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MOLLUSCA.—III.

LAND OPERCULATES.

(CYCLOPHORIDÆ, TRUNCATELLIDÆ, ASSIMINEIDÆ, HELICINIDÆ.)

BY

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PREFACE.

The Indian Molluscan Fauna has for a great number of years attracted the attention of many collectors and zoologists, foremost among whom may be mentioned the following: Benson, Pfeiffer, Stoliczka, Nevill, Theobald, Hanley, the two Blanford brothers, Beddome—unfortunately none of these any longer with us—and Lt.-Col. Godwin-Austen. The last named has an intimate and extensive knowledge of the Indian Mollusca, both conchological and anatomical, equalled by no man living. Of the total number of 572 species of land operculates known from India, Ceylon, and Burma, no fewer than 170 have been named and described by him, the next highest number—85—standing to the credit of Benson, while W. H. Blanford is responsible for 64, Pfeiffer following with 42, and Beddome with 25. In the largest genus—*Alycæus*, containing 145 known Indian species—Godwin-Austen is credited with as many as 102.

The classification adopted in the present volume is mainly that proposed by Kobelt in "Das Tierreich," Lief. 16.

In the marine operculates breathing is effected by means of one or two branchiæ. The terrestrial forms, however, having adopted an aërial mode of life and consequently breathing air instead of water, their respiration is carried on, as in the Pulmonata, by a lung formed from the mantle-cavity. In some genera, where the shell is completely closed by the operculum, a tube has been developed on the last whorl, near the aperture, for the purpose of admitting air into the shell. Such are: *Alycæus*, *Pterocyclus*, *Opisthoporus*, *Spiraculum*, and *Rhiostoma*. In the last genus the anterior

part of the last whorl has become detached, and the tube, which is quite free, is directed towards the penultimate whorl.

As regards the circulatory system, the Indian land operculates are provided with only one auricle, and the pulmonary veins, as well as the auricle—into which they open,—are situated in front of the ventricle.

In their nervous system these families, like other Streptoneura, are characterized by the loop formed by the two visceral nerve cords being twisted over itself in the form of the figure ∞. They also differ widely from the Pulmonata in their digestive and other organs.

In the preparation of this volume the writer has had the advantage of the co-operation of Mr. Hugh Watson, who has kindly read through all the proofs, in the course of which he has made many valuable suggestions. To Mr. G. C. Robson, as on a former occasion, I am indebted for giving me free access to the general collection in the British Museum at South Kensington. Mr. G. C. Leman also has obligingly placed several specimens from the late Col. Beddome's collection—now in his possession—at my disposal, while to Dr. F Haas, of the Senckenbergisches Museum, Frankfurt a/M., I am under obligation for procuring me photographs of the types of two species in the Möllendorff Collection.

London, *February*, 1921. G. K. GUDE.

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Family CYCLOPHORIDÆ.

Subfamily CYCLOPHORINÆ.

Genus **LEPTOPOMA**, *Pfeiffer*.

Leptopoma, Pfeiffer, Zeits. Malak. iv, 1847, p. 108; id., Mon. Pneum. 1852, p. 101; Adams, Genera Recent Moll. ii, 1855, p. 281; Chenu, Man. Conchyl. i, 1860, p. 487; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 127; Fischer, Man. Conchyl. 1885, p. 743; Sarasin, Land-Moll. Celebes, 1899, p. 15; Kobelt, Das Tierreich, Lief. 16, 1902, p. 4.

TYPE, *Cyclostoma vitrea*, Lesson.

Range. Southern Asia, Malaysia, Philippines, New Guinea, Melanesia.

Shell narrowly umbilicated, globose-turbinate or conical, thin, often translucent. Peristome simple—occasionally double—generally reflexed, sometimes straight, usually interrupted on the penultimate whorl, but somtimes connected by a thin callus. Operculum membranaceous, closely whorled, flat.

Subgenus **LEPTOPOMA**, *Pfeiffer* (s. s.).

Leptopoma (as subgenus), Kobelt, Das Tierreich, Lief. 16, 1902, p. 4.

TYPE, *Cyclostoma vitrea*, Lesson.

Range. Ceylon, Malaysia, Formosa, New Guinea, Melanesia.

Shell conical or globose-turbinate, thin, generally with brown bands on a white ground.

Only two species are known from Ceylon, none from the Indian Peninsula.

1. **Leptopoma semiclausum**, *Pfeiffer*.

Cyclostoma semiclausum (*Leptopoma*), Pfeiffer, P. Z. S. 1854, p. 302.

Leptopoma semiclausum, Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 70; Reeve, Conch. Icon. xiii, 1862, *Leptopoma*, pl. 6, fig. 35; Hanley & Theobald, Conch. Ind. 1870, pl. 6, fig. 2; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; Theobald, Cat. Shells Brit. India, 1876, p. 37; Nevill, Hand List, i, 1878, p. 281; Sykes, Journ. Malac. vii, 1899, p. 26; Kobelt, Conch.-Cab., Cyclophoridae, i, 1902, p. 446, pl. 55, fig. 9.

Leptopoma (*Leptopoma*) *semiclausum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. 1897, p. 79; id., Cat. Pneum. 1899, p. 7; Kobelt, Das Tierreich, Lief. 16, 1902, p. 14.

Original description:—"C. testa perforata, globoso-turbinata, tenuiuscula, striis obliquis et spiralibus minute decussata, albida,

flammis latis angulosis fusco-viridibus et fasciis inframedianis nonnullis saturatioribus picta; spira elata, turbinata, acutiuscula; anfr. 5 convexis, rapide accrescentibus; apertura obliqua, fere circulari; perist. duplice: interno expansiusculo, incumbente, externo rectangule patente, ad perforationem reflexo, eam fere claudente.—Operc. virenti-fulvum.

"Diam. maj. 13, min. 10, alt. 10 mill." (*Pfeiffer.*)

Hab. Ceylon (*Thwaites, H. Nevill*).

2. **Leptopoma taprobanensis**, *Preston.*

Leptopoma taprobanensis, Preston, Rec. Ind. Mus. iii, 1909, p. 137, pl. 22, fig. 4.

Original description:—"Shell pyramidal, white, painted with broad reddish brown flame markings; whorls $4\frac{1}{2}$, convex, the apical whorls uniformly reddish brown, smooth, the remainder sculptured throughout with spiral liræ; sutures deeply impressed; base of shell convex; umbilicus moderately broad; peristome continuous, single, reflexed, white; aperture circular.

"Alt. 6·5; diam. major 6·25; aperture alt. 2·5, diam. 2·5 mm." (*Preston.*)

Hab. Ceylon.

Subgenus **TROCHOLEPTOPOMA**, *Kobelt & Möllendorff.*

Trocholeptopoma, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 80; id., Cat. Pneum. 1899, p. 8; Kobelt, Das Tierreich, Lief. 16, 1902, p. 17.

TYPE, *Cyclostoma helicoides*, Grateloup.

Range. Burma, Andamans, Ceylon, Farther India, Malaysia, New Guinea.

Shell more or less trochoid-turbinate, generally with distinct spiral sculpture, frequently variegated; last whorl compressed, angulated, or keeled.

3. **Leptopoma apicatum**, *Benson.*

Leptopoma apicatum, Benson, A. M. N. H. ser. 2, xviii, 1856, p. 95; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 73; Reeve, Conch. Icon. xiii, 1862, *Leptopoma*, pl. 6, fig. 33; H. Nevill. Enum. Helic. Pneum. Ceylon, 1871, p. 5; Hanley & Theobald, Conch. Ind. 1876, pl. 142, fig. 1; Theobald, Cat. Shells Brit. India, 1876, p. 37; Nevill, Hand List, i, 1878, p. 281; Sykes, Journ. Malac. vii, 1899, p. 27.

Leptopoma (*Trocholeptopoma*) *apicatum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 80; id., Cat. Pneum. 1899, p. 8; Kobelt, Das Tierreich, Lief. 16, 1902, p. 18; id., Conch.-Cab., Cyclophoridae, i, 1902, p. 446, pl. 55, fig. 10.

Original description:—"Testa subobtecte perforata, globoso-conica, tenui, oblique striatula, sublente spiraliter confertim striata, albida, interdum flammulis et fascia unica infra peri-

phæriam angulatam ornata, sutura profunda; spira conica, apice saturate castaneo-nigrescente, acutiusculo; anfractibus $4\frac{1}{2}$ convexiusculis, ultimo ad periphæriam obtuse angulato; apertura obliqua, rotundata; peristomate duplici, interiori expansiusculo marginibus callo junctis, exteriori breviter expanso; margine columellari reflexo perforationem fere occultante.

"Diam. major $10\frac{1}{2}$, min. 9, axis 9 mill."

Hab. Ceylon (*E. Layard, H. Nevill*).

"This *Leptopoma* may be distinguished from any of the varieties of *L. vitreum* by its angular periphery, dark apex, more convex whorls, deeper suture, double peristome and parietal callus, as well as by the reflexion of the columellar lip over the perforation, and of the narrow lip above it. It is deficient also in the angular projection observable on the lower part of the same lip in that species." (*Benson.*)

4. Leptopoma aspirans, *Benson.*

Leptopoma aspirans, Benson, A. M. N. H. ser. 2, xvii, 1856, p. 229; Theobald, J. A. S. B. xxvi, 1857, p. 247; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 72; Reeve, Conch. Icon. xiii, 1862, *Leptopoma*, pl. 4, fig. 18; Blanford, J. A. S. B. xxxi, 1862, p. 144; xxxiv, 1865, p. 97; Hanley & Theobald, Conch. Ind. 1870, pl. 6, fig. 4; Theobald, Cat. Shells Brit. India, 1876, p. 37; Nevill, Hand List, i, 1878, p. 280*, var. *major*; Möllendorff, J. A. S. B. lv, 1886, p. 309; id., P. Z. S. 1891, p. 341.

Leptopoma (*Trocholeptopoma*) *aspirans*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 80; id., Cat. Pneum. 1899, p. 8; Kobelt, Das Tierreich, Lief. 16, 1902, p. 19; id., Conch.-Cab., Cyclophoridae, i, 1906, p. 465, pl. 57, figs. 17, 18.

Original description:—"Testa perforata, globoso-conica, acuminata, tenui, translucente, oblique et spiraliter exilissime striata, lineis elevatis 6 spiralibus, æquidistantibus, superne munita, albido-cornea, fasciis fuscis vel strigis angulatis castaneis ornata; spira acuminato-conica, sutura impressa, apice acutiusculo; anfractibus $5\frac{1}{2}$ convexis, ultimo ad periphæriam carinato, subtus læviori; apertura obliqua, subcirculari, peristomate tenui, horizontaliter breviter patente, marginibus callo tenui junctis, columellari leviter emarginato, operculo ut in genere.

"Diam. major 11, minor 9, alt. 12 mill., apert. $6\frac{1}{2}$ mill. longa."

Hab. Burma: Tenasserim Valley (*Theobald*); Tongoop, Arakan (*Ingram*); Arakan Hills (*Blanford, Kurz*); Bassein, Pegu; Long Island, Bassein River (*Blanford*). India: Khasi Hills, Assam (*Godwin-Austen*). Perak: Bukit Pondong (*Townsend, Hungerford*).

"In form it most nearly approaches *L. vitreum*, Qu., but has a more acuminate spire. Its sculpture has greater resemblance to that of the more globose and depressed Bornean species, *L. sericatum*, Pfr. The smaller specimens have a more conical and trochiform appearance than the larger ones." (*Benson.*)

5. Leptopoma elatum, *Pfeiffer.*

Leptopoma elatum, Pfeiffer, Zeits. Malak. viii, 1851, p. 146 (*nom. nud.*); id., Cat. Phaneropn. Brit. Mus. 1852, p. 82; id., Mon. Pneum. 1852, p. 117; Adams, Gen. Rec. Moll. ii, 1855, p. 281; Reeve, Conch. Icon. xiii, 1862, *Leptopoma*, pl. 1, fig. 3; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; Hanley & Theobald, Conch. Ind. 1876, pl. 142, fig. 2; Theobald, Cat. Shells Brit. India, 1876, p. 281; Nevill, Hand List, i, 1878, p. 281; Sykes, Journ. Malac. vii, 1899, p. 26.

Cyclostoma elatum, Pfeiffer, P. Z. S. 1852, p. 159; id., Conch.-Cab., Cyclostomaceen, 1853, p. 246, pl. 32, figs. 16, 17.

Leptopoma (*Trocholeptopoma*) *elatum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 80; id., Cat. Pneum. 1899, p. 8; Kobelt, Das Tierreich, Lief. 16, 1902, p. 22.

Original description:—"C. testa umbilicata, conica, tenuiuscula, oblique striata, lineis spiralibus, distantibus, elevatis sublente munita, vix diaphana, albida; spira conica, acutiuscula; anfr. 5½ parum convexis, ultimo convexiore, subacute carinato, basi confertius reticulato; umbilico angustissimo non pervio; apertura diagonali, truncato-ovali; perist. simplice, marginibus distantibus, æquilatis, angulatim patentibus, columellari subangustato.—Operc.? "Diam. maj. 11½, min. 10, alt. 10½ mill." (*Pfeiffer.*)

Hab. Ceylon (*Mus. Cum.*; *H. Nevill*).

6. Leptopoma immaculatum, *Chemnitz.*

Turbo immaculatus, Chemnitz, Conch.-Cab. ix, part 2, 1786, pp. 2, 57, pl. 123, fig. 1063.

Cyclostoma immaculatum, Pfeiffer, Conch.-Cab., Cyclostomaceen, 1846, p. 22, pl. 3, fig. 7; pl. 4, fig. 7; pl. 7, figs. 23, 24; pl. 16, fig. 9.

Leptopoma immaculatum, Pfeiffer, Zeits. Malak. iv. 1847, p. 108; Gray, Cat. Cyclophoridæ, 1850, p. 25; Pfeiffer, Mon. Pneum. 1852, p. 105; id., Cat. Phaneropn. Brit. Mus. 1852, p. 74; Adams, Gen. Rec. Moll. ii, 1855, p. 281; Mörch, Journ. Conchyl. xx, 1872, p. 339; id., op. cit. xxiv, 1876, p. 361; Pfeiffer, Malak. Blätt. xxiv, 1877, p. 48; Kobelt in Semper, Reisen Philipp. Teil 2, iv, part 2, 1886, p. 49, pl. 7, figs. 3–5; Godwin-Austen, Proc. Zool. Soc. 1895, p. 452.

Leptopoma (*Dermatocera*?) *immaculatum*, Nevill, Hand List, i, 1878, p. 281.

Leptopoma (*Trocholeptopoma*) *immaculatum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 81; id., Cat. Pneum. 1899, p. 9; Kobelt, Das Tierreich, Lief. 16, 1902, p. 24.

Turbo lævis, Wood, Index Test. Suppl. 1828, p. 18, pl. 6, fig. 5.

Cyclostoma læve, Wood, Index Test. Suppl. 1828, p. 36; Sowerby, Proc. Zool. Soc. 1843, p. 63; id., Thes. Conch. i, 1843, p. 133, pl. 29, figs. 220–222; Adams & Reeve, Voy. Samarang, 1848, p. 57, pl. 14, fig. 3.

Cyclostoma maculata, Lea, Trans. Amer. Philos. Soc. N. S. vi, 1838 p. 68, pl. 23, fig. 87.

Leptopoma maculatum, Hidalgo, Journ. Conchyl. xxxvi, 1888, p. 88.

Leptopoma (*Trocholeptopoma*) *maculatum*, Möllendorff, Abh. Naturf. Ges. Görlitz, xxii, 1898, p. 169; id., reprint, p. 144.

Cyclostoma maculosa, Souleyet, Revue Zool. iv, 1842, p. 101; Eydoux & Souleyet, Voy. Bonite, ii, 1852, p. 539, pl. 30, figs. 38–41.
Dermatocera maculosa, Adams, Gen. Rec. Moll. ii, 1855, p. 282; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 78.
Cyclostoma azaolanum, Jay, Cat. Shells, Ed. 4, 1850, p. 254.

"T. perforata, globoso-conica, tenuis, concentrice confertissime lineata, diaphana, albida, sæpe castaneo punctata et strigato-maculata; spira conica, acuta; anfr. $5\frac{1}{2}$ convexi, ultimus superne carinis nonnullis obsoletis, ad peripheriam carina 1 validiore munitis, basi convexus; apertura vix obliqua, subcircularis; perist. tenue, undique late expansum, marginibus disjunctis, columellari medio dilatato. umbilicum angustissimum, haud pervium non occultante.—Operc. normale.—Diam. maj. 17, min. 14, alt. 12 mill. Ap. intus 9 mill. longa." (*Pfeiffer.*)

Hab. Kachal, Nicobars. Philippines.

7 **Leptopoma roepstorfianum**, *Nevill.*

Leptopoma roepstorfianum, Nevill, Hand List, i, 1878, p. 280; Godwin-Austen, P. Z. S. 1875, p. 452.
Leptopoma (*Trocholeptopoma*) *roepstorfianum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 81; id., Cat. Pneum. 1899, p. 9; Kobelt, Das Tierreich, Lief. 16, 1902, p. 29.

Original description:—"Like *L. aspirans*, but more globose and swollen; apparently smooth and polished, but under the lens

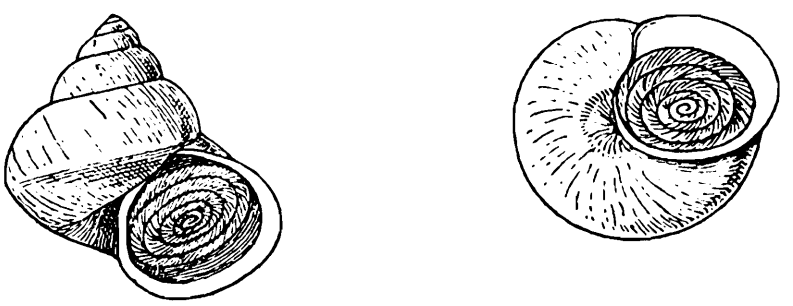


Fig. 1.—*Leptopoma roepstorfianum.* (× 2.)

closely spirally somewhat absolutely [? obsoletely] striated; umbilicus less open: aperture more effused, margin at base sub-angulate, not rounded, either uniformly white or beautifully marked—'zebra-like.'" (*Nevill.*)

Hab. Andaman Islands (*de Roepstorf*); Port Blair (*Godwin-Austen*).

In addition to the type Nevill indicates, *l. c.* p. 281, "var. *nicobarica*, Martens," but he gives no description, and I have been unable to trace the name in any of von Martens' articles.

Presumably this form is from the Nicobar group, but Nevill does not state this. Kobelt in 'Das Tierreich' indicates the Nicobars for the species, probably on the strength of the name.

Godwin-Austen (*l. c.*) states that he found in Nevill's MS. copy of the 'Hand List' the varieties *gigantea* and *albida*—no description of either is given—the former from Port Blair and the latter from the same locality as well as from the "Brothers."

The species is now illustrated for the first time from a specimen in the British Museum.

Genus **JAPONIA**, *Gould.*

Japonia, Gould, Proc. Boston Soc. Nat. Hist. vi, 1859, p. 426
Kobelt, Das Tierreich, Lief. 16, 1902, p. 34.

TYPE, (1st species) *Cyclostoma barbata*, Gould (non *C. barbatum*, Pfeiffer).

Range. South China, Japan, Southern Asia, Malaysia, Philippines, New Guinea, New Hebrides, Fiji Islands, New Zealand.

Shell small, narrowly umbilicated, turbinate, spirally striated, covered with a brownish periostracum, in young specimens frequently hairy; peristome thickened, provided at the suture with a more or less distinct notch. Operculum flat, thin, many-whorled. Animal similar to that of *Cyclophorus*, but the foot furnished with a slime-pore above. Radula as in *Cyclophorus*.

Subgenus **LAGOCHILUS**, *Blanford* (em.).

Lagocheilus, Blanford, A. M. N. H. ser. 3, xiii, 1864, p. 452.
Lagochilus, s. str., Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 82; id., Cat. Pneum. 1899, p. 10 (as subgenus of *Lagochilus*); Kobelt, Das Tierreich, Lief. 16, 1902, p. 35 (as subgenus of *Japonia*).

TYPE, *Cyclophorus scissimargo*, Benson.

Range. From India to the Philippines.

Original description:—"Testa anguste umbilicata, turbinato-conica, parva, spiraliter lirata, epidermide fusca (in exemplis junioribus sæpe hispidula) induta. Peristoma incrassatum, superne ad angulam rima transverse breviter incisum. Operculum planum, tenue, albidum."

8. Japonia binoyæ, *Sykes.*

Cyclophorus binoyæ, Sykes, Journ. Malac. vii, 1899, p. 29, pl. 2, fig. 4.
Japonia (*Lagochilus*) *binoyae*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 37; id., Conch.-Cab., Cyclophoridae, i, 1907, p. 526, pl. 66, fig. 3.

Original description:—"Closely related to *C. vescus*, but the spiral striation is very much finer, the lines being more numerous and closely set, the periostracum much stronger, being almost scabrous; the shell is also more closely coiled, a specimen of $4\frac{1}{2}$ whorls measuring only: alt. 3, diam. 5 mm." (*Sykes.*)

Hab. Ceylon: Binoya, Ambagamuwa (*Collett*).

9. **Japonia daflaensis**, *Godwin-Austen.*

Lagocheilus daflaensis, Godwin-Austen, Rec. Ind. Mus. viii, 1918, p. 575, text-fig. 3 C.

Original description:—"Shell elongately conoid, umbilicated; sculpture about ten fine liræ, regularly disposed, crossed by fine epidermal striæ of growth; colour dark brown; spire, sides nearly flat, apex fine; suture moderately impressed; whorls 6, sides rounded, evenly increasing; aperture circular, obtusely angulated above; peristome double, continuous, sinuate on outer margin, with small nick at the suture.

"Size (largest): major diameter 5·2, alt. axis 4·0 mm."

Hab. India: Toruputu, Dafla Hills (*Godwin-Austen*).

10. **Japonia galatheæ**, *Mörch.*

Cyclophorus (*Craspedotropis*) *galatheæ*, Mörch, Journ. Conchyl. xx, 1872, p. 315; id., Vid. Meddel. ser. 3, iv, 1872, p. 22; id., Journ. Conchyl. xxiv, 1876, p. 361.

Loptopoma (err. typ.) *galatheae*, Pfeiffer, Malak. Blätt. xxiv, 1877, p. 148.

Leptopoma? galatheae (*Cyclophorus*), Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 128.

Lagocheilus galatheæ + var. *minor*, Nevill, Hand List, i, 1878, p. 283; Godwin-Austen, P. Z. S. 1895, p. 444.

Lagochilus (*Lagochilus*) *galatheae*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1877, p. 83; id., Cat. Pneum. 1899, p. 11.

Japonia (*Lagochilus*) *galatheae*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 43.

Original description:—"T. depresso-conica, perforato-umbilicata; anfr. $5\frac{1}{5}$ convexiusculi; sutura sat profunda, lineis acutis spiralibus in anfr. penult. circ. 10–12, in ultimo circiter 20, umbilicum versus distantioribus et obsoletioribus; fasciis brunneis obliquis subsigmoideis, suturam versus latioribus, umbilicum versus intrantibus. Striæ incrementi, parum prominentes. Apertura diagonalis, circularis, intus cœrulescens, peristomate breviter expanso, duplice, interno albo, externo fusco, callo parietali ad insertionem marginis superioris exciso.

"Diam. maj. 6 mill.; axis 4 mill.; alt. max. $6\frac{1}{2}$ mill.; ap. diam. 3 mill." (*Mörch.*)

Hab. Nicobars: Borders of Galathea River (*Reinhardt*); Teressa, Katchal, Kamorta (*Roepstorf*); Nicobars (*Stoliczka.*)

Mörch records a var. *minor*, measuring only 5 mm. in diameter, from Katchal.

J. galatheæ is allied to *J. roepstorfi*, but the latter has more distant, ciliated spiral liræ, is more depressed, and has a wider umbilicus.

The species has never been illustrated, and I have been unable to find specimens in any collection to which I have had access.

11. Japonia leporina, *Blanford.*

Cyclophorus (*Lagocheilus*) *leporinus*, Blanford, J. A. S. B. xxxiv, 1865, p. 82.
Cyclophorus leporinus, Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 123.
Lagocheilus leporinus, Stoliczka, J. A. S. B. xli, part 2, 1872, p. 269; Hanley & Theobald, Conch. Ind. 1875, p. 54, pl. 135, fig. 2; Theobald, Cat. Shells Brit. India, 1876, p. 37; Nevill, Hand List, i, 1878, p. 282; Crosse, Journ. Conchyl. xxvii, 1879, p. 203.
Lagochilus (*Lagochilus*) *leporinum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 83; id., Cat. Pneum. 1899, p. 11.
Japonia (*Lagochilus*) *leporina*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 47; id., Conch.-Cab., Cyclophoridae, i, 1907, p. 530, pl. 66, fig. 12.

Original description:—"Shell narrowly umbilicated, conically turbinate, thin, dark horny, and ornamented throughout with oblique striæ and with raised spiral lines, closer together at the periphery and within the umbilicus than elsewhere. Spire conical, apex rather acute. Whorls $5\frac{1}{2}$, rounded; the last cylindrical, not descending. Aperture oblique, subcircular, angulate above; peristome simple, thickened, subexpanded, incised at the upper angle; columellar margin curved backwards. Operculum horny, greyish white, multispiral.

"Major diameter 4, minor $3\frac{1}{2}$ mill.; axis 4 mill."

Hab. Burma: Akoutong, Pegu (*Blanford*); Thyat Myo (*Hungerford*).

"This form is allied to *Cyclophorus scissimargo*, Bens., and *C. tomotrema*, Bens. . . . . The present species is smaller and higher in the spire than either of the others. The animal of *C. leporinus* is short, dark in colour, with small black tentacles, and resembles ordinary *Cyclophori* in most characters. The only specimen obtained living and examined, posssesed, however, the peculiarity of a groove down the middle of the caudal portion of the foot above.

"The peristome is simple in the only perfect adult specimen which I possess, but in a broken barely adult shell, there is a rudimentary duplication. The two lips are probably united in the full grown shell." (*Blanford.*)

12. **Japonia malleata**, *Blanford.*

Cyclophorus malleatus, W. T. & H. F. Blanford, J. A. S. B. xxx, 1861, p. 349, pl. 1, fig. 6; p. 364; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 71.
?*Cyathopoma malleatum*, Hanley & Theobald, Conch. Ind. 1874, p. 35, pl. 82, figs. 5, 6.
Leptopoma malleatum, Theobald, Cat. Shells Brit. India, 1876, p. 37.
Cyclophorus (*Leptopomoides*) *malleatus*, Nevill, Hand List, i, 1878, p. 274.
Lagochilus (*Lagochilus*) *malleatum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 83; id., Cat. Pneum. 1899, p. 11.
Japonia (*Lagochilus*) *malleata*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 48.

Original description:—"Testa anguste umbilicata, trochiformis, oblique striata, liris spiralibus supra et infra cincta, solidiuscula, epidermide fusca induta, sub epidermide albida; spira conica, apice acuta, sutura impressa. Anfr. 5 convexi; ultimus rotundatus in veteribus exemplis descendens et fere solutus. Apertura parum obliqua, circularis, superne subangulata; perist. rectum, simplex, breviter adnatum, margine columellari recedente, dextro supra antice porrecto. Operc. ?

"Diam. maj. $6\frac{1}{2}$, min. $5\frac{1}{2}$, axis $6\frac{1}{2}$, ap. diam. 3 mm." (*Blanford.*)

Hab. India: Shevroy Hills (*King, Stoliczka*); Nilgiris (*Blanford*); Kalryenmullies (*Foote*).

"This appears to be a representative of the Cingalese group, comprising *Cyclophorus halophilus*, Bens., *C. orophilus*, Bens., *C. flammeus*, Pfr., &c. It differs from all except *C. orophilus* and *C. conulus* in being spirally lirate, and from these two in several characters of spire, aperture, epidermis, &c.

"Some specimens of the same or of a closely allied species were found by one of us in Neddiwuttom Ghat on the Nilgiris. They were, however, much smaller, the largest specimen procured only measuring in its two diameters, $4\frac{1}{2}$ and 4 mm., axis $4\frac{1}{2}$. A specimen of the same small form also occurs in Mr. Foote's collection from the Kalryenmullies." (*Blanford.*)

13. **Japonia oakesi**, *Godwin-Austen.*

Lagocheilus oakesi, Godwin-Austen, Rec. Ind. Mus. viii, 1918, p. 574, text-fig. 3 A.

Original description:—"Shell turbinate, rather flattened on base, rather openly umbilicated; sculpture very fine close liration, crossed with oblique lines of growth; colour umber-brown, with a greenish tint, grey inside the aperture; spire high, conic, apex fine; suture impressed; whorls $5\frac{1}{2}$, rounded, the last rather flattened on the periphery; aperture ovate, obtusely angulate above, oblique; peristome double, continuous; columella margin rather flat above, then suboblique, subangulate in outline.

"Size: major diameter 4·75, alt. axis 4 mm." (*Godwin-Austen.*)

Hab. India: Abor Hills (*Oakes*).

A small variety is figured on the same page as the type (text-fig. 3 B). It measures: major diam. 4, alt. axis 3·5 mm., has the last whorl more rounded, and not quite so widely umbilicated.

14. **Japonia occulta**, *Sykes.*

Lagochilus occultus, Sykes, Journ. Malac. vii, 1899, p. 28, pl. 2, fig. 6.
Japonia (*Lagochilus*) *occulta*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 49; id., Conch.-Cab., Cyclophoridae, 1907, p. 518, pl. 65, fig. 1.

Original description:—"Testa mediocriter et perspective umbilicata, elate turbinata, tenuiuscula, brunneo-cornea, spira bene elevata; anfr. $4\frac{1}{2}$–5 convexi, sutura profunde impressa, periostraco bene induti, lineis spiralibus (ultimus sex approx.) et transversis, et setis sparsim notati, basi usque in umbilicum leviter lirati;

apertura subcircularis, peristomate leviter incrassato, superne leviter exciso. Alt. 2·5, diam. 4 mm." (*Sykes.*)

Hab. Ceylon: Ambegamua (*Collett*).

"The first species of the genus recorded from Ceylon. The shell is clothed with a dense periostracum, which forms transverse and spiral lines, the latter having a few hairs scattered along them. The notch is small but distinct."

15. **Japonia phayrei**, *Theobald.*

Jerdonia (?) *phayrei*, Theobald, J. A. S. B. xxxix, part 2, 1870, p. 396; Hanley & Theobald, Conch. Ind. 1875, pl. 135, fig. 3.
Mychopoma phayrei, Theobald, Cat. Shells Br. India, 1876, p. 39.
Cyclophorus phayrei, Theobald, Op. cit., Addenda, p. ii.
Lagochilus phayrei, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxxi, 1899, p. 130; id., Cat. Pneum. 1899, p. 98.
Japonia (*Lagochilus*) *phayrei*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 50.

Original description:—"Testa parva, turbinata, perforata; apice exserto; anfractibus quinque, angulariter quadratis, convexe planatis, bicarinatis: carina quaque plurimis setis regulariter radiatim parumque sursum inclinatis armata, hac peripheriali, illa ad suturam posita, in ultimo anfractu tantim carinis duabus solutis apparentibus; area circum umbiliacari duabus carinis filiformibus circumdata, umbilicum valde profundum coarctantibus. Epidermide vix scabriuscula, fusca, ad aperturam leviter striata. Apertura subcirculari, integra, haud obliqua; peristomate prope marginem superiorem breviter expanso. Diam. major ·13, diam. min. ·10, alt. ·12 unc." [3·25, 2·5, 3 mm.] (*Theobald.*)

Hab. Shan States: Upper Salween Valley (*Fedden*).

16. **Japonia polynema**, *Mörch.*

Cyclophorus (*Craspedotropis*) *polynema*, Mörch, Journ. Conchyl. xxiv, 1876, p. 361.
Loptopoma polynema, Pfeiffer, Malak. Blätt. xxiv, 1877, p. 148.
Lagocheilus polynema, Nevill, Hand List, i, 1878, p. 283.
Lagochilus (s. s.) *polynema*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 84; id., Cat. Pneum. 1899, p. 12.
Japonia (*Lagochilus*) *polynema*, Kobelt, Das Tierreich, Lief. 16 1902, p. 51.



Fig. 2.—*Japonia polynema.* (× 3.)

Original description:—"Differt a præcidentibus [*C. galatheæ* & *C. roepstorfi*] t. solidiore, opaca, liris confertissimis, alternatim minoribus; flammis pallidioribus et irregularioribus. Diam. 6 mill. alt. $3\frac{1}{2}$." (*Mörch.*)

This form may be distinguished from *J. roepstorfi* and *J. galatheæ* by the thicker, non-transparent shell, with very close spiral liræ, alternating in thickness, and paler irregular flammules. The specimen figured is in the British Museum. The species has not hitherto been illustrated.

17. Japonia roepstorfi, *Mörch.*

Cyclophorus (*Craspedotropis*) *roepstorfi*, Mörch, Journ. Conchyl. xxiv, 1876, p. 361.
Lagocheilus roepstorffi, Nevill, Hand List, i, 1878, p. 283; Godwin-Austen, Proc. Zool. Soc. 1895, p. 452.
Lagochilus (s. s.) *roepstorfi*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 84; id., Cat. Pneum. 1899, p. 12.
Japonia (*Lagochilus*) *roepstorfi*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 53.

Original description:—"Differt a præcedente [*C. galatheæ*] t. liris remotioribus ciliatis, spira planiore et umbilico latiore. Diam. $6\frac{1}{2}$ mill., alt. 4." (*Mörch.*)
Hab. Nicobar Islands: Kamorta (*Roepstorf*).

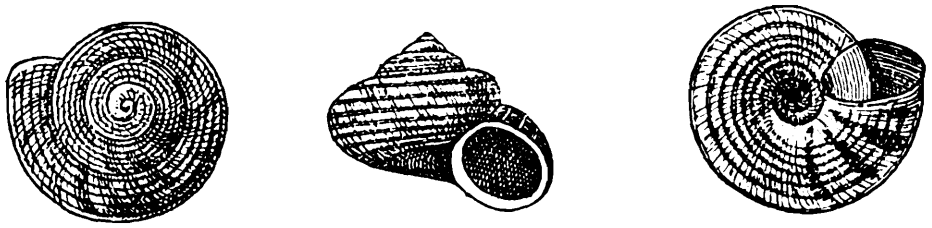


Fig. 3.—*Japonia roepstorfi.* (× 3.)

The species is now figured for the first time. The specimen is from the Beddome collection, and measures: 6·5 mm. in diameter, alt. (including aperture) 5 mm.

18. Japonia scissimargo, *Benson.*

Cyclophorus? *scissimargo*, Benson, A. M. N. H. ser. 2, xvii, 1856, p. 228; Theobald, J. A. S. B. xxvi, 1857, p. 247; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 61.
Cyclophorus scissimargo, Pfeiffer, Novit. Conch. ser. 1, ii, 1860, p. 144, pl. 37, figs. 19–21; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 20, fig. 105.
Lagocheilus scissimargo, Blanford, A. M. N. H. ser. 3, xiii, 1864, p. 452; Hanley & Theobald, Conch. Ind. 1870, pl. 6, fig. 7; Theobald, Cat. Shells Brit. India, 1876, p. 37; Nevill, Hand List, i, 1878, p. 282; Crosse, Journ. Conchyl. xxvii, 1879, p. 203; Morlet, Journ. Conchyl. xxxvii, 1889, p. 152; P. Fischer,

Bull. Soc. Hist. Nat. Autun, iv, 1891, p. 106; Dautzenberg & H. Fischer, Journ. Conchyl. liii, 1905, p. 169, pl. 4, figs. 14, 15.

Lagocheilus (s. s.) *scissimargo*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 84; id., Cat. Pneum. 1899, p. 12.

Japonia (*Lagochilus*) *scissimargo*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 53.

Original description:—"Testa umbilicata, globoso-turbinata, sub epidermide corneo-albida, strigis distantibus angulatis picta, radiato-striata, striis exilissimis et lineis elevatis remotis spiralibus, his quidem ciliatis, cancellata; spira conica, sutura profunda, apice obtusiusculo, nigrescente; anfractibus 5 convexis; apertura obliqua, subcirculari, superne leviter angulari, peristomate duplici, exteriori et interiori acutis, sulco separatis, margine columellari emarginato, parietali adnato, superne breviter anguste inciso; umbilico profundo, anguste perspectivo. Operculo —— ?

"Diam. major 7, minor 5½, alt. 7 mill."

Hab. Burma: Phaie Than, Tenasserim (*Theobald*); Cambodia (*Pavie*); Tonkin (*Messager*).

"This little species, which has some affinity to *C. triliratus*, Pfr., is singular on account of the incision which appears in the parietal margin near its junction with the right lip, a feature not observed in any other species of the Cyclostomacea. It is with some hesitation therefore that, in the absence of an operculum, I refer it to *Cyclophorus*, although the general habit of the shell bears out the location." (*Benson.*)

19. **Japonia sikhimensis**, *Godwin-Austen.*

Lagocheilus sikhimensis, Godwin-Austen, Rec. Ind. viii, 1918, p. 575, text-fig. 3 D.

Original description:—"Shell openly umbilicated, turbinate, subturreted; sculpture, about 7 liræ on the peripheral part of the whorl, about 3 below, 5 can be seen within the umbilicus, none on the flatter part next the suture; colour umber-brown; spire fairly high, apex small; suture open; whorls 5½, tumid; aperture circular, obtusely angulate above; peristome double, narrow, continuous; columella margin subvertical.

"Size: major diameter 5·0, alt. axis 3·0 mm." (*Godwin-Austen.*)

Hab. India: Rishetchu, Sikhim (*W Robert*).

20. **Japonia tomotrema**, *Benson.*

Cyclophorus? *tomotrema*, Benson, A. M. N. H. ser. 2, xix, 1857, p. 206; Theobald, J. A. S. B. xxvii, 1858, p. 318; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 50; Suppl. 2, 1865, p. 76.

Cyclophorus (*Lagocheilus*) *tomotrema*, Pfeiffer, Mon. Pneum. Suppl. 3, 1875, pp. 122, 409.

Lagocheilus tomotrema, Blanford, A. M. N. H. ser. 3, xiii, 1864, p. 452; Hanley & Theobald, Conch. Ind. 1870, pl. 6, fig. 8; Stoliczka, J. A. S. B. xli, 1872, part 2, p. 269; Godwin-Austen, Op. cit. xlv, 1876, part 2, p. 174; Theobald, Cat. Shells Brit.

India, 1876, p. 37; Nevill, Hand List, i, 1878, p. 282; Crosse, Journ. Conchyl. xxvii, 1879, p. 203.
Lagochilus (s. s.) *tomotrema*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 84; id., Cat. Pneum. 1899, p. 12.
Japonia (*Lagochilus*) *tomotrema*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 56; id., Conch.-Cab., Cyclophoridae, i, 1907, p. 531, pl. 66, fig. 13.

Original description:—"Testa anguste umbilicata, turbinato-pyramidali, radiato-striatula, liris elevatis spiralibus plurimis, nonnullis majoribus, munita, fusco-cornea; spira conica, apice obtusiusculo albido, sutura bene impressa; anfractibus 5 convexis, ultimo subcarinato; apertura obliqua, subcirculari, livida, supra angulata; persistomate duplici, interiori continuo, expansiusculo, superne ad angulum inciso, exteriori expanso, dilatato. Operc. ——?

"Diam. $5\frac{1}{2}$, axis 5 mill." (*Benson.*)

Hab. India: Teria Ghat, Khasi Hills (*Theobald*); Darjeeling (*Stoliczka*); Dafla Hills (*Godwin-Austen*); Naga Hills (*Roberts*).

21. **Japonia vesca**, *Sykes.*

Cyclophorus vescus, Sykes, Journ. Malac. vii, 1899, p. 29, pl. 2, fig. 3.
Japonia (*Lagochilus*) *vesca*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 58; id., Conch.-Cab., Cyclophoridae, i, 1907, p. 525, pl. 66, figs. 1, 2.

Original description:—"Testa mediocriter umbilicata, depresso-turbinata, solidula, brunneo-cornea, ad suturam et usque ad peripheriam maculis castaneis picta, periostraco levissime induta, apice obtusulo, sutura valde impressa; anfr. $4\frac{1}{2}$–5, sat rapide accrescentes, convexi, primi fere læves, reliqui spiraliter striati, lineis incrementibus leviter notati; apertura subcircularis, superne angulata, persistomate leviter incrassato, reflexiusculo; operculum corneum, tenue, multispirale. Alt. 5·75, diam. 10·5 mm." (*Sykes.*)

Hab. Ceylon: Ambagamuwa (*Collett*).

Var. *a*. "Minor, pallidior. Alt. 4, diam. 8 mm."

Hab. Ceylon: Uda Pussellawa (*Preston*).

The shell is stated to be of the ordinary turbinate form, marked with spiral lines which become less conspicuous on the last whorl. A specimen in the Beddome collection measures 12 mm. in diameter.

22. **Japonia warnefordiana**, *G. Nevill.*

Lagocheilus warnefordianus, G. Nevill, Hand List, i, 1878, p. 282.
Lagochilus (s. s.) *warnefriedianum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 85; id., Cat. Pneum. 1899, p. 13.
Japonia (*Lagochilus*) *warnefordiana*, Kobelt, Das Tierreich, Lief. 16, 1902 p. 58.

Original description :—"Shell ovately turbinate, with $5\frac{1}{2}$ convex whorls, the last globosely swollen; suture distinct; apex acute; umbilicus very narrow, much smaller than in any of the other Indian species, almost entirely covered by the peristome; almost quite smooth, even under a lens, scarcely any trace of spiral sculpture; light brown colour, elegantly flamed with darker brown; aperture round, with a double peristome, the outer margin very thin, broadly reflected; operculum thin, multispiral, light colour, on the interior side polished and with a central umbo." (*Nevill.*)

Hab. Andaman Islands: Mt. Harriet (*G. Nevill, Stoliczka*); Nicobar Island (?) (*Stoliczka*).

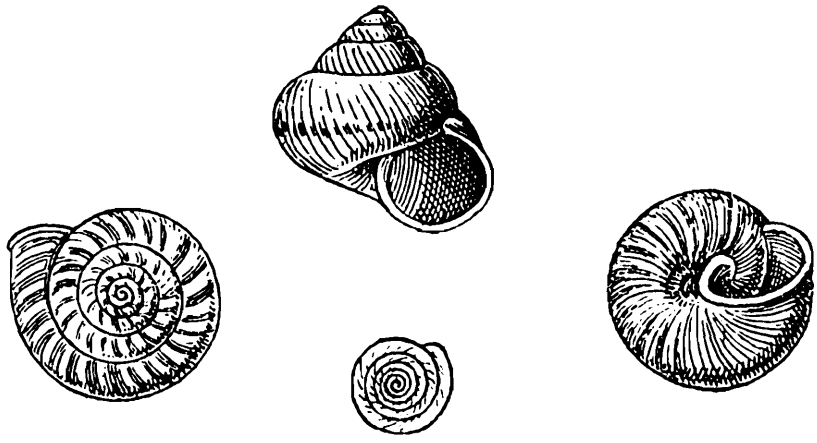


Fig. 4.—*Japonia warnefordiana.* (Shell×2, operculum×3.)

This species is now illustrated for the first time from an Andaman specimen in the Beddome collection.

23. Japonia wullerstorfiana, *Zelebor.*

Cyclotus wüllerstorfianus, Zelebor, Verh. K.K. zool.-bot. Ges. xvii, 1867, p. 807.
Cyclophorus wüllerstorffii, Mörch, Journ. Conchyl. xx, 1872, p. 330.
Lagocheilus wüllerstorfianus, Godwin-Austen, Proc. Zool. Soc. 1895, p. 452.
Lagocheilus wüllerstorfianum, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxxi, 1899, p. 131; id., Cat. Pneum. 1899, p. 98.
Japonia (Lagochilus) wullerstorfiana, Kobelt, Das Tierreich, Lief. 16, 1902, p. 59.



Fig. 5.—*Japonia wullerstorfiana.* (× 2.)

Original description :—"T. anguste umbilicata, turbinata, tenuiscula, striatula, superne liris 5, subtus 4 filiformibus cincta, luteo

et castaneo flammulata; spira turbinata, vertice acuto; anfr. 5½ convexiusculi, ultimus fascia lutea infra liram periphericam ornatus, basi parum convexus; apertura parum obliqua, subcircularis; perist. simplex, anguste expansum, marginibus approximatis, callo junctis. Operc.?—Diam. maj. 7, min. 6, alt. 5½ mm." (*Zelebor.*)

Hab. Nicobar Islands (*Novara Exped.*).

The species has not hitherto been illustrated, and I am pleased to be able to give 3 views of a specimen in the British Museum.

Genus **CRASPEDOTROPIS**, *Blanford.*

Craspedotropis, Blanford, A. M. N. H. ser. 3, xiii, 1864, p. 454 (as subgenus of *Cyclophorus*); Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 71 (? genus); Nevill, Hand List, i, 1878, p. 278; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 86 (as genus); id., Cat. Pneum. 1899, p. 14; Kobelt, Das Tierreich, Lief. 16, 1902, p. 68.

TYPE, *Cyclophorus cuspidatus*, Benson.

Range. India.

Shell acuminate conoid, carinated, with a thick fuscous periostracum, the keel fimbriated. Operculum closely wound.

24. **Craspedotropis bilirata**, *Beddome.*

Cyclophorus biliratus, Beddome, P. Z. S. 1875, p. 452, pl. 53, fig. 34; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 408.

? *Craspedotropis biliratus*, Theobald, Cat. Shells Brit. India, 1876, Addenda, p. ii.

Cyclophorus (*Craspedotropis*) *biliratus*, Nevill, Hand List, i, 1878, p. 278.

Ditropis biliratus, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 86; id., Cat. Pneum. 1899, p. 14.

Ditropis (*Ditropis*) *biliratus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 73.

Original description:—"Shell umbilicated, turbinate, furnished with a thick dark epidermis, which is soon obsolete on the fourth or fifth upper whorl, but always present on the lowest one, where it forms an oblique, coarse, hair-like striation most prominent round the periphery and at the suture of the two lower whorls, and generally round the umbilicus, where it forms quite a fringe; colour below the epidermis dull olive; spire conical, apex subacute; whorls 6, the five upper ones smooth, convex, or sometimes the fifth (or fourth and fifth) with a slight rib round the centre; lowest whorl with two prominent raised ribs round the periphery, with a broad flat space between them, below convex, smooth or with several raised striæ, the whorl descending slightly near the mouth; aperture oblique, subcircular, slightly angled at the termination of the ribs at the peristome; umbilicus more or less striated within; peristome single, thin, continuous, or slightly interrupted on the penultimate; operculum of a single layer, thin,

horny, multispiral, concave externally, nucleus small, central height of shell $\frac{3}{16}$ inch [5 mm.], slightly more than the breadth of the lowest whorl."

Hab. India: South Canara range of Ghats, 2500 feet elevation (*Beddome*); Wynaad? (*Beddome*).



Fig. 6.—*Craspedotropis bilirata.* (× 3.)

"This shell is closely allied to *Cyclophorus cuspidatus*, Bens. (*Craspedotropis*, Blanf.); it has exactly the same operculum (the two not being in any way distinguishable), which, however, seems scarcely to differ from that of many typical species of *Cyclophorus*, except, perhaps, in being more closely wound, certainly not enough to constitute a subgenus." (*Beddome.*)

Nevill mentions * another *Cyclophorus biliratus*, Beddome, under the subgenus *Leptopomoides* from the Wynaad, but it is uncertain whether this is the same as the Canara form.

The specimen figured is from the Beddome collection, and measures 3·5 mm. in diameter, alt. 4 mm. In describing the species Col. Beddome stated it was allied to *Cyclophorus cuspidatus*. Nevill referred it to *Craspedotropis*, but Kobelt and Möllendorff placed it in *Ditropis*. Its affinities appear to me to warrant its inclusion in the former rather than in the latter genus.

25. Craspedotropis cuspidata, *Benson.*

Cyclostoma cuspidatum, Benson, A. M. N. H. ser. 2, viii, 1851, p. 189; Pfeiffer, Mon. Pneum. 1852, p. 313; id., Cat. Phaneropn. Brit. Mus. 1852, p. 223; id., Conch.-Cab., *Cyclostoma*, 1854, p. 378, pl. 49, figs. 21–23.

Cyclophorus cuspidatus, Benson, A. M. N. H. ser. 2, xiv, 1854, p. 415; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 62; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 19, fig. 93; Blanford, A. M. N. H. ser. 3, xiii, 1864, p. 454.

Craspedotropis cuspidatus, Hanley & Theobald, Conch. Ind. 1875, pl. 135, figs. 1, 4; Theobald, Cat. Shells Brit. India, 1876, p. 37.

Cyclophorus (Craspedotropis) cuspidatus, Nevill, Hand List, i, 1878, p. 278.

Craspedotropis cuspidata, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 86; id., Cat. Pneum. 1899, p. 14; Kobelt, Das Tierreich, Lief. 16, 1902, p. 68, fig. 13.

Original description:—" Testa umbilicata, acuminato-conoidea, oblique striata, lineis spiralibus circumdata, epidermide olivaceo-

* Hand List, i, 1878, p. 274.

fusca; spira elongata, attenuata, apice mamillari; anfractibus 5, primis convexis, ultimo et penultimo superne convexiusculis, lira unica præditis, ultimo subtus convexo, periphæria carinata, carina lamellato fimbriata; basi 3-lirata, lira subumbilicari fimbriata; apertura perobliqua, subcirculari, superne subangulata, dimidium longitudinis æquante, peristomate tenui, acuto, margine columellari expansiusculo; umbilico mediocri profundo, anfractus plures exhibente.

"Diam. major 6, minor 5, alt. 4 mill." (*Benson.*)

Hab. India: Nilgiris (*Jerdon, Blanford*); Ootacamund (*Beddome*).



Fig. 7.—*Craspedotropis cuspidata.* (× 3.)

"This species is singular on account of its attenuated spire, and the hirsute lamellar appendages to the keels, at the periphery and umbilicus; but the latter character is apt to be obliterated." (*Benson.*)

The shell figured is from the Beddome collection and measures: 4·5 mm. in diameter, alt. 3·75 mm.

26. **Craspedotropis fimbriata**, *Godwin-Austen.*

Craspedotropis fimbriatus, Godwin-Austen, J. A. S. B. xliv, 1875, p. 7, pl. 4, fig. 1; Hanley & Theobald, Conch. Ind. 1876, p. xiii; Theobald, Cat. Shells Brit. Ind. 1876, addenda, p. ii; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 86; id., Cat. Pneum. 1899, p. 14; Kobelt, Das Tierreich, Lief. 16, 1902, p. 69.

Cyclophorus (*Craspedotropis*) *fimbriatus*, Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 406.

Original description:—"Shell conoidly turbinate, closely umbilicated, thin, covered with a rough dark brown epidermis, longitudinally striate, a leaf-like fringe adorns the periphery of the last whorl, spire conoid, its side concave, apex attenuate, blunt, suture deep; whorls 5, flat above, aperture diagonal, circular, the lip slightly reflected, peristome thin. Operculum multispiral, flat, smooth on the outer surface. Animal not seen.

"Major diam. 0·19 [4·75 mm.], alt. 0·15 in. [3·75 mm.]." (*Godwin-Austen.*)

Hab. India: Thengdan Peak, Naga Hills (*Godwin-Austen*).

27. Craspedotropis salemensis, *Beddome.*

Cyclophorus salemensis, Beddome, P.Z.S. 1875, p. 453, pl. 53, fig. 35; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 408.
Craspedotropis salemensis, Hanley & Theobald, Conch. Ind. 1876, p. xiii.
Ditropis salemensis, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 87; id., Cat. Pneum. 1899, p. 15.
Ditropis (*Ditropis*) *salemensis*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 77.

Original description:—"Shell moderately umbilicated, turbinate, with the spire rather acuminate, of a dull olive-green, furnished with a dirty dark brown, obliquely striated, thread-like epidermis, which is early deciduous on the upper whorls, but always present on the lowest, and round the umbilicus, where it forms a fringe; whorls 6, the upper five generally smooth, convex, or the fifth more or less bilirate towards its termination; lowest whorl a little descending in front, convex below, furnished with five prominent spiral costulations above the region of the periphery, and four to five below it, which latter are only conspicuous towards the termination of the whorl; umbilicus spirally lirate within; aperture oblique, subcircular, angled at its apex; peristome single, continuous, angled at its apex, and suddenly contracted a little below the apex of its right margin, and slightly angled at the centre of the same margin (at the exit of the lower or most prominent of the costulations round the periphery); operculum as in *C. biliratus* and *cuspidatus*: length $\frac{7}{32}$ inch [5·5 mm.], and the greatest diameter equalling the length." (*Beddome.*)

Hab. India: Shevaroy Hills, Salem district (*Beddome*).

The remarks under *C. bilirata* as to its generic position apply to the present species. Col. Beddome considered its affinities to be with *bilirata* and *cuspidata*.

Genus **LEPTOPOMOIDES**, *Nevill.*

Leptopomoides, Nevill, Hand List, i, 1878, p. 273 (as subgenus of *Cyclophorus*); Fischer, Man. Conchyl. 1885, p. 744 (as section of *Cyclophorus*, s. s.); Kobelt, Das Tierreich, Lief. 16, 1902, p. 69 (as genus).
Leptopomatoides (em.), Martens, Zool. Record, xv, 1878, Moll. p. 78; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 86; id., op. cit. xxxi, 1899, p. 131; id., Cat. Pneum. 1899, pp. 14, 98.

Type, (1st species) *Cyclostoma halophilum*, Benson.

Range. Southern India and Ceylon.

Shell narrowly umbilicated, turbinate or conoid, thin, smooth or covered with fine spiral liræ. Peristome more or less discontinuous.

Operculum thin, almost membranaceous, narrowly coiled.

28. Leptopomoides conulus, *Pfeiffer*.

Cyclostoma (*Leptopoma*) *conulus*, Pfeiffer, Proc. Zool. Soc. 1854, p. 127.
Leptopoma conulus, Reeve, Conch. Icon. xiii, 1862, *Leptopoma*, pl. 8, fig. 45; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5, Theobald, Cat. Shells Brit. India, 1876, p. 37; Hanley & Theobald, Conch. Ind. 1875, pl. 105, fig. 1.
Cyclophorus (*Leptopomoides*?) *conulus*, Nevill, Hand List, i, 1878, p. 274.
Leptopomatoides conulus, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, p. 86; id., Cat. Pneum. 1899, p. 14.
Craspedotropis conulus, Sykes, Journ. Malak. vii, 1899, p. 28.
Leptopomoides conulus, Kobelt, Das Tierreich, Lief. 16, 1902, p. 69.

Original description :—" C. testa anguste umbilicata, conica, tenui, epidermide corneo-fulva, distanter membranaceo-costulata induta; spira regulariter conica, apice obtusiuscula; anfr. 5, sensim accrescentibus, subangulato-convexis, ultimo liris sub 6 distinctis filiformibus cincto; apertura parum obliqua, subangulato-circulari; perist. simplice, acuto, vix expansiusculo, marginibus subdisjunctis, columellari reflexiusculo.
" Diam. maj. 4, min. $3\frac{2}{3}$, alt. $3\frac{1}{2}$ mill." (*Pfeiffer.*)
Hab. Ceylon (*Thwaites*; *Nevill*); Ambagamua (*Collett*).

29. Leptopomoides flammeus, *Pfeiffer*.

Cyclostoma (*Leptopoma*) *flammeum*, Pfeiffer, Proc. Zool. Soc. 1854, p. 127.
Leptopoma flammeum, Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 76; Reeve, Conch. Icon. xiii, 1862, *Leptopoma*, pl. 8, fig. 47; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; Hanley & Theobald, Conch. Ind. 1876, pl. 142, fig. 3; Theobald, Cat. Shells Brit. India, 1876, p. 37.
Cyclophorus flammeus, Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 69; Suppl. 3, 1875, p. 111.
Cyclophorus (*Leptopomoides*?) *flammeus*, Nevill, Hand List, i, 1878, p. 274.
Leptopoma (*Leptopomatoides*) *flammeum*, Sykes, Journ. Malak. vii, 1899, p. 28.
Leptopomatoides flammeus, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 86; id., Cat. Pneum. 1899, p. 14.
Leptopomoides flammeus, Kobelt, Das Tierreich, Lief. 16, 1902, p. 70.

Original description :—" C. testa angustissime umbilicata, elongato-conica, tenui, oblique leviter striatula, fulva, strigis angulatis rufis ornata; spira elevata, conica, apice acutiuscula, pallida; sutura profunda; anfr. 6, perconvexis, lente accrescentibus, ultimo rotundato; apertura parum obliqua, subcirculari, intus concolore; perist. simplice, recto, marginibus breviter disjunctis, columellari subdilatato, patente.
" Diam. maj. 8, min. 7, alt. 8 mill." (*Pfeiffer.*)
Hab. Ceylon (*Layard*).

30. Leptopomoides halophilus, *Benson.*

Cyclostoma halophilum, Benson, A. M. N. H. ser. 2, vii, 1851, p. 265; Pfeiffer, Conch.-Cab., Cyclostomaceen, 1853, p. 241, pl. 31, figs. 29–31.

Leptopoma halophilum, Pfeiffer, Zeits. Malak. viii, 1851, p. 147; id., Mon. Pneum. 1852, p. 118; id., Cat. Phaneropn. Brit. Mus. 1852, p. 83; Adams, Gen. Rec. Moll. ii, 1855, p. 281; Reeve, Conch. Icon. xiii, 1862, *Leptopoma*, pl. 8, fig. 49; Hanley & Theobald, Conch. Ind. 1870, pl. 6, fig. 3; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; Theobald, Cat. Shells Brit. India, 1876, p. 37; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 306.

Cyclophorus halophilus, Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 69.

Cyclophorus halophila, A. Adams, Proc. Zool. Soc. 1867, p. 314.

Cyclophorus (*Leptopomoides*?) *halophilum*, Nevill, Hand List, i, 1878, p. 273.

Leptopomatoides halophilus, Kobelt, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 86; id., Cat. Pneum. 1899, p. 14.

Leptopoma (*Leptopomatoides*) *halophilum*, Sykes, Journ. Malac. vii, 1899, p. 27.

Leptopomoides halophilus, Kobelt, Das Tierreich, Lief. 16, 1902, p. 702, fig. 14; Smith, Fauna & Geogr. Mald. Laccad. Archip. i, part 2, 1902, p. 144.

Original description :—" Testa umbilicata, globoso-turbinata, glabra, obsolete, longitudinaliter striata, cornea, translucente, fasciis 1–3 rufo-castaneis (submediana angusta semper existente) ornata; spira conica, apice exsertiuscula, sutura impressa; anfractibus 4–4½ convexis, ultimo rotundato; apertura circulari, superne leviter angulata, peristomate tenui, expansiusculo, margine columellari leviter emarginato; umbilico profundo. Operculo corneo, tenui, planato, multispirato.

" Diam. major 5, minor 4½, axis 4¼ mill." (*Benson.*)

Hab. Ceylon: Point de Galle (*Benson*); Colombo (*Theobald*); Balapiti (*G. Nevill*); Maturata (*Simon*); Trincomalie, Ratnapura (*Preston*). Maldive Archipelago (*Stanley Gardiner*).

31. Leptopomoides orophilus, *Benson.*

Cyclostoma orophilus, Benson, A. M. N. H. ser. 2, xi, 1853, p. 106.

Leptopoma orophilum, Pfeiffer, Malak. Blätt. i, 1854, p. 87; id., Mon. Pneum. Suppl. 1, 1858, p. 77; Reeve, Conch. Icon. xiii, 1862, *Leptopoma*, pl. 8, fig. 51; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; Hanley & Theobald, Conch. Ind. 1876, pl. 142, fig. 4; Theobald, Cat. Shells Brit. India, 1876, p. 37.

Cyclophorus (*Leptopomoides*) *orophilum*, Nevill, Hand List, i, 1878, p. 274.

Leptopomatoides orophilus, Kobelt & Möllendorff, Nachr. Deuts. Malak. xxix, 1897, p. 86; id., Cat. Pneum, 1899, p. 14.

Leptopoma (*Leptopomatoides*) *orophilum*, Sykes, Journ. Malac. vii, 1899, p. 27.

Leptopomoides orophilus, Kobelt, Das Tierreich, Lief. 16, 1902, p. 70.

Fig. 1

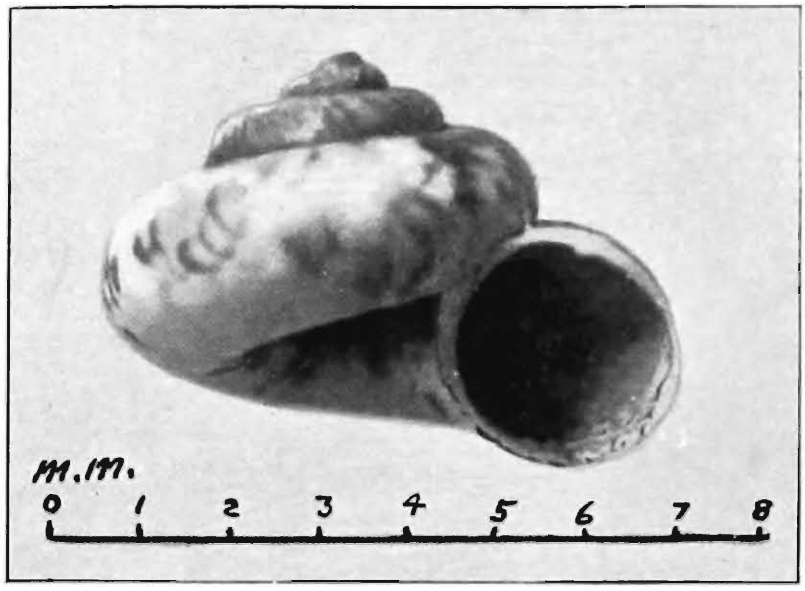
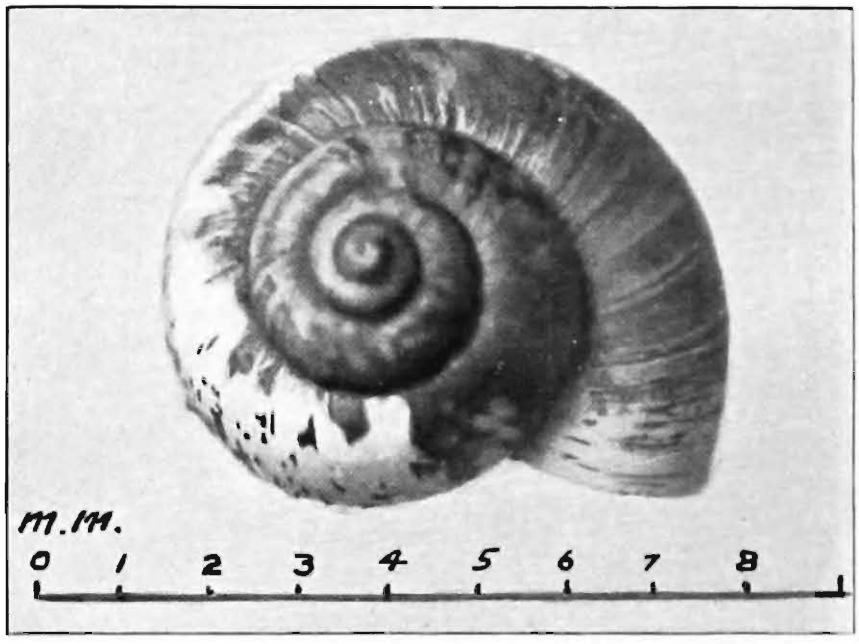


Fig. 2.



Leptopomoides valvatus.

Original description :—" Testa anguste umbilicata, globoso-conica, sub epidermide non nitente olivacea, albida, versus apicem acuminatum nigrescente ; spira elevata, conica, attenuata, sutura distincta ; anfractibus 5, convexis, ultimo rotundata, lineis 9 elevatiusculis, subtus remotioribus munito ; apertura parum obliqua, circulari ; peristomate tenui, recto, anfractui penultimo breviter adnato, labio expansiusculo ; umbilico non pervio.

" Diam. major 9, minor 7, alt. 7½ mill." (*Benson.*)

Hab. Ceylon : Monahagalla Hill. (*E. L. Layard*).

32. Leptopomoides pœcilus, *Pfeiffer.*

Cyclostoma (*Leptopoma*) *pœcilum*, Pfeiffer, Proc. Zool. Soc. 1854, p. 302.

Leptopoma poecilum, Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 76; Reeve, Conch. Icon. xiii, 1862, *Leptopoma*, pl. 8, fig. 46; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 2; Theobald, Cat. Shells Brit. India, 1876, p. 37.

Cyclophorus poecilus, Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 69.

Cyclophorus (*Scabrina*) *poecilus*, Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 111.

Cyclophorus (*Leptopomoides*) *pœcilus*, Nevill, Hand List, i, 1878, p. 274.

Leptopomatoides poecilus, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 86 ; id., Cat. Pneum. 1899, p. 14.

Leptopomoides poecilus, Kobelt, Das Tierreich, Lief. 16, 1902, p. 70.

Original description:—" C. testa perforata, turbinata, tenuiuscula, oblique striata, virenti-lutea, flammis albidis et lineis spiralibus nigricantibus ornata; spira turbinata, apice acutiuscula, nigricante; anfr. 5 convexis, sensim accrescentibus, ultimo peripheria rotundato, basi planiusculo, circa perforationem punctiformem excavato ; apertura parum obliqua, subcirculari ; perist. simplice, recto marginibus approximatis.—Operc. corneum.

" Diam. maj. 8, min. 6⅔, alt. 6 mill." (*Pfeiffer.*)

Hab. Ceylon (*Thwaites*).

33. Leptopomoides valvatus, *Möllendorff.*

Leptopomatoides valvatus (Blanford), Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 35 ; Kobelt & Möllendorff, tom. cit. p. 86 ; id., Cat. Pneum. 1899, p. 14.

Leptopomoides valvatus, Kobelt, Das Tierreich, Lief. 16, 1902, p. 71.

Original description :—" T. sat late et pervie umbilicata, depresse turbinata, solidula, subtiliter striatula, olivaceo-flavida, nitidula. Anfr. 5 teretes, ultimus non descendens. Apertura parum obliqua, circularis, peristoma simplex, rectum, obtusum.

" Diam. 7, alt. 5 mm." (*Möllendorff.*)

Hab. India : Canara (*Blanford*).

Genus **MICRAULAX**, *Theobald.*

Micraulax, Theobald, J. A. S. B. xlv, 1876, part 2, p. 185 (as subgenus of *Cyclophorus*); Fischer, Man. Conchyl. 1885, p. 744 (as section of *Cyclophorus*, s. s.); Kobelt, Das Tierreich, Lief. 16, 1902, p. 71 (genus).

TYPE, *Micraulax scabra*, Theobald.

Range. Southern India and Ceylon.

"Cyclophori habitu planorbulari, testo sulco brevi intus instructa, operculo?

"Section of the planorbular *Cyclophori*, uniting the *Myxostoma* type with the turbinate *Lagocheilus*. The canal of *Cataulus* is merely, it would seem, a more highly developed and specialised representation of the shallow groove in this species." (*Theobald.*)

"Shell depressed, turbinate or discoid, widely umbilicated, a short groove inside with a corresponding raised rib outside on the base analogous to the basal canal in *Cataulus*." (*Kobelt*, in German.)

34. **Micraulax cœloconus**, *Benson.*

Cyclostoma cœloconus, Benson, A. M. N. H. ser. 2, viii, 1851, p. 189; Pfeiffer, Conch.-Cab., *Cyclostomaceen*, 1854, p. 384, pl. 50, figs. 9, 10.
Cyclophorus coeloconus, Pfeiffer, Zeits. Malak. viii, 1851, p. 141; id., Mon. Pneum. 1852, p. 83; id., Cat. Phaneropn. Brit. Mus. 1852, p. 57; Benson, A. M. N. H. ser. 2, xiv, 1854, p. 415; Adams, Gen. Rec. Moll. ii, 1855, p. 280; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 18, fig. 89; Hanley & Theobald, Conch. Ind. 1870, pl. 4, fig. 5, 1876, p. xv; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 4; Theobald, Cat. Shells Brit. India, 1876, p. 35.
Leptopoma cœloconus, Theobald, Cat. Shells Brit. India, 1876, p. 37
Cyclophorus (*Micraulax*) *coeloconus*, Nevill, Hand List, i, 1878, p. 273 (+ var. *parva*).
Micraulax coeloconus, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 86; id., Cat. Pneum. 1899, p. 14; Kobelt, Das Tierreich, Lief. 16, 1902, p. 71, fig. 15.

Original description:—"Testa subaperte umbilicata, turbinata, tenui, scabre confertim radiato-striata, olivaceo-lutescente, fascia unica submediana, strigisque undatis, radiatis, rufo-fuscis, ornata; spira conoidea, apice acutiusculo; sutura bene impressa; anfractibus $4\frac{1}{2}$ valde convexis, ultimo cylindrico; apertura obliqua, ovato-circulari, peristomate tenui, acuto, umbilico profundo omnes anfractus exhibente.

"Diam. maj. 13, minor 11, axis 9 mill." (*Benson.*)

Hab. India: Nilgiris (*Jerdon*, *H. F. Blanford*); Trichinopoly (*H. F. Blanford*); Tinnevelly (*Beddome*); Ceylon (*H. Nevill*).

35. **Micraulax scabra**, *Theobald.*

Micraulax scabra, Theobald, J. A. S. B. xlv, part 2, 1876, p. 185, pl. 14, fig. 4; Kobelt, Das Tierreich, Lief. 16, 1902, p. 71.
Cyclophorus (*Micraulax*) *scaber*, Nevill, Hand List, i, 1878, p. 273.
Micraulax scaber, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 86; id., Cat. Pneum. 1899, p. 14.

Original description:—"Testa late et profunde umbilicata, et sulco haud profundo et valde inconspicuo intus instructa, linea parum elevata externe notato. Anfractibus 4–4½ convexis, ultimo subinflato, celeriter crescente, et ad aperturam non descendente. Epidermide scabra, juxta aperturam corrugata. Apertura parum obliqua, subcirculari, breviter adnata. Operculo?

"Lat. major 14·20, lat. minor 12·00, alt. 6·20, aperturæ lat. 6·00 mm." (*Theobald.*)

Hab. India: Travancore.



Fig. 8.—*Micraulax scabra.*

The accompanying figure is from the type in the British Museum. It measures: Diam. maj. 15, min. 13·5, alt. (incl. apert.) 8·5 mm.

Genus **DITROPIS**, *Blanford.*

Ditropis, Blanford, J. A. S. B. xxxviii, part 2, 1869, p. 126 (as subgenus of *Cyclophorus*); Hanley & Theobald, Conch. Ind. 1875, p. xiv (genus); Theobald, Cat. Shells Brit. India, 1876, p. 37; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 86; id., Cat. Pneum. 1899, p. 14; Kobelt, Das Tierreich, Lief. 16, 1902, p. 72.

Type, *Cyclophorus planorbis*, Blanford.

Range. India, Malaysia, Philippine Islands; New Guinea; Fitzroy Island, Australia; East Africa.

"Testa translucens, subvitrea, epidermide olivacea nitida instructa, carinis duabus, vel pluribus, una ad peripheriam, altera subtus ab illa interspatio discreta circumdata. Operculum corneum, arctispirum, duplex, lamina interna membranacea, externa crassiuscula, marginibus anfractuum liberis, ambabus sulco marginali disjunctis. Animal ignotum.

"Shell translucent, almost vitreous, covered with a smooth olivaceous epidermis, with two or more spiral ribs, one of which is always at the periphery of the last whorl, and a second below, separated by an interval from the other. Operculum horny, closely wound, composed of two laminæ, separated by a marginal groove, the inner membranaceous, the outer rather thick, and with the edges of the whorls free. Animal unknown." (*Blanford.*)

The lingual ribbon of one species was examined by Blanford.

It differs from that of *Cyclophorus* in the form of the lateral teeth, and in their denticulations being shorter and more numerous. In *C.* (*Ditropis*) *convexus*, the species examined, the central tooth has 7 denticulations, that in the middle being the largest; all the lateral teeth apparently had 5 denticulations, but it appeared very difficult to count those in the outermost laterals correctly.

36. **Ditropis beddomei**, *Blanford.*

Cyclophorus (*Ditropis*) *beddomei*, Blanford, J. A. S. B. xxxviii, part 2, 1869, p. 127, pl. 16, fig. 2; Nevill, Hand List, i, 1878, p. 278.
Ditropis beddomei, Hanley & Theobald, Conch. Ind. 1875, pl. 136, figs. 8, 9; Theobald, Cat. Shells Brit. India, 1876, p. 37; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 86; id., Cat. Pneum. 1899, p. 14.
Ditropis (*Ditropis*) *beddomei*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 72.

Original description:—"Testa latissime umbilicata, depressa, discoidea, tenuis, olivacea, confertissime striata, parum nitida, spiraliter costata. Spira plana, sutura valde impressa. Anfr. circa 4, (primo in exemplo unico deficienti) convexi, primi fere glabri; penultimus costis 2–3, supra uni, infra in umbilico, juxta suturam ornatus, ultimus antice descendens, teres, juxta suturam et subter peripheriam glaber, 7-costatus, costis 4 superioribus, quarum extera ad peripheriam, 3 basalibus ab superis intervallo disjunctis. Umbilicus perspectivus. Apertura diagonalis, rotunda; peristoma simplex, rectum, breviter adnatum, nigrescens, intus tenuiter albido-labiatum. Operculum fusco-corneum, intus convexum, limbo tenuissimo circumdatum, extus concaviusculum, marginibus anfractuum parum elevatis.

"Diam. maj. 8, min. $6\frac{3}{4}$, axis $2\frac{1}{2}$ millem., ap. diam. intus 2.

"Shell very widely umbilicated, depressed, discoidal, thin, olive-coloured, very closely and minutely striated, less polished than the other species, and covered with spiral ribbing. The spire is flat, or nearly so, but the innermost whorls being deficient in the only specimen sent for description by Major Beddome, it is impossible to say whether the apex is slightly exserted or not. The suture is much impressed, Whorls about 4 in number, convex; the last one descending near the mouth, smooth near the suture, both above and below, with 7 spiral ribs; 4 above, the outermost forming the periphery of the shell, and 3 below, separated from the others by a smooth space; 3 of the upper and 1 of the lower can be traced on the penultimate whorl near the suture, but become obsolete on the inner whorls. The umbilicus exposes all the whorls below. Aperture diagonal, round, peristome only joined for a very short distance to the penultimate whorl, thickened, all in one plane and not expanded, faintly edged with white inside, blackish externally.

"The operculum differs from that of *Cyclophorus planorbis* by the edges of the whorls being less produced externally, and by its

being in consequence less concave. Major diameter 0·31 inch, minor 0·27, axis 0·9. (*Blanford.*)

Hab. India: Travancore (*Beddome*).

37. **Ditropis convexa**, *Blanford.*

Cyclophorus (*Ditropis*) *convexus*, Blanford, J. A. S. B. xxxviii, part 2, 1869, p. 128, pl. 16, fig. 3 (shell), p. 131, fig. 2 (lingual dentition); Nevill, Hand List, i, 1878, p. 278.

Ditropis convexus, Hanley & Theobald, Conch. Ind. 1875, pl. 136, figs. 7, 10; Theobald, Cat. Shells Brit. India, 1876, p. 37.

Ditropis convexa, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 86; id., Cat. Pneum. 1899, p. 37.

Ditropis (*Ditropis*) *convexa*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 74.

Original description:—"Testa aperte umbilicata, depresso-convexa, tenuis, nitida, vitrea, glabra, olivacea, minutissime et obsolete decussato-striatula. Spira convexa, apice obtuso; sutura impressa, intus marginata. Anfr. 4, convexi; ultimus versus aperturam paulum descendens, teres, juxta suturam fascia lata fusca pictus, extus pallidior, carina una valida ad peripheriam, altera ad basin circumdatus; umbilico perspectivo, omnes anfractus exhibens, confertim spiraliter liratus. Apertura obliqua rotunda; peristoma rectum simplex, incrassatum atque continuum. Operculum fusco-corneum, per-simile illi *Cyclophori planorbis*, marginibus externis anfractuum laciniatim productis.

"Diam. maj. $6\frac{1}{2}$, min. $5\frac{1}{2}$, axis $3\frac{1}{2}$ millem. Ap. diam. intus $2\frac{1}{4}$.

"Shell openly umbilicated, depressly convex, thin, smooth, shining, glassy, of an olive colour, with minute sub-obsolete decussating striæ, only visible beneath a powerful lens. Spire convex, apex obtuse, suture impressed and with an internal margination, due to the prolongation of the inner whorls of the keel surrounding the shell. Whorls 4, convex; the last descending slightly near the aperture, and becoming paler in colour in front on the outer half of the surface only, so that a band of darker colour surrounds the shell close to the suture. Of the two keels one is at the periphery, and rather lower in position than usual, owing partly to the raised spire, the other is at the base, rather towards the umbilicus, which exhibits all the whorls, and is closely spirally ribbed inside. Aperture round, oblique, peristome in one plane, simple, thickened. Operculum very similar to that of *Cyclophorus planorbis*, with the external edges of the whorls lengthened, ragged and split up into a fringe-like edge. Major diameter 0·26, minor 0·22, axis 0·14 inch." (*Blanford.*)

Hab. India: Calcad Hills, Travancore; Tinnevelly (*Beddome*).

38. **Ditropis planorbis**, *Blanford.*

Cyclophorus (*Ditropis*) *planorbis*, Blanford, J. A. S. B. xxxviii, part 2, 1869, p. 126, pl. 16, fig. 1; Nevill, Hand List, i, 1878, p. 278.

Ditropis planorbis, Hanley & Theobald, Conch. Ind. 1875, pl. 136, figs. 5, 6; Theobald, J. A. S. B. xlv, part 2, 1876, p. 185; id. Cat.

Shells Br. India, 1876, p. 37; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 87; id., Cat. Pneum. 1899, p. 15.

Ditropis (*Ditropis*) *planorbis*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 76, text-fig. 16 (p. 72).

Original description:—"Testa latissime umbilicata, depressa, discoidea, vitrea, tenuis, olivacea, glabra, obsolete striatula, polita. Spira plana, nucleo non exserto, sæpe eroso, sutura impressa, at anfractum ultimum et supra et in umbilico costa sublata intus marginata. Anfr. 4–4½, convexi; ultimus antice vix descendens subquadrangularis, supra atque subtus convexus, carinis duabus validis circumdatus, una ad peripheriam, altera juxta basin ad latus externum. Umbilicus perspectivus, omnes anfractus exhibens. Apertura obliqua, sub-quadrata, intus albido-labiata; peristoma incrassatum, rectum, non-expansum. Operculum intus convexum, extus concavum, marginibus anfractuum externorum laciniatim elongatis.

"Exempli majoris diam. maj. 8½, min. 7, alt. 2, ap. diam. 1¾ millem. Exempli minoris diam. maj. 7, min. 5½, alt. 1½, ap. diam. (fere) 1½ millem.

"Shell very broadly umbilicated, depressed, discoidal, thin, glassy, smooth and polished, with obsolete striation. Spire perfectly flat; the apex not rising above the surface; suture impressed; the nucleus is generally wanting, being apparently remarkably liable to erosion. Whorls 4 to 4½, slightly convex above, the last descending but slightly near the mouth, and nearly square, with two keels, the one rather high up, forming the periphery of the shell, the other at the outer side of the base; these keels can be traced upon the penultimate and part of the ante-penultimate whorl, both on the spire and within the umbilicus, forming a distinct rib inside the suture. Aperture oblique, nearly square, with a white internal lip; peristome thickened, all in one plane and not expanded. Operculum convex and smooth inside, the margins of the whorls externally much elongated and torn, especially towards the margin.

"Major diameter, from the edge of the peristome to the opposite margin, 0·34 inch, minor diam. at right angles to the other, 0·28, height 0·08. A smaller specimen measures 0·27 and 0·2 in the two diameters, and 0·05 in height." (*Blanford.*)

Hab. India: Calcad Hills, Travancore, Tinnevelly (*Beddome*).

Genus **SCABRINA**, *Blanford.*

Scabrina, Blanford, J. A. S. B. xxxii, 1863, p. 322 (as section of *Cyclophorus*); id., A. M. N. H. ser. 3, xiii, 1864, p. 452; Nevill, Hand List, i, 1878, p. 277 (as subgenus); P. Fischer, Man. Conchyl. 1885, p. 744 (as section of *Cyclophorus*, s. s.); Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 88 (as genus); id., Cat. Pneum. 1899, p. 16; Kobelt, Das Tierreich, Lief. 16, 1902, p. 87.

Dasytherion, Mabille, Bull. Soc. Malac. France, iv, 1887, p. 140.

Scabrinus, Sykes, Proc. Malac. Soc. iii, 1898, p. 73 (as subgenus).

Type, *Cyclophorus calyx*, Benson.

Range. South China, India, Farther India, Ceylon, Comores.

Shell widely umbilicated, depressed, subdiscoid, with a fuscous hairy periostracum; whorls rounded; aperture circular; peristome thickened; operculum thick, corneous, edges of whorls lamellate, raised.

"Distinguished from other discoid species by a scabrous epidermis, and an operculum with raised edges to the whorls externally, thus exactly resembling that of the Burmese forms of *Pterocyclos* and *Spiraculum*, to the former of which genera this little group forms a passage." (*Blanford.*)

39. **Scabrina basisulcata**, *von Martens.*

Cyclophorus (*Scabrina*) *basisulcatus*, von Martens, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 179; id., Arch. Naturg. lxv, i, 1899, p. 31, pl. 4, fig. 3.

Scabrina basisulcata, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxxi, 1899, p. 132; id., Cat. Pneum. 1899, p. 100; Kobelt, Das Tierreich, Lief. 16, 1902, p. 87.

Original description:—"T. perlate umbilicata, orbiculata, depressa, radiatim striata, ad suturam profundum utrinque hispidula, virescenti fusca, opaca, subunicolor; spira vix paululum prominula, apice papillatim prominente, lævi, nitido rufofusco; anfr. 5, convexi, ultimus supra peripheriam angulis prominulis 2–3 obtusis versus aperturam evanescentibus sculptus; umbilicus cingulis distinctis in anfr. ultimo 4, in penultimo 6 conspicuis isignitus. Apertura diagonalis, circularis, peristoma (duplicatum, internum continuum rectum supra insertionem leviter emarginatum, externum) rectangulatim breviter expansum, interruptum, superne in alulam rotundatam paululum declivem continuatum.

"Diam. maj. 16, min. 13, alt. 9, aper. diam. intern. 4 mill. Operculum typicum." (*von Martens.*)

Hab. Upper Burma: Padoukbin near Thayet Myo (*Nötling*).

40. **Scabrina brounæ**, *Sykes.*

Cyclophorus (*Scabrinus*) *brounæ*, Sykes, Proc. Malac. Soc. iii, 1898, p. 73, pl. 5, figs. 2, 3.

Scabrina brounae, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxxi, 1899, p. 132; id., Cat. Pneum. 1899, p. 100; Kobelt, Das Tierreich, Lief. 16, 1902, p. 87

Original description:—"Testa late umbilicata, depresse conica, periostraco brunneo-fusco, scabro ornata, lineis elevatis spiralibus et costis remotis notata, in regione umbilicari lævior; spira subelevata, apice exserto, plicatulo, obtuso; sutura profunda; anfr. $4\frac{1}{2}$, convexi, ultimus versus aperturam parum descendens; apertura fere circularis, duplex, internum continuum, externum leviter expansum. Alt. 5·5, diam. max. 10·5 mm." (*Sykes.*)

Hab. Ceylon: Nuwara-Eliya (*Mrs. Broun*).

The author draws special attention to the thick, rough periostracum, which forms distant radiating ridges, in addition to the usual spiral striation in many of the species, and states that no other known Ceylon species appears really to approach it.

41. Scabrina calyx, *Benson.*

Cyclophorus calyx, Benson, A. M. N. H. ser. 2, xvii, 1857, p. 228; Theobald, J. A. S. B. xxvi, 1857, p. 247; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 56; id., Novit. Conch. ser. 1, ii, 1860, p. 145, pl. 37, figs. 25-27; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 20, fig. 104; Blanford, J. A. S. B. xxxiv, 1865, p. 97; Hanley & Theobald, Conch. Ind. 1870, pl. 4, fig. 4.

Cyclophorus (*Scabrina*) *calyx*, Blanford, J. A. S. B. xxxii, 1863, p. 322; Nevill, Hand List, i, 1878, p. 278.

Cyclostoma (*Myxostoma*) *calyx*, Stoliczka, J. A. S. B. xl, part 2, 1871, p. 148 (animal).

Myxostoma calyx, Theobald, Cat. Shells Brit. India, 1876, p. 36.

Scabrina calyx, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix. 1897, p. 88; id. Cat. Pneum. 1899, p. 16; Kobelt, Das Tierreich, Lief. 16, 1902, p. 87; id. Conch.-Cab., Cyclophoridae, i, 1908, p. 697, pl. 61, figs. 19, 20.

Original description:—"Testa late umbilicata, orbiculato-depressa, radiato-striatula, albida, strigis castaneis radiatis superne picta; spira planata, sutura impressa, apice vix prominulo; anfractibus $4\frac{1}{2}$ convexiusculis, ultimo compresso, subtus, circa

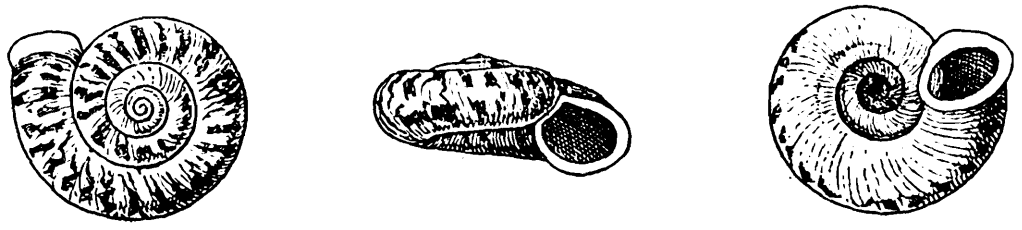


Fig. 9.—*Scabrina calyx.* (× 2.)

umbilicum minime profundum, latum, angulato; apertura obliqua, circulari, peristomate duplici, continuo, breviter adnato, externo incrassato, superne expanso, angulato. Operculo ——?

"Diam. major 10, minor 8, axis 3 mill." (*Benson.*)

Hab. Burma: Akoutong (*Theobald*); Moulmein (*Blanford*).

"The flattened depressed form of this shell, and the angular expansion of the outer peristome at the top of the aperture, render it easy of recognition among the depressed and widely umbilicate forms of *Cyclophorus*." (*Benson.*)

Blanford * thinks that some mistake must have been made in labelling, for he found the shell abounding in Moulmein, but although he repeatedly searched all round the Akoutong Hills he

* J. A. S. B. xxxiv, 1865, p. 97.

never met with it. He also states * that Benson's description "must have been taken from a dead specimen which had lost both its epidermis and operculum." In living specimens he found the shell covered with "a scabrous dark epidermis, radiately striated, and with raised spiral lines which, as in *C. hispidulus*, were more marked in young than in adult individuals. The operculum was slightly concave externally, in consequence of the edges of the whorls being raised and ragged, especially near the circumference; internally it was smooth and nearly flat, with a small central nucleus. *C. calyx* is well distinguished from *C. hispidulis* and *C. pinnulifer* by its smaller whorls, the strong subangulation around the umbilicus, the ornamentation beneath the epidermis and the markings of the epidermis itself, the raised ridges surrounding the shell being fewer and much more pronounced in *C. hispidulis*."

Stoliczka found the animal "identical in form with those of other Cyclophoridæ, only of smaller size; when full grown the body is black, with very long subulate tentacles, slightly thickened near the tips, the rostrum is long and deeply cleft in front, the foot rather elongated, posteriorly narrowly produced and pointed; eyes rather small, placed laterally at the base of the tentacles on barely perceptible bulgings. The sides of the foot and the tentacles are usually paler than the body, and young specimens are pale grey coloured throughout. The largest specimens found south of Moulmein measure: Diam. maj. 14; d. min. 12; alt. testæ 7·2, alt. ult. anfr. cum perist. 5, diam. apert. int. 4 mm."

The accompanying figures represent a specimen in the British Museum.

42. **Scabrina hispidula**, *Blanford.*

Cyclophorus hispidulus, Blanford, J. A. S. B. xxxii, 1863, p. 321; id., op. cit. xxxiv. 1865, p. 97; Hanley & Theobald, Conch. Ind. 1870, pl. 47, figs. 5, 6.
Myxostoma hispidulum, Theobald, Cat. Shells Brit. India, 1876, p. 36.
Cyclophorus (*Scabrina*) *hispidulus*, Nevill, Hand List, i, 1878, p. 278.
Scabrina hispidula, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 88; id., Cat. Pneum. 1899, p. 16; Kobelt, Das Tierreich, Lief. 16, 1902, p. 88.

Original description:—"Shell widely umbilicate, subplanulately depressed, radiately striated and marked by extremely fine and close concentric impressed lines, white, covered with a thick dark brown epidermis, which forms a broad raised spiral costulation around the shell, more marked in young than in fully grown specimens. Spire almost flat, apex just exserted, suture deep. Whorls 5, cylindrical, the last descending very little near the aperture, which is subvertical and circular. Peristome double, inner lip continuous and projecting a little; outer lip slightly

* J. A. S. B. xxxii, 1863, p. 322.

expanded. Operculum multispiral, externally flat, the margins of the whorls being very rough and free, internally very slightly concave, with a minute central nucleus projecting.

"Major diam.	14 mm.	0·55 inch.
Minor diam.	12 „	0·5 „
Altitude	7 „	0·28 „
Diameter of aperture	5 „	0·15 „ "

(*Blanford.*)

Hab. Burma: Mya Leit Doung near Ava (*Blanford*).

43. Scabrina inglisiana, *Stoliczka.*

Cyclophorus (*Myxostoma*) *inglisianus*, Stoliczka, J. A. S. B. xl, part 2, 1871, p. 148, pl. 6, fig. 1; Hanley & Theobald, Conch. Ind. 1876, pl. 143, figs. 8, 9.
Myxostoma inglisianum, Theobald, Cat. Shells Br. India, 1876, p. 36.
Cyclophorus (*Scabrina*) *inglisianus*, Nevill, Hand List, i, 1878, p. 278.
Scabrina inglisiana, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 88; id., Cat. Pneum. 1899, p. 16.

Original description:—"Cycl. testa subdiscoidea, late umbilicata; anfractibus $4\frac{1}{2}$, primo depresso, albido, lævigato, ceteris teretibus, paululum in amplitudine accrescentibus, sordide lutescente albescentibus, strigis fuscis, supra retrorse angulatis, ad peripheriam rotundatam ult. anfr. fascia castanea intersectis, notatis, epidermide pallida transversim rugulatim striata indutis; suturis profundis, simplicibus; apertura paulum descendente et obliqua, circulari, marginibus junctis, paululum incrassatis, haud dilatatis, supra prope suturam leviter insinuatis. Operculo corneo, tenui, circulari, anfractibus 7 extus paulo lamelliforme exstantibus composito, medio depressiusculo, intus polito, medio submammillato. Diam. maj. 9, d. min. 7·5, alt. totius testæ 5, alt. ult. anfr. prope aperturam 3, diam. apert. 2·7 mm.

"Animal plumbeo-cinereum, tentaculis longis, acutis, nigricantibus, pede pallidescente, angusto, postice acuto; rostro longo, nigricante, antice ad marginem modice lobato." (*Stoliczka.*)

Hab. Burma: Damotha near Moulmein (*Stoliczka*).

The author compares the present species with *Pterocyclus feddeni*, Blf., which it resembles in the colouring, but is easily distinguished by its thinner and very gradually increasing whorls, whose tubular form also readily separates the shell from *Cyclophorus calyx*, which has the basal angulation always distinct.

44. Scabrina pinnulifera, *Benson.*

Cyclophorus pinnulifer, Benson, A. M. N. H. ser. 2, xix, 1857, p. 205; Theobald, J. A. S. B. xxvii, 1858, p. 318; Pfeiffer, Novit. Conch. ser. 1, ii, 1860, p. 145, pl. 37, figs. 22–24; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 20, fig. 103; Blanford, J. A. S. B. xxxii, 1863, p. 322; Hanley & Theobald, Conch. Ind. 1870, pl. 4, fig. 2.
Cyclophorus (*Myxostoma*) *pinnulifer*, Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 41.

Myxostoma pinnulifer, Theobald, Cat. Shells Brit. India, 1876, p. 37
Cyclophorus (*Scabrina*) *pinnulifer*, Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 100; Nevill, Hand List, i, 1878, p. 277.
Scabrina pinnulifera, Kobelt & Möllendorff, Nach. Deuts. Malak. Ges. xxix, 1897, p. 88; id., Cat. Pneum. 1899, p. 16; Kobelt, Das Tierreich, Lief. 16, 1902, p. 90.

Original description:—"Testa late umbilicata, orbiculato-depressa, radiato-striata, striis minutissimis spiralibus decussata, sub epidermide scabra, fusca, albida, superne strigis remotis castaneis radiata; spira planata, apice vix prominulo, sutura profunda; anfractibus 4 convexis, subtus rotundatis, ultimo antice latiori; apertura obliqua, circulari; peristomate leviter expanso, subduplicato, interiori continuo, superne ad angulum vix sinuato, exteriori superne alam verticalem subfornicatam efformante. Operc.?

"Diam. major 13, minor 10, axis 3¼ mill." (*Benson.*)

Hab. India: Teria Ghat, Khasi Hills (*Theobald*); Hengdan Peak, Naga Hills (*Godwin-Austen*).

"Related to the Sikkim *C. phœnotopicus* and to *C. calyx* of Burmah, but more nearly to the latter, from which it is distinguished by its wider last whorl, the absence of any angulation below, and by its more developed peristome." (*Benson.*)

Genus **THEOBALDIUS**, *Nevill.*

Theobaldius, Nevill, Hand List, i, 1878, p. 275 (as subgenus of *Cyclophorus* (no description)); Fischer, Man. Conchyl. 1885, p. 744 (as section of *Cyclophorus*, s. s.); Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 88 (as genus); id., Cat. Pneum. 1899, p. 16; Kobelt, Das Tierreich, Lief. 16, 1902, p. 91; id., Conch.-Cab., Cyclophoridae, i, 1907, p. 556.

Type, *Cyclophorus annulatus*, Pfeiffer.

Range. India and Ceylon.

"Shell depressed or discoid, widely umbilicated, last whorl rounded; aperture circular; peristome generally double. Operculum entering the mouth, thin, corneous, many-whorled." (*Kobelt*, in German.)

45. **Theobaldius annulatus**, *Pfeiffer.*

Cyclostoma annulatum (Troschel), Pfeiffer, Zeits. Malak. iv, 1847, p. 150; id., Conch.-Cab., Cyclostomaceen, 1847, p. 162, pl. 22, figs. 17–19.
Cyclophorus annulatus, Pfeiffer, Zeits. Malak. iv, 1847, p. 108; id., op. cit. viii, 1852, p. 143; id., Cat. Phaneropn., Brit. Mus. 1852, p. 69; Adams, Gen. Rec. Moll. ii, 1855, p. 279; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 15, fig. 66; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 4; Hanley & Theobald, Conch. Ind. 1876, pl. 143, figs. 1, 4; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 303.

Myxostoma annulatum, Theobald, Cat. Shells Br. India, 1876, p. 36.
Cyclophorus (*Theobaldius*) *annulatus*, Nevill, Hand List, i, 1878, p. 275.
Theobaldius annulatus, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 88; id., Cat. Pneum. 1899, p. 16; Kobelt, Das Tierreich, Lief. 16, 1902, p. 91, text-fig. 23; id., Conch.-Cab., Cyclophoridae, i, 1907, p. 556.

Original description:—"T. umbilicata, depressissima, subdiscoidea, solidula, ruguloso-striata, sub epidermide tenui, olivaceo-cornea alba, superne obsolete fusco-maculata; spira plana; anfr. $4\frac{1}{2}$–$5\frac{1}{2}$ convexiusculi; umbilicus latissimus, profundus; apertura obliqua, ovali-subrotundata; perist. subsimplex, undique expansiusculum, marginibus approximatis, infra medium anfractus penultimi callo brevi subangulatim junctis.
"Diam. maj. 18, min. 15, alt. 6 mill." (*Pfeiffer.*)
Hab. Ceylon (*Hoffmeister*); Udagama (*Simon*).

Var. **discus**, *Kobelt.*

Cyclostoma annulatum var., Pfeiffer, Conch.-Cab., Cyclostomaceen, 1847, p. 163, pl. 29, figs. 14, 15.
Theobaldius annulatus, var. *discus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 81.
Theobaldius annulatus var., Kobelt, Conch.-Cab., Cyclophoridae, i, 1907, p. 556.

Considerably larger than the type, measuring: Diam. maj. 23·5, min. 19, alt. 8 mm. The shell figured by Pfeiffer was received from Cuming.

Var. **nilgiricus**, *Kobelt.*

Theobaldius (*annulatus*?) *nilgiricus*, Kobelt, Conch.-Cab., Cyclophoridae, i, 1907, p. 557, pl. 71, figs. 4–6.

Original description:—"Differt a typo testa multo majore, sculptura distinctiore, striis costelliformibus, apertura magis obliqua, peristomate distincte duplici, interno producto.
"Diam. maj. 29·5, min. 25, alt. 11·5, alt. apert. obl. 12, lat. 10 mm." (*Kobelt.*)
Hab. India: Nilgiris.

46. **Theobaldius bairdi**, *Pfeiffer.*

Cyclostoma bairdi (*Cyclophorus*), Pfeiffer, Proc. Zool. Soc. 1852, p. 144, pl. 13, fig. 1; id., Conch.-Cab., Cyclostomaceen, 1854, p. 372, pl. 48, figs. 17–19.
Cyclophorus bairdi, Pfeiffer, Cat. Phaneropn. Brit. Mus. 1852, p. 63; Adams, Gen. Rec. Moll. ii, 1855, p. 279; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 15, fig. 68; Hanley & Theobald, Conch. Ind. 1870, pl. 4, fig. 1; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 4; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 303.
Myxostoma bairdi, Theobald, Cat. Shells Br. India, 1876, p. 36.
Cyclophorus (*Theobaldius*) *bairdi*, Nevill, Hand List, i, 1878, p. 275.

Theobaldius bairdi, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 88; id., Cat. Pneum. 1899, p. 16; Kobelt, Das Tierreich, Lief. 16, 1902, p. 91; id., Conch.-Cab., Cyclophoridae, i, 1907, p. 565.

Original description:—"C. testa late umbilicata, depressa, subdiscoidea, solida, spiraliter confertim striata, fulvo-lutea, strigis crebris angulatis castaneis picta; spira vix elevata, medio subprominula; anfr. 4½, convexiusculis, ultimo subdepresso, peripheria obsoletissime angulato et fascia castanea ornato; umbilico aperto, ⅓ diametri paulo superante; apertura obliqua, subangulato-rotundata, intus alba; perist. subsimplice, continuo, breviter adnato, expansiusculo, superne angulatim subproducto.

"Diam. maj. 26, min. 20, alt. 9 mill." (*Pfeiffer.*)

Hab. Ceylon (*Cuming*); Maturata (*Simon*).

47. **Theobaldius cadiscus**, *Benson.*

Cyclophorus cadiscus, Benson, A. M. N. H. ser. 3, v. 1860, p. 385; Hanley & Theobald, Conch. Ind. 1875, pl. 105, fig. 10.

Cyclophorus thwaitesi, Hanley & Theobald, op. cit. 1870, pl. 3, fig. 8 (non Pfeiffer).

Cyclophorus cadixus, H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 4.

Myxostoma cadiscus, Theobald, Cat. Shells Br. India, 1876, p. 36.

Theobaldius cadiscus, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 88; id., Cat. Pneum. 1899, p. 16; Kobelt, Das Tierreich, Lief. 16, 1902, p. 92; id., Conch.-Cab., Cyclophoridae, i, 1907, p. 565, pl. 71, fig. 17.

Original description:—"Testa sublate et profunde umbilicata, convexo depressa, tenui, confertim oblique striata, sub epidermide pallide corneo-albida; spira convexa apice obtuso, sutura profundiuscula; anfractibus 5 convexiusculis, ultimo cylindrico, antice descendente; apertura obliqua, ovato-rotundata, superne angulata, peristomate duplici, interiore continuo, modice porrecto, exteriore adnato, ad dextram breviter expanso, margine columellari recto, simplici.

"Diam. major 17, minor 15, axis 8 mill." (*Benson.*)

Hab. Ceylon: East Matelle (*Layard*).

48. **Theobaldius cratera**, *Benson.*

Cyclophorus cratera, Benson, A. M. N. H. ser. 2, xviii, 1856, p. 94; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 55; Hanley & Theobald, Conch. Ind. 1870, pl. 47, fig. 8; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 4.

Myxostoma cratera, Theobald, Cat. Shells Brit. India, 1876, p. 36.

Theobaldius cratera, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 88; id., Cat. Pneum. 1899, p. 16; Kobelt, Das Tierreich, Lief. 16, 1902, p. 92; id., Conch.-Cab., Cyclophoridae, i, 1907, p. 561, pl. 70, fig. 3.

Original description:—"Testa late umbilicata, planulato-depressa,

subdiscoidea, tenuiuscula, radiatim et confertim ruguloso-striata, vix nitidula, fulvo-cornea, raro castaneo-strigata; spira planulata, apice vix prominente, sutura profundiuscula; anfractibus 5 convexiusculis, ultimo longe lenteque descendente; apertura obliqua mediocri, subrotundata, superne angulata, intus albida; peristomate duplici, interiori continuo, acuto, breviter porrecto, exteriori expansiusculo, breviter adnato, albido; umbilico aperto, profundiusculo, operculo tenui, corneo, 7-spirato; anfractibus valde angustis, suturis intus et extus pulchre carinatis.

" Diam. major 24, minor 20, alt. 8 mill.
" " 22 " 18 " 6 "
" " 13 " 11 " 4 " "

Hab. Ceylon (*E. L. Layard, F. Layard*).

" The operculum is more closely wound than in *C. parma*, from which it differs in colour, the form and position of the aperture, sculpture, and deeper umbilicus; this part is shallower than in its near ally, *C. annulatus*, Trosch., which exhibits, moreover, a prominent dark apex to the spire, whereas in *C. cratera* the apex is flattened and white. The variation in size is considerable, as may be seen by reference to the measurements. The smallest variety exhibits the adult character: the narrow volutions of the operculum, and a darker corneous hue than in *C. parma*, are constant. Its double peristome and the flatness of the apex at once distinguish it from *C. Thwaitesi*, Pfr." (*Benson.*)

49. **Theobaldius cytopoma**, *Benson.*

Cyclophorus cytopoma, Benson, A. M. N. H. ser. 3, v, 1860, p. 385; Hanley & Theobald, Conch. Ind. 1870, pl. 47, fig. 9, 1875, p. xv; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 4.

Myxostoma cytopoma, Theobald, Cat. Shells Brit. India, 1876, p. 36.

Cyclophorus (*Theobaldius*) *annulatus*, var. *cytopoma*, Nevill, Hand List, i, 1878, p. 275.

Theobaldius cytopoma, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 88; id., Cat. Pneum. 1899, p. 275; Kobelt, Das Tierreich, Lief. 16, 1902, p. 92; id., Conch.-Cab., Cyclophoridae, i, 1907, p. 557, pl. 70, fig. 15.

Original description:—" Testa late et profunde umbilicata, planato-depressa, subdiscoidea, vix nitidula, confertim et arcuatim rugoso-striata, fulvo-castanea, subtus pallidiore apicem versus flammis pallidioribus, et infra medium anfractus ultimi fascia fusca inconspicua ornata; spira planulata, apice non prominente, sutura profunda; anfractibus $5\frac{1}{2}$ convexis, ultimo antice sensim descendente; umbilico $\frac{2}{5}$ diametri æquante; apertura ampla, obliqua, angulato-ovali, intus lactea, peristomate simplici expansiusculo, superne acute angulato, breviter adnato, intus incrassato-labiato, margine columellari subtus recedente, dextro, superne antice arcuato. Operculo fulvo-corneo, solidiusculo, 7-spirato, convexiusculo, ad apicem foveato, intus concavo, margine externo

sulco lato fere circumdato, anfractibus ad marginem carinatis, carina exteriore elevatiore.

" Diam. major 24½, minor 19, axis 8 mill." (*Benson.*)

Hab. Ceylon (*Layard*).

The author considers the keeled edges of the whorls of the somewhat thickened operculum to form a striking character in this species, affording indications of an approach to the operculum of *Pterocyclus*. *C. loxostoma*, Pfr., and *C. bairdi*, Pfr., are allied, but from the latter it differs in the flat spire, the formation of the aperture, the colouring, and the absence of spiral striation.

50. Theobaldius deplanatus, *Pfeiffer*.

Cyclostoma deplanatum (*Cyclophorus*?), Pfeiffer, Proc. Zool. Soc. 1854, p. 301.

Cyclophorus deplanatus, Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 62; Suppl. 2, 1865, p. 72; Blanford, J. A. S. B. xxxv, 1866, pp. 38, 40; Hanley & Theobald, Conch. Ind. 1870, pl. 3, fig. 10; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, pp. 116, 409.

Myxostoma deplanatum, Theobald, J. A. S. B. xlv, part 2, 1876, p. 185; id., Cat. Shells Brit. India, 1876, p. 36.

Cyclophorus (*Theobaldius*) *deplanatus*, Nevill, Hand List, i, 1878, p. 276.

Theobaldius deplanatus, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 105; id., Cat. Pneum. 1899, p. 17; Kobelt, Das Tierreich, Lief. 16, 1902, p. 93; id., Conch.-Cab., Cyclophoridae, i, 1907, p. 562, pl. 70, figs. 8–10; pl. 71, figs. 1–4.

Original description:—" C. testa late umbilicata, depressa, subdiscoidea, solida, confertim striatula, nitida, fusco-lutea vel castanea, fascia unica peripherica, lutea cincta; spira vix prominula, vertice subtili; sutura profunda; anfr. 5 rotundatis, ultimo terete, antice sensim descendente; apertura obliqua, subcirculari, intus alba; perist. continuo, incrassato, expansiusculo, subduplicato, breviter adnato, margine columellari regulariter arcuato.—Operc. ——?

" Diam. maj. 27½, min. 23, alt. 8 mill." (*Pfeiffer.*)

Hab. India: Koondah Mountains (*Pirrie*); Anamullays, Sispara Ghat (*Beddome*); Travancore (*Theobald*).

51. Theobaldius layardi, *H. Adams*.

Cyclophorus layardi, H. Adams, Proc. Zool. Soc. 1868, p. 294, pl. 28, fig. 21; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 4; Hanley & Theobald, Conch. Ind. 1875, pl. 104, figs. 2, 3.

Myxostoma layardi, Theobald, Cat. Shells Br. India, 1876, p. 36.

Cyclophorus (*Theobaldius*) *layardi*, Nevill, Hand List, i, 1878, p. 276.

Theobaldius layardi, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 105; id., Cat. Pneum. 1899, p. 17; Kobelt, Das Tierreich, Lief. 16, 1902, p. 93; id., Conch.-Cab., Cyclophoridae, i. 1907, p. 560, pl. 70, figs. 1, 2.

Original description:—" C. testa late umbilicata, depressa, solidula, confertim oblique striata et liris pluribus distantibus sculpta, sub epidermide fusca flavidula; spira parum elevata, apice obtusulo, sutura profunda; anfr. 5, convexis, ultimo antice descendente; apertura obliqua, subcirculari, superne angulari; perist. continuo, duplici, interno breviter expanso, albido, externo expanso, superne dilatato, adnato. Op. corneum, tenue, extus subconcavum, arctispirum.

" Diam. maj. 26, min. 22, alt. 11 mill." (*H. Adams.*)

Hab. Ceylon (*Thwaites*).

52. **Theobaldius liliputianus**, *Preston.*

Cyclophorus (*Theobaldia*) *liliputiana*, Preston, Rec. Ind. Mus. iii, 1909, p. 138, pl. 22, fig. 18.

Original description:—" Shell small, suborbicular, depressed, white painted with a broad, reddish brown, subperipheral band, both above and below which occur zigzag flame markings of the same colour; whorls $4\frac{1}{4}$; spire scarcely raised; sutures deeply impressed; umbilicus wide and shallow; peristome white, continuous, double, slightly reflexed; aperture circular.

" Alt. 4, diam. major 10, minor 7·75, aperture alt. 3·25, diam. 3·25 mm." (*Preston.*)

Hab. Ceylon.

Apparently the smallest species of the genus recorded from Ceylon.

53. **Theobaldius loxostoma**, *Pfeiffer.*

Cyclostoma loxostomum (*Cyclophorus*), Pfeiffer, Proc. Zool. Soc. 1852, p. 146.

Cyclostoma loxostomum, Pfeiffer, Conch.-Cab., Cyclostomaceen, 1854, p. 377, pl. 49, figs. 11–13.

Cyclophorus loxostomus, Pfeiffer, Cat. Phaneropn. Brit. Mus. 1852, p. 65; Adams, Gen. Rec. Moll. ii, 1855, p. 280.

Cyclophorus loxostoma, Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 17, fig. 83; H. Nevill, Enum. Pneum. Ceylon, 1871, p. 4; Hanley & Theobald, Conch. Ind. 1876, p. xv.

Cyclophorus (*Theobaldius*) *loxostoma*, Nevill, Hand List, i, 1878, p. 277.

Theobaldius loxostomus, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 105; id., Cat. Pneum. 1899, p. 17; Kobelt, Das Tierreich, Lief. 16, 1902, p. 93.

Theobaldius loxostoma, Kobelt, Conch.-Cab., Cyclophoridae, i, 1907, p. 558.

Original description:—" C. testa umbilicata, depressa, discoidea, solidula, confertim filoso-striata, fusco-fulva, maculis pallidioribus conspersa; spira plana, vertice subtili haud prominente; anfr. 5, convexiusculis, sensim accrescentibus, ultimo terete, antice dilatato, non descendente; umbilico pateræformi, $\frac{1}{3}$ diametri, superante;

apertura diagonali, subcirculari, intus margaritacea; perist. continuo, breviter adnato, recto, subduplicato, vix incrassato.

" Diam. maj. $13\frac{2}{3}$, min. 11, alt. 4 mill." (*Pfeiffer.*)

Hab. Ceylon (*Mr. Lear*).

54. **Theobaldius maculosus**, *Sowerby.*

Cyclostoma maculosum, Sowerby, Proc. Zool. Soc. 1843, p. 66; id., Thes. Conch. i, 1843, p. 112, pl. 31, figs. 256, 257; Pfeiffer, Conch.-Cab., Cyclostomaceen, 1847, p. 54, pl. 7, figs. 4–6.

Cyclophorus maculosus, Pfeiffer, Zeits. Malak. viii, 1851, p. 143; id., Mon. Pneum. 1852, p. 91; Adams, Gen. Rec. Moll. ii, 1855, p. 280; Pfeiffer, op. cit. Suppl. 1, 1858, p. 62; Reeve, Conch. Icon. xiii, *Cyclophorus*, 1861, pl. 5, fig. 17; Pfeiffer, op. cit. Suppl. 2, 1865, p. 72; Suppl. 3, 1875, p. 116.

Theobaldius maculosus, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 105; id., Cat. Pneum. 1899, p. 17; Kobelt, Das Tierreich, Lief. 16, 1902, p. 93; id., Conch.-Cab., Cyclophoridae, i, 1907, pp. 560, 566.

Original description:—" Cycl. testa suborbiculari, depressa, crassiuscula, lævi, castanea, albido-maculosa, spira paululum levata, apice nigricante; anfractibus 4, rotundatis, obsolete spiraliter striatis; apertura subcirculari, peritremate subincrassato, subreflexo, postice acuminatiusculo; umbilico maximo, spiraliter castaneo lineato." (*Sowerby.*)

Alt. 13, maj. diam. 30, min. 23 mm.

Hab. Southern India (*Kobelt & Möllendorff*).

The country of origin of this species was unknown to Sowerby, and all subsequent writers dealing with it have queried its habitat, except Kobelt and Möllendorff, who indicated Southern India in 1897.

55. **Theobaldius nivicola**, *Godwin-Austen.*

Cyclophorus (*Myxostoma*) *nivicola*, Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 173, pl. 7, fig. 1.

Cyclophorus (*Theobaldius*) *nivicola*, Nevill, Hand List, i, 1878, p. 275.

Theobaldius nivicola, Kobelt, Das Tierreich, Lief. 16, 1902, p. 94.

Original description:—"Shell flatly discoidal, openly umbilicated. Whorls 5, with distinct longitudinal striation, the last well rounded on the periphery, large, the rest rapidly decreasing, covered with a thick epidermis, colour dark brown-umber. At half the circumference from the apex fine zigzag pale ochreous markings ornament the upper surface; these widen and are arranged closer towards the apex, which is pale; a black band on the periphery is bounded by a pale narrow one. Spire slightly raised. Suture deep. Aperture oblique, very slightly descending, circular. Peristome thickened, double, reflected, with a small re-entering notch near the suture. Operculum corneous, flat.

" Major diam. 1·0 [25·5 mm.], alt. 0·45 inch [11·25 mm.].

Hab. India: Dafla Hills, Assam (*Godwin-Austen*).

"This form is a representative here of the Ceylonese *C. bairdii*. A variety of the same size but plain, with pale band on the periphery, on Toruputu Peak. Small (major diam. 0·65 [16·5 mm.]) varieties also occur, both ornamented and plain; the latter are very similar in size and light ochreous colouration to *C. ravidus* of the Nilgiri Hills, but the former have fine zigzag markings and a single black band on the periphery." (*Godwin-Austen.*)

56. **Theobaldius oakesi**, *Godwin-Austen.*

Cyclophorus oakesi, Godwin-Austen, Records Ind. Mus. viii, 1915, p. 502, pl. 40, fig. 1.

Original description:—"Shell globosely conoid, umbilicated, not widely. Sculpture, a strong epidermis, fine lines of growth. Colour strong sienna brown, mottled, broadish splashes of black. No pheripheral band. Spire somewhat depressed, apex broad and blunt. Suture impressed. Whorls $4\frac{1}{4}$, well rounded. Aperture circular, suboblique. Peristome simple, not thickened, very slightly expanded, in the best specimen it is not fully formed. Operculum horny multispiral, smooth in front and concave.

Major diam. 9·4; alt. axis 4·8 mm."

Hab. India: Tsanspu Valley, Abor Hills, 2 specimens (*Oakes*).

"The subgeneric position of this species is very doubtful; the animal has not been seen." (*Godwin-Austen.*)

The species is provisionally placed in the genus *Theobaldius*. I have not seen specimens.

57. **Theobaldius orites**, *Nevill.*

Cyclophorus (*Theobaldius*) *orites*, Nevill, J. A. S. B. l, part 2, 1881, p. 147, pl. 6, fig. 4.

Theobaldius orites, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 105; id., Cat. Pneum. 1899, p. 17; Kobelt, Das Tierreich, Lief. 16, 1902, p. 94; id., Conch.-Cab., Cyclophoridae, i, 1907, p. 567, pl. 71, figs. 14–16.

Original description:—"Broadly and openly umbilicate, solid, depressed, subdiscoidal, covered with a rather thick, smooth, bright yellow, or horn-coloured, epidermis, throughout, under the lens very minutely, closely, obliquely striated; spire perfectly flat, suture excavate; whorls 4, the last one perfectly round, increasing unusually rapidly in size; aperture circular, peristome double, the outer margin above near the body whorl, being slightly subangulately produced, showing a distinct transition to the 'wing-like' process of *Pterocyclus*, columellar margin oblique, the duplication of the peristome becoming obsolete.

"Operculum thin, horny, slightly immersed, flat, composed of five or six acutely defined volutions.

"Alt. $5\frac{1}{2}$, diam. $14\frac{1}{10}$ mill." (*Nevill.*)

Hab. India: Chola Range, Sikkim.

58. Theobaldius parapsis, *Benson.*

Cyclophoris parapsis, Benson, A. M. N. H. ser. 2, xii, 1853, p. 96; Pfeiffer, Malak. Blätt. i, 1854, p. 87; Adams, Gen. Rec. Moll. ii, 1855, p. 280; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 66; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 18, fig. 90; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 4; Hanley & Theobald, Conch. Ind. 1876, p. xv.

Myxostoma parapsis, Theobald, Cat. Shells Brit. India, 1876, p. 37.

Cyclophorus (*Theobaldius*) *parapsis*, Nevill, Hand List, i, 1878, p. 277

Theobaldius parapsis, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 105; id., Cat. Pneum. 1899, p. 17; Kobelt, Das Tierreich, Lief. 16, 1902, p. 94; id., Conch.-Cab., Cyclophoridae, i, 1907, p. 558, pl. 69, figs. 21–25.

Original description:—"Testa late et perspective umbilicata, orbiculato-depressa, tenui confertim striatula, olivacea, sub epidermide tenui albida; spira planiuscula, apice vix prominulo, sutura profunda; anfractibus 4 convexiusculis, ultimo cylindrico, leviter descendente, non dilatato; apertura subverticali, subcirculari, intus glaucescente; peristomate continuo, breviter adnato, recto, simplice, acuto: operculo tenui, corneo, arcte spirato, medio concaviusculo, intus obtuse umbonali.

"Diam. major 13, minor 10, alt. 5 mill."

Hab. Ceylon: Damboul (*E. L. Layard*).

"It differs from *C. loxostoma*, Pfeiffer (a large and handsomely marked variety of which was found on the same rock), in colouring, epidermis, depth of suture, narrower and deeper umbilicus, and the more circular and vertical aperture, which exhibits nothing of the diagonal departure from the axis observable in Pfeiffer's shell. The peristome also is acute and single, instead of being double, slightly expanded and thickened, as in that species, of which Mr. Layard's specimen is variegated with radiate and undulated chestnut stripes, and with a single band on a fulvous ground." (*Benson.*)

59. Theobaldius parma, *Benson.*

Cyclophorus parma, Benson, A. M. N. H. ser. 2, xviii, 1856, p. 94; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 55; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 4; Hanley & Theobald, Conch. Ind. 1876, p. 57, pl. 143, figs. 2, 3.

Myxostoma parma, Theobald, Cat. Shells Brit. India, 1876, p. 36.

Theobaldius parma, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 105; id., Cat. Pneum. 1899, p. 17; Kobelt, Das Tierreich, Lief. 16, 1902, p. 94; id., Conch.-Cab., Cyclophoridae, i, 1907, p. 566, pl. 70, figs. 6, 7.

Original description:—"Testa latissime umbilicata, planato-depressa, discoidea, tenuiuscula, confertim et arcuatim sericato-striata, saturate castanea, flammulis nonnullis pallidis spiram versus ornata, subtus interdum pallidiori; spira planata, apice nullo modo prominente, sutura profunda; anfractibus 5 convexis, ultimo

antice descendente; apertura valde obliqua, ampla, ovato-rotundata, superne angulata, intus livide cærulea; peristomate duplici, interiori continuo, albido, ad dextram expansiusculo, exteriori breviter interrupto, expansiusculo, fusco-corneo; margine columellari subtus recedente, dextro prorsum arcuato; umbilico latissimo, minime profundo. Operculo tenui, corneo, $5\frac{1}{2}$-spirato, suturis intus extusque pulchre carinatis.

"Diam. major 26, minor 23, alt. 6 mill."

Hab. Ceylon (*E. L. Layard*).

" .... The shell is easily distinguished from the other planorbular *Cyclophori* of Ceylon by its dark colour and depressed form, which recall those of *Pterocyclos hispidus*, Pearson, by its very wide and shallow umbilicus, and by the size and peculiar position of the aperture. The whorls of the operculum, which is of a clear horn-colour, are less closely wound than in *C. cratera*." (*Benson.*)

60. **Theobaldius phænotopicus**, *Benson.*

Cyclostoma phænotopicum, Benson, A. M. N. H. ser. 2, viii, 1851, p. 190; x, 1852, p. 271; Pfeiffer, Conch.-Cab., Cyclostomaceen, 1854, p. 386, pl. 50, figs. 20, 21.

Cyclophorus phaenotopicus, Pfeiffer, Zeits. Malak. viii, 1851, p. 144; id., Cat. Phaneropn. Brit. Mus. 1852, p. 70; id., Mon. Pneum. 1852, p. 100; Benson, A. M. N. H. ser. 2, xiv, 1854, p. 415; Adams, Gen. Rec. Moll. ii, 1855, p. 280; Theobald, J. A. S. B. xxvii, 1858, p. 322; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 18, fig. 91; Hanley & Theobald, Conch. Ind. 1870, pl. 4, fig. 3.

Myxostoma phænotopicum, Theobald, Cat. Shells Brit. India, 1876, p. 37.

Cyclophorus (*Theobaldius*) *phaenotopicus*, Nevill, Hand List, i, 1878, p. 277.

Theobaldius phaenotopicus, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 105; id., Cat. Pneum. 1899, p. 17; Kobelt, Das Tierreich, Lief. 16, 1902, p. 95; id., Conch.-Cab., Cyclophoridae, i, 1907, p. 567.

Original description:—" Testa subaperte umbilicata, depressa, subdiscoidea, tenui, non nitente, striis scabris, acutis, radiatis, elevatis, aliis, impressis spiralibus, sub lente vix percipiendis, prope suturam decussatis, rufo-fusca, strigis augulatis, interruptis picta; spira depressa, apice prominula, sutura impressa; anfractibus $4\frac{1}{2}$ convexis, sensim accrescentibus; apertura circulari, peristomate tenui, recto, marginibus approximatis; umbilico profundo, perspectivo. Operculo corneo, tenui, concaviusculo, arctispirali; anfractibus 7–8.

"Diam. major 12, minor 10, alt. 4 mill."

Hab. India: Darjeeling, Sikkim (*Stoliczka*, *Theobald*, *H. F. Blanford*, *Mainwaring*).

"Although the larger of my two specimens does not bear the signs of age, yet, even if the peristome should be found to acquire a further development, the peculiar dull and sharp scabrous sculpture, as well as the narrower umbilicus, will serve to prevent

the species from being confounded with any allied form, such as *C. annulatum* and *C. stenostoma*, which possess a similar operculum. The impressed spiral striæ are confined to the inner slope of the whorl, towards the suture, and are only visible under a lens." (*Benson.*)

This description Benson subsequently amplified * as follows :—

" Peristomate verticali, integro, expansiusculo, subreflexo, superne duplicato, lamella exteriore ibidem subangulato.

" Diam. major 13, minor 10, axis 5½ mill."

61. **Theobaldius ravidus**, *Benson.*

Cyclostoma ravidum, Benson, A. M. N. H. ser. 2, viii, 1851, p. 190; Pfeiffer, Conch.-Cab., Cyclostomaceen, 1854, p. 385, pl. 50, figs. 14–16.

Cyclophorus ravidus, Pfeiffer, Zeits. Malak. viii, 1851, p. 144; id., Cat. Phaneropn. Brit. Mus. 1852, p. 70; id., Mon. Pneum. 1852, p. 99; Benson, A. M. N. H. ser. 2, xiv, 1854, p. 415; Adams, Gen. Rec. Moll. ii, 1855, p. 280; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 20, fig. 102; W. T. & H. F. Blanford, J. A. S. B. xxx, 1861, p. 364; Blanford, J. A. S. B. xxxviii, 1869, p. 143; Hanley & Theobald, Conch. Ind. 1875, p. 42, pl. 105, figs. 5, 6.

Myxostoma ravidum, Theobald, Cat. Shells Brit. India, 1876, p. 37.

Cyclophorus (*Theobaldius*) *ravidus*, Nevill, Hand List, i. 1878, p. 276 (+var. *anamullayensis* and var. *wynaadensis*).

Theobaldius ravidus, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 105; id., Cat. Pneum. 1899, p. 17; Kobelt, Das Tierreich, Lief. 16, 1902, p. 95; id., Conch.-Cab., Cyclophoridae, i, 1907, p. 568.

Original description :—" Testa aperte umbilicata, subdiscoidea, nitidiuscula, confertim scabre tenuiter radiato-striata, olivaceo-lutea, sub epidermide alba; spira vix elevata, apice planato, obtuso, sutura impressa; anfractibus 4 convexiusculis, lente accrescentibus, ultimo cylindraceo, antice vix descendente, superne prope suturam sub lente obsolete spiraliter striato; apertura obliqua, circulari, peristomate tenui, recto, marginibus callo tenui junctis; umbilico lato, perspectivo; operculo tenui, corneo, multispirato, extus concaviusculo.

" Diam. major 15, minor 13, axis 7 mill."

Hab. India: Nilgiris (*Jerdon, Blanford*); Kolamullay (*Blanford*); Anamullay Hills, Wynaad, Battingh, Battenpathi; Shevaroy Hills (*Beddome*).

" The species differs from *C. annulatum*, Troschel, which has a similar operculum, in the more closely-wound whorls, in the narrower umbilicus, more delicate sculpture, and absence of any pattern on the upper side." (*Benson.*)

Blanford states † that the species attains a considerably larger size in the Anamullay Hills and the Wynaad than the type, shells from the former locality measuring 27 mm. by 22 mm., and

* A. M. N. H. ser. 2, x, 1852, p. 271.

† J. A. S. B. xxx, 1861, p. 143.

from the latter 24 mm. by 19·5 mm. The operculum, when in good condition, has raised margins to the whorls. He was inclined, however, to consider the species identical with *C. annulatus*, from Ceylon.

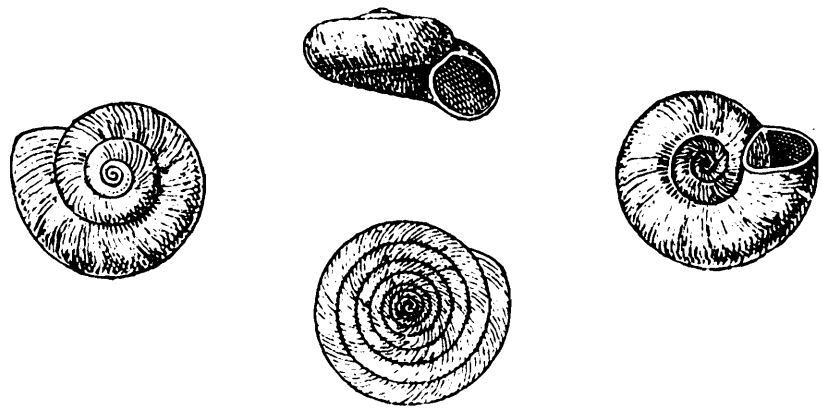


Fig. 10.—*Theobaldius ravidus.* (Shell nat. size, operc. × 3.)

Nevill separated these two forms from the type as varieties, naming them *anamullayensis* and *wynaadensis* respectively, without, however, giving any definition; he even added in brackets "? sp. nov."

The specimen now figured is from the Beddome collection kindly lent by Mr. Leman. It measures 16 × 14 mm. in diameter, alt. 8 mm. The operculum is many-whorled and closely coiled.

62. **Theobaldius shiplayi**, *Pfeiffer.*

Cyclostoma (*Cyclophorus*) *shiplayi*, Pfeiffer, Proc. Zool. Soc. 1856, p. 337; id., Mon. Pneum. Suppl. 1, 1858, p .68; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 18, fig. 85; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 76; Hanley & Theobald, Conch. Ind. 1876, p. 57, pl. 143, figs. 7, 10.

Myxostoma shiplayi, Theobald, Cat. Shells Brit. India, 1876, Addenda, p. ii.

Cyclophorus (*Theobaldius*) *shiplayi*, Nevill, Hand List, i, 1878, p. 277.

Theobaldius shiplayi, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 105; id., Cat. Pneum. 1899, p. 17; Kobelt, Das Tierreich, Lief. 16, 1902, p. 95; id., Conch.-Cab., Cyclophoridae, i, 1907, p. 568, pl. 71, figs. 7, 8.

Original description:—"C. testa umbilicata, depressa, tenuiuscula, membranaceo-striata, fulva, castaneo oblique strigata; spira vix elevata; anfr. 4 convexis, ultimo terete; umbilico $\frac{1}{3}$ diametri occupante; apertura obliqua, subcirculari; perist. simplice, recto, ad anfractum contiguum vix interrupto. Operc.?

"Diam. maj. 7, min. 6, alt. 3 mill." (*Pfeiffer.*)

Hab. India: Nilgiris (*Shiplay*).

63. **Theobaldius stenostoma**, *Sowerby.*

Cyclostoma stenostomus, Sowerby, Thes. Conch. i, 1843, p. 95, pl. 31, fig. 261.

Cyclostoma stenostoma, Pfeiffer, Conch.-Cab., Cyclostomaceen, 1849, p. 149, pl. 20, figs. 23–25.

Cyclophorus stenostoma, Pfeiffer, Zeits. Malak. iv, 1847, p. 108; Benson, A. M. N. H. ser. 2, xiv, 1854, p. 415; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 17, fig. 82; Hanley & Theobald, Conch. Ind. 1875, p. 42, pl. 105, figs. 7, 8; G. Nevill, J. A. S. B. l, part 2, 1881, p. 146 (var. *substenostoma*).

Cyclophorus stenostomus, Pfeiffer, Zeits. Malak. viii, 1852, p. 143; id., Cat. Phaneropn. 1852, p. 64; Adams, Gen. Rec. Moll. ii, 1855, p. 280.

Myxostoma stenostoma, Theobald, Cat. Shells Brit. India, 1876, p. 37.

Cyclophorus (*Theobaldius*) *stenostoma*, Nevill, Hand List, i, 1878, p. 276.

Theobaldius stenostomus, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 105; id., Cat. Pneum. 1899, p. 17.

Theobaldius stenostoma, Kobelt, Das Tierreich, Lief. 16, 1902, p. 95; id., Conch.-Cab., Cyclophoridae, i, 1907, p. 569, pl. 71, figs. 11-13.

Original description:—" T. suborbiculari, depressa, crassa, lævi, castanea, albido-maculosa; spira fere plana, anfractibus 4, subrotundatis; apertura fere circulari, postice subangulata, paululum coarctata, peritremate subincrassato, umbilico maximo; operculo corneo, anfractibus sex.

" Shell suborbicular, depressed, thick, smooth, chestnut coloured with whitish specks; spire nearly flat, volutions 4, somewhat rounded; aperture nearly circular, angular posteriorly, slightly contracted; peritreme a little thickened; umbilicus very large; operculum horny, with six volutions. Arabia." (*Sowerby.*)

Hab. India: Nilgiris (*Blanford*); Ootacamund (*Stoliczka*).

Var. **anguis**, *Hanley & Theobald.*

Cyclophorus stenostoma, var. *anguis* (Sowerby), Hanley & Theobald, Conch. Ind. 1875, p. 43, pl. 105, fig. 9.

Theobaldius stenostoma, var. *anguis*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 96.

Larger than the type, and has the entire upper surface concentrically shagreened by wavy and somewhat broken raised wrinkles. Hanley and Theobald considered this variety to be possibly a distinct species.

Hab. India: Nilgiris.

The type was originally stated by Sowerby to be from Arabia, evidently an error.

64. **Theobaldius subplicatus**, *Beddome.*

Cyclophorus subplicatus, Beddome, P. Z. S. 1875, p. 452, pl. 53, figs. 25–27; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 406.

Cyclophorus subplicatulus, Hanley & Theobald, Conch. Ind. 1876, p. xv, pl. 145, figs. 5, 7.

Myxostoma subplicatulus (Bedd.), Theobald, Cat. Shells Brit. India, 1876, Addenda, p. ii.

Theobaldius subplicatus, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 105; id., Cat. Pneum. 1899, p. 17; Kobelt, Das Tierreich, Lief. 16, 1902, p. 96; id., Conch.-Cab., Cyclophoridae, i, 1907, p. 563, pl. 70, figs. 13, 14.

Original description:—"Shell broadly umbilicated, depressed, solid, of a dark chestnut-brown and covered with a dusty fuscous epidermis when young, closely striated obliquely and inconspicuously, spirally lirate, and ornamented with oblique rather inconspicuous scarcely raised folds or plications which are angled above the region of the periphery on the lowest whorl and again run backwards; spire slightly elevated, apex obtuse, sutures deep; whorls 4, convex, the last descending slightly towards the peristome; aperture oblique, subcircular, angled at its left apex; peristome double, both lips continuous, the inner white, the outer scarcely expanded except at its left apex; operculum of a single horny thin layer, subconcave externally, with 6 spiral whorls: diameter $1\frac{1}{16}$ inch [27 mm.], height $\frac{3}{8}$ inch [9·5 mm.]."

Hab. Ceylon: Haycock Mountain (*Beddome*).

"Very like *C. layardi*, but with the spiral lines much less prominent and furnished with peculiar oblique folds, and the peristome less reflexed." (*Beddome.*)

65. Theobaldius thwaitesi, *Pfeiffer*.

Cyclophorus thwaitesi, Pfeiffer, Proc. Zool. Soc. 1854, p. 127; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 18, fig. 87; Hanley & Theobald, Conch. Ind. 1870, pl. 3, fig. 9 (not fig. 8); 1876, p. xv; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 4; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 305.

Myxostoma thwaitesii, Theobald, Cat. Shells Brit. India, 1876, p. 37

Theobaldius thwaitesi, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 105; id., Cat. Pneum. 1899, p. 17; Kobelt, Das Tierreich, Lief. 16, 1902, p. 96; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 699, pl. 70, figs. 4, 5.

Original description:—"C. testa late umbilicata, depressa, subdiscoidea, tenui, subconfertim arcuato-striata, nitidula, luteofulva, strigis angulosis castaneis eleganter flammata; spira subplana, vertice vix prominulo; sutura profunda; anfr. 4, modice convexis, celeriter accrescentibus, ultimo terete, antice vix descendente; apertura fere diagonali, ovali-rotundata; intus submargaritacea; perist. simplice, acuto, marginibus fere contiguis, callo tenui junctis, dextro expansiusculo, columellari subreflexo.

"Diam. maj. 12, min. 9, alt. 5 mill." (*Pfeiffer.*)

Hab. Ceylon (*Thwaites*); Kandy, Galle (*Simon*).

66. Theobaldius tristis, *Blanford*.

Pterocyclos? tristis, Blanford, J. A. S. B. xxxviii, part 2, 1869, p. 134, pl. 16, fig. 9; Theobald, Cat. Shells Brit. India, 1876, p. 38.

Cyclophorus tristis, Hanley & Theobald, Conch. Ind. 1876, p. 57, pl. 143, figs. 5, 6.

Cyclophorus (*Theobaldius*) *tristis*, Nevill, Hand List, i, 1878, p. 276. *Theobaldius tristis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 105; id., Cat. Pneum. 1899, p. 17; Kobelt, Das Tierreich, Lief. 16, 1902, p. 96; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 700, pl. 70, figs. 11, 12.

Original description:—"Testa late umbilicata, depressa, tenuis, epidermide crassa, fulvescenti-brunnea induta; sub epidermide albida, striatula. Spira convexa, apice parum exserto, per-obtuso, sutura profunda. Anfr. 5 rotundati; ultimus teres, longe sensim descendens. Apertura obliqua, rotunda; peristoma brevissime adnatum, duplex; internum parum porrectum, superne juxta suturam vix sinuatum; externum leviter expansum, continuum, a peristomate interno sulco discretum, supra ejus sinum in alam verticalem parvam, instar tubuli imperfecti, antice spectantem anfractum penultimum non attingentem, breviter cucullatim productum. Operc.? Diam. maj. 19½, min. 16, axis 9½ mill. Ap. diam. intus 6½.

"Shell widely umbilicated, depressed, thin, covered with a thick, olivaceous brown epidermis; beneath the epidermis white, faintly striated. The epidermis is closely rugately striated near the suture. Spire convex; apex scarcely exserted, obtuse; suture deep. Whorls 5, rounded, the last cylindrical, descending very gradually for a considerable distance behind the aperture. Mouth oblique, circular; peristome double, the two portions divided by a groove; the inner slightly projecting, with a very small, almost obsolete sinus above, close to the suture; the outer a little expanded, and produced above into a short vertical wing, opening in front, and forming an imperfect tube; it is just above the imperfect sinus in the inner peristome, and does not touch the penultimate whorl. Operculum unknown. Major diameter 0·8, minor 0·62, axis 0·36; diameter of the aperture 0·26 inch." (*Blanford.*)

Hab. India: South Canara, Tinnevelly (*H. Beddome*).

In the absence of the operculum the species was doubtfully referred to the genus *Pterocyclus* by the author, but the subsequent discovery of specimens with the operculum led Hanley and Theobald to refer it to *Cyclophorus*.

Genus **CYCLOPHORUS**, *Montfort.*

Cyclophorus, Montfort, Conchyl. Syst. ii, 1810, p. 290; Pfeiffer, Zeits. Malak. iv, 1847, p. 107; id., Mon. Pneum. 1852, p. 54; Adams, Genera Rec. Moll. ii, 1855, p. 279; Fischer, Man. Conchyl. 1885, p. 743; Godwin-Austen, Land and Freshw. Moll. India, ii, 1897, p. 17; Sarasin, Land-Moll. Celebes, 1899, p. 32; Kobelt, Das Tierreich, Lief. 16, 1902, p. 97.

TYPE, *Helix volvulus*, Müller.

Range. South-Eastern Asia, New Guinea, Africa.

Shell globose-turbinate, depressed, or discoid; peristome

continuous, expanded, or straight. Operculum corneous, thin, narrowly coiled, more or less concave externally, smooth, edges of whorls not raised.

Subgenus **LITOSTYLUS**, *Kobelt & Möllendorff.*

Litostylus (nom. nud.), Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 88 (part.); id., Cat. Pneum. 1899, p. 16; Kobelt, Das Tierreich, Lief. 16, 1902, p. 97.

TYPE, *Helix involvulus*, Müller.

Range. India, Ceylon, Farther India, Philippines.

" Shell more or less depressed, ribbed or spirally lirate, peristome not dilated." (*Kobelt.*)

67 **Cyclophorus ceylanicus**, *Pfeiffer.*

Cyclostoma ceylanicum (Sowerby MS.), Pfeiffer, Conch.-Cab., Cyclostomaceen, 1849, p. 171, pl. 29, figs. 1–3.

Cyclostoma indicum, Sowerby, Thes. Conch. ii, 1850, p. 163 *, pl. 31 *b*, figs. 320, 321 (non Deshayes).

Cyclophorus ceylanicus, Pfeiffer, Zeits. Malak. viii, 1851, p. 140; id., Mon. Pneum. 1852, p. 70; id., Cat. Phaneropn. Brit. Mus. 1852, p. 47; Adams, Gen. Rec. Moll. ii, 1855, p. 272; Pfeiffer, op. cit. Suppl. 1, 1858, p. 51; Suppl. 2, 1865, p. 66; Hanley & Theobald, Conch. Ind. 1870, pl. 33, fig. 2; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 4; Pfeiffer, Suppl. 3, 1875, pp. 105, 406; Hanley & Theobald, Conch. Ind. 1876, p. xv; Theobald, Cat. Shells Brit. India, 1876, p. 35; Nevill, Hand List, i, 1878, p. 272.

Cyclophorus menkeanus, Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 10, fig. 42 (non Philippi).

Cyclophorus (*Litostylus*) *ceylanicus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 105; id., Cat. Pneum. 1899, p. 17; Kobelt, Das Tierreich, Lief. 16, 1902, p. 98; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 689, pl. 101, figs. 9, 10, pl. 103, figs. 7, 8.

Original description:—" C. testa umbilicata, depresso-turbinata, solida, liris permultis elevatis acutis (interpositis minoribus) striisque longitudinalibus confertissimis decussata, saturate castanea, strigis albis, angustis, undulatis picta; spira conoidea, obtusiuscula; anfr. 5 convexis, ultimo infra carinam submedianam, acutiorum fascia lata nigricante ornato, circa umbilicum infundibuliformem subcompresso, stramineo; apertura subobliqua, subcirculari, intus cœrulescenti-alba; perist. incrassato, candido, marginibus callo tenui superne angulatim junctis, dextro expanso, columellari reflexo.—Operc. corneum, arctispirum, extus vix concavum.

" Diam. maj. 37, min. 30, alt. 24 mill. Ap. intus oblique 17 mill. longa." (*Pfeiffer.*)

Hab. Ceylon.

Allied to *C. stenomphalus*, but the spirals are much more prominent and more acute.

68. Cyclophorus cornutus, *Kobelt.*

Cyclostoma cornu venatorium (non *Helix cornu-venatorium*, Gmelin, 1791), Sowerby, Thes. Conch. i. 1843, p. 107, pl. 24, fig. 41 (not 42); Pfeiffer, Conch.-Cab., Cyclostomaceen, 1849, p. 159, pl. 22, figs. 1–3; 1854, p. 387, pl. 49, figs. 14–16; Benson, A. M. N. H. ser. 2, xix, 1857, p. 210.

Aulopoma cornu venatorium, Pfeiffer, Zeits. Malak. iv, 1847, p. 111; viii, 1851, p. 138; Gray, Nomencl. Moll. Brit. Mus. i, 1850, p. 14; Pfeiffer, Mon. Pneum. 1852, p. 53; Adams, Gen. Rec. Moll. ii, 1855, p. 283.

Cyclophorus cornu venatorium, Theobald, J. A. S. B. xxvi, 1857, p. 247; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 69; Blanford, J. A. S. B. xxxiv, 1865, p. 96; Hanley & Theobald, Conch. Ind. 1875, p. 42, pl. 104, figs. 5, 6; Theobald, Cat. Shells Brit. India, 1876, p. 36; Nevill, Hand List, i, 1878, p. 268.

Cyclophorus (*Litostylus*) *cornu venatorium*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 105; id., Cat. Pneum. 1899, p. 17.

Cyclophorus (*Litostylus*) *cornutus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 98 (nom. mut.); id., Conch.-Cab., Cyclophoridae, i, 1908, p. 645, pl. 91, fig. 7.

Original description:—" T. orbiculato-depressa, albicante; spira mucronata, nigra; anfractibus 4 ventricosis, superne transversim striatis, infra lævibus, linea mediana ferruginea; sutura profunda; apertura circulari, peritremate tenui, acuto; umbilico maximo.

"Shell orbicular, depressed, whitish; spire mucronated, with a black apex; volutions 4, ventricose, transversely striated on the upper part, smooth beneath, with a brown spiral line in the middle; suture deep; aperture circular; peritreme thin, acute; umbilicus very large." (*Sowerby.*)

Hab. Burma: Ava (*Oldham*).

69. Cyclophorus involvulus, *Müller.*

Helix involvulus, Müller, Hist. Verm. part 2, 1774, p. 84; Wood, Index Test. 1825, pl. 32, fig. 8.

Cyclostoma involvulus, Benson, J. A. S. B. v, 1836, p. 355; Sowerby, Thes. Conch. i, 1843, p. 119, pl. 26, figs. 114–116; Pfeiffer, Conch.-Cab., Cyclostomaceen, 1847, p. 28, pl. 4, figs. 3, 4; pl. 8, figs. 10–12 (var.).

Cyclophorus involvulus, Pfeiffer, Zeits. Malak. iv, 1847, p. 108; viii, 1851, p. 138; id., Cat. Phaneropn. Brit. Mus. 1852, p. 39; Adams, Gen. Rec. Moll. ii, 1855, p. 280; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 1, fig. 1; Hanley & Theobald, Conch. Ind. 1870, pl. 2, fig. 1; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 4; Theobald, Cat. Shells Brit. India, 1876, p. 36; Nevill, Hand List, i, 1878, p. 273; Fischer, Man. Conchyl. 1855, p. 744, pl. 12, fig. 41; Westerlund, Vega Exped. Vetensk. Jakttag. iv, 1885, p. 188; Jousseaume, Mém. Soc. Zool. Franee, vii, 1894, p. 304.

Cyclophorus (*Litostylus*) *involvulus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 105; id., Cat. Pneum. 1899, p. 17: Kobelt, Das Tierreich, Lief. 16, 1902, p. 99; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 651, pl. 93, fig. 7.

"T. umbilicata, turbinato-depressa, solida, superne costis spiralibus, obtuse elevatis, subconfertis munita, pallide fulvida, castaneo marmorata; spira brevis, subacuminata; anfr. 5 convexi, ultimus latus, medio fascia pallida, infra peripheriam fascia lata nigricante, albido conspersa, ornatus, basi convexa albidus; umbilicus mediocris, pervius; apertura parum obliqua, subcircularis, superne obsolete angulata, intus aurantiaca; perist. duplex; internum continuum, rectum, subincrassatum, igneum, externum reflexum, pallidius.—Operc. normale.—Diam. maj. 34, min. 28, alt. 20 mill. Ap. intus 14 mill. longa." (*Pfeiffer.*)

Hab. India: Behar, Sylhet (*Benson*); Ceylon (*Anderson, Layard*); Point de Galle (*Vega Exp.*).

70. Cyclophorus jerdoni, *Benson.*

Cyclostoma jerdoni, Benson, A. M. N. H. ser. 2, viii, 1851, p. 185; Pfeiffer, Conch.-Cab., Cyclostomaceen, 1854, p. 382, pl. 50, figs. 1–3.

Cyclophorus jerdoni, Pfeiffer, *Z*eits. Malak. viii, 1851, p. 140; Cat. Phaneropn. Brit. Mus. 1852, p. 48; id., Mon. Pneum. 1852, p. 71; Benson, A. M. N. H. ser. 2, xiv, 1854, p. 415; Adams, Gen. Rec. Moll. ii, 1855, p. 280; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 5, fig. 20; Blanford, J. A. S. B. xxxv, part 2, 1866, pp. 38 & 40; Hanley & Theobald, Conch. Ind. 1870, pl. 33, figs. 5, 6; Theobald, Cat. Shells Brit. Ind. 1876, p. 36.

Cyclophorus polynema, var. *jerdoni*, Nevill, Hand List, i, 1878, p. 272.

Cyclophorus (*Litostylus*) *jerdoni*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 105; id., Cat. Pneum. 1899, p. 17; Kobelt, Das Tierreich, Lief. 16, 1902, p. 99.

Original description:—"Testa umbilicata, depresso-turbinata, supra lineis elevatis spiralibus confertissimis corrugatis, strias obliquas decussantibus, subtus striis decussatis levioribus munita, albida, flammis fulguratis castaneis superne, et usque ad dimidium basis picta, fascia pallida mediana, flammulis attenuatis articulata, cincta; spira depressa, apice prominula, sutura distincta; anfractibus 5 convexis, ultimo prope suturam depresso-planulato, periphæria subangulata; apertura vix obliqua, subcirculari, ad apicem angulata, peristomate expansiusculo, incrassato, albido, ad umbilicum subreflexo; marginibus callo crasso junctis, umbilico mediocri, profundo, pervio, anfractus 2 exhibente.

"Diam. maj. 35, min. 28, axis 20 mill." (*Benson.*)

Hab. India: Nilgiris (*Jerdon*); Balarangam (*Beddome*); Anamullays (*Blanford*).

"Distinguished by its peculiar sculpture, more depressed form, rather wider umbilicus, and less expanded and less reflected peristome, from the white-lipped shell figured by Sowerby, Pl. Supp. no. 31 B, f. 321, as *C. indicum*, Deshayes, and by Pfeiffer, as *C. ceylanicum*, Sowerby, who subsequently suppressed his MS. name. It is also less darkly coloured than that species, and the whitish ground forms a greater proportion in the markings. The

red-mouthed var. of *C. indicum*, figured by Sowerby, was sent to me by Dr. Jerdon as found on the opposite face of the Nilgherris." (*Benson.*)

71. Cyclophorus liratula, *Preston.*

Cyclophorus liratula, Preston, Records Ind. Mus. iii, 1909, p. 138, pl. 22, fig. 8.

Original description:—"Shell subdiscoidal, moderately solid, covered with a brown periostracum; spire raised; whorls 3½, somewhat rapidly increasing in size, painted with broad, regular, brownish purple flame markings, rather coarsely, spirally lirate and very finely transversely striate; umbilicus wide and deep; peristome continuous, double; aperture nearly circular; interior of shell bearing a bluish white callus for a distance of about four millimetres from the aperture.

"Altitude 6. Diam. maj. 11 mm. Aperture, alt. 4, diam. 3·5 mm." (*Preston.*)

Hab. Ceylon.

72. Cyclophorus menkeanus, *Philippi.*

Cyclostoma menkeanum, Philippi, Zeits. Malak. iv, 1848, p. 123; Pfeiffer, Conch.-Cab., Cyclostomaceen, 1848, p. 171, pl. 28, figs. 6–8.

Cyclophorus menkeanus, Pfeiffer, Zeits. Malak. iv, 1847, p. 107 (nom. nud.); id., op. cit. viii, 1852, p. 139; id., Cat. Phaneropn. Brit. Mus. 1852, p. 44; id. Mon. Pneum. 1852, p. 66; Adams, Gen. Rec. Moll. ii, 1855, p. 280; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 10, fig. 42; Hanley & Theobald, Conch. Ind. 1870, pl. 33, fig. 3; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 4; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 303.

Cyclophorus involvulus, var. *menkeana*, Nevill, Hand List, i, 1878, p. 273.

Cyclophorus (*Litostylus*) *menkeanus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 105; id., Cat. Pneum. 1897, p. 17; Kobelt, Das Tierreich, Lief. 16, 1902, p. 100.

Original description:—"C. testa depressa, conica, confertim et argute transverse striata, alba, ferrugineo nebulosa; zona ferruginea anguste ambitum anfractus ultimi cingente; basi lactea, lævi; anfractibus quinque, convexis, ultimo tereti; umbilico mediocri; apertura subcirculari, superius subangulata; peritremate albo, continuo, subreflexo, demum sæpius repitito." (*Philippi.*)

Diam. maj. 30, min. 28, alt. 20; ap. 15 mill. long. 5 lat. (*Pfeiffer.*)

Hab. Ceylon: Kandy (*Simon*).

73. Cyclophorus muspratti, *Godwin-Austen & Beddome.*

Cyclophorus muspratti, Godwin-Austen & Beddome, A. M. N. H. ser. 6, xiii, 1894, p. 506.

Cyclophorus (*Litostylus*) *muspratti*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 105; id., Cat. Pneum. 1899, p. 17; Kobelt, Das Tierreich, Lief. 16, 1902, p. 101; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 662, pl. 96, figs. 5, 6.

Original description:—"Shell umbilicated, turbinate, slightly keeled; sculpture, apex smooth, the whorls thence are longitudinally ribbed and striated, increasing in strength near the suture from above downwards, and crossed by the lines of growth, producing a deccussate surface; this is coarser and rougher on the last whorl and under surface. Colour madder-brown, crossed by mottled broken lines on whorls 3 and 4. Spire conic, moderately high, sides slightly convex, apex sharp; suture shallow; whorls 5, sides convex, the last somewhat keeled; aperture circular, oblique; peristome white, not thickened, slightly reflected.

"Size, type: maj. diam. 48·75, min. 39·0; alt. axis 22·25 mm.
largest: „ 50·0, „ 42·0; „ 23·0 mm."

Hab. India; Naga Hills (*Doherty*); Maokokchung, Naga Hills (*Muspratt*).

"In the young shell the longitudinal striæ are very sharp and distinct, quite lirate in appearance; this character separates it from the other species of *Cyclophorus* from those hills." (*Godwin-Austen & Beddome.*)

74. **Cyclophorus nagaensis**, *Godwin-Austen & Beddome.*

Cyclophorus nagaensis, Godwin-Austen & Beddome, A. M. N. H. ser. 6, xiii, 1894, p. 507.

Cyclophorus (*Litostylus*) *nagaensis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 105; id., Cat. Pneum. 1899, p. 17; Kobelt, Das Tierreich, Lief. 16, 1902, p. 101.

Original description:—"*Shell* umbilicated, turbinate, not keeled; sculpture, lines of growth only, without any spiral lines being

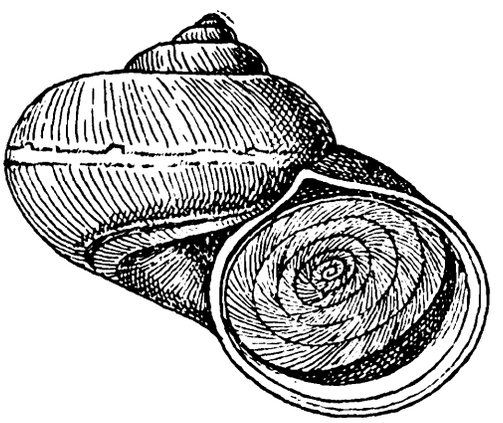


Fig. 11.—*Cyclophorus nagaensis.*

visible. Colour grey-brown, more ochraceous below, when wetted of a madder-brown colour; a white line on the periphery, bounded by a broad very dark band, shaded off below; the third whorl is crossed by narrow wavy white lines; in the next growth these lines are wider apart and zigzag in outline; the next and final

growth is plain. Spire depressedly conoid, apex subacute; suture shallow; whorls 5, rounded; aperture subvertical, large, circular, grey within; peristome not much thickened, scarcely reflected, bright orange-red.

"Major diam. 45, min. 36; alt. axis 21 mm."

Hab. India: Khonoma and Kigwema, Naga Hills, 5000–6000 feet (*Doherty*); Maokokchung, Naga Hills, Assam (*Muspratt*).

"The form of this species is only similar to *C. Pearsoni*, but the red of the lip is more intense than in shells from the typical locality; its very smooth surface also distinguishes it." (*Godwin-Austen & Beddome.*)

The species is now figured for the first time from a specimen in the British Museum; it measures, major diam. 43, min. 35; alt. (cum perist.) 34 mm.

75. **Cyclophorus nilagiricus**, *Benson.*

Cyclostoma nilagiricum, Benson, A. M. N. H. ser. 2, x, 1852, p. 268.
Cyclophorus nilagiricus, Benson, A. M. N. H. ser. 2, xiv, 1854, p. 415; Pfeiffer, Malak. Blätt. i, 1854, p. 83; id., Mon. Pneum. Suppl. 1, 1858, p. 52; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 2, fig. 6; Hanley & Theobald, Conch. Ind. 1870, pl. 1, fig. 5, 1876, p. xv; Nevill, Hand List, i, 1878, p. 269 (+ var. *minor*).
Cyclophorus niligiricus, Theobald, J. A. S. B. xlv, 1876, part 2, p. 185.
Cyclophorus nilgiricus, Theobald, Cat. Shells Brit. India, 1876, p. 36.
Cyclophorus (*Litostylus*) *nilagiricus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 105; id., Cat. Pneum. 1899, p. 17: Kobelt, Das Tierreich, Lief. 16, 1902, p. 101; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 656, pl. 95, figs. 1–6.
Cyclostoma (*Cyclophorus*) *pirrieanum*, Pfeiffer, P. Z. S. 1853, p. 51.
Cyclophorus pirrieanus, Pfeiffer, Malak. Blätt. i, 1854, p. 85; Benson, A. M. N. H. ser. 2, xiv, 1854, p. 415; Adams, Gen. Rec. Moll. ii, 1855, p. 280; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 53.

Original description:—"Testa umbilicata, depresso-turbinata, solida, liris spiralibus 8–9 majoribus, quibusdam parvis obsoletis inæquidistantibus interjectis munita, castanea, ad periphæriam albido-articulata, infra fascia latissima saturatiore, superne strigis radiatis angustis undatis albidis frequentioribus, subtus rarioribus ornata; spira ad apicem exsertiuscula, obtusata; anfractibus 5, convexiusculis, ultimo ad periphæriam subfuniculato-carinato, superne angulato, circa suturam late planato, subtus circa periomphalum excavatum lævigatum compresso, umbilico mediocri profundo, subcylindrico; apertura obliqua, pyriformi-rotundata, aurantiaca, fauce cærulescente, peristomate expanso, incrassato, reflexiusculo, aurantiaco, breviter adnato, prope umbilicum leviter sinuato, superne angulato, producto, intus sulco intrante impresso.

"Diam. major 43–45, minor 34–36, axis 22–24 mill."

Hab. India: Nilgiris (*Jerdon, Blanford, Beddome*); Travancore (*Bourdillon*); Walaghat, Koondah Hills (*Pirrie*); South Canara, Balarangam (*Beddome*).

"The young of *C. nilagiricum* preserved its distinctness from *C. Jerdoni* in the same condition by its sculpture, colour, the depression of the spire, the broad flattening observable above the shoulder of the whorl, the angulation of the shoulder, the excavation of the periomphalum, its compressed angulated edge, and by the blue colour of the interior, which is bordered with chestnut in the young, but gradually gives place to the orange of the peristome in the adult example of *C. nilagiricum*, while the whole of the interior is white in both states of *C. Jerdoni*. The spiral striæ are not very conspicuous on the underside of *C. nilagiricum*, and are entirely discontinued at a short distance from the periphery, the region of the umbilicus being smooth. In most of the allied species the umbilicus and its neighbourhood are pale, but in this species the dark chestnut ground colour of the shell extends over the whole exterior surface where not broken by flecks or streaks of whitish." (*Benson.*)

76. **Cyclophorus pœciloneurus**, *Godwin-Austen & Beddome.*

Cyclophorus pœciloneurus, Godwin-Austen & Beddome, A. M. N. H. ser. 6, xiii, 1894, p. 507.

Cyclophorus (*Litostylus*) *poeciloneurus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 105; id., Cat. Pneum. 1899, p. 17; Kobelt, Das Tierreich, Lief. 16, 1902, p. 102.

Original description:—"*Shell* umbilicated, turbinate, keeled; sculpture, apex smooth and shining; five distinct lirate ribs run contiguous to the suture on the lower margin of the whorls, commencing with the third whorl; these have two finer thread-like ribs between them, and similar fine liration is continued above and on the lower surface of the shell, crossed by strong lines of growth on the epidermis. Colour umber-brown, marbled with madder-brown, given off from a few strong spots of this colour next the suture; the peripheral rib is dashed with white at intervals. Spire conoid, sides flat, apex sharp; suture shallow; whorls 5, subconvex, the last sharply keeled, forming a strong rib; aperture oblique-ovate, ample on the outer margin, grey within; peristome white, well thickened in mature shells, sharply reflected.

	Maj. diam. mm.	Min. diam. mm.	Alt. axis. mm.
"Type ..	31	25·75	15
Col. Beddome's largest sp.	33	26	16
Var. with red lip (*aureolabris*, Nev.)	34·5	27·5	15·5"

Hab. India: Lahupa Naga Hills (*Godwin-Austen*); eastward to the Dihing River (*Ogle*); Naga Hills (*Doherty*); Maokokchung, Naga Hills (*Muspratt*).

"In these eastern hills this form takes the place of *C. zebrinus* of the Khasi Hills &c., but it is much larger, the spiral ribbing is much stronger, the whorls are more convex, and it is more openly umbilicated.

"All the specimens in Lieut.-Col. Godwin-Austen's collection, and also those collected by Mr. Doherty, are white-lipped shells; among the specimens received by Col. Beddome the red-lipped predominate.

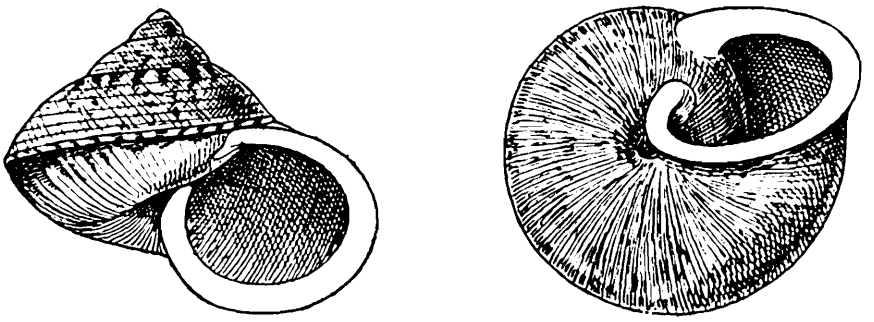


Fig. 12.—*Cyclophorus pœciloneurus.*

"The coloration is very variable; in some, as in the type, the marbling occurs in fine zigzag lines far apart, in other examples these are so closely run together as to give the shell a beautiful ruddy colour." (*Godwin-Austen & Beddome.*)

This species remained unfigured until Dr. Kobelt illustrated the variety *aureolabris* in the Conchylien-Cabinet from a specimen in the Möllendorff collection. The shell now figured represents the typical, white-lipped form. It is from the Beddome collection and measures: Major diam. 33, min. 27·5 mm. Alt. (incl. apert.) 28 mm.

Var. **aureolabris**, *Nevill.*

Cyclophorus zebrinus, var. *aureolabris*, Nevill, Hand List, i, 1878, p. 268.

Cyclophorus pœciloneurus, var. *aureolabris*, Godwin-Austen, A.M.N.H. ser. 6, xiii, 1894, p. 508.

Cyclophorus (*Litostylus*) *poeciloneurus*, var. *aureolabris*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 102; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 639, pl. 90, figs. 10–12.

A large variety with the peristome of a brilliant orange-colour. Diam. 34·5 mm.

The Beddome collection contains three specimens of this variety, agreeing well in outline with Kobelt's figure, but they are much darker in colour.

77 **Cyclophorus polynema**, *Pfeiffer.*

Cyclostoma (*Cyclophorus ?*) *polynema*, Pfeiffer, Proc. Zool. Soc. 1854, p. 126; id., Mon. Pneum. Suppl. 1, 1858, p. 46; Suppl. 2, 1865, p. 64; Suppl. 3, 1875, p. 103; Hanley & Theobald, Conch. Ind. 1870, pl. 2, fig. 8; 1876, p. xv; Theobald, Cat. Shells Brit. India, 1876, p. 36; Nevill, Hand List, i, 1878, p. 272.

Cyclophorus (*Litostylus*) *polynema*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 106; id., Cat. Pneum. 1899, p. 18; Kobelt, Das Tierreich, Lief. 16, 1902, p. 102; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 651, pl. 93, fig. 8.

Original description:—" C. testa umbilicata, depresso-turbinata, tenuiusculo, oblique striatula et liris filiformibus confertissimis, subtus obsoletioribus, cincta, superne flammis angulosis læte castaneis et albidis variegata; spira brevi, turbinata, apice obtusula; anfr. $4\frac{1}{2}$, convexiusculis, rapide accrescentibus, ultimo ad suturam antice subplanato, peripheria obsoletissime angulato et fascia lata, nigro-fusca, deorsum diluto ornato, circa umbilicum mediocrem pallido; apertura obliqua, subrotundata, latiore quam alta; perist. albo, continuo, breviter adnato, margine dextro expansiusculo, columellari breviter revoluto.

"Diam. maj. 33, min. 26, alt. 17 mill." (*Pfeiffer.*)

Hab. India: Cuttack, Manbhoom (*Stoliczka*).

78. **Cyclophorus pyrotrema**, *Benson.*

Cyclophorus pyrotrema, Benson, A. M. N. H. ser. 2, xiv, 1854, p. 412; Adams, Gen. Rec. Moll. ii, 1855, p. 280; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 45; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 4, fig. 13; Hanley & Theobald, Conch. Ind. 1870, pl. 2, fig. 10, + var. fig. 9; 1876, p. xv; Theobald, Cat. Shells Brit. India, 1876, p. 36; Nevill, Hand List, i, 1878, p. 272; Martens, Arch. Naturg. lxv, part 1, 1899, p. 31.

Cyclophorus (*Litostylus*) *pyrotrema*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 106; id., Cat. Pneum. 1899, p. 18; Kobelt, Das Tierreich, Lief. 16, 1902, p. 103; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 665, pl. 97, fig. 3.

Original description:—"Testa umbilicata, turbinato-conica, solida, superne costis spiralibus, obtusiusculis, confertis, striisque obliquis confertissimis sculpta, castaneo albidoque fulguratim strigata et marmorata; spira conica, elevatiuscula, apice acuto. Anfractibus 5 convexis, ultimo fascia albida mediana, infra periphæriam obsolete angulatam fascia lata, subtus nonnullis aliis castaneis ornata; basi valde convexa circa umbilicum submediocrem pervium albida; apertura vix obliqua, irregulariter subcirculari, superne angulata, intus lactea vel cærulescente; peristomate duplici, breviter ad anfractum penultimum adnato, interno continuo, expansiusculo igneo, externo reflexiusculo albido, margine columellari sensim arcuato, fere verticali, subrevoluto, subsinuato. Operculo normali, tenui, pallide fusco, margine anfractuum elevatiusculo, scabro.

"Diam. major 36, minor 30, alt. 26 mill.
" " 34, " 28, " 24 "
" " 26, " 21, " 18 " "

Hab. India: Sikrigal, Patharghata, Bahar (*W. H. Benson*); Rajmehal Hills (*Raban*); Rungpore (*H. F. Blanford*); Burma: Padoukbin, Thyet-Myo (*Nötling*).

"With a general resemblance in form to *C. indicus*, Desh., it will be at once distinguished by the absence of a keel or acute spiral ribs, by the wider umbilicus, less developed peristome, and more elevated form. The very gradual arcuation of the columellar lip is also an essential character, detracting from the uniformity of the circular aperture. The sinus observable at this part, impinging on the plane of the aperture, is also conspicuous in *C. indicus*.

"A variety occurs in which the shell is of a pale buff colour, darker towards the apex, the bands and markings being obsolete, and the colour of the peristome being equally vivid with that of the typical shells. Another thinner variety occurs in which the interior coloured lip is not present." (*Benson.*)

79. Cyclophorus spironema, *Pfeiffer*.

Cyclostoma (*Cyclophorus*) *spironema*, Pfeiffer, Proc. Zool. Soc. 1854, p. 127; id., Mon. Pneum. Suppl. 1, 1858, p. 53; Suppl. 2, 1865, p. 67; Suppl. 3, 1875, p. 109.

Cyclophorus (*Litostylus*) *spironema*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 106: id., Cat. Pneum. 1899, p. 18; Kobelt, Das Tierreich, Lief. 16, 1902, p. 104.

Original description:—"C. testa umbilicata, subturbinato-depressa, solida, liris crebris filiformibus sculpta, superne læte castaneo et albido variegata; spira brevi, vertice acutiusculo; sutura submarginata; anfr. 4, convexis, rapide accrescentibus, ultimo juxta suturam subplanato, ad peripheriam rotundatum

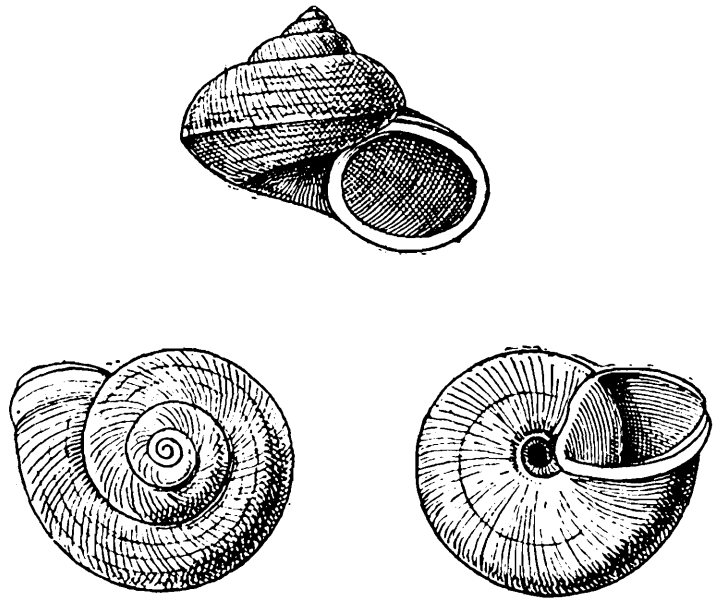


Fig. 13.—*Cyclophorus spironema.*

fascia alba et infra eam altera læte castanea ornato, circa umbilicum latiusculum sublævigato, pallido; apertura vix obliqua, subangulato-circulari; perist. continuo, breviter adnato, vix expanso, ætate in tubum mediocrem, spiraliter striatum, producto.

"Diam. maj. 28, min. 22½, alt. 14 mill." (*Pfeiffer.*)

Hab. India.

The species is now illustrated for the first time from a specimen in the British Museum. Two specimens in the Beddome collection—labelled Burma—have the peristome much more thickened and lengthened into a tube.

Subgenus **GLOSSOSTYLUS**, *Kobelt & Möllendorff.*

Glossostylus (nom. nud.), Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 106 (part); id., Cat. Pneum. 1899, p. 18; Kobelt, Das Tierreich, Lief. 16, 1902, p. 105.

TYPE, *Cyclostoma validum*, Sowerby.

Range. India, Farther India, Formosa, Malaysia, Philippines.

"Shell depressed or conoid, generally with spiral keels. Peristome thickened, frequently with a winglike expansion, last whorl not dilated at the aperture." (*Kobelt* in German.)

80. **Cyclophorus altivagus**, *Benson.*

Cyclophorus altivagus, Benson, A. M. N. H. ser. 2, xiv, 1854, p. 411; Adams, Gen. Rec. Moll. ii, 1855, p. 279; Pfeiffer, Mon. Pneum. Suppl 1, 1858, p. 57; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 13, fig. 55; Hanley & Theobald, Conch. Ind. 1870, pl. 34, figs. 2, 3; fig. 6 (var.); Nevill, Hand List, i, 1878, p. 265.
Cyclophorus (*Glossostylus*) *altivagus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 106; id., Cat. Pneum. 1899, p. 18; Kobelt, Das Tierreich, Lief. 16, 1902, p. 106; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 655, pl. 94, figs. 8, 9.
Cyclostoma stenomphalum, var. *aurora* (non Benson), Pfeiffer, Conch.-Cab., Cyclostomaceen, 1854, p. 384, pl. 50, figs. 11–13.

Original description:—"Testa angustissime umbilicata, fere perforata, globoso-conica, solida, striata, superne rufa, castaneo picta, subtus versus periomphalum albida; spira elevata, turbinata, acutiuscula; anfractibus $5\frac{1}{2}$ convexis, superne costis spiralibus sex munitis, ultimo rotundato, ad periphæriam vix carinato, basi lævigata, umbilico pervio; apertura vix obliqua, subovali-circulari, superne angulata, intus lutescente; peristomate duplici, interno continuo, valde porrecto, acuto, externo expansiusculo, costam fingente, superne anguste angulatim adscendente, ad anfractum penultimum late emarginato, margine columellari minime sinuato, supra umbilicum angustum dilatato-reflexo. Operc.?

"Diam. major 31, minor 26, alt. $24\frac{1}{2}$ mill. Apert. intus 17 mill. longa, 15 lata.

"It differs from this species [*Cyclophorus indicus*] in its more elevated form, indistinct keel, rounded last whorl, more elongate aperture, porrect inner lip, the absence of any sinuosity in the plane of the aperture on the columellar lip, less expanded outer peristome, and by the greater expansion of the external columellar lip over the umbilicus, which is also much narrower; and permits no view of the internal whorls." (*Benson.*)

Hab. India: Mahableshwar (*A. E. Benson, Blanford*).

81. **Cyclophorus aurora**, *Benson.*

Cyclostoma aurora, Benson, A. M. N. H. ser. 2, viii, 1851, p. 186.
Cyclophorus aurora, Pfeiffer, Zeits. Malak. viii, 1851, p. 140; id., Mon. Pneum. 1852, p. 72; Adams, Gen. Rec. Moll. ii, 1855, p. 279; Theobald, J. S. A. B. xxvii, 1858, p. 321; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 9, fig. 36; Hanley & Theobald, Conch. Ind. 1870, pl. 3, fig. 4; Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 173; Nevill, Hand List, i, 1878, p. 265; Godwin-Austen, Moll. India, i, 1886, p. 205, pl. 51, figs. 1, 2–2^a (animal).
Cyclophorus (*Glossostylus*) *aurora*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 106; id., Cat. Pneum. 1899, p. 18; Kobelt, Das Tierreich, Lief. 16, 1902, p. 107; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 641, pl. 91, fig. 2 (var.).

Original description:—"Testa anguste umbilicata, globoso-subturbinata, spiraliter 5–6 obsolete carinata, ferruginea, versus apicem rubente, oblique rugulosa; spira conoidea, apice obtusiusculo; anfractibus $4\frac{1}{2}$ convexiusculis, ultimi periphæria obsolete angulata; apertura ampla, vix obliqua, circulari, superne angulata; peristomate continuo, expansiusculo, subincrassato, reflexiusculo, aurantio; fauce rubente.

"Diam. maj. 28, min. 23, axis 19 mill." (*Benson.*)

Hab. India: Darjeeling, Sikkim (*Stoliczka*, *H. F. Blanford*, *Mainwaring*); Bhutan; Dafla Hills, Assam (*Godwin-Austen*).

Nevill regarded the present species as a variety of *C. himalayanum*, Pfr., but Benson, while admitting near relationship, considered the two forms distinct. The latter is more depressed and has a wider umbilicus. Pfeiffer, on the other hand, classed it as a variety under *C. stenomphalus*, but the figure in Conch. Icon., which illustrates one of Benson's specimens, does not bear out this view.

82. **Cyclophorus bapuensis**, *Godwin-Austen.*

Cyclophorus (*Glossostylus*) *bapuensis*, Godwin-Austen, Records Ind. Mus. viii, 1915, p. 494, pl. 38, fig. 2.

"The description of this species follows that of *sidiensis* in many particulars, but it is not nearly so keeled. It has a distinct peripheral band. The umbilicus is more open and not so concealed. The spire is lower, sides less flat, and first three whorls much smaller. Suture more impressed. Whorls, aperture, and peristome the same.

"Major diam. 33, alt. axis 16 mm." (*Godwin Austen.*)

Hab. India: Abor Hills, vicinity of Bapu (*Oakes*).

83. **Cyclophorus bensoni**, *Pfeiffer.*

Cyclostoma (*Cyclophorus*) *bensoni*, Pfeiffer, Proc. Zool. Soc. 1852, p. 158; id., Conch.-Cab., Cyclostomaceen, 1853, p. 244, pl. 32, figs. 11–13.

Cyclophorus bensoni, Pfeiffer, Zeits. Malak. viii, 1852, p. 139; id., Mon. Pneum. 1852, p. 63; id., Cat. Phaneropn. Brit. Mus. 1852, p. 41; Benson, A. M. N. H. xiv, 1854, p. 414; Adams, Gen. Rec. Moll. ii, 1855, p. 279; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 9, fig. 38; Hanley & Theobald, Conch. Ind. 1870, pl. 34, fig. 5; Morelet, Ser. Conch. iv, 1875, p. 284; Nevill, Hand List, i, 1878, p. 270.

Cyclophorus (*Glossostylus*) *bensoni*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 106; id., Cat. Pneum. 1899, p. 18; Kobelt, Das Tierreich, Lief. 16, 1902, p. 108.

Original description:—"C. testa umbilicata, subgloboso-turbinata, solida, lineis obliquis et confertis spiralibus subtiliter decussata, albido-fulvea, castaneo-variegata; spira turbinata, obtusiuscula; anfract. 5 convexis, supremis unicoloribus luridis, sequentibus flammulato-pictis, ultimo magno, obsolete angulato, ad carinam fascia nigricante et utrinque fasciis inæqualibus castaneis ornato, circa umbilicum angustum, infundibuliformem pallido, subcompresso; apertura parum obliqua, subcirculari, intus lactea; perist. continuo, igneo-aurantiaco, breviter adnato, breviter fornicato-reflexa.—Operc. ?

"Diam. maj. 43, min. 34, alt. 26 mill." (*Pfeiffer.*)

Hab. India: Sibsagar (*Peal*); ? Siam (*Morelet*).

Var. **cryptomphaloides**, *Nevill.*

Cyclophorus bensoni, var. *cryptomphaloides*, Nevill, Hand List, i, 1878, p. 270.

Cyclophorus (*Glossostylus*) *bensoni*, var. *cryptomphaloides*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 106; id., Cat. Pneum. 1899, p. 18; Kobelt, Das Tierreich, Lief. 16, 1902, p. 108.

Original description:—"Umbilicus completely covered by a very thin and porcellaneous extension of the columellar margin; transverse bands almost obsolete, except the characteristic broad one at the periphery." (*Nevill.*)

Hab. India: Naga Hills (*Butler*).

84. **Cyclophorus charpentieri**, *Mousson.*

Cyclostoma charpentieri, Mousson, Land- und Süssw. Moll. Java, 1849, p. 56, pl. 6, fig. 3.

Var. **nicobarica**, *Mörch.*

Cyclophorus charpentieri, var. *nicobarica*, Mörch, Journ. Conchyl. xx, 1872, p. 316.

Cyclophorus (*Leptopomoides*) *charpentieri*, var. *nicobarica* (Martens), Nevill, Hand List, i, 1878, p. 275.

Cyclophorus (*Glossostylus*) *woodianus*, var. *charpentieri*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 121.

A small form of *C. charpentieri*, measuring: Diam. maj. 24, min. 19, axis 13 mm.

Hab. Nicobar Islands: Kar Nicobar (*Kjellerup*); Laoi, Pulo-Panjang (*Rheinhardt*); Batti Malve (*Roepstorf*).

85. Cyclophorus crassalabella, *Godwin-Austen.*

Cyclophorus crassalabella, Godwin-Austen, Proc. Zool. Soc. 1888, p. 244.

Cyclophorus (*Glossostylus*) *crassalabella*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 107; id., Cat. Pneum. 1899, p. 19; Kobelt, Das Tierreich, Lief. 16, 1902, p. 110.

Original description:—"Shell similar in form to *C. fulguratus*, rather openly umbilicated; coloration, a distinct narrow dark brown band on the periphery, sharply defined above, giving off below a regular series of zigzag markings, like a fringe hanging from it; the whorls above are ornamented with similar zigzag bands at equal intervals, but which do not extend to the peripheral band; spire conical, apex fine; whorls 5; aperture subvertical; peristome of a pale yellowish tint, very much thickened to the extent of 4·5 millim.

"Maj. diam. 41·5, min. 32, alt. axis 18·5 mm." (*Godwin-Austen.*)

Hab. Burma: Shan Hills (*Spratt*).

This species has remained unfigured and I have not seen specimens in any collection to which I have had access.

86. Cyclophorus cryptomphalus, *Benson.*

Cyclophorus cryptomphalus, Benson, A. M. N. H. ser. 2, xix, 1857, p. 206; Theobald, J. A. S. B. xxvi, 1857, p. 247; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 58; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 9, fig. 37; Blanford, J. A. S. B. xxxiv, 1865, p. 96; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 68; Hanley & Theobald, Conch. Ind. 1870, pl. 3, fig. 7; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, pp. 111, 407; Theobald, Cat. Shells Brit. India, 1876, p. 36; Nevill, Hand List, i, 1878, p. 270.

Cyclophorus (*Salpingophorus*) *cryptomphalus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 107; id., Cat. Pneum. 1899, p. 19; Kobelt, Das Tierreich, Lief. 16, 1902, p. 110; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 643, pl. 91, fig. 5.

Original description:—"Testa umbilicata, globoso-depressa, solida, oblique striatula, striis obsoletis confertis decussata, albida, superne rufo-castanea albido-fulgurata, fascia lata mediana albida et infra altera lata castanea cincta; spira turbinata, apice acutiusculo, sutura submarginata, anfractibus 5 convexis, ultimo rotundato, subtus valde convexo; apertura subobliqua circulari, albida; peristomate duplici breviter adnato, interno vix porrecto, expansiusculo, externo incrassato, reflexo, supra umbilicum angustiusculum subobtectum late auriculato-expanso. Operc. —— ?

"Diam. major 40, minor 32, axis 25 mill."

Hab. Burma: Ava (*Oldham*); Mya Leit Doung (*Blanford*).

"It is allied to *Cycl. volvulus*, Müll., but it is distinguished by its more depressed form, and by the auriculate process covering the umbilicus, as in some of the Philippine *Cyclophori*." (*Benson.*)

87. **Cyclophorus cybeus**, *Benson.*

Leptopoma cybeus, Benson, A. M. N. H. ser. 2, xix, 1857, p. 205; Theobald, J. A. S. B. xxvii, 1858, p. 318; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 74; id., Novit. Conch. ser. 1, ii, 1860, p. 146, pl. 37, figs. 28–30; Reeve, Conch. Icon. xiii, 1861, *Leptopoma*, pl. 1, fig. 6.

Cyclophorus cybeus, Hanley & Theobald, Conch. Ind. 1870, pl. 6, fig. 1; Theobald, Cat. Shells Brit. India, 1876, p. 37; Nevill, Hand List, i, 1878, p. 268.

Cyclophorus (*Glossostylus*) *zebrinus*, var. *cybeus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxxi, 1899, p. 133; id., Cat. Pneum. 1899, p. 101.

Cyclophorus (*Glossostylus*) *zebrinus*, var. *cybea*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 123.

Original description:—"Testa anguste umbilicata, tenui, turbinato-conica, striatula, lineis elevatis remotis spiralibus cincta, albida, strigis castaneis undulatis picta; spira conica, apice obtusiusculo, sutura impressa; anfractibus 5 convexiusculis, ultimo acute carinato; apertura magna vix obliqua, subcirculari, superne angulata; peristomate expanso-reflexo, margine columellari sinuato. Operculo corneo, 8-spirato.

"Diam. major 20, minor 16, axis 14 mill." (*Benson.*)

Hab. India: Nanclai Ponji, Assam (*Theobald*).

88. **Cyclophorus exul**, *Benson.*

Cyclophorus exul, Benson, A. M. N. H. ser. 2, xiv, 1854, p. 412; Adams, Gen. Rec. Moll. ii, 1855, p. 280; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 46; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 13, fig. 53; Hanley & Theobald, Conch. Ind. 1870, pl. 47, fig. 7; Theobald, Cat. Shells Brit. India, 1876, p. 36; Nevill, Hand List, i, 1878, p. 265.

Cyclophorus (*Glossostylus*) *exul*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 107; id., Cat. Pneum. 1899, p. 19; Kobelt, Das Tierreich, Lief. 16, 1902, p. 111; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 644, pl. 91, fig. 6.

Original description:—"Testa angustissime umbilicata, fere perforata, globoso-turbinata, tenui, undique lineis spiralibus vix elevatis, superne 8–9 valde obtusis, striisque obliquis teneribus decussata; sub epidermide fusca, tenui, albida; superne castaneo flexuoso-strigata, fascia nulla mediana cincta; spira turbinata, apice obtusulo, rufescente, suturis distinctis. Anfractibus 5 convexis, ultimo rotundato. Apertura vix obliqua, subcirculari, superne angulata; peristomate simplici, tenui, expanso, reflexiusculo, vix continuo, margine columellari umbilicum non pervium subtegente.

"Diam. major $25\frac{1}{2}$, min. 20, alt. 17 mill. Apert. intus 13 mill. longa."

Hab. India: Bhamoury (*Boys*); Sikkim, Darjeeling (*Stoliczka*).

"This shell differs from the pale-lipped *C. pyrotrema*, in which the aperture is not fully developed, by its more globose form, ventricose last whorl, small impervious umbilicus, more regular sculpture above, stronger sculpture below, thinness, pale colour, and the absence of any medial fascia. From the pale-lipped variety of *C. stenomphalum* with undeveloped peristome, it differs by the greater breadth of the aperture in proportion to its length, its non-pervious umbilicus, the absence of any carina at the periphery, the more closely sulcate and regular sculpture above, the extension of the sculpture on the under side into the umbilicus, its pale suite of colours, and by the absence of any colouring below the periphery. From *C. indicus* it may be known by the absence of keel, suite of colours, sculpture, and aperture." (*Benson.*)

Nevill doubted its validity as a species, for in his Hand List, while admitting the name, he adds in parenthesis "? small var. of *C. himalayanus*." It may be that the shells collected by Stoliczka in Sikkim differ somewhat from the type. Another set of eight shells, collected also by Stoliczka at Kurseong, near Darjeeling, are separated by Nevill as a variety which, however, he does not name, but he adds in parenthesis "? *C. polynema*, Benson."

89. **Cyclophorus fulguratus**, *Pfeiffer*.

Cyclostoma fulguratum (*Cyclophorus*), Pfeiffer, Proc. Zool. Soc. 1852, p. 63.

Cyclostoma fulguratum, Pfeiffer, Conch.-Cab., Cyclostomaceen, 1854, p. 345, pl. 45, figs. 9, 10.

Cyclophorus fulguratus, Pfeiffer, Zeits. Malak. viii, 1852, p. 141; id., Mon. Pneum. 1852, p. 80; id., Cat. Phaneropn. Brit. Mus. 1852, p. 55: Adams, Gen. Rec. Moll. ii, 1855, p. 280; Benson, A. M. N. H. ser. 2, xvii, 1856, p. 232; Theobald, J. A. S. B. xxvi, 1857, p. 247; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 9, fig. 35; Blanford, J. A. S. B. xxxi, 1862, p. 144; id., op. cit. xxxiv, 1865, p. 96; Hanley & Theobald, Conch. Ind. 1870, pl. 3, fig. 3; Morelet, Ser. Conch. iv, 1875, p. 283; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 102; Theobald, Cat. Shells Brit. India, 1876, p. 36, Hanley & Theobald, Conch. Ind. 1876, pl. 144, fig. 1; Nevill, J. A. S. B. xlvi, 1877, p. 28; Nevill, Hand List, i, 1878, p. 271; id., in Anderson, Zool. Res. Exp. W Yunnan, 1879, p. 889; Tapparone Canefri, Ann. Mus. Civ. Genova, ser. 2, vii, 1889, p. 308.

Cyclophorus (*Glossostylus*) *fulguratus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 107; id., Cat. Pneum. 1899, p. 19; Kobelt, Das Tierreich, Lief. 16, 1902, p. 112.

Original description:—" C. testa umbilicata, depresso-turbinata, solida, oblique striatula, sub lente confertissime decussata, alba, strigis fulguratis, castaneis superne elegantissime picta; spira turbinata, apice obtusula, cornea; anfractibus 5, convexis, ultimo rotundato, ad peripheriam fascia alba et infra eam, nigricanti-castanea ornata, circa umbilicum angustum, vix pervium albo; apertura parum obliqua, subcirculari, intus livescente, nitida; peristomate simplice, fulvido, interrupto, marginibus callo tenui

junctis, dextro et basali æqualiter expansis, columellari supra umbilicum dilatato, patente.

"Diam. maj. 19, min. 23, alt. 19 mill." (*Pfeiffer.*)

Hab. Burma: Rangoon (*Theobald*); Puppa Hill, Thyat Myo, Thondoung, Prome and Henzada Districts (*Blanford*); Prome and Meimboo (*Anderson*); Prome (*Fea*). Siam (*Morelet*). Tonkin (*Ancey*).

Var. **rangunensis**, *Kobelt.*

Cyclophorus fulguratus, var., Pfeiffer, Novit. Conch. ser. 1, iii, 1869, p. 440, pl. 98, figs. 1, 2.

Cyclophorus (*Glossostylus*) *fulguratus*, var. *rangunensis*, Kobelt, Conch.-Cab., Cyclophoridae, i, 1908, p. 647, pl. 93, figs. 1, 2.

Original description:—"Testa umbilicata, depresso-turbinata, solida, oblique striatula, sub lente confertissime decussata, alba, strigis fulguratis castaneis superne elegantissime picta; spira turbinata, apice obtusula, cornea; anfr. 5 convexi, ultimus rotundatus, ad peripheriam fascia alba et infra eam nigricanti-castanea ornatus, circa umbilicum angustum, vix pervium albus; apertura parum obliqua, subcircularis, intus livescens, nitida; perist. simplex, fulvidum, interruptum, marginibus callo junctis, dextro et basali æqualiter expansis, columellari supra umbilicum dilatato, patente." (*Pfeiffer.*)

Diam. maj. 45, min. 37, alt. 30 mm.

Hab. Burma: between Thyat Myo and Rangoon (*Blanford*).

90. **Cyclophorus fuscicolor**, *Godwin-Austen.*

Cyclophorus fuscicolor, Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 173, pl. 8 A, fig. 1.

Cyclophorus (*Glossostylus*) *fuscicolor*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 112.

Original description:—"Shell umbilicated, globosely turbinate, covered with a greyish umber-brown epidermis, with radiating longitudinal lines of ornamentation, the bands of colour rather broader towards the apex, but throughout very close together, in some specimens coalescing on the last whorl into a uniform dark shade of brown. Spire conical, apex sharp. Whorls 6, well rounded, with a single slightly raised ridge upon the keel. Aperture circular, sub-oblique, peristome continuous, double, very slightly reflected, Within the aperture grey.

"Alt. 1·24 [31 mm.], major diam. 2·30 inches [58 mm.]."

Hab. India: Dafla Hills, Assam (*Godwin-Austen*).

"This is a very distinct form allied to *C. bensoni* from the southern face of the Khasi Hills, shewing towards the apex in some specimens a tendency to the zigzag painting of that shell, but the uniform, striate, and sober colouring of the rest of the whorls is a very marked character. Two specimens have a moderately broad white band on the periphery, owing to the abrasion of the epidermis upon the raised ridge of the keel." (*Godwin-Austen.*)

91. Cyclophorus himalayanus, *Pfeiffer*.

Cyclostoma himalayanum, Pfeiffer, Proc. Zool. Soc. 1851, p. 242; id., Conch.-Cab., Cyclostomaceen, 1853, p. 247, pl. 33, figs. 10, 11.
Cyclophorus himalayanus, Pfeiffer, Zeits. Malak. viii, 1852, p. 138; id., Cat. Phaneropn. Brit. Mus. 1852, p. 36; Benson, A. M. N. H. ser. 2, xiv, 1854, p. 414; Adams, Gen. Rec. Moll. ii, 1855, p. 280; Theobald, J. A. S. B. xxvii, 1858, p. 321; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 4, fig. 14 *a*; Hanley & Theobald, Conch. Ind. 1870, p. 16, pl. 34, fig. 4; Theobald, Cat. Shells Brit. India, 1876, p. 36; Nevill, Hand List, i, 1878, p. 265.
Cyclophorus (*Glossostylus*) *himalayanus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 107; id., Cat. Pneum. 1899, p. 19; Kobelt, Das Tierreich, Lief. 16, 1902, p. 112; id. Conch.-Cab., Cyclophoridae, i, 1908, p. 674, pl. 98, figs. 4, 5.

Original description:—" C. testa umbilicata, globoso-turbinata, solidula, costis spiralibus obtusis, 10–12, lineisque interjacentibus obsoletis sculpta, sub epidermide decidua, albida; spira turbinata, superne rufa, acutiuscula; anfractibus 5, convexiusculis, ultimo ventroso, circa umbilicum angustum, infundibuliformem vix compresso; apertura subverticali, circulari; peristomate simplice, continuo, breviter adnato, fusco-igneo, subincrassato, breviter expanso, superne subangulato.—Operculum ?

" Diam. maj. 48, min. 39, alt. 35 mill." (*Pfeiffer.*)

Hab. India: Darjeeling (*Theobald*, *Stoliczka*, *Blanford*, *Mainwaring*); Himalayas.

92. Cyclophorus indicus, *Deshayes*.

Cyclostoma indicum, Deshayes, in Bélanger, Voy. Ind. Orient. Zool. 1832, p. 415, pl. 1, figs. 4, 5; Philippi, Abb. i, part 5, 1844, p. 104, pl. 1, fig. 2; Sowerby, Thes. Conch. i, 1850, p. 163*, pl. 31 B, figs. 320, 321; Pfeiffer, Conch.-Cab., Cyclostomaceen, 1853, p. 248, pl. 33, figs. 3, 4.
Cyclophorus indica, Deshayes, in Lamarck, Hist. Anim. s. vert. Ed. 2, viii, 1838, p. 363.
Cyclophorus indicus, Pfeiffer, Zeits. Malak. viii, 1852, p. 141; id., Mon. Pneum. 1852, p. 77; id., Cat. Phaneropn. Brit. Mus. 1852, p. 53; Benson, A. M. N. H. ser. 2, xiv, 1854, p. 415; Adams, Gen. Rec. Moll. ii, 1855, p. 280; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 4, fig. 15; Hanley & Theobald, Conch. Ind. 1870, p. 23, pl. 48, fig. 3; Theobald, Cat. Shells Brit. India, 1876, p. 36; Nevill, Hand List, i, 1878, p. 265.
Cyclophorus (*Glossostylus*) *indicus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 107; id., Cat. Pneum. 1899, p. 19; Kobelt, Das Tierreich, Lief. 16, 1902, p. 113.

Original description:—" C. testa orbiculata, turbinata, apice acuta, transversim striata; striis grossiusculis distantibus; anfractibus convexis, fusco-marmoratis; ad peripheriam linea nigra distinctis; apertura aurantia circulari; marginibus incrassatis, dilatatis.

"Cette belle espèce de Cyclostome est remarquable par sa taille et ses couleurs ; il a la forme d'un turbo ; sa spire, conique et pointue au sommet, se compose de six ou sept tours très convexes, à suture simple et à peine creusée, le dernier tour est très convexe. Sa circonference est subcarinée et au centre il est pourvu d'un trou ombilical très profond et assez étroit. L'ouverture est d'un beau jaune orangé, elle est oblique à l'axe ; ses bords sont épaissis et renversés en dehors. La surface extérieure est couvert de stries fines et subgranuleuses ; quelques unes, un peu plus grosses que les autres, sont distantes et ne se montrent qu'à la partie supérieure de la coquille.

"La coloration est peu variable ; sur un fond d'un fauve pâle se montrent des marbrures, et souvent des flammules longitudinales, d'un brun plus ou moins foncé, suivant les individus. A la circonference, où il existe une carène peu saillante, se montre une zone transverse d'un brun noirâtre, au dessous de laquelle on en voit deux ou trois autres beaucoup plus étroites qui entourent l'ombilic. Diam. 40 mm." (*Deshayes.*)

Hab. India : Elephanta Island (*Bélanger*) ; Western Ghats and Bombay (*Blanford*) ; Matheran (*Fairbank*).

93. **Cyclophorus koboensis**, *Godwin-Austen.*

Cyclophorus (*Glossostylus*) *koboensis*, Godwin-Austen, Records Ind. Mus. viii, 1915, p. 495, pl. 38, fig. 4.

"Shell turbinate, keeled, umbilicus open, not concealed by the peristome. Sculpture carinate, as described, splashes and zigzags of darker tint, giving a mottled appearance. Colour madder-brown, with a distinct dark brown band below the keel, ochraceous white beneath. Spire conic, depressed, apex very fine. Suture impressed. Whorls nearly 6. Aperture circular. Peristome double, inner lip continuous, together thick and reflected. Columellar margin vertically rounded. Operculum flat, multispiral, the whorls about 6, defined by a raised thread-like spiral.

"Major diam. 30–33 ; alt. axis 12–15 mm." (*Godwin-Austen.*)

Hab. India : Abor Hills, Kobo, on right bank of Tsanspu or Brahmaputra (*Kemp*) ; Rotung (*Oakes*).

94. **Cyclophorus patens**, *Blanford.*

Cyclophorus patens, Blanford, J. A. S. B. xxxi, 1862, p. 143 ; id., op. cit. xxxiv, 1865, p. 96 ; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 62 ; id., Novit. Conch. Ser. 1, iii, 1869, p. 441, pl. 98, figs. 3, 4 ; Hanley & Theobald, Conch. Ind. 1870, pl. 3, fig. 5 ; Theobald, Cat. Shells Brit. India, 1876, p. 36.

Cyclophorus fulguratus, var. *patens*, Theobald, J. A. S. B. xxxii, 1863, p. 376 ; xxxiii, 1864, p. 247 ; Nevill, op. cit. xlvi, 1877, p. 28 ; id., Hand List, i, 1878, p. 271.

Cyclophorus (*Glossostylus*) *patens*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 107 ; id., Cat. Pneum. 1899, p. 19 ; Kobelt, Das Tierreich, Lief. 16, 1902, p. 116 ; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 642, pl. 91, figs. 4, 8, 9.

Original description:—"Testa subanguste umbilicata, globoso-turbinata, nitida, subglabra, oblique striatula, subtilissime decussata, albida, plerumque obsolete fulvo-strigata, fascia unica, 2–3 mm. lata, nigricante castanea, infra peripheriam circumdata; rarius superne purpurascenti-castaneo-picta vel strigata, subtus castanea, periomphalo solo albido. Spira conica, apice acutiuscula, sutura impressa. Anfr. 5–5½ convexi, ultimus rotundatus, vix descendens; umbilicus pervius. Apertura fere verticalis, circularis, intus flaveola, peristoma simplex, breviter adnatum, sublate angulatim planulato-expansum, margine columellari reflexum, fulvum, læte aurantiacum vel flammeum. Operc. distincte 6-spiratum, corneum, nucleo centrali interno minime prominente.

	mm.	inches.		mm.	inches.
"Diam. maj. (exempli majoris)	38	or 1·5,	minoris	29	or 1·15
„ min. „	29	1·1	„	21	0·82
Alt.	26	1	„	19	0·75
Ap. diam. intus.	17	0·6	„	13	0·5

"This species is remarkable for its flat, disk-shaped expanded peristome, usually of a bright orange or scarlet colour, and for the absence of marked sculpture, and, in most specimens, of any conspicuous coloration, except a single broad dark chestnut stripe below the periphery." (*Blanford.*)

Hab. Burma: Thayet Myo, Prome, and Henzada, Prov. Pegu (*Blanford*).

Blanford refers to the fact that Theobald classes *C. patens* as a variety of *C. fulguratus*, but does not agree with this view. He states that both occur together at Thayet Myo and are very distinct, *C. patens* having a broad, rather thin disk-like expanded peristome, while the lip of *C. fulguratus* is much thicker but only moderately expanded. The former also is much smoother.

95. Cyclophorus pearsoni, *Benson.*

Cyclostoma pearsoni, Benson, A. M. N. H. ser. 2, viii, 1851, p. 185; Pfeiffer, Conch.-Cab., Cyclostomaceen, 1854, p. 380, pl. 49, figs. 34–36; Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 173.

Cyclophorus pearsoni, Pfeiffer, Zeits. Malak. viii, 1851, p. 138; id., Cat. Phaneropn. Brit. Mus. 1852, p. 38; id., Mon. Pneum. 1852, p. 58; Benson, A. M. N. H. ser. 2, xiv, 1854, p. 414; Adams, Gen. Rec. Moll. ii, 1855, p. 280; Theobald, J. A. S. B. xxvii, 1858, p. 317; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 3, fig. 10; Hanley & Theobald, Conch. Ind. 1870, pl. 48, fig. 5, 1876, p. xv (not pl. 1, fig. 6); Theobald, Cat. Shells Brit. India, 1876, p. 36; Nevill, Hand List, i. 1878, p. 271.

Cyclophorus (*Glossostylus*) *pearsoni*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix. 1897, p. 107; id., Cat. Pneum. 1899, p. 19; Kobelt, Das Tierreich, Lief. 16, 1902, p. 116.

Original description:—"Testa umbilicata, depresso-turbinata

lævigata, obsolete spiraliter striata, supra castaneo marmorata et late fasciata, subtus spiraliter castaneo-lineata, fascia alba ad periphæriam, subtus altera nigro-castaneo concurrente ornata; spira depresso-conoidea, apice acuto; anfractibus 5 convexiusculis, ultimo lato, subtus convexo; apertura vix obliqua, ampla, circulari, intus cærulescente; peristomate expanso, undique reflexo, læte aurantio, marginibus callo brevi junctis; umbilico subangusto, pervio, intus angustiori.

"Diam. major 42, minor 33, axis 25 mill." (*Benson.*)

Hab. India: Khasi Hills, Assam (*Pearson*); Dafla Hills, Assam (*Godwin-Austen*); Tezpur (*Stoliczka*); Sylhet and Gauhati (*Nevill*); Lacat (*Theobald*).

"In form, sculpture, and markings *C. Pearsoni* much resembles, in the back view, the shell figured by Sowerby, no. 128, pl. 27, of the 'Thesaurus' as *C. perdix*, but the spire is less acute. It differs otherwise in the narrower umbilicus, in the orange colour and rounded edge of the peristome (which is destitute of the flatness observable in *C. perdix*), as well as in the amplitude of the aperture, convexity and want of keel in the whorls, and in the absence of the articulated band at the suture." (*Benson.*)

Nevill mentions a var. *minor*, from the Khasi Hills, as being smaller, with less open umbilicus, and more angulate periphery. He also refers to a peculiar small variety from Sylhet, which he does not name, with a much raised spire, the last whorl almost detached, and the periphery acutely keeled. This, however, can scarcely be considered a variety, and must rather be regarded as a monstrosity.

Var. **fuscicolor**, *Nevill.*

Cyclophorus pearsoni, var. *fuscicolor* (Godwin-Austen), Nevill, Hand List, i, 1878, p. 271; Kobelt, Das Tierreich, Lief. 16, 1902, p. 116.

"A large variety with a trifle more open umbilicus and still more sombre coloration." (*Nevill.*)

Hab. India: Dafla Hills and Khasia Hills, Assam (*Godwin-Austen*).

Var. **subalabastrum**, *Nevill.*

Cyclophorus fulguratus, Hanley & Theobald, Conch. Ind. 1870, p. 2, pl. 3, fig. 3 (non Pfeiffer).

Cyclophorus pearsoni, var. *subalabastrum*, Nevill, Hand List, i, 1878, p. 271; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 107; id., Cat. Pneum. 1899, p. 19; Kobelt, Das Tierreich, Lief. 16, 1902, p. 116.

Differs from the type by the absence of markings, the shell being of a uniform dull white colour.

Hab. India: Chittagong (*Nevill*). Burma: Arakan Hills (*Kurz*).

Several specimens of the typical form, received by me from a native collector in the Khasi Hills in 1899, comprise one shell

which I refer to the var. *fuscicolor*. The periostracum is in a beautiful state of preservation and shows no trace of chestnut marbling, and the white band above the periphery—angulated in this specimen—is absent, while the narrow band below the periphery is deep black.

96. **Cyclophorus sidiensis**, *Godwin-Austen.*

Cyclophorus (*Glossostylus*) *sidiensis*, Godwin-Austen, Records Ind. Mus. viii, 1915, p. 495, pl. 38, fig. 3.

Original description:—" Shell conoidly turbinate, sharply keeled, umbilicus narrow and much concealed by the peristome. Sculpture, 3 distinct spiral liræ above the keel, distant with finer liration intermediate, underside liræ fine and close together. Colour madder brown. Splashings and spotting near the suture, giving a beautiful mottled pattern. Spire high, conical, sides flat, apex pointed. Suture moderately impressed. Whorls 5, side flatly convex. Aperture circular, suboblique. Peristome white, not much thickened, reflected and expanded. Columellar margin curving vertically.

" Major diam. 25·0 ; alt. axis 14·0 mm.

Hab. India : on Sidi River, Abor Hills (*I. H. Burkhill*).

" Rotung (*Kemp*). Major diam. 30·0 ; alt. axis 14·5 mm.

" Mr. Oakes also found one specimen of this species in the Tsanspu Valley.

" The Sidi River is in the outer hills north of the Trigonometrical Station ' Nari ' (Siwalik) 2490." (*Godwin-Austen.*)

97 **Cyclophorus stenomphalus**, *Pfeiffer.*

Cyclostoma stenomphalum Pfeiffer, Zeits. Malak. iii, 1846, p. 44 ; id., Conch.-Cab., Cyclostomaceen, 1848, p. 59, pl. 8, figs. 5, 6 ; Benson, A. M. N. H. ser. 2, viii, 1851, p. 191.

Cyclophorus stenomphalus, Pfeiffer, Zeits. Malak. iv, 1847, p. 107 ; id., op. cit. viii, 1851, p. 140 ; id., Cat. Phaneropn. Br. Mus. 1852, p. 48 ; Benson, A. M. N. H. ser. 2, xiv, 1854, p. 414 ; Adams, Gen. Rec. Moll. ii, 1855, p. 280 ; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 4, fig. 16 ; Hanley & Theobald, Conch. Ind. 1870, pl. 34, fig. 1.

Cyclophorus himalayana, var. *stenomphalus*, Nevill, Hand List, i, 1878, p. 265.

Cyclophorus (*Glossostylus*) *stenomphalus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 108 ; id., Cat. Pneum. 1899, p. 20 ; Kobelt, Das Tierreich, Lief. 16, 1902, p. 118.

Original description:—" T. umbilicata, trochiformis, solida, superne costis spiralibus validis (interjectis pluribus minoribus) munita, fulvescens, saturatius obsolete marmorata et ad suturam articulato-fasciata ; spira turbinata, acuta ; anfr. 5½ convexi, ultimus ad peripheriam acute carinatus, basi ventrosus, spiraliter striatus ;

umbilicus angustissimus, vix pervius; apertura ampla, subcircularis; perist. duplex, internum pallide aurantiacum, externum expansum, subincrassatum, superne dilatatum, angulatum, margine columellari incrassato, breviter reflexo.—Diam. maj. 35, min. 28, alt. 24 mill." (*Pfeiffer.*)

Hab. India: Bhutan (*Stoliczka*); Elephant Island, near Bombay (*Watson*); Khasia Hills (*Theobald*).

98. **Cyclophorus tryblium**, *Benson.*

Cyclophorus tryblium, Benson, A. M. N. H. ser. 2, xiv, 1854, p. 413; Adams, Gen. Rec. Moll. ii, 1855, p. 280; Theobald, J. A. S. B. xxvii, 1858, p. 321; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 45; Hanley & Theobald, Conch. Ind. 1870, pl. 48, fig. 1; Theobald, Cat. Shells Brit. India, 1876, p. 36.

Cyclophorus aurora, var. *tryblium*, Nevill, Hand List, i, 1878, p. 265.

Cyclophorus (*Glossostylus*) *tryblium*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix. 1897, p. 108; id., Cat. Pneum. 1899, p. 20; Kobelt, Das Tierreich, Lief. 16, 1902, p. 120; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 659, pl. 96, fig. 2.

Original description:—"Testa subaperte umbilicata, depresso-turbinata, solida, superne costis 7–8 planulatis munita, albida, castaneo marmorata, subtus lævigata, versus periomphalum albida, fascia nigricante ad periphæriam ornata; spira turbinata, superne rubella, apice acutiuscula. Anfractibus 5 convexis, ultimo subdepresso, obsolete angulato, subtus valde convexo; umbilico profundo, infundibuliformi. Apertura vix obliqua, subcirculari, intus lutescente; peristomate subsimplice, continuo, breviter adnato, pallide aurantio, subincrassato, superne angulatim adscendente, margine dextro subrevoluto, columellari subexpanso, planato. Operc.?

"Diam. major 47, minor 38, alt. 29 mill. Apert. intus 20 mill. longa."

Hab. Sikkim: Darjeeling (*Chapman*).

"Nearly equal in size to *C. himalayanus*, Pfr., from the same locality, it is distinguished from it by its form, depressed last whorl, wide umbilicus, sculpture, verticality of the angle at the upper part of the mediocre aperture, and by the colour of the peristome. There are indications of a broad light chestnut zone below the dark band at the periphery. The compressed character of the last whorl presents a strong contrast to the subglobose form of *C. himalayanus* in that part." (*Benson.*)

Var. **conica**, *Hanley & Theobald.*

Cyclophorus tryblium, var. *conica*, Hanley & Theobald, Conch. Ind. 1870, p. 22, pl. 47, fig. 10.

Cyclophorus (*Glossostylus*) *tryblium*, var. *conica*, Kobelt, Conch.-Cab., Cyclophoridae, i, 1908, p. 660, pl. 92, fig. 7.

Considerably smaller than the type, measuring 31 mm. in diameter (incl. perist.) and 29·5 in height (incl. aperture). The last whorl is rounded, the peristome is white, broadly reflected, double. The figure of the shell in Conch.-Ind. is copied by Kobelt.

Subgenus **SALPINGOPHORUS**, *Kobelt & Möllendorff.*

Annularia (part), Schumacher, Essai Nouv. Syst. Vers Test. 1817, p. 196.

Salpingophorus (part), Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, p. 108; id., Cat. Pneum. 1899, p. 20; Kobelt, Das Tierreich, Liet. 16, 1902, p. 124.

Type, *Cyclostoma perdix*, Broderip & Sowerby.

Range. India, Farther India, Ceylon, Malaysia.

"Shell with rapidly increasing whorls, the last dilated in front, peristome dilated and reflexed." (*Kobelt* in German.)

99. **Cyclophorus aborensis**, *Godwin-Austen.*

Cyclophorus aborensis, Godwin-Austen, Records Ind. Mus. viii, 1915, p. 494, pl. 38, fig. 1.

Original description:—"Shell globosely turbinate, openly umbilicated, solid. Sculpture, carinate spiral liræ wide apart, 5 conspicuous, the last peripheral with much finer intermediate liration, not distinctly seen in old specimens. Colour (specimen from Renging) a rich ruddy brown over most of the surface, beneath pale ochraceous, a few splashings of the same colour next the suture; in the type and in most old shells much bleaching takes place. Spire fairly high, conic, apex fine. Suture impressed. Whorls 5, rather rapidly increasing, rounded. Aperture circular, suboblique. Peristome white, solid, continuous, very slightly reflected. Columellar margin sub-vertically curving.

"Major diam. 5·60 [56·0], alt. axis 24·0, alt. aperture 28·0 mm."

Hab. India: Rotung, 2000 ft., near Egar stream (*S. W Kemp*); Kalek and Renging, 2000 ft. (*Oakes*).

"Mr. Oakes sent specimens from Kalek and Renging (figs. 1, 1*a*), and from Rami Lambang two specimens of a dwarf variety only 33 mm. in major diameter." (*Godwin-Austen.*)

100. **Cyclophorus alabastrinus**, *Pfeiffer.*

Cyclostoma (*Cyclophorus*) *alabastrinum*, Pfeiffer, Proc. Zool. Soc. 1854, p. 126.

Cyclophorus alabastrina, Pfeiffer, Novit. Conch. ser 1, i, 1855, p. 3, pl. 1, figs. 4, 5; id., Mon. Pneum. Suppl. 1, 1858, p. 41; Suppl. 2, 1865, p. 62; Suppl. 3, 1875, p. 102; Theobald, Cat. Shells Brit. India, 1876, p. 35; Hanley & Theobald, Conch. Ind. 1876, pl. 144, fig. 5.

? *Cyclophorus alabastrum*, H. Nevill, Enum. Helic. Pneum. Ceylon, 1876, p. 4; G. Nevill, Hand List, i, 1878, p. 270.

? *Cyclophorus aurantiacus*, var. *alabastrinus*, Nevill, Hand List, i, 1878, p. 266.

Cyclophorus (*Salpingophorus*) *alabastrinus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 108; id., Cat. Pneum. 1899, p. 20; Kobelt, Das Tierreich, Lief. 16, 1902, p. 124; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 666, pl. 97, figs. 4–6.

Original description:—"C. testa umbilicata, subdepresso-turbinata, solida, sublævigata, spiraliter minutissime striata, alabastrina; spira turbinata, sursum livido-fusca, apice convexiuscula; anfr. 5, convexis, celeriter accrescentibus, ultimo peripheria obsoletissime subangulato et antice rudimenta fasciæ castaneæ exhibente, basi inflato; umbilico angusto, vix pervio; apertura vix obliqua, circulari; perist. fulvo-carneo, continuo, breviter adnato, crasso, undique reflexo, margine sinistro subdilatato.

"Diam. maj. 45, min. 34, alt. 25 mill." (*Pfeiffer.*)

Hab. Ceylon (*Thwaites*).

101. **Cyclophorus arthriticus**, *Theobald.*

Cyclophorus arthriticus, Theobald, J. A. S. B. xxxiii, 1864, p. 246; Hanley & Theobald, Conch. Ind. 1870, pl. 1, fig. 4; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 404; Theobald, Cat. Shells Brit. India, 1876, p. 35.

Cyclophorus flavilabris, var. *arthritica*, Nevill, Hand List, i, 1878, p. 273.

Cyclophorus (*Salpingophorus*) *arthriticus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 108; id., Cat. Pneum. 1899, p. 20; Kobelt, Conch.-Cab., Cyclophoridae, i, 1908, p. 648, pl. 93, figs. 3, 4, 6.

Original description:—"Testa umbilicata, turbinata, solidissima, striata, lineisque spiralibus flexuosis obscure decussata; sublævi, non polita, fuscente castanea fascia lata, alba mediana, interdum circumdata. Interdum colore omnino alba, spira pallide castanea, et fascia parva castanea sub-mediana ornata. Anfractibus quinque convexis, haud tarde crescentibus; ultimo valde capaci, rotundato. Apertura circulari. Peristomate expanso, reflexiusculo, valde incrassato, continuo, intus flavo, interdum cærulescente. Apice pallide purpurascente-rubicundula.

"Long. 52, lat. 39, alt. 37 mills. Apertura 29 mills." (*Theobald.*)

Hab. Burma: Pegu (*Theobald*); Rangoon (*Stoliczka*, *Theobald*).

Nearly allied to *C. flavilabris*, Bens., differing in sculpture, form, and greater solidity.

Var. **fulgurans**, *Theobald.*

Cyclophorus arthriticus, var. *fulgurans*, Theobald, Conch. Ind. 1870, p. 2, pl. 3, fig. 2; Martens, Arch. Naturg. lxv, part 1, 1899, p. 31.

Smaller than the type and flammulated on the penultimate whorl.

Hab. Burma: Padoukbin, Thyet Myo District (*Nötling*).

102. Cyclophorus aurantiacus, *Schumacher.*

Turbo volvulus, Chemn. Conch.-Cab. ix, sect. 2, 1786, p. 57, pl. 123, figs. 1064, 1065.

Annularia aurantiaca, Schumacher, Essai Nouv. Syst. Vers Test. 1817, p. 196.

Cyclostoma aurantiacum, Pfeiffer, Zeits. Malak. iii, 1846, p. 33; id., Conch.-Cab., Cyclostomaceen, 1847, p. 31, pl. 4, figs. 8, 9; id., Zeits. Malak. viii, 1851, p. 139.

Cyclophorus aurantiacus, Pfeiffer, Zeits. Malak. iv, 1847, p. 107; id., Mon. Pneum. 1852, p. 62; id., Cat. Phaneropn. Brit. Mus. 1852, p. 41; Theobald, J. S. A. B. xxvi, 1857, p. 245; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 1, fig. 3; Blanford, J. A. S. B. xxxiv, 1865, p. 96; Hanley & Theobald, Conch. Ind. 1870, pl. 33, fig. 4; Mörch, Journ. Conchyl. xx, 1872, p. 338; Theobald, Cat. Shells Brit. India, 1876, p. 35; Nevill, Hand List, i, 1878, p. 266; Martens, Arch. Naturg. lxv, part 1, 1889, p. 31; Tapparone-Canefri, Ann. Mus. Civ. Genova, ser. 2, vii, 1889, p. 307.

Cyclophorus aurantiacus, a. *typicus*, Martens, Journ. Linn. Soc., Zool. xxi, 1887, p. 158, pl. 14, figs. 1, 2.

Cyclophorus (*Salpingophorus*) *aurantiacus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 109; id., Cat. Pneum. 1899, p. 21; Kobelt, Das Tierreich, Lief. 16, 1902, p. 125; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 611, pl. 84, figs. 1, 2.

Cyclophorus malayanus (non Benson), de Morgan, Bull. Soc. Zool. France, x, 1885, p. 410.

Cyclophorus lowi, de Morgan, Le Naturaliste, vii, 1885, p. 69.

"T. depresso-turbinata, solida, confertim striata, lineis spiralibus, confertis obsolete decussata, nigricante-castanea, fulvido et albido marmorata; spira brevis, acutiuscula; anfr. $5\frac{1}{2}$ convexi, ultimus permagnus, subdepressus, peripheria magis minusve carinatus, basi pallidus, castaneo-lineatus; umbilicus magnus, infundibuliformis; apertura subobliqua, ampla, subcircularis, intus cœrulescens; perist. continuum, anfractui penultimo breviter adnatum, undique incrassato-expansum, carneum.—Operc. corneum, arctispirum, margine anfractuum lamelloso.—Diam. maj. 58, min. 46. Alt. 32 mill. Ap. intus 24 mill. diam." (*Pfeiffer.*)

Hab. Burma: Tongoop, Arakan and Ramri Island; Zwagabin, near Moulmein, Tenasserim (*Theobald*); Tranquebar (*Spengler*). Malay Peninsula: Bukit Pondong, Perak (*Townsend*).

Var. **pernobilis**, *Gould.*

Cyclostoma pernobilis, Gould, Proc. Boston Nat. Hist. Soc. i, 1844, p. 140; id., Boston Journ. Nat. Hist. iv, 1844, p. 458, pl. 24, fig. 11.

Cyclostoma pernobile, Pfeiffer, Conch.-Cab., Cyclostomaceen, 1847, p. 30, pl. 3, fig. 15.

Cyclophorus pernobilis, Theobald, Cat. Shells Brit. India, 1876, p. 36; Nevill, Hand List, i, 1878, p. 266; Tapparone-Canefri, Ann. Mus. Civ. Genova, ser. 2, vii, 1889, p. 307.

Cyclophorus aurantiacus, b. *pernobilis*, Martens, Journ. Linn. Soc., Zool. xxi, 1886, p. 159, pl. 14, figs. 3–6.

Cyclophorus (*Salpingophorus*) *aurantiacus*, var. *pernobilis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 109; id., Cat. Pneum. 1899, p. 21; Kobelt, Das Tierreich, Lief. 16, 1902, p. 125; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 612, pl. 82, figs. 5, 6, pl. 84, fig. 6.

Original description:—"Shell depressed-conical, apex acute, solid; whorls six, rapidly increasing and rising into a pyramidal spire, depressed near the suture. In the early stages the whorls are acutely carinated; but at maturity the last whorl is round and girt with an obtuse, whitish rib; the surface is rendered somewhat rugose, by rather conspicuous lines of growth, and coarse revolving lines, which, as they cross the finer longitudinal lines, seem to run in zigzag. Prevailing colour above is dusky brown, clouded by yellowish spots of various sizes, which on the posterior whorls, are arranged in radiating zigzag series; a broad space around the umbilicus, which is very large and deep, is light straw color, with occasional revolving black lines or bands; aperture ample, somewhat wider than high, bluish within; peristome moderately reflected, rounded, of a beautiful carmine, or bright cherry-red color, not continuous, but embracing less than one fourth the preceding whorl, across which space passes a callus of the same red colour. Diameter 2 inches, height 1 inch." (*Gould.*)

Hab. Burma: Tenasserim (*Theobald*); Bhamo (*Fea*). Mergui Archipelago: Kings Island (*Gould*).

Var. **nevilli**, *Martens.*

Cyclostoma aurantiaca, Pfeiffer, Conch.-Cab., Cyclostomaceen, 1847, p. 167, pl. 23, figs. 4, 5.

Cyclophorus pernobilis (non Gould), Hanley & Theobald, Conch. Ind. 1870, pl. 1, fig. 7.

Cyclophorus aurantiacus, c. *nevilli*, Martens, Journ. Linn. Soc., Zool. xxi, 1887, p. 159, pl. 15, figs. 1, 2; Tapparone-Canefri, Ann. Mus. Civ. Genova, ser. 2, vii, 1889, p. 307; Martens, Arch. Naturg. lxv, part 1, 1899, p. 31.

Cyclophorus (*Salpingophorus*) *aurantiacus*, var. *nevilli*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 109; id., Cat. Pneum. 1899, p. 21; Kobelt, Das Tierreich, Lief. 16, 1902, p. 125.

Cyclophorus (*Salpingophorus*) *aurantiacus nevilli*, Kobelt, Conch.-Cab., Cyclophoridae, i, 1908, p. 613, pl. 83, figs. 3, 4; pl. 84, fig. 5.

Original description:—"Magnus turbinatus, umbilico arctiore, rotundatus, periomphalio fusco-fasciolato, peristomate aurantio.

"Diam. maj. 55–58, alt. 37–41; apert. diam. 30–33½, alt. 29–31 millim." (*Martens.*)

Hab. Burma: Tavoy; Maingkwan, Hukon Valley, Chindwin District (*Nötling*); Thagata (*Fea*). Mergui Archipelgo: Sullivan Island (*Anderson*). Siam: Salang Island (*Weber*).

Var. **reevei**, *Martens.*

Cyclophorus speciosus (non Philippi), Reeve, Conch. Icon. xiii. 1861, *Cyclophorus*, pl. 1, fig. 4.

Cyclophorus malayanus (non Benson), Hanley & Theobald, Conch. Ind. 1870, p. 23, pl. 48, fig. 4.

Cyclophorus aurantiaca, d. *reevei*, Martens, Journ. Linn. Soc., Zool. xxi, 1887, p. 159, pl. 15, figs. 3, 4; Tapparone-Canefri, Ann. Mus. Civ. Genova, ser. 2, vii, 1889, p. 307; Martens, Arch. Naturg. lxv, part 1, 1899, p. 31.

Cyclophorus (*Salpingophorus*) *aurantiacus*, var. *reevei*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 109; id., Cat. Pneum. 1899, p. 21; Kobelt, Das Tierreich, Lief. 16, 1902, p. 125.

Cyclophorus (*Salpingophorus*) *aurantiacus reevei*, Kobelt, Conch.-Cab., Cyclophoridae, i, 1908, p. 614, pl. 84, figs. 3, 4.

Original description:—"Mediocris, subturbinatus, umbilico multo arctiore, infra fasciolatus, apertura subcirculari, peristomate aurantio.

"Diam. maj. 52, alt. 37; apert. diam. 28, alt. 27 millim." (*Martens.*)

Hab. Burma: Dungl, Matu, Upper Chindwin District (*Nötling*); Meetan (*Fea*). Mergui Archipelago: Kings Island, Sullivan Island.—Var. *minor*, Martens: Elphinstone Island (*Anderson.*)

Var. **andersoni**, *Martens.*

Cyclophorus malayanus (non Benson), Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 1, fig. 2.

Cyclophorus aurantiaca, e. *andersoni*, Martens, Journ. Linn. Soc., Zool. xxi, 1887, p. 159, pl. 15, figs. 5, 6.

Cyclophorus (*Salpingophorus*) *aurantiaca*, var. *andersoni*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 109; id., Cat. Pneum. 1899, p. 21; Kobelt, Das Tierreich, Lief. 16, 1902, p. 126.

Cyclophorus (*Salpingophorus*) *aurantiaca andersoni*, Kobelt, Conch.-Cab., Cyclophoridae, i, 1908, p. 614, pl. 83, figs. 5, 6.

Original description:—"Minor, subturbinatus, umbilico sat arcto, subangulatus, apertura subcirculari, peristomate rubescente.

"Diam. maj. 44–48, alt. 31–36, apert. diam. 24–27, alt. 23–25 millim." (*Martens.*)

Hab. Mergui Archipelago: Owen Island (*Anderson*).

According to von Martens this form much resembles the shell figured as *C. sublævigatus* in Conch. Ind. pl. 34, fig. 7

103. **Cyclophorus austenianus**, *Preston.*

Cyclophorus austenianus, Preston, Proc. Malac. Soc. London, xi, 1914, p. 20, text-fig.

Original description:—"Shell acutely turbinate, somewhat thin, strongly carinate at the pheriphery, pale reddish-brown, painted on the upper whorls with broad, zigzag flame-markings of dark chestnut, and with a broad, spiral band, or group of bands, on the base immediately below the peripheral keel; whorls 5, rapidly increasing, sculptured above with fine, closely set, spiral riblets, some of which coarsen into liræ below, crossed by very oblique, closely set, transverse striæ, which give the shell, especially on the upper half of the whorls, a finely granular appearance; base of shell

sculptured with fine, wavy, revolving striæ and moderately fine liræ, which become obsolete in the umbilical area; suture well impressed, incised, and slightly overhung below; umbilicus somewhat wide, deep; columella descending in a curve, a very thick, polished, transparent callus uniting it with the lip above, just behind its junction with the parietal wall; labrum white, thickened, laminiferons, rather narrowly expanded and reflexed; aperture sub-circular; interior of shell whitish, smooth, polished, showing the spiral liræ and dark, subperipheral bands through the test; operculum slightly concave, laminiferous, with central nucleus, having 7–8 whorls. Alt. 35·5, diam. maj. 42, min. 32·5 mm. Aperture: alt. 19·5, diam. 20 mm." (*Preston.*)

Hab. India: Naga Hills.

104. **Cyclophorus balteatus**, *Benson.*

Cyclophorus balteatus, Benson, A. M. N. H. ser. 2, xix, 1857, p. 207; Theobald, J. A. S. B. xxvi. 1857, p. 247; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 45; Suppl. 2, 1865, p. 64; Hanley & Theobald, Conch. Ind. 1870, pl. 3, fig. 1; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, pp. 103, 404; Nevill, Hand List, i, 1878, p. 266.

Cyclophorus (Salpingophorus) balteatus, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 109; id., Cat. Pneum. 1899, p. 21; Kobelt, Das Tierreich, Lief. 16, 1902, p. 126; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 647, pl. 92, fig. 5.

Original description:—"Testa mediocriter umbilicata, solidiuscula, depresso-turbinata, striata, rugis confertissimis vix undulatis spiralibus superne decussata, basi glabra, saturate castanea, baltea angusta mediana, superne laciniata, et periomphalo lato lacteis; anfractibus 5 convexis, celeriter accrescentibus, penultimo compressiusculo, ultimo rotundato, subtus convexo, ad suturam planulato, antice sensim descendente; apertura obliqua, ovato-circulari, intus lactea; peristomate expanso, inæqualiter incrassato-reflexo, albido, superne undato, marginibus callo brevi, superne angulato, junctis; umbilico profundo, extus infundibuliformi. Operculo —— ?

"Diam. major 40, minor 30, axis 20 mill."

Hab. Burma: Pegu (*Theobald*).

"Remarkable for its dark chestnut and milky-white bands, which recall, by their contrast and decided boundaries, the colouring of *Helix hæmastoma*. A few white dots may be observed near the suture of the antepenultimate whorl . Perhaps the irregularity of the peristome may not be constant; but if is so conspicuous, that it has not been deemed advisable to omit it as a specific character." (*Benson.*)

105. **Cyclophorus beddomeanus**, *Preston.*

Cyclophorus beddomeanus, Preston, Proc. Malac. Soc. London, xi, 1914, p. 21, text-fig.

Original description:—"Shell large, turbinate, with rather

acute apex, thin, yellowish, with one broad super-pheripheral, blackish-brown band and a broad sub-peripheral band, immediately below which are two narrow bands of the same colour on the last whorl, the earlier whorls being reddish-brown, mottled with yellowish-grey; whorls 5, the last two rapidly increasing, sculptured with irregular lines of growth, crossed by rather broad, but flat, spiral ridges, the last whorl carinate at the periphery; suture incised, narrowly margined above; umbilicus moderately broad, deep; labrum continuous, somewhat thickened, but not reflexed, crimson; aperture large, sub-circular; interior of shell glossy, smooth, polished, bluish, the colour-bands being visible through the test; operculum laminiferous, with central nucleus, having about 8 convolutions. Alt. 44, diam. maj. 53·75, min. 40 mm. Aperture: alt. 24, diam. 25 mm." (*Preston.*)

Hab. India: Naga Hills.

A white-lipped variety is stated to occur also.

106. Cyclophorus birmanus, *Pfeiffer.*

Leptopoma birmanum, Pfeiffer, Mon. Pneum. 1852, p 117; id., Zeits. Malak. viii, 1852, p. 147; id., Cat. Phaneropn. Brit. Mus. 1852, p. 83; id., Mon. Pneum. Suppl. 1, 1858, p. 76; Suppl. 2, 1865, p. 85; id., Suppl. 3, 1875, p. 134; Stoliczka, J. A. S. B., xli, 1872, p. 262 (*C. siamensis*, juv.).

Cyclostoma birmanum, Pfeiffer, Conch.-Cab., Cyclostomaceen, 1854, p. 363, pl. 47, figs. 4–7.

Cyclophorus birmanus, Adams, Gen. Rec. Moll. ii, 1855, p. 279.

Original description:—"T. perforata, globoso-conica, tenuis, acute carinata, oblique striata, lineis spiralibus obsoletissimus sculpta, parum nitida, diaphana, fusco-lutea, strigis latis angulatis et fasciis interruptis castaneis ornata; spira turbinata, obtusula; anfr. $4\frac{1}{2}$ convexiusculi, ultimus basi tumidus; apertura parum obliqua, subtetragona, intus cœrulescens, margaritacea; perist. simplex, acutum, marginibus remotis, rectis (an serius reflexis?).—Operc. immersum, membranaceum, arctispirum, luteo-corneum.—Diam. maj. $14\frac{1}{2}$, min. 12, alt. 10 mill. ap. verticaliter $8\frac{1}{2}$ mill. longa, $7\frac{1}{2}$ lata." (*Pfeiffer.*)

Hab. Burma.

Stoliczka considered *C. birmanus* to be based on an immature specimen. The figure of the shell given by Pfeiffer hardly warrants this view, and I consider the best course to retain the species until better evidence is forthcoming as to its status.

107. Cyclophorus cucullatus, *Gould.*

Cyclostoma cucullatus, Gould, Proc. Boston Soc. Nat. Hist. vi, 1856, p. 14; id., Otia Conch. 1862, p. 221.

Cyclophorus cucullatus, Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 44; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 11, fig. 44; Pfeiffer, op. cit. Suppl. 2, 1865, p. 63.

Cyclophorus (*Salpingophorus*) *cucullatus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 109; id., Cat. Pneum. 1899, p. 21; Kobelt, Das Tierreich, Lief. 16, 1902, p. 127.

Original description:—"T. umbilicata, depresso-conica, solidula, lineis incrementi et lineis volventibus tenuibus superne insculpta, straminea ferrugineo tessellatim marmorata, et infra lineata, apice nigro; anfr. 5 rotundatis; sutura profunda: apertura (genuina) elliptica; peritremate reflexo, et cucullo lato unicolori oblique truncato valde protractro; fauce flava.

"Diameter, exclusive of false lip, $\frac{9}{10}$ in.; projection hood-lip, $\frac{1}{4}$ inch; axis $\frac{5}{8}$ inch.

"With the exception of the aperture, the shell is much like small specimens of *C. linguiferum* or still more like *C. irroratum*, Sowb. Its remarkable hood is sufficiently characteristic." (*Gould.*)

"T. umbilicata, turbinato-depressa, solida, sublævigata, albida, fasciis interruptis fuscis picta; spira turbinata, apice cornea, obtusula; anfr. $4\frac{1}{2}$ convexi, ultimus obsolete subangulatus, antice rotundatus; umbilicus mediocris, pervius; apertura obliqua, subcircularis; perist. duplex: externum expansum et reflexiusculum, internum latere dextro in unguem elongatum, extus striatum, intus lævigatum, fulvidum productum.—Operc.?—Diam. maj. 27, min. 20, alt. 14 mill. Ap. in fundo 8 mill. diam." (*Pfeiffer.*)

Hab. Mergui Archipelago (*Rev. J. Benjamin*).

108. **Cyclophorus excellens**, *Pfeiffer*.

Cyclostoma (*Cyclophorus*) *excellens*, Pfeiffer, Proc. Zool. Soc. 1854, p. 126.

Cyclophorus excellens, Pfeiffer, Novit. Conch. ser. 1, i, 1855, p. 11, pl. 4, figs. 1, 2; id., Mon. Pneum. Suppl. 1, 1858, p. 53; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 2, fig. 5; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 66; Suppl. 3, 1875, p. 107.

Cyclophorus (*Salpingophorus*) *excellens*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 109; id., Cat. Pneum. 1899, p. 21; Kobelt, Das Tierreich, Lief. 16, 1902, p. 128; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 670, pl. 98, figs. 1, 2.

Original description:—"C. testa umbilicata, subturbinato-depressa, solida, confertim spiraliter sulcata, parum nitida, fusco-aurantiaca, strigis angustis, fulguratis, albis elegantissime picta; spira breviter turbinata, apice corneo, obtusulo; anfr. 5, convexis, rapide accrescentibus, ultimo carina funiformi alba et adjacente linea rufa cincto, superne turgido, juxta suturam excavato, basi pallido, circa umbilicum late infundibuliformem subangulato; apertura parum obliqua, subcirculari, intus margaritaceo-alba; perist. pallide carneo, continuo, breviter adnato, superne subangulato, margine dextro breviter patente, sinistro anguste reflexo.

"Diam. maj. 53, min. 42, alt. 24 mill." (*Pfeiffer.*)

Hab. Burma: Tenasserim.

109. **Cyclophorus expansus**, *Pfeiffer*.

Cyclostoma expansum, Pfeiffer, Proc. Zool. Soc. 1851, p. 242; id., Conch.-Cab., Cyclostomaceen, 1854, p. 293, pl. 39, figs. 20, 21.

Cyclophorus expansus, Pfeiffer, Zeits. Malak. viii, 1851, p. 139; id., Cat. Phaneropn. Brit. Mus. 1852, p. 43; Adams, Gen. Rec. Moll. ii, 1855, p. 280; Theobald, J. A. S. B., xxvi, 1857, p. 246; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 5, fig. 18; Hanley & Theobald, Conch. Ind. 1870, pl. 2, figs. 3, 4; Theobald, Cat. Shells Brit. Ind. 1876, p. 36; Godwin-Austen, J. A. S. B. xlv, 1876, part 2, p. 173; Nevill, Hand List, i, 1878, p. 269; Martens, Journ. Linn. Soc., Zool. xxi, 1887, p. 160; Tapparone-Canefri, Ann. Mus. Civ. Genova, ser. 2, vii, 1889, p. 308.

Cyclophorus (*Salpingophorus*) *expansus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 109; id., Cat. Pneum. 1899, p. 21; Kobelt, Das Tierreich, Lief. 16, 1902, p. 129; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 656, pl. 94, figs. 10, 11.

Original description:—" C. testa umbilicata, turbinato-subglobosa, solidiuscula, spiraliter confertim striata, opaca, superne castaneo et albido variegata; spira conoidea, apice acutiuscula; anfractibus 5, convexiusculis, ultimo convexiore, dilatato, peripheria subcarinato, basi fasciis angustis castaneis ornata; umbilico angusto, pervio; apertura subverticali, fere circulari; peristomate subsimplice, continuo, breviter adnato, pallide aurantiaco, undique æqualiter angulatim plano-expanso, margine subrevoluto.—Operculum ?

" Diam. maj. 30, min. 22, alt. 19 mm." (*Pfeiffer.*)

Hab. Burma: Tavoy (*Reeve*); Tenasserim (*Theobald*); Mooleyit (*Fea*). Dafla Hills (*Godwin-Austen*); Mergui (*Anderson*).

" In the specimens collected by Dr. Anderson the expansion of the peristome is still broader than in the figures by Reeve and Conch. Ind." (*Martens.*)

110. **Cyclophorus serratizona**, *Hanley & Theobald*.

Cyclophorus serratizona (Thorpe MS.), Hanley & Theobald, Conch. Ind. 1876, p. 57, pl. 144, fig. 7.

Cyclophorus flavilabris, var. *serratizona*, Nevill, Hand List, i, 1878, p. 273.

Cyclophorus (*Salpingophorus*) *serratizona*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxxi, 1899, p. 133; id., Cat. Pneum. 1899, p. 101; Kobelt, Conch.-Cab., Cyclophoridae, i, 1908, p. 654, pl. 94, fig. 3.

Original description:—" The jagged edge of the white band forms a conspicuous, yet perhaps not permanent feature. The shell, which has a white aperture, and a large umbilical area, comes between *Phayrei* and *polynema*: the faint close spiral rugæ seem confined to the upper disc. Except in shape it might be taken for *C. labiosus*." (*Hanley & Theobald.*)

Diam. maj. 41·5, alt. (incl. apert.) 34·5 mm.

Hab. Burma: Upper Salween (*Theobald*).

111. Cyclophorus flavilabris, *Benson.*

Cyclophorus flavilabris, Benson, A. M. N. H. ser. 3, vi, 1860, p. 193; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 68; Hanley & Theobald, Conch. Ind. 1870, pl. 1, fig. 1; Theobald, Cat. Shells Brit. India, 1876, p. 36; Nevill, Hand List, i, 1878, p. 273.

Cyclophorus (*Salpingophorus*) *flavilabris*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 109; id., Cat. Pneum. 1899, p. 21; Kobelt, Das Tierreich, Lief. 16, 1902, p. 129; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 650, pl. 93, fig. 5.

Original description:—"Testa umbilicata, subgloboso-turbinata, suboblique striata, striis confertis spiralibus decussata, castanea, fascia saturatiore, sub altere angustiore albida pheripherica, ornata, periomphalo pallidiore; spira elevato-turbinata, apice vix acutiusculo, sutura impressa, superne marginata; anfractibus 5, convexis, ultimo antice sensim breviter adnato, superne extus angulato, expanso, crassiusculo, flavo; margine collumellari latiore, subrevoluto, umbilicum angustum leviter celante. Operc.——?

"Diam. major 51, minor 43, axis 36 mill." (*Benson.*)

Hab. Burma: Pegu (*Theobald*); Arakan (*Stoliczka*, *Theobald*).

112. Cyclophorus fultoni, *Godwin-Austen & Beddome.*

Cyclophorus fultoni, Godwin-Austen & Beddome, A. M. N. H. ser. 6, xiii, 1894, p. 508.

Cyclophorus (*Salpingophorus*) *fultoni*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 109; id., Cat. Pneum. 1899, p. 21; Kobelt, Das Tierreich, Lief. 16, 1902, p. 129.

Original description:—"Shell somewhat depressedly turbinate, rather widely umbilicated, periphery rounded; sculpture nearly smooth, under a lens a fine, close, oblique, vertical striation is apparent, which is obsoletely decussated with delicate spiral lines. Colour a uniform dark ruddy brown or madder-brown above and on the sides, but several narrow and two or three broader dark longitudinal bands are distinguishable in a strong light, pearl-white beneath. Whorls 5, the last very large, rather suddenly increasing towards the aperture, the last three apical whorls rising suddenly; suture shallow; aperture wide, nearly circular, a little higher than broad, oblique; peristome continuous, rather thickened, slightly reflected, pale yellowish, columellar margin rounded; operculum of the same colour as the shell, having 5 or 6 acutely defined volutions, the interspaces with the usual oblique lines of growth.

"Maj. diam. 49, min. diam. 43; alt. axis, max. 20, min. 19 mm."

Hab. India: Khasi Hills, Assam.

"The affinity of this beautiful species is with *C. siamensis*, from which it differs in its more depressed form and more oblique aperture, and especially in the coloration. The exact locality is

not known; the Khasi Hills is a large tract, and many species found on the northern slopes draining to the Brahmaputra are not found on the south side, while intervening is a high plateau with a very scanty number of land-shells." (*Godwin-Austen & Beddome.*)

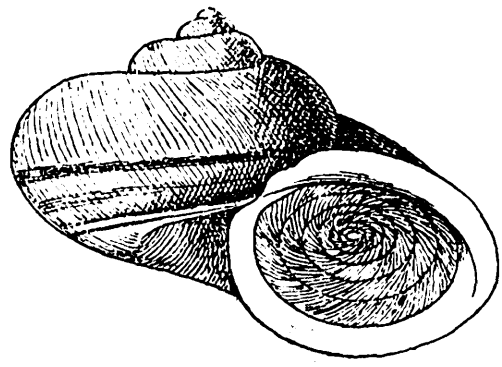


Fig. 14.—*Cyclophorus fultoni.*

The specimen figured is in the Beddome collection now in the possession of Mr. Leman. It is smaller than the type, measuring: major diam. 43, min. 34, axis 28 mm., and is in better condition than any I have seen. The species appears to vary considerably in size, a specimen in my own collection received from a native collector in Assam in 1899 measuring 47 × 37·5 in diameter.

113. **Cyclophorus haughtoni,** *Theobald.*

Cyclophorus haughtoni, Theobald, J. A. S. B. xxvi, 1857, p. 246; Hanley & Theobald, Conch. Ind. 1870, pl. 1, fig. 3; pl. 3, fig. 6; pl. 48, fig. 6; 1876, p. xv; Theobald, Cat. Shells Brit. India, 1876, p. 36; Nevill, Hand List, i, 1878, p. 270; Tapparone-Canefri, Ann. Mus. Civ. Genova, ser. 2, vii, 1889, p. 308.

Cyclophorus (Salpingophorus) haughtoni, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 109; id., Cat. Pneum. 1899, p. 21; Kobelt, Das Tierreich, Lief. 16, 1902, p. 129; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 661, pl. 96, fig. 4.

Original description:—" Testa, simili C. aurantiaco solida nitidiuscula; carinata, superne saturate castanea; in decorticatis speciminibus, spira lineis albidis ziczac variegata. Carina, catenata, alternate albida et castanea. Periomphalo albido, fasciis nonnullis castaneis spiralibus lineato. Peristomate vix pallidissime ochraceo, ore interiore cærulescencte. Size 1.70 major, 1.35 minor diameter in inches.

" This shell . . occurs abundantly at the " Farm Caves " and is at once distinguished from all other Tenasserim Cyclophori by its parti-coloured funiculate keel, which is not the result of abrasion, but is best seen in specimens covered by the epidermis." (*Theobald.*)

Hab. Burma: Moulmein, Farm Caves (*Theobald, Stoliczka*).

114. Cyclophorus khasiensis, *Nevill.*

Cyclostoma siamensis, Sowerby, Thes. Conch. i, 1850, p. 158*, pl. 31, figs. 392, 393.

Cyclophorus siamensis, Pfeiffer, Zeits. Malak. viii, 1852, p. 138; id., Mon. Pneum. 1852, p. 56, Suppl. 1, 1858, p. 41, Suppl. 2, 1865, p. 61; Adams, Gen. Rec. Moll. ii, 1855, p. 280; Benson, A. M. N. H. ser. 2, xix, 1857, p. 208; Theobald, J. A. S. B. xxvii, 1858, p. 317; Reeve, Conch. Icon. xiii, *Cyclophorus*, pl. 5, fig. 19; Hanley & Theobald, Conch. Ind. 1870, pl. 48, fig. 7; Theobald, Cat. Shells Brit. India, 1876, p. 36.

Cyclostoma siamense, Pfeiffer, Conch.-Cab., Cyclostomaceen, 1854, p. 323, pl. 42, figs. 5, 6.

Cyclophorus khasiensis, Nevill, Hand List, i, 1878, p. 273 (nom. nov.).

Cyclophorus (*Salpingophorus*) *siamensis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 109; id., Cat. Pneum. 1899, p. 21; Kobelt, Das Tierreich, Lief. 16, 1902, p. 132.

Original description:—"C. testa depresso-subglobosa, albida, strigis maculisque castaneis angulariter flexuosis picta; spira subdepresso-conica, subacuminata; anfractibus $3\frac{1}{2}$, rotundatis, ultimo maximo, ventricoso; sutura distincta, tenui; apertura circulari, maxima, intus alba; peritremate incrassato, pallide aurantiaco, rotundato, reflexo; umbilico majusculo.

"Shell of a somewhat depressed globose form, whitish with angular markings and streaks of a chestnut-colour; spire somewhat depressed, conical, slightly acuminated; whorls $3\frac{1}{2}$, rounded, the last very large, ventricose, with a distinct linear suture; aperture very large, circular, white within; peritreme thickened, of a pale orange-colour, rounded and reflected; umbilicus rather large. The entire surface of the shell is covered with very minute granules, irregularly arranged in spiral rows." (*Sowerby.*)

Hab. India: Teria Ghat, Khasi Hills (*Theobald, Godwin-Austen*); Lacat (*Theobald*).

115. Cyclophorus malayanus, *Benson.*

Cyclostoma malayanum, Benson, A. M. N. H. ser. 2, x, 1852, p. 269.

Cyclophorus malayanus, Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 42; Pfeiffer, op. cit. Suppl. 2, 1865, p. 62; Stoliczka, J. A. S. B. xli, 1872, part 2, p. 262, pl. 10, figs. 1–5; Pfeiffer, op. cit. Suppl. 3, 1875, pp. 102, 404; Theobald, Cat. Shells Brit. India, 1876, p. 36; Nevill, Hand List, i, 1878, p. 267.

Cyclophorus (*Salpingophorus*) *malayanus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 109; id., Cat. Pneum. 1899, p. 21; Kobelt, Das Tierreich, Lief. 16, 1902, p. 130; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 658, pl. 92, figs. 3, 4, pl. 96, fig. 1.

Original description:—"Testa depresso-turbinata, lævigata, spiraliter exilissime obsolete striata, supra castanea, albido undulatim strigata, interdum plurifasciata, subtus albida, castaneo

anguste fasciata, infra periphæriam fascia latiuscula saturata, albido sparse articulata, ornata; spira exsertiuscula, apice acutiuscula; anfractibus quinque subconvexo, ultimo rotundato, subtus convexo; apertura vix obliqua, magna, circulari, albida; peristomate duplicato, leviter adnato, externo plane expanso, superne arcuato, labio angusto; umbilico mediocri, pervio, subperspectivo.

"Diam. maj. 43, minor 32, axis 29 mill." (*Benson.*)

Hab. India: Shan States. Malaysia: Pulo Penang.

Stoliczka considered (*loc. cit.*) that the shell figured in Conch. Ind. plate 48, fig. 4, had nothing to do with this species. He thought it might represent a variety of *C. siamensis* or a peculiarly depressed form of *C. flavilabris*.

116. **Cyclophorus ophis**, *Hanley.*

Cyclophorus ophis, Hanley, P. Z. S. 1875, p. 605; Hanley & Theobald, Conch. Ind. 1876, p. 57, pl. 144, fig. 6; Theobald, Cat. Shells Brit. India, 1876, Addenda, p. ii; Pfeiffer, Malak. Blätt, xxiv, 1877, p. 146; Martens, Journ. Linn. Soc. xxi, 1887, p. 160.

Cyclophorus (*Salpingophorus*) *ophis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 109; id., Cat. Pneum. 1899, p. 21; Kobelt, Das Tierreich, Lief. 16, 1902, p. 130; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 653, pl. 94, fig. 2.

Original description:—"T. depresso-turbiniformis, satis magna, late umbilicata, nitida, solidiuscula, lævigata, brunneo et albido concentrice undata vel nebulosa, ad basim albida, maculis parvis diversiformibus spiraliter fasciata; spira satis elevata, apice livido. Anfractus valde convexi, $5\frac{1}{2}$–6, superne paululum planiores, celeriter (ultimus præsertim) accrescentes; sutura simplex. Apertura alba, permagna, unice hians, suborbicularis, latior quam alta, infra basim porrecta: labium acutum, late reflexum, undique expansum. Lat. circiter 2 poll. [50 mm.]." (*Hanley.*)

Hab. Burma: Tenasserim (*Theobald*). Mergui Archipelago: Elphinstone Island (*Anderson*).

"This remarkable-looking shell reminds one of *C. tuba* in shape, and *C. siamensis* in painting. Our specimen has an indistinct, interrupted, whitish peripheral fillet; and its surface exhibits, when magnified, some faint and close-set spiral wrinkles upon the upper portion of the final volution." (*Hanley.*)

117. **Cyclophorus pealianus**, *Nevill.*

Cyclophorus sublævigatus var. nov., Nevill, Hand List, i, 1878, p. 266.

Cyclophorus sublævigatus, var. *pealiana*, Nevill, J. A. S. B. xlvi, 1877, p. 27.

Cyclophorus pealianus, Nevill, J. A. S. B. l, 1881, p. 146, pl. 6, fig. 3.

Cyclophorus (*Salpingophorus*) *pealianus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 109; id., Cat. Pneum. 1899, p. 21; Kobelt, Das Tierreich, Lief. 16, 1902, p. 131; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 640, pl. 91, fig. 1.

Original description:—"Openly and deeply umbilicate, conically somewhat depressedly turbinate, solid; under the lens, the lower whorls are most minutely decussately sculptured, the apical $2\frac{1}{2}$ whorls on the other hand possessing characteristic, well marked, distant, longitudinal striation only, these striæ being incised and very obliquely flexuous; above the periphery a broad, white zone, above and below which there are crowded chestnut-brown bands, almost or altogether confluent, umbilical area white; spire moderately raised, with the apex exserted in a "mammillate" manner, suture distinct; whorls $4\frac{1}{2}$, convex, the last one with a raised and somewhat rounded keel at the periphery, which becomes obsolete near the peristome; aperture almost round, oblique, of a bluish-white colour, peristome callously expanded, boldly and evenly rounded, columellar margin also evenly rounded, margins of a very characteristic, brilliant orange-red colour, joined by a well-developed callosity of the same shade.

"Alt. $40\frac{1}{2}$, diam. 58 mill." (*Nevill.*)

Hab. India: Naga Hills (*Peal*).

118. **Cyclophorus perdix**, *Broderip & Sowerby.*

Cyclostoma perdix, Broderip & Sowerby, Zool. Journ. v, 1830, p. 50; Sowerby, Thes. Conch. i, 1843, p. 122, pl. 27, figs. 127, 128; Pfeiffer, Zeits. Malak. iii, 1846, p. 38; id., Conch.-Cab., Cyclostomaceen, 1848, p. 60, pl. 8, figs. 7–9; Mousson, Moll. Java, 1849, p. 54, pl. 8, fig. 1; Pfeiffer, Mon. Pneum. 1852, p. 63.

Cyclophorus perdix, Pfeiffer, Zeits. Malak. iv, 1847, p. 107; id., op. cit. viii, 1851, p. 139; id., Mon. Pneum. 1852, p. 64; id., Cat. Phaneropn. Brit. Mus. 1852, p. 42; Adams, Gen. Rec. Moll. ii, 1855, p. 280; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 49; Martens, Preuss. Exped. Ost-Asien, Zool. ii, 1867, p. 136.

Cyclophorus (*Salpingophorus*) *perdix*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 109; id., Cat. Pneum. 1899, p. 21; Kobelt, Das Tierreich, Lief. 16, 1902, p. 131.

Original description:—"C. testa spira depressiuscula, acuminata, anfractibus quatuor, leviter striatis; carina media, ætate oblite-rata; apertura ampla, peristomate reflexo; umbilico mediocri; long. $\frac{9}{10}$ poll., lat. $\frac{5}{20}$ poll." (1830.) [39 × 27 × 19 mm.]

"Shell nearly orbicular, whitish, varied with fuscous; spire rather depressed conical, rather acuminated, with from 4–5 volutions, the first of which are keeled, and the last with the keel obsolete, and a pale band, articulated with fuscous immediately below the suture, which is rather indistinct; aperture circular, peritreme spreading, almost revolute; umbilicus large." (*Sowerby*, 1843.)

Hab. Burma: Tenasserim (*Hay*). Malay Archipelago: Java, Rakata I., Sumatra, Banka.

Var. **roepstorfiana**, *Godwin-Austen.*

Cyclophorus perdix, var. *roepstorffiana* (Nevill MS.), Godwin-Austen, Proc. Zool. Soc. 1895, p. 452.

Original description :—" Distinguished from *C. zollingeri*, Mousson, by the less dilated last whorl and smaller aperture, keel more developed, and coloration of base different.

" Alt. 15·5, diam. 21·5 mm." (*Godwin-Austen.*)

Hab. Nicobar Islands: Great Nicobar (*Roepstorf*).

119. **Cyclophorus phayrei**, *Theobald.*

Cyclophorus phayrei, Theobald, Conch. Ind. 1876, p. 57, pl. 144, figs. 3, 4.

Cyclophorus haughtoni, var. *phayrei*, Nevill, Hand List, i, 1878, p. 270.

Cyclophorus (*Salpingophorus*) *haughtoni*, var. *phayrei* (Nevill), Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 109; id., Cat. Pneum. 1899, p. 21.

Cyclophorus (*Salpingophorus*) *haughtoni phayrei*, Kobelt, Conch.-Cab., Cyclophoridae, i, 1908, p. 654, pl. 94, figs. 4, 5.

A form never described but figured in Conch. Ind., where it is said to resemble *C. ceylanicus* and *C. haughtoni*. The figures in Conch.-Cab. by Kobelt are copied from Conch. Ind. Diam. maj. 49, min. 39, alt. (incl. apert.) 36 mm.

Hab. Burma: Moulmain (*Stoliczka*, *Theobald*).

Var. **noetlingi**, *Martens.*

Cyclophorus phayrei, var. *noetlingi*, Martens, Arch. Naturg. lxv, part 1, 1899, p. 31, pl. 4, fig. 2.

Generally resembling the type, but considerably smaller, measuring: major diam. 34, min. 27, alt. 24·5 mm. Apert., including the thickened peristome, 16·5 mm. wide and high. Coloration dusky brown, less variegated.

Hab. Burma: Padoukbin (*Noetling*).

120. **Cyclophorus porphyreticus**, *Benson* (em.).

Cyclostoma porphyriticum, Benson, A. M. N. H. ser. 2, viii, 1851, p. 187; Pfeiffer, Conch.-Cab., *Cyclostoma*, 1854, p. 383, pl. 50, figs. 22–24.

Cyclophorus porphyriticus, Pfeiffer, Zeits. Malak. viii, 1851, p. 139; id., Mon. Pneum. 1852, p. 65; Adams, Gen. Rec. Moll. ii, 1855, p. 280; Hanley & Theobald, Conch. Ind. 1875, p. 42, pl. 105, fig. 4; Theobald, Cat. Shells Brit. India, 1876, p. 36.

Cyclophorus porphyreticus, Nevill, Hand List, i, 1878, p. 269.

Cyclophorus (*Salpingophorus*) *porphyriticus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 109; id., Cat. Pneum. 1899, p. 21.

Cyclophorus (*Salpingophorus*) *porphyreticus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 132.

Cyclophorus perdix, Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 5, fig. 21 (non Brod. & Sow.).

Original description:—"Testa mediocriter umbilicata, depresso-conoidea, tenui, striis confertissimis distinctis, elevatis, subundulatis, spiraliter munita, albida, superne saturate castaneo, subtus pallidiore ornata, maculis angulatis circa suturam majoribus, conspersa, fasciis saturatis duabus albo-articulatis, altera ad periphæriam, altera inferiori cincta; spira brevi, apice acuto, sutura vix distincta; anfractibus $4\frac{1}{2}$ planulatis, ultimo angulato, subtus planiusculo; apertura ampla, ovato-circulari, livide albida, peristomate tenui, expanso, reflexo, marginibus callo tenui junctis, conniventibus, columellari angustato, leviter emarginato.

"Diam. maj. 31, minor $24\frac{1}{2}$, axis 18 mill." (*Benson.*)

Hab. East India (*Benson*); Eastern side of Bay of Bengal (*Hanley & Theobald*). Penang (*Stoliczka*).

"Allied to *C. aquilum*, Sow., but differing in tenuity, depressed form, keel, and sculpture. In form *C. porphyriticum* somewhat approaches *C. zebrinum*, mihi, but differs in sculpture, markings, less produced spire, less flattened underside, much wider umbilicus, and in the absence of the peculiar hispid epidermis which clothes that rare species." (*Benson.*)

121. **Cyclophorus speciosus**, *Philippi.*

Cyclostoma speciosum, Philippi, Zeits. Malak. iv, 1847, p. 123; Pfeiffer, Conch.-Cab., Cyclostomaceen, 1849, p. 170, pl. 25, figs. 1-3; id., Mon. Pneum. 1852, p. 56.

Cyclophorus speciosus, Pfeiffer, Zeits. Malak. viii, 1851, p. 138; id., Cat. Phaneropn. Brit. Mus. 1852, p. 36; Adams, Gen. Rec. Moll. i, 1855, p. 280; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 41; Blanford, J. A. S. B. xxxiv, 1865, p. 95; Hanley & Theobald, Conch. Ind. 1875, pl. 104, fig. 4; Theobald, Cat. Shells Brit. India, 1876, p. 36; Nevill, Hand List, i, 1878, p. 267; P. Fischer, Bull. Soc. Hist. Nat. Autun, iv, 1891, p. 102.

Cyclophorus (*Salpingophorus*) *speciosus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 109; id., Cat. Pneum. 1899, p. 21; Kobelt, Das Tierreich, Lief. 16, 1902, p. 133.

Original description:—"C. testa maxima, depresso-conica, confertissime transversim undulato-striata, ferruginea, albo-nubeculata, in basi zonis frequentibus ferrugineis inæqualibus picta; zona latiore et obscuriore, superius albo marginata, suturam continuante; anfractibus sex, modice convexis, ultimo tereti, obsolete carinato; umbilico mediocri; apertura maxima, quadrato-orbiculari; peritremate late reflexo, satis crasso, continuo, luteo-albo.—Alt. obliqua 23‴; diam. absque labro 26‴." (*Philippi.*) [61 × 45 × 35 mm.]

Hab. Burma: Tonghoop, Pegu (*Stoliczka*); Rangoon (*Blanford*). India: Assam (*Stoliczka*). Cambodia (*Pavie*).

Var. **aureolabris**, *Nevill.*

Cyclophorus speciosus, var. *aureolabris*, Nevill, Hand List, i, 1878, p. 267 (nom. nud.); id., J. A. S. B. l, 1888, p. 148.

Cyclophorus (*Salpingophorus*) *speciosus*, var. *aureolabris*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 109; id., Cat. Pneum. 1899, p. 21.

"Alt. 41½, diam. 59, perist. crass. 8 mill." (*Nevill.*)

Hab. Upper Burma: Lushai Hills (*E. W. Dunn*).

Differs from the type in the peristome being of a bright orange colour.

122. Cyclophorus sublævigatus, *Blanford.*

Cyclophorus sublævigatus, Blanford, Proc. Zool. Soc. 1869, p. 446; Hanley & Theobald, Conch. Ind. 1870, pl. 34, fig. 7; Theobald, Cat. Shells Brit. India, 1876, p. 36; Nevill, J. A. S. B. xlvi, 1877, p. 27; id., Hand List, i, 1878, p. 266; id., in Anderson, Zool. Res. Exped. W. Yunnan, 1879, p. 888; Tapparone-Canefri, Ann. Mus. Civ. Genova, ser. 2, vii, 1889, p. 308.

Cyclophorus (*Salpingophorus*) *sublævigatus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 110; id., Cat. Pneum. 1899, p. 22; Kobelt, Conch.-Cab., Cyclophoridae, i, 1908, p. 661, pl. 96, fig. 3.

Original description:—"Testa aperte umbilicata, depresso-turbinata, solida, sublævigata, oblique striatula, in anfractibus superioribus et nonnunquam sed rare in ultimo lineis impressis confertis spiralibus decussata, castanea, supra peripheriam et circa umbilicum spiraliter albido fasciata, periomphalo lato albo. Spira depresso-conica, lateribus concavis, apice papillari, magis exserto, sutura profunda. Anfr. 5, convexi, ultimus magnus, ad peripheriam angulatus, angulo antice evanescente, subtus convexus juxta aperturam leniter descendens. Apertura fere rotunda, obliqua, lutescenti-albida, aliquantulum latior quam alta. Peristoma rectum, incrassato-expansum, subcontinuum. Umbilicus pervius. Operculum normale.

"Diam. maj. 46, min. 38, axis 25 mm.; apert. cum perist. 23 mm. lata, 21½ alta." (*Blanford.*)

Hab. Burma: Bhamo (*Anderson*); Catein-Cauri (*Fea*).

Var. assamensis, *Nevill.*

Cyclophorus eximius (non Mousson), Hanley & Theobald, Conch. Ind. 1870, p. 15, pl. 33, figs. 1, 7.

Cyclophorus sublævigatus var. *assamensis*, Nevill, Hand List, i, 1878, p. 266.

Much larger than the type, measuring: diam. maj. 57, alt. incl. apert. 43 mm. In *C. eximius*, Mousson, from Java, the aperture is much wider.

Hab. India: Khasi Hills, Assam.

123. Cyclophorus theobaldianus, *Benson.*

Cyclophorus theobaldianus, Benson, A. M. N. H. ser. 2. xix, 1857, p. 206; Theobald, J. A. S. B. xxvi, 1857, p. 246; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 47; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 10, fig. 41; Blanford, J. A. S. B. xxxi, 1862, p. 144; xxxiv, 1865, p. 96; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 64; Suppl. 3, 1875, pp. 103, 405; Hanley & Theobald, Conch. Ind. 1870, pl. 1, fig. 2; 1876, p. 57, pl. 144, fig. 2 (var.); Theobald, Cat. Shells Brit. Ind. 1876, p. 36; Nevill, Hand List, i, 1878, p. 266.

Cyclophorus speciosus, var. Hanley & Theobald, Conch. Ind. 1875, pl. 104, fig. 7.

Cyclophorus (*Salpingophorus*) *theobaldianus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 110; id., Cat. Pneum. 1899, p. 22; Kobelt, Das Tierreich, Lief. 16, 1902, p. 134; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 652, pl. 94, fig. 1.

Original description:—" Testa mediocriter umbilicata, turbinato-depressa, solidiuscula, lineis filiformibus elevatis flexuosis spiralibus, striisque obliquis clathrato-decussata, subtus læviori, castaneo-fusca, superne strigis albidis interruptis picta, subtus area lata pallida, fascia angusta albida mediana, et infra eam altera lata castanea cincta; spira mediocri, turbinata, apice acutiusculo, sutura distincta; anfractibus 5 convexis, celeriter accrescentibus, ultimo subcarinato, basi convexa; apertura obliqua, subcirculari, ampla, latiuscula, intus albida; peristomate fornicato-reflexo, interdum incrassato, lutescente, breviter adnato, callo parietali superne expansiusculo, angulato-calloso, margine columellari leviter sinuato, operculo paleaceo, crassiusculo, marginibus anfractuum centralium vix conspicuis, intus umbone minuto munito.

" Diam. major 50, minor 39, axis 28 mill.; aperturæ alt. et lat. (perist. incl.) 29 mill." (*Benson.*)

Hab. India: Assam (*Stoliczka*). Burma: Thyet Myo, Pegu, Moulmain (*Theobald*); Prome and Henzada Distr. (*Blanford*); Chittagong (*Stoliczka*).

Theobald* reduces *C. theobaldianus* to a synonym of *C. speciosus*, but the figures in Conch. Ind. do not bear out this view.

124. Cyclophorus zebrinus, *Benson.*

Cyclostoma zebrinum, Benson, J. A. S. B. v, 1836, p. 355; Pfeiffer, Zeits. Malak. viii, 1851, p. 140; Sowerby, Thes. Conch. i, 1850, p. 157*, pl. 31 *a*, figs. 287, 288; Pfeiffer, Mon. Pneum. 1852, p. 71; id., Conch.-Cab., Cyclostomaceen, 1853, p. 256, pl. 34, figs. 21–23; Benson, A. M. N. H. ser. 2, xiv, 1854, p. 114.

Cyclophorus zebrinus, Pfeiffer, Cat. Phaneropn. Brit. Mus. 1852, p. 49; Adams, Gen. Rec. Moll. ii, 1855, p. 280; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 52; Theobald, J. A. S. B. xxvii, 1858,

* Cat. Shells Brit. India, 1876, Addenda, p. ii.

p. 318; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 11, fig. 46; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 66; Hanley & Theobald, Conch. Ind. 1870, pl. 2, fig. 2; Theobald, Cat. Shells Brit. India, 1876, p. 36; Godwin-Austen, J. A. S. B. xlv, 1876, part 2, p. 173; G. Nevill, J. A. S. B. xlvi, 1877, p. 28 (var.); id., Hand List, i, 1878, p. 268; id., in Anderson, Zool. Res. Exped. W. Yunnan, i, 1879, p. 889; Martens, Journ. Linn. Soc. xxi, 1887, p. 160 (*a. typicus*); Tapparone-Canefri, Ann. Mus. Civ. Genova, ser. 2, vii, 1889, p. 309 (var. *minor*); Smith, The Conchologist, ii, 1893, p. 6.

Cyclophorus (*Glossostylus*) *zebrinus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 108; id., Cat. Pneum. 1899, p. 20; Kobelt, Das Tierreich, Lief. 16, 1902, p. 123.

Original description :—" Testa albida, strigis plurimis rufo-castaneis, angulato-flexuosis picta, spira depressiuscula, acuminata; anfractibus plicis paucis transversalibus distantibus, ultimo rugis undulatis longitudinalibus sculptis; carina media subacuta. Apertura ampla, peritremate reflexo; umbilico parvo. Epidermide crassa, fusca, plicis longitudinalibus, his setis fortibus munitis, instructis.

" Diam. 10·35 poll. [34 × 27 × 21 mm.]

" It differs [from *C. perdix*, Sowb.] in its sculpture, in its more developed keel, more contracted umbilical cavity, and in the possession of a singular epidermis, of which Mr. Sowerby's specimens of *C. perdix*, though one was taken alive at Tenasserim, appear to have been destitute. In the latter species the markings are white mottled on a chestnut ground; in *zebrinum* they consist of distant zigzag flames of light chestnut on a white ground." (*Benson.*)

Hab. India: Silhet (*Benson*); Dafla Hills, Khasi Hills, Munipur (*Godwin-Austen*). Burma: Hoetone (*Anderson*); Bhamo (*Fea*). Mergui Archipelago: King Island (*Anderson*). China: Ponsee, Yunnan (*Anderson*).

Var. **ambigua**, *Martens*.

Cyclophorus zebrinus, var. *ambiguus*, Martens, Journ. Linn. Soc. xxi, 1886, p. 160, pl. 15, fig. 9.

Cyclophorus (*Glossostylus*) *zebrinus*, var. *ambigua*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 108; id., Cat. Pneum. 1899, p. 20; Kobelt, Das Tierreich, Lief. 16, 1902, p. 123.

Cyclophorus (*Salpingophorus*) *zebrinus ambiguus*, Kobelt, Conch.-Cab., Cyclophoridae, i, 1908, p. 610, pl. 82, fig. 7.

Original description :—" Minor, obtuse angulatus, costulis spiralibus obsolescentibus, fulvus, infra suturam maculis fuscis et albidis ornatus, subtus fasciolatus, umbilico sat angusto, peristomate albido. Diam. maj. 28, alt. 21; apert. diam. et alt. 15 mm."

Hab. Mergui Archipelago: Owen and Sullivan Islands (*Anderson*).

Var. **chrysolabris**, *Kobelt.*

Cyclophorus zebrinus, β. *aureolabris* (non Nevill), Martens, Journ. Linn. Soc. xxi, 1887, p. 160.
Cyclophorus (*Glossostylus*) *zebrinus*, var. *aureolabris*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 108; id., Cat. Pneum. 1899, p. 20.
Cyclophorus (*Glossostylus*) *zebrinus*, var. *chrysolabris*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 123.

"Peristome intensely yellow." (*Martens.*)
Hab. Burma: Mergui, Tenasserim (*Anderson*).

Subgenus **CYCLOPHORUS**, *Montfort.*

Cyclophorus, Montfort, Conchyl. Syst. ii, 1810, p. 290; Kobelt, Das Tierreich, Lief. 16, 1902, p. 135.
Eucyclophorus (as section), Möllendorff, Jahrb. Deuts. Malak. Ges. xiii, 1886, p. 162; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 110; id., Cat. Pneum. 1899, p. 22.

Type, *Cyclostoma punctata*, Grateloup.

Range. India, Ceylon, Farther India, China, Japan, Loo Choo Archipelago.
Shell subturbinate, without spiral liræ, usually spirally striated.

125. **Cyclophorus affinis**, *Theobald.*

Cyclophorus affinis, Theobald, J. A. S. B. xxvi, 1857, p. 246; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 61; Suppl. 2, 1865, p. 101; Hanley & Theobald, Conch. Ind. 1870, pl. 2, fig. 7, pl. 48, fig. 2; Theobald, Cat. Shells Brit. India, 1876, p. 35; Nevill, Hand List, i, 1878, p. 270.
Cyclophorus (*Eucyclophorus*) *affinis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 110; id., Cat. Pneum. 1899, p. 22.
Cyclophorus (*Cyclophorus*) *affinis*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 135.
Cyclophorus (*Salpingophorus*) *affinis*, Kobelt, Conch.-Cab., Cyclophoridae, i, 1908, p. 654, pl. 94, figs. 6, 7.

Original description:—"Testa subgloboso-turbinata, umbilicata,

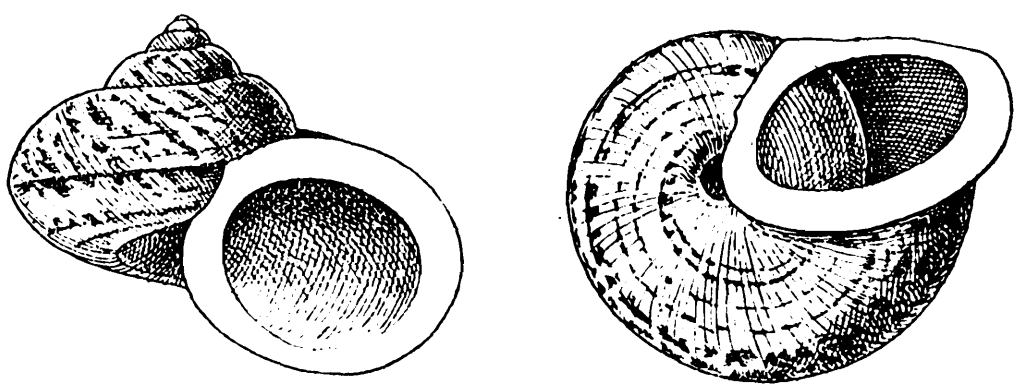


Fig. 15.—*Cyclophorus affinis.*
The specimen figured is in the British Museum Collection.

solidiuscula, castaneo-marmorata, haud nitida, vix carinata

peristomate reflexo, forti, expansiusculo-distorto, pallidissime flavescente, intus cærulescente.

"Major diam. 1·4–1·6 [35–40 mm.], min. 1·12–1·36 in. [28–34 mm.]." (*Theobald.*)

Hab. Burma: Moulmain.

Var. **picta**, *Theobald.*

Cyclophorus affinis, var. *picta*, Theobald, Conch. Ind. 1875, p. 42, pl. 104, fig. 1.
Cyclophorus haughtoni, var. *picta*, Nevill, Hand List, i, 1878, p. 270.
Cyclophorus (*Cyclophorus*) *affinis*, var. *picta*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 135.

"A most lovely shell, which has sometimes minute spiral striolæ, sometimes concentric wrinkles." (*Theobald.*)

Hab. Burma: Zwagabin, Moulmain (*Stoliczka*, *Theobald*).

Larger than the type, measuring 44 mm. in diameter.

126. **Cyclophorus punctatus**, *Grateloup.*

Cyclostoma punctatum, Grateloup, Act. Soc. Linn. Bordeaux, xi, 1839, p. 168, 1841, p. 440, pl. 3, fig. 10; Pfeiffer, Conch.-Cab., Cyclostomaceen, 1847, p. 40, pl. 5, figs. 12, 13.
Cyclostoma irroratum, Sowerby, Proc. Zool. Soc. 1843, p. 61; id., Thes. Conch. i, 1843, p. 123, pl. 27, figs. 134, 135.
Cyclophorus punctatus, Pfeiffer, Mon. Pneum. 1852, p. 67; Adams, Gen. Rec. Moll. ii, 1855, p. 280; Pfeiffer, op. cit. Suppl. 1, 1858, p. 50; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 12, fig. 51; Pfeiffer, op. cit. Suppl. 2, 1865, p. 65; Martens, Preuss. Exped. Ost-Asien, Zool. ii, 1867, p. 39; Morelet, Ser. Conch. iv, 1875, p. 284; Pfeiffer, op. cit. Suppl. 3, 1875, pp. 104, 406; Nevill, Hand List, i, 1878, p. 267.
Pterocyclos punctatus, Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 301.
Cyclophorus (*Eucyclophorus*) *punctatus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 111; id., Cat. Pneum. 1899, p. 23.
Cyclophorus (*Cyclophorus*) *punctatus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 142.
Cyclophorus (s. str.) *punctatus*, Kobelt, Conch.-Cab., Cyclophoridae, i, 1908, p. 626, pl. 87, figs. 7, 8.

Original description:—"C. testa trochiformi, umbilicata, luteola, transversim fasciata, seriatim lineolato-punctifera; fasciis lineolisque fusco-violaceis; apertura rotundata intus albida; peristomate candido, subreflexo; spira acuta.

"Coquille trochiforme, epidermée, ombiliquée, d'un jaune pâle, ornée de fascies transverses et de lineoles déchiquetées et ponctiformes, mais régulièrement disposées par séries, de couleur brune-violacée. Le dessus de la coquille est principalement recouvert de petites maculations ou flammules en zig-zag, très rapprochées. Cinq tours de spire arrondis; le sommet acuminé, lisse et violet.

Ouverture ronde, blanche à l'intérieur. Le péristome blanc, brillant, arrondi et réfléchi sur les bords.

" Haut. : 18 à 20 mill.—Diam. de la base, 22 à 23 mill." (*Grateloup.*)

Hab. Ceylon (*Grateloup*) ; Monahagalla (*Layard*). Annam (*Morelet*). China: Hongkong (*Kobelt*); Canton (*Martens, Richthofen*).

Its recorded occurrence in Ceylon has been questioned by subsequent writers.

127. **Cyclophorus scurra,** *Benson.*

Cyclophorus scurra, Benson, A. M. N. H. ser. 2, xix, 1857, p. 208; Theobald, J. A. S. B. xxvi, 1857, p. 247; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 47; Suppl. 2, 1865, p. 64; Suppl. 3, 1875, pp. 103, 405; Hanley & Theobald, Conch. Ind. 1875, pl. 105, figs. 2, 3; Theobald, Cat. Shells Brit. India, 1876, p. 36; Nevill, Hand List, i, 1878, p. 272.

Cyclophorus (*Eucyclophorus*) *scurra,* Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 111; id., Cat. Pneum. 1899, p. 23.

Cyclophorus (*Cyclophorus*) *scurra,* Kobelt, Das Tierreich, Lief. 16, 1902, p. 142.

Cyclophorus (s. str.) *layardi* (non Adams), Kobelt, Conch.-Cab., Cyclophoridae, i, 1908, p. 646, pl. 91, figs. 10, 11.

Original description :—" Testa subanguste umbilicata, tenui, globoso-turbinata, nitida, tenuiter striata, striis exilissimis spiralibus, sub lente vix conspicuis, decussata, albida, superne strigis undatis, lineisque spiralibus, subtus fasciis (submediana majori) castaneis picta; spira turbinato-conica, apice acutiusculo, nigrescente; anfractibus 5 convexis, sensim accrescentibus, ultimo rotundato; apertura vix obliqua, circulari, superne leviter angulata; peristomate simplici, tenui, anguste expansiusculo, albido. Operc. —— ?

" Diam. major 19, minor 16, axis 14 mill." (*Benson.*)

Hab. Burma: Pegu (*Theobald*); Tongoop Pass, Arakan (*Blanford*); Upper Burma (*Anderson*).

Kobelt in 1908 was led off the track. On page 560, pl. 70, figs. 1 & 2, he correctly deals with *Theobaldius layardi* (*Cyclophorus layardi,* Adams), but on the present occasion * he refers *Cyclophorus layardi* to the section *Cyclophorus,* s. str., and considers the species a doubtful one, stating that it does not agree with Adams's description and dimensions. He quotes and copies Conch. Ind. pl. 105, figs. 2, 3, which represents *Cyclophorus* (s. str.) *scurra,* Benson, whereas Adams's species is illustrated by Hanley & Theobald on pl. 104, figs. 2, 3 !

Var. **davisoniana,** *Nevill.*

Cyclophorus scurra, var. *davisoniana,* Nevill, Hand List, i, 1878, p. 272 (? n. sp.).

* Conch.-Cab., Cyclophoridae, i, 1908, p. 646, pl. 91, figs. 10, 11.

Cyclophorus (*Eucyclophorus*) *scurra*, var. *davisoniana*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 111; id., Cat. Pneum. 1899, p. 23.

Cyclophorus (*Cyclophorus*) *scurra*, var. *davisoniana*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 142.

Last whorl more contracted and base less convex than in the type. Nevill stated that it would probably prove to be a distinct species.

Hab. Burma: Tenasserim (*Davison*).

Subgenus **CYCLOHELIX**, *Mörch.*

Cyclohelix, Mörch, Cat. Conch. Yoldi, i, 1852, p. 41; Godwin-Austen, Land & Freshw. Moll. India, ii, 1897, p. 23; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 111; id., Cat. Pneum. 1899, p. 23; Kobelt, Das Tierreich, Lief. 16, 1902, p. 144.

TYPE, *Turbo foliaceus*, Chemnitz.

Range. Nicobar and Andaman Islands.

Shell conical-turbinate, generally with spiral sculpture, umbilicus narrow or covered. Peristome much thickened. Operculum spiral, smooth in front, flat, thin.

128. **Cyclophorus crocatus**, *Born.*

Turbo crocatus, Born, Index Mus. Vindob. 1778, p. 343.

Trochus crocatus, Born, Testacea, 1780, p. 338, pl. 12, figs. 11, 12.

Cyclophorus crocatus, Pfeiffer, Cat. Phaneropn. Brit. Mus. 1852, p. 55; id., Mon. Pneum. Suppl. 3, 1875, p. 111

Cyclophorus (*Cyclohelix*) *crocatus*, Mörch, Journ. Conchyl. xx, 1872, p. 316; id., op. cit. xxiv, 1876, p. 360; Nevill, Hand List, i, 1878, p. 275; Godwin-Austen, Land & Freshw. Moll. India, ii, 1897, p. 24, pl. 68, figs. 5–8 (anatomy); Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxxi, 1899, p. 134; id., Cat. Pneum. 1899, p. 101; Kobelt, Das Tierreich, Lief. 16, 1902, p. 144.

Trochus turbo, Chemnitz, Conch.-Cab. ix, part 2, 1786, pp. 2, 53, pl. 122, fig. 1059.

Cyclostoma turbo, Sowerby, Thes. Conch. i, 1843, p. 116, pl. 25, figs. 102, 103; Pfeiffer, Conch.-Cab., Cyclostomaceen, 1848, p. 140, pl. 19, figs. 4, 5.

Cyclophorus turbo, Pfeiffer, Zeits. Malak. iv, 1847, p. 108; id., Mon. Pneum. 1852, p. 80; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 13, fig. 57; Pfeiffer, Malak. Bl. xxiv, 1877, p. 147.

Cyclophorus (*Cyclohelix*) *turbo*, Mörch, Cat. Conch. Yoldi, i, 1852, p. 41; id., Journ. Conchyl. xx, 1872, p. 338; Nevill, Hand List, i, 1878, p. 275; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 111; id., Cat. Pneum. 1899, p. 23.

Cyclostoma maculosa, Jay, Cat. Shells, ed. 3, 1839, p. 122, pl. 7, figs. 9, 10.

Original description:—"Testa conica, lævis; anfractus circiter quinque convexi, sulco suturali interstincti; basis convexa;

columella angulata, replicata, tegens umbilicum obsoletum; color baseos et epidermidis albus nitens, spiræ sub epidermide croceus." (*Born.*)

Diam. maj. 25, min. 21, alt. 16 mm.

Hab. Nicobar Islands: Galathea Bay, Kondul (*Stoliczka*); Camorta (*Stoliczka*, *Roepstorf*).

129. Cyclophorus denselineatus, *Pfeiffer.*

Cyclostoma denselineatum (*Cyclophorus*), Pfeiffer, Proc. Zool. Soc. 1852, p. 62.

Cyclostoma denselineatum, Pfeiffer, Conch.-Cab., Cyclostomaceen, 1853, p. 348, pl. 45, figs. 17, 18.

Cyclophorus denselineatus, Pfeiffer, Mon. Pneum. 1852, p. 68; Adams, Gen. Rec. Moll. ii, 1855, p. 280; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 50; id., Suppl. 2, 1865, p. 65; Reeve, Conch. Icon. xiii, 1864, *Cyclophorus*, pl. 8, fig. 34.

Cyclophorus commamaculatus, Frauenfeld, Verh. K. K. zool.-bot. Ges. xix, 1869, p. 878 (nom. nud.).

Cyclophorus commaculatus (Behn), Mörch, Journ. Conchyl. xx, 1872, p. 330.

Cyclophorus (*Cyclohelix*) *denselineatus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 111; id., Cat. Pneum. 1899, p. 23, Kobelt, Das Tierreich, Lief. 16, 1902, p. 145.

Original description:—" C. testa umbilicata, globoso-turbinata, solida, lineis spiralibus impressis et obliquis minutissime decussata, vix nitidula, pallide fulva, maculis et fasciis interruptis fuscis picta; spira turbinata, sursum nigricante, apice acuta; anfractibus 5, parum convexis, ultimo superne convexiore, infra medium obtuse carinato, basi planiusculo, circa umbilicum angustum, pervium pallido; apertura parum obliqua, subcirculari, transverse dilatata; peristomate incrassato, vix expanso, marginibus approximatis, callo junctis, columellari reflexiusculo.

" Diam. maj. 23½, min. 20, alt. 16 mill." (*Pfeiffer.*)

Hab. Nicobar Islands (*Frauenfeld*).

130. Cyclophorus foliaceus, *Chemnitz.*

Turbo foliaceus, Chemnitz, Conch.-Cab. ix, part 2, 1786, p. 59, pl. 123, figs. 1069, 1070.

Cyclostoma foliaceum, Pfeiffer, Conch.-Cab., Cyclostomaceen, 1847, p. 36, pl. 4, figs. 10, 11.

Otopoma foliacea, Gray, Nomencl. Moll. Brit. Mus. i, 1850, p. 35; Bourguignat, Moll. Pays Çomalis Medjourtin, 1882, p. 60.

Cyclophorus foliaceus, Benson, A. M. N. H. ser. 3, v, 1860, p. 97; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 65; Theobald, Cat. Shells Brit. India, 1876, p. 36; Mörch, Journ. Conch. xx, 1872, p. 339; id., op. cit. xxiv, 1876, p. 360; Pfeiffer, Malak. Bl. xxiv, 1877, p. 147.

Cyclophorus (*Leptopomoides*) *foliaceus*, Nevill, Hand List, i, 1878, p. 274.

Leucoptychia foliacea, Crosse, Journ. Conchyl. xxxiii, 1885, p. 12, pl. 1, figs. 1–1*c* (shell), figs. 1*d*, 1 *e* (operc.).

Cyclophorus (*Cyclohelix*) *foliaceus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 111; id., Cat. Pneum. 1899, p. 23; Kobelt, Das Tierreich, Lief. 16, 1902, p. 145, fig. 28 (p. 144); id., Conch.-Cab., Cyclophoridae, i, 1908, p. 673, pl. 98, figs. 1–3.

"Shell deeply umbilicated, somewhat depressed-turbinate, solid, with weak lines of growth decussated by spiral lines, rose-coloured, with a white peripheral zone; spire moderately elevated; apex blunt, suture deep; whorls $5\frac{1}{2}$, slightly convex, increasing slowly, the last higher than the spire, indistinctly carinated, descending slightly, covered with varicose lamellæ at various distances; aperture oblique, subcircular, brownish within; peristome reflexed, whitish, united by a thick callus; columellar margin dilated, half covering the umbilicus which is contracted by the entering lamellæ. Operculum thin, many whorled, with central nucleus.—Diam. 31 × 26, alt. 27 mm." (*Kobelt*, in German.)

Hab. Nicobar Islands: Camorta (*Roepstorf*).

131. **Cyclophorus leai**, *Tryon.*

Cyclophorus foliaceus, non *Turbo foliaceus*, Chemn., Benson, A. M. N. N. ser. 3, vii, 1861, p. 29; Reeve, Conch. Icon. xiii, 1861, *Cyclophorus*, pl. 13, figs. 52*a*, *b*; Hanley & Theobald, Conch. Ind. 1870, p. 1, pl. 2, figs. 5, 6; 1876, p. xv; Tryon, Amer. Journ. Conch. vi, 1870, p. 25; Stolickza, J. A. S. B. xxxix, part 2, 1870, p. 87; Pfeiffer, Malak. Bl. xviii, 1871, p. 105.

Cyclostoma leai, Tryon, Amer. Journ. Conch. v, 1869, p. 111, pl. 10, fig. 6; id., op. cit. vi, 1870, p. 25.

Cyclophorus (*Cyclostoma*) *leai*, Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 105.

Cyclophorus (*Leptopomoides*) *leai*, Nevill, Hand List, i, 1878, p. 274.

Leucoptychia leai, Crosse, Journ. Conchyl. xxxiii, 1885, p. 16, pl. 1, figs. 2–2*f* (shell), figs. 2*g*, 2*h* (operc.).

Cyclophorus (*Cyclohelix*) *leai*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 111; id., Cat. Pneum. 1899, p. 23; Kobelt, Das Tierreich, Lief. 16, 1902, p. 145; id., Conch.-Cab., Cyclophoridae, i, 1908, p. 672, pl. 92, figs. 8–10.

Original description:—"Shell globosely conic, narrowly umbilicate; whorls five, convex, closely spirally striated; aperture oval; lip slightly reflected. Epidermis light brown, crossed by zigzag darker flames, which are most apparent below the sutures. Operculum?

"Dimensions—Diam. 16, alt. 19 mm." (*Tryon.*)

Hab. Andaman Archipelago (*Stoliczka*, *Wood-Mason*, *Roepstorf*).

132. **Cyclophorus nicobaricus**, *Pfeiffer.*

Cyclophorus (*Cyclohelix*) *trochoides* (*Helicodonta*), Mörch, Cat. Conch. Yoldi, 1852, p. 41 (nom. nud.).

Cyclophorus trochoides (Yoldi), Adams, Gen. Rec. Moll. ii, 1852, p. 280; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 58.

Cyclophorus nicobaricus (Behn), Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 68.
Cyclophorus (*Cyclohelix*) *nicobaricus*, Mörch, Journ. Conchyl. xx, 1872, p. 317; id., op. cit. xxiv, 1876, p. 361; Godwin-Austen, Proc. Zool. Soc. 1895, p. 451; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 111; id., Cat. Pneum. 1899, p. 23; Kobelt, Das Tierreich, Lief. 16, 1902, p. 146.
Cyclophorus nicobarius, Pfeiffer, Malak. Bl. xxiv, 1877, p. 147.

Original description :—"T. anguste umbilicata, trochiformis, solida, oblique striata, striisque, spiralibus confertissimis sub lente decussata, sericina, fulva, albo-guttulata; spira conica, acutiuscula; sutura carino-marginata; anfr. 5 modice convexi, ultimus ad basin subacute carinatus, basi subplanatus; apertura diagonalis, truncato-auriformis; perist. carneum, incrassatum, vix expansiusculum, marginibus vix callo junctis, dextro ad insertionem flexuoso,



Fig. 16.—*Cyclophorus nicobaricus.*

columellari umbilicum semitegente, versus basin callum dentiformem gerente.—Operc. tenue, rubello-corneum.—Diam. maj. 17, min. 15, alt. 13 mill. Ap. 9 mill. alta." (*Pfeiffer.*)

Hab. Nicobar Islands: Pulo Panjang (*Reinhardt, Didrichsen*).

The species is now figured for the first time from a specimen in the Beddome Collection; it measures: 15·5 × 13·75 mm. in diameter, alt. 15 mm.

In the British Museum I found three specimens received from the Copenhagen Museum in 1866, labelled *Cyclophorus helicoides*, Yoldi, Little Nicobar, Galathea Expedition. Now the only species mentioned in the Yoldi Catalogue under that name is Grateloup's, which belongs to a Leptopoma. The specimens in question differ from *C. nicobaricus* only in size, measuring: diam. maj. 20, min. 18·5, alt. (incl. apert.) 21 mm. They may be referred to as var. *major*, nov. One specimen has the umbilicus a little less covered by the columellar margin of the peristome.

Genus **AULOPOMA**, *Troschel.*

Aulopoma, Troschel, Zeits. Malak. iv, 1847, p. 43; Gray, Nomencl. Moll. Brit. Mus. 1850, p. 14; Pfeiffer, Zeits. Malak. viii, 1851, p. 137; id., Cat. Phaneropn. Brit. Mus. 1852, p. 34; id., Mon. Pneum. 1852, p. 52; Adams, Gen. Rec. Moll. ii, 1855, p. 282; Chenu, Manuel Conchyl. i, part 2, 1860, p. 488; Nevill, Hand List, i, 1878, p. 279; Fischer, Man. Conchyl. 1885, p. 744 (as subgenus of *Cyclophorus*); Kobelt & Möllendorff, Nachr. Deuts. Malak.

Ges. xxix, 1897, p. 113; id., Cat. Pneum. 1899, p. 25; Kobelt, Das Tierreich, Lief. 16, 1902, p. 157.

TYPE, *Aulopoma hofmeisteri*, Troschel.

Range. Ceylon.

Shell widely umbilicated, depressed turbinate or discoid, last whorl solute; peristome continuous, free, fitting into a circular groove on the inner side of the operculum, which is slightly larger than the aperture, planorbis-shaped, multispiral, composed of two laminæ with a spiral cavity between.

133. Aulopoma grande, *Pfeiffer.*

Cyclostoma (*Aulopoma*) *grande*, Pfeiffer, Proc. Zool. Soc. 1855, p. 104; id. Novit. Conch. ser. 1, i, 1856, p. 69, pl. 19, figs. 11–13.
Aulopoma grande, Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 39; Hanley & Theobald, Conch. Ind. 1870, pl. 47, figs. 1, 2; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; Theobald, Cat. Shells Brit. India, 1876, p. 37; Nevill, Hand List, i, 1878, p. 279; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 113; id., Cat. Pneum. 1899, p. 25; Kobelt, Das Tierreich, Lief. 16, 1902, p. 158.

Original description:—"C. teste umbilicata, depressa, solida, confertim distincte striata, sulcis spiralibus nonnullis remotis sculpta, sub epidermide nigro-fusca, sæpe fasciatim detrita, obsolete marmorata; spira brevissima conoidea, vertice subtili, acuminato, nigricante; anfr. 5 convexis, ultimo terete, basi læviore, antice breviter soluto, vix descendente; apertura obliqua, subcirculari; perist. simplice, recto.—Operc. subsexspirato, anfractibus oblique valide plicatis.

"Diam. maj. 25, min. 21½, alt. 13 mm." (*Pfeiffer.*)

Hab. Ceylon (*Thwaites*).

134. Aulopoma helicinum, *Chemnitz.*

Turbo helicinus, Chemnitz, Conch.-Cab. ix, part 2, 1786, p. 59, pl. 123, figs. 1067, 1068.
Cyclostoma helicinum, Pfeiffer, Conch.-Cab., Cyclostomaceen, 1849, p. 160, pl. 22, figs. 4, 5.
Aulopoma helicinum, Pfeiffer, Zeits. Malak. iv, 1847, p. 111; Gray, Nomencl. Moll. Brit. Mus. 1850, p. 14; Pfeiffer, op. cit. viii, 1851, p. 138; id., Mon. Pneum. 1882, p. 53; id., Cat. Phaneropn. Brit. Mus. 1852, p. 35; Adams, Gen. Rec. Moll. ii, 1855, p. 283; Hanley & Theobald, Conch. Ind. 1870, pl. 4, fig. 8; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; Theobald, Cat. Shells Brit. India, 1876, p. 37; Nevill, Hand List, i, 1878, p 279; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 302; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 113; id., Cat. Pneum. 1899, p. 25; Kobelt, Das Tierreich, Lief. 16, 1902, p. 158.

"C. testa late umbilicata, subdiscoidea, tenuiuscula, striata, pallide cornea, rufo-marmorata et unifasciata; spira mucronate,

cœrulescenti-fusca, anfr. 4 teretibus, ultimo antice descendente, soluto; apertura obliqua, subcirculari; perist. continuo, recto, acuto, tenui.—Operc. corneum, utrinque concavum, angustissime spiratum, anfr. convexis, extus confertim plicatus." (*Pfeiffer.*)

Diam. maj. 13, min. 10, alt. 6·5 mm.

Hab. Ceylon: Balapiti (*Nevill*).

135. **Aulopoma itieri,** *Guérin.*

Cornu venatorium, Chemnitz, Conch.-Cab. ix, part 2, 1786, p. 104, pl. 127, figs. 1132, 1133.

Aulopoma cornu-venatorium, Pfeiffer, Cat. Phaneropn. Brit. Mus. 1852, p. 34; Adams, Gen. Rec. Moll. ii, 1855, p. 283, pl. 85, fig. 8 (shell); figs. 8 *a*, 8 *b* (operculum); Chenu, Man. Conchyl. i, part 2, 1860, p. 488, fig. 3604.

Cyclostoma itieri, Guérin, Rev. Zool. x, 1847, p. 2.

Aulopoma itieri, Pfeiffer, Zeits. Malak. iv, 1847, p. 111; Gray, Nomencl. Moll. Brit. Mus. 1850, p. 14; Pfeiffer, op. cit. viii, 1851, p. 137; id., Cat. Phaneropn. Brit. Mus. 1852, p. 34; id., Mon. Pneum. 1852, p. 52; Adams, Gen. Rec. Moll. ii, 1855, p. 283; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 39; Hanley & Theobald, Conch. Ind. 1870, pl. 4, fig. 7, var. fig. 6; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; Pfeiffer, Cat. Pneum. Suppl. 3, 1875, pp. 98, 403; Theobald, Cat. Shells Brit. India, 1876, p. 27; Nevill, Hand List, i, 1878, p. 279; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 113; id., Cat. Pneum. 1899, p. 25; Kobelt, Das Tierreich, Lief. 16, 1902, p. 158, fig. 33 (p. 157).

Original description: — "Testa crassiuscula, suborbiculari, superne depressa, pallida, castaneo-undulata, spira brevi; anfractibus quinis, striatis, striis ex sutura profunda radiantibus; ultimo anfractu prope aperturam disjuncto, antice inclinato; umbilico lato, profundo; operculo corneo, tenui, spirali, externe posito, marginem aperturæ excedente.

"Largeur 0·015; hauteur 000·9. [22 × 18 × 11 mm.]

"Cette espèce, qui se rapproche un peu des *C. substriatum* et *C. planorbulum* des auteurs anglais, n'aurait rien de bien remarquable si ce n'était la singularité de son opercule, qui est tout à fait extérieur, dépassant l'ouverture et dont les bords sont reçus dans un petit canal.—Cet opercule corné, assez fragile, a l'aspect d'un planorbe déprimé. C'est le premier exemple qui soit parvenu à notre connaissance d'un opercule extérieur, et dans lequel vient s'emboîter le bord de l'ouverture." (*Guérin-Méneville.*)

Hab. Ceylon (*Itier*).

Var. **hofmeisteri,** *Troschel.*

Aulopoma hofmeisteri, Troschel, Zeits. Malak. iv, 1847, p. 43.

Aulopoma hoffmeisteri, Gray, Nomencl. Moll. Brit. Mus. 1850, p. 14; Benson, A. M. N. H. ser. 2, vii, 1851, p. 265; Hanley & Theobald, Conch. Ind. 1870, p. 22, pl. 47, figs. 3, 4; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; Theobald, Cat. Shells Brit. India, 1876, p. 37.

Aulopoma itieri, var. *hoffmeisteri*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 159.

Original description (in German):—"It is flat, almost disk-shaped, with a very acute, scarcely projecting spire, very deep suture, wide umbilicus, and it is yellowish in colour, with brown bands and markings. Diam. 8'''." (*Troschel.*) [16 × 12 × 7 mm.]

Hab. Ceylon.

136. **Aulopoma sphæroideum**, *Dohrn.*

Aulopoma sphæroideum, Dohrn, Malak. Blätter, iv, 1857, p. 85; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 39; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5 (*A. spheroideum*); Theobald, Cat. Shells Brit. India, 1876, p. 37; Nevill, Hand List, i, 1878, p. 279; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 113; id., Cat. Pneum. 1899, p. 25; Kobelt, Das Tierreich, Lief. 16, 1902, p. 159.

Original description:—"T. anguste umbilicata, conoidea-globulosa, tenuis, striatula, sub epidermide fulva albida, obsolete rufo-maculata; spira conoidea, apice nigricans, acutiuscula; anfr. vix ultra 4 rapide accrescentes, 2 ultimi turgidi, ultimus antice breviter solutus; apertura obliqua, circularis, superne levissime subangulata; perist. simplex, rectum.—Operc pallidum, extus medio excavatum, anfr. 5 convexis, oblique striatis.—Diam. maj. 13½, min. 11¼, alt. 9 mill. Ap. diam. 6½ mill."

Hab. Ceylon (*Nietner*).

Genus **PTEROCYCLUS**, *Benson.*

Pterocyclos, Benson, J. A. S. B. i, 1832, p. 11; id., Zool. Journ. v, 1834 p. 462; id., J. A. S. B. v. 1836, p. 356; Troschel, Zeits. Malak. iv, 1847, p. 44; Benson, A. M. N. H. ser. 2, i, 1848, p. 345; Pfeiffer, Conch.-Cab., Cyclostomaceen, 1849, p. 193; Gray, Nomencl. Moll. Brit. Mus. i, 1850, p. 11; Pfeiffer, Zeits. Malak. viii, 1851, p. 135; id., Mon. Pneum. 1852, p. 41; id., Cat. Phaneropn. Brit. Mus. 1852, p. 25; Adams, Gen. Rec. Moll. ii, 1855, p. 277; Chenu, Man. Conchyl. i, part 2, 1860, p. 486; Martens, Preuss. Exped. Ost-Asien, Zool. ii, 1867, p. 114.

Pterocyclus, Nevill, Hand List, i, 1878, p. 260; Fischer, Man. Conchyl. 1885, p. 745; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 113; id., Cat. Pneum. 1899, p. 25; Kobelt, Das Tierreich, Lief. 16, 1902, p. 160; id., Conch.-Cab., Cyclophoridae, ii, 1909, p. 719.

Steganotoma, Troschel, Arch. Naturg. iii, part 1, 1837, p. 163.

Type, *Pterocyclos rupestris*, Benson.

Range. India, Farther India, Ceylon, Southern China, Malaysia.

Shell discoid, somewhat convex above, concave below, and widely umbilicated; whorls cylindrical, slightly adhering together, and visible on both sides. Sutures channelled. Peristome reflected, interrupted at the summit of the aperture by an oblique sinus. Outer lip furnished, at the upper part, with an arched wing, which overhangs the sinus. Wing broad, tumid, bending downwards and mucronate in front, adhering to the penultimate whorl. Operculum multispiral, convex outside, the edges of the whorls slightly raised, concave inside.

137. **Pterocyclus aborensis**, *Godwin-Austen.*

Pterocyclos aborensis, Godwin-Austen, Rec. Ind. Mus. viii, 1915, p. 498, pl. 39, fig. 1.

"Shell subdepressedly turbinate, very openly umbilicated. Sculpture, epidermal lines of growth strong. Well raised distant spiral liræ, both on upper and lower side. The one next the suture the most conspicuous, with two less pronounced intervening, about 14 altogether. Colour a rich umber-brown. Spire subconoid, apex small. Suture deep. Whorls 5, regularly increasing, angulately rounded on periphery. Aperture circular. Peristome double, not thickened, slightly reflected, inner lip continuous, the outer expanded forward at inner angle into a half closed spout-shaped wing. Columellar margin subvertically curved. Operculum not seen.

"Major diam. 26·0; alt. axis 10·0 mm." (*Godwin-Austen.*)

Hab. India: Abor Hills, Ponging; Rami Lambang (*Oakes*).

138. **Pterocyclus albersi**, *Pfeiffer.*

Pterocyclos albersi, Pfeiffer, Zeits. Malak. iv, 1847, p. 151; id., Conch.-Cab., Cyclostomaceen, 1849, p. 197, pl. 28, figs. 1–5; Gray, Nomencl. Moll. Brit. Mus. 1850, p. 12; Pfeiffer, Cat. Phaneropn. Brit. Mus. 1852, p. 28; id., Mon. Pneum. 1852, p. 45; Adams, Gen. Rec. Moll. ii, 1855, p. 277; Benson, A. M. N. H. ser. 2, xix, 1857, p. 208; Theobald, J. A. S. B. xxvii, 1858, p. 317; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 30; Reeve, Conch. Icon. xiv, 1863, *Pterocyclos*, pl. 2, fig. 9; Theobald, Cat. Shells Brit. India, 1876, p. 37; Smith, Proc. Zool. Soc. 1878, p. 499; Godwin-Austen, Proc. Zool. Soc. 1888, p. 245.

Cyclostoma albersi, Petit, Journ. Conchyl. i, 1850, p. 41.

Pterocyclus albersi, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 113; id., Cat. Pneum. 1899, p. 25; Kobelt, Das Tierreich, Lief. 16, 1902, p. 161; id., Conch.-Cab., Cyclophoridae, ii, 1909, p. 720.

Original description:—"T. latissime umbilicata, discoidea, solidula, striatula, sub epidermide cornea alba, castaneo marmorata et fascia lata nigricante infra medium circumdata; spiro medio vix elevata; anfr. 5 planiusculi, sutura profunda, canaliculata discreti, ultimus antice solutus, superne squamoso-carinatus; apertura subcircularis, intus albida; perist. duplex, internum rectum, prominulum, expansiusculum, superne profunde incisum, externum subincrassatum, patens, superne in rostrum antrorsum incurvatum, liberum, postice in carinam abiens protractum.—Operculum extus convexum, spiraliter lamellatum: lamellis inferis spinis erectis confertis coronatis.—Diam. 26, alt. 9 mill." (*Pfeiffer*).

Hab. Burma: Hlindet. India: Teria Ghat, Assam (*Theobald*).

E. A. Smith in 1878 questioned the occurrence of this species in India and Burma on the strength of Hanley's statement in Conch. Ind. p. 58, that the shell referred to this species by

Benson in 1857 was a variety of *P. parvus*. Lt.-Col. Godwin-Austen, however, in 1888 again recorded the species from Burma.

139. **Pterocyclus ater**, *Stoliczka*.

Pterocyclus ater, Stoliczka, J. A. S. B. xl, 1871, p. 149, pl. 6, fig. 2; Nevill, Hand List, i, 1878, p. 262; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 113; id., Cat. Pneum. 1899, p. 25; Kobelt, Das Tierreich, Lief. 16, 1902, p. 161; id., Conch.-Cab., Cyclophoridae, ii, 1909, p. 726, pl. 105, figs. 4–6.

Pterocyclos ater, Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 51; Theobald, Cat. Shells Brit. India, 1876, p. 37; Hanley & Theobald, Conch. Ind. 1876, pl. 142, figs. 5, 6.

Original description:—"Pt. testa orbiculato-planorbulari, latissime umbilicata; apice vix exserto; anfractibus quinis, depressiuscule teretibus, sutura profunda junctis, liris spiralibus tenuibus, plus minusve distincte setiferis, subdistantibus, ornatis, sub epidermide lividis, transversaliter fulguratim castaneo notatis, epidermide scabriuscula, transversim conferte striata, indutis; ultimo anfractu ad aperturam sensim descendente; apertura obliqua, circulari, peristomate duplici, interno paululum crassiculo, ad suturam emarginato, externo tenui, dilatato, supra in alam angustam, curvatam, atque ad anf. penultimum leviter affixam expanso, pone alam perforato. Diam. maj. 16·5, d. min. 13·5, alt. tot. testæ 7·2, axis 3·2, diam. diag. apert. cum perist. 6 mm.

"Operculum orbiculare, supra lamellis spiralibus exstantibus, distincte denticulatis, compositum, infra lævigatum, volutionibus angustis spiralibus concentrice minute striatis.

"Animal fere uniforme atrum, corpore supra, tentaculis ad terminationem et pede lateraliter ad marginem inferiorem paulo palidoribus; forma ab ceteris speciebus ejusdem generis haud distincta." (*Stoliczka.*)

Hab. Burma: Kuengan near Moulmain (*Theobald*).

The outer lip is at the suture produced into a narrow obtuse wing, curved towards and loosely attached to the previous whorl, leaving a rounded circular foramen behind it. The whorls of the operculum are peculiarly dentate above.

140. **Pterocyclus bifrons**, *Pfeiffer*.

Pterocyclos bifrons, Pfeiffer, Proc. Zool. Soc. 1855, p. 117; id., Mon. Pneum. Suppl. 1, 1858, p. 30; Reeve, Conch. Icon. xiv, 1863, pl. i, fig. 1; Pfeiffer, op. cit. Suppl. 2, 1865, p. 42; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; Pfeiffer, op. cit. Suppl. 3, 1875, p. 53, p. 385; Theobald, Cat. Shells Brit. India, 1876, p. 38; Hanley & Theobald, Conch. Ind. 1876, pl. 142, figs. 8, 9; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 301.

Pterocyclus bifrons, Nevill, Hand List, i, 1878, p. 261; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 113; id., Cat. Pneum. 1899, p. 25; Kobelt, Das Tierreich, Lief. 16, 1902, p. 162; id., Conch.-Cab., Cyclophoridae, ii, 1909, p. 723, pl. 104, figs. 15, 16.

Original description:—"Pt. testa umbilicata, discoidea, solida, superne arcuato-striatula, nitida, purpurascenti-castanea; spira plana, vertice subtili, lucide castaneo; sutura alba; anfr. 6 convexis, ultimo latiore, peripheria obsolete angulata, antice descendente et juxta suturam prominentiam fornicatam formante, basi violaceo; apertura diagonali, subcirculari; perist. duplicato, incrassato; interno superne sulco triangulari interrupto, externo subpatente, superne producto et in prominentiam anfractus ultimi abeunte.

"Diam. maj. 25, min. 21½, alt. 8 mm." (*Pfeiffer.*)

Hab. Ceylon.

141. **Pterocyclus bilabiatus**, *Sowerby.*

Pterocyclos bilabiatus (Sowerby), Benson, Zool. Journ. v, 1835, p. 462 (no description); Pfeiffer, Zeits. Malak. iv, 1847, p. 111; Benson, A. M. N. H. ser. 2, i, 1848, p. 346; Pfeiffer, Conch.-Cab., Cyclostomaceen, 1849, p. 193, pl. 24, figs. 11–14, 1853, p. 231; Gray, Nomencl. Moll. Brit. Mus. 1850, p. 13; Pfeiffer, Zeits. Malak. viii, 1851, pp. 4, 137; id., Cat. Phaneropn. Brit. Mus. 1852, p. 31; Adams, Gen. Rec. Moll. ii, 1855, p. 277; Blanford, J. A. S. B. xxx, 1861, pp. 363, 364; Reeve, Conch. Icon. xiv, 1863, *Pterocyclos*, pl. 3, fig. 13; Hanley & Theobald, Conch. Ind. 1870, pl. 5, fig. 2; Theobald, Cat. Shells Brit. India, 1876, p. 38.

Cyclostoma bilabiatum, Sowerby, Thes. Conch. i, 1843, p. 110, pl. 25, figs. 81, 82.

Pterocyclus bilabiatus, Nevill, Hand List, i, 1878, p. 262; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 113; id., Cat. Pneum. 1899, p. 25; Kobelt, Das Tierreich, Lief. 16, 1902, p. 163; id., Conch.-Cab., Cyclophoridae, ii, 1909, p. 724.

Original description:—"Shell discoid, with a depressed, nearly flat spire, of a pale colour, undulated with chestnut; volutions five, rounded, increasing gradually in size, quite smooth; suture distinct, rather deep; aperture nearly circular, with a double peritreme; inner peritreme simple, notched at the upper part, outer one sinuous and undulated, running into a vaulted tubercle at the upper part; umbilicus large and spreading, volutions distinct within; operculum circular, spiral, concave within, convex and lamellar externally." (*Sowerby.*)

Diam. maj. 20, min. 17, alt. 8·5 mm.

Hab. India: Salem, Madras (*Heath*); Kolamullay Hills and Nilghiris (*Blanford*); Coonoor Pass (*Nevill*).

Var. **conica**, *Nevill.*

Pterocyclus bilabiatus, var. *conica*, Nevill, Hand List, i, 1878, p. 262; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 113; id., Cat. Pneum. 1899, p. 25; Kobelt, Das Tierreich, Lief. 16, 1902, p. 163.

"An elevated closely wound form." (*Nevill.*)

Hab. Ceylon.

142. Pterocyclus brahmakundensis, *Godwin-Austen.*

Pterocyclos brahmakundensis, Godwin-Austen, Rec. Ind. Mus. viii, 1915, p. 499, fig. 1.

"Shell very depressedly discoid, smooth throughout, very widely umbilicated; sculpture fine and close, transverse lines of growth on the epidermis; colour sienna-brown, more ochraceous below, indistinctly mottled, passing into zig-zag markings on the apical whorls, a narrow black peripheral band; spire very flat, scarcely raised above the last whorl; suture well impressed; whorls 5, rounded on periphery, narrowing rapidly, rather closely wound, the last descending; aperture circular, oblique; peristome double, fairly strong, reflected, inner lip continuous, shallowly sinuous on the upper inner margin next the wing, this is spout-shaped, directed upwards; columellar margin rounded; operculum not seen.

"Maj. diam. 2·1; alt. axis 1·4 mm." [err. typ. read 21 × 14 mm.]

Hab. India: Brahmakund, Eastern Assam (*M. T. Ogle*).

"I have had this species for many years; it was given me by Mr. Ogle, collected when he was surveying in Eastern Assam. The opportunity now occurs of bringing it to notice, with the fine series from the contiguous Abor Country. It is interesting to compare its form with *Pterocyclos miriensis*, and to note the differences, particularly in the sculpture of the latter." (*Godwin-Austen.*)

143. Pterocyclus cetra, *Benson.*

Pterocyclos cetra, Benson, A. M. N. H. ser. 2, xvii, 1856, p. 228; Theobald, J. A. S. B. xxvi, 1857, p. 246; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 32; id., Novit. Conch. ser. 1, i, 1860, p. 125, pl. 35, figs. 10–12; Reeve, Conch. Icon. xiv, 1863, *Pterocyclos*, pl. 3, fig. 11; Hanley & Theobald, Conch. Ind. 1876, pl. 134, figs. 7, 10; Theobald, Cat. Shells Brit. India, 1876, p. 38.

Pterocyclus cetra, Nevill, Hand List, i, 1878, p. 262; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 113; id., Cat. Pneum. 1899, p. 25; Kobelt, Das Tierreich, Lief. 16, 1902, p. 164; id., Conch.-Cab., Cyclophoridae, ii, 1909, p. 727, pl. 105, figs. 10–12.

Original description: — "Testa late umbilicata, orbiculato-depressa, capillaceo-striatula, luteo-cornea, strigis radiatis, subremotis, irregularibus ornata; spira planata, sutura impressa, apice vix prominulo; anfractibus 5 convexiusculis angustis, ultimo breviter descendente; apertura obliqua, circulari, peristomate duplici, interiori continuo, breviter porrecto, superne breviter emarginato, exteriori expanso, incrassato, superne lingua obtusa vix descendente, sinu profundo ab anfractu penultimo separata, munito; umbilico lato, non profundo, omnes anfractus exhibente, margine subangulato. Operculo ——?

"Diam. major 13, minor 10, axis 4 mill." (*Benson.*)

Hab. Burma: Moulmain, Tenasserim (*Theobald, Stoliczka*); Phaietan (*Theobald*).

144. **Pterocyclus cingalensis**, *Benson.*

Pterocyclos cingalensis, Benson, A. M. N. H. ser. 2, xi, 1853, p. 105; Pfeiffer, Malak. Blätt. i, 1854, p. 81; id., Mon. Pneum. Suppl. 1, 1858, p. 29; Hanley & Theobald, Conch. Ind. 1870, pl. 5, fig. 5; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 301.

Pterocyclus cingalensis, Nevill, Hand List, ii, 1878, p. 261; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 113; id., Cat. Pneum. 1899, p. 25; Kobelt, Das Tierreich, Lief. 16, 1902, p. 164; id., Conch.-Cab., Cyclophoridae, ii, 1909, p. 733, pl. 106, fig. 8.

Original description: — "Testa late umbilicata, orbiculato-depressa, solidula, radiato-striata, albida, superne strigis subundatis, medio fascia castanea picta; spira planiuscula, apice vix prominulo, sutura profunde impressa; anfractibus 5, convexis, ultimo lente descendente, superne alato, breviter soluto; ala prominentiam elongatam augustam ascendentem formante, postice carina obtusa desinente; apertura obliqua, subcirculari; peristomate duplici, interno porrecto, superne profunde inciso, externe incrassato, superne dilatato, leviter deflexo; umbilico profundiusculo. Operculo (teste E. L. Layard) pyramidali.

"Diam. major 19½, minor 16, alt. 6 mill."

Hab. Ceylon: Monahagalla Hill (*E. L. Layard*).

"Distinguished from *Pt. rupestris* by the length and narrowness of the alar prominence, which ascends slightly on the penultimate whorl, and runs parallel with it, instead of spreading semi-circularly as in that shell. From *Pt. albersi* it differs not only in size, but in the absence of the incurvated beak which is such a prominent feature in that species. The umbilicus, equally broad with that of *Pt. rupestris*, is somewhat deeper in proportion." (*Benson.*)

145. **Pterocyclus comatus**, *Möllendorff.*

Pterocyclus comatus (Beddome), G. Nevill, J. A. S. B. l, 1881, p. 146 (nom. nud.).

Pterocyclus comitis (Beddome), Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 36.

Pterocyclus comitis, Kobelt & Möllendorff, tom. cit. p. 113; id., Cat. Pneum. 1899, p. 25.

Pterocyclus comatus, Kobelt, Das Tierreich, Lief. 16, 1902, p. 164; id., Conch.-Cab., Cyclophoridae, ii, 1910, p. 748, pl. 109, figs. 6-8.

Original description:—" T. latissime umbilicata, depressa, fere discoidea, solida, plicato-striatula, lutea, strigis flammulatis castaneis regulariter picta. Spira brevissime conoidea. Anfr. 5½ teretes,

sutura profunda subcanaliculata disjuncti, ultimus antice longiuscule descendens. Apert. diagonalis, circularis, peristoma duplex, internum superne profunde excisum, externum superne in alam tubuli instar compressam antice deflexam productum.

"Diam. 16·33, alt. 8·66 mm." (*Möllendorff.*)

Hab. India: Anamullay Hills (*Beddome*).

146. **Pterocyclus cumingi,** *Pfeiffer.*

Pterocyclos cumingi, Pfeiffer, Zeits. Malak. viii, 1851, pp. 5, 136; id., Proc. Zool. Soc. 1852, p. 158; id., Mon. Pneum. 1852, p. 48; id., Cat. Phaneropn. Brit. Mus. 1852, p. 30; id., Conch.-Cab., Cyclostomaceen, 1853, p. 232, pl. 31, figs. 6–8; Adams, Gen. Rec. Moll. ii, 1855, p. 277; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 29; Reeve, Conch. Icon. xiv, 1863, *Pterocyclos,* pl. 3, fig. 14; Pfeiffer, op. cit. Suppl. 2, 1865, p. 42; Hanley & Theobald, Conch. Ind. 1870, pl. 49, figs. 7, 8; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; Theobald, Cat. Shells Brit. India, 1876, p. 38; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 301.

Pterocyclus cumingi, Nevill, Hand List, i, 1878, p. 261; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 113; id., Cat. Pneum. 1899, p. 25; Kobelt, Das Tierreich, Lief. 16, 1902, p. 165; id., Conch.-Cab., Cyclophoridae, ii, 1909, p. 731.

Original description:—"Pt. testa latissime umbilicata, solida, striatula, nitida, fulvo-lutea, strigis castaneis fulguratis, bifasciatim latioribus et saturatioribus picta; spira plana; anfract. 5 convexi, ultimus teres, antice juxta penultimum in prominentiam elongatam, fornicatam, sulco circumscriptam tumefactus; apertura parum obliqua, subcircularis, intus margaritacea; perist. simplex, album, incrassatum, reflexum, superne sulco triangulari subinterruptum, in linguam inflexam tenuiusculam productum.—Operculum?

"Diam. maj. 32, min. 28, alt. 6 mill." (*Pfeiffer.*)

Hab. Ceylon (*Layard*). Var. India: Travancore (*Stoliczka*).

147. **Pterocyclus cyclophoroideus,** *G. Nevill.*

Pterocyclus cyclophoroideus, G. Nevill, J. A. S. B. 1, 1881, p. 145; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 113; id., Cat. Pneum. 1899, p. 25; Kobelt, Das Tierreich, Lief. 16, 1902, p. 165; id., Conch.-Cab., Cyclophoridae, ii, 1910, p. 753.

Original description:—"This is a form that has hitherto been confused with *Pt. nanus,* Benson, the shell is more depressed and of thicker substance, resembling more closely *Cyclophorus stenostoma,* Sowerby, both in form and colouration; it can be distinguished at a glance by the apparently constant absence of the conspicuous band at the periphery; I intended, despite all the above, to have merely separated it as a subspecies, when I noticed that all my Anamullay specimens have a much raised, concave operculum,

whilst on the other hand in my single operculated specimen of *Pt. nanus* it is only slightly raised, scarcely concave, etc.

"Alt. 8¾, diam. 16 mill." (*Nevill.*)

Hab. India: Anamullay Hills (*Beddome*).

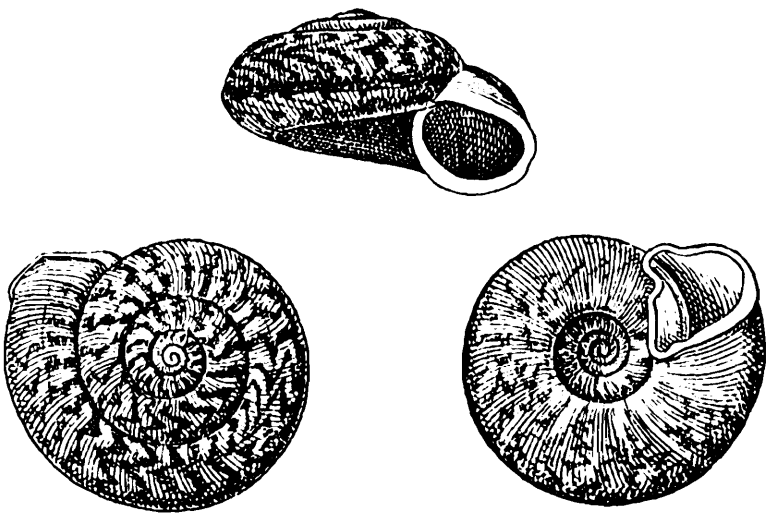


Fig. 17.—*Pterocyclus cyclophoroideus.* (× 2.)

This species has hitherto remained unfigured. The accompanying illustration is from a specimen in the British Museum; it measures: alt. 8, major diam. 14 mm. The peripheral band is not constantly absent as Nevill surmised.

Var. **subluteola**, *G. Nevill.*

Pterocyclus cyclophoroideus, var. *subluteola*, G. Nevill, J. A. S. B. l, 1881, p. 146.

Differs from the type in being of a light yellow instead of a darkish brown, scarcely if at all streaked or mottled.

Hab. India: Anamullay Hills (*Beddome*).

148. **Pterocyclus feddeni**, *Blanford.*

Pterocyclus feddeni, Blanford, J. A. S. B. xxxiv, 1865, p. 83; Hanley & Theobald, Conch. Ind. 1870, pl. 5, fig. 9; 1875, pl. 134, fig. 1; Theobald, Cat. Shells Brit. India, 1876, p. 38; G. Nevill, J. A. S. B. xlvi, 1877, p. 29; id., Hand List, i, 1878, p. 262; Pfeiffer, Mon. Pneum. Suppl. 3, 1878, p. 53; G. Nevill, in Anderson, Zool. Res. Exp. W. Yunnan, 1879, p. 890; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 113; id., Cat. Pneum. 1899, p. 25; Kobelt, Das Tierreich, Lief. 16, 1902, p. 166; id., Conch.-Cab., Cyclophoridae, ii, 1909, p. 734, pl. 106, fig. 9.

Original description:—"Shell widely umbilicated, convexly depressed, smooth, finely striated, rather thin, elegantly marked with alternating transverse zig-zag stripes of white and chestnut, and with a moderately broad submedian band of darker colour; spire nearly flat; apex but very slighty protruded; suture deep. Whorls 4½, convex; the last rounded, descending towards

the mouth. Aperture circular, slightly oblique; peristome double; the two portions separated by a shallow groove, the inner cut away into a moderate sinus above, and the outer turned up into a small vertical wing, free from the penultimate whorl. Operculum concave within, the centre flat; flatly concave without, with lamellar free edges to the whorls, thickest at the circumference.

	mm.	inch.
"Major diam.	11	0·44
Minor ditto.	9	0·36
Axis . . .	5	0.2" (*Blanford.*)

Hab. Burma: Thyet Myo, Pegu (*Blanford*); Bhamo and Irawaddy Bank (*Anderson*).

149. **Pterocyclus insignis**, *Theobald.*

Pterocyclos insignis, Theobald, J. A. S. B. xxxiv, part 2, 1865, p. 278; Hanley & Theobald, Conch. Ind. 1870, pl. 5, figs. 6, 7; Theobald, Cat. Shells Brit. India, 1876, p. 38; Pfeiffer, Mon. Pneum. Suppl. 3, 1878, p. 385.

Pterocyclus insignis, G. Nevill, J. A. S. B. xlvi, 1877, p. 29; id., Hand List, i, 1878, p. 261; id., in Anderson, Zool. Res. Exp. W. Yunnan, 1879, p. 889; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 113; id., Cat. Pneum. 1899, p. 25; Kobelt, Das Tierreich, Lief. 16, 1902, p. 166; id., Conch.-Cab., Cyclophoridae, ii, 1909, p. 724, pl. 104, figs. 9, 10.

Original description:—"Forma typica. Testa albida, epidermide flavescente sive castanea, decidua vestita, castaneo-fasciata. Peristomate duplici, antice valde expanso. Operculo intus concavo, extra planiusculo, margine valde radiate hirsuto.—Lat. 1·20; lat. oris intus 0·65." (*Theobald.*) [31 × 25 × 14 mm.]

Hab. India: Shan States (*Blanford*).

Var. **planorbioides**, *G. Nevill.*

Pterocyclus insignis, var. *planorbioides*, Nevill, Hand List, i, 1878, p. 261; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxxi, 1899, p. 135; id., Cat. Pneum. 1899, p. 102.

Original description:—"The spire is actually sunken in this remarkable Planorbis-like form; the last whorl is more compressed; the aperture smaller; and the umbilicus more open and shallow than in the type form. The excavated suture is common to both." (*Nevill.*)

Hab. Burma: Kakhyen Hills (*Anderson*).

150. **Pterocyclus magnus**, *Godwin-Austen.*

Pterocyclos magnus, Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 174, pl. 7, fig. 3.

Pterocyclus magnus, Nevill, Hand List, i, 1878, p. 261; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 113; id.,

Cat. Pneum. 1899, p. 25; Kobelt, Das Tierreich, Lief. 16, 1902, p. 166; id., Conch.-Cab., Cyclophoridae, ii, 1910, p. 753, pl. 112, figs. 3, 4.

Original description:—"This shell is similar in form to *P. parvus*, only that the winged portion of the peristome is far more fully developed and folded round into a perfect, largely developed tube with its internal orifice just within the aperture, the inner lip being deeply notched to give room for it. The shell is ornamented with a single black peripheral band and with minute transverse brown zig-zag markings. Apex very flat. Whorls 5, rounded.

"The largest example measures—alt. 0·26 [6 mm.], major diam. 0·95 [24 mm.], minor diam. 0·75 [19 mm.], apertural tube 0·20 inch [5 mm.]." (*Godwin-Austen.*)

Hab. India: Dafla Hills, Naga Hills, Assam (*Godwin-Austen*).

The following additional details are given by Nevill, who considered it doubtfully more than a well-defined variety of *P. parvus*. The compressed last whorl, which is semi-detached at the proportionately smaller aperture, the more open umbilicus and the different character of the "tube" distinguish this form from the large variety of *P. parvus*.

Pterocyclus magnus, var.

Pterocyclos magnus, var., Godwin-Austen, Rec. Ind. Mus. viii, 1915, p. 500.

"A single specimen, with peristome not quite perfect and surface in poor condition, was sent me by officers of the Survey with the Miri Mission. It comes nearest to the above Dafla Hill shell in general form, the markings differ considerably. Major diameter 24·75. It should be looked for again." (*Godwin-Austen.*)

151. **Pterocyclus marionæ**, *Preston*.

Pterocyclus marionæ, Preston, Proc. Malac. Soc. xi, 1914, p. 22, text-fig.

Original description:—"Shell somewhat orbicular, moderately depressed, covered with a thin, laminiferous, reddish-brown periostracum; whorls 4½, regularly increasing, the last very obtusely angled at the periphery, and possessing a short, but rather broad, wing-like development just behind the labrum; suture very deeply impressed; umbilicus wide, deep; labrum reflexed, white, laminiferous, continuous but for a slight break below the wing-like projection; aperture circular; operculum corneous, convex above, with central nucleus, bearing several raised, more or less foliaceous laminæ, which are especially strong towards the outer margin, below concave, polished, shining. Alt. 8, diam. maj. 20, min. 15 mm. Aperture: alt. 7, diam. 7 mm." (*Preston.*)

Hab. India: Naga Hills.

152. **Pterocyclus miriensis**, *Godwin-Austen*.

Pterocyclos miriensis, Godwin-Austen, Rec. Ind. Mus. viii, 1915, p. 498, pl. 39, fig. 2.

" Shell depressedly discoid, very widely umbilicated. Sculpture very strong, regular spiral liræ, above and below. Colour rich burnt sienna brown. Spire very flatly conic. Suture well impressed. Whorls 5, subangularly rounded on the periphery. Aperture circular, subvertical, just shows above the last whorl. Peristome double, not thickened, slightly reflected, inner lip thin, continuous, the outer expanded into a wing, openly spout-shaped. Columellar margin well rounded.

" Major diam. 30·0; alt. axis 8·0 mm." (*Godwin-Austen.*)

Hab. India: Miri Hills.

153. **Pterocyclus nanus**, *Benson*.

Pterocyclos nanus, Benson, A. M. N. H. ser. 2, viii, 1851, p. 450; Pfeiffer, Mon. Pneum. 1852, p. 47; id., Conch.-Cab., Cyclostomaceen, 1854, p. 388, p. 388, pl. 49, figs. 31–33; Adams, Gen. Rec. Moll. ii, 1855, p. 277; Reeve, Conch. Icon. xiv, 1863, *Pterocyclos*, pl. 3, fig. 12; Blanford, J. A. S. B. xxxv, 1866, pp. 38 & 40; Hanley & Theobald, Conch. Ind. 1870, pl. 49, figs. 5, 6; Theobald, Cat. Shells Brit. India, 1876, p. 38.

Pterocyclus nanus, Nevill, Hand List, i, 1878, p. 262; id., J. A. S. B. l, 1881, p. 146; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 114 (*manus*, err. typ.); id., Cat. Pneum. 1899, p. 26 (*manus*, err. typ.); id., Nachr. Deuts. Malak. Ges. xxxi, 1899, p. 135; id., Cat. Pneum. 1899, p. 102; Kobelt, Das Tierreich, Lief. 16, 1902, p. 167; id., Conch.-Cab., Cyclophoridae, ii, 1909, p. 730.

Original description:—" Testa profunde perspective umbilicata, depressa, discoidea, albida, fascia media strigisque undulatis castaneis superne ornata; spira prominula, saturatiore; anfractibus $4\frac{1}{2}$ convexis, ultimo supra soluto; apertura obliqua, circulari; peristomate duplicata, marginibus sulco leviter impresso vix discretis, interno superne profunde recteque inciso, externo reflexiusculo, supra sinum alam angustam fornicatam, antice breviter descendentem, angulatam, formante.

" Diam. major 10, minor 8, alt. 5 mill."

Hab. India: Nilgiris (*Jerdon*); Anamullay (*Beddome*); Southern India (*Stoliczka*); ? Salem (*Nevill*).

"Possessing a similar deep umbilicus, narrower than in the other known species, it was overlooked as a young and imperfect specimen. On examination it proves to have arrived at its full growth, being allied in the characters of the aperture to *Pt. rupestris*, nobis, but differing from the smallest varieties of that shell not only in size and in the form of the umbilicus, but also in the less curvature of the incision under the wing, which is moreover less expanded, and does not touch nor cover any part of the preceding whorl. The operculum is unknown." (*Benson.*)

Var. **applanata**, *G. Nevill.*

Pterocyclus nanus, var. *applanata*, G. Nevill, J. A. S. B. l, 1881, p. 146; Kobelt, Das Tierreich, Lief. 16, 1902, p. 167.

Differs from the type in being rather more richly painted, with more flattened spire, more slowly increasing whorls, and slightly more open umbilicus.

Diam. 13·75, alt. 7 mm.

Hab. India: Southern India (*Stoliczka*); ? Salem (*Nevill*).

Var. **reflexilabris**, *G. Nevill.*

Pterocyclus nanus, var. *reflexilabris* (? distinct species), G. Nevill, J. A. S. B. l, 1881, p. 146; Kobelt, Das Tierreich, Lief. 16, 1902, p. 167.

Pterocyclus nanus reflexilabris, Kobelt, Conch.-Cab., Cyclophoridae, ii, 1910, p. 754.

"A white apparently colourless form, with black apex and easily distinguished from the preceding [*nanus*], as well as *Pter. cyclophoroideus*, by the fragile, broadly reflected and duplex peristome, rather differently shaped too above; the operculum, in my single specimen, agrees with what I take to be the typical form; it is very little raised or concave . . . Mr. Blanford also possesses two specimens." (*Nevill.*)

Hab. India: Khoondah Hills (*Pirie*); Nilgiri Hills (*Blanford*).

154. **Pterocyclus parvus**, *Pearson.*

Spiraculum parvum, Pearson, J. A. S. B. ii, 1833, p. 592, pl. 20, fig. 7.

Pterocyclos parvus, Benson, J. A. S. B. v, 1836, p. 357; id., A. M. N. H. ser. 2, i, 1848, p. 346; Pfeiffer, Zeits. Malak. viii, 1851, pp. 5, 136; id., Mon. Pneum. 1852, p. 48; id., Cat. Phaneropn. Brit. Mus. 1852, p. 30; id., Conch.-Cab., Cyclostomaceen, 1853, p. 233, pl. 31, figs. 12–14; Adams, Gen. Rec. Moll. ii, 1855, p. 277; Reeve, Conch. Icon. xiv, 1863, *Pterocyclos*, pl. 3, fig. 15; Hanley & Theobald, Conch. Ind. 1876, pl. 142, figs. 7, 10; Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 174; Theobald, Cat. Shells Brit. Ind. 1876, p. 38; Tapparone-Canefri, Ann. Mus. Civ. Genova, ser. 2, vii, 1889, p. 309.

Pterocyclus parvus, Nevill, Hand List, i, 1878, p. 260; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 114; id., Cat. Pneum. 1899, p. 26; Kobelt, Das Tierreich, Lief. 16, 1902, p. 167; id., Conch.-Cab., Cyclophoridae, ii, 1909, p. 730.

Original description:—"Shell white, subdiaphanous, zoned with a dark brown line along the circumference of the whorl, striated above with brown zig-zag striæ, and less distinctly so below. Shelly spiracle or breathing tube situated near to the mouth. Mouth perfectly circular; lip thickened and reflected, umbilicus largely dilated, upper surface plano-convex, almost flat. Diameter $\frac{6}{10}$ of an inch. [14 × 11·5 × 5 mm.]

"Operculum unknown, supposed to resemble that of *S. hispidum*.
"Epidermis dark brown." (*Pearson.*)
Hab. India: Shengorh, Tanir Ridge, and Toruputu, Khasi Hills (*Godwin-Austen*); Tezpur (*Stoliczka*); Naga Hills (*Oldham*).

Var. **assamensis**, *Hanley & Theobald.*

Pterocyclos arakanensis, Blanford, J. A. S. B. xxxiv, 1865, p. 98 (nom. nud.).
Pterocyclus parvus, var. *arakanensis*, Nevill, Hand List, i, 1878, p. 261.
Pterocyclus parvus, var. *aracanensis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 114; id., Cat. Pneum. 1899, p. 26.
Pterocyclos parvus, var. *assamensis*, Hanley & Theobald, Conch. Ind. 1870, p. 56, pl. 5, fig. 3.
Pterocyclus parvus, var. *assamensis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 114; id., Cat. Pneum. 1899, p. 26.

Larger than the type, measuring 19 mm. in diameter and much paler in colour with the zig-zag markings narrower and more crowded.
Hab. India: Khasi Hills (*Theobald*); Akyab (*Blanford*); Chittagong (*Raban*).
Nevill also mentions a var. *major*, from the Khasi Hills, which is probably identical with the present variety.

155. **Pterocyclus pseudocumingi**, *Möllendorff.*

Pterocyclus cumingi, var., Nevill, Hand List, i, 1876, p. 261.
Pterocyclus pseudocumingi (Nevill MSS.), Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 36; Kobelt & Möllendorff, tom. cit. p. 114; id., Cat. Pneum. 1899, p. 26; Kobelt, Das Tierreich, Lief. 16, 1902, p. 168; id., Conch.-Cab., Cyclophoridae, ii, 1910, p. 746, pl. 108, figs. 13-15.

Original description:—"T. latissime umbilicata, discoidea, solidula, subtiliter striatula, pallide lutea, strigis flammulatis castaneis et tænia peripherica alba, altera castanea infra illam picta. Spira vix prominula. Anfr. $5\frac{1}{2}$ teretes, sutura profunda impressa disjuncti, ultimus paullum descendens. Apert. modice obliqua, circularis, peristoma duplex, internum superne valde excisum, externum in alam magnam anfractui penultimo adnatam productum. Operculum intus profunde excavatum, extus lamella subtestacea anfr. 7 floris instar convergentibus indutum.
"Diam. 14·25, alt. 5 mm." (*Möllendorff.*)
Hab. India: Travancore (*Stoliczka*).

156. **Pterocyclus pullatus**, *Benson.*

Pterocyclos pullatus, Benson, A. M. N. H. ser. 2, xvii, 1856, p. 227; Theobald, J. A. S. B. xxvi, 1857, p. 246; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 31; id., Novit. Conch. ser. 1, i,

1860, p. 124, pl. 35, figs. 5–9; Reeve, Conch. Icon. xiv, 1863, *Pterocyclos*, pl. 3, fig. 16; Blanford, J. A. S. B. xxxiv, 1865, p. 97; Hanley & Theobald, Conch. Ind. 1875, pl. 134, figs. 2-4; Theobald, Cat. Shells Brit. India, 1876, p. 38.

Pterocyclus pullatus, Nevill, Hand List, i, 1878, p 262; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 114; id., Cat. Pneum. 1899, p. 26; Kobelt, Das Tierriech, Lief. 16, 1902, p. 168; id., Conch.-Cab., Cyclophoridae, ii, 1909, p. 728, pl. 105, figs. 13–15.

Original description:— "Testa aperte umbilicata, convexo-depressa, confertim radiato-striatula, nigrescente-castanea, superne strigis luteo-albidis, fulguratis, fasciaque saturata ornata; spira convexa, sutura profunda, apice prominulo; anfractibus $4\frac{1}{2}$ convexis, ultimo longe descendente, subtus convexo; apertura vix obliqua, circulari; peristomate duplici, interiori breviter porrecto, superne sinu mediocri latiusculo, interrupto, exteriori vix expansiusculo, superne alam subrevolutam semicucullatam, antice breviter descendentem obtusam, ab anfractu penultimo distantem efformante; umbilico mediocri, profundo perspectivo. Operculo intus concavo, extus concaviusculo, scabro; anfractuum marginibus elevatis; margine laterali lato, lamellis acutis spiralibus munito.

"Diam. major 13, minor $11\frac{1}{2}$, axis 6 mill." (*Benson.*)

Hab. Burma: Akoutong (*Theobald*, *Blanford*).

157. **Pterocyclus rupestris**, *Benson.*

Pterocyclos rupestris, Benson, J. A. S. B. i, 1832, p. 13, pl. 2, fig. 1 (not pl. 1, fig. 2); id., op. cit. v, 1836, p. 356; id., A.M.N.H. ser. 2, i, 1848, p. 346; Gray, Nomencl. Moll. Brit. Mus. 1850, p. 12; Pfeiffer, Zeits. Malak. viii, 1851, pp. 4, 136; id., Cat. Phaneropn. Brit. Mus. 1852, p. 29; id., Mon. Pneum. 1852, p. 46; id., Conch.-Cab., Cyclostomaceen, 1853, p. 231, pl. 31, figs. 3–5, 9–11; Adams, Gen. Rec. Moll. ii, 1855, p. 277, pl. 85, fig. 3; Reeve, Conch. Icon. xiv, 1863, *Pterocyclos*, pl. 2, fig. 8; Blanford, J. A. S. B. xxxv, 1866, p. 38; Hanley & Theobald, Conch. Ind. 1870, pl. 5, fig. 8; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 53; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 301.

Spiraculum rupestris, Pearson, J. A. S. B. ii, 1833, p. 592.

Pterocyclus rupestris, Nevill, Hand List, i, 1878, p. 260; Cooke, Cambr. Nat. Hist. iii, 1895, p. 266, fig. 180 A; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 114; id., Cat. Pneum. 1899, p. 26; Kobelt, Das Tierreich, Lief. 16, 1902, p. 169; id., Conch.-Cab., Cyclophoridæ, ii, 1909, p. 736, pl. 106, fig. 10.

Steganotoma picta, Troschel, Arch. Naturg. iii, part 1, 1837, p. 165, pl. 3, figs. 12, 13 (shell); figs. *a*, *b*, *c* (operculum).

Steganotoma pictum, Philippi, Abbild. Conch. i, part 5, 1844, p. 105, *Cyclostoma*, pl. 1, fig. 5.

Pterocyclos pictus, Pfeiffer, Conch.-Cab., Cyclostomaceen, 1849, p. 194, pl. 24, figs. 21 23 (shell); figs. 24, 25 (operculum); Gray, Nomencl. Moll. Brit. Mus. 1850, p. 12.

Original description:—"Shell sub-diaphanous, whitish, closely striated across the whorls, marked above and below with angular

chestnut lines running across the whorls, and with a band of the same colour on the centre of the last whorl, purplish-brown towards the apex.

"Var. 1. The same without the medial line.

"Var. 2. Ditto without the angular markings underneath.

"Var. 3. The whole shell horn-coloured." (*Benson.*)

Diam. maj. 22, min. 19, alt. 8 mm.

Hab. India: Rajmahal Range (*Stoliczka*); Pareshnath (*Raban*); Ganjam (*Ball*).

Var. puriensis, *Nevill.*

Pterocyclus rupestris, var. *puriensis*, Nevill, Hand List, i, 1878, p. 260; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 114; id., Cat. Pneum. 1899, p. 26; Kobelt, Das Tierreich, Lief. 16, 1902, p. 169.

"A dwarf form with raised spire." (*Nevill.*)

Hab. India: Puri (*Raban*); Chandbally (*Nevill*).

158. **Pterocyclus spiramentum**, *Godwin-Austen.*

Pterocyclos spiramentum, Godwin-Austen, Rec. Ind. Mus. viii, 1915, p. 499, pl. 40, fig. 4.

"Shell openly umbilicated, depressedly orbiculate, somewhat globose. Sculpture, only fine epidermal lines of growth. Colour dark sienna-brown, crossed by dark bands, running from the suture to the narrow black periphery band. Spire slightly raised, very depressedly conoid. Suture deep. Whorls 4, the last rapidly increasing. Aperture circular, subvertical. Peristome slightly reflected, not much thickened, the outer lip is expanded near the suture, with sides turned in forming a spout-like projection. Close behind this and adjacent to the suture is an apparent tube, but it is rather of gutter form, semicircular in section, and is given off from a cleft on the columellar side just within the aperture, which is not an orifice—if it were so the gutter would be a true tube and the shell a *Spiraculum*. It illustrates how the sutural tube in that genus has originated. This species is on the borderland of the two genera *Pterocyclos* and *Spiraculum*. It must be put in *Pterocyclos*, because the tube is close to the aperture, almost a part of the peristome. In *Spiraculum* the tube is remote from the aperture. Operculum concave in centre, multispiral, suture not raised.

"Major diam. 15·0; alt. axis 4·75 mm." (*Godwin-Austen.*)

Hab. India: Abor Hills (*Oakes*).

159. **Pterocyclus troscheli**, *Benson.*

Pterocyclos troscheli, Benson, A. M. N. H. ser. 2, viii, 1851, p. 196, pl. 5, fig. 2: Pfeiffer, Zeits. Malak. viii, 1851, p. 136; id., Cat. Phaneropn. Brit. Mus, 1852, p. 27; id., Mon. Pneum.

1852, p. 44 ; Adams, Gen. Rec. Moll. ii, 1855, p. 277 ; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5 ; Theobald, Cat. Shells Brit. India, 1876, p. 38; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 302.

Cyclophorus (*Myxostoma*) *troscheli*, Chenu, Man. Conchyl. i, part 2, 1860, p. 487, fig. 3595.

Pterocyclus cumingi. var. *troscheli*, Nevill, Hand List, i, 1878, p. 261.

Pterocyclus troscheli, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 114; id., Cat. Pneum. 1899, p. 26, p. 102 ; Kobelt, Das Tierreich, Lief. 16, 1902, p. 170; id., Conch.-Cab., Cyclophoridae, ii, 1910, p. 749, pl. 109, figs. 13, 14.

Original description:—" Testa latissime umbilicata, orbiculato-depressa; anfractibus 4 lente accrescentibus, ultimo antice subdilatato; apertura circulari, peristomate incrassato, reflexo, superne antice obsolete sinuato, ala cucullata, antice angulata, deflexa, anfractui penultimo adhærente; umbilico latissimo. Operculo convexo, corneo.

" Diam. major 20, minor 18 mill." (*Benson.*)

Hab. Ceylon: Trincomalee (*Bland*).

Genus **PEARSONIA**, *Kobelt.*

Spiraculum (part.), Pearson, J. A. S. B. ii, 1833, p. 590; Adams, Gen. Rec. Moll. ii, 1855, p. 278 (as subgenus of *Pterocyclos*); Blanford, J. A. S. B. xxxii, 1863, p. 319; id., A. M. N. H. ser. 3, xii, 1863, p. 55 (animal); xiii, 1864, p. 451 ; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 47 ; Fischer, Man. Conchyl. 1885, p. 745 (as subgenus); Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 114 ; id., Cat. Pneum. 1899, p. 26.

Pearsonia, Kobelt, Das Tierreich, Lief. 16, 1902, p. 171.

Type, *Spiraculum hispidum*, Pearson.

Range. India and Farther India.

Shell depressed, sub-discoidal, covered with a thick periostracum, sometimes hairy ; aperture circular ; last whorl furnished, a short distance behind the aperture, with a short reverted sutural tube, open at both ends. Operculum multispiral, the edges of the whorls projecting.

Subgenus **PEARSONIA**, s. str.

Spiraculum, s. str., Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 114 ; id., Cat. Pneum. 1899, p. 26.

Pearsonia (subgenus), Kobelt, Das Tierreich, Lief. 16, 1902, p. 171.

Type, *S. hispidum*, Pearson.

Range. India and Farther India.

Shell as in the genus; basal margin of peristome without process.

160. **Pearsonia andersoni**, *Blanford.*

Spiraculum andersoni, Blanford, Proc. Zool. Soc. 1869, p. 447; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 49; Theobald, Cat.

Shells Brit. India, 1876, p. 38; Nevill, J. A. S. B. xlvi, 1877, p. 28; id., in Anderson, Zool. Res. Exp. W. Yunnan, i. 1879, p. 889.

Pterocyclos (*Spiraculum*) *andersoni*, Hanley & Theobald, Conch. Ind. 1870, pl. 49, figs. 3, 4.

Pterocyclus (*Spiraculum*) *andersoni*, Nevill, Hand List, i, 1878, p. 264.

Spiraculum (s. str.) *andersoni*, Kobelt & Möllendorff, Nachr. Deuts Malak. Ges. xxix, 1897, p. 114; id., Cat. Pneum. 1899, p. 26.

Pearsonia (*Pearsonia*) *andersoni*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 172.

Pearsonia andersoni, Kobelt, Conch.-Cab., Cyclophoridae, ii, 1911, p. 766, pl. 112, figs. 10, 11.

Original description:—"Testa late umbilicata, depressa, discoidea, oblique striata, lineis elevatis minutis spiralibus superne et præsertim juxta peripheriam, sed non circa umbilicum, confertissime decussata, albide, strigis castaneis fulguratis radiantibus picta. Spira plana, apice vel plano vel vix exsertiusculo, sutura profunda. Anfr. $4\frac{1}{2}$, teretes, ultimus versus aperturam longe descendens, 5-6 mill. pone peristoma tubulo suturali reverso parvo, arcuatim recurvato vel subrecto et libero, 2-3 mm. longo munitus. Apertura diagonalis rotunda; peristoma continuum, duplex, internum expansiusculum undique appressum, postice juxta anfractum penultimum profunde angulatim sinuatum, externum expansum, supra sinum dilatatum, juxta anfractum penultimum instar cuculli plani porrectum. Operc. persimile ei *Sp. hispidi*, corneum, intus concavum, extus convexum, marginibus anfractuum, præsertim externorum, lamellatim liberis, apice planiusculo.

"Diam. maj. $15\frac{1}{2}$–17, min. 12–$13\frac{1}{2}$, axis 5–6, apert. diam. intus 5 mm." (*Blanford.*)

Hab. Burma: Bhamo and right bank of Irrawaddy (*Anderson*).

"Distinguished from *Sp. avanum*, W Blanf., by its more oblique mouth, differently shaped and more expanded peristome, by the horizontal cowl-shaped projection running forwards along the last whorl instead of being vertical, the greater distance of the sutural tube from the mouth, and the much more convex operculum." (*Blanford.*)

161. **Pearsonia assamensis**, *Fulton.*

Spiraculum assamense, Fulton, Nautilus, xiv, 1900, p. 87.

Original description:—"Shell discoidal, flat above, very broadly umbilicated, dark brown with a few oblique stripes of a lighter color, encircled by four rows of hairs arranged in tufts, one being at the periphery, one above, and two below, the latter two are often worn off in older specimens; whorls $4\frac{1}{2}$, slightly convex above, last rounded; tube erect, short, inclined towards the apex, situated 2 mm. from the margin of the aperture; peristome white, somewhat thickened, bordered by a narrow flange; aperture oblique, circular; operculum shelly, whorls 5.

"Diam. maj. 14 mm., min. 12 mm., alt. 5 mm." (*Fulton.*)
Hab India: Khasi Hills, Assam.

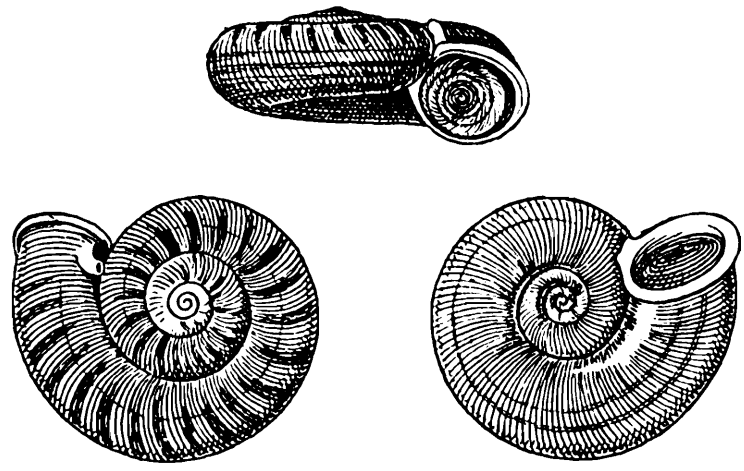


Fig. 18.—*Pearsonia assamensis.* (× 2.)

"In most respects this species is very like *nagaense*, Aust. & Bedd., but can be easily separated by the position of the breathing tube, which in *assamense* is much nearer the aperture. The operculum of *nagaense* does not appear to have so many whorls as our species, a large part of the central portion being quite flat and smooth. These characters appear to be constant in the numerous specimens I have examined of both species." (*Fulton.*)
The accompanying illustration is from the type in the British Museum.

162. **Pearsonia avana**, *Blanford.*

Spiraculum avanum, Blanford, J. A. S. B. xxxii, 1863, p. 319; Theobald, Cat. Shells Brit. India, 1876, p. 38; Nevill, J. A. S. B. xlvi, 1877, p. 28; id., in Anderson, Zool. Res. Exp. W. Yunnan, i, 1879, p. 889.
Pterocyclos (*Spiraculum*) *avanus*, Hanley & Theobald, Conch. Ind. 1875, pl. 134, figs. 8, 9.
Pterocyclus (*Spiraculum*) *avanus*, Nevill, Hand List, i, 1878, p. 264.
Spiraculum (s. str.) *avanum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 114; id., Cat. Pneum. 1899, p. 26.
Pearsonia (*Pearsonia*) *avana*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 172.
Pearsonia avana, Kobelt, Conch.-Cab., Cyclophoridae, ii, 1913, p. 971.

Original description:—"Shell convexly depressed, widely umbilicated, marked with radiating striæ and covered (in young specimens) with a thick scabrous epidermis; colour white, with broad zig-zag chestnut stripes crossing the whorls, and a wide submedian band of the same colour surrounding the shell. Spire scarcely raised, suture deep. Whorls 4½, rounded; the last cylindrical, descending slightly and gradually towards the mouth, and

bearing, 3 mm. behind the aperture, a short reverted sutural tube curved into an arch, so that its posterior termination is close to the suture, and open at both ends. Aperture slightly oblique, circular. Peristome (in well-grown specimens) double, the inner lip continuous and slightly protruded, angulately incised at the



Fig. 19.—*Pearsonia avana.*

suture. Outer lip expanded and produced, close to the last whorl, into a small vertical tongue-shaped projection. Operculum multispiral, almost flat, with a central prominent nucleus within, slightly concave externally, the edges of the outer whorls being free and slightly raised.

	mm.	inch.
" Major diameter ...	17	0·68
Minor ditto	14	0·56
Altitude	8	0·34
Diameter of aperture	5½	0·25 " (*Blanford.*)

Hab. India: Shan Hills, east of the town of Ava.

This species has hitherto remained unfigured. The accompanying illustration is from a specimen in the general collection of the British Museum.

163. **Pearsonia beddomei**, *Blanford.*

Spiraculum beddomei, Blanford, J. A. S. B. xxxv, 1866, p. 31; id., op. cit xxxviii, 1869, p. 137; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 48; Theobald, Cat. Shells Brit. India, 1876, p. 38.

Pterocyclos (*Spiraculum*) *beddomei*, Hanley & Theobald, Conch. Ind. 1875, pl. 134, figs. 5, 6.

Pterocyclus (*Spiraculum*) *beddomei*, Nevill, Hand List, i, 1878, p. 264.

Spiraculum (s. str.) *beddomei*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 114; id., Cat. Pneum. 1899, p. 26.

Pearsonia (*Pearsonia*) *beddomei*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 172.

Pearsonia beddomei, Kobelt, Conch.-Cab., Cyclophoridae, ii, 1911, p. 767, pl. 112, figs. 14–18.

Original description:—" Shell very broadly umbilicated, depressed, sub-discoidal, smooth, (?) solid, white with transverse chestnut zig-zag stripes. Spire flat or subconvex, suture deep. Whorls 5, rounded, the last cylindrical, descending gradually towards the aperture, and furnished, 7-10 millimetres behind the peristome, with a short open sutural tube, projecting *forwards*

and upwards, not touching the penultimate whorl. Aperture diagonal, circular, peristome double, both lips continuous, the inner slightly expanded, curved back into a shallow angular sinus at the suture, the outer expanded, and inverted upon the upper and dextral margins, rising near the suture into a compressed wing, which is attached throughout on the left side to the penultimate whorl. Operculum horny, concave within, convex without, flattened near the centre, 2 or 3 outer whorls furnished with a free spiral testaceous lamelliform border.

	mm.	inches.	
" Major diameter . .	27	1·12	
Minor ditto	23	·92	
Height .	10	·4	
Interior diameter of aperture...	8	·32	" (*Blanford.*)

Hab. India: Kimety Hills, near Vizagapatam, Madras Presidency (*Beddome*); Ganjam, Orissa (*Ball*).

" The wing of *Sp. beddomei* is much more distinct, higher and more pterocycloid than that of *Sp. hispidum*; the inner peristome (which is deficient in the last-named species) is angularly sinuate beneath the wing, but there is no approach to the deep, subcircular opening of the Indian species of *Pterocyclos*. . .

" The operculum has even more resemblance to that of *Pterocyclos tenuilabratus*, Metcalfe, than that of *Sp. hispidum*." (*Blanford.*)

164. **Pearsonia bhamoensis**, *Theobald.*

Spiraculum bhamoense, Theobald, J. A. S. B. xlv, part 2, 1876, p. 186.

Pterocyclus (*Spiraculum*) *bhamoensis*, Nevill, Hand List, i, 1878, p. 264.

Pearsonia (*Pearsonia*) *bhamoensis*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 173.

Pearsonia bhamoensis, Kobelt, Conch.-Cab., Cyclophoridae, ii, 1913, p. 972.

Original description:—" Testa depressa, aperto-umbilicata. Apice elevatiusculo, sutura profunda, anfract. 4½ convexis, ultimo juxta aperturam parum descendente. Epidermide tenui, leviter striata, vix scabriuscula. Colore corneo-albescente, fascia mediana cincto, strigisque castaneis fulguratis picto, superioribus latis, inferioribus autem (sive subfascialibus) angustis. Aliquando unicolore, corneo-straminea. Apertura obliqua magna. Peristomate duplici, intus ad suturam angulato-inciso; extra alam linguiformem subtubularem horizontalem adnatam formante. Tubulo suturali recurvato ab apertura 3 mm. distante.

" Diam. max. 11·00, diam. min. 8·50, alt. 5·50 (-oris diam.), apertura 5·20 mm."

Hab. Burma: Bhamo.

" The nearest ally of this interesting form is *S. avanum*, W. Bl., which it approaches in the recurved form of its sutural tube, but

it differs in size and mode of coloration. In *S. avanum*, too, the linguiform projection of the peristome is vertical, not as in the present species horizontal. The coloration, too, is peculiar, the



Fig. 20.—*Pearsonia bhamoensis.*

fulgurate stripes above the peripheral band being much more open or more obtusely bent than in the narrow or more acutely angled bands below it." (*Theobald.*)

The specimen now figured is the type in the British Museum, received from Theobald. The species has hitherto remained unfigured.

165. **Pearsonia bitubifera**, *Theobald.*

Spiraculum bitubiferum, Theobald, J. A. S. B. xlv, part 2, 1876, p. 187.

Pterocyclus (*Spiraculum*) *bitubiferus*, Nevill, Hand List, i, 1878, p. 264.

Pearsonia (*Pearsonia*) *bitubifera*, Kobelt, Das Tierriech, Lief. 16, 1902, p. 173.

Pearsonia tranvancorica bitubifera, Kobelt, Conch.-Cab., Cyclophoridae, ii, 1913, p. 973.

Original description:—"Testa depressa, late umbilicata, apice depresso, sutura profunda, anfract. 5 convexis, ultimo prope tubulum paullo ascendente, inde descendente. Epidermide scabriuscula spiraliter striata; colore albido, transverse vix subfulgurate castaneo strigato. Perist. simplici, expansiusculo, recurvato, prope suturam alam formante, tubulo brevissimo sursum spectante instructo. Tubulo suturali recurvato ab apertura 8 mm. distante. Apertura obliqua.

"Diam. max. (peristomate incluso) 18·30, diam. min. 14·00, alt. 7·00, apert. 7·80 mm." (*Theobald.*)

Hab. Burma: Bhamo.

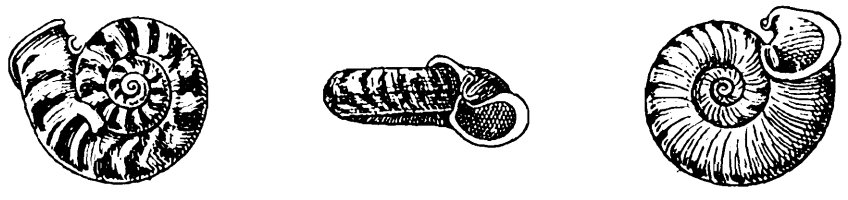


Fig. 21.—*Pearsonia bitubifera.*

"This remarkable species differs from most others in possessing a distinct tubular wing at the mouth which somewhat recalls the same feature in *Pt. albersi*, only the tube is more free and open.

The only other species possessing a second tube is *S. mastersi*, figured in the Conch. Indica, pl. v, fig. 1, but not described. In that species, however, the last whorl towards the mouth is free and the peristomial tube less complete though longer than in the present form." (*Theobald.*)

Nevill considered this form to be a mere variety of *P. gordoni*.

This is another species which has not previously been illustrated. The accompanying figures are from a specimen in the British Museum. Its measurements are: Diam. maj. 18·5, min. 15, alt. 6·75 mm.

166. **Pearsonia hispida,** *Pearson.*

Spiraculum hispidum, Pearson, J. A. S. B. ii, 1833, p. 592; Blanford, J. A. S. B. xxxii, 1863, p. 320; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 47; Theobald, Cat. Shells Brit. India, 1876, p. 38; Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 175, pl. 7, fig. 4 (sutural tube).

Pterocyclos hispidus, Benson, J. A. S. B. v, 1836, p. 355; id., A. M. N. H. ser. 2, i, 1848, p. 346; Gray, Nomencl. Moll. Brit. Mus. 1850, p. 12; Pfeiffer, Zeits. Malak. viii, 1851, pp. 8, 136; id., Mon. Pneum. 1852, p. 46; Theobald, J. A. S. B. xxvii, 1858, p. 317; Pfeiffer, Cat. Phaneropn. Brit. Mus. 1852, p. 28; id., Conch.-Cab., Cyclostomaceen, 1853, p. 231; Chenu, Man. Conchyl. i, part 2, 1860, p. 486, figs. 3588, 3589; Reeve, Conch. Icon. xiv, 1863, *Pterocyclos*, pl. 5, fig. 26.

Pterocyclos (*Spiraculum*) *hispidus*, Adams, Gen. Rec. Moll. ii, 1855, p. 278; Hanley & Theobald, Conch. Ind. 1870, pl. 5, fig. 4.

Pterocyclus (*Spiraculum*) *hispidus*, Nevill, Hand List, i, 1878, p. 263.

Spiraculum (s. str.) *hispidum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 114; id., Cat. Pneum. 1899, p. 26.

Pearsonia (*Pearsonia*) *hispida*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 173.

Pearsonia hispida, Kobelt, Conch.-Cab., Cyclophoridae, ii, 1911, p. 765, pl. 111, figs. 1–3.

Cyclostoma spiraculum, Sowerby, Thes. Conch. i, 1843, p. 110, pl. 31, figs. 270–272.

Steganotoma princepsi (v. d. Busch), Philippi, Abbild. Conch. i, 1844, p. 106, *Cyclostoma*, pl. 1, fig. 6.

Pterocyclos princepsi, Gray, Nomencl. Moll. Brit. Mus. 1850, p. 12.

Pterocyclos princepi, Pfeiffer, Zeits. Malak. iv, 1847, p. 111; id., Conch.-Cab., Cyclostomaceen, 1849, p. 195, pl. 24, figs. 7–10.

Original description:—"Shell white, subdiaphanous, upper surface of the body-whorl slighty patched with rufous. Epidermis dark brown, covered with short, bristly hairs, which at the outer and under side of the whorl are placed thickly together, giving an appearance to the shell of its being zoned with three narrow dark lines; whorls five, breathing tube one line in length, conical, compressed, pointing backward and inward; mouth circular, lip thickened and reflected.

"Diameter 1 inch.

"Operculum corneous, formed of several spiral layers, deeply cupped at the outer surface, and plano-convex at the inner." (*Pearson.*)

(No locality given.)

Hab. India: Patharghata, in Behar (*Benson*); Teria Ghat (*Theobald*).

Col. Godwin-Austen mentions a var. *minor*,* from Dihiri, Parbat, Dafla Hills, which agrees with the specimens fron Teria Ghat.

167. **Pearsonia kempi**, *Godwin-Austen.*

Spiraculum kempi, Godwin-Austen, Rec. Ind. Mus. viii, 1915, p. 496, pl. 39, figs. 4, 5.

"Shell flatly discoid, widely umbilicated. Sculpture close, epidermal lines of transverse growth both above and below, conspicuous close spiral liræ with every 2nd and 3rd somewhat stronger—in the type 2nd much more conspicuous on the central line of the last whorl, producing an angulate upper surface. Colour rich umber-brown, very indistinct transverse colouring, and a broad peripheral band. Spire very low, only just raised above the last whorl. Suture deeply impressed; the sutural tube is 9 mm. behind the peristome, extremely short, and does not appear to grow longer, it is of small diameter. Whorls 5, rounded on periphery. Aperture circular. Peristome white, thickened, double, reflected, the outer lip forming a low ridge behind the expanded inner lip, thus forming the short open descending wing. Columellar margin rounded. Operculum roundly convex, the whorl in double filaments distinctly raised, close and smooth at centre.

"Major diam. 26·5; alt. axis 7 mm. (Largest 30·0 Ponging.)" (*Godwin-Austen.*)

Hab. India: Abor Hills (*Oakes*).

"This is very close to the next species [*Sp. planum*] found by Mr. Kemp, but which in a few minor characters differs too much to be considered the same; unfortunately there are only two very old bleached specimens of it." (*Godwin-Austen.*)

168. **Pearsonia luyorensis**, *Godwin-Austen.*

?*Spiraculum luyorensis*, Godwin-Austen, Rec. Ind. Mus. viii, 1915, p. 500, pl. 40, fig. 5.

"Shell openly umbilicated, orbiculate, very depressed. Sculpture, a smooth epidermis, lines of growth very fine and close. Colour a very rich dark madder-brown, broad dark bands close set, cross the third whorl transversely. There is a narrow peripheral band. Spire very low, apex just showing above the plane of the

* J. A. S. B. xlv, part 2, 1876, p. 174.

last whorl. Suture impressed, the sutural tube close behind the aperture, 3 mm. distant, 3 mm. in length and curving backwards. Whorls 4, the last expanding rapidly. Aperture circular, subvertical. Peristome double, not very thickened, slightly reflected, at the suture, the outer lip is extended forward into a long spout resting on the periphery.

"Major diam. 18·75; alt. axis 4·8 mm." (*Godwin-Austen.*)

Hab. India: Luyor, Abor Hills (*Oakes*).

"This is close to *Pterocyclos spiramentum*, but is distinct in its much flatter apex, and far wider umbilicus. The peristome presents a stage further towards, and has reached the development of *Spiraculum*, rendering it a more than usually interesting species." (*Godwin-Austen.*)

169. **Pearsonia mastersi**, *Hanley & Theobald.*

Pterocyclos (*Spiraculum*) *mastersi* (Blanford MS.), Hanley & Theobald, Conch. Ind. 1870, p. 3, pl. 5, fig. 1.
Pterocyclos mastersi, Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 386.
Spiraculum mastersi, Blanford, J. A. S. B. xlvi, 1877, p. 314; Theobald, Cat. Shells Brit. India, 1876, p. 38.
Pterocyclus (*Spiraculum*) *mastersi*, Nevill, Hand List, i, 1878, p. 263.
Spiraculum (s. str.) *mastersi*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 114; id., Cat. Pneum. 1899, p. 26.
Pearsonia (*Pearsonia*) *mastersi*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 114.
Pearsonia mastersi, Kobelt, Conch.-Cab., Cyclophoridae, ii, 1911, p. 769, pl. 113, fig. 9.

"Testa latissime umbilicata, depressa, epidermide crassiuscula, fusca, scabra, decussato-subcostulata induta, atque liris tribus pilosis, una juxta peripheriam, altera supra, tertia infra, circumdata; sub epidermide alba, fasciis angulatis transversis castaneis notata; lineis incrementi confertis lirisque spiralibus minutis magis distantibus decussatim ornata. Spira fere plana, apice vix emersa. Anfr. 5, rotundati, ultimus antice longe solutus, valde descendens, paulo ante solutionem tubulo brevi, curvato, pervio, longitudinaliter striato, ad anfr. penultimum excurrente, antice compresso, in rimam apertam intra anfractum ultimum desinente, postice tereti, extus patente, 6–8 mill. pone aperturam oriente, munitus. Apertura diagonalis, circularis; peristoma incrassato-expansum, subduplex, superne in rostrum subtubuliforme, antice porrectum, excurrens. Operculum corneum, intus concavum, extus convexum, marginibus anfractuum liberis lamelliferis."

"Diam. maj. peristomate incluso 24, min. 16½, alt. 5, ap. diam. intus 6 mill." (*Blanford.*)

Hab. India: Golaghat, Naga Hills (*Masters*).

"This shell differs from all other known forms of *Spiraculum* by having the last whorl free and descending for a considerable distance, and by having, besides the sutural tube, a projection,

frequently of a subtubular form, from the top of the peristome. The shell has some resemblance to *Rhiostoma*, and still more to *Opisthoporus birostris*." (*Blanford.*)

170. **Pearsonia minima**, *Godwin-Austen.*

Spiraculum mininum, Godwin-Austen, Rec. Ind. Mus. viii, 1915, p. 501, pl. 40, fig. 2.

"Shell orbiculate, depressed, widely umbilicated. Sculpture, fine transverse lines of growth on the epidermis. Colour dull ochraceous, with a green tinge, 3rd and last whorls crossed by irregular broadish brown bands, indication of a band just below the periphery. Spire depressed, but apex well above last whorl. Suture impressed, the tube short, close behind the aperture, only 2 mm. distant. Whorls 4, regularly increasing. Aperture circular, with very slight angulation at sutural margin. Peristome double; both inner and outer lips continuous, moderately thickened and slightly reflected.

"Major diam. 9·2; alt. axis 3·25 mm." (*Godwin-Austen.*)

Hab. India: Jeku, Abor Hills (*J. Coggin Brown*).

"Lt. G. F. T. Oakes, R.E., has sent me seven examples of this species from Sibbum, far finer in size; four are bleached. The largest measures 10 mm. in major diameter. Three are perfect with strong epidermis. Colour sienna-brown in tint with ochraceous mottling, with an indistinct peripheral band. Major diam. 11·5 mm.

"This is a close ally of *Spiraculum kempi*, but the closely mottled zig-zag pattern and black peripheral band is not seen in that species; in this respect it is similar to *Spiraculum nevilli* of the Dafla Hills; it is smaller and rather flatter than that shell.

"It is hardly possible to find better examples showing the development of the sutural tube in *Spiraculum* than in the species figured on plate xl. Although it is not from the Tsanspu Valley but from the source of the Irrawady, *Spiraculum putaoensis* has been introduced in order to show how close is the relationship and how beautiful evolutionary stages have been. In having a tube on the suture behind the peristome and a simple peristome, both belong to the genus *Spiraculum*. In figures 2 *c* and 3 *b*, within the aperture may be seen the little orifice having a connection with the branchial sac. In *Spiraculum minimum* this is very close to the aperture, in *Spiraculum putaoensis* it is more remote. In the first the inner and outer lips of the peristome are united and thickened at the upper inner margin next the suture, while in the second there is further development; a clear separation of the lips has taken place, the inner has a slight nick on the line of the suture, shown by a sort of cicatrice up to the branchial orifice, and the outer lip is expanded forward into a short scoop-like process corresponding to the wing, as it has been called, of *Pterocyclos*. The next species (fig. 4) [*P. spiramentum*] might

be placed in this genus and is a true link with it. The tube is so far forward, it still forms a part of the peristome, a complete isolated orifice has not yet been formed—it is a slit; the process of its further development would be the growing more forward of the whorl itself. In fig. 5, *Spiraculum luyorensis*, we find this stage reached, and in fig. 5 *b* the internal orifice has been left behind, and externally a perfect tube is seen on the suture (fig. 5 *a*) behind the aperture and completely separate from it. While this evolution has been in progress, another change has taken place; the scoop in fig. 4 has grown forward considerably into the elongated gutter of fig. 5, with its edges growing inwards and nearly touching, corresponding in life, in all probability, with a sharp fold of the mantle edge, which with further growth might become more and more tube-like." (*Godwin-Austen.*)

171. **Pearsonia nagaensis**, *Godwin-Austen & Beddome.*

Spiraculum nagaense, Godwin-Austen & Beddome, A. M. N. H. ser. 6, xiii, 1894, p. 509.
Spiraculum (s. str.) *nagaense*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 135; id., Cat. Pneum. 1899, p. 103.
Pearsonia (*Pearsonia*) *nagaensis*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 174.
Pearsonia nagaensis, Kobelt, Conch.-Cab., Cyclophoridae, ii, 1911, p. 771, pl. 113, figs. 12, 13.

Original description:—"Shell discoidal, upper surface flat, widely umbilicated; sculpture, strong longitudinal striation, covered with a thick epidermis, with two parallel bands of close set hairs on the periphery. Colour umber, with a series of darker bands crossing the whorls. Spire quite flat; suture deep, the sutural tube is 4·5 mm. behind the peristome, is well developed, arched and bending over, and lies directed backwards and parallel with the suture; whorls 5, rounded, the last descending very slightly; aperture circular; peristome thickened, white, continuous, with an angulate notch above and close to the body-whorl; operculum widely spiral, shelly, whitish grey.

"Maj. diam. 17·5, min. 14·0; alt. axis 5·25 mm." (*Godwin-Austen & Beddome.*)

Hab. India :Maokokchung, Naga Hills (*Muspratt*).

"This small form may be distinguished from *S. hispidum*, var. *minor*, of Teria Ghat in the Khasi Hills and base of the Dafla Hills, in the form and direction in which the sutural tube lies backward on the shell; in *hispidum* it lies across and nearly at right angles with the suture, in this new form it is on the line of the suture." (*Godwin-Austen & Beddome.*)

172. **Pearsonia nevilli**, *Godwin-Austen.*

Spiraculum nevilli, Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 174, pl. 7, fig. 2.

Pterocyclus (*Spiraculum*) *nevilli*, Nevill, Hand List, i, 1878, p. 264.
Pearsonia (*Pearsonia*) *nevilli*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 174.
Pearsonia nevilli, Kobelt, Conch.-Cab., Cyclophoridae, ii, 1911, p. 765, pl. 112, figs. 1, 2.

Original description:—"Shell discoidal, convexly depressed, widely umbilicated, covered with a dark brown epidermis which soon becomes eroded, and with an incipient dark band on the keel in perfect specimens. Spire very slightly raised, suture deep, whorls 5, much rounded, the last descending slightly towards the aperture. The sutural tube is only 0·10″ [2·5 mm.] in length, 0·3″ [7·5 mm.] behind the aperture, turns back, and is situated close to the suture. Aperture oblique, circular. Peristome double, inner lip continuous, having at the suture a re-entering angular notch, the outer is similarly notched and then expanded and folded into a spout-shaped form. Operculum not seen, probably as in *S. hispidum*.

"Alt. 0·36 [9 mm.], major diam. 1·05 [26·5 mm.], minor diam. 0·92 [23·5 mm.], apert. 0·45 in. [11·5 mm.]."

Hab. India: Dihiri Parbat, Dafla Hills, Assam (*Godwin-Austen*).

"This *Spiraculum* is quite distinct from *S. hispidum*, for which I mistook it when found, and consequently omitted to search for more examples. In the form of the sutural tube it most nearly resembles *S. avanum* W Blf., thus differing very considerably from *S. hispidum*, in which that part is broad and curves quite over and across the suture in well-grown shells. The most notable point of difference, however, is the expansion of the outer lip into a tube-like process, in which respect the species shews its very close affinity to the genus *Pterocyclos*." (*Godwin-Austen.*)

Pearsonia nevilli, *G.-A.*, var.

Spiraculum nevilli, var. Godwin-Austen, Rec. Ind. Mus. viii, 1915, p. 497.

"Shell very openly umbilicated, discoid. Sculpture, close spiral liration, accentuated at the middle half of the whorl looking at it from above. Colour dark madder-brown, mottled or rather streaked closely with ochre bands which, as they approach the apex, are closely zig-zagged, beneath plain. A distinct black band on the periphery. Spire very flat. Suture impressed. Whorls 5, regularly increasing. Aperture circular, oblique. Peristome double, thickened, much reflected, expanding forward near suture into a spout-like shape, which continues as a raised, pronounced narrow ridge on the reflected whorl, the epidermis being peculiarly shining. A little further development would constitute this a tube, such is its appearance. Operculum multi-spiral, about 10 whorls, the edges slightly raised and furred on outer margin."

"Major diam. 21·5; alt. axis 5·0 mm. (Type immature, 1st received.) Major diam. 22·5; alt. axis 9·5 mm. (full-grown example)." (*Godwin-Austen.*)

Hab. India: Abor Hills.

Pearsonia nevilli, *G.-A.*, var.

Spiraculum nevilli, var., Godwin-Austen, Rec. Ind. Mus. viii, 1915, p. 497.

"The wing or spout is not so long in typical *nevilli* from the Dafla Hills, and the last whorl near the aperture descends much more than in this Abor shell, otherwise they are very close in form. The Abor shells are not so very much mottled, but have a distinct band, and they are much smaller.

"Major diam. 23·25; alt. axis 4·8 mm." (*Godwin-Austen.*)

Hab. India: Luyor, Abor Hills (*Oakes*).

173. **Pearsonia oakesi**, *Godwin-Austen.*

Spiraculum oakesi, Godwin-Austen, Rec. Ind. Mus. viii, 1915, p. 496, pl. 39, fig. 3.

"Shell depressedly discoid, widely umbilicated. Sculpture close, fine transverse lines of growth in the epidermis, no spiral ribbing. Colour: ground grey white, crossed by regular bands of brown, zig-zag below, merging into a narrow dark peripheral band, from which zig-zag lines are given off on the basal side. Spire scarcely raised above the last whorl. Suture well impressed, the sutural tube very long, 7 mm., narrow, set obliquely backward, nearly reaching to the apical whorl. Whorls 5, regularly increasing. Aperture circular. Peristome continuous, thickened, reflected at the upper inner angle, expanded forward from above and below, horizontally upon the median line of the penultimate whorl forming a narrow slit. Columellar margin rounded. Operculum multispiral, slightly concave, smooth at centre, edges of the outer whorls distinct and slightly raised.

"Operculum multispiral, edges of suture slightly raised, concave in centre.

"Major diam. 26·0; alt. axis 5·5 mm."

Hab. India: Abor Hills (*Oakes*).

"Five specimens of this beautiful species came to hand; it does not recall any species as yet found in Assam or Burma." (*Godwin-Austen.*)

174. **Pearsonia plana**, *Godwin-Austen.*

Spiraculum planum, Godwin-Austen, Rec. Ind. Mus. viii, 1915, p. 497, pl. 39, fig. 6.

"Shell similar to *S. kempi*. Sculpture, rather coarser spiral

ribbings. Colour bleached. Spire very low, the apex scarcely showing above the last whorl. Suture deeper. Sutural tube only 6·5 from the peristome, it is 4 mm. long and sharply recurved backward. Whorls 5. Aperture circular. Peristome double, thickened, outer lip expanding into a somewhat lengthened open wing, ascending on the whorl next it, not descending as in previous species.

"Major diam. 30·0; alt. axis 6·0 mm."

Hab. India: Upper Rotung, Abor Hills; Upper Rotung; Yembung (*Kemp*).

"A single small variety, bleached, only 28 mm. in major diameter, was sent to me from the Miri Hills." (*Godwin-Austen.*)

175. **Pearsonia putaoensis,** *Godwin-Austen.*

Spiraculum putaoensis, Godwin-Austen, Rec. Ind. Mus. viii, 1915, p. 500, pl. 40, fig. 3.

"Shell widely umbilicated, orbicularly depressed. Sculpture, fine regular transverse striæ of growth. Colour, bleached, and epidermis gone; zig-zag streakings at regular intervals cross the whorls from the suture outwards. Spire scarcely raised above the last whorl. Suture impressed, the tube 4½ mm., behind the aperture, a mere orifice, but in the perfect shell there may be a tube. Whorls 4, increasing regularly. Aperture circular, oblique. Peristome double, inner and outer lips continuous, the inner with a slight notch near sutural margin, the outer expanded into a wing or spout.

"Major diam. 14·0; alt. axis 4·0 mm."

Hab. Burma: Putao, Upper Burma (*Capt. E. C. Morris*).

"The habitat of this species at the head of the Irrawady valley (not a very far distant one from the Tsanspu) is interesting and I have introduced it here because in the sutural tube it approaches a species found in the Abor Hills, which I next describe as *Spiraculum minimum*, and is much smaller. It also recalls *Spiraculum andersoni*, Blf., from Bhamo, but this is more openly umbilicated, the wing similar." (*Godwin-Austen.*)

176. **Pearsonia simplex,** *Nevill.*

Pterocyclus (*Spiraculum*) *mastersi,* var. *simplex* (? distinct species), Nevill, Hand List, i, 1878, p. 263.

Spiraculum (s. str.) *simplex,* Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 114; id., Cat. Pneum. 1899, p. 26.

Pearsonia (*Pearsonia*) *simplex,* Kobelt, Das Tierreich, Lief. 16, 1902, p. 175.

"Of much simpler characters than the typical form. The last whorl only a little detached; the sutural tube not bent back; the suture less excavated; and only a small expanded tube at the upper margin of the aperture." (*Nevill.*)

Hab. India: Naga Hills (*Roberts*).

177. **Pearsonia travancorica**, *Blanford.*

Spiraculum travancoricum (Beddome), Blanford, J. A. S. B. xlix, 1880, p. 212, pl. 3, fig. 6; Cooke, Cambr. Nat. Hist. iii, 1895, p. 266, fig. 180 c.
Spiraculum (s. str.) *travancoricum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 114; id., Cat. Pneum. 1899, p. 26.
Pearsonia (*Pearsonia*) *travancorica*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 175.
Pearsonia travancorica, Kobelt, Conch.-Cab., Cyclophoridae, ii, 1913, p. 973.

Original description:—"Shell broadly umbilicate, depressedly turbinate, and, in the single aged specimen found, decorticated, whitish and smooth throughout. Traces of a brown epidermis remain around the umbilicus, and younger specimens are probably brown in colour, and perhaps ornamented with coloured bands, like other species of the genus. Spire raised, depressedly conical, suture deep, apex acute. Whorls $4\frac{1}{2}$ rounded; the last cylindrical, descending, and free near the aperture, and provided above, about three millimetres behind the mouth, with a rather elongate tube, which projects forward, and is in contact with the penultimate whorl throughout. The tube appears broken at the end, and may have been even longer originally; the anterior termination in the specimen is in a line with the oblique peristome of the shell. Aperture diagonal, circular; peristome double, inner lip sharp, not projecting much, curved backwards near the penultimate whorl; outer peristome expanded, and wavy above externally and below, straight and somewhat narrower on the left margin. Operculum nearly flat externally, concave within; the outer margins of the whorls free and lamellar, except towards the middle; the circumference surrounded by several raised lines, the edges of the outermost whorls. Major diameter $12\frac{1}{2}$ mm., minor $10\frac{1}{2}$, axis 7, diameter of the mouth $5\frac{1}{2}$ mill." (*Blanford.*)

Hab. India: Hills between Travancore and Tinnevelly.

"This species differs from all others of the genus by its higher spire, and by the combination of the mouth being free and the sutural tube being directed forward and attached to the last whorl." (*Blanford.*)

Subgenus **PSEUDOSPIRACULUM**, *Kobelt.*

Diplopterum, Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 114; id., Cat. Pneum. 1899, p. 26 (non *Diplopteron* corr. *Diplopterum*, Swainson, 1839).
Pseudospiraculum, Kobelt, Das Tierreich, Lief. 16, 1902, p. 175.

Type, (only species) *Spiraculum fairbanki*, Blanford.

Range. India.

Shell with a tongue-shaped process on the lower margin of the peristome.

178. **Pearsonia fairbanki**, *Blanford.*

Spiraculum fairbanki, Blanford, J. A. S. B. xxxviii, 1869, p. 135; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 48; Theobald, Cat. Shells Brit. India, 1876, p. 38.
Pterocyclos (*Spiraculum*) *fairbanki*, Hanley & Theobald, Conch. Ind. 1870, pl. 49, figs. 1, 2.
Pterocyclus (*Spiraculum*) *fairbanki*, Nevill, Hand List, i, 1878, p. 264.
Spiraculum (*Diplopterum*) *fairbanki*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 114; id., Cat. Pneum. 1899, p. 26.
Pearsonia (*Pseudospiraculum*) *fairbanki*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 175, fig. 37; id., Conch.-Cab., Cyclophoridae, ii, 1911, p. 770.

Original description:—"Shell broadly umbilicated, depressed, nearly discoidal, greyish white with irregular streaks and spots of chestnut and two bands of the same colour; one, somewhat interrupted, below the periphery, the other broader, within the umbilicus. Spire almost flat, the apex prominent and papillar, the suture deeply impressed. Whorls 5, rounded, the last cylindrical, gradually descending in front and furnished, 4 mill. behind the aperture, with a short, nearly vertical spiracle, in the form of a truncated cone, and joined to the penultimate whorl. Aperture diagonal, circular, the peristome double, the internal portion projecting slightly and obtuse, with a rather shallow angular sinus near the suture: the external peristome is continuous, expanded, dilated above into a projecting wing which runs forwards for some distance along the last whorl in front of the aperture, and is bent downwards at the end. Near the base of the columellar margin there is a small gutter-shaped projection. The operculum is very concave within, externally convex, flattened at the apex, with free lamellar edges to the whorls as in the typical species of *Pterocyclos*.

"Major diameter $14\frac{1}{2}$, minor $11\frac{1}{2}$, axis 6, diameter of the aperture within 4 mill." (*Blanford.*)

Hab. India: Pulney Hills (*Fairbank*).

Genus **RHIOSTOMA**, *Benson.*

Rhiostoma (part.), Benson, A. M. N. H. ser. 3, v, 1860, p. 96; Pfeiffer, Journ. Conchyl. x, 1862, p. 45; Blanford, A. M. N. H. ser. 3, xiii, 1864, p. 451; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 38; Martens, Preuss. Exped. Ost-Asien, Zool. ii, 1867, p. 63; Stolizckza, J. A. S. B. xl, 1870, p. 150 (animal); Nevill, Hand List, i, 1878, p. 262 (as subgenus of *Pterocyclus*); Fischer, Man. Conchyl. 1885, p. 745 (subgenus); Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 115; id., Cat. Pneum. 1899, p. 27; Kobelt, Das Tierreich, Lief. 16, 1902, p. 176; id., Conch.-Cab., Cyclophoridae, ii, 1910, p. 754.

TYPE, *Rhiostoma haughtoni*, Benson.

Range. Burma, Farther India.

Shell widely umbilicated, subdiscoid, last whorl solute, descending laterally; peristome free, notched above, with a more or less imperfect reflexed tube at the end of the notch. Operculum shortly cylindrical, multispiral, deeply excavated within, nucleus flat, smooth.

179. **Rhiostoma haughtoni**, *Benson*.

Rhiostoma haughtoni, Benson, A. M. N. H. ser. 3, v, 1860, p. 96; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 39; Stoliczka, J. A. S. B. xl, 1871, p. 150; Theobald, Cat. Shells Brit. India, 1876, p. 37; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 115; id., Cat. Pneum. 1899, p. 27; Kobelt, Das Tierreich, Lief. 16, 1902, p. 177, fig. 38; id., Conch.-Cab., Cyclophoridae, ii, 1910, p. 759, pl. 110, fig. 14, pl. 111, figs. 14–16.

Pterocyclos haughtoni, Reeve, Conch. Icon. xiv, 1863, pl. 5, fig. 30.

Pterocyclos (*Rhiostoma*) *haughtoni*, Hanley & Theobald, Conch. Ind. 1870, pl. 5, fig. 10.

Pterocyclus (*Rhiostoma*) *haughtoni*, Nevill, Hand List, i, 1878, p. 262.

Original description :—" Testa late umbilicata, convexo-depressa, solidiuscula, oblique scabre striatula, superne castanea, subtus albida, fascia angusta mediana saturatiore, utrinque angulato-marmorata, ornata; spira depresso-conoidea, apice prominulo obtusiusculo, sutura impressa; anfractibus 5, convexiusculis, ultimo cylindrico, antice longe soluto, lateraliter descendente, superne carina obtusa a sutura usque ad tubulum marginalem decurrente munito; apertura libera, obliqua, diagonali, circulari; peristomate subduplici, extus incrassato, reflexiusculo, superne ad sinistram inciso, tubulo imperfecto, antice aperto, sinistrorse erecto, rimam coronante, munito; umbilico perspectivo, profundo; operculo testaceo, multispirato, breviter cylindrico, apice planato, lævigato, anfractibus arcte convolutis, marginibus acute carinatis, spatiis intersitis epidermide scabra vestitis; intus profunde excavato, polito.

" Diam. major 21, minor 11, axis 8½ mill." (*Benson.*)

Hab. Burma : Moulmain (*Haughton*, *Theobald*) ; Damotha, N.E. of Moulmain (*Stoliczka*).



Fig. 22.—*Rhiostoma haughtoni.*

" Young specimens have no trace of the upper notch at the outer lip and are generally undistinguishable from the planorboid *Cyclophori*, like the Ceylon *C. annulatus*, Trosch., or the Nilgherry

C. ravidus, Bens. Only in full-grown specimens the last whorl at the aperture becomes detached from the previous whorl. The operculum is first thin, flattened outside and slightly concave inside; gradually the shape becomes convex outside, as the whorls increase in number, and at the same time the internal concavity enlarges." (*Stoliczka.*)

The shell now figured is in the general collection of the British Museum, and measures: Major diam. 21·5, minor 18, alt. 12 mm.

180. **Rhiostoma strubelli**, *Möllendorff.*

Rhiostoma strubelli, Möllendorff, Nachr. Deuts. Malak. Ges. xxxi, 1899, p. 166; Kobelt, Das Tierreich, Lief. 16, 1902, p. 179; id., Conch.-Cab., Cyclophoridae, ii, 1910, p. 759, pl. 113, figs. 10, 11.

Original description:—"T. late et aperte umbilicata, umbilico $\frac{5}{18}$ diametri æquante, conoideo-depressa, solidiuscula, subtiliter sed distincte striatula, griseo-alba, strigis fulguratis castaneis picta, ad peripheriam tænia angusta fusca ornata. Spira breviter conoidea. Anfr. 5 teretes, sutura sat profunde impressa submarginata disjuncti, ultimus longe descendens, breviter solutus, in parte soluta superne carinula obtusa, ad aperturam tubulo crassiusculo munitus. Apert. fere diagonalis, circularis, peristoma breviter expansum, sat incrassatum. Operculum subtestaceum breviter cylindricum, 2·5 mm. altum.

"Diam. 18, alt. 10 mm." (*Möllendorff.*)

Hab. Burma: Kalow, Shan States (*Strubell*).

Section CYCLOTEÆ.

Genus **CYCLOTUS**, *Swainson.*

Cyclotus, Swainson, Treat. Malac. 1840, pp. 186, 336 (as subgenus of *Cyclostoma*); Pfeiffer, Zeits. Malak. viii, 1851, p. 132; id., Mon. Pneum. 1852, p. 16 (as genus); Adams, Gen. Rec. Moll. ii, 1855, p. 274; Chenu, Man. Conchyl. i, part 2, 1860, p. 485; Blanford, A. M. N. H. ser. 3, xiii, 1864, p. 446; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 14; Martens, Preuss. Exped. Ost-Asien, Zool. ii, 1867, p. 116; Nevill, Hand List, i, 1878, p. 255; Fischer, Man. Conchyl. 1885, p. 745 (as subgenus of *Pterocyclus*); Möllendorff, Ber. Senckenb. Nat. Ges. 1890, p. 266; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 116; id., Cat. Pneum. 1899, p. 28; Sarasin, Land Moll. Celebes, 1899, p. 35; Kobelt, Das Tierreich, Lief. 16, 1902, p. 188; id., Conch.-Cab., Cyclophoridae, ii, 1911, p. 773.

Type, *Cyclotus variegatus*, Swainson.

Range. Southern Asia, Southern China and Japan, New Guinea.

Shell widely umbilicated, flat or discoid, with a dark periostracum; peristome simple or provided with a wing. Operculum composed of two laminæ separated by a deep furrow, the inner membranaceous, the outer calcareous, flat, without process or appendages.

Subgenus **SIPHONOCYCLUS**, *Möllendorff.*

Rhiostoma (part.), Benson, A. M. N. H. ser. 3, v, 1860, p. 96.
Siphonocyclus, Möllendorff, Nachr. Deuts. Malak. Ges. xxxii, 1900, pp. 135, 136; Kobelt, Das Tierreich, Lief. 16, 1902, p. 208; id., Conch.-Cab., Cyclophoridae, ii, 1911, p. 813.

TYPE, *Pterocyclos tener*, Menke.

Range. Burma, Farther India, South China, Hainan.
Shell with sutural tube as in *Opisthoporus*. Operculum normal.

181. **Cyclotus gordoni**, *Benson.*

Opisthoporus gordoni, Benson, A. M. N. H. ser. 3, xi, 1863, p. 322; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 36; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 118; id., Cat. Pneum. 1899, p. 30.
Spiraculum gordoni, Blanford, A. M. N. H. ser. 3, xiii, 1864, p. 451; Theobald, J. A. S. B. xxxix, 1870, p. 399, pl. 18, fig. 6.
Spiraculum (*Opisthoporus*) *gordoni*, Theobald, Cat. Shells Brit. India, 1876, p. 38.
Pterocyclos (*Spiraculum*) *gordoni*, Hanley & Theobald, Conch. Ind. 1870, pl. 49, figs. 9, 10.
Pterocyclus (*Spiraculum*) *gordoni*, Nevill, Hand List, i, 1878, p. 264.
Procyclotus (*Siphonocyclus*) *gordoni*, Möllendorff, Nachr. Deuts. Malak. Ges. xxxii, 1900, p. 137.
Cyclotus (*Siphonocyclus*) *gordoni*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 209, fig. 43; id., Conch.-Cab., Cyclophoridae, ii, 1911, p. 820, pl. 123, figs. 15, 16.

Original description:—" O. testa late et concave umbilicata, depressa, discoidea, confertim striata, sub lente striis minutis spiralibus, nonnullis elevatiusculis, decussata, albida, strigis fulguratis castaneis fasciaque fusca dentata ad peripheriam ornata; spira planata, apice non elevato obtuso, sutura profunda, demum canaliculata; anfractibus 5, gradatim accrescentibus, convexis, ultimo rotundato, antice descendente, pone alam breviter soluto, 4 millim. pone aperturam spiraculo suturali brevi retrorsum spectante, nonnunquam subobsoleto, munito; apertura valde obliqua, circulari; peristomate duplici, interno prope anfractum penultimum breviter inciso, exteriore superne et ad dextram angulatim expanso, ala intus concava insuper anfractum penultimum antrorsum ascendente munito.

" Diam. major 22–23, minor 17–19, axis 5–6 mill." (*Benson.*)

Hal. Burma: Moulmain (*Gordon*).

Section CYATHOPOMATEÆ.

Genus **CYATHOPOMA**, *Blanford.*

Cyathopoma, Blanford, J. A. S. B. xxx, 1861, p. 348 (nom. nud.); id., A. M. N. H. ser. 3, xiii, 1864, p. 449; id., Journ. Conchyl. xvi, 1868, p. 257; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 23;

Nevill, Hand List, i, 1878, p. 258; Nevill, J. A. S. B. l, 1881, p. 144; Fischer, Man. Conchyl. 1885, p. 745; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 119; Sykes, Proc. Malac. Soc. iii, 1898, pp. 66, 159; Kobelt, Das Tierreich, Lief. 16, 1902, p. 218.

TYPE, *Cyclotus filocinctus*, Benson.

Range. India, Farther India, Ceylon, Andamans, Nicobars, Seychelles.

Animal white, with a short oval foot, undivided beneath; small black tentacles with eyes at base.

Shell small, umbilicated, pyramidal-turbinate or depressed turbinate, generally with spiral liræ, periostracum thick. Operculum convex on the inner side, multispiral, normally truncate conoid, composed of two laminæ, the inner membranaceous, outer calcareous, very concave, the edges of the whorls free, occasionally beautifully ornamented.

Subgenus **CYATHOPOMA**, *Blanford.*

Cyathopoma (part.), Blanford, J. A. S. B. xxx, 1861, p. 348; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix. 1897, p. 119; id., Cat. Pneum. 1899, p. 31; Kobelt, Das Tierreich, Lief. 16, 1902, p. 219; Pilsbry, Bull. Amer. Mus. Nat. Hist. xl, 1919, p. 328.

TYPE, *Cyclotus filocinctus*, Benson.

Range. Southern India, Ceylon, Nicobars, Japan; Seychelles, Belgian Congo.

Shell small, more or less depressed, widely umbilicated, with distinct spiral liræ; peristome single or double; operculum with raised edges to the whorls, which are often incurved towards the centre and prettily ornamented.

182. **Cyathopoma album**, *Beddome.*

Cyathopoma (*Jerdonia*) *album*, Beddome, P. Z. S. 1875, p. 446, p. 52, fig. 14.
Cyathopoma album, Theobald, Cat. Shells Brit. India, 1876, Addenda, p. ii; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 379.
Jerdonia alba, Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 308.
Cyathopoma (s. str.) *album*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 119; id., Cat. Pneum. 1899, p. 31.
Cyathopoma (*Cyathopoma*) *album*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 219, fig. 46.

Original description:—"Shell widely umbilicated, depresso-turbinate, furnished with a chalky-white or whitish-brown epidermis, having a minute vertical striation, which is early deciduous, or only present in patches, the shell beneath being of a peculiar shining white horny texture; spire conoidal, apex subacute; whorls 4–5, spirally lirate, the lowest with four to five,

the penultimate with three ribs or lines, more prominent before the loss of the epidermis; the umbilicus prominently spirally ribbed within; aperture circular, oblique; peristome thin, simple, continuous, slightly angled at the inner base at the termination of the first rib round the umbilical region; operculum externally very concave, with the margins of the outer shelly layer much raised but straight and not at all arched, multispiral, with a small transparent nucleus: length $\frac{1}{14}$ inch [1·75 mm.], breadth $\frac{1}{12}$ inch [2 mm.]." (*Beddome.*)

Hab. India: Yellagherry Mountains; Sirumullay Hills, Dindigul (*Beddome*). Ceylon: Dimbola (*Beddome*).

Stated by the author to be allied to *C. kolamulliense*, Blanford.

183. Cyathopoma artatum, *Sykes.*

Cyathopoma artatum, Sykes, Proc. Malac. Soc. ii, 1897, p. 236, pl. 16, figs. 19, 20.
Cyathopoma (s. str.) *artatum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxxi, 1899, p. 136; id., Cat. Pneum. 1899, p. 103.
Cyathopoma (*Cyathopoma*) *artatum*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 219.

Original description:—"Testa dextrorsa, late et perspective umbilicata, depresso-turbinata, apice acutula, periostraco calcareo, deciduo, induta, sub hoc albido-cornea, polita; anfr. $4\frac{1}{2}$, regulariter accrescentes, spiraliter lirati, sub lente leviter transversim striati, ultimus carinis duabus supra peripheriam, et sex liris magis approximatis sub peripheriam et in umbilico, penultimus duabus carinis; apertura circularis, peristomate simplice, continue, intus leviter incrassato; operculum valde concavum, multispirale. Alt. 1·3, lat. 2 mm." (*Sykes.*)

Hab. Ceylon: Uda Pussellawa (*Preston*).

"This minute species is noteworthy for being clothed with a periostracum of a very chalky nature, which, however, appears to be very easily rubbed off, and many specimens only fully exhibit it within the umbilical area. The three upper carinations are sharply edged, while those below the periphery and in the umbilicus are rounded and thread-like." (*Sykes.*)

184. Cyathopoma atrosetosum, *Beddome.*

Cyathopoma (*Jerdonia*) *atrosetosum*, Beddome, P. Z. S. 1875, p. 448, pl. 52, fig. 18.
Cyathopoma atrosetosum, Theobald, Cat. Shells Brit. India, 1876, Addenda, p. ii; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 380.
Cyathopoma (s. str.) *atrosetosum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 119; id., Cat. Pneum. 1899, p. 31.
Cyathopoma (*Cyathopoma*) *atrosetosum*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 219.

Original description:—"Shell umbilicated, ovate to subturbinate,

spirally lirate, thin, semitransparent, whitish, furnished with a deciduous brownish vertically but inconspicuously striated epidermis, subobsolete on some specimens; spire conical; whorls 5, rounded, furnished with numerous close, rather inconspicuous spiral lines, along which are numerous, rather distant, patent or suberect long black lines; umbilicus more or less open, with a more or less prominent keel at its entrance, inconspicuously ribbed or smooth within; aperture subvertical, circular; peristome single, subdouble or double, entire or with the outer margin beautifully crenated; operculum subdouble, externally white and shelly, and a little concave from the margins being raised, multispiral, with a large central transparent nucleus, internally membranaceous, convex, yellowish, shining: length $\frac{1}{10}$ inch [2·5 mm.], greatest diameter $\frac{1}{10}$ to $\frac{1}{14}$ inch [2·5–1·75 mm.]."

Hab. India: South Canara Ghats; Anamullays (*Beddome*).

"The peristome, the umbilical region, and even the shape of the shell are very variable." (*Beddome.*)

185. **Cyathopoma beddomeanum**, *Nevill.*

Cyathopoma (*Jerdonia*) *blanfordi*, Beddome, P. Z. S 1875, p. 446, pl. 52, fig. 13 (not *Cyathopoma blanfordi*, H. Adams, 1868); Theobald, Cat. Shells Brit. India, 1876, Addenda, p. ii; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 377.

Cyathopoma (*Jerdonia*) *beddomeanum* (nom. mut.), Nevill, J. A. S. B. l, 1881, p. 145.

Cyathopoma (s. str.) *beddomeanum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 119; id., Cat. Pneum. 1899, p. 31.

Cyathopoma (*Cyathopoma*) *beddomeanum*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 220.

Original description:—"Shell thin, umbilicated, pyramidal, turreted, straw-coloured, apex attenuated and subacute; whorls 6, sutures prominent, all the whorls, except the two small apical ones, prominently carinated; carinations two to three on the third whorl, three to five on the fourth, five to seven on the lowest, those about the umbilical region rather distant; umbilicus pervious; aperture circular; peristome thin, single, continuous, inconspicuously crenulate; operculum as in the last species [*nitidum*]: length $\frac{1}{7}$ inch [3·5 mm.], greatest diameter $\frac{1}{11}$ inch [2·25 mm.]."

Hab. India: Tinnevelly Mountains, 4000 ft. (*Beddome*).

"I have a closely allied species from Ceylon, *Jerdonia dickoyensis* (Nevill MS.); it is rather smaller, with a finer carination, and much smoother about the umbilical region; and I think specifically distinct." (*Beddome.*)

186. **Cyathopoma coonoorense**, *Blanford.*

Cyathopoma coonoorense, Blanford, Journ. Conchyl. xvi, 1868, p. 261, pl. 12, fig. 6; Hanley & Theobald, Conch. Ind. 1875, pl. 135, fig. 10; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 25; Nevill, Hand List, i, 1878, p. 259.

Cyathopoma (s. str.) *coonoorense*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 119; id., Cat. Pneum. 1899, p. 31.
Cyathopoma (*Cyathopoma*) *coonoorense*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 220.

Original description:—"Testa aperte umbilicata, depresso-turbinata, lineis subdistantibus elevatis minutis cincta, albida, epidermide luteo-cornea, strigis castaneis obliquis ornata induta. Spira conoidea, apice acuto; sutura profunda. Anfr. 4 rotundati, ultimus teres, versus aperturam leviter descendens, undique minute spiraliter liratus. Apertura obliqua, circularis, juxta umbilicum sinuata; peristoma, subduplex vel duplex.—Operculum?

"Diam. maj. vix 3, min. $2\frac{1}{2}$; alt. $2\frac{1}{4}$ mill."

Hab. India: Coonoor, Nilghiri Hills (*Blanford*).

"Closely allied to *C. malabaricum*. The spiral sculpture is less pronounced than in most species, the periostracum is thinner, smoother, and ornamented with coloured bands.

"A larger form with more crowded spiral liræ and distinctly double peristome has been collected by Beddome at Krore Mund in the Nilghiri Hills." (*Blanford.*)

187. Cyathopoma deccanense, *Blanford.*

Cyathopoma deccanense, Blanford, Journ. Conchyl. xvi, 1868, p. 258, pl. 12, fig. 2; Hanley & Theobald, Conch. Ind. 1874, pl. 82, figs. 8, 9; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, pp. 23, 377.
Cyathopoma deccanianum, H. Adams, Proc. Zool. Soc. 1868, p. 292.
Cyathopoma dekkanense, Theobald, Cat. Shells Brit. India, 1876, p. 38.
Cyathopoma deccanense, Nevill, Hand List, i, 1878, p. 259.
Cyathopoma (s. str.) *deccanense*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 120; id., Cat. Pneum. 1899, p. 32.
Cyathopoma (*Cyathopoma*) *deccanense*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 220.

Original description:—"Testa subanguste umbilicata, turbinata, solidula, albida, lineis confertis elevatis cincta, epidermide crassa, molli, faciliter detergenda, supra fuscescenti, subtus albida, subtestacea, verticaliter striata, induta. Spira conica, apice subacuto; sutura impressa. Anfr. $4\frac{1}{2}$ convexi, ultimus cylindraceus, supra 2–3 lineis elevatis, ad peripheriam, carina elevatiuscula, subtus duabus similibus circumdatus, in umbilico perspectivo, conico, costis confertis spiralibus ornatus. Apertura parum obliqua, circularis; peristoma subsimplex, vix incrassatum, ad extremitates carinæ medianæ et ambarum basalium brevissime linguiformiter porrectum, margine externo leviter antice arcuato.—Operculum normale, margine elevato anfractuum sub lente lineis reticulatis pulcherrimo sculpta.

"Diam. maj. 3, min. $2\frac{1}{2}$, alt. $3\frac{1}{4}$ mill. Apert. intus $1\frac{1}{4}$ mill." (*Blanford*).

Hab. India: Khandalla, Singhur, Western Ghats, near Bombay, 2–4000 ft. (*Blanford*); Bhore Ghat (*Nevill*).

May be distinguished from *C. filocinctum* by the more elevated spire, the narrower umbilicus, and the absence of all crenulation inside the mouth. The periostracum is stated to be very curious and difficult to retain on account of its extreme fragility.

188. **Cyathopoma filocinctum**, *Benson.*

Cyclostoma filocinctum, Benson, A. M. N. H. ser. 2, viii, 1851, p. 188; id., op. cit. ser. 2, xiv, 1854, p. 416; Pfeiffer, Conch.-Cab., *Cyclostoma*, 1854, p. 379, pl. 49, figs. 26–28.

Cyclostomus? filocinctus, Pfeiffer, Zeits. Malak. viii, 1851, p. 163; id., Mon. Pneum. 1852, p. 221; id., Cat. Phaneropn. Brit. Mus. 1852, p. 155.

Cyclotus filocinctus, Benson, A. M. N. H. ser. 2, xiv, 1854, p. 416; Adams, Gen. Rec. Moll. ii, 1855, p. 275; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 25; Reeve, Conch. Icon. xiv, 1863, *Cyclotus*, pl. 9, fig. 50.

Cyathopoma filocinctum, Blanford, A. M. N. H. ser. 3, xiii, 1864, p. 449; Journ. Conchyl. xvi, 1868, p. 258, pl. 12, fig. 1; Hanley & Theobald, Conch. Ind. 1874, pl. 82, figs. 2, 3; Theobald, Cat. Shells Brit. India, 1876, p. 38 (*pilocinctum*); Nevill, Hand List, i, 1878, p. 258.

Cyathopoma (s. str.) *filocinctum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxxi, 1899, p. 136; id., Cat. Pneum. 1899, p. 104.

Cyathopoma (*Cyathopoma*) *filocinctum*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 221.

Original description:—"Testa subaperte umbilicata, turbinato-globosa, infra spatium humerale glabrum lineis frequentibus elevatis cingulata, albida, epidermide fusca induta; spira elevata, subconica, sutura impressa, apice papillari; anfractibus $4\frac{1}{2}$ rotundatis, ultimo cylindraceo; apertura circulari, superne vix angulata, prope umbilicum leviter sinuata, $\frac{2}{5}$ longitudinis æquante; peristomate duplici, interiori simplici acuto, exteriori breviter reflexo; umbilico profundo, perspectivo.

"Diam. major 3, minor $2\frac{1}{2}$, alt. $2\frac{1}{2}$ mill."

Hab. India: Nilgiris (*Jerdon, Blanford, Theobald*).

"This little species is distinguished by the spiral ridges, which are numerous between the shoulder of the whorl and the umbilicus, but are deficient near the suture, as well as by its double peristome. The epidermis is deciduous." (*Benson.*)

Blanford supplemented * Benson's description as follows:—"Epidermide oblique striata, juxta saturam plicato-striato, sæpe hispida, peristomate intus confertissime crispato."

189. **Cyathopoma kalryenense**, *Blanford.*

Cyclotus kalryenensis, Blanford, J. A. S. B. xxx, 1861, p. 352, pl. 2, fig. 1; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 33.

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* Journ. Conchyl. xvi, 1868, p. 258.

Cyathopoma kalryenense, Blanford, J. A. S. B. xxxi, 1862, p. 145; id., A. M. N. H. ser. 3, xiii, 1864, p. 449; id., Journ. Conchyl. xvi, 1868, p. 260, pl. 12, fig. 4; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 24; Hanley & Theobald, Conch. Ind. 1876, p. xiii; Theobald, Cat. Shells Brit. India, 1876, p. 38; Nevill, Hand List, i, 1878, p. 259.

Cyathopoma (s. str.) *kalryenense*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 120; id., Cat. Pneum. 1899, p. 32.

Cyathopoma (*Cyathopoma*) *kalryenense*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 221.

Original description:—"Testa umbilicata, elevato-conica, albida, spiraliter lirata, epidermide pallide cornea, induta; spira conica, apice subacuta; sutura profunda; anfr. 5 rotundati; ultimus cylindraceus. Apertura parum obliqua circularis; peristoma duplex, externum expansum, internum porrectum labio dextro crenulato, acutum continuum; umbilicus perspectivus. Operculum concavum externe testaceum, anfractuum marginibus lamella spirali, ad anfractus externos elevata, incurvata, munitis. Alt. 2, diam. maj. 2·5, min. 2; apert. diam. 0·8 mm." (*Blanford.*)

Hab. India: Kalryen Hills, near Salem (*King & Foote*); Sirumullays (*Beddome*).

Most closely allied to *C. filocinctum*, differing in the much smaller size and the more elevated spire.

190. **Cyathopoma kolamulliense**, *Blanford.*

Jerdonia? *kolamulliensis*, Blanford, J. A. S. B. xxx, 1861, pp. 351, 366, pl. 1, fig. 4.

Cyathopoma kolamulliense, Blanford, A. M. N. H. ser. 3, xiii, 1864, p. 449; id., Journ. Conchyl. xvi, 1868, p. 260, pl. 12, fig. 5; Hanley & Theobald, Conch. Ind. 1875, pl. 135, figs. 8, 9; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 24.

Cyclotus? *kolamulliensis*, Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 28.

Cyathopoma (*Jerdonia*) *kolamulliense*, Nevill, Hand List, i, 1878, p. 259.

Cyathopoma kolamalliense, Theobald, Cat. Shells Brit. India, 1876, p. 38.

Mychopoma kolamallayense, Theobald, op. cit. p. 39.

Cyathopoma (s. str.) *kolamullyense*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 120; id., Cat. Pneum. 1899, p. 32.

Cyathopoma (*Cyathopoma*) *kolamulliense*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 221.

Original description:—"Testa aperte umbilicata, depresso-turbinata, albido-cornea, transverse striata, nitida; spira conoidea, apice acutiuscula, sutura impressa. Anfr. 4 convexi, ultimus rotundatus, costis 5 filiformibus circumdatus, aliis 7 crebris, striis verticalibus decussatis, in umbilico ornatus, quarum una ad marginem basalem angulatam umbilici carinam præstat. Apertura circularis, obliqua; perist. rectum, simplex, continuum, superne

et at latus dextrum valde antice porrectum, margine columellari recedente. Umbilicum perspectivum, conicum. Operc.?

"Diam. maj. $2\frac{2}{3}$, min. $2\frac{1}{3}$, axis 2, ap. diam. 1 mm."

Hab. India: Kolamullay Hills, near Trichinopoly (*King, Beddome*).

"The sculpture within the umbilicus recalls that of *Cyathopoma filocinctum*, B." (*Blanford.*)

191. Cyathopoma latilabre, *Beddome.*

Cyathopoma latilabre, Beddome, P. Z. S. 1875, p. 450, pl. 53, figs. 28, 29; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 376; Hanley & Theobald, Conch. Ind. 1876, p. xiii; Theobald, Cat. Shells Brit. India, 1876, Addenda, p. ii; Nevill, Hand List, i, 1878, p. 259.
Cyathopoma (s. str.) *latilabre*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 120; id., Cat. Pneum. 1899, p. 32.
Cyathopoma (*Cyathopoma*) *latilabre*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 222.

Original description:—"Shell deeply and prominently umbilicated, turbinato-globose, glabrous or subglabrous, epidermis of a pale yellowish-brown colour, with oblique vertical dark chestnut-coloured bands and a minute vertical striation, white beneath the epidermis; spire conical, apex subacute; whorls five or six, the lowest smooth in its upper half near the suture, in the region of the periphery surrounded with three rather prominent carinations with a smooth space between them and the umbilical region, the penultimate and antepenultimate with generally two less prominent lines or ribs; lowest whorl cylindrical, slightly descending with an inconspicuous swelling followed by a slight contraction just in front of the reflexed peristome; the umbilicus furnished with very prominent spiral ribs up to the very apex of the shell; aperture a little oblique, subcircular; peristome half-double; the inner lip dilated and much angled on its outer margin, small and continuous round the inner margin, outer lip irregularly angled on its outer margin, and much dilated at the inner basal margin, where it suddenly terminates, not being continued round the inner portion of the aperture; operculum externally milky white, shelly, papilliform, smooth, flattened at the apex, where it is furnished with a small circular aperture, inner layer membranaceous, slightly concave externally, with a central diaphanous nucleus, multispiral, the edges of the whorls raised: height of shell $\frac{3}{16}$ inch [4·5 mm.], the greatest diameter equalling the height."

Hab. India: South Canara Ghats, 2000–3000 ft. elevation (*Beddome*); Wynaad (*Fairbank*).

"The operculum is an exaggerated form of that of the typical *Cyathopoma filocinctum*, the margins of the outer shelly layers are arched over and almost meet in the centre, forming a papilla with only a small hole in the centre." (*Beddome.*)

192. **Cyathopoma leptomita**, *Sykes.*

Jerdonia ceylanica, Collett, Journ. Roy. Asiat. Soc. (Ceylon Branch), xv, 1897, p. 20.
Cyathopoma leptomita, Sykes, Proc. Malac. Soc. iii, 1898, p. 69, pl. 5, fig. 8.
Cyathopoma (s. str.) *leptomita*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxxi, 1899, p. 136; id., Cat. Pneum. 1899 p. 104.
Cyathopoma (*Cyathopoma*) *leptomita*, Kobelt, Das Tierreich Lief. 16, 1902, p. 222.

Original description:—"Testa elevata, conoidea, late et perspective umbilicata, cineracea, brunneo-ochraceo eleganter picta, apice protracto, acutulo; anfr. 5, primi læves, reliqui carinati, ultimus 10 carinis approx. ornatus, undique arctissime et tenuissime lirati, liris delicatissimis, fimbriatis; liris conspicuis 6 approx. in umbilico; sutura bene impressa; apertura ovato-circularis, labro tenui; operculum multispirale, concavum. Alt. 2·5, lat. 3 mm." (*Sykes.*)

Hab. Ceylon: Ambagamuwa (*Collett*).

May be readily separated from *C. ceylanicum* by the well-marked though closely-set lines crossing the carinations.

193. **Cyathopoma mariæ**, *Jousseaume.*

Cyathopoma dickoyense (nom. nud.), H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 6.
Jerdonia dickoyensis (Nevill MS.), Beddome, Proc. Zool. Soc. 1875, p. 446; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 308.
Cyathopoma dekoyense, Theobald, Cat. Shells Brit. India, 1876, p. 38.
Cyathopoma mariæ, Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 307, pl. 4, fig. 4; Sykes, Proc. Malac. Soc. ii, 1897, p. 235.
Cyathopoma (s. str.) *dickroyense*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 119; id., Cat. Pneum. 1899, p. 31.
Cyathopoma (s. str.) *dickoyense*, Kobelt & Möllendorff, op. cit. xxxi, 1899, p. 135; id., Cat. Pneum. 1899, p. 103.
Cyathopoma (s. str.) *mariæ*, Kobelt & Möllendorff, op. cit. xxxi, 1899, p. 136; id., Cat. Pneum. 1899, p. 104.
Cyathopoma (*Cyathopoma*) *dickoyense*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 221.
Cyathopoma (*Cyathopoma*) *mariæ*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 222.

Original description:—"Coquille très petite, de forme conique, à sommet obtus. La base, un peu dilatée et arrondie, est perforée au centre par un ombilic étroit, un peu evasé et recouvert en partie par le bord columellaire; sa couleur, d'un corné blanc au sommet, devient d'un gris-jaunâtre foncé sur les derniers tours. Le test mince, un peu luisant et subtransparent, est strié longitudinalement et enroulé circulairement de quatre petits cordons filiformes. La spire est formée par l'enroulement de cinq tours et demi arrondis

et turbinés, dont l'accroissement s'effectue assez régulièrement. La suture qui est sépare est très profonde et très apparante, malgré la petitesse de la coquille. Les deux premiers tours, lisses et d'un corné blanchâtre, forment, à l'extrémité de la spire, un sommet obtus ; les tours suivants sont striés longitudinalement et ornés de côtes circulaires ; le dernier tour qui est, ainsi que les deux précédents, d'un gris-jaunâtre, est orné de très fines stries longitudinales légèrement obliques, très serrées, et de quatre petites côtes très espacées qui s'enroulent sur la partie médiane. L'espace assez étendu qui les sépare en bas de l'ombilic et en haut de la suture est presque lisse. L'ouverture est circulaire et le péristome est droit, excepté dans sa partie columellaire, où il se déjette du coté de l'ombilic. L'opercule, profondément enfoncé dans l'ouverture, est légèrement concave sur la face externe, qui est lisse au centre et entourée à la péripherie de trois petites lamelles concentriques." (*Jousseaume.*)

Hab. Ceylon (*Simon*).

194. **Cyathopoma ovatum,** *Beddome.*

Cyathopoma (*Jerdonia*) *ovatum*, Beddome, P. Z. S. 1875, p. 447, pl. 52, fig. 16.
Cyathopoma ovatum, Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 378; Theobald, Cat. Shells Brit. India, 1876, Addenda, p. ii.
Cyathopoma (s. str.) *ovatum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 120; id., Cat. Pneum. 1899, p. 32.
Cyathopoma (*Cyathopoma*) *ovatum*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 223.

Original description:—" Shell umbilicated, ovate, spirally lirate, furnished with a light-bright brownish, obliquely striated, thread-like epidermis, and a few hairs along the spiral costulations, white beneath the epidermis ; spire conical, apex subacute ; whorls 5, the lowest with about eleven spiral costulations continuous down to the umbilicus, the four upper lines nearest the suture less conspicuous, or subobsolete ; the penultimate with three to four spiral lines, umbilicus moderately open, spirally lirate within ; aperture oblique, oblong, the vertical and spiral lines clearly visible on the inside of the whorl ; peristome continuous, or a little interrupted at the apex on the penultimate whorl, double, except on its inner or left margin ; the outer lip expanded and reflexed on its outer margin, contracted at its base and again prominently expanded at the base of the columellar margin, the inner one white, shining, and minutely crenulated on its outer and lower margins ; operculum as in *C. wynadense*, with a moderate transparent nucleus : length $\frac{1}{9}$ inch [2·5 mm.], greatest breadth $\frac{1}{13}$ inch [2 mm.]."

Hab. India : Yellagherry Hills, Salem District.

" The epidermis and spiral costulations are very similar to those of *filocinctum* and *wynadense* ; it is, however, a smaller species, and ovate, not turbinate in form, and with a different

operculum. *C. filocinctum* has the inner lip of the peristome furnished with large, prominent, obtuse, white crenations; and the spiral ribs or costulations on the base of the lowest whorl are always continuous up to the umbilical region, there being no intervening smooth space. *C. wynadense* has the inner lip of the peristome smooth; and the spiral costulations on the lower whorl are generally interrupted by a smooth space before the umbilical region is entered; but this latter character is not constant, as some of my specimens have the costulations continuous up to the umbilical region, as in *filocinctum*, so that it cannot, in the absence of the operculum, be looked to as a characteristic to distinguish them; but the peristome, where the shell is adult, is a safe character." (*Beddome.*)

195. **Cyathopoma peilei**, *Preston.*

Cyathopoma peilei, Preston, Proc. Malac. Soc. v, 1903, p. 340, text-fig. 1.

Original description:—"Shell dextral, trochiform, umbilicated. Whorls 5, spirally grooved and cross-sculptured with distinct liræ. Periostracum smooth, of a deep rich brown colour. Suture channelled. Peristome double and reflexed. Umbilicus deep. Aperture almost circular. Alt. 3, diam. max. 3 mm."

Hab. India: Yercand, Shevroy Hills, (*Peile*).

"The nearest ally to this species seems to be *Cyathopoma wynaadense*, Blanford, from which it differs in having coarser but fewer spiral lines of sculpture, cross plications, a slightly more narrow umbilicus, and a channelled suture; moreover, it is more trochiform in shape and of a much darker colour." (*Preston.*)

196. **Cyathopoma prestoni**, *Sykes.*

Cyathopoma prestoni, Sykes, Proc. Malac. Soc, ii, 1897, p. 236, pl. 16, figs. 17, 18.
Cyathopoma (s. str.) *prestoni*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 136; id., Cat. Pneum. 1899, p. 104.
Cyathopoma (*Cyathopoma*) *prestoni*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 223.

Original description:—"Testa dextrorsa, elevata, pyramidalis, mediocriter et perspective umbilicata, periostraco brunneo leviter induta, apice obtusula; anfr. 5, regulariter accrescentes, leviter et obsolete spiraliter lirati, transversim striati, ultimus carinis obsoletis quinque (?), fere lævis in umbilico; sutura bene impressa; apertura fere circularis, continua, peristomate leviter intus incrassato. Alt. 2, lat. 1·5 mm."

Hab. Ceylon: Uda Pussellawa (*Preston*).

"In form this species is intermediate between *C. maricæ* and *C. artatum*, with a well-marked suture. The brown periostracum and nearly obsolete carinæ, with the almost smooth umbilical area, are its distinguishing features." (*Sykes.*)

A larger form than the type is recorded by Mr. Sykes * found by Mr. Collett at Lower Ambagamuwa (2500 ft. alt.). It differs from the type not only in its greater size, having an additional whorl, but also in its more elevated form, and in the more strongly marked spiral sculpture, the liræ also being more numerous; the periostracum, moreover, is thicker, and, under a lens, gives an obsoletely decussated appearance to the shell.

197. **Cyathopoma shevaroyanum**, *Beddome.*

Cyathopoma shevaroyanum, Beddome, P. Z. S. 1875, p. 451, pl. 53, figs. 32, 33; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 378; Hanley & Theobald, Conch. Ind. 1876, p. xiii; Nevill, Hand List, i, 1878, p. 259; id., J. A. S. B. 1, part 2, 1881, p. 145, pl. 6, fig. 7.

Cyathopoma shevroyanum, Theobald, Cat. Shells Brit. India, 1876, Addenda, p. ii.

Cyathopoma (s. str.) *shevroyanum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 120; id., Cat. Pneum. 1899, p. 32.

Cyathopoma (*Cyathopoma*) *shevaroyanum*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 223.

Original description:—"Shell prominently umbilicated, turbinate, a little depressed, spirally lirate, epidermis dark fuscous, scarcely hairy, but with numerous very minute vertical striations, and a few larger prominent distant ones; spire conical; whorls 5, the lower one with four rather inconspicuous costulations round the region of the periphery, smooth in the upper portion near the suture, and with a broad smooth space in front of the umbilical region, the upper whorls with inconspicuous costulations; umbilicus lirate within, but not very conspicuously; aperture oblique, subcircular; peristome double, not dilated, and quite smooth; operculum as in *C. filocinctum* and *C. malabaricum*; but occasionally the outer whorl is completely arched over, leaving only a very small hole in the centre (as in *C. latilabre*): greatest diameter $\frac{1}{10}$ inch [2·5 mm.], height scarcely as much."

Hab. India: Shevaroys and Yellaghirry Hills, Salem District (*Beddome*).

"This species comes nearest to *C. kalryenense*, but wants the crenated aperture and is considered distinct by Mr. Blanford." (*Beddome.*)

Nevill, when figuring this species,† gave some further particulars of the operculum, which he states "externally presents a curious analogy to that of some species of *Turbo*; it is convex, testaceous, smooth, with only a very small and inconspicuous 'umbo,' or opening, which is situated considerably above the centre, consequently near the top of the aperture."

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* Op. cit. iii, 1898, p. 159.

† J. A. S. B. 1, part 2, 1881, p. 145, pl. 6, fig. 7.

198. **Cyathopoma sivagherrianum**, *Beddome.*

Cyathopoma (*Jerdonia*) *sivagherrianum*, Beddome, P. Z. S. 1875, p. 448, pl. 52, fig. 17; Nevill, Hand List, i, 1878, p. 259.
Cyathopoma sivagherrianum, Theobald, Cat. Shells Brit. India, 1876, Addenda, p. ii; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 377.
Cyathopoma (s. str.) *sivagherianum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 120; id., Cat. Pneum. 1899, p. 32.
Cyathopoma (*Cyathopoma*) *sivagherrianum*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 223.

Original description:—"Shell pyramidal, turreted, thin, umbilicus very small and obscure, straw-coloured, glabrous, spirally lirate, apex attenuated, obtuse; whorls 5, convex, the two lower with five spiral lines scarcely raised, antepenultimate with 2–4 lines, aperture vertical, circular; peristome simple, thin, continuous or slightly interrupted at its apex; operculum double, with a sulcate margin, internally membranaceous, externally shelly, but only a little concave, as the margins are only slightly raised, nucleus central, transparent, moderate: length $\frac{1}{14}$ inch [1·75 mm.], greatest diameter $\frac{1}{17}$ inch [1·5 mm.]." (*Beddome.*)

Hab. India: Sivagherry Mountains, 3000 ft.; Sispara (*Beddome*).

199. **Cyathopoma travancoricum**, *Beddome.*

Cyathopoma travancoricum, Beddome, P. Z. S. 1875, p. 451, pl. 53, figs. 30, 31; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 376.
Cyathopoma travankoricum, Theobald, Cat. Shells Brit. India, 1876, Addenda, p. ii.
Cyathopoma (s. str.) *travancoricum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 120; id., Cat. Pneum. 1899, p. 32.
Cyathopoma (*Cyathopoma*) *travancoricum*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 23.

Original description:—'Shell deeply and prominently umbilicated, turbinato-globose, glabrous, with rather obsolete vertical chestnut markings, spirally lirate, but not striated vertically;



Fig. 23.—*Cyathopoma travancoricum.*

spire conical, apex subacute; whorls 6, the lowest with seven to eight carinations, commencing near the suture and generally but not always interrupted by a small space in front of the umbilical region, the same swelling and contraction is present near the

mouth as in *C. latilabre*, the penultimate and antepenultimate with two to four carinations; the umbilicus furnished with very prominent spiral ribs up to the very apex of the shell; aperture a little oblique, subcircular; peristome double, inner lip continuous, dilated and crenated on its outer and lower margins, outer lip irregularly angled on its outer margin and reflexed, much dilated at its inner basal margin, subobsolete round the inner margin; operculum is in *C. latilabre*: greatest breadth $\frac{1}{5}$ inch [5 mm.], extreme height about the same."

Hab. India: Travancore Mountains, 3000 ft. elevation (*Beddome*).

"Very similar to *C. latilabre*, but rather larger, and with many more carinations on the lowest whorl, and the inner peristome crenated instead of simply angled; the swelling near the aperture is peculiar to those two species, and somewhat as in *Alycæus*, but in a less marked degree." (*Beddome.*)

The specimen figured is in the general collection of the British Museum.

200. **Cyathopoma vitreum**, *Beddome.*

Cyathopoma (*Jerdonia*) *vitreum*, Beddome, P. Z. S. 1875, p. 449, pl. 53, figs. 21, 22; Nevill, Hand List, i, 1878, p. 259.

Cyathopoma vitreum, Hanley & Theobald, Conch. Ind. 1876, pl. 145, fig. 9; Theobald, Cat. Shells Brit. India, 1876, Addenda, p. ii; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 379.

Cyathopoma (s. str.) *vitreum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 120; id., Cat. Pneum. 1899, p. 32.

Cyathopoma (*Cyathopoma*) *vitreum*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 224.

Original description:—"Shell openly umbilicate, depresso-turbinate, or rather subdiscoidal, the spire scarcely raised, whitish, of a shining glass-like texture, without any epidermis; whorls 4, the lowest terete, not descending, angulari-convex, with three spiral prominently raised costulations round the region of the periphery, and one between them and the umbilical region, the upper portion nearest the suture non-lirate, or sometimes a fifth line is there present, penultimate angulari-convex, bilirate, the two apical whorls very small; umbilical region spirally lirate within; aperture a little oblique, subcircular; peristome single, thin; operculum double, with a very small central transparent nucleus, a little concave externally from the margins being slightly raised, outer layer less shelly than usual: greatest diameter $1\frac{1}{4}$ inch [1·75 mm.], height $\frac{1}{2}\frac{1}{2}$ inch [1·15 mm.]."

Hab. India: Sivagherry Mountains, Tinnevelly District, 1000 ft. elevation (*Beddome*).

"This comes nearest to *C. album*; but numerous specimens of all ages show no sign of any epidermis, and it is of a more depressed form, and of a glassy rather than a horny texture; the operculum is much less concave and scarcely shelly." (*Beddome.*)

201. **Cyathopoma wynaadense**, *Blanford.*

Cyathopoma wynaadense, Blanford, Journ. Conchyl. xvi, 1868, p. 259, pl. 12, fig. 3; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 24; Theobald, Cat. Shells Brit. India, 1876, p. 38.
Cyathopoma (s. str.) *wynaadense*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 120; id., Cat. Pneum. 1899, p. 32.
Cyathopoma (*Cyathopoma*) *wynaadense*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 224.

Original description:—"Testa aperte umbilicata, turbinata, spiraliter lirata, albida, epidermide tenui, fuscescenti, striatula, induta. Spira conica, apice subacuto; sutura profunda. Anfr. $4\frac{1}{2}$–5 rotundati, juxta suturam lævigati, ultimus teres, lineis plerumque 4 elevatis ad peripheriam cinctus, subtus lævigatus, circum umbilicum perspectivam intus confertissime liratum vix compressus. Apertura parum obliqua, circularis, vix sinuata; peristoma duplex, externum, expansum, internum vix porrectum. Operculum?

"Diam. maj. 3, min. 2, alt. 3. Apert. intus, 1 mill." (*Blanford.*)

Hab. India: Wynaad, Nilgiris. Closely allied to *C. deccanense*.

Subgenus **JERDONIA**, *Blanford.*

Jerdonia, Blanford, J. A. S. B. xxx, 1861, p. 348 (as genus); id., A. M. N. H. ser. 3, xiii, 1864, p. 448; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 72; Nevill, Hand List, i, 1878, p. 259 (as subgenus of *Cyathopoma*); Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 120; id., Cat. Pneum. 1899, p. 32; Kobelt, Das Tierreich, Lief. 16, 1902, p. 224.

Type, *Cyclostoma trochlea*, Benson.

Range. Southern India, Ceylon, Andamans.

Shell rather narrowly umbilicated (umbilicus rarely covered), more or less turbinate, corneous, smooth or ornamented with spiral lines. Operculum concentric, multispiral, double, surrounded by a marginal groove, inner side membranaceous, outer side calcareous.

202. **Cyathopoma anamullayanum**, *Beddome* (emend.).

Cyathopoma (*Jerdonia*) *anamallayanum*, Beddome, P. Z. S. 1875, p. 446, pl. 52, fig. 15; Kobelt, Das Tierreich, Lief. 16, 1902, p. 224.
Cyathopoma anamallayanum, Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 380; Theobald, Cat. Shells Brit. India, 1876, Addenda, p. ii.
Cyathopoma (*Jerdonia*) *anamullayanum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 120; id., Cat. Pneum. 1899, p. 32.

Original description:—"Shell umbilicated, turbinate, with a conical apex, glabrous, with a very inconspicuous vertical striation: epidermis yellowish, with broad, oblique, bright chestnut vertical bands, white beneath the epidermis; whorls 6, convex, with deep sutures, and very faint spiral lines, generally visible on the two to three lower whorls under a powerful glass; the lowest whorl somewhat flattened below and keeled round the umbilical region,

which is white and striated within, and less open than in *C. malabaricum*; aperture a little oblique, oblong; peristome, when adult, double, not dilated, continuous, before maturity simple, thin, and a little interrupted at the apex, where it touches the penultimate whorl; operculum a little retracted, a little concave externally from the slight elevation of the margin of the outer shelly portion, closely multispiral, with a moderate transparent nucleus: length $\frac{1}{7}$ inch [3·5 mm.], greatest diameter $\frac{1}{8}$ inch [3 mm.]." (*Beddome.*)

Hab. India: Anamullay Hills, 6000 ft.; Pulney Hills, 6000 ft.

It is stated to be a glabrous species with markings similar to those found in *C. malabaricum*; but it is much larger and more conical, not at all depressed, less prominently striated, the umbilicus differently shaped, and with a different operculum.

203. Cyathopoma ceylanicum, *Beddome.*

Cyathopoma (*Jerdonia*) *ceylanicum*, Beddome, P. Z. S. 1875, p. 450, pl. 52, fig. 20; Nevill, Hand List, i, 1878, p. 259 (*ceylonicum*); Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 120; id., Cat. Pneum. 1899, p. 32; Kobelt, Das Tierreich, Lief. 16, 1902, p. 225.

Cyathopoma ceylanicum, H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 6; Hanley & Theobald, Conch. Ind. 1876, pl. 145, fig. 8; Theobald, Cat. Shells Brit. India, 1876, p. 38; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 381.

Jerdonia ceylanica, Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 308.

Original description:—"Shell prominently umbilicated, turbinate, with a conical blunt apex, inconspicuously spirally lirate, epidermis glabrous, yellowish, with obliquely vertical bright chestnut bands and a very inconspicuous vertical striation; whorls 5, convex or subangular, the lowest with two inconspicuous lines or ribs along the region of the periphery, and sometimes a third still more obsolete between them and the suture; penultimate with two carinations, the lower one almost touching the suture and sometimes obsolete, antepenultimate inconspicuously unicarinate; umbilicus somewhat angled at the entrance, smooth within; aperture nearly vertical, circular; peristome subdouble, continuous, inconspicuously angled or crenated at the exit of the two carinations of the lowest whorl; operculum as in *C. anamallayanum*: length $\frac{1}{9}$ inch [2·75 mm.], greatest diameter $\frac{1}{8}$ inch [3 mm.]."

Hab. Ceylon: Rambaddi waterfalls (*Beddome*).

"Very like *C. anamallayanum*, but distinguished under the lens by its much more prominent though still inconspicuous carination; it is also of greater diameter with reference to its length." (*Beddome.*)

In 1871 H. Nevill published a *Cyathopoma ceylanicum* in his Enum. Helic. Pneum. Ceylon, but no description or figure was given and Beddome's name is consequently not thereby invalidated.

204. **Cyathopoma colletti**, *Sykes.*

Jerdonia trochlea (non Benson), Hanley & Theobald, Conch. Ind. 1875, pl. 135, figs. 5, 6.

Cyathopoma colletti, Sykes, Proc. Malac. Soc. iii, 1898, p. 159, pl. 10, figs. 1, 1 *a–c* (shell), figs. 1 *d*, 1 *e* (operculum); Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxxi, 1899, p. 136; id., Cat. Pneum. 1899, p. 104.

Cyathopoma (*Jerdonia*) *colletti*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 225, figs. 47 *b*, 47 *c* (operculum).

Original description :—"Testa dextrorsa, elevata, pyramidalis, mediocriter et perspective umbilicata, cornea, strigis castaneis obliquis picta; anfr. $4\frac{1}{2}$, convexi, regulariter accrescentes, primi læves, reliqui spiraliter lirati, ultimus duabus liris, unica ad peripheriam, altera basali, ornata in regione umbilicari lævi impressa; sutura impressa; apertura subcircularis. Diam. max. 1·1, alt. 1 mm.; spec. maj. diam. 1·5, alt. 1·2 mm." (*Sykes.*)

Hab. Ceylon: Eton Estate, Punduloya, 4000 ft. (*Collett*).

"This species may easily be separated from the other known species of Ceylon by the fact that it is smooth save for the two distinct spiral liræ on the last whorl, of which only one appears on the earlier whorls, and by the difference in its coloration.

"The operculum is very remarkable: seen from without it appears as a ring of foliaceous laminæ standing up and surrounding a deep central pit." (*Sykes.*)

205. **Cyathopoma conoideum**, *Sykes.*

Cyathopoma conoideum, Sykes, Proc. Malac. Soc. iii, 1898, p. 159, pl. 10, fig. 3; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxxi, 1899, p. 136; id., Cat. Pneum. 1899, p. 104.

Cyathopoma (*Jerdonia*) *conoideum*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 225.

Original description :—"Testa dextrorsa, valde elevata, trochoidalis, mediocriter et perspective umbilicata, periostraco brunnea induta, apice acutulo; anfr. 7, lente accrescentes, planoconvexi, primi læves, reliqui obsolete spiraliter lirati, ultimus liris duabus, unica in medio, altera infra, ornatus, fere lævis in regione umbilicari; sutura valde impressa; apertura subcircularis, basi recedens, continua, peristomate leviter incrassato. Alt. 2·6, lat. 1·5 mm."

Hab. Ceylon: Binoya, Watawala (*Collett*).

"A very interesting form, remarkable for its trochoid shape (it is almost turreted in form, owing to the deeply impressed suture) and obsolete spiral liræ." (*Sykes.*)

206. **Cyathopoma elatum**, *Beddome.*

Cyathopoma (*Jerdonia*) *elatum*, Beddome, P. Z. S. 1875, p. 448, pl. 52, fig. 19; Nevill, Hand List, i, 1878, p. 259; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 120; id.,

Cat. Pneum. 1899, p. 32; Kobelt, Das Tierreich, Lief. 16, 1902, p. 225.

Cyathopoma elatum, Theobald, Cat. Shells Brit. India, 1876, Addenda, p. ii; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 382.

Original description:—"Shell narrowly umbilicated, ovato-pyramidal, spirally lirate, epidermis brownish, furnished with distant prominent vertical striæ and a fine very minute striation also present between them; spire conical, apex subacute, sutures deep; whorls 5, rounded, furnished with numerous rather close spiral costulations, continuous down to the ribbed umbilical region; aperture vertical, circular; peristome double, the inner one continuous, quite entire or very inconspicuously crenate, outer more or less expanded and reflexed, continuous all round except at the left apex, where it comes into contact with the base of the penultimate whorl; operculum as in *C. procerum* &c.: height $\frac{1}{8}$ inch [3 mm.], greatest breadth $\frac{1}{10}$ inch [2·5 mm.]."

Hab. India: Golconda Hills, Vizagapatam District, 3000 ft. elevation (*Beddome*).

"Very near *C. procerum*, but with rather a different epidermis and more ovate, having a broader base." (*Beddome.*)

207. Cyathopoma imperforatum, *Nevill.*

Cyathopoma (*Jerdonia*) *imperforatum*, Nevill, J. A. S. B. 1, 1881, p. 145; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 120; id., Cat. Pneum. 1899, p. 32; Kobelt, Das Tierreich, Lief. 16, 1902, p. 226.

Nevill states that it is at once distinguished by its being the only described species of the genus with an imperforate base; although he hoped to give a figure and more detailed description later on, he never appears to have done so. He referred the "probably new species" from the Anamullay Hills at 6600 ft., mentioned by Beddome in Proc. Zool. Soc. 1875, p. 449, under *C. elatum* to his species. His specimen was received from Beddome.

Alt. $2\frac{1}{2}$, diam. 2 mill.

Hab. India: Anamullay Hills (*Beddome*).

208. Cyathopoma innocens, *Sykes.*

Cyathopoma innocens, Sykes, Journ. Malac. vii, 1899, p. 29, pl. 2, fig. 2.

Cyathopoma (*Jerdonia*) *innocens*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 226.

Original description:—"Testa turrita, elongato-pyramidalis, perspectiva umbilicata, apice obtusulo; anfr. $4\frac{1}{2}$–5, lente accrescentes, valde convexi, sub lente lineis incrementibus parvis notati, sutura valde impressa; apertura circularis; operculum multispirale, medio concavum. Alt. 1·65, diam. 1·2 mm."

Hab. Ceylon: Eton Estate, Punduloya, 4000 ft. (*Collett*).

"This minute speck, which appears to be adult, has no salient characters. The periostracum seems absent and there is no sculpture beyond the lines of growth; the suture is very deep and the whorls very convex. It belongs to the group of *C. turbinatum*, Sykes, but it is much smaller, and more elevated in proportion to its breadth; the umbilicus is also narrower." (*Sykes.*)

209. **Cyathopoma malabaricum**, *Blanford.*

Cyclotus malabaricus, Blanford, J. A. S. B. xxix, 1860, p. 125; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 32.
Cyathopoma malabaricum Blanford, A. M. N. H. ser. 3, xiii, 1864, p. 449; id., Journ. Conchyl. xvi, 1868, p. 261, pl. 12, fig. 7; Hanley & Theobald, Conch. Ind. 1874, pl. 82, figs, 1, 4; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 25; Nevill, Hand List, i, 1878, p. 258.
Cyathopoma malbaricum, Theobald, Cat. Shells Brit. India, 1876, p. 38.
Cyathopoma (*Jerdonia*) *malabaricum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 120; id., Cat. Pneum. 1899, p. 32; Kobelt, Das Tierreich, Lief. 16, 1902, p. 226.

Original description:—"Testa subaperte umbilicata, depresso-conica, albida, glabra, nitidula, epidermide decidua cornea, ad anfr. ultimum transverse fusco-strigata, induta; spira conica, apice acuta; sutura profunda; anfr. 4 rotundati, celeriter crescentes, ultimus cylindraceus; apertura parum obliqua, circularis, prope umbilicum parum sinuata, superne vix angulata; perist. duplex, externum brevissime expansum, internum porrectum, acutum, continuum; umbilicus perspectivus. Operculum haud immersum, duplex, internum corneum multispirum, externum testaceum, anfractuum marginibus lamella spirali, albida, scabra ad anfr. externos perelevata et versus centrum incurvata, quasi convexa, munitis.

"Diam. maj. $3\frac{1}{4}$, min. $2\frac{3}{4}$, alt. $2\frac{1}{2}$, apert. diam. $1\frac{1}{6}$ mm."

Hab. India: Pykara, Nilgiris (*Blanford*).

"Nearly allied to *Cyclotus filocinctus*, Benson, by the peculiarity of its operculum, this shell is distinguished by its smaller size, more depressed form, and less expanded peristome, by the absence of the marked sculpture of *C. filocinctus*, and by the epidermis being lighter in colour and marked by brown transverse streaks on the last whorl. That of *C. filocinctus* is hispid. . . The construction of the operculum is very peculiar. The testaceous spiral lamina being very much more raised towards the exterior than towards the centre, and being curved inwards, the interior whorls of the operculum are almost concealed and the appearance, unless very closely examined, is that of the operculum of a *Turbo* hollowed out at the centre. The lamella in *C. malabaricus* is rather more elevated than even in *C. filocinctus*." (*Blanford.*)

210. **Cyathopoma natalicium**, *Godwin-Austen.*

Cyathopoma natalicium, Godwin-Austen, Proc. Zool. Soc. 1895, p. 453, text-fig. D.

Cyathopoma (s. str.) *natalicium*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 120; id., Cat. Pneum. 1899, p. 32.

Cyathopoma (*Cyathopoma*) *natalicium*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 222.

Original description:—"Shell dextral, depressedly turbinate; openly umbilicated, flat below, angulate at the umbilicus; sculpture smooth above, with very fine regular transverse costulation on the last whorl, with a strong lirate rib on the periphery; colour pale ochraceous; spire low; apex blunt; suture well marked; whorls $4\frac{1}{2}$, convex; aperture arcuately circular, subvertical, sinuate on outer margin, somewhat angular below at the peripheral ribs; peristome double, continuous.

"Operculum multispiral, elongate, with a deep central depression.

"Major diam. 2·25, alt. axis 1·2 mm." (*Godwin-Austen.*)

Hab. Nicobars: Camorta.

211. **Cyathopoma nitidum**, *Beddome.*

Cyathopoma (*Jerdonia*) *nitidum*, Beddome, P. Z. S. 1875, p. 445, pl. 52, fig. 12; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 120; id., Cat. Pneum. 1899, p. 32; Kobelt, Das Tierreich, Lief. 16, 1902, p. 226.

Cyathopoma nitidum, Theobald, Cat. Shells Brit. India, 1876, Addenda, p. ii; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 381.

Original description:—"Shell inconspicuously umbilicated, pyramidal, turreted, smooth, shining, of a yellowish olive tint, apex rather obtuse, sutures deep, a very minute oblique striation is generally visible under the lens; whorls 5, convex, smooth, the lowest scarcely descending towards the aperture; aperture circular; peristome continuous, single, thin; operculum double, thick, surrounded by a sulcate margin, externally very slightly concave; the nucleus very large, half the diameter of the circle, very thin, transparent, shining, destitute of whorls, the outer portion externally shelly, internally membranaceous, furnished with an exquisitely close spiral sculpture: length of shell varying from $\frac{1}{12}$ [2 mm.] to $\frac{1}{8}$ inch [3 mm.], breadth of lowest whorl $\frac{1}{12}$ inch [2 mm.]."

Hab. India: Anamullay Hills, 6000 ft., South Canara Ghats, 4000 ft. (*Beddome*).

"A shell of very simple structure, closely allied to *Cyclostoma trochlea*, Bens. (*Jerdonia*, Blanford), but without any carinations, and a much smaller umbilicus; the operculum is very similar, but with a larger transparent nucleus and much more closely wound.

"The operculum of *Cyathopoma wynadense*, *procerum*, and *kolamalliense*, is very similar to that of this shell, only differing in being a little more concave externally." (*Beddome.*)

212. Cyathopoma ogdenianum, *Preston.*

Cyathopoma ogdeniana, Preston, Rec. Ind. Mus. iii, 1909, p. 138, pl. 22, fig. 11.

Original description:—"Shell turbinate, bearing traces of having been covered with a brown periostracum, sculptured above with distant transverse and spiral ridges, the former being absent on the base of the shell, in which region the latter are more numerous and less distant: whorls $4\frac{1}{2}$, somewhat inflated; sutures deeply impressed; umbilicus wide and deep; peristome continuous, thickened, slightly reflexed and double throughout; aperture circular.

"Altitude 2·5, diam. maj. 2 mm."

Hab. Ceylon: Kirklees Estate, Uda Pussellawa (*Ogden*).

"In general outline and sculpture this species may be compared with *C. serendibense*, Preston; the whorls of the present form are, however, more tumid, the umbilicus is wider and the peristome is throughout thickened, reflexed and double, which is not the case with *C. serendibense*." (*Preston.*)

213. Cyathopoma perconoideum, *Preston.*

Cyathopoma perconoideum, Preston, Rec. Ind. Mus. iii, 1909, p. 139, pl. 22, fig. 9.

Original description:—"Shell elongately conic, white, bearing traces of having been covered with a light yellowish brown periostracum; whorls 6, convex, sculptured with several spiral liræ; sutures impressed; umbilicus very narrow and partly concealed by the outward expansion of the peristome; peristome continuous, reflexed in the umbilical region and at the base, simple at all other points; aperture almost circular.

"Alt. 2, diam. 0·75 mm."

Hab. Ceylon: Bandarawella, prov. of Uva.

"Allied to *Cyathopoma conoideum*, Sykes, but more elongately conoid in form; the spiral liræ are also much more numerous than in that species. The umbilicus is narrower, being reduced in the present form to a mere chink; the aperture, moreover, is more nearly circular than in *C. conoideum*." (*Preston.*)

214. Cyathopoma procerum, *Blanford.*

Cyathopoma procerum, Blanford, Journ. Conchyl. xvi, 1868, p. 262, pl. 12, fig. 8; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 26; Hanley & Theobald, Conch. Ind. 1875, pl. 135, fig. 7; Theobald, Cat. Shells Brit. India, 1876, p. 38.

Cyathopoma (*Jerdonia?*) *procerum*, Nevill, Hand List, i, 1878, p. 260.

Cyathopoma (*Jerdonia*) *procerum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 120; id., Cat. Pneum. 1899, p. 32; Kobelt, Das Tierreich, Lief. 16, 1902, p. 226.

Original description:—"Testa anguste umbilicata, pyramidata, spiraliter lirata, albido-cornea, epidermide brunnea, verticaliter striata, juxta suturam plicata induta. Spira conica, apice acuto; sutura valde impressa. Anfr. 5 rotundati, ultimus cylindraceus, subtus confertim liratus et strigis fuscis transversis signatus. Apertura subverticalis, circularis, ad basin et juxta umbilicum leviter sinuata; peristoma incrassatum, subduplex, extus leviter maculatum.—Operculum retractum, tenue, intus membranaceum, extus subtestaceum, concavum, anfractuum marginibus vix elevatis.

"Diam. maj. 2, alt. $2\frac{3}{4}$–3; diam. apert. c. perist. 1 mill." (*Blanford.*)

Hab. India: Beypore, Malabar (*Fairbank*).

With more elevated spire than the other Indian species. It appears to be the only one, so far, discovered away from the mountain districts.

Nevill mentions a var. *major* (? distinct species) collected by Beddome in the Anamullays, but he gives no description.

215. **Cyathopoma serendibense**, *Preston.*

Cyathopoma (*Jerdonia*) *serendibense*, Preston, Proc. Malac. Soc. v, 1903, p. 340, text-fig. 2.

Original description:—"Shell dextral, conoidal, moderately perforate, light brown in colour. Whorls 6, the last four spirally sculptured, the spirals being crossed at right angles by transverse plications bearing a stout bristly hair at each point of contact. The earlier whorls are quite smooth. Suture impressed. Peristome simple except where it approaches the columella, in which region it is reflexed. Aperture circular. Operculum calcareous, concave, multispiral, the central nucleus being situated at the bottom of a deep hollow. Alt. 3, diam. 2·5 mm." (*Preston.*)

Hab. Ceylon: Lower Uda Pussellawa.

"This species appears to be most closely allied to *Cyathopoma ceylanicum*, Beddome, from which, however, it is easily distinguished by its very prominent spiral sculpture, and by its whorls being much less swollen than is the case in that species." (*Preston.*)

216. **Cyathopoma tignarium**, *Benson.*

Cyathopoma (?) *tignarium*, Benson, A. M. N. H. ser. 3, xii, 1863, p. 426.

Cyathopoma tignarium, Blanford, Journ. Conchyl. xvi, 1868, p. 263, pl. 12, fig. 9; Hanley & Theobald, Conch. Ind. 1874, pl. 82, figs. 7, 10; Theobald, Cat. Shells Brit. India, 1876, p. 38.

Cyclotus tignarius, Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 33.

Lagocheilus tignarius, Godwin-Austen, P. Z. S. 1895, p. 453.

Cyathopoma (*Jerdonia*) *tignarium*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 120; id., Cat. Pneum, 1899, p. 32; Kobelt, Das Tierreich, Lief. 16, 1902, p. 227

Original description:—"C. testa minuta, umbilicata, turbinato-conica, liris spiralibus subtus confertioribus cincta, oblique striatula, sub epidermide luteo-fusca albida; spira conica, apice obtusiusculo, sutura profunda; anfractibus 5, valde convexis, ultimo cylindrico; apertura vix obliqua, circulari; peristomate continuo, simplici, recto, acuto, ad anfractum penultimum breviter adhærente. Operculo calcareo, medio anguste concavo, nigrescente, polito, margine lato planato, arctissime spirali.

"Diam. 2, alt. $2\frac{1}{2}$ mill." (*Benson.*)

Hab. Andaman Islands (*Theobald*).

217. **Cyathopoma trochlea**, *Benson.*

Cyclostoma trochlea, Benson, A. M. N. H. ser. 2, viii, 1851, p. 189; Pfeiffer, Conch.-Cab., Cyclostomaceen, 1854, p. 380, pl. 49, figs. 29, 30.

Cyclostomus trochlea, Pfeiffer, Zeits. Malak. viii, 1851, p. 161; id., Cat. Phaneropn. Brit. Mus. 1852, p. 144; id., Mon. Pneum. 1852, p. 205.

Cyclophorus (*Jerdonia*) *trochlea*, W T. & H. F. Blanford, J. A. S. B. xxx, 1861, p. 351; Blanford, A. M. N. H. ser. 3, xiii, 1864, p. 448.

Mychopoma trochlea, Theobald, Cat. Shells Brit. India, 1876, p. 39.

Cyathopoma (*Jerdonia*) *trochlea*, Nevill, Hand List, i, 1878, p. 259; Kobelt, Das Tierreich, Lief. 16, 1902, p. 227.

Cyathopoma (s. str.) *trochleum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 120; id., Cat. Pnenm. 1899, p. 32.

Original description:—"Testa anguste umbilicata, pyramidato-turrita, glabra, albida, apice obtusiusculo, sutura impressa; anfractibus 5, angulato-convexis, superne 1 carinatis, ultimo tricarinato, carino 1 superiori, 1 submediana, 1 circum umbilicari; apertura obliqua, circulari, $\frac{2}{7}$ longitudinis æquante; peristomate acuta, ad finem carinæ inferioris vix angulato; umbilico pervio.

"Diam. 2, long. 3 mill."

Hab. India: Nilgiris (*Jerdon*, *Blanford*).

"This minute shell is singular in its turrited form, and in the arrangement of its keels, which gives a flat cylindrical appearance to the periphery of the lower whorl." (*Benson.*)

218. **Cyathopoma turbinatum**, *Sykes.*

Cyathopoma turbinatum, Sykes, Proc. Malac. Soc. ii, 1897, p. 236, pl. 16, figs. 15, 16; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxxi, 1899, p. 136; id., Cat. Pneum. 1899, p. 104.

Cyathopoma (*Jerdonia*) *turbinatum*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 227.

Original description:—"Testa dextrorsa, depresso-pyramidalis, late et perspective umbilicata, periostraco brunneo levissime induta, apice obtusula; anfr. 5, celeriter accrescentes, leviter et obsolete spiraliter carinata, in umbilico lirati, ultimus carinis

obsoletis quator, duabus supra et unica sub peripheriam, unica major ad peripheriam, liris sex (?) in umbilico; sutura impressa; apertura circularis. Alt. 2·2, lat. 2·5 mm."

Hab. Ceylon: Uda Pussellawa (*Preston*).

"At first sight this shell might be taken for a variety of *C. shevaroyanum*, Beddome, from the Salem district, to which it is very nearly allied. It is, however, smaller, differs in the relative proportion of height to breadth (a specimen I have of *C. shevaroyanum* measures: alt. 2·3, lat. 3 mm.), and is of a thinner texture. The carinations above are also not so strongly marked, while the liræ in the umbilicus are stronger and appear to be more numerous." (*Sykes.*)

219. **Cyathopoma uvaense**, *Preston.*

Cyathopoma uvaense, Preston, Rec. Ind. Mus. iii, 1909, p. 139, pl. 22, fig. 10.

Original description:—"Shell conoidal, greyish white, covered with a smooth chocolate-coloured periostracum, sculptured with fine spiral somewhat distant liræ; whorls 4½, shouldered above, moderately convex; sutures impressed; umbilicus wide and deep; peristome almost continuous, white, very slightly reflexed; aperture subcircular.

"Alt. 3, diam. major 3·5, aperture, alt. 1, diam. 1 mm." (*Preston.*)

Hab. Ceylon: Bandarawella, Province of Uva.

Subgenus **PSEUDOJERDONIA**, *Kobelt.*

Pseudojerdonia, Kobelt, Das Tierreich, Lief. 16, 1902, p. 227.

TYPE, (1st species) *Cyathopoma garoense*, Godwin-Austen.

Range. India: Assam.

Differs from the Southern-Indian species of *Cyathopoma* in the thick operculum, excavated in the centre, resembling that of *Alycæus.*

Systematic position uncertain. Kobelt thought it might have to be referred to *Alycæus.*

220. **Cyathopoma garoense**, *Godwin-Austen.*

Cyathopoma garoense, Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 183.
Cyathopoma (*Jerdonia*) *garoense*, Nevill, Hand List, i, 1878, p. 260.
Cyathopoma (*Pseudojerdonia*) *garoense*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 228.

Original description:—"Shell openly umbilicated, turbinate, white, multilirate. Whorls 5, well rounded; there are six well marked longitudinal ribs on the last whorl, the interval between the 4th, 5th, and 6th being wider than that between the ribs above. Succeeding these below near the umbilicus can be counted

eight very close lines of ribbing; the whole surface between this ribbing is sharply and regularly striate, giving it rather a lace-like appearance. Spire conoid, apex high and papillate. Peristome simple, quite circular, single. Operculum exposed in front close to the margin of the aperture, multispiral, flat in front, thick and shelly in appearance. Animal not observed.

"Alt. 0·08 [2 mm.], major diam. 0·09 in. [2·25 mm.]." (*Godwin-Austen.*)

Hab. India: South Garo Hills, South Jaintia Hills, Assam (*Godwin-Austen*).

Is stated to be very like *C. deccanense* in the sculpture and position of the operculum.

221. **Cyathopoma jawaiense**, *Godwin-Austen.*

Cyathopoma jawaiensis, Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 182, pl. 8 A, fig. 6.
Cyathopoma (*Jerdonia*) *jawaiense*, Nevill, Hand List, i, 1878, p. 260.
Cyathopoma (*Pseudojerdonia*) *jawaiense*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 228.

Original description:—"Shell narrowly umbilicated, turbinate, covered with a dark umber epidermis. Whorls 4½, well rounded, with four well raised longitudinal ribs on the last, three shewing on the whorls above. Spire conical, apex papillate. Peristome simple, lip thin; aperture circular, the lirate ribbing extending up to the peristome so as to give it on the exterior margin an angular outline. Operculum pure white, situated close to the margin of the aperture, deeply concave in front, many whorled, with a small dark spot in the centre.

"Alt. 0·07 [1·75 mm.], major diam. 0·06 in. [1·5 mm.].

"The animal has long pointed pale tentacles, with the eyes on the upper outer basal margin. The labial ribbon is very similar to that of *Diplommatina*, all the teeth being five-cuspid in the usual arrangement 3–1–3, with the central rather broad." (*Godwin-Austen.*)

Hab. India; Jawai, Naga Hills, Assam (*Godwin-Austen*).

222. **Cyathopoma nevilli**, *Godwin-Austen.*

Cyathopoma nevilli, Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 182, pl. 8 A, fig. 5.
Cyathopoma (*Pseudojerdonia*) *nevilli*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 228.

Original description:—"Shell elongately turbinate, very closely umbilicated, covered with an olivaceous epidermis. Whorls 5½, rounded with four well marked spiral ribs and one basal near the umbilicus. Apex blunt. Aperture rounded, peristome simple, continuous, very slightly thickened and reflected, operculum well within the aperture, slightly concave, minutely multispiral, with a large central plain area.

"A very large specimen measures alt. 0·11 [2·8 mm.], major diam. 0·08 [2 mm.], but some are only 0·07 in. [1·75 mm.] in alt. Animal not observed." (*Godwin-Austen.*)

Hab. India: Khasi and Naga Hills, Assam (*Godwin-Austen*).

Genus **MYCHOPOMA**, *Blanford.*

Mychopoma, Blanford, J. A. S. B. xxxviii, 1869, p. 131; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 45; Nevill, Hand List, i, 1878, p. 260 (as subgenus of *Cyathopoma*); Fischer, Man. Conchyl. 1885, p. 745 (as section of *Cyathopoma*); Kobelt, Das Tierreich, Lief. 16, 1902, p. 228.

TYPE, *Mychopoma hirsutum*, Blanford.

Range. India, Comoros, New Guinea.

Shell turbinate, generally covered with a thick, brown, hairy periostracum; aperture sometimes crenulated within. Operculum flat or nearly so, rather thick, with a marginal sulcation; composed of an external calcareous and an internal membranaceous layer, both multispiral and united by a spiral lamina at right angles to them, the spaces between the whorls vacant.

223. **Mychopoma hirsutum**, *Blanford.*

Mychopoma hirsutum (Beddome MS.), Blanford, J. A. S. B. xxxviii, 1869, p. 132, pl. 16, figs. 5–5 *b* (shell), 5 *c*, 5 *d* (operculum); Hanley & Theobald, Conch. Ind. 1875, pl. 136, figs. 1, 4; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 45; Theobald, J. A. S. B. xlv, part 2, 1876, p. 185; id., Cat. Shells Brit. India, 1876, p. 38; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 120; id., Cat. Pneum. 1899, p. 32; Kobelt, Das Tierreich, Lief. 16, 1902, p. 229.

Cyathopoma (*Mychopoma*) *hirsutum*, Nevill, Hand List, i, 1878, p. 260.

Original description:—"Shell umbilicated, depressly turbinate, rather solid, covered with a thick dark coloured epidermis, which has strong raised decussated sculpture of spiral ridges and very close oblique costulation; at the periphery and around the umbilicus there is a fringe of close, rather long hairs, and the outer series continued on the inner whorls forms a sutural fringe also. Beneath the epidermis the shell is white with decussating lines, the spiral sculpture being more pronounced and the ribbing corresponding to the lines of growth less so than outside the epidermis. Spire convexly conoid, the apex prominent and papillar, suture deep, nearly concealed by the hairy fringe within. Whorls 5–5½, convex, the last cylindrical, descending but very little in front. Umbilicus pervious, exhibiting all the whorls, spirally ribbed, partly covered by the surrounding hairy fringe. Aperture diagonal, round, rather milky inside, with dark horizontal lines corresponding to the spiral ribs on the shell; the peristome is thick and double, curved backwards near the umbilicus, the internal portion with minute

pearly denticulations, largest on the outer (dextral) margin and gradually decreasing slightly in size on the upper and basal edges, vanishing entirely near the umbilicus; the external peristome is slightly expanded, the edge cut into minute teeth like those of a saw except on the inner or columellar margin. Operculum externally slightly concave, white, calcareous; the spiral sculpture obsolete near the centre in old specimens; internally membranaceous.

"Major diameter 8½, minor 7, axis 5½, diameter of the aperture 3½ millim." (*Blanford.*)

Hab. India: Calcad Hills, Travancore (*Beddome, Bourdillon*); Tinnevelly Hills (*Beddome*).

"This is a very curious and interesting species which, while differing in many respects from any known form, has marked affinities with shells belonging to distinct groups. Had the shell been discovered without the operculum, there could have been very little hesitation in considering it a large form of *Cyathopoma*; the sculpture and general shape are precisely those of the types of that genus, and in some species, such as *Cyathopoma filocinctum*, there is a thick epidermis, and also the very singular internal crenulation of the mouth, which is more marked in the present shell than in any allied species. The operculum, however, is totally different: instead of the whorls having the curious raised and incurved edges so characteristic of *Cyathopoma* they are flat and almost obsolete near the centre, on the outer surface, being far less distinct than in typical species of *Cyclotus*.

"The hairy fringe around both the periphery and the umbilicus so closely resembles that in *Cyclophorus* (*Craspedotropis*) *cuspidatus*, Bens., that there can be no question of a certain affinity between the two species, and there is considerable resemblance in their general form. The apertures, however, differ greatly, and there are marked distinctions in the operculum." (*Blanford.*)

224. **Mychopoma limbiferum**, *Blanford.*

Mychopoma limbiferum, Blanford, J. A. S. B. xxxviii, 1869, p. 133, pl. 16, figs. 4–4 *b* (shell), 4 *c*, 4 *d* (operculum), p. 131, text-fig. 1 (dentition); Hanley & Theobald, Conch. Ind. 1875, pl. 136, figs. 2, 3; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 45; Theobald, Cat. Shells Brit. India, 1876, p. 38; Thiele, Nachr. Deuts. Malak. Ges. xxxiii, 1901, p. 91; Kobelt, Das Tierreich, Lief. 16, 1902, p. 229.

Cyathopoma (*Mychopoma*) *limbiferum*, Nevill, Hand List, i, 1878, p. 260.

Lagochilus (s. str.) *limbiferum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 83; id., Cat. Pneum. 1899, p. 11.

Original description:—"Shell narrowly umbilicated, turbinate, thin, covered with a thick deciduous, yellowish brown epidermis, with dark spiral and oblique stripes or more frequently perhaps altogether dark brown, with a fringe of short hairs round the

umbilicus; beneath the epidermis, the shell is white with close spiral sculpture. In some specimens, as in *M. hirsutum*, there are oblique raised lines outside the epidermis, but they are not always conspicuous. Spire conical, suture deep. Whorls $5\frac{1}{2}$, convex, the last cylindrical, scarcely descending towards the aperture which is oblique and nearly circular. The peristome is much curved back, near the umbilicus, where it is almost simple and scarcely expanded: elsewhere the outer portion is sharply reversed, forming a broad rim at right angles to the axis of the whorl on the outer and basal margins, while near the penultimate whorl it is produced in front. The inner portion of the peristome scarcely projects beyond the outer; it is corrugated within, but not nearly so strongly or closely as in *M. hirsutum*, and the corrugation is very faint towards the base, and entirely wanting at the angle of the aperture and on the columellar margin. Operculum thinner than in the last species, and the calcareous external portion less developed, and entirely wanting at the centre.

"Major diam. $5\frac{1}{4}$–7, minor $4\frac{1}{2}$–6, axis $4\frac{1}{4}$–$5\frac{1}{2}$, apert. diam. intus 2–$2\frac{3}{4}$ millim."

Hab. India: Pulney Hills, 7000 ft. (*Fairbank*).

"A very different shell from the last, being much higher in the spire, with a broader edge to the mouth. The name is taken from the last peculiarity." (*Blanford.*)

225. **Mychopoma seticinctum**, *Beddome.*

Cyathopoma (*Jerdonia*) *seticinctum*, Beddome, P.Z.S. 1875, p. 449, pl. 53, figs. 23, 24.
Cyathopoma seticinctum, Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 382; Theobald, Cat. Shells Brit. India, 1876, Addenda, p. ii.
Mychopoma seticinctum, Hanley & Theobald, Conch. Ind. 1876, p. xiii; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 120; id., Cat. Pneum. 1899, p. 32; Kobelt, Das Tierreich, Lief. 16, 1902, p. 230, fig. 48 (p. 228).

Original description:—"Shell moderately umbilicate, turbinate, rather solid, spirally lirate, furnished with a brownish epidermis, which has a minute vertical striation, very hairy along the periphery, and slightly so about the sutures, but otherwise glabrous, white beneath the epidermis; spire conical (not convex or depressed, as in *C. hirsutum*); whorls 6, convex, sutures deep, the lowest terete, descending a little rather suddenly in front, with 12–15 continuous raised spiral costulations between the suture and the keel of the umbilical region, two of which at the region of the periphery are more raised than the others, and furnished with very long patent dark brown hairs, and between these two there are one or rarely two less prominent beardless costulations, penultimate with six to seven costulations, the upper and lower sutures slightly hairy, antepenultimate with five or six, and the whole above it with two or three less prominent lines, the two apical whorls small and nearly smooth; umbilicus pervious, exhibiting all the whorls, not surrounded with a hairy fringe

outside (as in *C. hirsutum*), spirally ribbed within, and there furnished with a strong raised thread-like sinuate or curved sculpture (more prominent than that in the same region of *C. hirsutum*); aperture oblique, subcircular; peristome thick, double, the inner one pearly white inside and crenated (but less prominently than in *C. hirsutum*), outer one dilated on its outer and lower margins, particularly at its right apex and left base, and somewhat reflexed, more or less sinuate (but not with prominent crenations as seen in *C. hirsutum*); operculum double, externally concave, shelly, with a small transparent central nucleus: height $\frac{1}{4}$ inch [6·25 mm.], greatest diameter $\frac{5}{16}$ inch [8 mm.]."

Hab. India: Banks of Sholayar, Anamullay Mountains, 2000 ft. elevation (*Beddome*).

"Nearly allied to *Mychopoma hirsutum*, but not furnished with the same curious, raised, thread-like epidermis, except within the umbilicus, and without any umbilical fringe; it is, besides, a smaller, differently shaped shell, and differs in other minor points. It has exactly the operculum of *M. hirsutum*." (*Beddome.*)

Subfamily PUPININÆ.

Section PUPINELLEÆ.

Genus **PSEUDOPOMATIAS**, *Möllendorff.*

Pomatias (part.), Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 169.
Pseudopomatias, Möllendorff, Nachr. Deuts. Malak. Ges. xvii, 1885, p. 164; id., Jahrb. Deuts. Malak. Ges. xiii, 1886, p. 177; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 141; id., Cat. Pneum. 1899, p. 37; Kobelt, Das Tierreich, Lief. 16, 1902, p. 272.
Fargesia, Heude, Journ. Conchyl. xxxiv, 1886, p. 211.

TYPE, *P. amœnus*, Möllendorff.

Range. India: Himalayas. Farther India, S. China.

Shell, turreted pyramidal, in form and sculpture resembling *Cochlostoma*, regularly ribbed; aperture slightly oblique; operculum thin, membranaceous, rather closely coiled.

226. **Pseudopomatias grandis**, *Godwin-Austen.*

Pomatias grandis, Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 181, pl. 7, fig. 13; Nevill, Hand List, i, 1878, p. 255.
Pseudopomatias grandis, Möllendorff, Jahrb. Deuts. Malak. Ges. xiii, 1886, p. 179; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 141; id., Cat. Pneum. 1899, p. 37; Kobelt, Das Tierreich, Lief. 16, 1902, p. 273.

Original description:—"Shell dextral, perforate, turreted, rather swollen below, solid, with moderately strong close costulation throughout, smooth on the penultimate whorl above the aperture, very close fine ribbing behind the aperture; covered with a thin epidermis; grey corneous or pale ochreous.

Spire rapidly decreasing to apex. Whorls 9, slightly convex, the last rounded below. Aperture vertical, circular. Peristome double, thickened, reflected, continuous, slightly angular at upper outer margin. Operculum thin, horny, indistinctly spiral in some specimens.

"Alt. 0·55 [14 mm.], diam. 0·20 [5 mm.], diam. ap. 0·17 in. [4 mm.]."

Hab. India: Shengorh Peak, Dafla Hills, Assam (*Godwin-Austen*).

"Its very large size distinguishes it at once from *P. himalayanæ* and *P. pleurophorus*, but it also differs in its more tumid form, the greater number of its whorls, its rounder aperture without the distinct small notch, and in not being so strongly costulated." (*Godwin-Austen.*)

227. **Pseudopomatias himalayæ**, *Benson.*

Pomatias himalayæ, Benson, A. M. N. H. ser. 3, iii, 1859, p. 123; Sowerby, Thes. Conch. iii, 1864, p. 266, pl. 259, figs. 19, 20; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 169; Hanley & Theobald, Conch. Ind. 1870, pl. 7, fig. 9; Pfeiffer, Novit. Conch. ser. 1, iv, 1871, p. 14, pl. 112, figs. 11–13.

Pomatias himalayanæ, Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 181.

Pomatias himalayana, Theobald, Cat. Shells Brit. India, 1876, p. 41.

Pomatias himalayanus, Nevill, Hand List, i, 1878, p. 255.

Pseudopomatias himalayæ, Möllendorff, Jahrb. Deuts. Malak. Ges. xiii, 1886, p. 178; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 142; id., Cat. Pneum. 1899, p. 38; Kobelt, Das Tierreich, Lief. 16, 1902, p. 273; Godwin-Austen, Rec. Ind. Mus. viii, 1917, p. 579, text-fig. 6 D.

Original description:—"Testa perforata, attenuato-turrita, solidiuscula, oblique confertim crassicostata, albida, epidermide tenui pallide cornea induta; spira elongato-turrita, sensim decrescente, apice obtuso, sutura impressa; anfractibus 7–8 convexiusculis, ultimo rotundato, costis remotioribus nonnullis intervenientibus, mox desinentibus, pone aperturam munito; apertura verticali, ovato-rotundata; peristomate duplici, incrassato, externo expanso reflexiusculo, interno continuo, superne ad angulum parietalem fissura minime profunda diviso. Operculo tenuissimo, membranaceo, translucente, paucispirato.

"Long. $5\frac{1}{2}$–10, diam. $2\frac{1}{2}$–4 mill. Apertura majoris 3 mill. longa, $2\frac{1}{2}$ lata." (*Benson.*)

Hab. India: Darjeeling, 7000 ft., Rungun Valley, 4000 ft. (*Blanford*); Toruputu and Shengorh Peaks, Dafla Hills (*Godwin-Austen*).

228. **Pseudopomatias luyorensis**, *Godwin-Austen.*

Pseudopomatias luyorensis, Godwin-Austen, Rec. Ind. Mus. viii, 1917, p. 578, text-fig. 5 B.

Original description:—"Shell perforate, elongately fusiform, turreted, somewhat tumid, solid; sculpture fine close and regular costulation; colour pale umber brown; spire high, sides flatly

convex, apex pointed; suture impressed; whorls 7, sides convex; aperture circular, vertical; peristome closely double, continuous, the outer much expanded on the lower columellar side.

"Major diameter 4·75, alt. axis 11·25 mm." (*Godwin-Austen.*)

Hab. India: Luyor, Abor Hills (*Oakes*).

229. **Pseudopomatias peguensis**, *Theobald.*

Pomatias peguense, Theobald, J. A. S. B. xxxiii, 1864, p. 248.

Pomatias peguensis, Hanley & Theobald, Conch. Ind. 1870, p. 4, pl. 7, fig. 8; Theobald, Cat. Shells Brit. India, 1876, p. 41; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 419; Nevill, Hand List, i, 1878, p. 255.

Pseudopomatias peguensis, Möllendorff, Jahrb. Deuts. Malak. Ges. xiii, 1886, p. 179; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 142; id., Cat. Pneum. 1899, p. 38; Kobelt, Das Tierreich, Lief. 16, 1902, p. 274.

Original description:—"Testa anguste sive obtecte umbilicata, turrita, costulate striata, translucente, flavescente-cornea. Apice obtuso, lævi. Anfractibus septem sive octo, tumidis, lente crescentibus. Apertura sub-circulari. Peristomate duplici, extra brevissime expanso, intus continuo, crasso, juxta suturam leviter inciso. Operculo tenui corneo.

"Long. 10, lat. 3·5 mills. Apertura 2·5 mills." (*Theobald.*)

Hab. Burma: Limestone Hill near Gwa, Pegu (*Theobald*).

230. **Pseudopomatias pleurophorus**, *Benson.*

Bulimus pleurophorus, Benson, A. M. N. H. ser. 2, xix, 1857, p. 329; Pfeiffer, Mon. Helic. iv, 1859, p. 474.

Pomatias pleurophorus, Benson, A. M. N. H. ser. 3, iii, 1859, p. 183; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 169; Hanley & Theobald, Conch. Ind. 1870, pl. 7, fig. 10; Theobald, Cat. Shells Brit. India, 1876, p. 41; Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 181; Nevill, Hand List, i, 1878, p. 254.

Pseudopomatias pleurophorus, Möllendorff, Jahrb. Deuts. Malak. Ges. xiii, 1886, p. 178; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 142; id., Cat. Pneum. 1899, p. 38; Kobelt, Das Tierreich, Lief. 16, 1902, p. 274.

Original description:—"Testa subperforata, ovato-pyramidata, costis verticalibus validis confertis, interstitiis nitentibus, munita, albida; spira elongato-conica, apice obtusulo, sutura profundiuscula; anfractibus $7\frac{1}{2}$ convexis, ultimo $\frac{1}{4}$ testæ æquante, ad basin rotundato; apertura subcirculari; peristomate recto, acuto, margine columellari reflexiusculo, dextro arcuato.

"Long. 8, diam. $3\frac{1}{2}$ mill."

Hab. India: Teria Ghat, Khasi Hills (*Theobald*).

231. **Pseudopomatias siyomensis**, *Godwin-Austen.*

Pseudopomatias siyomensis, Godwin-Austen, Rec. Ind. Mus. viii, 1917, p. 578, text-figs. 5 A, 6 C.

Original description:—"Shell perforate, elongately turreted, attenuate, solid; sculpture well-defined strong costulation, more

pronounced and distant on last whorl; colour white; an old well-grown shell; spire long, sides flatly convex, fining to the apex which is sharp; suture impressed; whorls 9, flatly convex; aperture circular, vertical; peristome double, inner thickened, a slight nick on the upper sutural margin.

"Major diameter 4·4, alt. axis 12·2 mm."

Hab. India: Siyom, Abor Hills (*Oakes*).

"Has much the shape of *P. grandis* of the Dafla Hills, but has much stronger costulation." (*Godwin-Austen.*)

Genus **NODOPOMATIAS**, nom. mut.*

Eupomatias, Godwin-Austen, Rec. Ind. Mus. viii, 1917, p. 579 (non *Eupomatias*, Wagner, 1897).

TYPE, *Eupomatias sibbumensis*, Godwin-Austen.

Range. India: Abor Hills.

"Shell in all respects similar to *Pseudopomatias*, with similar costulation; peristome double, well developed, perforate, the costulation on the left side of the last whorl terminates upon a strong raised keel bounding the umbilical region; this keel extends up to the peristome on the lower basal side of the aperture."

"The keel has a knotted or beaded appearance, and it would seem that the mantle edge must develop a close fold, the costulation causing an irregular thickening of the peristome as it is added to." (*Godwin-Austen.*)

232. **Nodopomatias oakesi**, *Godwin-Austen.*

Eupomatias oakesi, Godwin-Austen, Rec. Ind. Mus. viii, 1917, p. 580, text-figs. 5 D, 6 B.

Original description:—"Shell narrowly perforate, elongately turreted, solid, shiny; sculpture close regular fine ribbing, on the last whorl in front only seen near suture, then becoming quite smooth; colour ruddy umber-brown in type, pale ochraceous in two others; spire elongate, sides slightly convex, apex rather blunt; suture impressed; whorls 7, flatly convex; aperture circular, angulate above; peristome thickened, closely double, continuous just behind on the columella margin, high up there is a very strong umbilical keel much curved, which terminates just behind the peristome on the lower left margin; it shows white against the brown colour of the shell, and is quite bead-like and raised; operculum horny, flat in front, multispiral, nucleus central.

"Major diameter 3·75, alt. axis 11 mm." (*Godwin-Austen.*)

Hab. India: Abor Hills (*Oakes*).

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* In allusion to the knotted appearance of the basal keel.

233. Nodopomatias sibbumensis, *Godwin-Austen.*

Eupomatias sibbumensis, Godwin-Austen, Rec. Ind. Mus. viii, 1917, p. 579, text-figs. 5 c, 6 a.

Original description:—"Shell scarcely perforate, elongately turreted, solid; sculpture strong regular close costulation, which on last whorl terminates at the umbilical keel; colour not seen, shell bleached; spire elongate, sides nearly flat, apex pointed; suture shallow; whorls 9, sides flatly convex; aperture nearly circular, vertical; peristome double, continuous, the inner expanded and slightly reflected on the left side; a well-marked umbilical keel commences on the lower side of the last whorl in front and curving to the left extends to the lower margin behind the aperture.

"Major diameter 5·8, alt. axis 14·5 mm." (*Godwin-Austen.*)

Hab. India: Sibbum, Yamne Valley, Abor Hills (*Oakes*).

Genus **RHAPHAULUS**, *Pfeiffer.*

Anaulus (non Ehrenberg, 1844), Pfeiffer, Proc. Zool. Soc. 1855, p. 105; Benson, A. M. N. H. ser. 2, xvii, 1856, p. 342; Adams, Gen. Rec. Moll. ii, 1855, p. 286; Fischer, Man. Conchyl. 1885, p. 741 (as subgenus of *Pupina*).

Rhaphaulus, Pfeiffer, Novit. Conch. ser. 1, i, 1856, p. 75; id., Mon. Pneum. Suppl. 1, 1858, p. 90; Benson, A. M. N. H. ser. 3, iv, 1859, p. 94 (animal); Blanford, A. M. N. H. ser. 3, xii, 1863, p. 55 (*Raphaulus*) (animal); Martens, Preuss. Exped. Ost-Asien, Zool. ii, 1867, p. 154; Stoliczka, J. A. S. B. 1870, p. 151 (animal); Nevill, Hand List, i, 1878, p. 301; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 196; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 142; Smith, Proc. Malac. Soc. iii, 1898, p. 17; Kobelt & Möllendorff, Cat. Pneum. 1899, p. 38; Kobelt, Das Tierreich, Lief. 16, 1902, p. 274.

Pollicaria (part.), Gould, Proc. Boston Soc. Nat. Hist. vi, 1856, p. 14.

Streptaulus, Benson, A. M. N. H. ser. 2, xix, 1857, p. 201; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 92; Blanford, A. M. N. H. ser. 3, xiii, 1864, p. 459; Fischer, Man. Conchyl. 1885, p. 741 (as subgenus of *Pupina*); Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 142; id., Cat. Pneum. 1899, p. 38 (as subgenus of *Rhaphaulus*); Kobelt, Das Tierreich, Lief. 16, 1902, p. 277.

Type, *Anaulus bombycinus*, Pfeiffer.

Range. India, Farther India, Borneo.

Shell umbilicated, elongate ovate or cylindrical, generally somewhat depressed, with a dark periostracum; peristome thickened, double, provided with two tubes, open at both ends, one on the columellar margin, the other at the suture. Operculum thin, corneous, narrowly coiled, slightly concave.

Col. Godwin-Austen (*l. c.* p. 196) considers that *Streptaulus* cannot be regarded as generically or even subgenerically distinct, as he found the animal did not differ from that of *Rhaphaulus*,

the chief point of difference being confined to a single character—the position and form of the sutural tube at its terminal end. The form of this tube appears to vary even in the same species, being sometimes upright, at others directed downwards.

234. **Rhaphaulus aborensis**, *Godwin-Austen.*

Raphaulus aborensis, Godwin-Austen, Rec. Ind. Mus. viii, 1917, p. 571, text-fig. 2 c.

Original description:—"Shell elongately cylindrical, solid, not flattened in front, closely rimate; sculpture regularly and very closely costulate; colour bleached; spire high, rather inclined to the right, apex pointed; suture moderately impressed; whorls 6, swollen, sides convex; aperture circular; peristome thickened, continuous, the sutural tube turns obliquely downward from the upper outer margin and widens out gradually; in two specimens out of four it is horizontal.

"Major diameter 7·25, minor 7·0, alt. axis 14·0 mm." (*Godwin-Austen.*)

Hab. India: Abor Hills (*Oakes*); Miri Hills (*Wahab & Lewis*).

Four specimens from Rotung are stated to be smaller and more tumid, the largest measuring 12·5 × 6·5 mm.

235. **Rhaphaulus assamicus**, *Godwin-Austen.*

Rhaphaulus assamica, Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 201, pl. 47, fig. 2; Smith, Proc. Malac. Soc. iii, 1898, p. 18.

Rhaphaulus assamicus, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 142; id., Cat. Pneum. 1899, p. 38; Kobelt, Das Tierreich, Lief. 16, 1902, p. 275.

Raphaulus assamica, Godwin-Austen, Rec. Ind. Mus. viii, 1917, p. 570, text-fig. 1 A.

Original description:—"Shell elongately cylindrical, solid, rather tumid, flattened on the frontal surface of the penultimate whorl; sculpture regularly closely costulate; colour dull umber-brown; suture moderately impressed; whorls 6, penultimate the largest with sides flat, the next much smaller and convex; aperture perpendicular; peristome very thick, double, both continuous, but the outer only has a thin callus on the whorl.

"The sutural tube has its origin on the upper outer margin close upon the outer lip, is colourless, and turns sharp downwards behind it, extending to nearly the height of the last whorl. This peristomial tube is not a tube in the strict sense of the term, but in section is semicircular, an arch resting upon the body-whorl, which forms the diameter. An inner sutural tube follows the suture backwards; it opens internally 3 mm. within the aperture, it is indistinctly shown on the exterior, but the lines of costulation extend over it, differing thus from what is seen in the similar tube in *Streptaulus blanfordi*, Bs.

"Operculum horny, of 8 close-wound whorls; origin central.
"Largest: major diam. 8·3, diam. ap. 4, alt. axis 16·75 mm.
Smallest: „ „ 5, „ 3·8, „ „ 13·2 mm."
(*Godwin-Austen.*)

Hab. India: Brahmakhund, Assam (*Ogle*); Miri Hills (*Lewis*).

236. **Rhaphaulus blanfordi**, *Benson.*

Streptaulus blanfordi, Benson, A. M. N. H. ser. 2, xix, 1857, p. 201; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 92; Theobald, J. A. S. B. xxvii, 1858, p. 322; Pfeiffer, Novit. Conch. ser. 1, ii, 1860, p. 139, pl. 37, figs. 1–3; Hanley & Theobald, Conch. Ind. 1875, pl. 133, figs. 5, 6; Theobald, Cat. Shells Brit. India, 1876, p. 40; Godwin-Austen, J. A. S. B. xlv, 1876, part 2, p. 179, pl. 8 A, fig. 2; Nevill, Hand List, i, 1878, p. 302; Kobelt, Das Tierreich, Lief. 16, 1902, p. 277, fig. 61.

Raphaulus blanfordi (*Stephaulus*), Sowerby, Thes. Conch. iii, 1866, pl. 264, figs. 8, 9; fig. 2 (var.).

Rhaphaulus blanfordi, Reeve, Conch. Icon. xx, Pupinidæ, 1876, pl. 10, fig. 97; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 202, pl. 47, fig. 4; Smith, Proc. Malac. Soc. London, iii, 1898, p. 19.

Rhaphaulus (*Streptaulus*) *blanfordi*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 142; id., Cat. Pneum. 1899, p. 38.

Helix calpis, Benson, A. M. N. H. ser. 3, iii, 1859, p. 268; Pfeiffer, Malak. Blätt. vi, 1860, p. 20; id., Mon. Helic. v, 1868, p. 64; Hanley & Theobald, Conch. Ind. 1870, pl. 16, fig. 8; Blanford, J. A. S. B. xlix, 1880, p. 211.

Macrochlamys calpis, Theobald, Cat. Shells Brit. India, 1876, p. 19.

Nanina (*Microcystis*) *calpis*, Nevill, Hand List, i, 1878, p. 38.

Patula (*Pyramidula*) *calpis*, Pfeiffer & Clessin, Nomencl. Helic. 1881, p. 86.

Original description:—"Testa umbilicata, oblonga, polita, regulariter oblique striata, striis prope suturam submarginatam fortioribus, lineis nonnullis spiralibus decussatis, fusco-cornea, translucente; apice obtusiusculo; anfractibus 5 convexiusculis, penultimo ventricosiori; apertura magna, subcirculari; peristomate simplici, reflexo, subrevoluto; marginibus callo parietali tenui junctis; tubuli suturalis parte externa longa, pone junctionem labri breviter arcuatim elevata; suturam subtus exhibente; umbilico impervio.

"Long. $7\frac{1}{2}$, diam. 5 mill. Long. apert. (peristomate incluso) 4 mill." (*Benson.*)

Hab. Sikkim: Darjeeling (*H. Blanford, Mainwaring*). Assam: Dafla Hills (*Blanford*); Brahmakund (*Godwin-Austen*); Harmutti, Tanir Ridge, and Dikrang Valley (*Godwin-Austen*).

Godwin-Austen states that the true typical form ranges from 1000 to 4000 ft. in these hills.

The shell described as *Helix calpis* by Benson—sent to him by Blanford—proved to be an immature specimen of *Rhaphaulus blanfordi* according to a note by the latter in 1880 *.

* J. A. S. B. xlix, 1880, p. 211.

Var. **intubus**, *Godwin-Austen.*

Streptaulus blanfordi, var. α, Godwin-Austen, J. A. S. B. xlv, part 2 1876, p. 180, pl. 8 A, fig. 3.
Rhaphaulus blanfordi, var. *intubus*, Godwin-Austen, Land & Freshw Moll. India, i, 1886, p. 202, pl. 47, fig. 5.
Rhaphaulus (*Streptaulus*) *blanfordi*, var. *intubus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 142; id., Cat. Pneum. 1899, p. 38.

In this form the internal tube opens on the peristome outwards, with no tendency to form an external sutural tube.
Hab. India: Shengorh Peak, Dafla Hills.

Var. **tubulus**, *Godwin-Austen.*

Streptaulus blanfordi, var. *tubulus*, Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 180, pl. 8 A, fig. 4.
Rhaphaulus blanfordi, var. *tubulus*, Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 202, pl. 47, fig. 6.
Rhaphaulus (*Streptaulus*) *blanfordi*, var. *tubulus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 142; id., Cat. Pneum. 1899, p. 38.

Original description:—"The internal tube passes out just behind the peristome, almost in the same way as in *Rhaphaulus chrysallis*, Bs., and is directed upwards for about 0·05 of an inch [1·25 mm.]."
Hab. India: Toruputu Peak, 5000 ft., Dafla Hills, Assam (*Godwin-Austen*).

Var. **tortuosa**, *Godwin-Austen.*

Rhaphaulus blanfordi, var. *tortuosus*, Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 202, pl. 47, fig. 7 (no description).

To judge by the figures, this variety appears to differ from the type and the other varieties in having a higher and more attenuated spire, while the tube behind the peristome passes downwards instead of upwards. An abnormal form is figured on the same plate, fig. 8, in which the tube appears to slope down the last whorl at an angle of about 60°.
Hab. India: Damsang Peak, Western Bhutan Hills.

237 **Rhaphaulus chrysalis**, *Pfeiffer.*

Cyclostoma chrysalis, Pfeiffer, Proc. Zool. Soc. 1852, p. 158; id. Conch.-Cab., Cyclostomaceen, 1853, p. 239, pl. 31, figs. 23, 24 (*C. chrysallis*).
Megalomastoma chrysallis, Pfeiffer, Mon. Pneum. 1852, p. 131; id., Cat. Phaneropn. Brit. Mus. 1852, p. 92.
Anaulus chrysalis, Benson, A. M. N. H. ser. 2, xvii, 1856, p. 342.
Rhaphaulus chrysallis, Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 92; Nevill, Hand List, i, 1878, p. 301.
Rhaphaulus chrysalis, Theobald, J. A. S. B. xxvii, 1857, p. 247: Benson, A. M. N. H. ser. 3, iv, 1859, p. 94 (animal); Blanford,

A. M. N. H. ser. 3, xii, 1863, p. 55; Sowerby, Thes. Conch. iii, 1864, pl. 264, figs. 6, 7; Stoliczka, J. A. S. B. xl, 1871, p. 151 (animal); Hanley & Theobald, Conch. Ind. 1875, pl. 133, fig. 7; Reeve, Conch. Icon. xx, Pupinidæ, 1876, pl. 10, fig. 59; Theobald, Cat. Shells Brit. India, 1876, p. 40; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 200, pl. 47, fig. 1; Tapparone-Canefri, Ann. Mus. Civ. Genova, ser. 2, vii, 1889, p. 310; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 142; Smith, Proc. Malac. Soc. iii, 1898, p. 19; Kobelt & Möllendorff, Cat. Pneum. 1899, p. 38; Kobelt, Das Tierreich, Lief. 16, 1902, p. 275.

Pollicaria chrysalis, Gould, Proc. Boston Soc. Nat. Hist. vi, 1856, p. 14.

Original description:—"C. testa umbilicata, distorto-ovata, solida, striatula et punctato-malleata, fusco-carnea; spira irregulariter ovata, apice conoidea, acutiuscula; sutura levi; anfract. 6 convexiusculis, penultimo latere aperturali planulato, ultimo



Fig. 24.—*Rhaphaulus chrysalis*.

angustiore; apertura verticali, circulari; perist. crasso, dilatato, patente, reflexo, margine supero linea horizontali adnato.—Operculum?

"Long. 16, diam. 9 mill." (*Pfeiffer*.)

Hab. Burma: Ava (*Benson*); Moulmain (*Stoliczka, Hungerford, Theobald, Richthofen, Fea*).

The accompanying figures have been drawn from the type in the Cuming Collection of the British Museum. It measures alt. 15·5, diam. 9½ mm.

238. **Rhaphaulus luyorensis**, *Godwin-Austen*.

Streptaulus luyorensis, Godwin-Austen, Rec. Ind. Mus. viii, 1917, p. 573.

Original description:—"Shell umbilicated, *Pupina*-like, solid, shining; sculpture fine close shallow striation; colour pale ochraceous; spire fairly high, apex blunt and rounded; suture impressed; whorls 6, 4th and 5th the largest and nearly equal in diameter; aperture circular; peristome thickened, reflected, with a callous on the body-whorl; the sutural tube flattened, follows the suture and is perforated finely at intervals.

"Major diameter 4·75, alt. axis 8 mm."

Hab. India: Luyor Valley (*Oakes*).

"This a close ally of *R. blanfordi*, but can be distinguished at once by its much more tumid form and blunt apex. It is far nearer to the Sikhim shell than the one which has been described as *R. miriensis*." (*Godwin-Austen*.)

239. **Rhaphaulus miriensis**, *Godwin-Austen.*

Streptaulus miriensis, Godwin-Austen, Rec. Ind. Mus. viii, 1917, p. 573.

Original description:—"Shell cylindrical, pupiform, strongly excavated and keeled on umbilical region; sculpture very fine transverse regular striation; colour bleached; spire high, apex conic; whorls 6, the 4th with the greatest diameter, sides flatly convex, the aperture circular; peristome thickened, not continuous on upper margin.

"Major diameter 5, minor 5, alt. axis 9·4 mm." (*Godwin-Austen.*)

Hab. India: Miri Hills (*Oakes*).

The only specimen received was unfortunately crushed before the description was complete. The sutural tube is stated to be exactly like that of *Rhaphaulus blanfordi* of Sikhim, *i. e.* "a narrow flat band running back along the suture with here and there minute perforations." Fortunately the two species had been compared, and the Miri shell was found to be "quite distinct, that the antepenultimate whorl was the largest and the sculpture very much finer; the deep excavation at the umbilicus was another very remarkable character."

240. **Rhaphaulus oakesi**, *Godwin-Austen.*

Raphaulus oakesi, Godwin-Austen, Rec. Ind. Mus. viii, 1917, p. 572, text-fig. 2 D.

Original description:—"Shell cylindrical, rimate, solid; sculpture very fine and regular costulation; colour dark ochraceous; spire moderately high, apex blunt; whorls 5, penultimate, somewhat flattened in front; sutural tube horizontal; operculum horny, flat in front, of about 6 whorls.

"Major diameter 7, minor 6·5, alt. axis 13 mm." (*Godwin-Austen.*)

Hab. India: Abor Hills (*Oakes*).

241. **Rhaphaulus pachysiphon**, *Theobald & Stoliczka.*

Raphaulus pachysiphon, Theobald & Stoliczka, J. S. A. B. xli, 1872, p. 329, pl. 11, fig. 1; Hanley & Theobald, Conch. Ind. 1875, pl. 133, fig. 4; Theobald, Cat. Shells Brit. Ind. 1876, p. 40.

Rhaphaulus pachysiphon, Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 143; Nevill, Hand List, i, 1878, p. 302; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 200, pl. 47, fig. 3; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 142; Smith, Proc. Malac. Soc. iii, 1898, p. 18; Kobelt & Möllendorff, Cat. Pneum. 1899, p. 38; Kobelt, Das Tierreich, Lief. 16, 1902, p. 276.

Original description:—"R. testa cylindraceo ovata, anguste perforata, solida, fusca; spira obtusa, apice ad latus inclinato, excentrico; anfractibus $5\frac{1}{2}$ convexiusculis, transversim confertissime striolatis, ad suturam simplicem adpressis; anfractu

penultimo sensim, ultimo valde, descendente, primo supra aperturam deplanato, altero ad suturam paulo constricto, ad basin convexiusculo; apertura fere verticali, circulari, peristomate pallide fuscescente, plane expanso atque crasso, supra ad anfractum penultimum labio attenuato et fere horizonli adnato, postice (aut supra) ad suturan tubulo crasso, deflexo instructo.

"Long. 12·6, lat. anfr. penult. 7·6, diam. apert. cum perist. 6·2, apert. int. 3·6 mm." (*Theobald & Stoliczka.*)

Hab. Burma: Ataran Valley, near Moulmain (*Stoliczka*); Kivengan (*Hungerford*).

Very distinct from the other species by the distorted spire and externally bent down sutural tube.

242. **Rhaphaulus shimangensis**, *Godwin-Austen.*

Raphaulus shimangensis, Godwin-Austen, Rec. Ind. Mus. viii, 1897, p. 573, fig. 2 E.

Original description:—"Shell tumidly cylindrical, solid, openly rimate; sculpture very fine and regular costulation; colour bleached; spire moderately high, apex pointed, inclining to the right; suture moderately impressed; whorls 5; aperture circular; peristome thickened, horizontal on upper margin; sutural tube ascending obliquely.

"Major diameter 7, minor 6·5, alt. axis 12 mm." (*Godwin-Austen.*)

Hab. India: Shimang Valley (*Oakes*).

243. **Rhaphaulus yamneyensis**, *Godwin-Austen.*

Raphaulus yamneyensis, Godwin-Austen, Rec. Ind. Mus. viii, 1917, p. 571, fig. 1 B.

Original description:—"Shell shape similar to *aborensis*; penultimate whorl flattened in front and more openly rimate; sculpture fine close costulation; colour, specimen bleached; spire high; apex pointed; whorls 6; aperture circular; peristome thickened, wide on upper margin; sutural tube broken off, it was directed obliquely upwards.

"Major diameter 8·5, minor 7·75, alt. axis 15 mm." (*Godwin-Austen.*)

Hab. India: Yamne Valley, Abor Hills (*Oakes*).

Genus **SCHISTOLOMA**, *Kobelt.*

Megalomastoma (part.), Pfeiffer, Zeits. Malak. viii, 1851, p. 148; id., Mon. Pneum. Suppl. 1, 1858, p. 78.

Megalostoma, Chenu, Man. Conchyl. i, part 2, 1860, p. 489.

Coptocheilus, Gould, Proc. Boston Soc. Nat. Hist. viii, 1862, p. 282 (non *Coptochilus*, Amyot & Serville, 1843); Kobelt, in Semper, Reisen Arch. Philipp. iv, part 2, 1886, p. 59.

Coptochilus, Fischer, Man. Conchyl. 1855, p. 742; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 142; id., Cat. Pneum. 1899, p. 38.

Schistoloma, Kobelt, Das Tierreich, Lief. 16, 1902, p. 278.

TYPE, *Cyclostoma altum*, Sowerby.

Range. India (Himalayas), Farther India, Sumatra, Borneo, Philippines.

Shell narrowly umbilicated, cylindrical or ovate; apex acute; last whorl generally solute; peristome double, inner slightly grooved at the upper margin. Operculum corneous, flat, nearly circular, multispiral.

244. Schistoloma funiculatum, *Sowerby.*

Cyclostoma funiculatum (nom. nud.), Benson, J. A. S. B. vii, 1838, p. 217 (*funiculatum*, laps.); Sowerby, Thes. Conch. i, 1850, p. 166*, pl. 31 *b*, figs. 316, 317; Pfeiffer, Conch.-Cab., Cyclostomaceen, 1853, p. 240, pl. 31, figs. 27, 28.

Megalomastoma funiculatum, Gray, Nomencl. Moll. Brit. Mus. 1850, p. 31; Pfeiffer, Zeits. Malak. viii, 1851, p. 149; id., Mon. Pneum. 1852, p. 133; id., Cat. Phaneropn. Brit. Mus. 1852, p. 94; Adams, Gen. Rec. Moll. ii, 1855, p. 284; Theobald, J. A. S. B. xxvii, 1858, p. 322; Sowerby, Thes. Conch. iii, 1864, pl. 263, fig. 8; Hanley & Theobald, Conch. Ind. 1870, pl. 7, fig. 2; 1875, pl. 133, fig. 1 (var.); Reeve, Conch. Icon. xx. Pupinidæ, 1876, pl. 8, fig. 75; Theobald, Cat. Shells Brit. India, 1876, p. 41.

Megalomastoma (*Coptocheilus*) *funiculatum*, Nevill, Hand List, i, 1878, p. 296.

Coptochilus funiculatum, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 142; id., Cat. Pneum. 1899, p. 38.

Schistoloma funiculatum, Kobelt, Das Tierreich, Lief. 16, 1902, p. 279.

Original description:—"Shell of a cylindrically turreted form, smooth, shining, of an olivaceous fulvous colour; spire rather obtuse, with seven slightly rounded volutions, which are very finely striated posteriorly, and the last of which is rugulose and

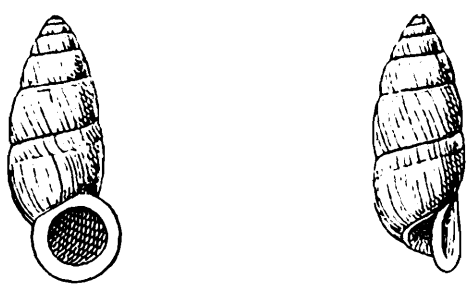


Fig. 25.—*Schistoloma funiculatum.*

posteriorly striated; suture distinct and slender; aperture circular; peritreme thickened, rounded, and reflected, of a dull orange-colour; umbilicus small, furnished externally with a distinct embossed carina.

"Long. 24·5; diam. 8·5 mm." (*Sowerby.*)

Hab. India: Khasi Hills.

The accompanying figures are from a specimen in the British Museum.

245. Schistoloma pauperculum, *Sowerby*.

Cyclostoma pauperculum, Sowerby, Thes. Conch. i, 1850, p. 166*, pl. 31 *b*, fig. 318; Pfeiffer, Conch.-Cab., Cyclostomaceen, 1854, p. 381, pl. 49, figs. 37, 38.

Megalomastoma pauperculum, Pfeiffer, Zeits. Malak. viii, 1851, p. 149; id., Mon. Pneum, 1852, p. 134; id., Cat. Phaneropn. Brit. Mus. 1852, p. 94; Adams, Gen. Rec. Moll. ii, 1856, p. 285; Sowerby, Thes. Conch. iii, 1864, pl. 263, fig. 22; Hanley & Theobald, Conch. Ind. 1875, pl. 133, fig. 3; Godwin-Austen, J.A.S.B. xlv, part 2, 1876, p. 180; Theobald, Cat. Shells Brit. India, 1876, p. 41.

Megalomastoma (*Coptocheilus*) *pauperculum*, Nevill, Hand List, i, 1878, p. 297.

Coptochilus pauperculum, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 142; id., Cat. Pneum. 1899, p. 38.

Schistoloma pauperculum, Kobelt, Das Tierreich, Lief. 16, 1902, p. 280.

Original description:—"Shell small, cylindrically turreted, shining, of an olivaceo-fulvous colour; spire rather obtuse, with six slightly rounded volutions, very finely striated with the lines of growth (sometimes rendered slightly rugulose by erosion); suture distinct, rather deep; aperture nearly circular; peritreme slightly thickened, rounded and reflected, very slightly foliaceous and interrupted at the last volution; umbilicus small, surrounded by a somewhat obsolete raised line.

"Long. 22; diam. 7·5 mm." (*Sowerby*.)

Hab. India: Bhutan.

246. Schistoloma sectilabrum, *Gould*.

Cyclostoma sectilabrum, Gould, Boston Journ. Nat. Hist. iv, 1844, p. 459, pl. 24, fig. 10; Pfeiffer, Conch.-Cab., Cyclostomaceen, 1849, p. 164, pl. 24, figs. 17, 18.

Megalomastoma sectilabrum, Pfeiffer, Zeits. Malak. iv, 1847, p. 109; id., op. cit. viii, 1851, p. 149; id., Cat. Phaneropn. Brit. Mus. 1852, p. 93; Adams, Gen. Rec. Moll. ii, 1856, p. 285; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 84; Sowerby, Thes. Conch. iii, 1864, pl. 263, fig. 24; Hanley & Theobald, Conch. Ind. 1870, pl. 7, fig. 3; Reeve, Conch. Icon. xx, Pupinidæ, 1876, pl. 10, fig. 88.

Megalomastoma sectilabre, Theobald, J. A. S. B. xxvi, 1857, p. 247; id., Cat. Shells Brit. Ind. 1876, p. 41; Stoliczka, J. A. S. B. xli, part 2, 1872, p. 268, pl. 10, fig. 13.

Megalomastoma (*Coptocheilus*) *sectilabrum*, Nevill, Hand List, i, 1878, p. 297.

Megalomastoma (*Coptochilus*) *sectilabrum*, Möllendorff, J. A. S. B. lv, 1886, p. 314.

Megalomastoma (*Coptochilus*) *sectilabre*, Martens, Journ. Linn. Soc., Zool. xxi, 1887, p. 160.

Coptochilus sectilabrum, Möllendorff, Proc. Zool. Soc. 1891, p. 346.

Coptochilus sectilabre, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 143; id., Cat. Pneum. 1899, p. 39.

Schistoloma sectilabrum, Kobelt, Das Tierreich, Lief. 16, 1902, p. 280.

Original description:—"Shell elongated, spire acutely terminated, of a light reddish-brown color; whorls about eight, convex, nearly smooth, and shining; the penultimate whorl, on a profile view, somewhat gibbous; last whorl not conforming to the axis of the preceding whorls, but thrust forward, so that the plane of the aperture advances beyond a parallel with the axis; aperture coloured as without; lip white, everted moderately, having a slight fissure or canal across it posteriorly, at the outer angle of the aperture; posteriorly the lip is double, the inner portion continuous, the outer terminating as it touches the shell; umbilicus small; operculum thin, horny.

"Length 1 inch [25 mm.]; breadth $\frac{1}{4}$ of an inch [6·25 mm.]."

Hab. Burma: Tavoy (*Mason*); King's Island, Mergui Archipelago (*Anderson*). Perak (*Möllendorff*).

"Closely resembles *C. altum*, Sowb., but has the fissure across the peritreme on the opposite side." (*Gould.*)

247 **Schistoloma tanychilum**, *Godwin-Austen.*

Megalomastoma tanycheilus, Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 180, pl. 7, fig. 5.

Megalomastoma (*Coptocheilus*) *tanycheilus*, Nevill, Hand List, i, 1878, p. 296.

Coptochilus tanychilum, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 143; id., Cat. Pneum. 1899, p. 39.

Schistoloma tanychilus, Kobelt, Das Tierreich, Lief. 16, 1902, p. 281.

Original description:—"Shell cylindrical, turreted, solid, pale ochreous, sometimes with a tinge of green, rather strongly and diagonally striated. Spire straight, sides nearly parallel, apex conoidal, suture shallow. Whorls 9, with very slight convexity of side. Aperture vertical, large, and circular, the peristome continuous, very largely developed, thickened, and expanded; at base of the last whorl is a strong keel which terminates above near the centre of aperture. Operculum composed of several horny layers, which appear to be formed slowly and concentrically on a line radiating from the centre to the circumference.

"Length 1·20 [30·5 mm.], diam. 0·35 [9 mm.], diam. apert. (peristome included) 0·32 in. [8 mm.]."

Hab. India: Dikrang Valley, Dafla Hills, Assam (*Godwin-Austen*).

"This shell is a much wider departure from the Darjeeling form first described by Benson, *M. funiculatum*, which is so much more tumid, shorter in spire, of a dark purplish-brown colour, and never has the peristome so broad and thickened as in this species. *M. pauperculum* is intermediate between the two." (*Godwin-Austen.*)

Genus **TORTULOSA**, *Gray*.

Tortulosa, Gray, Proc. Zool. Soc. 1847, p. 177; Adams, Gen. Rec. Moll. ii, 1856, p. 285; Chenu, Man. Conchyl. i, part 2, 1860, p. 489; Kobelt, Das Tierreich, Lief. 16, 1902, p. 281.
Cataulus, Pfeiffer, Zeits. Malak. viii, 1851, p. 149; id., Mon. Pneum. 1852, p. 136; Blanford, A. M. N. H. ser. 3, xiii, 1864, p. 462; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; G. Nevill, Hand List, i, 1878, p. 297; Fischer, Man. Conchyl. 1885, p. 741; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 143; Sykes, Proc. Malac. Soc. iii, 1898, p. 66; Kobelt & Möllendorff, Cat. Pneum. 1899, p. 39; Digby, Proc. Malac. Soc. v, 1903, p. 261 (anatomy); Sykes, Journ. Malac. x, 1903, p. 2; xii, 1905, p. 54.

TYPE, *Turbo tortuosus*, Chemnitz.

Range. India: Southern India, Ceylon; Nicobars.

Shell perforate, pupa-shaped, not callous, last whorl furnished with a filiform, basal keel; aperture circular, entire, prolonged at the base by a somewhat circular channel; peristome continuous, dilated at its lower extremity into the keel of the last whorl. Operculum orbicular, flat, horny, multispiral.

Subgenus **EUCATAULUS**, *Kobelt*.

Cataulus, Pfeiffer (part. "*normales*"), Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 87.
Eucataulus, Kobelt, Das Tierreich, Lief. 16, 1902, p. 281.

TYPE, *Cataulus templemani*, Pfeiffer.

Hab. Southern India, Ceylon.

Last whorl not solute.

248. **Tortulosa albescens**, *Blanford*.

Cataulus albescens, Blanford, J. A. S. B. xlix, 1880, p. 214; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 143; id., Cat. Pneum. 1899, p. 39.
Tortulosa (*Eucataulus*) *albescens*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 282.

Original description:—" Shell subperforate, subovately turreted, rather thin, whitish horny, rather sinuately and costulately striated. Spire turreted, with the sides convex, apex obtuse, suture much impressed. Whorls 7, convex, the last more closely wound than the penultimate, to which it is but slightly attached just behind the mouth. Basal keel transversely striated, subobsolete on the body-whorl near the junction of the peristome, becoming stronger in front and dilated near the mouth; the space inside the keel and around the umbilicus is of moderate size and plicately striated. Aperture nearly circular and subvertical, with the opening of the basal canal to the left of the base, and in nearly the same plane as the aperture. Peristome white, thickened, expanded and turned

back, produced slightly above to the right of the penultimate whorl, and to a greater extent below at the mouth of the canal; columellar margin a little narrower, joined for a short distance only to the penultimate whorl.

"Length 0·53 [13 mm.], major diameter 0·22 [5·5 mm.], minor 0·18 [4·5 mm.]; breadth of the aperture within 0·12 inch [3 mm.]." (*Blanford.*)

Hab. India: Mynall, near Trevandrum, Travancore (*Bourdillon*).



Fig. 26.—*Tortulosa albescens.*

Differs from *T. calcadensis*, with which the species has been confused, in having one whorl less, and being much smaller, with proportionately shorter whorls; the sculpture is less close and distinct, the colour whitish instead of golden brown, the basal keel less developed, and its opening is in the same plane as the aperture, instead of being turned downwards. From *T. costulata* it is chiefly distinguished by its much finer sculpture and by the characters of the basal keel.

The accompanying figures have been drawn from a specimen in the general collection of the British Museum. Its measurements are: alt. 13·5; major diam. 5 mm. The species has not before been illustrated.

249. **Tortulosa aurea**, *Pfeiffer.*

Cataulus aureus, Pfeiffer, Proc. Zool. Soc. 1855, p. 118; id., Mon. Pneum. Suppl. 1, 1858, p. 88; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 141; Hanley & Theobald, Conch. Ind. 1875, pl. 106, fig. 9; Theobald, Cat. Shells Brit. India, 1876, p. 41; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 309; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 143; Sykes, Proc. Malac. Soc. iii, 1898, p. 66; Kobelt & Möllendorff, Cat. Pneum. 1899, p. 39; Sykes, Journ. Malac. xii, 1905, p. 54.

Tortulosa (*Eucataulus*) *aurea*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 282.

Original description:—" C. testa breviter rimata, oblongo-pyramidali, tenuiuscula, confertim striata, sericina, læte aurea; spira turrita, apice acutiuscula; sutura submarginata; anfr. 8 convexis, ultimo parum attenuato, basi axin vix excedente; carina umbilicari valida, compressa, antrorsum parum dilatata; periomphalo lato,

antice costulato; apertura circulari; perist. albo, duplice, interno continuo, appresso, basi canali angusto interrupto, externo perincrassato, fornicatim reflexo, basi producto, canali mediocri perforato.

"Long. 25, diam. 10 mill." (*Pfeiffer.*)

Hab. Ceylon (*Thwaites*).

250. **Tortulosa austeniana**, *Benson.*

Cataulus austenianus, Benson, A. M. N. H. ser. 2, xii, 1853, p. 95; Pfeiffer, Malak. Blätt. i, 1854, p. 89; id., Mon. Pneum. Suppl. 1, 1858, p. 88; Sowerby, Thes. Conch. iii, 1864, pl. 264, fig. 9 (*austinianus*); H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; Hanley & Theobald, Conch. Ind. 1875, pl. 106, fig. 7; Reeve, Conch. Icon. xx, Pupinidæ, 1876, pl. 7, fig. 59; Theobald, Cat. Shells Brit. India, 1876, p. 41; Nevill, Hand List, i, 1878, p. 297; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 309; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 143; Sykes, Proc. Malac. Soc. iii, 1898, p. 67: Kobelt & Möllendorff, Cat. Pneum. 1899, p. 39; Sykes, Journ. Malac. xii, 1905, p. 55.

Tortulosa austeniana, Adams, Gen. Rec. Moll. ii, 1856, p. 285.

Tortulosa (*Eucataulus*) *austeniana*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 282.

Original description:—"T. subperforata, ovato-pyramidata, solidiuscula, eleganter oblique costulato-striata, sericea, diaphana, saturate rubro-castanea, spira turrita, sutura impressa, apice acutiusculo; anfr. 8 convexiusculis, ultimo antice subascendente, carina basali, compressa, prominente, subfuniculata, antice non dilatata; apertura subcirculari, obliqua, sursum spectante, perist. duplici, incrassato, saturate fusco-aurantiaco, interno continuo, breviter adnato, externo fornicatim patente reflexo, superne et ad collumellam subauriculato-dilatato, canali basali aperto, intus vix strictiore, ad sinistram perforato; operc. spiraliter laminato, anfractus multos appressos reconditos exhibente, facie exteriori anfractus plures angustos mentiente.

"Diam. 13½, alt. 25 mill." (*Benson.*)

Hab. Ceylon: Heneratgodde (*Layard*).

251 **Tortulosa blanfordi**, *Dohrn.*

Cataulus blanfordi, Dohrn, Proc. Zool. Soc. 1862, p. 202; Pfeiffer, Novit. Conch. ser. 1, ii, 1863, p. 224, pl. 58 (not pl. 59), figs. 11–13; Sowerby, Thes. Conch. iii, 1864, pl. 264, fig. 8; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 88; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; Hanley & Theobald, Conch. Ind. 1875, pl. 106, fig. 3; Reeve, Conch. Icon. xx, Pupinidæ, 1876, pl. 6, fig. 53; Theobald, Cat. Shells Brit. India, 1876, p. 41; Nevill, Hand List, i, 1878, p. 298; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 309; Sykes, Proc. Malac. Soc. iii, 1898, p. 67; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxxi, 1899, p. 136; id., Cat. Pneum. 1899, p. 104; Sykes, Journ. Malac. xii, 1905, p. 55.

Cataulus blanfordianus, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 143; id., Cat. Pneum. 1899, p. 39.
Tortulosa (*Eucataulus*) *blanfordi*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 283.

Original description:—"Testa subperforata, ovato-fusiformis, solida, confertim striata, parum nitens, rufa; spira convexo-turrita, apice obtusiusculo; anfr. 9, convexiusculi, ultimus attenuatus, antice subascendens; carina umbilicalis compressa, valida, antice vix dilatata; periomphalum angustum, costulato-striatum; apertura subcircularis; peristomium aurantiaco-fuscum, incrassatum, valde expansum, reflexum, ad anfractum penultimum angustatum, margine dextro protracto, basali recedente, canali augusto perforato. Operculum tenue, corneum.

"Long. 20–21½, diam. 6–7; ap. intus diam. 3½, cum perist. long. 6½–7 mill." (*Dohrn.*)

Hab. Ceylon: Bollegalle, near Kandy (*Blanford*).

252. Tortulosa calcadensis, *Blanford*.

Cataulus calcadensis (Beddome MS.), Blanford, J. A. S. B. xxxviii, 1869, p. 137, pl. 16, fig. 8; Hanley & Theobald, Conch. Ind. 1875, pl. 106, fig. 10; Theobald, J. A. S. B. xlv, 1876, p. 185; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 141; Reeve, Conch Icon., xx, Pupinidæ, 1876, pl. 6, fig. 50; Nevill, Hand List, i, 1878, p. 298; Blanford, J. A. S. B. xlix, 1880, p. 215; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 143; id., Cat. Pneum. 1899, p. 39.
Tortulosa (*Eucataulus*) *calcadensis*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 283.
Cataulus kalkadensis, Theobald, Cat. Shells Brit. India, 1876, p. 41.
Hapalus travankoricus, Theobald, J. A. S. B. xlv, part 2, 1876, p. 186, pl. 14, fig. 5; Blanford, op. cit. xlix, part 2, 1880, p. 215 (juv.); Gude, Fauna Brit. Ind., Moll. ii, 1914, p. 504.

Original description:—"Shell subperforate, fusiformly turrited, solid, closely and rather sinuously costulated. Spire ovately turrited, apex rather acute, suture much impressed. Whorls 8½, convex, the last a little smaller, quite free from the other whorls for a short distance behind the mouth, but not descending much, not nearly so far as *C. tortuosus* is represented as doing. The basal keel is strong, compressed, transversely ribbed, and becoming larger in front; the space inside the keel around the umbilicus is of moderate size and ribbed. Aperture nearly circular and almost vertical, the opening of the basal canal being at the left side and not in the same plane as the aperture, but turned a little downwards and to the right. Peristome thickened, double, the inner portion obtuse, the outer expanded, turned back, produced below the canal and above near the suture, narrower on the inner margin and not touching the penultimate whorl. Operculum unknown.

"Length 16–21, major diameter (peristome included) $5\frac{3}{4}$–7, minor 5–$6\frac{1}{2}$, width of aperture inside 3–$3\frac{1}{2}$ mm.

"Length of the aperture and outer peristome in the larger specimen from the base of the canal to the end of the projection above $6\frac{1}{2}$ mill."

Hab. India: Calcad Hills, Travancore (*Beddome*).

"At first sight, this shell bears a most striking resemblance to *C. tortuosus*, Chemn., but the last whorl is much less produced, and there appear, judging from the description and figures of Chemnitz's species, to be several slight but not unimportant distinctions in sculpture and form. Amongst the Ceylonese species, the nearest approach to the present is made by *C. decorus*, Bens., and *C. blanfordi*, Dohrn, but no Ceylonese kind is known with the last whorl free. The previously described *Cataulus* from the base of the Anamullay Hills resembles *C. calcadensis* in the sinistral position of the keel, a character not noticed by Pfeiffer in his description." (*Blanford.*)

In 1880 (*loc. cit.*) Blanford recorded the receipt of fresh living specimens from Col. Beddome of a golden-brown colour, with the aperture of the same tint as the shell. The peristome in these specimens was not free from the last whorl; the operculum was found to be normal and precisely similar to that of Ceylonese species of the genus.

At the same time Blanford stated that he was satisfied that the specimens described by Theobald as *Hapalus travankoricus* were immature shells, and he believed them to be the young of *C. calcadensis* or some nearly allied species.

253. **Tortulosa colletti**, *Sykes.*

Cataulus colletti (Sykes), Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897. p. 143 (nom. nud.); Sykes, Proc. Malac. Soc. iii, 1898, p. 69, pl. 5, fig. 15; Kobelt & Möllendorff, Cat. Pneum. 1899, p. 39

Tortulosa (*Eucataulus*) *colletti*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 283, text-fig. 63 (aperture).

Original description:—"Testa breviter et profunde rimata, elongata-pyramidalis, solida, substriata, castanea; spira elongata, apice obtusulo; sutura submarginata; anfr. 8–$8\frac{1}{2}$, plano-convexi, ultimus parum attenuatus; carina umbilicalis valida, compressa; periomphalum latum, costulato-striatim; apertura subcircularis; peristoma incrassatum et reflexum, basi productum, canali mediocri perforatum.

"Alt. 23, diam. 8·2 mm."

Hab. Ceylon: Matale, 1200 ft. (*Collett*).

"A species belonging to the same group as the last [*C. nevilli*], but it is narrower, the whorls are flatter, the striæ almost obsolete, the base of the lip projects a little forward, and the notch lies a shade more to the right." (*Sykes.*)

254. Tortulosa congener, *Sykes.*

Cataulus congener, Sykes, Journ. Malac. xii, 1905, p. 57, text-fig. 4.

Original description:—"Shell elongately pyramidal, rimate, yellow, becoming tinged with red-brown on the earlier whorls, these latter are smooth, while the rest of the shell is closely, finely, longitudinally striate; suture well impressed; whorls $7\frac{1}{2}$, convex; umbilical region moderate in size, sculptured as the rest of the shell; aperture subcircular; lip white, double, the outer part well reflected and thin at the edge, slightly produced at the right upper margin, the inner part circular and produced; basal canal small, the carina being whitish.

"Alt. 16·5, diam. max. (last whorl) 6 mm."

Hab. Ceylon.

"Resembling in form a dwarf *C. aureus*, but separable by *inter alia* the shape of the outer lip and the duplication of the lip, as also by the small basal canal." (*Sykes.*)

255. Tortulosa connectens, *Fulton.*

Cataulus connectens, Fulton, Journ. Malac. x, 1903, p. 102, pl. 9, fig. 4; Sykes, op. cit. xii, 1905, p. 55.

Original description:—"Shell fusiform, oblong, solid, narrowly perforate, dark reddish-brown; whorls $9\frac{1}{2}$, obliquely striated, lower slightly convex, earlier whorls almost straight, the last carinated at the base; aperture circular, pale reddish-brown within; peristome continuous, yellow, thickened and reflexed, an egg-shaped opening to basal canal. Operculum normal.

"Major diam. (including peristome) $8\frac{1}{2}$, alt. 21 mm." (*Fulton.*)

Hab. Ceylon: Watawala (*Collett*).

Stated to be closely allied to *blanfordi*, Dohrn, and *decorus*, Bens., but readily separable from the former by its yellow peristome, from the latter by its smaller size and more slender form, and from both by the peristome being more in line with, or under, the whorls.

Mr. Sykes considers it to be only a local race of *blanfordi* with yellow peristome.

256. Tortulosa costulata, *Blanford.*

Cataulus costulatus, Blanford, J. A. S. B. xlix, 1880, p. 213, pl. 3, fig. 7; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 143; id., Cat. Pneum. 1899, p. 39.

Tortulosa (*Eucataulus*) *costulata*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 283.

Original description:—"Shell subperforate, subovately turreted, solid, rather coarsely and subsinuately costulated, of a pale straw-

colour. Spire turreted, with convex sides, apex rather obtuse, sutures well impressed. Whorls $7\frac{1}{2}$, convex, the last more closely wound than the penultimate, to which it is scarcely attached just behind the mouth; the basal keel compressed, costulate, dilated in front; the space inside the keel and around the umbilicus is of moderate size and ribbed. Aperture nearly circular and subvertical, with the opening of the basal canal on the left side of the base, and not quite in the same plane as the aperture, but turned rather downwards. Peristome white, thickened, expanded, and turned back, produced above to the right of the penultimate whorl and below around the canal, narrow on the columellar margin, and only united for a short distance with the penultimate whorl.

"Length 0·65 [16 mm.], breadth (including the peristome) 0·25 [6·25 mm.], minor diameter from front to back 0·23 [5·75 mm.], width of aperture inside 0·13 [3·25 mm.] inch."

Hab. India: Tinevelly Ghats (*Beddome*).

"This species of *Cataulus*, the third hitherto obtained from the hills of Southern India, is distinguished from all other known forms of the genus by its comparatively coarse ribbing across the whorls. In other respects, it closely approaches *C. calcadensis*, Bedd., having a similarly shaped spire, aperture, and basal channel. I have only seen one specimen of *C. costulatus*; this differs from *C. calcadensis* not only in having stronger sculpture, but also in being rather shorter and in having one whorl less in the spire. The colour of *C. costulatus* also is paler than that of the Calcad shell, and the lip of the aperture is white.

"Like the other Southern-India forms, *C. calcadensis*, *C. recurvatus*, and the species hereafter described [*C. albescens*], *C. costulatus* has the canal a little to the left of the lowest portion of the aperture, or nearer to the umbilicus than to the outer margin. In most Ceylonese species of the genus the canal is nearly at the lowest portion of the mouth (it is slightly to the left in *C. pyramidatus*, *C. eurytrema*, and *C. austenianus*; basal in the smaller forms, like *templemanni* and *C. layardi*). I find that in *C. tortuosus* the position of the canal is precisely as in *C. calcadensis* and *C. costulatus* (in *C. recurvatus*, the sinistral position of the canal is much more marked)." (*Blanford.*)

257. Tortulosa cumingi, *Pfeiffer*.

Cataulus cumingi, Pfeiffer, Proc. Zool. Soc. 1856, p. 339; id., Novit. Conch. ser. 1, i, 1857, p. 91, pl. 25, figs. 16, 17; id., Mon. Pneum. Suppl. 1, 1858, p. 87; Theobald, Cat. Shells Brit. India, 1876, p. 41; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 311; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 143; id., Cat. Pneum. 1899, p. 39.

Cataulus cumingii, Sowerby, Thes. Conch. iii, 1864, pl. 264, fig. 3; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; Reeve, Conch. Icon. xx, Pupinidæ, 1876, pl. 6, fig. 52.

Cataulus thwaitesi?, Sykes, Proc. Malac. Soc. iii, 1898, p. 68.

Tortulosa (*Eucataulus*) *cumingi*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 284.

Original description:—"C. testa vix rimata, turrito-fusiformi, solidula, subgranulato-striata, daucino-fusca; spira convexo-turrita, apice acutiuscula; sutura submarginata; anfr. 8 vix convexiusculis, penultimo convexiore, ultimo attenuato, basi axin vix excedente, carina umbilicali compressa, albida, angulatim patula; periomphalo mediocri, turgido, distinctius striato; apertura subcirculari; perist. albo, continuo, incrassato, fornicatim patente, superne anguste adnato, cæterum dilatato, basi longe producto, canali infundibuliformi perforato.

"Long. $20\frac{2}{3}$, diam. medio 7 mill. Apert. intus $4\frac{1}{2}$, cum perist. $7\frac{1}{3}$ mill. longa." (*Pfeiffer.*)

Hab. Ceylon (*Thwaites*).

258. **Tortulosa decora**, *Benson.*

Cataulus decorus, Benson, A. M. N. H. ser. 2, xii, 1853, p. 96; Pfeiffer, Malak. Bl. i, 1854, p. 90; id., Mon. Pneum. Suppl. 1, 1858, p. 89; Sowerby, Thes. Conch. iii, 1864, pl. 264, fig. 13; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; Hanley & Theobald, Conch. Ind. 1875, pl. 106, fig. 5; Reeve, Conch. Icon. xx, Pupinidæ, 1876, pl. 7, fig. 64; Theobald, Cat. Shells Brit. India, 1876, p. 41; Nevill, Hand List, i, 1878, p. 298; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 309; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 143; Sykes, Proc. Malac. Soc. iii, 1898, p. 67; Kobelt & Möllendorff, Cat. Pneum. 1899, p. 39; Sykes, Journ. Malac. xii, 1905, p. 55.

Tortulosa decora, Adams, Gen. Rec. Moll. ii, 1856, p. 28.

Tortulosa (*Eucataulus*) *decora*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 284.

Original description:—"T. subperforata, elongato-turrita, solida, confertim costulato-striata, nitidiuscula, rufo-castanea, apice acutiusculo; anfr. 8 convexiusculis, ultimo ad basin compresso-carinato, carina valde prominente, versus marginem funiculata, incrassata, antice vix dilatata; apertura verticali, circulari; perist. incrassato, reflexo, breviter adnato, læte aurantiaco, ad basin subproducto, deorsum recedente; canali extus late perforato; periomphalo magno; operc. ut in praecedente [*C. austenianus*].

"Diam. vix 10, axis 21 mill." (*Benson.*)

Hab. Ceylon: Ratnapoora (*Layard*).

259. **Tortulosa duplicata**, *Pfeiffer.*

Cataulus duplicatus, Pfeiffer, Proc. Zool. Soc. 1854, p. 303; id., Mon. Pneum. Suppl. 1, 1858, p. 90; Sowerby, Thes. Conch. iii, 1864, pl. 264, fig. 2; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; Hanley & Theobald, Conch. Ind. 1875, pl. 106, fig. 2; 1876, p. xii; Reeve, Conch. Icon. xx, Pupinidæ, 1876, pl. 6, fig. 51; Theobald, Cat. Shells Brit. India, 1876, p. 41; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 310; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 143; id., Cat. Pneum. 1899, p. 39.

Cataulus thwaitesi, var. *duplicata*, Sykes, Proc. Malac. Soc. iii, 1898, p. 68.

Tortulosa (*Eucataulus*) *duplicata*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 284.

Original description:—" C. testa subperforata, fusiformi-ovata, solida, striata striisque spiralibus obsolete decussata, virescenti-fusca, pallide nebulosa; spira curvilineari, elongata, apice acutiuscula; sutura levi, marginata; anfr. $7\frac{1}{2}$ vix convexiusculis, ultimo attenuato, antice subascendente; carina basali compressa, antrorsum vix dilatata; apertura circulari, basi axin vix excedente; perist. aurantiaco, duplici: interno breviter porrecto, basi profunde inciso, externe rectangule patente, basi ad canalem angustum vix protracto.

" Long. 18, diam. 7 mill." (*Pfeiffer.*)

Hab. Ceylon (*Thwaites*); Maturata (*Simon*).

Closely allied to *T. templemani*.

260. **Tortulosa eurytrema**, *Pfeiffer*.

Cataulus eurytrema, Pfeiffer, Proc. Zool. Soc. 1852, p. 145, pl. 13, fig. 5; id., Mon. Pneum. 1852, p. 138; id., Cat. Phaneropn. Brit. Mus. 1852, p. 97; id., Conch.-Cab., Cyclostomaceen, 1854, p. 386, pl. 48, figs. 12, 13; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; Hanley & Theobald, Conch. Ind. 1876, pl. 146, fig. 3; Reeve, Conch. Icon. xx, Pupinidæ, 1876, pl. 6, fig. 56; Theobald, Cat. Shells Brit. India, 1876, p. 41; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 310; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 143; Sykes, Proc. Malac. Soc. iii, 1898, p. 67; Kobelt & Möllendorff, Cat. Pneum. 1899, p. 39; Sykes, Journ. Malac. xii, 1905, p. 55.

Tortulosa eurytrema, Adams. Gen. Rec. Moll. ii, 1856, p. 285.

Cataulus euryptrema, Sowerby, Thes. Conch. iii, 1864, pl. 264, fig. 17.

Tortulosa (*Eucataulus*) *eurytrema*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 285.

Original description:—" C. testa subperforata, subfusiformi-oblonga, solida, subarcuato-striata, vix nitidula, castanea; spira turrita, apice obtusiuscula; anfr. $8\frac{1}{2}$, convexis, ultimo angustiore, basi oblique supra axis protracto; carina basali solida, compressa, antice sensim tubæ instar dilatata; apertura circulari; perist. carneo, continuo breviter adnato, incrassato et reflexo, parte sinistra marginis basalis canali magno, subcirculari, retrorsum in rimam filiformem abeunte, perforata.

" Long. 26, diam. 10 mill." (*Pfeiffer.*)

Hab. Ceylon.

261. **Tortulosa greeni**, *Sykes*.

Cataulus greeni, Sykes, Journ. Malac. vii, 1899, p. 30, pl. 2, fig. 5; id., op. cit. xii, 1905, p. 55.

Tortulosa (*Eucataulus*) *greeni*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 285.

Original description:—"Testa conspicue sed anguste rimata, elongato-pyramidalis, solidula, eleganter costulato-striata, apud suturas crenulata, pallide straminea; spira producta, apice obtusiusculo; sutura valde impressa; anfr. 8, plano-convexi; carina umbilicalis valida, acuta; periomphalum magnum, costulato-striatim; apertura subcircularis; peristoma album, continuum, duplex, externum incrassatum et valde reflexum, internum productum, margine dextro apud medium sinu exciso notatum basi productum, canali mediocri perforatum.

"Alt. 17, diam. 6 mm."

Hab. Ceylon: Punduloya (*E. C. Green*).

"A very remarkable form, differing from all the known Ceylon species of the genus in having a sinus or notch in the upper dextral margin, in addition to the usual perforation at the base." (*Sykes.*)

Var. **robusta**, *Fulton.*

Cataulus greeni, var. *robusta*, Fulton, Journ. Malac. x, 1903, p. 102, pl. 9, fig. 1; Sykes, op. cit. xii, 1905, p. 55.

"Shell more solid than typical *greeni*, somewhat broader in form, the oblique striæ and crenulations at suture more conspicuous, the notch on upper right margin of peristome varies from being almost entirely absent, to specimens having a small but clearly defined V-shaped one.

"With reference to the distinct notch supposed to be characteristic of *greeni*, I have before me a specimen of the typical form from Punduloya, which scarcely shows the notch, thus demonstrating the instability of that character.

"Major diam. $7\frac{1}{2}$; alt. 17 millim." (*Fulton.*)

Hab. Ceylon: Dimbula, 5000 ft. (*Collett*).

262. Tortulosa hæmastoma, *Pfeiffer.*

Cataulus hæmastomus, Pfeiffer, Proc. Zool. Soc. 1856, p. 391; id., Mon. Pneum. Suppl. 1, 1858, p. 89; id., Novit. Conch. ser. 1, i, 1859, p. 117, pl. 32, figs. 24, 25; Sowerby, Thes. Conch. iii, 1864, pl. 264, fig. 11; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; Hanley & Theobald, Conch. Ind. 1875, pl. 106, fig. 4; Reeve, Conch. Icon. xx, Pupinidæ, 1876, pl. 7, fig. 61; Theobald, Cat. Shells Brit. India, 1876, p. 41; Nevill, Hand List, i, 1878, p. 297; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 309; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 143; Sykes, Proc. Malac. Soc. iii, 1898, p. 67; Kobelt & Möllendorff, Cat. Pneum. 1899, p. 39; Sykes, Journ. Malac. xii, 1905, p. 55.

Tortulosa (*Eucataulus*) *hæmastoma*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 285.

Original description:—"C. testa breviter et profunde rimata, ovato-pyramidalis, tenuiuscula, conferte striatula, parum nitente,

diaphana, citrina; spira convexiusculo-turrita, apice subacuta; sutura submarginata; anfr. 8 convexis, ultimo vix attenuato, basi axin excedente; carina umbilicali valida, compressa, antrorsum vix dilatata; periomphalo lato, costulato-striato; apertura subcirculari; perist. fusco-sanguineo, simplice, ad anfractum contiguum angustato, lateribus rectangule late patente et revoluto, basi subproducto, canali mediocre perforato. Operc. tenue, rufocorneum.

"Long. 27–28, diam. 11–12 mill." (*Pfeiffer.*)

Hab. Ceylon (*Thwaites*).

Mr. Sykes in 1905 records a variety with a white lip.

263. Tortulosa layardi, *Pfeiffer.*

Megalomostoma layardii (nom. nud.), Gray, Nomencl. Moll. Brit. Mus. i, 1850, p. 31.

Cataulus layardi (nom. nud.), Pfeiffer, Zeits. Malak. viii, 1851, p. 150; id., Proc. Zool. Soc. 1852, p. 160, pl. 13, fig. 6; id., Mon. Pneum. 1852, p. 137; id., Cat. Phaneropn. Brit. Mus. 1852, p. 96; id., Conch.-Cab., Cyclostomaceen, 1854, p. 385; Sowerby, Thes. Conch. iii, 1864, pl. 264, fig. 7; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; Hanley & Theobald, Conch. Ind. 1875, pl. 106, fig. 8; Reeve, Conch. Icon. xx, Pupinidæ, 1876, pl. 6, fig. 57; Theobald, Cat. Shells Brit. India, 1876, p. 41; Nevill, Hand List, i, 1878, p. 298; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 311; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 143; Sykes, Proc. Malac. Soc. iii, 1898, p. 67; Kobelt & Möllendorff, Cat. Pneum. 1899, p. 39; Sykes, Journ. Malac. xii, 1905, p. 55.

Pupina templemani var. β, Pfeiffer, Proc. Zool. Soc. 1852, p. 158.

Pupina layardi, Pfeiffer, Conch.-Cab., Cyclostomaceen, 1853, p. 236, pl. 31, figs. 17, 18.

Tortulosa layardi, Adams, Gen. Rec. Moll. ii, 1856, p. 285; Frauenfeld, Verh. K. K. zool.-bot. Ges. Wien, xix, 1869, p. 879.

Tortulosa (*Eucataulus*) *layardi*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 285.

Original description:— "C. testa subperforata, subfusiformi-oblonga, solida, distincte arcuato-striata, pallide straminea; spira oblongo-turrita, apice acutiuscula; anfr. 8, planiusculis, ultimo basi carina elevata, compressa munita, circa umbilicum angustissimum costulato; apertura verticali, subcirculari, basi canali subaperto acuta; perist. continuo, albo, superne breviter adnato, duplici; interno porrecto, externo incrassato-reflexo, basi subangulatim producto, canali extus lato, introrsum angustiore excavato.

"Long. 17½, diam. medio 7 mill." (*Pfeiffer.*)

Hab. Ceylon: Rambodde

264. Tortulosa marginata, *Pfeiffer.*

Cataulus marginatus, Pfeiffer, Proc. Zool. Soc. 1853, p. 52; id., Malak. Bl. 1, 1854, p. 90; id., Mon. Pneum. Suppl. 1, 1858, p. 90; Sowerby, Thes. Conch. iii, 1864, pl. 264, figs. 4, 5; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; Hanley & Theobald, Conch. Ind. 1876, pl. 145, fig. 6; Reeve, Conch. Icon. xx, Pupinidæ, 1876, pl. 7, fig. 58; Theobald, Cat. Shells Brit. India, 1876, p. 41; Nevill, Hand List, i, 1878, p. 298; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 310; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 143; Sykes, Proc. Malac. Soc. iii, 1898, p. 68; Kobelt & Möllendorff, Cat. Pneum. 1899, p. 39; Sykes, Journ. Malac. xii, 1905, p. 55.

Tortulosa marginata, Adams, Gen. Rec. Moll. ii, 1856, p. 285.

Tortulosa (*Eucataulus*) *marginata*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 286.

Original description:—"T. vix perforata, subfusiformi-turrita, solida, subarcuatim costulato-striata, opaca, fusco-lilacea, strigis angulosis albidis marmorata; spira subcurvilinearis, turrita, apice obtusa; sutura levis, filomarginata; anfr. 8 planiusculi, ultimus vix attenuatus; carina basalis alba, compressa, antrorsum subdilatata; apertura verticalis, subovalis; perist. album, duplex: internum basi profunde incisum, externum patens, ad canalem mediocrem retractum.

"Long. 16, diam. 5½ mill. Ap. intus 4 mill. longa, 3½ lata." (*Pfeiffer.*)

Hab. Ceylon: Newera Ellia (*Nevill*).

Var. **crenulata**, *Fulton.*

Cataulus marginatus, var. *crenulata*, Fulton, A. M. N. H. ser. 7, xiii, 1904, p. 453; Sykes, Journ. Malac. xii, 1905, p. 55.

"Slightly broader than typical *marginatus*, less strongly malleated, and lacking the distinctly margined suture of that species; of a light reddish colour, and crenulated at and below the suture of the middle whorls, the antepenultimate showing it more distinctly.

"Maj. diam. 6, alt. 15 mm." (*Fulton.*)

Hab. Ceylon.

Var. **notata**, *Sykes.*

Cataulus marginatus, var. *notata*, Sykes, Journ. Malac. xii, 1905, p. 57, text-fig. 3.

"Shell larger than the typical form; shape more pyramidal; whorls more flattened; longitudinal striation almost absent; the malleation in the variety is much stronger, especially on the last half of the last whorl, where a second carina, above the normal one, is often present, leaving a smooth area between them: mouth duplex, pale flesh-colour.

"Alt. 17, diam. max. (last whorl) 5·5 millim." (*Sykes.*)

Hab. Ceylon.

265. **Tortulosa nevilli**, *Sykes.*

Cataulus nevilli, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 143 (nom. nud.); Sykes, Proc. Malac. Soc. iii, 1898, p. 68, pl. 5, fig. 16; Kobelt & Möllendorff, Cat. Pneum. 1899, p. 39; Sykes, Journ. Malac. xii, 1905, p. 55.
Tortulosa (*Eucataulus*) *nevilli*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 286.

Original description:—"Testa anguste et profunde rimata, pyramidata, solidula, eleganter costulato-striata, brunnea, spira elevata, apice obtusulo; sutura impressa; anfr. 8, convexi, ultimus non attenuatus; carina umbilicalis valida, compressa; periomphalum mediocre, costulato-striatum; apertura subcircularis; peristoma rubro-castaneum, continuum, incrassatum et valde reflexum, basi productum, canali mediocri perforatum.

"Alt. 23·6, diam. max. 9·5 mm." (*Sykes.*)

Hab. Ceylon: Ambepusse (*Collett*); Kegalla (*Preston*).

The nearest ally is stated to be *C. austenianus*, Benson; but the present species appears to differ in being more elongate, in having the whorls more convex, the lip of a different colour and attached to the shell at a different angle, while the notch is more vertical and not so much to the left as in *C. austenianus*.

Var. **flaveola**, *Fulton.*

Cataulus nevilli, var. *flaveola*, Fulton, A. M. N. H. ser. 7, xiii, 1904, p. 453; Sykes, Journ. Malac. xii, 1905, p. 55.

"Lighter coloured and with a yellow peristome, the latter being more on a plane with the spire than in typical *nevilli*, which is generally somewhat produced forward at the basal portion.

"Maj. diam. 11; alt. 25 mm." (*Fulton.*)

Hab. Ceylon.

266. **Tortulosa nietneri**, *Nevill.*

Cataulus nietneri, Nevill, J. A. S. B. xxxix, part 2, 1871, p. 7, pl. 1, fig. 7; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 142; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; Reeve, Conch. Icon. xx, Pupinidæ, 1876, pl. 6, fig. 48 (*nieteri*); Theobald, Cat. Shells Brit. India, 1876, p. 41; Nevill, Hand List, i, 1878, p. 297; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 309; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 143; Sykes, Proc. Malac. Soc. iii, 1898, p. 68; Kobelt & Möllendorff, Cat. Pneum. 1899, p. 39; Collett, Journ. Malac. vii, 1899, p. 86, text-fig. A; Sykes, Journ. Malac. xii, 1905, p. 55.

Original description:—"T. parva, subfusiformis, vix perforata apice sub-obtusa; supra pallide-straminea, infra virescente grisea et irregulariter albido strigata; anfractibus 6, convexiusculis primis duobus vel tribus lævigatis, ceteris transversim costulato

striatis, ultimo antice subapplanato, ad basin acute carinato; apertura circulari, peristomate albido, incrassato ac reflexo, intus ad basin anguste canaliculato. Operculum normale.

"Long. 11, diam. $4\frac{1}{4}$, alt. apert. 4, diam. apert. $3\frac{1}{2}$ mm."

Hab. Ceylon.

"This is the smallest species of the genus as yet described, it is also composed of fewer whorls, the last being peculiarly somewhat flattened; the sculpture is obsolete on the first three, just discernible on the fourth and very distinct on the last two whorls; the notch at the base of the peristome is less conspicuous than in the other species of the genus; the shell is of a straw-colour, irregularly marbled and streaked with greenish zigzag markings; the operculum is of a light horny texture, composed of about 6 whorls." (*Nevill.*)

Var. **caperata**, *Collett.*

Cataulus nietneri, var. *caperata*, Collett, Journ. Malac. vii, 1899, p. 86, text-figure C; Sykes, op. cit. xii, 1905, p. 55.

"Shell larger and more solid than the type. Whorls more rounded and sutures deeper. Apex smooth and horny. The rest of the shell closely and strongly wrinkled all over, excepting the small flattened portion of the last whorl immediately above the peristome. Operculum as in the type.

"Alt. 18, diam. max. 7 mm." (*Collett.*)

Hab. Ceylon: Ambegamuwa and Balangoda (*Collett*).

Var. **unicolor**, *Collett.*

Cataulus nietneri, var. *unicolor*, Collett, Journ. Malac. vii, 1899, p. 86, text-fig. B; Sykes, op. cit. xii, 1905, p. 55.

"Shell larger and more elongated than the type. Whorls more solid, more densely striated and more roughened. Apex golden and horny. The rest of the shell very pale yellow throughout. The conspicuous white flames which ornament the typical form and var. *caperata* are entirely absent in the present variety, which is rare. Operculum normal.

"Alt. 17, diam. max. 6·5 mm." (*Collett.*)

Hab. Ceylon: Ambegamuwa (*Collett*).

267. Tortulosa prestoni, *Sykes.*

Cataulus prestoni, Sykes, Journ. Malac. xii, 1905, p. 56, text-fig. 2.

Original description:—"Shell nearly related to *C. aureus*, but differing in the following characters. Colour straw-yellow rather than golden yellow; size smaller; whorls not so inflated; umbilical region more rounded; lip not so produced at the base, not so much reflected, and not so 'winged' at the upper right margin; canal smaller.

"Alt. 10·8; diam. max. (of last whorl) 8 millim." (*Sykes.*)

Hab. Ceylon.

268. **Tortulosa pyramidata**, *Pfeiffer*.

Cataulus pyramidatus, Pfeiffer, Proc. Zool. Soc. 1852, p. 145, pl. 13, fig. 4; id., Mon. Pneum. 1852, p. 137; id., Cat. Phaneropn. Brit. Mus. 1852, p. 96; id., Conch.-Cab., Cyclostomaceen, 1854, p. 386, pl. 48, figs. 9–11; Sowerby, Thes. Conch. iii, 1864, pl. 264, fig. 10; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; Reeve, Conch. Icon. xx, Pupinidæ, 1876, pl. 7, fig. 60; Hanley & Theobald, Conch. Ind. 1876, pl. 146, fig. 5; Theobald, Cat. Shells Brit. India, 1876, p. 41; Nevill, Hand List, i, 1878, p. 297; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 310; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 143; Sykes, Proc. Malac. Soc. iii, 1898, p. 68; Kobelt & Möllendorff, Cat. Pneum. 1899, p. 39; Sykes, Journ. Malac. xii, 1905, p. 55.

Tortulosa pyramidata, Adams, Gen. Rec. Moll. ii, 1856, p. 285, pl. 86, figs. 2 *a*, 2 *b* (operculum); Chenu, Man. Conchyl. i, part 1, 1860, p. 489, text-fig. 3617; Frauenfeld, Verh. K. K. zool.-bot. Ges. Wien, xix, 1869, p. 879.

Tortulosa (*Eucataulus*) *pyramidata*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 287.

Original description:—"C. testa subperforata, ovato-pyramidata, solida, distincte subarcuatim et confertim striata, sericea, saturate castanea; spira turrita, apice acutiuscula; anfr. 7–7½, modice convexis, ultimo non attenuato, basi axis vix excedente; carina basali compressa, antice vix dilatata; periomphalo latiusculo, profundius striato, medio turgido; apertura subcirculari; perist. albo, continuo, breviter adnato, incrassato, horizontaliter patente et reflexiusculo, basi vix producto, canali mediocri perforato.

"Long 23–29, diam. 10–12½ mill." (*Pfeiffer*.)

Hab. Ceylon.

269. **Tortulosa recurvata**, *Pfeiffer*.

Cataulus recurvatus, Pfeiffer, Proc. Zool. Soc. 1862, p. 116, pl. 12, fig. 2; Sowerby, Thes. Conch. iii, 1864, pl. 264, fig. 16; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 88; Blanford, J. A. S. B. xxxv, 1866, p. 38; Hanley & Theobald, Conch. Ind. 1876, pl. 146, fig. 2; Reeve, Conch. Icon. xx, Pupinidæ, 1876, pl. 6, fig. 55; Theobald, Cat. Shells Brit. India, 1876, p. 41; Nevill, Hand List, i, 1878, p. 298; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 143; id., Cat. Pneum. 1899, p. 39.

Tortulosa (*Eucataulus*) *recurvata*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 287.

Original description:—"T. breviter et profunde rimata, ovato-turrita, solida, distincta subarcuato-striata, virenti-fulva; spira regulariter attenuata; sutura profunda, simplex; anfr. 7, summi rubescentes, 3 ultimi convexi, ultimus antice subascendens, basi carina compressa antice dilatata munitus; periomphalum angustum, costulato-striatum; apertura subcircularis, ad basin interrupta et canali perlato aucta; perist. duplex, internum porrectum, basi fissum, externum patens et reflexum, parte canalem formante recurvata.

"Long. 23, diam. 10 mill." (*Pfeiffer*.)

Hab. India: Anamullay, Nilgiris.

270. Tortulosa rugosa, *Fulton.*

Cataulus rugosa, Fulton, A. M. N. H. ser. 7, xiii, 1904, p. 452.
Cataulus rugosus, Sykes, Journ. Malac. xii, 1905, p. 55.

Original description:—"Shell very narrowly umbilicate, subfusiform, moderately solid, colour light yellowish brown, nucleus smooth, sculptured below with somewhat nodulous oblique striæ, which give a malleated appearance to the shell; whorls $6\frac{1}{2}$, moderately convex; basal carina moderately produced; aperture circular, reddish brown within; peristome yellowish, continuous; basal canal semicircular, situate at centre of basal portion of the peristome.

"Maj. diam. 5; alt. $11\frac{1}{2}$ mm."

Hab. Ceylon.



Fig. 27.—*Tortulosa rugosa.*

"This form is nearest to *C. marginatus*, but is much smaller, not so slender, and the suture is not margined." (*Fulton.*)

The accompanying figures have been drawn from the type in the British Museum.

271. Tortulosa smithi, *Sykes.*

Cataulus smithi, Sykes, Journ. Malac. xii, 1905, p. 56, text-fig. 1.

Original description:—"Shell deeply rimate, solid, straw-yellow, the protoconch a trifle darker, pyramidal, with the spire well raised; the earlier whorls smooth, and the residue sculptured by numerous, closely-set, fine longitudinal costulæ; suture well impressed; whorls 8, plano-convex, the last being a little compressed in front; umbilical region large, sculptured as the rest of the shell; the umbilical carina is large and distinct, with a second smaller one within; lip white continuous, subcircular, slightly projecting at the base, reflected, most noticeably so at the lower outer margin, canal large.

"Alt. 26·5, diam. max. (of last whorl) 10·5 mm."

Hab. Ceylon.

"As compared with *C. aureus* the present shell is straw-yellow and not golden yellow in colour; it is much larger with flatter whorls, the mouth is subcircular and lacks the angle at the upper right hand margin, etc. From *C. austenianus* the shape and colour of the mouth and lip, as also the elongate form, will suffice to sever it: similar variations distinguish it from the white-lipped var. of *C. hæmastoma*. I would lay stress on the second carina at the base." (*Sykes.*)

272. Tortulosa sykesi, *Fulton.*

Cataulus sykesi, Fulton, A. M. N. H. ser. 7, xiii, 1904, p. 453; Sykes, Journ. Malac. xii, 1905, p. 55.

Original description:—"Shell narrowly umbilicate, subfusiform, solid, uniform light yellowish to uniform reddish-brown colour, arcuately striated, the striæ rather blunt and not very conspicuous; whorls nearly 7, slightly convex; basal carina prominent, with a conspicuous inner ridge; aperture subcircular, reddish brown within; peristome whitish, very much thickened but scarcely duplex, continuous; aperture of basal canal subcircular, situate slightly to the left of the centre of base of peristome.

"Maj. diam. (yellow form) 6½; alt. 14½ mm.
" " (reddish-brown form) 6½; alt. 14 mm."

Hab. Ceylon.



Fig. 28.—*Tortulosa sykesi.*

"This form bears a general resemblance to *C. duplicatus*, Pfr., but is smaller, has less whorls, and the suture of the earlier whorls is not margined as in that species." (*Fulton.*)

The shell shown in the accompanying illustration is one of the co-types in the British Museum. It shows the operculum *in situ*, better than the type.

273. Tortulosa templemani, *Pfeiffer.*

Cataulus templemani (nom. nud.), Pfeiffer, Zeits. Malak. viii, 1851, p. 150; id., Mon. Pneum. 1852, p. 136; id., Cat. Phaneropn, Brit. Mus. 1852, p. 96; id., Conch.-Cab., Cyclostomaceen, 1854, p. 385; Sowerby, Thes. Conch. iii, 1864, pl. 264, fig. 12; Hanley & Theobald, Conch. Ind. 1875, pl. 106, fig. 1; Reeve, Conch. Icon. xx, Pupinidæ, 1876, pl. 7, fig. 62; Theobald. Cat. Shells Brit. India, 1876, p. 41; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 310; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 143; Sykes, Proc. Malac. Soc. iii, 1898, p. 68; Kobelt & Möllendorff, Cat. Pneum. 1899, p. 39; Sykes, Journ. Malac. xii, 1905, p. 55.

Pupina templemani, Pfeiffer, Proc. Zool. Soc. 1852, p. 158; id., Conch.-Cab., Cyclostomaceen, 1853, p. 236, pl. 31, figs. 15, 16.

Tortulosa templemani, Adams, Gen. Rec. Moll. ii, 1856, p. 285.

Cataulus templemanni, H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; G. Nevill, Hand List, i, 1878, p. 297.

Tortulosa (*Eucataulus*) *templemani*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 287

Original description:—"P. testa subperforata, subfusiformi-oblonga, solidula, striata, parum nitida, non callosa, castanea;

spira oblongo-turrita, apice acutiuscula; anfr. 8 planiusculis, ultimo basi acute et prominenter carinato; apertura verticali, basi subproducta; perist. continuo, aurantiaco, superne breviter adnato, margine dextro sinistroque reflexo-patentibus, basali deorsum dilatato, canaliculato; canali extus lato, intus lineari.—Operculum?

"Long. 20, diam. 7 mill." (*Pfeiffer.*)

Hab. Ceylon (*Templeman*); Maturata (*Simon*).

274. Tortulosa thwaitesi, *Pfeiffer.*

Cataulus thwaitesi, Pfeiffer, Proc. Zool. Soc. 1852, p. 147; id., Mon. Pneum. 1852, p. 138; id., Cat. Phaneropn. Brit. Mus. 1852, p. 97; id., Conch.-Cab., Cyclostomaceen, 1854, p. 387, pl. 49, figs. 9, 10; Sowerby, Thes. Conch. iii, 1864, pl. 264, fig. 6, var. fig. 15; H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5 (*C. thwaitesii*); Hanley & Theobald, Conch. Ind. 1875, pl. 106, fig. 6; id., op. cit. 1876, p. xii (+ *C. cumingi*); Reeve, Conch. Icon. xx, Pupinidæ, 1876, pl. 6, fig. 54; Theobald, Cat. Shells Brit. India, 1876, p. 41; Nevill, Hand List, i, 1878, p. 298; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 311 (+ *C. cumingi*); Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 143; Sykes, Proc. Malac. Soc. iii, 1898, p. 66 (+ *C. cumingi* and *C. duplicatus*); Kobelt & Möllendorff, Cat. Pneum. 1899, p. 39; Sykes, Journ. Malac. xii, 1905, p. 55.

Tortulosa thwaitesi, Adams, Gen. Rec. Moll. ii, 1856, p. 285.

Tortulosa (*Eucataulus*) *thwaitesi*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 288.

Cataulus gregarius (? *C. thwaitesi*) (nom. nud.), H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; Theobald, Cat. Shells Brit. India, 1876, p. 41; G. Nevill, Hand List, i, 1878, p. 297.

Original description:—"C. testa vix perforata, subfusiformi-turrita, solida, longitudinaliter confertim costulata, vix nitidula, violaceo-fusca; spira ovato-turrita, apice acutiuscula; sutura impressa; anfr. 7–7½, convexiusculis, ultimo vix attenuato; carina basali validissima, compressa, angulatim patente, alba; apertura verticali, circulari; perist. duplice albo: interno basi profunde inciso, externo ad anfr. penultimum exciso, cæterum incrassato, reflexo, basi canali mediocri perforata.

"Long. 19, diam. 7 mill." (*Pfeiffer.*)

Hab. Ceylon (*Thwaites*).

Subgenus **TORTULOSA**, *Gray.*

Tortulosa, Gray, Proc. Zool. Soc. 1847, p. 177; Kobelt, Das Tierreich, Lief. 16, 1902, p. 288 (subgenus).

Cataulus (part.), Pfeiffer, Zeits. Malak. viii, 1851, p. 149; (part: "abnormes"); id., Mon. Pneum. Suppl. 1, 1858, p. 87.

TYPE (only species), *Turbo tortuosus*, Chemnitz.

Range. India. Nicobars.

Shell with the last whorl solute.

275. **Tortulosa tortuosa**, *Chemnitz.*

Turbo tortuosus, Chemnitz, Conch.-Cab. xi, 1795, p. 158, pl. 195 A, figs. 1882, 1883.
Urocoptis tortuosa, Beck, Index Moll. 1837, p. 83.
Cyclostoma tortuosum, Sowerby, Thes. Conch. i, 1843, p. 152, pl. 28, figs. 185, 186; Pfeiffer, Conch.-Cab., Cyclostomaceen, 1849, p. 165, pl. 24, figs. 19, 20.
Megalomastoma tortuosum, Pfeiffer, Zeits. Malak. iv, 1847, p. 109; Gray, Nomencl. Moll. Brit. Mus. i, 1850, p. 30.
Cataulus tortuosus, Pfeiffer, Zeits. Malak. viii, 1851, p. 150; id., Cat. Phaneropn. Brit. Mus. 1852, p. 95; id., Conch.-Cab., Cyclostomaceen, 1854, p. 385; Sowerby, Thes. Conch. iii, 1864, pl. 264, fig. 1; Blanford, J. A. S. B. xxxviii, 1869, p. 138; Reeve, Conch. Icon. xx, Pupinidæ, 1876, pl. 6, fig. 49; Theobald, Cat. Shells Brit. India, 1876, p. 41; Blanford, J. A. S. B. xlix, 1880, p. 216; G. Nevill, op. cit. 1, 1881, p. 149; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 143; id., Cat. Pneum. 1899, p. 39.
Tortulosa tortuosa, Adams, Gen. Rec. Moll. ii, 1856, p. 285, pl. 86, fig. 2; Chenu, Man. Conchyl. i, part 1, 1860, p. 489, text-figs. 3614, 3616 (shell), fig. 3615 (operculum); Mörch, Journ. Conchyl. xx, 1872, p. 339.
Tortulosa (*Tortulosa*) *tortuosa*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 288, text-fig. 64.

"Shell oblong, pupiform, white, thin, shining, with 7 rounded volutions, which are obsoletely striated, the last of them somewhat compressed, and slightly contracted near the aperture, exserted; suture distinct; aperture circular; peritreme continuous, reflected, with a small canal internally at the lower part; umbilicus small, surrounded by a keel which continues to the lower margin of the peritreme." (*Sowerby.*)

Hab. ? Nicobars. India: Trevandrum, 2500 ft. (*Beddome*).

Genus **POLLICARIA**, *Gould.*

Pollicaria (part.), Gould, Proc. Boston Soc. Nat. Hist. vi, 1856, p. 14; Martens, Preuss. Exped. Ost-Asien, Zool. ii, 1867, p. 67; Stoliczka, J. A. S. B. xl, 1871, p. 150; Kobelt, Das Tierreich, Lief. 16, 1902, p. 288.
Hainesia (part.), Pfeiffer, Malak. Bl. iii, 1856, p. 120; id., Mon. Pneum. Suppl. 1, 1858, p. 79.
Hybocystis, Benson, A. M. N. H. ser. 3, iv, 1859, p. 90; Blanford, op. cit. ser. 3, xiii, 1864, p. 460; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 56; Nevill, Hand List, i, 1878, p. 298; Crosse, Journ. Conchyl. xxxiii, 1885, p. 180; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxxi, 1899, p. 136; id., Cat. Pneum. 1899, p. 104.

TYPE, *Cyclostoma pollex*, Gould.

Range. Burma, Farther India.

Shell distortedly ovate, penultimate whorl flattened in front; aperture circular, with an internal callus, sinuate above, separated

from the left margin of the peristome by a deep furrow; operculum calcareous, thick, slightly concave on the outer side, the whorls increasing slowly, the last, in full-grown specimens, becoming gradually attenuated; the inner with only $1\frac{1}{2}$ whorls, the last raised, almost covering the remainder, with a periostracum, and an umbilicus-like cavity.

276. **Pollicaria gravida**, *Benson*.

Megalomastoma gravidum, Benson, A. M. N. H. ser. 2, xvii, 1856, p. 229; Theobald, J. A. S. B. xxvi, 1857, p. 247; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 79; Hanley & Theobald, Conch. Ind. 1870, pl. 7, fig. 1.

Hybocystis gravida, Benson, A. M. N. H. ser. 3, iv, 1859, p. 91; Pfeiffer, Novit. Conch. ser. 1, i, 1860, p. 123, pl. 35, figs. 1–4; id., Mon. Pneum. Suppl. 2, 1865, p. 56; Theobald, Cat. Shells Brit. India, 1876, p. 40 (+ *Otopoma blennus*); Nevill, Hand List, i, 1878, p. 298; Crosse, Journ. Conchyl. xxxiii, 1885, p. 187; Tapparone Canefri, Ann. Mus. Civ. Genova, ser. 2, vii, 1889, p. 309 (+ *O. blennus*); Cooke, Cambr. Nat. Hist. iii, 1895, p. 305, text-fig. 205; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxxi, 1899, p. 137; id., Cat. Pneum. 1899, p. 105.

Pollicaria gravida, Sowerby, Thes. Conch. iii, 1864, pl. 263, fig. 5 (+ *P. pollex*); Stoliczka, J. A. S. B. xl, 1871, p. 150 (animal); Reeve, Conch. Icon. xx, Pupinidæ, 1876, pl. 8, fig. 68; Kobelt, Das Tierreich, Lief. 16, 1902, p. 289, text-fig. 65.

Cyclostoma (*Pollicaria*) *pollex*, Gould, Proc. Boston Soc. Nat. Hist. vi, 1856, p. 14.

Otopoma blennus, Benson, A. M. N. H. ser. 2, xvii, 1856, p. 231; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 111; Theobald, J. A. S. B. xxvii, 1857, p. 248.

Original description:—"Testa perforata, pupiformi, distorta, solida, læviuscula, vix striatula, fusco-albida; spira distorto-ovata, sutura marginata, apice conoideo-obtuso; anfractibus 6 convexis,

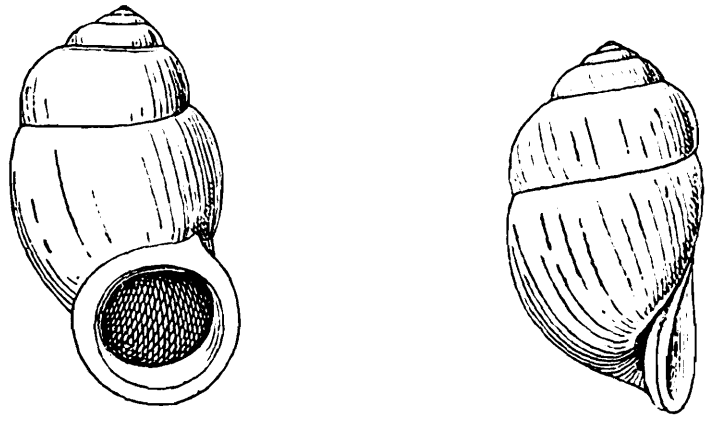


Fig. 29.—*Pollicaria gravida*.

penultimo elongato supra aperturam planato, dorso gibbo, ultimo angustiori, antice subito ascendente; apertura leviter sursum

spectante, circulari, fauce fusca, peristomate albido, incrassato, superne angulato, expansiusculo, reflexiusculo, intus late sulcato, tum calloso-marginato, callo interiori dextrorsum superne angulato-sinuato, sutura canalis obsoleti ad angulum anticum raro apparente.

"Long. 35 mill., diam. anfr. penult. 20 mill."

Hab. Burma: Moulmain (*Fea, Stoliczka*); Damotha (*Stoliczka*).

"In the obsolete channel, occasionally visible at the top of the aperture, this shell has possibly some relation to Gould's *M. sectilabre*. The indentation, invariably present in the internal callus of the aperture, seems to have some reference to the obliterated channel, and shows a passage to the *Pupinæ*. The form has a great resemblance to that of the gigantic *P. grandis*, Forbes (*forbesi*, Pfr.), which it exceeds in size. As in that shell, the great length of the penultimate whorl, above the aperture, contrasts with the shortness of the same part in the allied species *M. chrysallis*, Pfr." (*Benson.*)

The accompanying figures have been drawn from a specimen in the British Museum, measuring 34 mm. in length, 18 mm. in diameter.

Section PUPINEÆ.

Genus **PUPINA**, *Vignard.*

Regestoma, Hasselt, Alg. Konst- en Letter-Bode, ii, 1823, p. 245.
Registoma, Gray, Syn. Brit. Mus. ed. 44, 1842, p. 91; as synonym of *Pupina*.
Rhexistoma, Herrmannsen, Index Gen. Malac. ii, 1847, p. 392.
Rhegostoma, Agassiz, Nomencl. Zool. Index, 1848, p. 934.
Rhegistoma (part.), Martens, Preuss. Exped. Ost-Asien, Zool. ii, 1867, p. 156 (as section of *Pupina*).
Pupina, Vignard, Ann. Sci. Nat. xviii, 1829, p. 439; Gray, Proc. Zool. Soc. 1847, p. 182; Pfeiffer, Zeits. Malak. viii, 1851, p. 150; id., Mon. Pneum. 1852, p. 139; Adams, Gen. Rec. Moll. ii, 1856, p. 288; Chenu, Man. Conchyl. i, part 1, 1860, p. 490; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 147; Nevill, Hand List, i, 1878, p. 299; Fischer, Man. Conchyl. 1885, p. 740; Godwin-Austen, Land & Freshw. Moll. India, ii, 1897, p. 34; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxxix, 1897, p. 145 (part.); id., Cat. Pneum. 1899, p. 41; Kobelt, Das Tierreich, Lief. 16, 1902, p. 302.

Type, *P. keraudrini*, Vignard.

Range. Burma, Farther India, Southern China, Japan, Malaysia, New Guinea, Melanesia, Australia.

Shell elongate ovate, smooth, with a shining enamel-like coating; peristome simple, thickened or reflexed, with two canals, the upper at the suture, the lower oblique at the middle of the columellar margin. Operculum thin, membranaceous, rather flat, narrowly coiled.

Subgenus **TYLOTOECHUS**, *Kobelt & Möllendorff*.

Eupupina (part.), Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 147.
Mesostoma, Heude (non Orsted), Journ. Conchyl. xxxiv, 1886, p. 211.
Tylotoechus (part.), Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 145; id., Cat. Pneum. 1899, p. 41; Kobelt, Das Tierreich, Lief. 16, 1902, p. 306.

TYPE, *Pupina destructa*, Heude.

Range. Burma, Farther India, Southern China, Japan, Malaysia, New Guinea, Melanesia, Queensland.

The upper canal formed by a tongue-shaped process of the callus and the peristome.

277. Pupina artata, *Benson*.

Pupina artata, Benson, A. M. N. H. ser. 2, xvii, 1856, p. 230; Theobald, J. A. S. B. xxvi, 1857, p. 247; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 96; Benson, A. M. N. H. ser. 3, iv, 1859, p. 94; Pfeiffer, Novit. Conch. ser. 1, ii, 1860, p. 142, pl. 37, figs. 10–12; Sowerby, Thes. Conch. iii, 1864, pl. 265, figs. 1, 2; Blanford, J. A. S. B. xxxiv, 1865, p. 99 (animal); Hanley & Theobald, Conch. Ind. 1870, pl. 7, fig. 5; Stoliczka, J. A. S. B. xl, 1871, p. 151; Reeve, Conch. Icon. xx, 1876, pl. 1, fig. 3; Theobald, Cat. Shells Brit. India, 1876, p. 41; Nevill, Hand List, i, 1878, p. 299; Möllendorff, J. A. S. B. lv, 1886, p. 314; Godwin-Austen, Land & Freshw. Moll. India, ii, 1897, p. 38, pl. 69, fig. 6.
Pupina (*Tylotoechus*) *artata*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 145; id., Cat. Pneum. 1899, p. 41; Kobelt, Das Tierreich, Lief. 16, 1902, p. 306.

Original description:—"Testa imperforata, pupiformi, ovato-acuminata, politissima, fusco-cornea, translucente, vel hyalina; spira ovato-conoidea, apice obtusiusculo, sutura callosa, lineari; anfractibus $5\frac{1}{2}$, convexiusculis, ultimo $\frac{1}{3}$ testæ partem superante; apertura verticali, circulari, bicanaliculata; peristomate obtusiusculo, margine parietali superne linguam acutam, callo verticali elongato, cum margine dextro subparallelo, marginatum, exhibente, infra cum basali canalem incisum, ascendentem, extus calloso-marginatum, efformante. Operculo testaceo, pauci-spirali, concaviusculo, sutura elevata.

"Long. 6, diam. $3\frac{1}{2}$ mill." (*Benson.*)

Hab. Burma: Moulmain (*Theobald*). Perak (*Möllendorff*).

278. Pupina arula, *Benson*.

Pupina arula, Benson, A. M. N. H. ser. 2, xvii, 1856, p. 230; Theobald, J. A. S. B. xxvi, 1857, p. 247; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 95; id., Novit. Conch. ser. 1, ii, 1860, p. 141, pl. 37, figs. 7–9; Sowerby, Thes. Conch. iii, 1864, pl. 265, fig. 3 (*avula*, err. typ.); Hanley & Theobald, Conch. Ind. 1870, pl. 7, fig. 4; Reeve, Conch. Icon. xx, 1876, pl. 1, fig. 5; Theobald, Cat. Shells Brit. India, 1876, p. 41; Nevill, Hand List, i, 1878, p. 300; Möllendorff, J. A. S. B. lv, 1886, p. 314; Godwin-Austen, Land & Freshw. Moll. India, ii, 1897, p. 37, pl. 69, fig. 1.

Pupina (*Tylotoechus*) *arula*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 145; id., Cat. Pneum. 1899, p. 41; Kobelt, Das Tierreich, Lief. 16, 1902, p. 307.

Original description:—"Testa imperforata, conoideo-ovata, longitudinaliter striatula, nitidissima, fusco-rubella, apice conoideo, acuto, sutura calloso-marginata, anfractibus 6, ultimo spiram subæquante, antice breviter ascendente; apertura circulari, angulo superiori acuto adjecto, callo parietali superne lamella intrante munito; columella profunde incisa, canalem extus apparentem, lingua lata parietali obtectum, callisque duobus divergentibus marginatum, exhibente; peristomate obtuso, expansiusculo, extus marginato, margine dextro supra medium arcuato; basi foveata. Operculo ——?

"Long. 9, diam. 5 mill."

Hab. Burma: Yanglan (*Theobald*). Perak (*Möllendorff*).

"It has much affinity with *P. aurea*, Hinds, the superior canal being rather simulated than actually developed, and being formed by an angle, at the top of the otherwise circular aperture, cut off from the lower portion, in part, by the parietal lamella." (*Benson.*)

279. **Pupina blanfordi**, *Theobald.*

Pupina blanfordi, Theobald, J. A. S. B. xxxiii, 1864, p. 247; Pfeiffer, Mon. Pneum. Suppl. 3, 1877, p. 414; Theobald, Cat. Shells Brit. India, 1876, p. 41; Reeve, Conch. Icon. xx, 1876, pl. 1, fig. 6; Godwin-Austen, Land & Freshw. Moll. India, ii, 1897, p. 41, pl. 69, fig. 2.

Pupina artata, var. *blanfordiana*, Nevill, Hand List, i, 1878, p. 300.

Pupina (*Tylotoechus*) *blanfordi*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 145; id., Cat. Pneum. 1899, p. 41; Kobelt, Das Tierreich, Lief. 16, 1902, p. 309.

Original description:—"Testa pupiniformi, politissima, flavescente-cornea. Anfractibus quinque. Peristomate albo, non expanso. Canalibus albis.

"Long. 6, diam. 3·5 mills."

Hab. Burma: Pegu (*Blanford*).

"It is intermediate in its characters and aspect between *P. peguensis*, B., and *P. artata*, B., to the latter of which it more closely approaches in the shape and unreflected form of its peristome." (*Theobald.*)

280. **Pupina hungerfordiana**, *Nevill.*

Pupina hungerfordiana, Nevill, Hand List, i, 1878, p. 300; id., J. A. S. B. l, 1881, p. 148, pl. 6, fig. 6.

Pupina hungerfordi, Godwin-Austen, Land & Freshw. Moll. India, ii, 1897, p. 41, pl. 69, fig. 7.

Pupina (*Tylotoechus*) *hungerfordiana*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 146; id., Cat. Pneum. 1899, p. 42; Kobelt, Das Tierreich, Lief. 16, 1902, p. 314.

Original description:—"Shell about the same size as *P. imbricifera*, between which and *P. artata* it is fairly intermediate; from

the former it can be distinguished by the slightly more produced spire and less convex whorls, much less everted last whorl, smaller aperture, even more evenly circular, and in a marked manner by the single instead of double peristome; the parietal callosity is quite different, being compressed, vertical, and more lateral and produced; the incised canal at the columella is also more covered by the triangular callosity, above which it is less compressed and more evenly expanded; from *P. artata* by its size, proportions, and additional whorl, but especially by the quite different characters of the two callosities; the parietal callosity especially is quite different, being much longer (it reaches beyond the middle of the last whorl), more vertical, and much more laterally inclined; indeed it extends further back than the peristome.

"Long. $8\frac{1}{4}$; diam. 5; apert. (intus) 2 mill." (*Nevill.*)

Hab. Burma: Hsaddan Koo, Salween Valley (*Hungerford*).

281. **Pupina imbricifera**, *Benson.*

Pupina imbricifera, Benson, A. M. N. H. ser. 2, xvii, 1856, p. 230; Theobald, J. A. S. B. xxvii, 1858, p. 318; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 94; id., Novit. Conch. ser. 1, ii, 1860, p. 140, pl. 37, figs. 4–6; Sowerby, Thes. Conch. iii, 1864, pl. 265, figs. 4, 5; Godwin-Austen, J. A. S. B. xxxix, 1870, pl. 2, fig. 8 (dentition); Hanley & Theobald, Conch. Ind. 1870, pl. 7, fig. 7; Reeve, Conch. Icon. xx, 1876, pl. 1, fig. 7; Theobald, Cat. Shells Brit. India, 1876, p. 41; Godwin-Austen, J. A. S. B. xlv, 1876, part 2, p. 179 (var.); Nevill, Hand List, i, 1878, p. 300.

Pupina (*Tylotoechus*) *imbricifera*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 146; id., Cat. Pneum. 1899, p. 42; Kobelt, Das Tierreich, Lief. 16, 1902, p. 315.

Original description:—"Testa imperforata, ventricose, ovato-acuta, politissima, fuscescente, pellucida; spira conica, apice acutiusculo, sutura leviter impressa; anfractibus $6\frac{1}{2}$ convexiusculis, ultimo spiram æquante, ventricosiori, antice subascendente; apertura circulari, bicanaliculata, peristomate pallide carneo, duplici, interno obtuso, breviter porrecto, externo expanso, subreflexo, superne longe ascendente, margine parietali calloso linguam acutam, cum margine dextro conniventem, et callum verticalem, validum, elongatum, arcuatim divergentem, cum processu labri exterioris canalem efformantem, exhibente, subtus cum basali exteriore canalem incisum, marginibus extus callosis, ascendentem, construente. Operculo ——?

"Long. 10, diam. anfract. penult. 5 mill."

Hab. India: Sylhet.

"This handsome species is singular on account of the great development of the callus, which runs up the penultimate whorl two-thirds of its height, forming, with the prolongation of the outer lip, a channel leading to the incision at the top of the aperture." (*Benson.*)

282. **Pupina limitanea**, *Godwin-Austen.*

Pupina limitaneus, Godwin-Austen, Land & Freshw. Moll. India, ii, 1897, p. 40, pl. 69, fig. 4.

Pupina (Tylotoechus) limitanea, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 146; id., Cat. Pneum. 1899, p. 42; Kobelt, Das Tierreich, Lief. 16, 1902, p. 316.

Original description:—"Shell ovately conoid, shining polished surface; sculpture none; colour pale ochre to dull whitish, black where parts of animal remain, probably black when living; spire conic, sides convex, apex subobtuse; suture shallow, linear; whorls $5\frac{1}{2}$, the last twice as high as the spire; aperture circular, at suture a vertical slit, formed by the thickened upper margin and a short vertical lamella; columella with a deep narrow incision seen from front, the frontal flap narrow; peristome thick and obtuse.

"Major diam. 3, alt. axis 5 mm.

"Smallest ,, 3, ,, 4·5 mm."

Hab. Eastern frontier of Burma and Siam (*Woodthorpe*).

"This species is nearest to *P. peguensis*, but it is smaller, different in form, proportion of whorls, and the columellar slit is narrower." (*Godwin-Austen.*)

283. **Pupina nicobarica**, *Pfeiffer.*

Pupina (Registoma) nicobarica, Pfeiffer, Proc. Zool. Soc. 1852, p. 145.

Registoma nicobaricum, Pfeiffer, Cat. Phaneropn. Brit. Mus. 1852, p. 104; id., Mon. Pneum. 1852, p. 147; Adams, Gen. Rec. Moll. ii, 1856, p. 289; Mörch, Journ. Conchyl. xxiv, 1876, p. 362.

Pupina nicobarica, Pfeiffer, Conch.-Cab., Cyclostomaceen, 1854, p. 388, pl. 48, figs. 28–31; Reeve, Conch. Icon. xx, 1876, pl. 3, fig. 26; Nevill, Hand List, i, 1878, p. 299 (+ var. *major*); Godwin-Austen, Proc. Zool. Soc. 1895, p. 455; id., Land & Freshw. Moll. India, ii, 1897, p. 42.

Registoma nicobarica, Frauenfeld, Verh. K. K. zool.-bot. Ges. Wien, xix, 1869, p. 879.

Pupina (Tylotoechus) nicobarica, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 146; id., Cat. Pneum. 1899, p. 42; Kobelt, Das Tierreich, Lief. 16, 1902, p. 318.

Original description:—"P. testa imperforata, ovato-conica, solidula, glaberrima, nitida, pallide isabellina; spira convexa,



Fig. 30.—*Pupina nicobarica.*

sursum conica, acutiuscula; sutura lineari; anfr. 5, vix convexiusculis, ultimo oblique descendente, antice breviter ascendente,

basi rotundato; apertura subverticali, circulari, nodulo calloso minuto juxta insertionem marginis dextri coarctata; perist. simplice, vix expansiusculo, margine columellari subincrassato, incisura brevi, subascendente a basali separato.

"Long. 6, diam. 3 mill." (*Pfeiffer.*)

Hab. Nicobars: Border of River, Galathea (*Reinhardt*); Kamorta (*Roepstorf*).

The shell figured is one of several received by the British Museum from Mrs. Roepstorf of Copenhagen.

284. Pupina peguensis, *Benson.*

Pupina peguensis, Benson, A. M. N. H. ser. 3, vi, 1860, p. 192; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 95; Theobald, Cat. Shells Brit. India, 1876, p. 41; Nevill, Hand List, i, 1878, p. 300; Godwin-Austen, Land & Freshw. Moll. India, ii, 1897, p. 40, pl. 69, fig. 3.

Pupina blanfordi (non Theobald), Hanley & Theobald, Conch. Ind. 1870, pl. 7, fig. 6.

Pupina (*Tylotoechus*) *peguensis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 147; id., Cat. Pneum. 1899, p. 43; Kobelt, Das Tierreich, Lief. 16, 1902, p. 319.

Original description:—"Testa imperforata, subgloboso-ovata, lævigata, polita, pellucida, cornea; spira convexo-conica, apice acutiusculo, sutura calloso-marginata; anfractibus $4\frac{1}{2}$, ultimo spiram superante, antice breviter ascendente, ad basin foveato; apertura subverticali, sursum spectante, circulari, angulo acuto superne adjecto, callo parietali superne et lamella intrante munita; columella profunde incisa, canalem extus progredientem lingua lata superiore obtectum callisque duobus extus divergentibus marginatum exhibente; peristomate expansiusculo; margine dextro, supra medium arcuato, basalique crassiusculo obtusis.

"Long. 6, diam. $3\frac{1}{2}$ mill."

Hab. Burma: Pegu.

"Closely related to the Tenasserim *Pupina arula*, B., but, independently of its smaller size, differing in form, proportions, translucence, and absence of sculpture." (*Benson.*)

285. Pupina tongupensis, *Godwin-Austen.*

Pupina tongupensis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1897, p. 41, pl. 69, fig. 5.

Pupina (*Tylotoechus*) *tongupensis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 147; id., Cat. Pneum. 1899, p. 43; Kobelt, Das Tierreich, Lief. 16, 1902, p. 323.

Original description:—"Shell globosely conoid, tumid, shiny; sculpture smooth, no striation; colour ochraceous; spire low, sides rounded, apex blunt; suture very shallow; whorls 5, very swollen; aperture circular, a deep cleft on upper angle, bounded by a short rounded lamella on the body-whorl; peristome not

thickened, a narrow cleft on the columellar margin, external canal horizontal, narrow, upper margin moderately wide.

"Major diam. 3·5, alt. axis 5 mm." (*Godwin-Austen.*)

Hab. Burma: Tongoop Pass, Arakan Hills (*Blanford*).

"The species differs in its small and globose form from all others I have examined, and the aperture is fully formed." (*G.-A.*)

Subfamily ALYCÆINÆ.

Genus **DIORYX**, *Benson.*

Dioryx (part.), Benson, A. M. N. H. ser. 3, iii, 1859, p. 177 (as section of *Alycæus*); Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 44; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 187, (as subgenus); Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 149 (genus); id., Cat. Pneum. 1899, p. 45; Kobelt, Das Tierreich, Lief. 16, 1902, p. 336.

TYPE (first species), *Alycæus amphora*, Benson.

Range. India, Farther India, Southern China, Formosa.

Shell conoid or depressed turbinate, the constriction narrow and immediately behind the aperture, the sutural tube arising proportionately nearer to the peristome than in *Alycæus*.

286. **Dioryx amphora**, *Benson.*

Alycæus amphora, Benson, A. M. N. H. ser. 2, xvii, 1856, p. 226; Theobald, J. A. S. B. xxvi, 1857, p. 247; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 34; id., Novit. Conch. ser. 1, i, 1860, p. 126, pl. 35, figs. 15–17; Hanley & Theobald, Conch. Ind. 1874, pl. 91, figs. 2, 3; Theobald, Cat. Shells Brit. India, p. 1876, p. 39; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 2, fig. 15; G. Nevill, J. A. S. B. xlvi, 1877, p. 29; id., Hand List, i, 1878, p. 292; id., in Anderson, Zool. Res. Exp. W. Yunnan, i, 1879, p. 890.

Alycæus (*Dioryx*) *amphora*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 429, pl. 153, fig. 11.

Dioryx amphora, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 149; id., Cat. Pneum. 1899, p. 45; Kobelt, Das Tierreich, Lief. 16, 1902, p. 336.

Original description:—"Testa anguste umbilicata, ovato-globosa, exilissime costulato-striata, albido-carnea, versus apicem



Fig. 31.—*Dioryx amphora.* (× 2.)

acutiusculum rubella; spira conica; sutura subprofunda; anfract. 4 convexis, ultimo inflato, juxta aperturam constricto, tubulo suturali longissimo prope peristoma oriente; apertura verticali;

peristomate duplici, continuo, interiori breviter porrecto, intus pallide aurantiaco, exteriori expanso, striatulo, incrassato; umbilico intus spiraliter striato, margine compressiusculo. Operculo ——?

"Long. 5½, diam. obliq. 5 mill."

Hab. Burma: Moulmain and Tenasserim Valley (*Theobald*).

"The shell occurs also of a smaller size. It approaches in form the Sikkim *A. urnula*, nobis, but has a more globose aspect. The extreme length of the sutural tube is remarkable; it extends so far round the last whorl as to be visible from the front on both sides of the shell. The aperture occupies about half the height of the specimen." (*Benson.*)

The specimen figured is in the British Museum.

287. **Dioryx feddenianus**, *Theobald.*

Alycæus feddenianus, Theobald, J. A. S. B. xxxix, part 2, 1870, p. 397, pl. 18, fig. 4; Hanley & Theobald, Conch. Ind. 1874, pl. 91, figs. 1, 4; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 66; Theobald, Cat. Shells Brit. India, 1876, p. 39; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 2, fig. 18; Nevill, Hand List, i, 1878, p. 294.

Dioryx feddeniana, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 149; id., Cat. Pneum. 1899, p. 45.

Alycæus (*Dioryx*) *feddenianus*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 415, pl. 153, fig. 12.

Dioryx feddenianus, Kobelt, Das Tierreich, Lief. 16, 1902, p. 338.

Original description:—"Testa globoso, subturbinata, profunde umbilicata, glabra, in ultimo anfractu ad suturam peculiariter deplanata, deinde subangulata et infra angulum levissime convexiuscula seu planata et angustata, solida, brunnea; anfractibus 3½, rapide crescentibus, superioribus, convexiusculis, ultimo supra et prope umbilicum angulato; tubulo suturali tenui, prope



Fig. 32.—*Dioryx feddenianus.* (× 2.)

aperturam oriente et fere dimidium ultimi anfractus in longitudine æquante; strictura brevissima, vix conspicua; apertura circulari, carneola, supra augustissime adanata; perist. duplici, interno integro, tenuissimo, externo breviter expansiusculo et reflexo.

"Diam. maj. ·20 [5 mm.], d. min. ·16 [4 mm.], alt. ·16 unc. [4 mm.]."

Hab. Burma: Shan States (*Fedden*); Moulmain (*Hungerford*).

The specimen figured is in the British Museum.

288. **Dioryx globulosus**, *Godwin-Austen.*

Alycæus (*Dioryx*) *globulosus*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 368, pl. 157, fig. 1.

Original description:—"Shell globosely conical, closely perforate; sculpture: a strong epidermis, with irregular transverse striæ of growth and with streaks of brown; spiral striation is indistinctly seen, on swollen portion very regular close flat costulation; colour pale umber-brown; spire low, apex blunt; suture well impressed; whorls 4, tumid, the last reflected just behind the aperture; aperture circular; peristome double, much thickened, very slightly reflected; operculum widely spiral, the sutures distant, slightly concave.

"Major diam. 3·25; alt. axis 4 mm."

Hab. India: Luzor, Tsanspu Valley (*Oakes*).

"The operculum is of the type of *D. urnula*, smooth in front, the sutures only just discernible." (*Godwin-Austen.*)

289. **Dioryx labrirubidum**, *Godwin-Austen.*

Alycæus, n. sp., Nevill, Hand List, i, 1878, p. 292, No. 22.
Alycæus (*Dioryx*) *labrirubidum*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 430, pl. 155, fig. 1.

Original description:—"Shell rimate, elongately conical, solid; sculpture: extremely fine transverse striation throughout, not even coarser next the sutural tube except slightly so at its anterior end; colour pink throughout, stronger on the peristome, approaching red on the apex; spire high, sides flat, apex small; suture impressed; whorls 5, sides rounded, the last constricted close behind the aperture, distance to the sutural tube very short; aperture circular, strong; peristome solid, double, reflected.

"Major diam. 6; alt. axis 5·2 mm." (*Godwin-Austen.*)

Hab. Burma; Khargan, Attaran Valley (*Theobald*); Phaboo (*Hungerford*).

290. **Dioryx pingoungensis**, *Godwin-Austen.*

Alycæus (*Dioryx*) *urnula* var., Godwin-Austen, Proc. Zool. Soc. 1888, p. 245; id., Land & Freshw. Moll. India, ii, 1914, p. 414.
Alycæus (*Dioryx*) *pingoungensis*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 414, pl. 153, fig. 13.

Original description:—"Shell solid, imperforate; sculpture very smooth, surface with indistinct transverse striation, next the sutural tube there is fine close costulation; colour dull white; spire high conic, apex rounded; suture well impressed, the sutural tube very long; whorls with sides very rounded; aperture circular, vertical; peristome strong and thickened, double.

"Major diam. 3·10; alt. axis 2·70 mm."

Hab. Burma: Pingoung, Shan Hills (*Spratt*).

"This species, although very similar in all main characters to the Indian forms, as I said in 1888, is certainly quite worthy of

separation. Compared with typical *urnula*, Bs., from Darjiling, it is more solid and smoother, costulate sculpture on last whorl somewhat stronger, the umbilical margin more circumscribed, peristome solid, and particularly in the distance from base of the sutural tube to the peristome being very short, forming the constricted part of the whorl, when it is compared with typical *D. urnula* from Darjiling and the variety from the Naga Hills, etc.; it thus approaches the constriction of *D. amphora*." (*Godwin-Austen.*)

291. **Dioryx urceolus**, *Godwin-Austen.*

Alycæus (*Dioryx*) *urceolus*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 369, pl. 153. fig. 9.

Original description:—"Shell ovately globose, elongate, no perforation; sculpture: costulation next the sutural tube very fine and close, rest of shell finely striate; colour bleached; spire high, apex small; suture impressed, the sutural tube moderately long: in the drawing made from the first specimen received . this is represented too short, the end being broken; whorls $4\frac{1}{2}$, sides rounded; constriction short behind aperture; aperture oval vertically; peristome simple, double, rather solid.

"Major diam. 4·8; alt. axis 4·25 mm."

Hab. India: Abor Hills (*Oakes*).

"This species differs considerably from typical *urnula* in being far larger and so high in the spire, *urnula* being more globose and depressed; from another Abor species of this subgenus it may be known at once by its less tumid globose shape and the peristome being far less thickened." (*Godwin-Austen.*)

292. **Dioryx urnula**, *Benson.*

Alycæus urnula, Benson, A. M. N. H. ser. 2, xi, 1853, p. 284; Pfeiffer, Malak. Bl. i, 1854, p. 88; Adams, Gen. Rec. Moll. ii, 1855, p. 278; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 34; Theobald, J. A. S. B. xli, part 2, 1872, p. 330; Hanley & Theobald, Conch. Ind. 1874, pl. 91, figs. 8, 9; Theobald, Cat. Shells Brit. India, 1876, p. 40; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 2, fig. 13; Nevill, Hand List, i, 1878, p. 292.

Alycæus (*Dioryx*) *urnula*, Benson, A. M. N. H. ser. 3, iii, 1859, p. 284; Godwin-Austen, Proc. Zool. Soc. 1888, p. 245; id., Land & Freshw. Moll. India, ii, 1914, p. 345, pl. 153, fig. 1; p. 346, pl. 153, fig. 2 (large var.).

Dioryx urnula, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 149; id., Cat. Pneum. 1899, p. 45; Kobelt, Das Tierreich, Lief. 16, 1902, p. 340.

Original description:—"Testa rimata, vix perforata, globoso-conica, lævigata, sordide albida, apice acutiusculo, rubescente, sutura impressa, callum gerente; anfractibus $3\frac{1}{2}$, convexis, ultimo ventricoso, exilissime radiato-striato, pone aperturam breviter constrictiusculo, proxime tubam retroversam, suturalem, elongatam,

emittente; apertura circulari verticali integra, peristomate incrassato, subduplicato, expanso, subreflexo, breviter adnato; operculo aperturam æquante, planato, anfractibus mediocribus, subconspicuis.

"Diam. $3\frac{1}{2}$, alt. $4\frac{1}{2}$ mill."

Hab. India: Darjeeling (*Trotter*); Sikkim (*Godwin-Austen*); Arakan Hills (*Nevill*); Toroputu, Brahmakand, Garo Hills, Naga Hills, Jaintia Hills (*Godwin-Austen*). Burma: Bhamo (*Anderson*); Moulmain (*Theobald*).

"This interesting species inhabits the same locality as *A. constrictus*, described in the tenth volume of the 'Annals,' but differs in form and sculpture and in the position of the sutural callus. The strangulation is less conspicuous than in other species of *Alycæus*, and the constriction occurs immediately behind the peristome; hence the sutural callus also commences near the aperture instead of being remote as in the other species. A brown mark, in the single specimen which has come to hand, occurs at the point where the callus is given off. The callus lying in the suture is also longer than in the orbiculate *A. strangulatus*, in which it is moderate, or in *A. constrictus*, where it is short. The number of whorls in the operculum of *A. strangulatus* is much greater, and they are more compactly wound than in either *A. urnula* or *constrictus*; in *A. urnula* the sutures are tolerably distinct, and the central whorls are slightly concave; in *A. constrictus* the sutures are inconspicuous, as originally noted." (*Benson.*)

Var. **globosa**, *Godwin-Austen.*

Alycæus (*Dioryx*) *urnula*, var. *globosus*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 363, pl. 153, fig. 8.

Alycæus (*Dioryx*) *globosus*, Godwin-Austen, Rec. Ind. Mus. viii, 1915, p. 503.

Original description:—"Shell globosely and depressedly conical, scarcely perforate; sculpture: extremely fine costulation next the sutural tube and still further back, the upper whorls smooth; colour pale whitish brown; spire depressed, apex blunt; suture moderately impressed; sutural tube moderately long; whorls 4, tumid, constricted close behind the peristome, distance of this last to base of sutural tube very short; aperture circular; peristome double, much thickened, sharply and shortly reflected; operculum distantly spiral, central whorl conspicuous, colour dull yellow.

"Major diam. 4·0; alt. axis 3·75 mm." (*Godwin-Austen.*)

Hab. India: Brahmakund, Assam (*Ogle*).

Var. **anghamiensis**, *Godwin-Austen.*

Alycæus (*Dioryx*) *urnula*, var. *anghamiensis*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 402, pl. 153, figs. 5, 6.

Original description:—"Shell very globosely conoid, imper-

forate, with strong epidermis; sculpture smooth, with distant strong striation approaching irregular distant costulation; fine close costulation as far back as end of sutural tube; colour pale sienna-brown, apex darker; spire subconic, low; apex blunt; suture impressed, the sutural tube very long; whorls 4, much rounded; aperture circular, vertical; peristome compactly double.

"Major diam. 4·1; alt. axis. 2·9 mm."

Hab. India: Japvo Peak, Naga Hills (*Godwin-Austen*).

"Other specimens were found in the Anghami-Naga Hills. This is very distinct from typical *D. urnula* in its globose, tumid shape. From the Lhota Naga Hills there are five specimens which come very close to this variety, yet are not quite the same, and one is very large, 4·5 mm. in major diameter and 6 mm. in height." (*Godwin-Austen.*)

Var **daflaensis**, *Godwin-Austen.*

Alycæus (*Dioryx*) *urnula* var., Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 178.

Alycæus (*Dioryx*) *urnula*, var. *daflaensis*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 360, pl. 153, fig. 4.

Original description:—"Higher in the spire, aperture proportionally larger; whorls more rounded, sutural tube only one-fourth the length, and the ribbing much less fine on the swell of the whorl—differences which by some would be considered quite sufficient to warrant another name being given to this Dafla form. Five specimens were found all possessing the above character, so it would appear to be quite constant." (*Godwin-Austen.*)

Hab. India: Niosi Ridge and Toruputu Peak, Dafla Hills (*Godwin-Austen*).

Var. **pisum**, *Godwin-Austen.*

Alycæus (*Dioryx*) *urnula* var., Godwin-Austen, J. A. S. B. lx, part 2, 1871, p. 93, pl. 5, figs. 4, 4 *a*.

Alycæus (*Dioryx*) *urnula*, var. *pisum*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, pp. 384, 402, pl. 143, fig. 9, pl. 153, fig. 3.

Original description:—"Shell globosely conoid; colour whitish to pale pink ochraceous; spire moderately high, apex blunt; suture well impressed; the tube moderately long; whorls 4, the last very tumid; aperture circular; peristome moderately thickened; operculum multispiral, central portion rather raised above the marginal whorls.

"This variety may be known by a more globose shape and a more depressed spire than in the type species.

"The specimens from Marangsip Peak are most richly coloured in tints of pink and ochre." (*Godwin-Austen.*)

Hab. India: Marangsip Peak, South Jaintia Hills; Nongjinghi Trigonometrical Station, 4563 ft., Jaintia Hills (*Godwin-Austen*).

293. **Dioryx varius**, *Godwin-Austen.*

Alycæus (*Dioryx*) *varius*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 402, pl. 157, fig. 7.

Original description:—"Shell turbinate, narrowly perforate; sculpture: transverse striation above, finely costulated next the sutural tube; colour bleached; spire rather high, apex fine; suture impressed, sutural tube long; whorls 4, rounded, slightly swollen near sutural tube, constriction near base of it and at some distance from the peristome, interval smooth and straight; aperture circular, subvertical; peristome double, solid, thickened on outer margin, not so on the columellar margin.

"Major diam. 4·0; alt. axis 2·5 mm."

Hab. India: Lhota Naga Hills (*Chennell*).

"This is an interesting form, but unfortunately only one specimen was found. The long sutural tube and the short distance it is behind the peristome places it in *Dioryx*, but it differs very much in the umbilical region and in general shape." (*Godwin-Austen.*)

Genus **ALYCÆUS**, *Gray.*

Alycæus, Gray, Nomencl. Moll. Brit. Mus. i, 1850, p. 27; Pfeiffer, Zeits. Malak. viii, 1851, p. 147; id., Mon. Pneum. 1852, p. 119; Adams, Gen. Rec. Moll. ii. 1855, p. 278; Benson, A. M. N. H. ser. 3, iii, 1859, p. 176; Chenu, Man. Conchyl. i, part 2, 1860, p. 487; Blanford, A. M. N. H. ser. 3, xiii. 1864, p. 456; id., J. A. S. B. xxxiv, 1865, p. 98; Martens, Preuss. Exped. Ost-Asien, Zool. ii, 1867, p. 150; Godwin-Austen, J. A. S. B. xl, part 2, 1871, p. 87; Nevill, Hand List, i, 1878, p. 290; Fischer, Man. Conchyl. 1885, p. 742; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 186; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 149; id., Cat. Pneum. 1899, p. 45; Sarasin, Land-Moll. Celebes, 1899, p. 60; Kobelt, Das Tierreich, Lief. 16, 1902, p. 341; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 332.

TYPE, *Cyclostoma gibbum*, Eydoux.

Range. India, Burma, Farther India, Malaysia, Southern China, Japan.

Shell narrowly umbilicated, conical or depressed-conoid; whorls convex; the last whorl distorted, compressed, much constricted before the aperture, provided with a sutural tube; aperture circular; peristome generally thickened or reflexed; operculum corneous, many-whorled.

Subgenus **ALYCÆUS**, s. str.

Orthalycæus (part.), Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 57; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 149; id., Cat. Pneum. 1899, p. 45.

Alycaeus (subgenus), Kobelt, Das Tierreich, Lief. 16, 1902, p. 341.

TYPE, *Cyclostoma gibbum*, Eydoux.

Range. India, Burma, Nicobars, Farther India, Sunda Islands.

Shell conoid or turbinate; constriction more or less distant from the mouth; operculum can be retracted as far as the constriction, which is completely closed by it.

294. **Alycæus anonymus**, *Godwin-Austen.*

Alycæus anonymus (W. Blf. MS.), Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 405, pl. 139, figs. 1, 1 *a*.

Original description:—"Shell turbinate, rather openly umbilicated; sculpture: fine regular costulation throughout, gradually getting coarser near the sutural tube, finer and continued up to the peristome; colour very pale ochraceous; spire conoid, fairly high, sides flat; suture impressed; whorls 4, well rounded, slightly swelling for the length of the sutural tube, which is moderately long; aperture nearly circular, oblique; peristome double and much thickened, slightly reflected.

"Major diam. 6·7; alt. axis 3·5 mm." (*Godwin-Austen.*)

Hab. Burma: Akowtong, Thoudaung, and Yenandoung, Pegu.

295. **Alycæus barowliensis**, *Godwin-Austen.*

Alycæus barowliensis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 352, pl. 141, fig. 4.

Original description:—"Shell conoid, compact, narrowly umbilicated; sculpture: distant costulation on the upper whorls, very fine and close next the sutural tube, smooth anterior to it up to the peristome; colour bleached; spire high, conical; apex blunt; suture moderately impressed; sutural tube long; whorls 4, constriction slight, distant from aperture, a slight swelling between the two, aperture oval, rounded below, subangulate on the lower margin, rounded on the columellar side; peristome double and much thickened.

"Major diam. 3; alt. axis 2 mm." (*Godwin-Austen.*)

Hab. India: Barowli River, Akha Hills, Durrang, Assam (*Godwin-Austen*).

296. **Alycæus beddomei**, *Godwin-Austen.*

Alycæus beddomei, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 386, pl. 149, figs. 5, 5 *a*.

Original description:—"Shell very globosely conoid, rather closely umbilicated; sculpture: regular, close costulation next the long sutural tube, indistinct and distant on the upper whorls, very fine, close longitudinal liration is very marked; colour pale umber; spire rather high, conic, apex blunt; suture very well impressed; whorls 4, very convex, constriction slight close to the sutural tube, thence to aperture short; aperture ovate, subvertical; peristome double, solid on the outer margin, much reduced in thickness on the inner in four of the shells in which the peristome was not so mature, angulation was noted on the

outer margin by two faint indentations operculum; rather solid, horny, concentric.

"Major diam. 4·5; alt axis 2·5 mm." (*Godwin-Austen.*)

Hab. India: Naga Hills (? *Muspratt*).

297 **Alycæus blanfordi**, *Godwin-Austen.*

Alycæus blanfordi (nom. nud.), Theobald, Cat. Shells Brit. India, 1876, p. 39.

Alycaeus (*Orthalycaeus*) *blanfordi*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 149; id., Cat. Pneum. 1899, p. 45.

Alycæus blanfordi, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 418, pl. 148, fig. 3.

Original description:—"Shell very globosely conoid, openly umbilicated; sculpture: fine, distant, raised costulation on the upper whorls, becoming close, and strong contiguous to the sutural tube; colour ruddy ochraceous; spire conoid; suture impressed, the tube long and thin; whorls 4, well rounded, constriction short, well marked in front of the tube, then expanding between that and the aperture; aperture oval, subangulate at upper inner margin; an elongate tooth on the upper margin of the peristome, which is slightly reflected, with an indication of crenation on the lower; the peristome double and much thickened; operculum black.

"Major diam. 3·2; alt. axis 1·25 mm." (*Godwin-Austen.*)

Hab. Burma: Chwegali, Arakan Hills.

298. **Alycæus burti**, *Godwin-Austen.*

Alycæus burtii, Godwin-Austen, J. A. S. B. xliii, part 2, 1874, p. 149, pl. 3, fig. 9; id., op. cit. xlv, part 2, 1876, p. 176 (var.); Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 3, fig. 27; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 352, pl. 144, figs. 8, 8 *a*.

Alycæus burti, Theobald, Cat. Shells Brit. India, 1876, p. 39; Nevill, Hand List, i, 1878, p. 291.

Alycaeus (*Alycaeus*) *burti*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 342.

Original description:—"Shell turbinate, openly umbilicated, thick, pale ochreous; shallow but well-marked ribbing on swell of last whorl and finely costulated on the apex. Spire conoid, apex sharp, suture well impressed. Whorls 5, the last moderately swollen, constriction very slight, short, and smooth up to the peristome; sutural tube moderate, rather large at base. Aperture oblique, laterally oval, angular on inner upper margin, with 4 well-marked notches on the outer margin; peristome thickened, double, well reflected, inner lip continuous.

"Major diam. 0·22″ [5·5 mm.], minor diam. 0·19″ [4·75 mm.]; alt. 0·15″ [3·75 mm.]." (*Godwin-Austen.*)

Hab. India: foot of the Bhutan Himalayas, Akha Hills, at the debouchement of the Barowli River, in Durrang, Assam (*Burt*); Dihiri Parbat, Burro Gorge (*Godwin-Austen*).

"A variety of it, differing slightly, which is much larger and more depressed in form, but which in the crenate peristome and in form of constriction is the same, occurred in the valley of the Dikrang and in the Yetai Ravine. This variety measures in alt. 0·18 [4·5 mm.], major diam. 0·25 in. [6·25 mm.]." (*Godwin-Austen*, l. c. 1876.)

Var. **yetaiensis**, *Godwin-Austen.*

Alycæus burtii, var. *yetaiensis*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 353, pl. 149, fig. 7.

Original description:—"Shell depressedly and globosely conoid, very openly umbilicated; sculpture: costulation fine, somewhat irregular and distant as it approaches the termination of the sutural tube, it is then close and strong. Behind the aperture it is quite smooth. Distinct longitudinal striæ are to be seen on the upper whorls; colour dull pale ochraceous; spire low, apex small, papillate; suture much impressed; whorls $4\frac{1}{2}$, the last swollen, smooth portion behind aperture short with no ridges; aperture circular, slightly angulate above near suture; peristome crenulated on the outer margin, four depressions with strongly defined intermediate processes, straight above, well rounded on the columellar side; operculum multispiral, very concave, and outer margin turned inwards.

"Major diam. 0·75 [? 7·5], alt. axis 0·3 [? 3]. Size of largest: major diam. 0·9 [? 9], alt. axis 3·5 mm." (*Godwin-Austen.*)

Hab. India: Yetay Ravine, No. 24 Peak, Dafla Hills (*Godwin-Austen*).

299. **Alycæus chanjukensis**, *Godwin-Austen.*

Alycæus chanjukensis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 364, pl. 157, figs. 5, 5 *a*.

Original description:—"Shell globosely conoid, closely umbilicated; sculpture: fine, rather close costulation on the apical whorls, strong and close-set next the sutural tube, becoming gradually finer posteriorly; colour bleached; spire high, conical, apex fine; suture impressed, sutural tube very long; whorls $4\frac{1}{2}$, well rounded on the sides, the constriction is short; aperture ovately circular, subvertical; peristome double, deeply and sharply crenulated, 4 deep channels running backwards separated by V-shaped barriers, and much thickened as viewed from the side; columellar margin well curved.

"Major diam. 4·58; alt. axis 2·7 mm."

Hab. India: Chanjuk La, Tsanspu Valley, 4300 ft., Lat. 29° 25′, Long. 95° 20′ (*Oakes*).

"This may be compared with *A. vesica* from the same great valley, but its spire differs and the crenulation is sharper and finer. It may also be compared with *A. lohitensis* from Brahmakund, but the difference is quite specific." (*Godwin-Austen.*)

300. **Alycæus conicus**, *Godwin-Austen.*

Alycæus conicus, Godwin-Austen, J. A. S. B. xl, part 2, 1871, p. 87, pl. 3, figs. 1, 1 *a*, 1 *b*; Hanley & Theobald, Conch. Ind. 1875, pl. 103, figs. 8, 9; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 386; Theobald, Cat. Shells Brit. India, 1876, p. 39; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 1, fig. 9; Nevill, Hand List, i, 1878, p. 290; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 387, pl. 143, figs. 4, 4 *a*, 4 *b*.

Alycaeus (*Orthalycaeus*) *conicus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 149; id., Cat. Pneum. 1899, p. 45.

Alycaeus (*Alycaeus*) *conicus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 342.

Original description :—" Shell narrowly umbilicated, turbinate, thick, translucent pale corneous, pink or white, quite smooth, with shining lustre in fresh shells, with very strong regular filiform costulation on the tumid portion of the last whorl, the sculpture terminating abruptly both in front and behind with the exception of some raised striæ close behind the termination of the sutural tube; indistinct ribbing near the umbilicus. Spire conoid, apex obtuse; suture impressed; whorls 4–4½, rounded, last very slightly swollen, constricted and enlarging slightly again near the aperture. Constriction smooth, rather short; sutural tube moderate, commencing at 0·045 inch [1·125 mm.] distance from the mouth. Aperture slightly oblique, a perfect circle; peristome double, thick, inner continuous, projecting, slightly expanded, the outer retrorelict. Operculum horny, multispiral, concave in front; smooth behind, no central boss.

" Major diam. 0·12″ [3 mm.] to 0·13″ [3·25 mm.], minor diam. 0·11″ [2·75 mm.]; alt. 0·10″ [2·5 mm.] to 0·11″ [2·75 mm.]; diam. of aperture 0·06″ [0·15 mm.]; sutural tube 0·045″ [0·11 mm.]."

Hab. India: Limestone Hill and Samiamri, east of the Kopili River, North Cachar.

"This shell is very close to *Alycæus vestitus*, W. Blanford, but differs in its smaller size, the upper whorls being quite smooth, and in the ribbing near the sutural tube being more strongly and coarsely marked and in ending abruptly with it." (*Godwin-Austen.*)

Var. **nana**, *Godwin-Austen.*

Alycæus conicus, var. *nanus*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 388, pl. 138, figs. 6, 6 *a*, 6 *b*, 7

" It differs first in the much smaller size, next in the height of spire, it is altogether smoother, no sign of any distant costulation on the first whorl, which true *conicus* shows in some specimens." (*Godwin-Austen.*)

Major diam. 2·6; alt. axis 1·5 mm.

Hab. India: Jatinga Valley, Jhiri Valley, Hengdan Peak, and Phulong, North Cachar (*Godwin-Austen*).

301. **Alycæus dikrangensis**, *Godwin-Austen.*

Alycæus dikrangensis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 355, pl. 148, figs. 6, 6 A.

Original description:—"Shell somewhat depressedly turbinate, openly umbilicated, the costulation next the sutural tube is very fine and close; sculpture becoming coarser but still close towards the apex; colour stony white; spire pyramidal, apex small; suture impressed; tube long; whorls $4\frac{1}{2}$, regularly increasing, constriction between peristome and sutural tube short; aperture irregularly circular, nearly vertical; peristome double, inner crenulated, five deep notches, the outer continuous, sharply turned back.

"Major diam. 6; alt. axis 3·3 mm."

Hab. India: Toruputu Peak, Dafla Hills (*Godwin-Austen*).

"This species might easily be mistaken for *A. lohitensis*, the peristome being very similar, particularly when viewed from the side, but the costulation is very different, as also the crenulation on the side of the aperture. It is also close to *A. crenulatus* of the Darjiling Hills." (*Godwin-Austen.*)

302. **Alycæus kamakiaensis**, *Godwin-Austen.*

Alycæus kamakiaensis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 375, pl. 141, fig. 8.

Original description:—"Shell turbinate, moderately umbilicated; sculpture: fine well-marked, close costulation extending a little beyond the length of suture, gradually becoming finer and much more distant on nearing the apex; colour a brown epidermis, coming off; spire slightly depressedly conic, apex small; suture impressed, the sutural tube moderately long; whorls 4; aperture oval, angular above, the obscure crenulation on outer margin making it polygonal in outline, sub-oblique; peristome double, not very thickened; columellar margin vertically curved.

"Major diam. 2·5; alt. axis 1·2 mm." (*Godwin-Austen.*)

Hab. India; Kamakia Temple Hill, near Gowhatty, Assam (*Godwin-Austen*).

303. **Alycæus levis**, *Godwin-Austen.*

Alycæus levis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 394, pl. 138, figs. 3, 3 A.

Original description:—"Shell depressedly globose, umbilicus open; sculpture: shell a good deal worn, but very fine close costulation next the sutural tube; colour bleached; spire conical, depressed; apex rounded; suture moderately impressed, sutural tube long; whorls $4\frac{1}{2}$, slight constriction in front of tube and then slightly

swelling again; aperture circular; peristome double, simple, much thickened; columellar margin rounded; operculum black.

"Major diam. 6; alt. axis 2·7 mm."

Hab. Burma: Munipur.

"It is in form exceedingly like a very large *Alycæus* from Burma, *A. magnus*, but about half as small." (*Godwin-Austen.*)

304. **Alycæus logtakensis**, *Godwin-Austen.*

Alycæus logtakensis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 394, pl. 155, fig. 6.

Original description:—"Shell closely umbilicated, globosely pyramidal; sculpture: distant, strong costulation on the upper whorls, close, well raised and stronger at the sutural tube, and finely sq anterior to it; colour whitish; spire high conical, apex rather pointed, suture moderately impressed, the sutural tube fairly long; whorls 4, the last moderately swollen and slightly constricted in front of the sutural tube; aperture oval, strongly angulate above near suture, rounded on outer margin; peristome double, very thick as viewed from the side, well reflected, the outer somewhat protruded and angulate on the lower margin.

"Major diam. 3·4; alt. axis 1·6 mm." (*Godwin-Austen.*)

Hab. Burma: Logtak Lake, Munipur.

305. **Alycæus lohitensis**, *Godwin-Austen.*

Alycæus lohitensis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 362, pl. 137, figs. 1, 1 A.

Original description:—"Shell turbinate, umbilicus open; sculpture fine, rather close costulation, close, coarser and well defined near the sutural tube, which is long; colour stony white; spire rather high, apex fine; suture slightly impressed; whorls 4½, the three apical small; aperture circular, slightly angulate on upper margin, with four distinct crenulations below; peristome double, thickened, not expanded, crenulation only slightly shown on outside, the inner sharply folded back; columellar margin rounded; operculum smooth, black.

"Major diam. 4·5; alt. axis 3·5 mm."

Hab. India: Brahmakund, Lohit Valley, Eastern Assam (*Ogle*).

"This may be compared with the Dafla Hills species *A. burtii* and *A. rugosus*, but the form of the aperture differs considerably." (*Godwin-Austen.*)

306. **Alycæus magnus**, *Godwin-Austen.*

Alycæus magnus, Godwin-Austen, Proc. Zool. Soc. 1893, p. 594; id., Land & Freshw. Moll. India, ii, 1914, p. 395, pl. 138, figs. 1, 1 A.

Alycaeus (*Orthalycaeus*) *magnus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 150; id., Cat. Pneum. 1899, p. 46.

Alycaeus (*Alycaeus*) *magnus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 346.

Original description:—"Shell globosely turbinate, rather closely umbilicated, thick; sculpture: fine regular costulation next the sutural tube, becoming finer and more irregular on the apical whorls; colour, specimen bleached; spire conoid, rounded, apex blunt; suture moderately impressed, the sutural tube long and well developed; whorls 5, the last much swollen, the constriction near the base of the sutural tube slightly swelling towards the aperture; aperture oblique, circular, with a slight angulation above; peristome double, continuous, strong, slightly expanded and reflected, the inner with a flange on the umbilical margin.

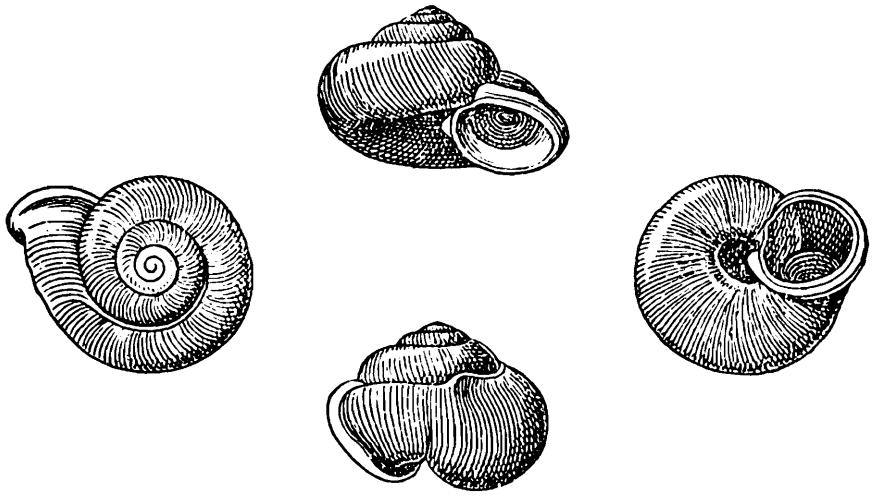


Fig. 33.—*Alycæus magnus*. (× 2.)

"Major diam. 11, min. diam. 8·8; alt. axis 5·25 mm."

Hab. India: Naga Hills (*Muspratt*).

"It is a giant, yet modified, form of *A. nagaensis*, from Asalu, but it is more closely umbilicated and the costulation, for its greater size, is much finer; it is also more globose, and more rounded at the apex." (*Godwin-Austen.*)

The specimen figured is in the British Museum, received from Col. Beddome, and is evidently a co-type.

307. Alycæus margarita, *Theobald.*

Alycæus margarita, Hanley & Theobald, Conch. Ind. 1874, p. 39, pl. 95, fig. 10 (not pl. 97, fig. 7); Theobald, Cat. Shells Brit. India, 1876, p. 40; Nevill, Hand List, i, 1878, p. 293.

Alycaeus (*Orthalycaeus*) *margarita*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 150; id., Cat. Pneum. 1899, p. 417.

Alycaeus (*Alycaeus*) *margarita*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 347.

Alycæus (*Cycloryx*) *margarita*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 416.

Theobald states that the shell is related to *A. graphicus*, but that it differs in form, sculpture, and colouring. Godwin-Austen refers the shell figured on plate 97, fig. 7, of Conch. Ind. to

A. sculptilis. No description of *A. margarita* has been given, but judging from figure 10 on pl. 95 of Conch. Ind., it appears to be conoid, narrowly umbilicated, composed of 4½ or 5 whorls, the earlier reddish, the last bluish white, strongly and distantly ribbed; aperture subcircular, scarcely oblique, with double peristome, the inner continuous, projecting, the outer expanded; major diam. 3·25 mm.

Hab. Burma: Shan States (*Fedden*).

308. **Alycæus mundulus,** *Godwin-Austen.*

Alycæus mundulus, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 357, pl. 149, fig. 8.

Original description:—"Shell globosely conoid, umbilicated; sculpture rather strong, regular costulation on the upper whorls, conspicuous, as next the suture it is peculiarly fine and regular; colour white; spire high, about half the diameter, apex fine; suture impressed, the sutural tube moderately long; whorls 4, well rounded, constriction slight and scarcely any swelling; aperture oblique, ovate, the upper outer margin protruded forwards, behind the aperture; peristome simple, double, rounded below, angulate near suture, nearly vertical on the columellar side.

"Major diam. 4·5; alt. axis 2·25 mm."

Hab. India: Toruputu, Dafla Hills (*Godwin-Austen*).

"In form it is curiously like *A. commutatus,* an allied subspecies, as well as in the type of sculpture and the operculum, but the aperture is quite distinct." (*Godwin-Austen.*)

309. **Alycæus nattoungensis,** *Godwin-Austen.*

Alycæus pusillus, Theobald, J. A. S. B. xli, 1872, p. 330.
Alycæus pusillus var. (? distinct species), Nevill, Hand List. i, 1878, p. 291.
Alycæus nattoungensis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 410, pl. 155, figs. 15, 15 *a.*

Original description:—"Shell conoid, base rather flat; sculpture: strong well-defined costulation next the sutural tube, succeeded by fine distant and irregular; colour whitish, apex pinkish; spire fairly high; suture impressed, the sutural tube long; whorls 3½, rounded, the last scarcely constricted close to the sutural tube, thence very flat to the aperture; aperture oval, subvertical; peristome is reflected, not double, but it is not quite fully developed.

"Major diam. 2·5; alt. axis 1·1 mm."

Hab. Burma: Nattoung Hills, Pegu (*Theobald*).

"This species in its small size and general form is like *A. pusillus,* G.-A., of the Jaintia Hills, but a close examination shows marked departure, seen particularly well, when viewed from

above, in the very short sutural tube of *A. pusillus*—the very short costulated portion of the whorl and its smooth glossy surface, and generally flatter apex." (*Godwin-Austen.*)

310. Alycæus nowgongensis, *Godwin-Austen.*

Alycæus nowgongensis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 397, pl. 137, figs. 4, 4 *a*, 4 *b*.

Original description:—"Shell rather openly umbilicated, depressedly turbinate; sculpture: fine regular costulation, terminates short of the length of the sutural tube, succeeded by well-marked distant ribs; colour white, bleached; spire conic, somewhat depressed; suture well impressed, sutural tube moderately long; whorls 4, well rounded, the last constricted close to base of sutural tube, then slightly swollen diagonally forward to the peristome; aperture circular, simple, slightly angulate at upper outer angle; peristome double, the outer reflected and spreading outwards.

"Major diam. 3; alt. axis 1·4 mm."

Hab. India: Koliaghur, Nowgong District, Assam (*Godwin-Austen*).

"In the form of the inflation in front of the constriction this species recalls *A. diagonius*, but its shape is quite different and it is much more openly umbilicated. I found this single specimen on the low granite hill of Koliaghur in the ruins of an old temple. The Brahmaputra washes the base of the hill, a terminal spur from the Lhota Naga Hills on the south." (*Godwin-Austen.*)

311. Alycæus oglei, *Godwin-Austen.*

Alycæus oglei, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 362, pl. 148, fig. 2.

Original description:—"Shell globosely conoid, umbilicated; sculpture: close regular costulation on the swollen part of the last whorl, at termination of the suture becoming more distant; colour bleached; spire high, turbinate, apex small; suture very impressed, the sutural tube very long; whorls 4, with very rounded sides, very slightly constricted at the sutural tube and expanded slightly to the aperture, this portion short and smooth; the aperture subvertical, horizontally oval, slightly angulate on upper inner margin; peristome double, thickened, crenulated, with four indentations, the first high on outer margin. The operculum (Dibing specimen) is remarkable, being multispiral and deeply concave in front.

"Major diam. 5·5; alt. axis 2·9 mm." (*Godwin-Austen.*)

Hab. India: Sadia and Dihing, Assam (*Ogle*).

312. Alycæus panggianus, *Godwin-Austen.*

Alycæus panggiana, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 367, pl. 156, figs. 3, 3 *a*.

Original description:—"Shell openly umbilicated, globosely conical, sculpture fine; close costulation next the sutural tube,

succeeded by much stronger and more distant, towards the apex becoming very fine; colour whitish; spire moderately high, apex small; suture moderately impressed; whorls 4, well rounded, the last smooth and straight from sutural tube to the aperture; aperture circular; peristome well rounded on the inner margin, well crenulated on the outer in 5 folds; operculum multispiral, sutures distant, intermediate space diagonally striate, with well-marked lines of growth.

"Major diam. 4; alt. axis 1·6 mm."

Hab. India: Sibbum, Abor Hills (*Oakes*).

"I name this species after the Abor Clan Panggi, of which the principal stockaded village is Sibbum.

"The sutural tube is bent on itself in this particular specimen, and must be abnormal, for although I have now handled hundreds of shells of this genus, I have never seen one like it before." (*Godwin-Austen.*)

313. **Alycæus perplexus**, *Godwin-Austen.*

Alycæus perplexus, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 380, pl. 155, fig. 11.

Original description:—"Shell globosely conical, openly perforated; sculpture smooth to eye, but it is extremely fine close costulation, close and fairly strong on swollen portion near the sutural tube, which is long and very fine; colour strong ochraceous brown; spire high conic; suture well impressed; whorls 4, well rounded, the constriction slight in front of the sutural tube, then swelling slightly towards the aperture, this is oval, subangulate above, subvertical on columellar side; peristome double slightly reflected, much broader on outer margin than on the inner; operculum closely multispiral, pale in colour, with a rather deep central depression.

"Major diam. 3·75 mm."

Hab. India: Khasi Hills.

"This species is not far removed from *A. theobaldi*; it is smaller and more conical, the aperture differs considerably as well as the sculpture." (*Godwin-Austen.*)

314. **Alycæus politus**, *Blanford.*

Alycæus politus, Blanford, J. A. S. B. xxxiv, 1865, p. 83; Hanley & Theobald, Conch. Ind. 1874, pl. 94, figs. 1–3; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 60; Theobald, Cat. Shells Brit. India, 1876, p. 40; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 5, p. 39; Nevill, Hand List, i, 1878, p. 292; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 422, pl. 139, figs. 5, 5 *a*.

Alycaeus (*Orthalycaeus*) *politus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 150; id., Cat. Pneum. 1899, p. 46.

Alycaeus (*Alycaeus*) *politus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 348.

Original description:—"Shell moderately umbilicated, turbinately depressed, smooth, polished, shining, amber-coloured.

Spire depressly conoidal; suture deep; apex obtuse, rather redder than the remainder of the shell. Whorls $3\frac{1}{2}$, convex; the last round, scarcely descending towards the mouth, very little swollen at the side, and ornamented on the inflated portion for a short distance with close fine costulation, which extends beneath to the umbilicus and renders the shell opaque in that spot. Constriction long, smooth, swelling considerably in front towards the mouth, sutural tube short, about $\frac{1}{5}$ to $\frac{1}{6}$ of the periphery of the penultimate whorl. Aperture oblique, circular, deeply sinuate at the junction with the penultimate whorl, and at the lower right margin; peristome double, the inner lip projecting and continuous, outer lip retrorelict. Operculum horny, multispiral, externally concave.

"Major diameter 3, minor ditto $2\frac{1}{4}$, axis $1\frac{1}{4}$ mm."

Hab. Burma: Phoung do, near Cape Negrais, Arakan.

"Very near *A. humilis*, W Blanf., from Pegu, but distinguished by its lower spire, wider umbilicus, more sinuous mouth, and especially by its high polish, in which it is only equalled by *A. nitidus*, W. Blanf." (*Blanford.*)

315. Alycæus pusillus, *Godwin-Austen.*

Alycæus pusillus, Godwin-Austen, J. A. S. B. xl, part 2, 1871, p. 89, pl. 3, figs. 3, 3 *a*, 3 *b*; Hanley & Theobald, Conch. Ind. 1875, pl. 103, figs. 7, 10; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 388; Theobald, Cat. Shells Brit. India, 1876, p. 40; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 1, fig. 7; Nevill, Hand List, i, 1878, p. 290; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 379, pl. 143, figs. 6, 6 *a*, 6 *b*.

Alycaeus (*Orthalycaeus*) *pusillus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 150; id., Cat. Pneum. 1899, p. 46.

Alycaeus (*Alycaeus*) *pusillus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 348.

Original description:—"Shell depressedly turbinate, moderately umbilicated, thin, translucent, vitreous, pale horny, smooth, rarely showing any signs of costulation; the sculpture when present is very fine and distant; closely and regularly ribbed on the expansion of the last whorl, also within the umbilicus. Spire depressedly conoid, apex blunt, suture moderately impressed, whorls $3\frac{1}{4}$, the last scarcely swollen. Constriction very slight, smooth, sutural tube very short and thick; aperture oblique, round, peristome double, inner continuous, both lips expanded. Operculum thin, horny, transparent, multispiral, slightly concave and without central boss at back.

"Major diam. 0·09 [2·25 mm.], minor 0·075 [1·875 mm.]; alt. 0·055" [1·375 mm.]; diam. of aperture 0·035 [0·875 mm.]; sutural tube 0·012 [0·3 mm.]."

Hab. India: Jawai, Jaintia Hills, Kopili (*Godwin-Austen*).

"This species is very similar to *A. humilis*, described by Mr. W T. Blanford from Akouktong, Burma, but this last

is a larger, thicker shell, and the outer lip is reflected near the umbilicus which is not so open, as in the new shell above described." (*Godwin-Austen.*)

316. **Alycæus pyramidalis**, *Benson*,

Alycæus pyramidalis, Benson, A. M. N. H. ser. 2, xvii, 1856, p. 225; Theobald, J. A. S. B. xxvi, 1857, p. 247; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 33; id., Novit. Conch. ser. 1, i, 1860, p. 126, pl. 35, figs. 13, 14; Hanley & Theobald, Conch. Ind. 1874, pl. 91, figs. 5, 6; Theobald, Cat. Shells Brit. India, 1876, p. 40; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 1, fig. 6; Nevill, Hand List, i, 1878, p. 293; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 427, pl. 156, figs. 6, 6 *a*.

Alycaeus (*Orthalycaeus*) *pyramidalis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 150; id., Cat. Pneum. 1899, p. 46.

Alycaeus (*Alycaeus*) *pyramidalis*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 348.

Original description:—"Testa perforata, pyramidato-conica, læviuscula, confertim oblique arcuto-striatula, albido-carnea, apicem versus rubella; spira pyramidata, suture valde impressa, apice obtusiusculo; anfractibus $5\frac{1}{2}$ valde convexis; ultimo postice inflato, tum constricto, deinde subtumido, aperturam versus latiori, tubulo calloso, elongato, retroverso, suturali, pone constrictionem oriente, munito; apertura obliqua, subcirculari; peristomati duplici, interno continuo, expansiusculo, externo expanso, reflexiusculo, anfractu penultimo brevissime angulatim adnato, superne antice sinuato, tum arcuato, ad umbilicum leviter emarginato. Operculo ——?

"Long. 12, axis 10, lat. 10 mill."

Hab. Burma: Therabuin Hill, Tenasserim Valley (*Theobald*).

"Nearly related to the Cochin-Chinese *Alycæus gibbus*, Fér., but easily to be distinguished by its more pyramidal growth and by the greater length of the spire in proportion to the breadth of the last whorl, its more symmetrical proportions, sculpture, etc. The origin of the sutural tube is about 4 millimetres from the anterior margin of the aperture. This shell was met with at no other place in the district, and seemed restricted to a spot of a few acres in circumference. The hill is of limestone, steeply scarped and almost inaccessible." (*Benson.*)

317 **Alycæus reinhardti**, *Mörch.*

Alycæus (*Charax*) *reinhardi*, Mörch, Vid. Medd. 1872, p. 22; id., Journ. Conchyl. xx, 1872, p. 315.

Alycæus reinhardi, Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 62; Nevill, Hand List, i, 1878, p. 295.

Alycæus (*Charax*) *reinhardti*, Mörch, Journ. Conchyl. xxi v 1876, p. 362.

Alycæus reinhardti, Pfeiffer, Malak. Blätt. xxiv, 1877, p. 146; Godwin-Austen, Proc. Zool. Soc. 1895, p. 455; id., Land & Freshw. Moll. India, ii, 1914, p. 431.

Alycaeus (*Orthalycaeus*) *reinhardi*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 150; id., Cat. Pneum. 1899, p. 46.

Alycaeus (*Alycaeus*) *reinhardti*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 349.

Alycæus nicobaricus (Mörch), Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 4, fig. 29.

Original description:—T. conoideo-turbinata, anguste umbilicata, conferte costulato-striata, lineis confertis spiralibus in anfr. ultimo evanescentibus; color flavescens vel ochraceus præsertim in anfr. apicalibus; spira regulariter turbinata, apice obtusiusculo; anfr. convexi, ultimus teres, ad suturam 2 mill. pone aperturam constrictus; crista indistincta pone aperturam. Pone stricturam tubulus filiformis, in ipsa sutura repens et recurrens, longissimus (3 mill.). Apertura circularis, obliqua, superne angulata; peristoma duplex, labro externo tenui, reflexo, interno subincrassato, vix reflexo, umbilicum versus fere connato.—Diam. maj. 5 mill.; diam. apert. $2\frac{1}{2}$ mill.

"Operculum calcarium, flavum, extus concavum, irregulare, spiraliter laminosum, striis incrementi peripheriam versus expressis, intus planum, læve, mamilla centrali; peripheria marginata, acie sulco diviso.—Diam. $1\frac{4}{5}$ mill." (*Mörch.*)

Hab. Nicobar Islands: Kar Nicobar (*Kjellerup*); Kamorta (*Roepstorf*).

318. Alycæus rotundatus, *Godwin-Austen.*

Alycæus rotundatus, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 359, pl. 154, fig. 6.

Original description:—"Shell well umbilicated, globosely conoid, with a strong epidermis; sculpture indistinct and somewhat irregular, fine costulation on upper whorls, close and fine on the swollen portion near the rather long sutural tube; colour umber-brown; spire moderately high, apex fine; suture impressed; whorls 4, rounded, between the sutural tube and the aperture there is a slight swelling, this part quite smooth; aperture irregularly oval, slightly angulate above; peristome simple, double, somewhat thickened on lower margin, curved on the columellar side, slightly reflected.

"Major diam. 4·8; alt. axis 2·2 mm." (*Godwin-Austen.*)

Hab. India: Dafla Hills.

Similar to *A. sylheticus.*

319. Alycæus rubinus, *Godwin-Austen.*

Alycæus rubinus, Godwin-Austen, Proc. Zool. Soc. 1893, p. 594; id., Land & Freshw. Moll. India, ii, 1897, p. 3, pl. 63, figs. 2, 2*a*; id., op. cit. ii, 1914, p. 412.

Alycaeus (*Orthalycaeus*) *rubinus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 150; id., Cat. Pneum. 1899, p. 46.

Alycaeus (*Alycaeus*) *rubinus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 351.

Original description:—"Shell globosely turbinate, closely umbilicated, of thin texture, the last whorl not much swollen; sculpture very fine close ribbing adjacent to the sutural tube, rest of shell smooth, with distant fine striæ; colour olivaceous ochre; spire conic, sides rounded; suture impressed; whorls 4, sides rounded, slightly constricted in front of the sutural tube, which is fine and moderately long; aperture oblique, circular; peristome thin, reflected, the double lips being scarcely perceptible, a slight nick on the upper margin.

"Major diam. 6; alt. axis 5 mm." (*Godwin-Austen.*)

Hab. Burma: Ruby Mines District, Upper Burma (*Doherty*).

320. **Alycæus sculpturus**, *Godwin-Austen.*

Alycæus sculpturus, Godwin-Austen, J. A. S. B. xliv, part 2, 1875, p. 8, pl. 4, figs. 2–2*c*; Theobald, Cat. Shells Brit. India, 1876, Addenda, p. ii; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 398, pl. 145, figs. 6, 6*a*, 6*b*.

Alycaeus (*Orthalycaeus*) *sculpturus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 150; id., Cat. Pneum. 1899, p. 46.

Alycaeus (*Alycaeus*) *sculpturus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 351.

Original description:—"Shell closely umbilicated, turbinate, horny or grey, with distant well-marked costulation on the upper whorls, smooth below, finely ribbed on swollen part of the whorl, still more finely on the constricted portion; spire subconoid; whorls 4, the last slightly swollen, then constricted and slightly swelling again towards the peristome, which is longitudinally undulated; sutural tube moderate; aperture oblique, waved; peristome thickened, expanded a little, double, with four deep undulations on the outer margin and one less developed on the lower, the first undulation forming a deep notch on the peristome near its junction with the last whorl. Operculum as in *A. crispatus*, mihi.

"Major diam. 0·14 [3·5 mm.], minor diam. 0·10 [2·5 mm.], alt. 0·08 inch [2 mm.]."

Hab. India: hill ranges near Tellizo Peak to the eastward, Sikhami, Lahupa Naga Hills. Burma: Munching and Laisen, Munipur.

"This species is very close to *A. crispatus*, G.-A., from the Khasi and Jaintia Hills, . . but is a much more closely wound shell—a character which, when a large series of the two were placed side by side, was found to be constant; and this, with the absence of the ridge on the constriction, marks it as distinct." (*Godwin-Austen.*)

321. Alycæus serratus, *Godwin-Austen.*

Alycæus serratus, Godwin-Austen, J. A. S. B. xliii, part 2, 1874, p. 148, pl. 3, figs. 6, 6 *a*, 6 *b*; Theobald, Cat. Shells Brit. India, 1876, p. 40; Nevill, Hand List, i, 1878, p. 291; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 400, pl. 144, figs. 6, 6 *a*, 6 *b*.

Alycaeus (*Orthalycaeus*) *serratus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 150; id., Cat. Pneum. 1899, p. 46.

Alycaeus (*Alycaeus*) *serratus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 351.

Original description:—" Shell very closely umbilicated, turbinate, rather thin, pale corneous or dark brown, finely costulated on tumid portion of the last whorl; rest of shell smooth, with shining surface; suture moderately impressed. Spire conoid, apex pointed. Whorls 4, rounded, the last very slightly tumid, constricted and enlarged into a low, recurved ridge. Sutural tube moderate. Aperture subvertical, circular, very finely notched on lower and outer margin; peristome double, thick, the outer reflected on the inner margin. Operculum thin, pale horny, flat in front.

" Major diam. 0·10" [2·5 mm.], minor diam. 0·09" [2·25 mm.]; alt. 0·09" [2·25 mm]."

Hab. Burma: Laisen Trigl. Station, Munipur Hills.

" In the thickened rounded form of the peristome this species assimilates to *A. conicus*, but the minute notches on the inner margin are peculiar and unlike what is seen in any form I am acquainted with. It seems intermediate between the above [*A. stoliczkai*] and *A. diagonius*." (*Godwin-Austen.*)

322. Alycæus sibbumensis, *Godwin-Austen.*

Alycæus sibbumensis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 367, pl. 156, figs. 4, 4 *a*.

Original description:—" Shell globosely conoid, solid, well umbilicated; sculpture: very fine, close transverse costulation near apex, becoming more distant on the 3rd whorl, extremely fine and close next the long sutural tube; there is an indication of distant longitudinal liration also at this part; a few distant indistinct liræ cross the smooth portion in front of the constriction; colour whitish stone; spire fairly high; suture well impressed; whorls 4, sides well rounded, the last very tumid; aperture nearly circular, subvertical on the columellar side; peristome double, very much thickened on the outer margin, less so on the inner.

" Major diam. 6·7; alt. axis 3 mm."

Hab. India: Sibbum, Abor Hills (*Oakes*).

" The sculpture, particularly that of the swollen portion of the last whorl, near the sutural tube, is characteristic of several species of *Alycæi* of the Abor Hills." (*Godwin-Austen.*)

323. **Alycæus sylheticus**, *Godwin-Austen*.

Alycæus sylheticus, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 382, pl. 154, figs. 4, 4 *a*.

Original description :—" Shell globosely conoid, openly umbilicated; sculpture: strong costulation and rather distant at the base of the sutural tube, becoming closer posteriorly: on the upper whorls the costulation is distant; colour dull white, with a pink apex; spire rather depressedly conoid, apex blunt; suture moderately impressed; whorls 4, the last swelling next the sutural tube, which is fairly elongate—constriction short, then swelling slightly forwards; aperture horizontally ovate, angular at the upper inner margin, rounded below; peristome double, the outer reflected and expanded to an extreme extent on the columellar side.

" Major diam. 2·6; alt. 1·7 mm." (*Godwin-Austen.*)

Hab. India: South Sylhet Hills (*Chennell*).

324. **Alycæus vesica**, *Godwin-Austen*.

Alycæus vesica, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 368, pl. 149, fig. 10.

Original description:—" Shell very globosely conoid, with a strong epidermis; sculpture: strong close costulation from the long sutural tube backwards on the swollen portion of the whorl, becoming very fine on the whorls above; colour pale ochraceous brown; spire rather high, apex small and fine; suture impressed; whorls 4½, closely-wound, constriction short, smooth, then swelling much round to the left front of the shell; aperture oval, angulate on upper margin, subvertical; peristome strongly crenulated, with four deep channels, double, thick, vertical, and sinuate on the columellar margin.

" Major diam. 6·75; alt. axis 4 mm." (*Godwin-Austen.*)

Hab. India: Bapu Peak, Abor Hills.

325. **Alycæus vestitus**, *Blanford*.

Alycæus vestitus, Blanford, J. A. S. B. xxxi, 1864, p. 138; id., op. cit. xxxiv, 1865, p. 99; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 54; Hanley & Theobald, Conch. Ind. 1875, pl. 103, fig. 4; Theobald, Cat. Shells Brit. India, 1876, p. 40; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 1, fig. 3; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 424, pl. 139, figs. 2, 2 *a*.

Alycaeus (*Orthalycaeus*) *vestitus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 151; id., Cat. Pneum. 1899, p. 47.

Alycaeus (*Alycaeus*) *vestitus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 352.

Original description :—" Testa subanguste umbilicata, turbinata, solida, epidermide decidua, crassa, subtestacea, sordide albida, conferte, ad spatium inflatum confertissime costulata, induta, sub epidermide rubella, lævis, spatio inflato costulato-striata. Spira conoidea, apice obtusa, sutura impressa. Anfr. 4½ rotundati, ultimus teres, ad latus parum inflatus. Stricture brevis, versus

aperturam vix tumidior. Tubulum suturale mediocre. Apertura fere verticalis, circularis, majuscula: peristoma duplex; interno continuo, externo expansulo, ab interno sulco separato, ad anfr. penultimum breviter interrupto.

"Diam. maj. 5, min. $3\frac{1}{2}$, alt. vix 3; apert. diam. $1\frac{1}{2}$ mm. Var. minor. Diam. maj. 4, min. 3, alt. $2\frac{1}{4}$ mm."

Hab. Burma: Arakan Hills, banks of Pado Khyoung, Henzada District; Moditoung.

"This species is not affined to any known form. It is perhaps nearer to the little group to which *A. graphicus* belongs than to any other, but it has not the short sutural tube nor the ovately conoid form which characterizes that section of the genus. The shortness of the constriction, and the very slight degree in which it expands towards the aperture, connect this form somewhat with the section *Dioryx* of Mr. Benson." (*Blanford.*)

Var. **akyabensis**, *Godwin-Austen.*

Alycæus vestitus, var. *akyabensis*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 425, pl. 155, fig. 7.

Original description:—"Shell moderately umbilicated, globosely conical, solid; sculpture: apical whorls smooth, then succeeds fine close costulation, stronger next suture, adjacent to the long and fully-developed sutural tube, the costulation is fine and very close together; colour pale ochraceous; spire moderately high, apex rather blunt; suture impressed; whorls $4\frac{1}{2}$, very rounded, the constriction moderate, the distance from tube to the aperture short and smooth; aperture circular, subangulate above, subvertical; peristome double, continuous, curved on the inner margin, the outer slightly reflected.

"Major diam. 4·25; alt. axis 2·4 mm."

Hab. Burma: Baumi, Akyab (*Theobald*).

"A much more globose shell than true *vestitus*. Side of spire slightly concave." (*Godwin-Austen.*)

326. **Alycæus vulcani**, *Blanford.*

Alycæus vulcani, Blanford, J. A. S. B. xxxii, 1863, p. 323; id., op. cit. xxxiv, 1865, p. 98; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 47; id., Novit. Conch. ser. 1, iii, 1869, p. 449, pl. 98, figs. 37–39; Hanley & Theobald, Conch. Ind. 1874, pl. 96, figs. 8, 9; Theobald, Cat. Shells Brit. India, 1876, p. 40; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 2, fig. 17; Nevill, Hand List, i, 1878, p. 294; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 413, pl. 151, figs. 5, 5 *a*.

Alycaeus (*Orthalycaeus*) *vulcani*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 151; id., Cat. Pneum. 1899, p. 47

Alycaeus (*Alycaeus*) *vulcani*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 352.

Original description:—"Shell moderately umbilicated, depressedly turbinate, thin, translucent, varying in colour from

amber to nearly white, rather closely costulated throughout, more strongly upon the inflated portion of the last whorl, and very closely ribbed within the umbilicus. Spire conoid, apex blunt, deep rufous; suture impressed. Whorls 4, rounded, the last moderately swollen at the side, then constricted, and swelling again slightly towards the mouth. Constriction smooth; sutural tube of moderate length, about 2 mm. Aperture oblique, round, peristome crenulately waved on the outer edge, the lowest crenulation forming a rudimentary channel at the base; peristome double, the inner alone continuous, both lips somewhat expanded. Operculum thin, horny, distinctly multispiral, very concave externally, internally convex and with a prominent central nucleus.

"Major diam. $4\frac{1}{2}$, minor ditto $3\frac{1}{2}$, alt. 3; diam. ap. $1\frac{1}{4}$ mm."

Hab. Burma: Puppa Peak, Ava, Upper Burma.

"It is a more globose form than either *A. succineus*, mihi, or *A. polygonoma*, mihi, to which it is allied. The crenulation of the mouth is perhaps more marked than in any other Burmese species." (*Blanford.*)

" the costulation at the base of the sutural tube is particularly strong, and at first distant, and I would call attention to the well-marked distant fine costulation on the smooth part of the whorl anterior to this, the four costæ behind the peristome are very noticeable. The same species has been collected at Ava; in all the examples I have looked at, the peristome is less crenulated and in two or three is hardly noticeable. The ribbing behind the peristome is quite as strongly developed." (*Godwin-Austen.*)

327. Alycæus yamneyensis, *Godwin-Austen.*

Alycæus yamnayensis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 368, pl. 156, fig. 2.

Alycæus yamneyensis, Godwin-Austen, op. cit. p. 441; id., Rec. Ind. Mus. viii, 1915, p. 503.

Original description:—"Shell umbilicated, very globosely conoid; sculpture above fine, distinct horizontal striæ superimposed by fine regular and distant costulation—fine regular costulation on the swollen part next the sutural tube; spire high, apex small, acute; suture impressed, the sutural tube very long; whorls 5, the last very rounded and swollen; the constriction is sharp, the distance to the aperture short, smooth, and nearly flat; aperture irregularly oval, curving above, nearly vertical on the columellar side; peristome thickened, double and strongly crenulate on the outer margin, with three conspicuous ridges, above these the inner lip is much thickened, the outer lip has a marked expansion on the inner lower margin.

"Major diam. 7·25; alt. axis 4 mm. (type).
" " 7·75 mm. (largest)."

Hab. India: Yamne Valley, Abor Hills (*Oakes*).

"This species is of the type of *A. Oglei*, of the Noa Dihing Valley, south of the Brahmaputra, but is far larger, more globose, with a finer apex, and much stronger peristome. *A. aborensis* is also a close ally, but differs in form, slight crenulation, and the very different costulation on the swell of the last whorl." (*Godwin-Austen.*)

Subgenus **CHAMALYCÆUS**, *Kobelt & Möllendorff.*

Orthalycaeus (part.), Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 57.
Chamalycaeus, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 151; id., Cat. Pneum. 1899, p. 47; Kobelt, Das Tierreich, Lief. 16, 1902, p. 352.

TYPE (first species), *Alycæus andamaniæ*, Benson.

Range. India, Burma, Andamans, Nicobars, Farther India, Southern China, Japan, Malaysia, Philippines.

Shell depressed turbinate to discoid; constriction and sutural tube as in subgenus *Alycæus.*

328. **Alycæus aborensis**, *Godwin-Austen.*

Alycæus aborensis, Godwin-Austen, Land & Freshw. Moll. India, ii. 1914, p. 364, pl. 149, fig. 9.

Original description:—"Shell umbilicated, very globosely conoid, the sutural tube very long, so that the end is visible when the shell is viewed from the front; sculpture: fine costulation on the three apical whorls, with regular, very fine longitudinal striation and succeeded by fine transverse striation and very fine close costulation next the suture; colour bleached: spire rather high, apex small; suture impressed; whorls 4, well rounded, the last much swollen, becoming much smaller near the constriction and swelling slightly again towards the aperture; aperture oval, obliquely angulate on upper margin, vertical on inner side, curving; peristome double, the inner sinuately and moderately crenulate on outer lower margin.

"Major diam. 7·75; alt. axis 4 mm."

Hab. India: Bapu Peak, Abor Hills (*Oakes*).

"In the extremely fine costulation of the swollen part of the whorl next the suture, this species approaches *A. omissus* of the Shan States." (*Godwin-Austen.*)

329. **Alycæus andamaniæ**, *Benson.*

Alycæus andamaniæ, Benson, A. M. N. H. ser. 3, vii, 1861, p. 28; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 47; Hanley & Theobald, Conch. Ind. 1874, pl. 91, figs. 7, 10; Theobald, Cat. Shells Brit. India, 1876, p. 39; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 2, fig. 10; Nevill, Hand List, i, 1878, p. 295; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 430.
Alycaeus (*Chamalycaeus*) *andamaniae*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 151; id., Cat. Pneum. 1899, p. 47; Kobelt, Das Tierreich, Lief. 16, 1902, p. 352.

Original description:—"A testa aperte umbilicata, conoideo-depressa, remote radiato-plicatula, plicis regionis inflatæ confertis,

superne subtusque rugis flexuosis spiralibus remotiusculis sculpta, ferrugineo-rubente, apice rubido, subtus pallidiore, pone aperturam cornea; spira primo planiuscula, apicem versus papillarem obtusum excerta, sutura profundiuscula; anfractibus 4, convexis, ultimo rotundato, antice descendente, tubulo suturali retroverso brevi; apertura majuscula circulari integra; peristomate subdiplici, margine undique expansiusculo, extus fuscato. Operc. ——?

"Diam. major 5, minor 4; alt. 3 mill." (*Benson.*)

Hab. Andaman Islands, Port Blair (*Haughton*); Nicobar Islands (*Stoliczka*).

330. **Alycæus bhutanensis,** *Godwin-Austen.*

Alycæus bhutanensis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 350, pl. 148, fig. 8.

Original description:—"Shell depressedly globose; sculpture: extremely fine longitudinal lirations crossed by fine close costulation, on the upper whorls, close and much stronger next the sutural tube; colour pale horny; spire low, apex small, suture impressed; whorls 4, the last much swollen on the long sutural tube, constriction hardly to be seen, distance from tube to aperture very short; aperture rather broadly oval, curved on the columellar margin, 3 shallow notches, and 3 subvertical-elongate teeth; peristome double, evenly reflected, strong.

"Major diam. 7·1; alt. 3·9 mm." (*Godwin-Austen.*)

Hab. India: Bhutan Frontier, probably on Eastern, or Aka Hills, side.

331. **Alycæus brahma,** *Godwin-Austen.*

Alycæus brahma, Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 195, pl. 48, fig. 3; id., op. cit. ii, 1914, p. 363 (var.).

Alycaeus (*Chamalycaeus*) *brahma*. Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 151; id., Cat. Pneum. 1899, p. 47; Kobelt, Das Tierreich, Lief. 16, 1902, p. 353.

Original description:—"Shell turbinate, umbilicated; sculpture very fine, longitudinal or spiral hair-like striæ, crossed by distant costulation, the ribs alternately very fine; colour whitish grey; spire high-conic, apex fine; suture impressed, the tube long; whorls 4, well rounded, the swollen portion regularly ribbed for the length of the sutural tube, then blending gradually into finer costulation, the last suddenly flattened just within the umbilical region, constricted sharply just beyond the base of the sutural tube, then straight and cylindrical up to the reflected inner lip; peristome oblique, crenulated on the outer lower margin, with four notches, solid, double, and much reflected; operculum multispiral, with a central dark depression.

"Major diam. 5, alt. axis 4 mm."

Hab. India: Brahmakund (*Ogle*); Dihing Valley, Singpho Hills (*Ogle*) (var.).

"This shell in its simple straight portion of the whorl at the constriction shows a resemblance to the Asalu species figured by me in the J. A. S. B. 1871, fig. 3, which I then thought a variety of *A. ingrami*; but it is quite distinct, and the Asalu species I now name *A. bicrenatus*." (*Godwin-Austen.*)

332. Alycæus busbyi, *Godwin-Austen.*

Alycæus busbyi, Godwin-Austen, Proc. Zool. Soc. 1893, p. 595; id., op. cit. 1895, p. 455; id., Land & Freshw. Moll. India, ii, 1897, p. 5, pl. 63, fig. 1; id., op. cit. ii, 1914, p. 431.

Alycaeus (Chamalycaeus) bustyi, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 151; id., Cat. Pneum. 1899, p. 47

Alycaeus (Chamalycaeus) busbyi, Kobelt & Möllendorff, op. cit. xxi, 1899, p. 137; id., Cat. Pneum. 1899, p. 105; Kobelt, Das Tierreich, Lief. 16, 1902, p. 353.

Original description:—"Shell turbinate, of tumid form, widely umbilicated; sculpture smooth, fine ribbing near the sutural tube and still finer below; colour pale ochraceous; spire moderately high, apex blunt; suture deep, the sutural tube short and thick; whorls $4\frac{1}{2}$, very rounded, the last much swollen and compressed within the umbilical cavity, constriction simple, slight; aperture oblique circular; peristome double, the outer lip flat and expanding at right angles to the whorl.

"Major diam. 7·5; alt. axis 3 mm." (*Godwin-Austen.*)

Hab. Nicobar Islands (*Busby*).

333. Alycæus canaliculus, *Godwin-Austen.*

Alycæus canaliculus, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 371, pl. 154, fig. 11.

Original description:—"Shell umbilicated, globose; sculpture smooth: rather irregular, close, oblique, fine ribbing, not amounting to costulation until nearing the sutural tube, where strong costulation comes in; colour pale ochraceous; spire rather high, apex blunt; suture well impressed, the sutural tube shortish and stout; whorls 4, tumid and rounded, the last is sharply constricted just in front of the sutural tube, and expands again into a narrow ridge, which crosses the whorl diagonally to the edge of the peristome and then splays forward above; aperture circular, oblique angulate above; peristome double, strong, with a decided notch or channel on the lower margin, slightly rounded on the columellar margin, more so on the outer.

"Major diam. 3·1; alt. axis 1·5 mm."

Hab. India: Teria Ghat, foot of the Khasi Hills (*Godwin-Austen*).

"The aperture recalls that of *A. gemma* of the Dafla Hills, but the shell differs in other respects." (*Godwin-Austen.*)

334. **Alycæus davisi**, *Godwin-Austen.*

Alycæus davisi, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 408, pl. 148, figs. 9, 9 *a*.

Original description:—"Shell depressedly globose, well umbilicated; sculpture fine throughout, even next the sutural tube, first three or four liræ strong and distant, epidermis covers the surface which peels off in places; colour dull umber; spire low, apex flatly convex; suture well impressed, sutural tube long; whorls 4, the last very tumid, close, and in front of the constriction there is a well-defined ridge across the whorl, below it is close to the reflected peristome; aperture horizontally oval, oblique, subangulate above; peristome double, crenulated, four distinct notches, the upper on the upper margin, rounded on the columellar margin; operculum pale in colour, closely spiral with a small central depression.

"Major diam. 5·3; alt. axis 2·1 mm." (*Godwin-Austen.*)

Hab. Shan Boundary (*Woodthorpe*).

335. **Alycæus distinctus**, *Godwin-Austen.*

Alycæus ingrami, var., Godwin-Austen, J. A. S. B. xli, part 2, 1871, p. 92, pl. 4, figs. 3, 3 *a*, 3 *b*; id., op. cit. xliii, 1874, p. 150.

Alycæus ingrami, var. *nagaensis*, Godwin-Austen (part), J. A. S. B. xli, part 2, 1871, p. 92, pl. 4, fig. 2; Nevill, Hand List, i, 1878, p. 292; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 421.

Alycæus distinctus, Godwin-Austen, Proc. Zool. Soc. 1893, p. 592; id., Land & Freshw. Moll. India, ii, 1914, p. 390, pl. 145, figs 3, 3 *a*, 3 *b*; p. 421.

Original description:—"Differs from the described form from Arakan [i. e. *ingrami*], in the mouth being larger, and there is a tendency to undulation on the outer margin of the peristome, generally two notches are present.

"Major diameter 0·24" [6 mm.], minor diam. 0·24" [6 mm.]; alt. 0·16" [4 mm.]; diam. of aperture 0·11" [2·75 mm.]; sutural tube 0·09" [2·25 mm.]." (*Godwin-Austen.*)

Hab. India: Dimapur, Dumsiri Valley (300 ft.), Khunho Peak, Burrail Range (7000 ft.), Naga Hills (*Godwin-Austen*); Lhota Naga Hills, Asalu.

In 1893 Godwin-Austen, after comparing this shell with typical *A. ingrami*, became convinced that it was quite distinct and gave it the specific name of *distinctus*. Another form, from the Dafla Hills, originally considered to be a variety of *ingrami*, was likewise raised to specific rank under the name of *macgregori*.

A variety is recorded from Sadia, collected by M. Ogle, on page 363 of the same work and figured on pl. 137, figs. 2, 2 *a*, 2 *b*. It is stated to differ from the type in its flatter depressed shape, rounded aperture, and the shorter distance from it to the sutural tube.

Another variety, collected by F. Ede at Naraindhur, Cachar, is described on page 391 and illustrated on pl. 149, fig. 4. It is more elevated in the spire, and the aperture is more ovate than in the type, the columellar margin descending more obliquely. It measures: major diam. 5, alt. 2·5 mm.

Yet another form is referred to on page 391. Nineteen specimens were collected by Godwin-Austen in the Jatinga Valley, North Cachar Hills, which are higher in the spire, with coarser sculpture and smaller umbilicus, while the peristome is devoid of the notches on the outer margin. The same form was obtained by W Chennell in South Sylhet, North Khasi and Garo Hills.

336. **Alycæus edei**, *Godwin-Austen.*

Alycæus edei, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 391, pl. 149, figs. 2, 2 *a*.

Original description:—"Shell openly umbilicate, globose, rather flattened; sculpture: no costulation on the apical whorls, at the end of the sutural tube very fine close costulation commences, and increases very little in size forwards; colour whitish grey, some with a pink tint on the apex; spire low, apex rounded; suture moderately impressed, the tube long; whorls 4, the last swollen slightly, narrowly constricted and swelling again towards the aperture; aperture oval horizontally; peristome double, solid, inner sharply reflected, forming a broad margin viewed on the side; operculum black, smooth, spiral structure not seen in front, better seen at back, which is highly polished and with a central nipple.

"Major diam. 7; axis 2·5 mm." (*Godwin-Austen.*)

Hab. India: Naraindhur, Cachar.

337. **Alycæus inflatus**, *Godwin-Austen.*

Alycæus inflatus, Godwin-Austen, J. A. S. B. xliii, part 2, 1874, p. 146, pl. 3, figs. 1–1 *d*; Theobald, Cat. Shells Brit. India, 1876, p. 39; Nevill, Hand List, i, 1878, p. 291; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 392, figs. 1 *b*, 1 *c*, 1 *d*; var. p. 393, pl. 144, figs. 1, 1 *a*.

Alycaeus (*Chamalycaeus*) *inflatus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 151; id., Cat. Pneum. 1899, p. 49; Kobelt, Das Tierreich, Lief. 16, 1902, p. 356.

Original description:—"Shell depressedly turbinate, solid, pale ochreous horny, moderately umbilicated, smooth, finely sculptured on the swollen portion of the last whorl adjacent to the sutural tube. Spire conoid, apex blunt; suture impressed; whorls $4\frac{1}{2}$, the last very much swollen for the size of the shell; constriction smooth, very short; sutural tube moderate; aperture oblique, circular; peristome double, solid, united, and reflected; operculum concave, black, its position at the very edge of the aperture.

"Major diam. 4·5; alt. axis 2·2 mm."

Hab. India: Japvo Peak, Naga Hills, and Lanier River (*Godwin-Austen*). Var. Assam (*Stoliczka*).

"This shell in many respects assimilates to *A. conicus*, mihi, but is more openly umbilicated; in another direction it has the character of the subgenus *Dioryx*, viz. in form of mouth, the short constriction, and position of operculum close to the edge of the aperture." (*Godwin-Austen.*)

In the variety seen on plate 144, figs. 1, 1 *a*, the costulation on the swollen portion of the whorl is much stronger and the distance from the aperture much greater.

338. **Alycæus ingrami**, *Blanford.*

Alycæus ingrami, Blanford, J. A. S. B. xxxi, 1862, p. 135; id., op. cit. xxxiv, 1865, p. 99; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 48; id., Novit. Conch. ser. 1, iii, 1869, p. 448, pl. 98, figs. 34–36; Godwin-Austen, J. A. S. B. xxxix, 1870, p. 8, pl. 2, fig. 7; Theobald, J. A. S. B. xli, 1871, p. 330; Hanley & Theobald, Conch. Ind. 1874, pl. 92, figs. 7, 10; Theobald, Cat. Shells Brit. India, 1876, p. 39; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 6, fig. 54; Nevill, Hand List, i, 1878, p. 292; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 193, pl. 44, figs. 1–1 *c*; id., op. cit. ii, 1914, p. 421.

Alycaeus (*Chamalycaeus*) *ingrami*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 151; id., Cat. Pneum. 1899, p. 47; Kobelt, Das Tierreich, Lief. 16, 1902, p. 357.

Alycæus scepticus (W. Blanford) (nom. nud.), Theobald, J. A. S. B. xxxii, 1863, p. 377; Blanford, op. cit. xxxiv, 1865, p. 101.

Original description:—"Testa late umbilicata, conoideo-depressa, acute sinuato-costulata, albida, interdum rubello-albida, versus apicem ferruginea, vix translucens. Spira conoidea, apice obtusula, sutura parum profunda. Anfr. 4 convexi, ultimus ad peripheriam subcompressus, ad latus mediocriter tumidus, ibidem confertissime costulatus, tum constrictus, prope aperturam non descendens. Spatium constrictum longitudinis mediocris, costulatum, medio tumidum; tubulum suturale mediocre, $\frac{1}{4}$ peripheriæ subæquans. Apertura obliqua, circularis: peristoma duplex; externo breviter incrassato-expanso; interno expansiusculo, continuo. Operculum fusco-corneum, multispirum, externe perconcavum, nucleo centrali intus prominente papillari.

"Diam. maj. 6, min. 5; alt. $3\frac{1}{4}$; apert. diam. $1\frac{3}{4}$ mm."

Hab. Burma: Tongoup, Arakan (*Blanford*); Mai-i, Arakan (*Theobald*).

"Most nearly allied to *A. umbonalis*, B., from Pegu. It is distinguished from that species by its more raised spire, smaller size, shorter sutural tube, and shallower suture, by its less oblique mouth and non-descending last whorl, and by its duplex slightly expanded peristome, which contrasts strongly with the broadly reversed lip of *A. umbonalis*. That species also has the upper whorls much more closely, but less sinuously costulated than are those of *A. ingrami*. In the subangulation of the last whorl at the periphery there is some resemblance to the little Thayet Myo-

A. sculptilis, B., which, however, is easily distinguished by the characters of its crenulated peristome, besides other peculiarities." (*Blanford.*)

339. **Alycæus macgregori**, *Godwin-Austen.*

Alycæus ingrami, var. *nagaensis* (Godwin-Austen) (part.), Nevill, Hand List, i, 1878, p. 292; Godwin-Austen, Land & Freshw. Moll, ii, 1914, p. 421.

Alycæus macgregori, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 356, pl. 141, figs. 2, 2 *a*, 2 *b*.

Original description: — "Shell openly umbilicate, globosely turbinate; sculpture close, fine regular costulation on the swollen portion of the last whorl following the sutural tube, it contracts behind this and the ribbing becomes much finer and wider apart; colour bleached; spire depressedly conoid, apex small; suture well-impressed; sutural tube moderately long; whorls 4, the first from aperture to sutural tube short, plain, *i. e.* with no ribbing, then much swollen and contracted again showing well on under sides; aperture circular, oblique; peristome moderately thickened, slightly reflected, within it is feebly plicate; columellar margin rounded.

"Major diam. 7, min. 5·5; alt. axis 2·5 mm."

Hab. India: Shengorh, Dafla Hills (*Godwin-Austen*).

"At a hasty glance I had named this shell *A. nagaensis*. On a closer examination and comparison with that species it differs very materially, being much more globose as regards its form, and having crenulation within the aperture." (*Godwin-Austen.*)

340. **Alycæus montanus**, *Nevill.*

Alycæus montanus, Nevill, J. A. S. B. 1, part 2, 1881, p. 149, pl. 6, fig. 5; Nevill, Hand List, i, 1878, p. 294; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 341, pl. 136, figs. 3, 3 *a*.

Alycaeus (*Chamalycaeus*) *montanus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 151; id., Cat. Pneum. 1899, p. 47; Kobelt, Das Tierreich, Lief. 16, 1902, p. 359.

Original description:—"Openly and widely umbilicate, much depressed, solid, bright corneous brown, closely, evenly and regularly ribbed, ribs somewhat superficial, scarcely flexuous, close-set, for a short distance at the sutural tube more crowded and more strongly developed; spire scarcely elevate, apex obtuse; whorls 4, regularly evenly rounded, constriction scarcely defined, sutural tube short (about 1 mill.); aperture circular, peristome slightly thickened, but not double; operculum thick, black, and concave.

"Diam. $5\frac{1}{4}$, alt. $3\frac{1}{10}$ mill."

Hab. India: Sikkim (11,000 ft.) (*Stoliczka*).

"A very well marked form, reminding one of *A. expatriatus*; the depressed form, very open umbilicus, and scarcely distinguishable constriction are all good characters." (*Nevill.*)

341. Alycæus nagaensis, *Godwin-Austen.*

Alycæus ingrami, var. *nagaensis*, Godwin-Austen, J. A. S. B. xl, part 2, 1871, p. 92, pl. 5, figs. 2, 2 *a*, 2 *b*; Theobald, Cat. Shells Brit. India, 1876, p. 40; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 195, pl. 44, figs. 3–3 *c*; id., op. cit. ii, 1914, p. 396, pl. 143, figs. 2, 2 *a*, 2 *b*.

Alycaeus (*Chamalycaeus*) *nagaensis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 151; id., Cat. Pneum. 1899, p. 47; Kobelt, Das Tierreich, Lief. 16, 1902, p. 359.

Original description:—"Shell depressedly globose, openly umbilicated, thick, slightly translucent, white, generally covered with a thin muddy coating, finely and sharply costulated throughout. Spire depressedly conoid, apex blunt, suture impressed; whorls 4, rounded, the last much swollen; constriction close to the base of sutural tube, slightly swelling again towards the mouth, quite smooth; sutural tube very long and thin. Aperture oblique, circular; peristome double, both lips close and slightly expanded. Operculum black, smooth and concave in front, convex at back, with a central boss.

"Major diam. 0·32" [8 mm.], minor diam. 0·27" [6·75 mm.]; alt. 0·29" [7·25 mm.]; diam. of aperture 0·15 [3·75 mm.]; sutural tube 0·15" [3·75 mm.]." (*Godwin-Austen.*)

Hab. India: Asalu, Naga Hills.

A small variety, collected by Mr. Muspratt in the Eastern Naga Hills, is referred to.

342. Alycæus nitidus, *Blanford.*

Alycæus nitidus, Blanford, J. A. S. B. xxxi, 1862, p. 141; id., op. cit. xxxiv, 1865, p. 99; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 51; Blanford, J. A. S. B. xxxix, 1870, p. 24; Hanley & Theobald, Conch. Ind. 1874, pl. 94, figs. 4, 7; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 3, fig. 25; Nevill, Hand List, i, 1878, p. 293; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 421, pl. 151, figs. 4, 4 *a*.

Alycaeus (*Chamalycaeus*) *nitidus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 152; id., Cat. Pneum. 1899, p. 48; Kobelt, Das Tierreich, Lief. 16, 1902, p. 360.

Original description:—"Testa anguste umbilicata, depresse turbinata, solidula, fulvo-cornea, nitida, polita, translucens. Spira conoidea, lateribus convexis, apice obtusa, sutura impressa. Anfr. 4 convexi, ultimus ad peripheriam subangulato-compressus, subtus planulato-convexus, ad latus breviter tumidus, ibidem confertissime costulatus. Spatium constrictum longum, nitidum, lira retrorecumbente, parum elevata prope regionem inflatam munitum. Tubulum suturale breve. Apertura diagonalis, undata, circularis. Peristoma ad basin antice, superne prope anfractum penultimum retro sinuatum, duplex; interno continuo, breviter porrecto, basi canaliculato; externo expanso, retro relicto, in processum auriformem subtus producto. Operc. tenue, corneum, multispirum.

"Diam. maj. $3\frac{1}{2}$, min. 3, alt. $2\frac{1}{3}$; ap. diam. 1 mm." (*Blanford.*)
Hab. Burma: Tongoup, Arakan (*Blanford*); Akyab (*Stoliczka*). India: Khasi Hills (*Godwin-Austen*).

343. Alycæus omissus, *Godwin-Austen.*

Alycæus omissus, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 411, pl. 155, fig. 13.

Original description:—"Shell umbilicated, depressedly conoid, strong; sculpture: rather distant costulation up to the end of the sutural tube, which becomes closer towards the apex and less pronounced, next the tube it is very close and regular; colour bleached; spire depressed, apex small; suture impressed, the sutural tube moderately long; whorls 4, the last is smooth in front of the sutural tube, the interval to the aperture has a slight rise in the middle; aperture circular; peristome thick, double, the outer lip well reflected—within in the lower outer margin there are a few close-set teeth-like crenulations, recalling what is to be seen in *A. sculptilis* on a far larger scale.

"Major diam. 2·8; alt. axis 1·1 mm." (*Godwin-Austen.*)
Hab. Burma: Siam and Shan boundary (*Woodthorpe*).

344. Alycæus physis, *Benson.*

Alycæus physis, Benson, A. M. N. H. ser. 3, iii, 1859, p. 179; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 48; Hanley & Theobald, Conch. Ind. 1874, pl. 92, figs. 5, 6; Theobald, Cat. Shells Brit. India, 1876, p. 40; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus,* pl. 6, fig. 51; Nevill, Hand List, i, 1878, p. 294; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 342, pl. 134, figs. 1, 1 *a*.
Alycaeus (*Chamalycaeus*) *physis,* Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 152; id., Cat. Pneum. 1899, p. 48; Kobelt, Das Tierreich, Lief. 16, 1902, p. 361.

Original description:—"Testa mediocriter umbilicata, conoidea-depressa, tenui, regulariter planato-striata, striis opacis, minime

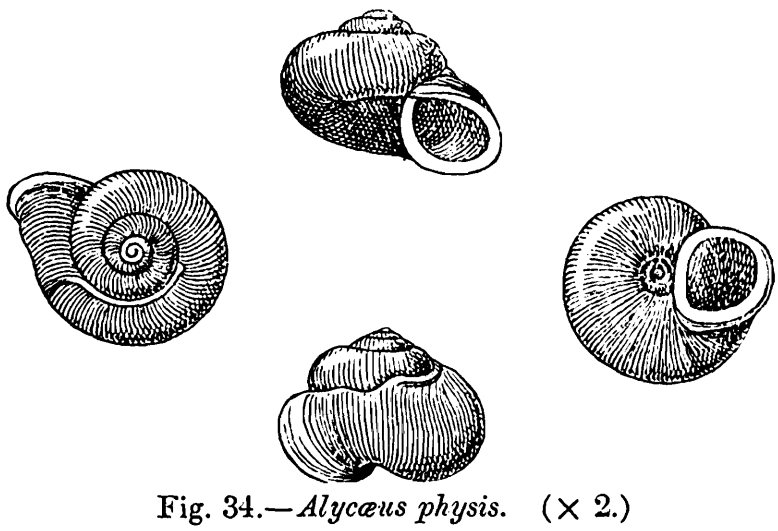


Fig. 34.—*Alycæus physis.* (× 2.)

elevatis, confertissimis, ad umbilicum perspectivum nonnullis elevatis acutis, hyalina, nitida; spira brevi, apice subpapillari,

sutura impressa; anfractibus 4 subconvexis, ultimo ad latis, pone constrictionem, valde inflato, tubulum suturalem elongatum gerente, pone labrum tumidiusculo; apertura obliqua, subcirculari, peristomate duplici, interno breviter expanso, incrassato-reflexo externum celante, marginibus callo parietali expansiusculo semicirculari junctis. Operc. ——?

"Diam. major 10, minor 8, axis 6 mill."

Hab. India: Rungit Valley, near Darjeeling, 2000 ft.

"Larger than the Khasia *A. prosectus*, from which it is abundantly distinguished by the characters of the aperture, the less mucronate spire, its peculiar striation and lustre, shorter sutural tube, and the greater inflation of the last whorl. In *prosectus* the space between the constriction and the aperture is suddenly tumid near the constriction, the swelling decreasing towards the peristome; in *physis* the swelling increases gradually towards the mouth, which is not inclined to be so very oblique. There are faint indications of spiral sculpture evident in the facet-like appearance of the surface. Within the umbilicus, near the inflated part, every fourth or fifth of the scarcely elevated striæ (which would elsewhere be hardly distinguishable except for their white opacity on the hyaline ground) is raised into a knife-like edge.

"In size and form *A. physis* nearly approaches *umbonalis*; but the colour, opakeness, great solidity, and the more moderate inflation of the last whorl, in addition to the more remote constriction, and the very different sculpture presented by the Burmese species, preclude any danger of confounding it with its Himalayan ally." (*Benson.*)

The specimen here figured is in the British Museum.

345. **Alycæus sandowayensis**, *Godwin-Austen.*

Alycæus sandowayensis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 423, pl. 139, figs. 4, 4 *a*.

Original description:—"Shell flatly conoid, openly perspectively umbilicated, flat on base; sculpture: finely costulated throughout and closely set, the coarsest is near the constriction anterior to the sutural tube; colour dark umber-brown; spire depressed, apex small; suture impressed, the sutural tube is short, stout, and slightly bent over; whorls 4, evenly increasing, the last slightly swollen near the sutural tube, then slightly constricted, and again expanding slightly towards the aperture; aperture ovate horizontally; peristome double, reflected, not solid. Columellar margin rounded.

"Major diam. 9; alt. axis 3 mm." (*Godwin-Austen.*)

Hab. Burma: Mai-i, Sandoway District, Arakan (*Stoliczka, Theobald*).

346. **Alycæus sculptilis**, *Benson.*

Alycæus sculptilis, Benson, A. M. N. H. ser. 2, xvii, 1856, p. 226; Theobald, J. A. S. B. xxvi, 1857, p. 247; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 35; Blanford, A. M. N. H. ser. 3, xiii, 1864, p. 458; id., J. A. S. B. xxxiv, 1865, p. 98; id., op. cit. xxxix, 1870, p. 24; Pfeiffer, Novit. Conch. ser. 1, iv, 1871, p. 17, pl. 112, figs. 20–23; Hanley & Theobald, Conch. Ind. 1874, pl. 97, figs. 5, 6; Theobald, Cat. Shells Brit. India, 1876, p. 40; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 4, figs. 32 *a*, 32 *b*; Nevill, Hand List, i, 1878, p. 292; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 412, pl. 139, figs. 7, 7 *a* (shell), pl. 145, fig. 8 (aperture).

Alycæus margarita, Hanley & Theobald, Conch. Ind. 1874, pl. 97, fig. 7 (teste Godwin-Austen).

Alycæus microstoma, Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 4, figs. 28 *a*, 28 *b* (teste Godwin-Austen).

Alycaeus (*Chamalycaeus*) *sculptilis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 152; id., Cat. Pneum. 1899, p. 48; Kobelt, Das Tierreich, Lief. 16, 1902, p. 362.

Original description:—"Testa late umbilicata, turbinata, subtrochiformi, acute costulata; spira conica, sutura profunda, apice attenuato, acutiusculo; anfractibus 5 convexis, ultimo ad latus inflato eo costulis confertissimis munito, tum constricto, antice læviori, tumido, tubulo suturali mediocri, ab apertura remoto, incumbente, circa umbilicum obtuse angulato, intus concaviusculo; apertura obliqua, circulari; peristomate duplici, interiori subporrecto, incrassato, margine superne profunde inciso, interiore dextrali interne crenulato vel denticulato, externo incrassato, expanso, reflexiusculo, superne incrassato prominente, ab anfractu penultimo sinu profundo separato. Operculo —— ?

"Diam. $3\frac{1}{2}$, axis $2\frac{1}{4}$ mill."

Hab. Burma: Thyet Myo (*Theobald*). India: Naga Hills (*Chennell*); Khasi Hills (*Godwin-Austen*).

"The specimen is much weathered, and has lost all its colour, so that I am unable to describe that part of its character. It presents a new form in the genus, and exhibits peculiar characters in the slit inside the aperture at its upper part, and in the crenulation or denticulation along the callous interior of the right lip. The teeth are twelve in number, and are disposed in pairs. The incision resembles that observable in some of the species of *Pterocyclos*, and there is a slight disposition towards the formation of a wing." (*Benson.*)

347. **Alycæus stoliczkai**, *Godwin-Austen.*

Alycæus stoliczkii, Godwin-Austen, J. A. S. B. xliii, part 2, 1874, p. 147, pl. 3, figs. 3, 3 *a*, 3 *b*; Theobald, Cat. Shells Brit. India, 1876, p. 40; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 399, pl. 144, figs. 3, 3 *a*, 3 *b*.

Alycæus stolitzkii, Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 6, fig. 53.

Alycaeus (*Chamalycaeus*) *stoliczkai*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 152; id., Cat. Pneum. 1899, p. 48; Kobelt, Das Tierreich, Lief. 16, 1902, p. 363.

Original description:—"Shell globosely turbinate, thick, pale horny, finely and closely ribbed from the swell of the first [? last] whorl as far back as the sutural tube, thence to the apex distantly and finely costulated, narrowly umbilicated; spire conoid, apex blunt; suture well impressed; whorls $4\frac{1}{2}$, rounded, the last swollen, then sharply constricted close to the origin of the sutural tube, again swelling and expanding to the mouth; constriction smooth, with a few distant lines of costulation. The sutural tube peculiarly long. Aperture oblique, circular, peristome double, outer lip small, the inner much produced and expanded into two broad, shallow channels on the inside of the outer margin, separated by a V-shaped thickening of the same. Operculum black, concave, of the usual multispiral form.

"Major diam. 0·31–0·28″ [7·75–7 mm.], minor 0·24–0·20″ [6·5 mm.]; alt. 0·17–0·15″ [4·25–3·75 mm.]; diam. ap. 0·12″ [3 mm.]; sutural tube 0·15″ [3·75 mm.]."

Hab. India: Angaoluo Peak, Naga Hills, 7000 ft. (*Belletty*); Kezakenomih and head of Lanier River (*Godwin-Austen*); Kohima, Anghami-Naga Hills. Lhota Naga Hills (var.).

"It comes near to the forms of *A. ingrami*, W Blanf., var., pls. iv & v, J. A. S. B. vol. xl, part 2, 1871, from the same range of mountains, but its tumid shape, and particularly the very produced aperture, render it a very distinct and well-marked species.

"A single specimen . . from Teria Ghat is very near this species, differing in being smaller, major diam. 4·75 mm., with a flatter spire, and costulation adjacent to the sutural tube very much finer, not so closely wound." (*Godwin-Austen.*)

348. **Alycæus strigatus**, *Godwin-Austen.*

Alycæus strigatus, Godwin-Austen, J. A. S. B. xliii, part 2, 1874, p. 146, pl. 3, fig. 2; Theobald, Cat. Shells Brit. India, 1876, p. 40; Nevill, Hand List, i, 1878, p. 291; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, pp. 381, 401, pl. 144, figs. 2, 2*a*, 2*b*.

Alycaeus (*Chamalycaeus*) *strigatus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 152; id., Cat. Pneum. 1899, p. 48; Kobelt, Das Tierreich, Lief. 16, 1902, p. 363.

Original description:—"Shell pale corneous or amber, finely and evenly costulated throughout. Spire depressed, apex blunt and darker coloured. Suture moderate. Whorls $3\frac{1}{2}$, the last very little swollen, slightly constricted, with a single low ridge close behind the aperture, the constriction smooth and very finely striated. Sutural tube very short. Aperture slightly oblique, circular; peristome single, simple, continuous, moderately thickened. Operculum . . ?

"Major diam. 0·15″ [3·75 mm.], minor diam. 0·11″ [2·75 mm.]; alt. 0·08″ [2 mm.]; diam. ap. 0·05″ [1·25 mm.]."

Hab. India: Assam (*Stoliczka*); Nenglo, near Asalu, North Cachar (*Godwin-Austen*).

"This is another species of the short-sutural-tubed section of *Alycæus*, of which *A. khasiacus* is a good type. The general and distinct costulation from constriction to apex, particularly the form of constriction and mouth, mark it as a good species. It is more openly umbilicated than *A. khasiacus*." (*Godwin-Austen.*)

349. Alycæus subinflatus, *Godwin-Austen.*

Alycæus subinflatus, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 400, pl. 154, figs. 8, 8 *a*.

Original description:—"Shell globosely conoid; sculpture: indistinct subdued costulation on upper whorls, apex distinctly striate spirally, close, regular, rather fine costulation continuous with the sutural tube; colour with pinkish tinge, red on the apex; spire rather high; suture impressed; whorls 4, tumid and well rounded; sutural tube long, constriction near its base and distance to aperture short, with a very slight swelling; aperture oval, subangulate above; peristome solid and double on the outer margin, and well reflected but very thin on the columellar side.

"Major diam. 4·5; alt. axis 2·2 mm."

Hab. Burma: Gaziphimi, Lahupa Naga Hills, N.E. Munipur.

"This is the species which I included in my description of *A. inflatus* from Japvo Peak in the Anghami Naga Hills. It is an allied form, and on closer examination I consider should receive a name, as it is something more than a variety. Comparison of the figures shows this better than description." (*Godwin-Austen.*)

350. Alycæus umbonalis, *Benson.*

Alycæus umbonalis, Benson, A. M. N. H. ser. 2, xvii, 1856, p. 225; Theobald, J. A. S. B. xxvi, 1857, p. 247; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 36; id., Novit. Conch. ser. 1, i, 1860, p. 127, pl. 35, figs. 18–20; Blanford, J. A. S. B. xxxiv, 1865, p. 98; Hanley & Theobald, Conch. Ind. 1874, pl. 92, figs. 8, 9; Theobald, Cat. Shells Brit. India, 1876, p. 40; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 4, fig. 36; Nevill, Hand List, i, 1878, p. 293; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 194, pl. 44, figs. 2–3 *c*; ii, 1914, pp. 413, 424.

Alycaeus (*Chamalycaeus*) *umbonalis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 152; id., Cat. Pneum. 1899, p. 48; Kobelt, Das Tierreich, Lief. 16, 1902, p. 364.

Original description:—"Testa late umbilicata, depressa, subdiscoidea, confertim acute arcuatim costulata, cinereo-albida, apicem versus obtusulum, rubellum vel nigrum, rubescente; spira brevi, sutura profunda; anfractibus $4\frac{1}{2}$ convexis, ultimo ad latus, spiraliter rugoso-cancellatum, inflato, tum constricto, deinde tumidiusculo, tubulum retroversum, elongatum suturalem pone constrictionem gerente; apertura valde obliqua, circulari, undata, peristomate duplici, interiori continuo, expanso, nitidissimo, prope umbilicum sinuato, exteriori expanso, incrassato, ad anf actum penultimum breviter interrupto; umbilico perspectivo. Operculo

corneo-fusco, multispirato, anfractuum marginibus scabre elevatis, extus profunde concavo, intus convexiusculo, nitidissimo, sulco marginato, umbone centrali papillari munito.

"Diam. major 10, minor 8, axis 5 mill."

Hab. Burma: Akowtong (*Theobald*); Bassein (*Blanford*); Thyet Myo (*Hungerford*); Arakan (*? Kurz*).

"The scabrous cancellation of the inflated part *only* of last whorl is an unusual feature, no trace of the spiral rugæ appearing elsewhere on the whorls.

"The origin of the sutural tube is about 4 millimetres from the aperture." (*Benson.*)

Subgenus **DICHARAX**, *Kobelt & Möllendorff.*

Charax (non Risso, 1826), Benson, A. M. N. H. ser. 3, iii, 1859, p. 177 (as section of *Alycæus*); Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 43; Fischer, Man. Conchyl. 1885, p. 743; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 152 (as subgenus); id., Cat. Pneum. 1899, p. 48.

Dicharax, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxxii, 1900, p. 186; Kobelt, Das Tierreich, Lief. 16, 1902, p. 364.

TYPE, *A. hebes*, Benson.

Range. India, Burma, Farther India, Southern China, Malaysia.

Constriction broad, contiguous to the aperture, from which it is separated by a ridge, which is hollow internally.

351. **Alycæus armillatus**, *Benson.*

Alycæus armillatus, Benson, A. M. N. H. ser. 2, xvii, 1856, p. 227; Theobald, J. A. S. B. xxvi, 1857, p. 247; Pfeiffer, Mon. Pneum. Suppl. 1, 1856, p. 37; Blanford, A. M. N. H. ser. 3, xiii, 1864, p. 458; id., J. A. S. B. xxxiv, 1865, p. 98; Hanley & Theobald, Conch. Ind. 1874, pl. 93, fig. 10; Theobald, Cat. Shells Brit. India, 1876, p. 39; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 5, fig. 38; Nevill, Hand List, i, 1878, p. 293; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 406, pl. 151, figs. 3, 3 *a*.

Alycaeus (*Charax*) *armillatus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 152; id., Cat. Pneum. 1899, p. 48.

Alycaeus (*Dicharax*) *armillatus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 365.

Original description:—"Testa umbilicata, depresso-turbinata, costulata; spira conoidea, sutura impressa, apice obtuso; anfractibus $3\frac{1}{2}$ convexis, ultimo ad latus inflato, confertius costulato, tum constricto, antice tumido, læviori, tubulo suturali brevi, ab apertura remoto, munito; apertura obliqua circulari, peristomate duplici, interno valde porrecto, continuo, margine simplici, extus striato, exteriori expanso, reflexiusculo; umbilico subaperto. Operculo ?

"Diam. major 2, minor $1\frac{3}{4}$, axis $1\frac{1}{4}$ mill."

Hab. Burma: Thyet Myo (*Theobald*).

"The exterior expanded peristome, forming a conspicuous collar round the porrect interior portion, is the most prominent character in this very minute species. The only specimen received is in a weathered condition, and so much bleached that the colour of the perfect shell cannot be ascertained." (*Benson.*)

352. **Alycæus asaluensis**, *Godwin-Austen.*

Alycæus crispatus var., Godwin-Austen, J. A. S. B. xl, 1871, p. 93, pl. 4, fig. 2.
Alycæus asaluensis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 385, pl. 145, figs. 2, 2 *a*, 2 *b*.

Original description:—"Shell umbilicated, conoid; sculpture: strong, regular, rather distant costulation on the upper whorls, much stronger and closer on the swell of the whorl next the sutural tube, a few finer and distant on the constriction, which continue up to the aperture; colour whitish; spire conical, fairly high; suture impressed, sutural tube very fine; whorls 4, the last sharply constricted, then rising suddenly into a ridge which expands forwards to the double peristome; aperture circular, very oblique; peristome double, distinctly crenulated, but not strongly so; this is not seen in the figure, which was taken too much from the side to see it well.

"Major diam. 3·5; alt. axis 2 mm." (*Godwin-Austen.*)

Hab. India: Dihung River, north of Asalu, North Cachar (*Godwin-Austen*); Nenglo and Phulong.

353. **Alycæus ataranensis**, *Godwin-Austen.*

Alycæus crispatus, Theobald & Stoliczka, J. A. S. B. xli, 1872, p. 330.
Alycæus, n. sp. (prox. *A. crispatus*), Nevill, Hand List, i, 1878, p. 293, no. 36.
Alycæus ataranensis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 426, pl. 148, figs. 4, 4 *a*, 4 *b*.

Original description:—"Shell globosely conoid, rather openly umbilicated; sculpture: rather distant costulation on the upper whorls (specimen being old they do not show well); colour bleached; spire moderately high, apex blunt; suture impressed; whorls 4, the last slightly swollen near sutural tube; constriction very short, a well-marked ridge rising between it and the aperture; aperture irregularly oval, oblique; peristome double, inner lip with four deep notches, with intermediate sharp notches, outer undulated, both much expanded and protruding forwards, detached from the last whorl, forming a deep notch on the inner upper margin; columellar margin rounded.

"Major diam. 2·3; alt. 1·9 mm."

Hab. Burma: Ataran (*Stoliczka*).

"It is easily mistaken for *A. crispatus*, of the Naga Hills, but differs materially in the part between the suture and aperture." (*Godwin-Austen.*)

354. **Alycæus avæ,** *Blanford.*

Alycæus avæ, Blanford, J. A. S. B. xxxii, part 2, 1863, p. 323; id., op. cit. xxxiv, 1865, p. 98; Hanley & Theobald, Conch. Ind. 1874, pl. 94, figs. 8-10; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 63; Theobald, Cat. Shells Brit. India, 1876, p. 39; Nevill, Hand List, i, 1878, p. 293; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 406, pl. 151, fig. 6.

Alycaeus (*Charax*) *avae*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 152; id., Cat. Pneum. 1899, p. 48.

Alycaeus (*Dicharax*) *avae*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 365.

Original description:—"Shell depressed, openly umbilicated, thin, closely costulated throughout, more strongly upon the inflated portion of the last whorl, white or light amber in colour. Spire very depressly conoid, apex blunt, suture impressed. Whorls 4, the last very little inflated at the side, then moderately constricted, constriction rather long, swollen in the centre, indistinctly costulated. Sutural tube short, about 1½ mm. in length. Aperture circular, diagonal. Peristome thickened, double, external lip expanded, inner continuous and projecting slightly at the base. Operculum thin, horny, multispiral, very concave externally and convex within, wanting the central boss.

"Major diam. 3½, minor ditto 3, alt. 2; diam. ap. 1 mm."

Hab. Burma: hills east of Mandalay and Ava (*Blanford*); Thyet Myo (*Hungerford*); var. Arakan (*Stoliczka*).

"This species approaches *A. strangulatus*, Hutt., which is larger and more discoid." (*Blanford.*)

355. **Alycæus bicrenatus,** *Godwin-Austen.*

Alycæus ingrami, var., Godwin-Austen, J. A. S. B. xl, part 2, 1871, p. 92, pl. 4, fig. 3.

Alycæus bicrenatus, Godwin-Austen, J. A. S. B. xliii, part 2, 1874, p. 148, pl. 3, figs. 5, 5 *a*, 5 *b*; Theobald, Cat. Shells Brit. India, 1876, p. 39; Nevill, Hand List, i, 1878, p. 291; Godwin-Austen, Land & Freshw. Moll. i, 1880, p. 196, pl. 51, fig. 4 (lingual ribbon); ii, 1914, p. 386, pl. 144, figs. 5, 5 *a*, 5 *b*.

Alycaeus (*Charax*) *bicrenatus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 152; id., Cat. Pneum. 1899, p. 48.

Alycaeus (*Dicharax*) *bicrenatus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 365.

Original description:—"Shell moderately umbilicated, subturbinate, pale corneous or nearly white; fine close ribbing on swell of last whorl, extending to behind termination of the sutural tube and thence to apex very finely and evenly costulated. Spire depressedly conoid, suture impressed, apex blunt. Whorls 4, the last moderately swollen, constriction rather wide, followed by a single well-defined high ridge close behind the expanded portion of the aperture, where it is defined by a sharp narrow costulate rib. The expanded portion anterior to this is longitudinally waved on the surface, produced by two deep triangular grooves situated well within the aperture and on the outer margin. Sutural tube short. Aperture oblique, peristome round, slightly angular above. Operculum pale horny, concave.

"Major diam. 0·14" [3·5 mm.], minor 0·10" [2·5 mm.]; alt. 0·09" [2·25 mm.]."

Hab. India: Kopamedza Peak, Naga Hills, 8–9000 ft.; Asalu, Cachar (*Godwin-Austen*).

"This shell belongs to the same group as the last [*A. globulosus*] and is very close to *A. crenatus*, mihi, but the longer sutural tube and the strongly crenated peristome of *crenatus* mark the distinction." (*Godwin-Austen.*)

356. Alycæus bifrons, *Theobald.*

Alycæus bifrons, Theobald, J. A. S. B. xxxix, 1870, p. 396, pl. 18, fig. 1; Hanley & Theobald, Conch. Ind. 1874, pl. 93, figs. 1, 4; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 63; Theobald, Cat. Shells Brit. India, 1876, p. 39; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 6, fig. 48; Nevill, Hand List, i, 1878, p. 293; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 407, pl. 139, figs. 3, 3 *a*.

Alycaeus (*Charax*) *bifrons*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 152; id., Cat. Pneum. 1899, p. 48.

Alycaeus (*Dicharax*) *bifrons*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 365.

Original description:—" Testa perspective umbilicata, depresse conoidea, translucente, cornea; apice rubello; spira elevatiuscula, sutura impressa; anfractibus quatuor, rotundis, juxta stricturam regulariter et confertim striato-costulatis, reliqua parte aliquando fere lævigatis, aliquando levissime striatis. Strictura glabra, longa, fere quartam partem ult. anfractus æquante, duabus costis fortissimis munita, quarum posterior paulo robustior et anteriore longior est; tubulo suturali tenuissimo, adpresso, quartam peripheriæ æquante; apertura ampla, circulari, sensim deflecta; perist. duplici, albido, labio adnato angustissimo, labro infra modice incurvato.

"Diam. maj. ·20 [5 mm.], min. ·15 [3·75 mm.], alt. ·10 unc. [2·5 mm.]." (*Theobald.*)

Hab. Burma: Shan States (*Fedden*).

357 Alycæus birugosus, *Godwin-Austen.*

Alycæus birugosus, Godwin-Austen, Proc. Zool. Soc. 1893, p. 593; id., Land & Freshw. Moll. India, ii, 1897, p. 2, pl. 63, figs. 5, 5*a*; 1914, pp. 370, 387, var. pl. 154, figs. 7, 7 *a*.

Alycaeus (*Charax*) *birugosus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 152; id., Cat. Pneum. 1899, p. 48.

Alycaeus (*Dicharax*) *birugosus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 366.

Original description:—" Shell globosely turbinate, rather openly umbilicated; sculpture smooth on upper whorls, regular close ribbing on the swell of the last; colour pale ochraceous or ruddy brown; spire conoid, rounded at apex; suture impressed; whorls 4, the last not swollen, contracted in front of the rather short sutural tube, then enlarging into two parallel ridges, which

adjoin the aperture; aperture ovate, angular above and below, rounded on the inner margin. Operculum pale in colour, smooth in front.

"Major diam. 3; alt. axis 1·25 mm."

Hab. India: south of Barak River, Khasi Hills; Jawai, Jaintia Hills (*Godwin-Austen*).

"Although this shell, in size and most of its characters, is like *A. multirugosus*, G.-A., of the Naga Hills, it differs materially, more especially in the form of the aperture and in the ridges on the expanded portion of the last whorl." (*Godwin-Austen.*)

The variety referred to by Godwin-Austen on page 370, pl. 154, figs. 7, 7 *a*, from Jawai, Jaintia Hills, appears to have a narrower umbilicus, and a more depressed spire; its measurements are: major diam. 2·9, alt. axis 1·3 mm.

Var. **minor**, *Godwin-Austen.*

Alycæus birugosus, var. *minor*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 370, pl. 155, fig. 9.

Smaller than the type, measuring: major diam. 2·4, alt. axis 1·1 mm.

Hab. India: Garo Hills (*Godwin-Austen*).

358. **Alycæus chennelli**, *Godwin-Austen.*

Alycæus chennelli, Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 192, pl. 48, figs. 1–1 *c*; var. fig. 2; ii, 1914, p. 387.

Alycaeus (*Charax*) *chennelli*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 152; id., Cat. Pneum. 1899, p. 48.

Alycaeus (*Dicharax*) *chennelli*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 366.

Original description:—"Shell globosely turbinate, umbilicated, but very closely, as a narrow slit; sculpture: smooth near apex, distant costulation developed beyond, and strongest near suture; colour white; spire conic, high, apex rounded; sutural tube long, fine; whorls 4, rounded, constriction short and close to the base of the sutural tube, then suddenly expanded, in a somewhat bell-shaped form, smooth, flatly convex in front, with a few very shallow indistinct wrinkles or pits; aperture very oblique, quadrate; peristome double, rounded on the outer lower margin, the columellar margin with a distinct notch; operculum smooth in front.

"Major diam. 3·7; alt. axis 2·9 mm."

Hab. India: Piknui Naga Hills and Lhota Naga Hills (*Chennell*).

"This shell is allied to *A. notatus* and *damsangensis*, but the expanded part of the last whorl behind the aperture is smoother, with only an indication of wrinkling. It is more closely wound than the latter, and the aperture differs from both in its squarer form and angulation below.

"Specimens from the Lhota Naga Hills (pl. 48, fig. 2) differ slightly in being larger and in the expanded portion being more

pitted and with little or no costulation towards the apex. These differences were found constant in 25 specimens received." (*Godwin-Austen.*)

359. Alycæus crenatus, *Godwin-Austen.*

Alycæus crenatus, Godwin-Austen, J. A. S. B. xl, part 2, 1871, p. 90, pl. 3, figs. 5, 5 *a*, 5 *b*; id., op. cit. xliii, part 2, 1874, p. 150; Hanley & Theobald, Conch. Ind. 1875, pl. 103, figs. 2, 3; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 390; Theobald, Cat. Shells Brit. India, 1876, p. 39; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 1, figs. 1 *a*, 1 *b*; Nevill, Hand List, i, 1878, p. 291; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 388, pl. 143, figs. 8, 8 *a*, 8 *b*.

Alycaeus (*Charax*) *crenatus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 152; id., Cat. Pneum. 1899, p. 48.

Alycaeus (*Dicharax*) *crenatus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 366.

Original description:—"Shell moderately umbilicated, depressedly turbinate, rather thin, translucent, pale horny or white, epidermis of former colour, peeling off in old shells, with very fine indistinct costulation throughout, fine close ribbing on the swell of the last whorl. Spire depressedly conoid, apex very blunt, suture well impressed. Whorls 4, rounded, the last moderately swollen, constricted close to the base of the sutural tube, with a marked subvertical ridge just behind the mouth. Constriction smooth, sutural tube long, rather thick; aperture oblique; peristome round, deeply waved on the upper and outer but not on the columellar margin, outer lip small, slightly expanded. Operculum multispiral, concave in front, with a small projecting boss at the back. Animal pale coloured, tentacles dark brown.

"Major diam. 0·18″ [4·5 mm.]; minor diam. 0·16″ [4 mm.]; alt. 0·11″ [2·75 mm.]; diam. of aperture 0·08″ [2 mm.]; sutural tube 0·075″ [1·9 mm.]."

Hab. India: Mokarsa, N.W. Khasi Hills; Hengdon Peak, Burrail Range, North Cachar, 5000 ft.; Latinga and Diyung Valleys; Lhota-Naga Hills (*Godwin-Austen*).

"Near *A. plectocheilus*, but much larger, the ridge more distant from the peristome and the latter more expanded. In some specimens the edges of the outer whorls in the operculum are much raised and bent inwards as in *Cyathopoma*.

"No appreciable difference can be found between the western and eastern shells, one only, that in the latter the last whorl behind the aperture and within the umbilicus is more rounded—in the western there is a decided keel. From the Lhota-Naga Hills, one example must be considered a variety; it is closer wound with closer umbilicus and whorl subangulate near it." (*Godwin-Austen.*)

360. **Alycæus crenulatus**, *Benson.*

Alycæus crenulatus, Benson, A. M. N. H. ser. 3, iii, 1859, p. 180; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 55; Hanley & Theobald, Conch. Ind. 1874, pl. 97, figs. 1, 4; Theobald, Cat. Shells Brit. India, 1876, p. 39; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 5, fig. 43; Nevill, Hand List, i, 1878, p. 295; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 337, pl. 133, figs. 1–1 *c*.

Alycaeus (*Charax*) *crenulatus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 152; id., Cat. Pneum. 1899, p. 48.

Alycaeus (*Dicharax*) *crenulatus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 367.

Original description:—"Testa umbilicata, depresso-turbinata, dense oblique costulata; spira conoidea, sutura profundiuscula, apice papillari; anfractibus 4 convexis, ultimo rotundato, ad latus inflato, eo costulis confertioribus ornato, tum juxta peristoma breviter constricto, lævi, tubulo suturali elongato non procul ab apertura oriente munito; apertura vix obliqua, circulari; peristomatis labro subduplici incrassato, exteriore reflexo, interiore crenulato quadriplicato aperturam vix coarctante, labio simplici, tenui, marginibus callo crasso prominente junctis. Umbilico profundo, margine rotundato. Operculo —— ?.

"Diam. major 4, minor $3\frac{1}{3}$, axis 3 mill."

Hab. India: Rungun Valley, Sikhim; Darjeeling, Namgu, 2500 ft., and Lingtam, Sikhim, 4000 ft. (*Blanford*); Damsang, Western Bhutan (*Godwin-Austen*).

"The constriction of the last whorl is near the aperture, without any intermediate ridge or swelling, in this respect showing an affinity with *amphora* and *urnula*. In the crenulation of the peristome it exhibits an analogy with *sculptilis* of the normal group, in which the crenulations are twelve in number, with the origin of the sutural tube remote from the aperture.

"The specimens examined are all weathered and bleached. It is a singular circumstance, that each of the three natural sections of *Alycæus* should have an analogical connexion through the plicate peristomes of *sculptilis*, *plectocheilus*, and *crenulatus*." (*Benson.*)

"The specimen figured, from Damsang, Western Bhutan, differs somewhat from specimens I have come across in Blanford's collection from Namgu and Lingtam, Sikhim, in having much stronger higher costulation." (*Godwin-Austen.*)

361. **Alycæus crispatus**, *Godwin-Austen.*

Alycæus crispatus, Godwin-Austen, J. A. S. B. xl, part 2, 1871, p. 91, pl. 4, figs. 1, 1 *a*, 1 *b*; id., op. cit. xliv, part 2, 1875, pl. 4, fig. 3; id., op. cit. xlv, part 2, 1876, p. 175; Theobald, Cat. Shells Brit. India, 1876, p. 39; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 389; Nevill, Hand List, i, 1878, p. 291; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, pp. 371, 389, pl. 145, figs. 1, 1 *a*, 1 *b*.

Alycaeus (*Charax*) *crispatus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 152 ; id., Cat. Pneum. 1899, p. 48.
Alycaeus (*Dicharax*) *crispatus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 367.

Original description:—"Shell moderately umbilicated, turbinate, rather thin, pale horny, with fine subdistant plicate costulation on the upper part of the whorls near the suture, smoother below, finely and closely ribbed on the swollen portion of the last whorl. Spire conoidal, apex rather acute, suture well impressed. Whorls 4, rounded, the last moderately swollen at the side, next constricted and smooth for a short distance, then traversed by a slightly recurved ridge, more developed in some specimens than in others, with a nearly smooth interval behind the mouth, but gradually becoming impressed with longitudinal undulations near the peristome. Sutural tube moderate. Aperture diagonal, waved on the outer and upper margins. Peristome thickened, irregularly double, expanding with 4 or 5 undulations on the right side, extending from the point of junction with the last whorl to the base of the aperture; the inner salient angles strongly projecting in aged specimens. Operculum multispiral, thickened, convex behind, very concave in front.

"Major diam. of typical shell 2·5 mm." (*Godwin-Austen.*)

Hab. India: Khasia, Jaintia, and N. Cachar Hills; Burroi Gorge, Dafla Hills; Shibak, Gabir Valley, near the Garo frontier (*Godwin-Austen*).

Var. **makarsæ**, *Godwin-Austen.*

Alycæus makarsæ (Godwin-Austen MS.), Theobald, Cat. Shells Brit. India, 1876, p. 40 (nom. nud.).
Alycæus crispatus, var. *makarsæ*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 372, pl. 158, fig. 13.

Original description :—" Shell depressedly conoid, rather openly umbilicate; sculpture: distant and strong costulation on upper whorls, becoming coarser at the end of the sutural tube, up to the base of same, thence to aperture, very fine close liræ; colour whitish; spire low, apex blunt; suture moderately impressed; whorls 4, rounded, no ridge near the constriction, expanded at the aperture forward, forming a notch near the inner upper side which is conspicuous; aperture ovate; peristome double, broad, solid, with the very slightest approach to crenulation on the outer margin within aperture; columellar margin subvertical, with the outer lip expanded into a flange; operculum very black and smooth.

"Major diam. 3·5; alt. axis 1·5 mm."

Hab. India: Makarsa, N. Khasi Hills (*Godwin-Austen*).

"It is much larger than typical *crispatus*." (*Godwin-Austen.*)

Var. **minima**, *Godwin-Austen.*

Alycæus crispatus, var. *minimus*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 373, pl. 148, figs. 5, 5 *a*.

Original description:—" Shell globosely pyramidal, umbilicated; sculpture: distant costulation on the upper whorls, close, regular, and larger on swell of last whorl; colour whitish; spire conic, sides flat; suture impressed, the sutural tube moderately long; whorls 4, the last swollen next the sutural tube, then constricted and expanding again into a well-defined ridge running diagonally forward and spreading to the undulations of the peristome; aperture circular; peristome double, thickened, crenulated, with strong notches and four blunt processes which, on the outside, are represented by a wavy outer lip.

" Major diam. 2·6; alt. axis 1·2 mm." (*Godwin-Austen.*)

Hab. India: Habiang, Garo Hills, West Khasi (*Godwin-Austen*).

Var. **rywukensis**, *Godwin-Austen.*

Alycæus crispatus, var. *rywukensis*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 373, pl. 154, figs. 3, 3 *a*, 3 *b*.

Original description:—" Shell small, depressedly and globosely conical, well umbilicated; sculpture: strong, distant, and regular costulation above, close and stronger next the sutural tube; colour whitish; spire rather low, apex blunt; suture impressed, the sutural tube fairly long; whorls $3\frac{1}{2}$, well rounded, the last is well constricted in front of base of sutural tube, then rises into a low but defined diagonally directed ridge and spreads forward, showing externally the shallow crenation with a decided notch next the sutural side; aperture irregularly ovate, suboblique; peristome double, crenulated on the upper and outer margin, not so below, and the columellar side rounded and suboblique; the crenulation is not deep, and the first upper fold extends forward and is the most conspicuous. Such is the description of the peristome of the type, but it is evidently not at full development. In the second example four well-defined notches and folds are seen, the lowest central and basal.

" Major diam. 2·3; alt. axis 1 mm."

Hab. India: Rywuk Valley, Garo Hills (*Godwin-Austen*).

" . . size does not count for much, but this little Garo Hills shell also differs from typical *crispatus* by its much more depressed and different shape." (*Godwin-Austen.*)

362. **Alycæus cucullatus**, *Theobald.*

Alycæus cucullatus, Theobald, J. A. S. B. xxxix, part 2, 1870, p. 396, pl. 18, figs. 2-2 *c*; Hanley & Theobald, Conch. Ind. 1874, pl. 96, figs. 1, 4; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 64; Theobald, Cat. Shells Brit. India, 1876, p. 39; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 2, fig. 12; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 407, pl. 155, fig. 5.

Alycaeus (*Charax*) *cucullatus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 152; id., Cat. Pneum. 1899, p. 48.

Alycaeus (*Dicharax*) *cucullatus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 367.

Original description :—"Testa umbilicata, depresse subdiscoidea, rubente cornea, transversim striata, juxta suturam striis fortioribus sive costulis filiformibus confertissimis ornata; apice glabro, rufescente, elevatiusculo; anfractibus quatuor, convexis; tubulo suturali modico, quartam peripheriæ vix æquante; strictura brevi, lævigata, striis nonnullis costiformibus ad basin et costa crassa transversa notata. Apertura parum obliqua, subrotundata, fere soluta, labro externe modice expanso, lamellose undulata, ad marginem paulo incrassato, 5-inciso, lamella supera maxime producta; labio simplici, paulo arcuato, supra vix adnato; operculo corneo, margine elevato nucleoque centrali parum excavato.

"Diam. maj. ·21 [5·25 mm.], diam. min. ·20 [5 mm.], alt. ·21 unc. [5·25 mm.]."

Hab. Burma: Shan States.

"This is a remarkably fine species with the crenulated lip of *A. plectocheilus* much exaggerated." (*Theobald.*)

363. **Alycæus daflaensis,** *Godwin-Austen.*

Alycæus daflaensis, Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 176, pl. 7, figs. 12, 12 *a*, 12 *b*; Nevill, Hand List, i, 1878, p. 291; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 354, pl. 145, figs. 11, 11 *a*, 11 *b*.

Alycaeus (*Dicharax*) *daflaensis*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 368.

Original description :—"Shell turbinate, moderately umbilicated, pale whitish or dull ochreous according to the state of the epidermis, finely ribbed throughout, rather more coarsely near the commencement of the swell of the last whorl, on this portion the ribbing is very fine and close. Spire conoid, apex blunt, suture impressed, the sutural tube moderate. Whorls 4, the last swollen, then constricted, and enlarging again into a well-raised ridge, which terminates below on margin of the peristome, it then descends and expands considerably with four deep longitudinal plications. Peristome single (no sign of the usual outer margin), continuous, with five plications on the outer margin, the lower margin recurved. Aperture oblique. Operculum multispiral, horny, with a large disc-like boss in the centre front side."

Hab. India: Toruputu Peak, 7000 ft., and Niosi Ridge, Dafla Hills.

"The nearest form to the above is *A. digitatus*, H. Blf., described and figured in J A. S. B. vol. xl, 1871, from Darjeeling, but the duplicate peristome in that shell is conspicuous, and forms a well-defined sharp edge where the expansion and plication of the inner lip commences. By the operculum alone it can be at once distinguished, and it is besides a much smaller shell.

"A dwarf variety occurs on Shengorh Peak, only 0·09 [2·25 mm.] in. alt., not so expanded near the aperture, and with the plication less developed. On the Tanir Ridge, at 4000 feet, the same

shell, of ordinary size and with the same character of the aperture, occurs, showing an interesting and gradual change in form; the operculum is also different, being pale coloured, multispiral, and flatly concave in front. This form is in this respect much nearer to *A. digitatus*, and might be separated under the title var. *subdigitatus*." (*Godwin-Austen.*)

Subsequently the author appears to have somewhat modified his views with regard to the Shengorh Peak form, for in 1914 he observed that it is a mere variety, differing in its smaller size, more depressed and rounded spire, and finer costulation, at the same time substituting the name var. *nana*.

364. **Alycæus dalingensis**, *Godwin-Austen.*

Alycæus dalingensis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 338, pl. 134, figs. 3–3 *c*.

Original description:—"Shell narrowly umbilicated, globosely conoid, rather solid; sculpture smooth on upper whorls, costulation near sutural tube close in low relief, the tube moderately long; colour dull ochraceous; spire moderately high, sides flat, apex rather blunt; suture impressed; whorls 4, rounded, regular in increase, constriction close to base of sutural tube, swelling at once towards the aperture, which is circular, with a nick or angle on the upper inner margin; peristome simple, double, reflexed, curving on the columellar side.

"Major diam. 3·4; alt. axis 1·7 mm."

Hab. India: Rechila Peak, Daling District, on Sikkim and Bhutan Boundary (10,300 ft.).

"This has a close resemblance to *A. lenticulus*, but it differs in its general shape and the aperture from that species." (*Godwin-Austen.*)

365. **Alycæus damsangensis**, *Godwin-Austen.*

Alycæus damsangensis, Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 192, pl. 43, figs. 3–3 *c*; ii, 1914, p. 339.

Alycæus subnotatus Nevill MS. (nom. nud.), Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 339.

Alycaeus (*Charax*) *damsangensis*, Kobelt & Möllendorf, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 152; id., Cat. Pneum. 1899, p. 48.

Alycaeus (*Dicharax*) *damsangensis*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 368.

Original description:—"Shell turbinate, very closely umbilicated; sculpture: well-marked distant costulation on the upper whorls, coarse, close, regular on the enlarged portion of the last; colour dull, very pale ochraceous; spire high, conic, apex blunt; suture moderately impressed, tube mediocre; whorls 4, the last sharply constricted at base of the sutural tube, then enlarging suddenly into a recurved ridge, succeeded by a depression, and then another shorter ridge, and a pit-like depression in front of it; aperture

oblique; peristome double, but not thickened; columellar margin straight, subvertical, with slight notch below; operculum multispiral, brown.

"Major diam. 3·8; alt. axis 3·2 mm."

Hab. India: Damsang Peak, Western Bhutan Hills (*W. Robert*).

"This shell assimilates somewhat, in the character of the constriction and the expansion of the whorl anterior to it, to *A. hebes*, Bs.; but in the irregular wrinkled portion in advance of the main ridge crossing the swollen part it differs materially, and presents a most interesting approach to *A. notatus*, G.-A., of the Dafla Hills, the surface of which is more irregularly wrinkled and pitted; it is not so closely umbilicated, and the aperture is more angulate below. It appears to be a most abundant species." (*Godwin-Austen.*)

366. **Alycæus diagonius**, *Godwin-Austen.*

Alycæus diagonius, Godwin-Austen, J. A. S. B. xl, part 2, 1871, p. 88, pl. 3, figs. 2, 2 *a*, 2 *b*; Hanley & Theobald, Conch. Ind. 1875, pl. 103, fig. 1; Theobald, Cat. Shells Brit. India, 1876, p. 39 (*A. diagonus*); Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 388; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 1, fig. 2; Nevill, Hand List, i, 1878, p. 290; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 389, pl. 143, figs. 5, 5 *a*, 5 *b*.

Alycaeus (*Charax*) *diagonius*, Kobelt & Möllendorf, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 152; id., Cat. Pneum. 1899, p. 48.

Alycaeus (*Dicharax*) *diagonius*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 368.

Original description:—"Shell closely umbilicated, turbinate, thin, translucent, pale amber or pinkish colour, finely but distantly costulated on the two last whorls, closely so on the inflated portion of the last; spire conoid, apex blunt, suture well impressed; whorls 4, rounded, constricted closely near base of the sutural tube, then swelling largely towards the mouth, the commencement of the swell forming a diagonal or recurved ridge above; constriction smooth, sutural tube 0·053 inch [1·325 mm.]; aperture diagonal, circular; peristome sinuate, double, inner lip continuous, outer expanded, slightly reflected at umbilicus and partially concealing it.

"Operculum concave in front, convex behind with a small central boss or nucleus.

"Major diam. 0·145" [3·65 mm.], minor diam. 0·12" [3 mm.], alt. 0·10" [2·5 mm.], diam. of aperture 0·075" [1·88 mm.]."

Hab. India: Diyung Valley, North of Asalu, in N. Cachar District (*Godwin-Austen*); Naga Hills (*Roberts*).

"This shell is at first sight very like *A. hebes*, Bs., but can easily be distinguished by its much narrower umbilicus, its more polished surface and less expanded mouth.

"A small variety of this shell was obtained and deserves special notice. The striation is wanting throughout, and the costulation on the swollen portion of the last whorl is somewhat

shorter; in these characters it approaches very near to *A. nitidus*, W. Blanford, from Arakan, but the recurved rib is in this last species much less developed." (*Godwin-Austen.*)

367. **Alycæus digitatus,** *Blanford.*

Alycæus digitatus, Blanford, J. A. S. B. xl, part 2, 1871, p. 41, pl. 2, figs. 4, 4 *a*, 4 *b*; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 64; Theobald, Cat. Shells Brit. India, 1876, p. 39; Nevill, Hand List, i, 1878, p. 294; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 339, pl. 134, figs. 5, 5 *a*.

Alycaeus (*Charax*) *digitatus,* Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 152; id., Cat. Pneum. 1899, p. 48.

Alycaeus (*Dicharax*) *digitatus,* Kobelt, Das Tierreich, Lief. 16, 1902, p. 369.

Original description:—"Testa solida, depresse turbinata, umbilicata, albido-cornea, regulariter costulata; pone aperturam usque ad tubulum striata. Spira parum excerta, apice obtusulo. Anfractus 4, rotundati; ultimus inflatus, deinde constrictus, iterum abrupte expansus, denique abrupte constrictus, antice depressus et in 5 plicationes validas desinens. Tubulus post constrictionem oriens, recurvatus, $\frac{1}{6}$ anfractus subæquans. Sutura impressa. Apertura perobliqua. Peristoma duplex; externum simplex evertatum; internum continuum, superne valde prolongatum, 5-plicatum. Plica basalis abrupte recurvata. Operculum corneum, extus concavum.

"Alt. 3·6 mm.; diam. major 5·5; minor 4 mm. Aperturæ alt. 2·25, lat. 2·75 mm."

Hab. India: Darjeeling; Rungno Valley, Sikhim Himalayas (*Blanford, Atkinson*); Rechila Peak, Western Bhutan Hills (*Godwin-Austen*).

"Of all the Alycæi yet described with plicate peristomes, this exhibits the character in the most exaggerated degree; the free portion of the lip being prolonged into five digitiform folds, nearly a millimetre in length. The ridge-shaped fold between the two constricted portions is very abrupt, as in *Alycœus plectocheilus*, which species, together with a yet unpublished form found by Major Godwin-Austen in the Khasi Hills, are its nearest allies. In some specimens, taken alive, the costulation has disappeared from the greater portion of the upper whorls, and remains only in patches; so that on a cursory inspection the whorls appear to be smooth and striate; it is most distinct on the inflated portion of the shell." (*Blanford.*)

Godwin-Austen refers to two specimens, found in the Blanford collection, with the MS. name *fimbriatus*. The specimens are bleached and poor, and represent a dwarf variety of *A. digitatus*.

368. **Alycæus dohertyi,** *Godwin-Austen.*

Alycæus dohertyi, Godwin-Austen, Proc. Zool. Soc. 1893, p. 595; id., Land and Freshw. Moll. India, ii, 1897, p. 3, pl. 63, figs. 3, 3 *a*; id., 1914, p. 408.

Alycaeus (*Charax*) *dohertyi*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 129; id., Cat. Pneum. 1899, p. 49.
Alycaeus (*Dicharax*) *dohertyi*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 369.

Original description:—"Shell globosely turbinate, solid, not umbilicated; sculpture: regular distant sharp costulation, closer and fine near the sutural tube; colour stone, with pink apex; spire rather high, conoid, rounded, apex blunt; suture impressed, the tube fine, rather long; whorls $4\frac{1}{2}$, the last swollen, constricted with a rounded ridge midway between the sutural tube and the peristome; aperture expanded, ovate; peristome double, fine sharp crenulations on the outer margin, rounded on the inner.

"Major diam. 3·25; alt. axis 2·8 mm."

Hab. Burma: Momeit (*Doherty*).

"This is quite a new form, partaking in the constriction and peristome of the characters of *A. plectocheilus*, *crenatus*, etc." (*Godwin-Austen.*)

369. **Alycæus duorugosus**, *Godwin-Austen.*

Alycæus duorugosus, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 391.

Original description:—"Shell very globose, umbilicated; sculpture smooth on the upper whorls, with indistinct striation, distant costulation on the last whorl, very fine and regular next the suture; colour umber-brown; spire high; suture impressed, the sutural tube short and thick; whorls 4, much rounded, the constricted part near sutural tube is fairly long, succeeded by two ridges well defined and both of nearly equal size lying close up to the peristome; aperture circular, somewhat flat above, well rounded below; peristome double, somewhat thickened and reflected. Columellar margin curving perpendicularly.

"Major diam. 3·75; alt. axis 2 mm."

Hab. India: Burrail Range, Naga. Burma: Angaoluo Trigonometrical Station, No. 2572; South Barak and Munipur (*Godwin-Austen*).

"This at first sight recalls *A. birugosus*, of the Khasi Hills, but is larger, more globose, the ridges near the aperture more developed, the aperture quite circular without the notch on the lower margin. It is near *A. khasiacus*, but smaller; the ridges in that species are unequal, the anterior much the smallest." (*Godwin-Austen.*)

370. **Alycæus expatriatus**, *Blanford.*

Alycæus expatriatus, Blanford, J. A. S. B. xxix, 1860, p. 123; id., op. cit. xxx, 1861, p. 349; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 52; Hanley & Theobald, Conch. Ind. 1876, pl. 145, figs. 1, 4; Theobald, Cat. Shells Brit. India, 1876, p. 39; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 5, fig. 45; Nevill, Hand List, i, 1878, p. 295; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 433.
Alycaeus (*Charax*) *expatriatus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 129; id., Cat. Pneum. 1899, p. 49.

Alycaeus (*Dicharax*) *expatriatus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 369, fig. 82.

Original description:—"Testa mediocriter umbilicata, depressa, ad anfractos internos obsolete, ad ultimum fortius, ad spatium inflatum valde, crebre costulata, corneo-albida, apice diaphane rubella; spira vix elevata, apice obtusa; sutura impressa; anfr. $3\frac{1}{2}$ convexi, ultimus ad latus mediocriter inflatus, deinde constrictus; constrictione longa, medio tumidâ, glabra; tubulum suturale pone constrictionem oriens, mediocriter longum, plerumque $\frac{1}{5}$ peripheriæ subæquans, sed nonnullis exemplis brevius; apertura circularis, obliqua, juxta anfr. penultimum retro curvatum; perist. duplex; internum breviter porrectum, continuum, externum expansum, interruptum, columellari margine strictum. Operculum corneum, distincte multispirum. Anfr. 7–8 planulatis, externe perconcavum, nucleo centrali interno prominente papillari.

"Diam. maj. $4\frac{1}{2}$, min. $3\frac{3}{4}$, alt. $2\frac{1}{2}$, apert. diam. $1\frac{3}{4}$ mm."

Hab. India: Neddoowuttom Ghat, Nilgiris; Anamullies and South Canara (*Blanford*); Shevroy Hills (*King*).

"This species appears to be more depressed in the spire than any other of the genus, except perhaps the Bornean *A. spiracellum*, A. Ad. & Reeve. Its nearest Indian ally is *A. strangulatus*, Hutton, and in size it is intermediate between that species and *A. stylifer*, Bens. It belongs to the section *Charax* of Benson, having a wide strangulation behind the peristome, crossed by a swollen ridge, which, however, in *A. expatriatus* never presents the sharpness so remarkable in *A. stylifer* and *hebes*, but is rather a broad tumid space separating two narrow constrictions. The sutural tube is variable in length, sometimes being nearly as sharp as in *A. strangulatus*, in other specimens as long as in *A. stylifer*; the latter being the usual case, the former the exception, but both occur in perfectly fresh and full-grown specimens.

"From *A. strangulatus* the species is distinguished by its greater size, more depressed form, more oblique aperture, by the recurvation of the peristome at its junction with the penultimate whorl, the longer sutural tube, the greater distance of the ridge crossing the constriction from the mouth, and the closer sculpture. From *prosectus* and *stylifer* the characters of the peristome, which is simple in *stylifer* and expanded at the columellar margin in *prosectus*, besides the smaller size of *A. expatriatus*; from *hebes* and *gemmula* the slightly prominent ridge not recurved and the depressed form, afford abundant grounds for distinction. *A. spiracellum* of Borneo is probably closely allied, but we are only acquainted with that shell by its description. Judging therefrom, *A. expatriatus* should be distinguished by its smaller size, more narrow umbilicus, greater bluntness of the ridge in the constriction, and, in general, by the greater length of the sutural tube, a character which, however, is evidently, from its variability in this species, of less value than has hitherto been supposed.

"The animal is small and colourless; the body very short; the sole undivided; tail short and rather pointed; tentacles short, yellowish; muzzle blunt, not elongated." (*Blanford.*)

Blanford in 1861 (*l. c.*) mentions a variety having been obtained by Mr. King from the Shevroys, a group of hills about 30 miles N. of the Kolamullies. It only differs from the Nilgiri form in size, measuring in its two diameters $5\frac{1}{2}$ and $4\frac{1}{2}$ mm. instead of $4\frac{1}{2}$ and $3\frac{3}{4}$.

Godwin-Austen records two specimens from the Shevroy Hills, larger than typical forms, the largest measuring 5·5 mm. major diameter. Both have short sutural tubes, but the ridge crossing the constriction varies in elevation throughout. He also mentions specimens from the Anamullies, in the Beddome collection, the largest of which measures 6 mm. in major diameter, while in all the ridge is quite high and the sutural tube short.

371. **Alycæus footei**, *Blanford.*

Alycæus footei, Blanford, J. A. S. B. xxx, 1861, p. 348, pl. 1, fig. 3; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 53; Theobald, Cat. Shells Brit. India, 1876, p. 39; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 4, figs. 35 *a*, 35 *b*; Nevill, Hand List, i, 1878, p. 295; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 432.

Alycaeus (*Charax*) *footei*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 129; id., Cat. Pneum. 1899, p. 49.

Alycaeus (*Dicharax*) *footei*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 370.

Original description:—"Testa aperte umbilicata, depressa, solida, ad anfractos internos striata, ad ultimum costulato-striata, ad spatium inflatum crebre costulata; spira vix elevata, apice obtusula; sutura parum impressa. Anfr. 4 convexi; ultimus ad latus mediocriter gibbosus, deinde constrictus, prope aperturam descendens; spatium constrictum longum, medio tumidum, striatum, costam validem retro recumbentem, peristomatis marginem dextrum ad basin attingentem, gerens; tubulus suturalis juxta constrictionem oriens, mediocris, $\frac{1}{5}$ peripheriæ subæquans. Apertura perobliqua, circularis, undata; perist. duplex; interno breviter porrecto, continuo; externo late expanso. Operc.?

"Diam. maj. 6, min. $4\frac{1}{2}$, alt. 3, ap. diam. $1\frac{3}{4}$ mm."

Hab. India: Kolamullies (*King*); Wynaad (*Stoliczka*); Tinevelly and South Canara; Kadur District, Mysore (*Blanford*); Yercaud, Shevroy Hills (*Godwin-Austen*).

"This shell is nearly allied to *A. expatriatus*, Blanf., of the Nilgiris, but distinguished principally by the possession of a recurved ridge upon the constriction, somewhat similar to that in *A. hebes*, Bens. and *A. gemmula*, Bens. Other differences are, the flatter suture and more oblique mouth, caused by the greater descent of the last whorl in *A. footei*, while the swelling at the side of the last whorl is somewhat greater, and the constriction more marked.

"From *A. hebes* and *A. gemmula*, the present species is easily

distinguishable by its flat spire, besides other characters of sculpture, etc. The ridge on the constriction *A. footei* lies back on the top of the whorl, and meets the peristome at the base of the right margin: in the other two species the ridge is more at the side, and meets the peristome at the bottom." (*Blanford.*)

Godwin-Austen publishes one of Blanford's numerous and valuable field-notes to the following effect:—

"*Alycæus footei* from the Wynaad only differs from the Shevroy type in the spire being a little higher and the constricted portion of the last whorl between the swollen part and the mouth rather longer. The ridge on the constriction is reverted. Diam. $5 \times 4\frac{1}{4}$, axis 3."

He also finds in the Blanford collection a variety of *A. footei* from the Kadur District, Mysore, having the ridges across the constriction high and narrow, not reverted, while in the same collection five specimens from Tinevelly the same ridge is very low and inconspicuous.

372. **Alycæus gemma**, *Godwin-Austen.*

Alycæus gemma, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 355, pl. 149, figs. 6, 6 *a*.

Original description:—"Shell umbilicated, depressedly conoid; sculpture: none on the upper whorls, a few indistinct, fine, costate ribs at suture; colour white; spire low, conoid, apex blunt; suture moderately impressed, the sutural tube short; whorls 4, well rounded, the constricted area is crossed by two ridges, the posterior broad, the anterior narrow and more conspicuous; aperture circular, angulate on upper margin; peristome double, angulate on lower margin, the outer very slightly reflected.

"One specimen only differs in being more solid, and has distant costulation on half of the 1st whorl.

"Major diam. 2·8; alt. axis 1·4 mm."

Hab. India: No. 7 Camp, Dikrang Valley, Dafla Hills (*Godwin-Austen*).

"Only three specimens were found. The form recalls that of *A. gemmula*, Bs., of Darjiling, but has distinctive characters by which it may be readily known." (*Godwin-Austen.*)

373. **Alycæus gemmula**, *Benson.*

Alycæus gemmula, Benson, A. M. N. H. ser. 3, iii, 1859, p. 179; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 52; Hanley & Theobald, Conch. Ind. 1874, pl. 93, fig. 7; Theobald, Cat. Shells Brit. India, 1876, p. 39; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 5, fig. 37; Nevill, Hand List, i, 1878, p. 294; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 190, pl. 48, figs. 4–4 *c*; ii, 1914, pp. 340, 356.

Alycaeus (*Charax*) *gemmula*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 129; id., Cat. Pneum. 1899, p. 49.

Alycaeus (*Dicharax*) *gemmula*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 371.

Original description:—"Testa umbilicata, conoideo-depressa, lævigata, nitida, ad ventriculum minutissime, ad umbilicum crasse striata, hyalina; spira conoidea, apice obtusiusculo, sutura profunda; anfractibus 4 convexiusculis, ultimo compresse rotundato, tum tumido, tubulum mediocrem gerente, tunc fossiculato-constricto, strictura crista recumbente, demumque area planata ab apertura separata; apertura obliqua, superne arcuatim prominente, peristomate duplici, valde incrassato-reflexo, intus superne ad angulum et infra ad basin leviter emarginato; umbilico profundo. Operc. —— ?

"Diam. major $2\frac{1}{4}$, minor $1\frac{1}{2}$, axis $1\frac{1}{2}$ mill."

Hab. India: Rungun Valley, Sikhim (*Blanford*); Darjeeling (*Nevill*).

"Its affinities are with the Khasia *A. hebes*; but it is perfectly distinct in colour, smaller size, sculpture, narrower constriction behind the ridge, narrower umbilicus, and in the emargination visible within the aperture at the lower part." (*Benson.*)

374. **Alycæus glaber**, *Blanford*.

Alycæus glaber, Blanford, J. A. S. B. xxxiv, part 2, 1865, p. 84; Hanley & Theobald, Conch. Ind. 1874, pl. 97, figs. 8–10; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 60; Theobald, Cat. Shells Brit. India, 1876, p. 39; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 4, fig. 31; Nevill, Hand List, i, 1878, p. 292; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 418, pl. 151, fig. 1.

Alycaeus (*Charax*) *glaber*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 129; id., Cat. Pneum. 1899, p. 49.

Alycaeus (*Dicharax*) *glaber*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 371.

Original description:—"Shell broadly umbilicated, conoidly depressed, solid, reddish white, the upper whorls darker, rather dull in lustre, smooth, except at the swollen portion of the last whorl, which is very finely and closely costulated. Spire depressly conoid; apex rather obtuse; suture impressed. Whorls 4, convex, the last obsoletely subangulate at the periphery, moderately swollen at the side, then constricted, descending a little near the mouth. Constriction of moderate length, smooth, slightly swollen in the middle. Sutural tube of moderate length. Aperture diagonal, circular; peristome more or less distinctly duplex, thickened, moderately expanded. Operculum dark coloured, horny, externally concave, internally convex, with a prominent central nucleus.

"Major diameter $7\frac{1}{2}$, minor ditto 6, axis $4\frac{1}{2}$ millim."

Hab. Burma: Akyab, Arakan (*Blanford*).

"This species closely resembles *A. ingrami*, W Blanf., for which I for some time mistook it, but it is distinguished by the absence of any sculpture on the upper whorls, and also by the more oblique mouth." (*Blanford.*)

375. **Alycæus globulus**, *Godwin-Austen.*

Alycæus globulus, Godwin-Austen, J. A. S. B. xliii, part 2, 1874, p. 147, pl. 3, figs. 4, 4 *a*, 4 *b*; Theobald, Cat. Shells Brit. India, 1876, p. 39; Nevill, Hand List, i, 1878, p. 291; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 392, pl. 144, figs. 4, 4 *a*, 4 *b*.

Alycaeus (*Charax*) *globulus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 129; id., Cat. Pneum. 1899, p. 49.

Alycaeus (*Dicharax*) *globulus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 371.

Original description:—"Shell moderately umbilicated, globosely turbinate, white, finely costulated on the shell of the first whorl, becoming gradually smooth thence to the apex; spire conoid, apex flat, rounded; whorls 4, flat, the last moderately swollen, then sharply constricted and again enlarged by a ridge from which emanate four minor longitudinal ridges on the expanded portion of the peristome; constriction narrow close to the sutural tube, this is moderate in length and about equal to the distance of its base to lip; aperture much expanded, oblique, round, angulate above, waved on the outer margin and channelled within; the outer lip of peristome thin, slightly recurved on the inner lower margin. Operculum black, multispiral, concave.

"Major diam. 0·2" [5 mm.], minor 0·16" [4 mm.]; alt. 0·1" [2·5 mm.]."

Hab. India: Phunggum, a Naga village at head of Lanier Valley, 5000 ft.

"Near *A. crispatus*. Its larger globose form, long sutural tube, and more open umbilicus mark it as distinct." (*Godwin-Austen.*)

376. **Alycæus habiangensis**, *Godwin-Austen.*

Alycæus habiangensis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 374, pl. 138, figs. 2, 2 *a*, 2 *b*.

Original description:—Shell minute, turbinate, closely umbilicate, glassy; sculpture confined to about 16 fine close ribs next the sutural tube, the rest of shell showing very indistinct costulation; colour whitish; spire conical; suture impressed, the sutural tube short; whorls 4, the last constricted close to sutural tube, swelling towards the aperture in one broad ridge, having subsidiary undulations; aperture oblique, circular; peristome: example is young, and this is not continuous, it is simple, with no sign of crenation; columellar margin rounded; operculum not present.

"Major diam. 3; alt. axis 1·3 mm."

Hab. India: Habiang Garo, on West Khasi border (*Godwin-Austen*).

"This shell belongs to a group of *Alycæus*, characterized by having a short tube and a narrow band of costulation, the rest of the shell being generally smooth and more or less shiny. *A. khasiacus*, G.-A., is one of the largest of this type of structure; it includes *conicus*, G.-A., *diagonius*, G.-A., and *pusillus*, G.-A." (*Godwin-Austen.*)

377. **Alycæus hebes**, *Benson.*

Alycæus hebes, Benson, A. M. N. H. ser. 2, xix, 1857, p. 204; Theobald, J. A. S. B. xxvii, 1858, p. 318; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 37; id., Novit. Conch. ser. 1, i, 1860, p. 129, pl. 35, figs. 28–31; Blanford, A. M. N. H. ser. 3, xiii, 1864, p. 459; Godwin-Austen, J. A. S. B. xl, part 2, 1871, p. 93, pl. 4, figs. 5, 5 *a*, 5 *b*; Hanley & Theobald, Conch. Ind. 1874, pl. 93, figs. 5, 6; Theobald, Cat. Shells Brit. India, 1876, p. 39; Sowerby in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 7, fig. 52; Nevill, Hand List, i, 1878, p. 290; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 191, pl. 43, figs. 1–1 *c*; ii, 1914, p. 374, pl. 145, figs. 5, 5 *a*, 5 *b*.

Alycæus (*Charax*) *hebes*, Benson, A. M. N. H. ser. 3, iii, 1859, p. 177; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 129; id., Cat. Pneum. 1899, p. 49.

Alycaeus (*Dicharax*) *hebes*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 371.

Original description:—"Testa umbilicata, solidiuscula, depressa, vix striatula, ad spatium inflatum et circa umbilicum confertissime striata, carneo-albida, apicem versus rubella; spira conoidea, apice obtusiusculo, sutura impressa; anfractibus 4 convexiusculis, ultimo ad latus gibboso, tubulum mediocrem suturalem gerente, spatio constricto costa valida retro recumbente munito; apertura obliqua, circulari; peristomate continuo, duplici, interiori porrecto, exteriori expanso, incrassato.

"Diam. major 4, minor 3, axis 3 mill."

Hab. India: Teria Ghat, Khasi Hills (*Theobald*).

"This species occurs on rocks, and is distinguished by the structure of the aperture from the small Bornean *A. spiracellum*, A. & R. In the latter species, moreover, the rib behind and above the aperture is nearly parallel with the peristome, whereas in *A. hebes* it looks like a hoop which had fallen backwards on the whorl. In both species it takes its rise at the right side of the peristome, and ends at the suture, corresponding with an internal sulcus." (*Benson.*)

378. **Alycæus humilis**, *Blanford.*

Alycæus humilis, Blanford, J. A. S. B. xxxi, 1862, p. 136; id., op. cit. xxxiv, 1865, p. 99; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 49; Hanley & Theobald, Conch. Ind. 1874, pl. 93, figs. 8, 9; Theobald, Cat. Shells Brit. India, 1876, p. 39; Sowerby in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 5, figs. 40 *a*, 40 *b*; Nevill, Hand List, i, 1878, p. 292; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 408, pl. 151, fig. 8.

Alycaeus (*Charax*) *humilis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 129; id., Cat. Pneum. 1899, p. 49.

Alycaeus (*Dicharax*) *humilis*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 372.

Original description:—"Testa aperte umbilicata, turbinato-depressa, lævis, rubello-succinea, ad apicem sanguinea. Spira conoidea, apice obtusula, sutura profunda. Anfr. $3\frac{1}{2}$, rotundati,

ultimus ad latus mediocriter inflatus et confertim costulatus, tum constrictus, versus aperturam breviter descendens. Strictura glabra, longa, antice tumidior. Tubulum suturale breve, $\frac{1}{6}$ peripheriæ subæquans. Apertura obliqua, circularis; peristoma duplex; externo retro-relicto, interno continuo, porrecto, fere soluto. Operculum corneum, multispirum, externe concavum.

"Diam. maj. $2\frac{1}{2}$, diam. min. 2, alt. $1\frac{1}{2}$; apert. diam. $\frac{2}{3}$ mm."

Hab. Burma: Akowtong, Pegu (*Blanford*).

"*A. humilis* resembles somewhat the minute *A. armillatus*, B., but differs in the very much greater distance to which the strongly marked costulation upon the tumid portion of the last whorl is carried back from the constriction, the distance being in both species proportional to the length of the sutural tube. *A. humilis* is futher distinguished by its longer constriction, by the descent of the mouth, and the greater tumidity of the last whorl. The colour, as in many *Alycæi*, is probably not quite constant, some specimens being white and translucent." (*Blanford*).

379. **Alycæus jaintiacus**, *Godwin-Austen*.

Alycæus jaintiacus, Godwin-Austen, J. A. S. B. xl, part 2, 1871, p. 92, pl. 5, figs. 3, 3 *a*, 3 *b*; Theobald, Cat. Shells Brit. India, 1876, p. 39; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 389; Nevill, Hand List, i, 1878, p. 290; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 375, pl. 143, figs. 3, 3 *a*, 3 *b*.

Alycaeus (*Charax*) *jaintiacus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 129; id., Cat. Pneum. 1899, p. 49.

Alycaeus (*Dicharax*) *jaintiacus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 372.

Original description:—" Shell subobtusely perforated, turbinate, pale amber or white, smooth, finely ribbed on the swollen portion of the last whorl, with sign of subdistant ribbing behind the termination of the sutural tube. Spire conoid, apex blunt, suture impressed. Whorls 4, rounded, last very slightly swollen, then moderately constricted, swelling again in a low ridge, somewhat recurved. Constriction smooth; sutural tube rather short, fine; aperture subvertical, round. Peristome deeply waved within; salient angles between the undulations nodose; inner lip continuous, outer reflected, considerably near the umbilicus.

" Major diam. 0·13" [3·25 mm.], minor diam. 0·11" [2·75 mm.]; alt. 0·10" [2·5 mm.]; diam. of aperture 0·07" [1·75 mm.]." (*Godwin-Austen.*)

Hab. India: Nongjinghi, Jaintia Hills.

Var. **crassa**, *Godwin-Austen*.

Alycæus jaintiacus, var. *crassus*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 375, pl. 137, figs. 5, 5 *a*.

Original description:—" Shell solid, globosely turbinate, narrowly umbilicate; sculpture: a few distant costulate lines on upper whorls, fine and close costulation next the sutural tube; colour

whitish; spire conic, rather high; apex blunt; suture impressed; whorls 4, the last with a sharp constriction in front of sutural tube, then expanding into a well-marked ridge inflated towards aperture; aperture circular, vertical; peristome much thickened, double, the outer lip with a flange which nearly hides the umbilicus and is sharply reflected, the inner crenulated on lower margin in three notches.

"Major diam. 3; alt. axis 1·75 mm." (*Godwin-Austen.*)

Hab. India: Nongjinghi, Jaintia Hills, 4563 ft. (*Godwin-Austen*).

380. **Alycæus khasiacus**, *Godwin-Austen.*

Alycæus khasiacus, Godwin-Austen, J. A. S. B. xl, part 2, 1871, p. 90, pl. 3, figs. 4, 4 *a*, 4 *b*; Hanley & Theobald, Conch. Ind. 1875, pl. 103, figs. 5, 6; Pfeiffer, Mon. Pneum. Suppl. 3, 1876. p. 390; Theobald, Cat. Shells Brit. India, 1876, p. 40; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 1, fig. 8; Nevill, Hand List, i, 1878, p. 290; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, pp. 376, 393, pl. 143, figs. 7, 7 *a*, 7 *b*.

Alycaeus (*Charax*) *khasiacus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 129; id., Cat. Pneum. 1899, p. 49.

Alycaeus (*Dicharax*) *khasiacus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 372.

Original description:—"Shell subturbinately depressed, openly umbilicated, translucent, varying much in colour from horny amber to pink- and dark red-browns; a shining surface, very finely striated under lens, very minute ribbing on the swell of the last whorl; in some specimens a faint costulation is seen. Spire depressedly conoid, apex very blunt, often darker coloured than rest of the shell. Suture impressed, whorls 4, well rounded, last moderately swollen, sharply constricted and again enlarging into two vertical ridges, that nearest the mouth being the least developed, and only extending across the upper portion of the whorl, being cut off by the peristome. Constriction smooth, sutural tube very short and thick at the base. Aperture oblique, round, slightly angulate above. Peristome more or less distinctly double, inner continuous, outer slightly expanded. Operculum multispiral, very concave in front, convex behind, no boss.

"Major diam. 0·15″ [3·75 mm.], minor diam. 0·13″ [3·25 mm.]; alt. 0·09″ [2·25 mm.]; diam. of aperture 0·07″ [1·75 mm.]; sutural tube 0·025″ [0·65 mm.]."

Hab. India: Khasi and Jaintia Hills; Cherra Poonjee, Assam (*Godwin-Austen*). Burma: Valley of the Barak, Munipur (*Godwin-Austen*).

"The very short tube and very fine ribbing on the last whorl, and the plain surface of the rest of the shell, combine to make this a very distinct and well-marked species of the genus *Alycæus*.

"This species, only smaller in size and not with the red coloration of the typical Khasi Hills form, occurred on the Trigonometrical Hill Station of Angaoluo in the North Naga Hills, It measures 3 mm. in major diameter as against 3·5 mm. of the

type shell. I have true *khasiacus* from Jawai in the Jaintia Hills, from Mairang and Shillong. I also found it in the valley of the Barak, Munipur, and at Asalu in the North Cachar Hills.

"Among a large series of this species variation may be noted in a specimen here and there. The two ridges behind the peristome are only slightly developed, blend and nearly disappear. Such examples might be considered, if singly and separately collected, to be a different species. The short sutural tube then shows what the true relationship is." (*Godwin-Austen.*)

381. **Alycæus kezamaensis,** *Godwin-Austen.*

Alycæus kezamaensis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 393, pl. 144, figs. 1, 1 *a*.

Original description:—"Shell globosely conoid, umbilicated; sculpture distant, very regular costulation, at sutural tube fine and very close; colour dark ochraceous; spire conoid with flat sides; suture slightly impressed; whorls 4, not very rounded, the last viewed from above expanding slightly forwards, constriction close to base of sutural tube, then swelling slightly between it and the peristome; aperture semiovate, angulate near suture: peristome double, somewhat thickened and sinuate above.

"Major diam. 2·9; alt. axis 1 mm."

Hab. India: Kezama, Anghami-Naga Hills (*Godwin-Austen*).

"A very small species with no very salient characters allied to *asaluensis*. A smaller shell, more globose, and differs in the form of the aperture." (*Godwin-Austen.*)

382. **Alycæus kurzianus,** *Theobald & Stoliczka.*

Alycæus kurzianus, Theobald & Stoliczka, J. A. S. B. xli, part 2, 1872, p. 330, pl. 11, fig. 2; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 61; Hanley & Theobald, Conch. Ind. 1876, pl. 145, figs. 2, 3; Theobald, Cat. Shells Brit. India, 1876, p. 40; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 3, fig. 22; Nevill. Hand List, i, 1878, p. 293; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 409, pl. 151, figs. 7, 7 *a*.

Alycaeus (*Charax*) *kurzianus,* Kobelt & Mollendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 129; id., Cat. Pneum. 1899, p. 49.

Alycaeus (*Dicharax*) *kurzianus,* Kobelt, Das Tierreich, Lief. 16, 1902, p. 373.

Original description:—"A. testa subglobose conoidea, late umbilicata, pallide rubescente; anfractibus 4, valde convexis, sublævigatis, transversim distanter obsolete costellatis, ultimo anfractu medio ambitus modice inflato, confertim costulato, tum valde constricto lævigatoque, in constrictione costa obtusa transversa instructo, rursusque expansiusculo atque paulo deflexo; apertura magna, obliqua, subrotundata, supra obtuse angulata, infra anguste canaliculata; peritremate modice incrassato, duplici, externo paulum expanso, labro interno plicatulo, labio sublævigato.

"Diam. maj. specim. maximi 3·5, minor 3, alt. 2·7 mm."

Hab. Burma: Nattoung, West Prome (*Theobald*); Pegu (*Kurz*).

"The peculiarly formed aperture with the lower canal and its internal plication on the outer lip readily distinguish this species from *A. polygona*, which besides differs by more rounded and higher whorls." (*Theobald & Stoliczka.*)

383. **Alycæus lectus**, *Godwin-Austen.*

Alycæus, n. sp., Nevill, Hand List, i, 1878, p. 294, no. 48.
Alycæus lectus, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 340, pl. 136, figs. 5, 5 *a*, 5 *b*.

Original description:—"Shell conoid, rather solid; sculpture very much obliterated, fine distant costulation, some fine and close behind the sutural tube, which is rather short, 0·09 mm.; colour (an old shell, much worn); spire depressedly conic, apex blunt; suture impressed; whorls 4, increasing regularly, constriction very narrow, the last swelling very slightly, and distance to the aperture very short, only 1 mm., angulate below next the umbilical region; aperture circular, oblique; peristome double, thickened.

"Major diam. 3·3; alt. axis 1·8 mm." (*Godwin-Austen.*)

Hab. India: Chaukkalan, near Darjeeling (*Stoliczka*).

Allied to *A. lenticulus*, but has distinctive characters.

384. **Alycæus lenticulus**, *Godwin-Austen.*

Alycæus, n. sp., Nevill, Hand List, i, 1878, p. 294, nos. 48, 49.
Alycæus lenticulus, Godwin-Austen, J. A. S. B. xliii, part 2, 1874, p. 147; id., Land & Freshw. Moll. India, ii, 1914, p. 340, pl. 136, figs. 2, 2 *a*, 4, 4 *a*, 4 *b*.

Original description:—"Shell conoid, moderately umbilicated globosely conoid; sculpture not well seen, fine costulation near sutural tube, which is rather short, only 0·075 mm. long; colour bleached; spire conic, rather high, apex blunt; suture rather shallow; whorls 4, very evenly increasing, the constriction slight, short, then swelling gradually towards the aperture; aperture very oblique, ovate, straight on outer margin, rounded on the columellar side, angular above; peristome double, very slightly thickened.

"Major diam. 3·4; alt. axis 1·4 mm."

Hab. India: Darjeeling (*Stoliczka*); Rungun Valley, Sikhim (*Stoliczka, Mainwaring*); Rissom Peak, Western Bhutan Hills.

" It is very similar to *A. theobaldi*, Bs., from the Khasi Hills, but is smaller with a more expanded aperture; peristome less thickened, and the sculpture appears to have been very fine.

"No. 49 of Nevill's Hand List, p. 294, I consider *A. lenticulus*, three are adult shells, of which I figure one (pl. 136,

figs. 4–4 *b*), as the type specimen is certainly not fully grown. This specimen is more globose, the peristome much thickened, and shows fine close costulation contiguous to the sutural tube." (*Godwin-Austen.*)

385. **Alycæus multirugosus**, *Godwin-Austen.*

Alycæus multirugosus, Godwin-Austen, J. A. S. B. xliii, part 2, 1874, p. 149, pl. 3, figs. 7, 7 *a*; Theobald, Cat. Shells Brit. India, 1876, p. 40; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 395, pl. 144, figs. 7, 7 *a*.

Alycaeus (*Charax*) *multirugosus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 129; id., Cat. Pneum. 1899, p. 49.

Alycaeus (*Dicharax*) *multirugosus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 373.

Original description:— "Shell depressedly turbinate, rather openly umbilicated, translucent, pale corneous, smooth glistening surface, very minute ribbing near sutural tube. Spire flatly conoid; whorls 4, flat, the last very little swollen, constricted and enlarged again towards the aperture into a zigzag-shaped ridge or what might be described as three parallel and connected ridges. Sutural tube short. Aperture oblique, circular; peristome double, both continuous and the outer slightly reflected. Operculum ?

"Major diam. 0·12″ [3 mm.], minor diam. 0·08″ [2 mm.]; alt. 0·08″ [2 mm.]; sutural tube 0·037″ [0·9 mm.]."

Hab. India: Hills at head of Lanier River, Naga Hills, 5–6000 ft. (*Godwin-Austen*).

"A close ally of *A. khasiacus*, mihi, but a much smaller shell; the many ridged area near constriction, however, is a wide departure from that form." (*Godwin-Austen.*)

386. **Alycæus mutatus**, *Godwin-Austen.*

Alycæus mutatus, Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 177, pl. 7, figs. 11, 11 *a*; Nevill, Hand List, i, 1878, p. 291; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 357, pl. 145, figs. 9, 9 *a*; pl. 157, fig. 8.

Alycæus khasiacus (1876 not 1871), Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 175 + var. Dafla.

Alycaeus (*Dicharax*) *mutatus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 373.

Original description:—"Shell subturbinately depressed, openly umbilicated, fragile, covered with a scabrous dull ochreous epidermis, which peels off in old shells, very regularly and strongly striated throughout, the ribbing on the last whorl very fine. Spire subconoid, apex rather blunt, suture deeply impressed. Whorls 4, rounded, the last swollen, moderately constricted, then again expanded and crossed by two ridges, the last of these not extending all round the whorl. The constriction very regularly ribbed. Sutural tube short, thickened at the base. Aperture oblique, circular. Peristome double, but closely united, very

slightly reflected. Operculum multispiral, the edges of the outer whorls in high relief so as to form a deep cup-like hollow in the centre.

"Alt. 0·10 [2·5 mm.], major diam. 0·20 [5 mm.], sutural tube 0·055 in. [1·375 mm.]."

Hab. India: Toruputu, Tanir, Shengohr Peaks; Yetay Ravine, Dikrang Valley, 6–7000 ft.; Valley of the Dikrang and Borpani, Dafla Hills (*Godwin-Austen*).

"This shell is an interesting ally of *A. khasiacus*, from which it differs in its thick, well-ribbed epidermis, but more especially in the very different form of the operculum, which in *khasiacus* is quite smooth and concave in front. It is also a smaller and more delicately formed shell." (*Godwin-Austen.*)

387 **Alycæus neglectus**, *Godwin-Austen.*

Alycæus neglectus, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 358, pl. 154, fig. 5.

Original description:—"Shell globosely pyramidal, openly umbilicated, remains of a dark epidermis; sculpture on upper whorls, fine, irregular, rather close, raised striæ, becoming finely costulate for the length of the sutural tube; colour whitish, probably pale brown when younger; spire fairly high, apex small; suture impressed, the tube moderately long; whorls 4, well rounded, the last slightly constricted then swelling into a straight ridge halfway between the costulate portion and the aperture; aperture oval, oblique; peristome simple, straight, yet curving slightly on the columellar side, rather flat below, curving up on the outer margin; operculum black, smooth.

"Major diam. 5·25; alt. axis 3 mm."

Hab. India: Toruputu Peak, Dafla Hills (*Godwin-Austen*).

"In form quite distinct from *A. theobaldi* of the Khasi Hills." (*Godwin-Austen.*)

388. **Alycæus nongtunensis**, *Godwin-Austen.*

Alycæus nongtunensis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 378, pl. 138, figs. 5, 5 *a*.

Original description:—"Shell globosely and tumidly turbinate, closely umbilicated, glassy lustre; sculpture: the costulation is confined to a narrow belt near the sutural tube, a slight indication of distant costulation on the first whorl in front; colour pale burnt sienna; spire low, conic, sides very slightly convex; suture impressed, sutural tube short; whorls 4, well rounded, the last only slightly constricted, and spreads forwards from the sutural tube for a considerable distance, with a smooth rounded surface; aperture circular, a slight angulation above; peristome double, continuous, the inner expanded; columellar margin rounded.

"Major diam. 2·8; alt. axis 1·25 mm." (*Godwin-Austen.*)

Hab. India: Nongtung, Jaintia Hills (*Godwin-Austen*).

389. **Alycæus notatus**, *Godwin-Austen.*

Alycæus notatus, Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 176, pl. 7, figs. 9, 9 *a*, 9 *b*; Nevill, Hand List, i, 1878, p. 291; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 191, pl. 43, figs. 2, 2 *a*, 2 *b*; id., op. cit. ii, 1914, p. 358, pl. 145, figs. 8, 8 *a*.

Alycaeus (*Charax*) *notatus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 129; id., Cat. Pneum. 1899, p. 49.

Alycaeus (*Dicharax*) *notatus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 374.

Original description:—"Shell globosely turbinate, narrowly umbilicated, of solid form, white; distant strong costulation on the upper whorls, close and fine ribbing on swollen portion of the last. Spire conoid, suture fairly impressed. Whorls $4\frac{1}{2}$, closely wound, the last swollen, then sharply constricted, and again enlarged and descending, the expanded portion being marked with deep fold-like furrows. Sutural tube moderate, aperture oblique. Peristome very thick, distinctly treble in full-grown shells, outer layer terminating just behind the aperture, the inner continuous, the two outer much reflected near the umbilicus. Operculum smooth in front.

"Alt. 0·14 [3·5 mm.], major diam. 0·17 in. [4·25 mm.]."

Hab. India: on the slopes of Toruputu Peak, 3000 ft.; Dafla Hills; Naga Hills (*Godwin-Austen*).

"This is one of the most distinct and curious I have yet discovered, the fold-like indentations upon the expanded portion near the aperture having no counterpart in any other form with which I am acquainted. In other respects it is somewhat similar to *A. diagonius*, in the strong thick peristome and closely wound whorls." (*Godwin-Austen.*)

390. **Alycæus notus**, *Godwin-Austen.*

Alycæus notus, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 411, pl. 155, fig. 12.

Original description:—"Shell umbilicated, depressedly conoid, rather solid; sculpture on upper whorls fine very close costulation, becoming more distant as the end of the sutural tube is reached, it is then particularly fine and close, smooth behind aperture; colour stony white, some having a pink apex; spire low, apex blunt; suture impressed, the sutural tube rather short; whorls 4, rounded, constriction slight near base of sutural tube, then swelling very slightly forward to the peristome; aperture ovately circular; peristome double, thick, inner continuous, plain, outer reflected; operculum closely spiral, brown.

"Major diam. 3; alt. axis 1·5 mm." (*Godwin-Austen.*)

Hab. Burma: Fort Stedman (*Woodthorpe*).

Like *armillatus*, but much larger.

391. **Alycæus obscurus**, *Godwin-Austen.*

Alycæus obscurus, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 378, pl. 154, figs. 9, 9 *a*.

Original description:—"Shell umbilicated, globosely conical; sculpture, fine somewhat distant costulation on the upper whorls, next the sutural tube becoming much stronger and closer; colour whitish; spire conic, sides flat, apex small; suture impressed; whorls $4\frac{1}{2}$, the last sharply constricted close to the sutural tube, then swelling into a sharply curving ridge and expanding forwards to the aperture, about halfway a well-defined narrow ridge extends across the whorl from side to side; aperture oblique, widely ovate, expanding; peristome double, the outer much expanded on the inner lower margin, the inner shows crenulation extending backwards internally, the two combined are vertical on the columellar margin.

"Major diam. 4; alt. axis 2 mm."

Hab. India: Cherra Poonjee, Assam.

"This was among some unnamed Alycæi from Cherra Poonjee and Teria Ghat, kindly sent to me by Mr. John Ponsonby. I have nothing like it in my own collection from those places and I have reason to think the locality correct. It has several well-marked characters." (*Godwin-Austen.*)

392. **Alycæus ochraceus**, *Godwin-Austen.*

Alycæus ochraceus, Godwin-Austen, Proc. Zool. Soc. 1893, p. 594; id., Land & Freshw. Moll. India, ii, 1897, p. 3, pl. 63, figs. 7, 7 *a*, 7 *b*; id., op. cit. ii, 1914, p. 411.

Alycaeus (*Charax*) *ochraceus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 129; id., Cat. Pneum. 1899, p. 49.

Alycaeus (*Dicharax*) *ochraceus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 374.

Original description:—"Shell sub-depressedly turbinate; sculpture: rather strong ribbing on the swollen part of the last whorl, on the apical whorls it is close and fine; colour ochre; spire somewhat flattened, apex blunt; suture deep; whorls 4, the last moderately swollen; sharp constriction in front of sutural tube, followed by a strong ridge which is contiguous to the crenulate peristome; aperture circular, suboblique; peristome strongly crenulated, double; operculum horny, a large central excavated circular space, surrounded by a pale ring, rising above to the marginal portion.

"Major diam. 4·5; alt. axis 1·5 mm."

Hab. Burma: Ruby Mines District (*Doherty*).

"The nearest known species allied to this is *A. crenatus*, of the Khasi Hills, but the ridge behind the aperture in this last lies further back with a short interval; the peristome is not so strongly crenulate. *A. plectocheilus* of Darjiling is a much smaller form." (*Godwin-Austen.*)

393. **Alycæus pachitaensis,** *Godwin-Austen.*

Alycæus pachitaensis, Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 190, pl. 48, figs. 5–5 *c*; ii, 1914, p. 359.
Alycaeus (*Charax*) *pachitaensis,* Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 129; id., Cat. Pneum. 1899, p. 49.
Alycaeus (*Dicharax*) *pachitaensis,* Kobelt, Das Tierreich, Lief. 16, 1902, p. 374.

Original description:—"Shell depressedly turbinate, openly umbilicated, small; sculpture: apical whorls quite smooth, some distinct distant costulation on the posterior side of the last whorl, succeeded by very fine and close on the swollen portion of the same; colour dull whitish ochre; spire subconoid, apex blunt; suture impressed, the tube short; whorls 4, the last swollen, the constriction close to the sutural tube, slightly enlarging again midway between it and the peristome, and this portion quite smooth; aperture oblique, ovate, angular above and below; peristome double, thickened, with a well-defined notch below, columellar margin concave; operculum multispiral, horny, brown.

"Major diam. 3·2, alt. axis 2·6 mm."

Hab. India: Pachita Village (Camp No. 7 of the Expeditionary Force, 1874–75), Dafla Hills, Assam (*Godwin-Austen*).

"This shell finds its nearest ally in *A. gemmula,* Bs., of the Darjiling side, but the distinct ridge next the constriction is reduced to a mere even swelling of the whorl, and the peristome and form of aperture differ; it is also larger." (*Godwin-Austen.*)

394. **Alycæus peilei,** *Preston.*

Alycæus (*Charax*) *peilei,* Preston, Proc. Malac. Soc. xi, 1914, p. 22, text-fig.
Alycæus peilei, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 397.

Original description:—"Shell irregularly discoidal, moderately depressed, white; whorls 4, the last gibbous, thin, strongly strangulated, and again becoming gibbous just behind the labrum, sculptured with fine, somewhat distant, transverse, arcuate striæ, which become closely crowded on the last whorl; suture rather deeply impressed; tube about 3 mm. in length; umbilicus rather widely ovate, deep; columella obliquely curved; labrum continuous, double above, treble below, erect, sinuous, having two notches, one broad in front, the other narrower above; aperture irregularly sub-circular.

"Alt. 4, diam. maj. 6·5, min. 5·5 mm. Aperture: alt. 1·5, diam. 1·75 mm." (*Preston.*)

Hab. India: Naga Hills.

395. **Alycæus plectochilus,** *Benson.*

Alycæus plectocheilus, Benson, A.M.N.H. ser. 3, iii, 1859, p. 180; Pfeiffer, Mon. Suppl. 2, 1865, p. 53; Hanley & Theobald,

Conch. Ind. 1874, pl. 96, figs. 5, 6; Theobald, Cat. Shells Brit. India, 1876, p. 40; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 2, figs. 14 *a*, 14 *b*; Nevill, Hand List, i, 1878, p. 294; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 342, pl. 134, figs. 4–4 *c*; large var. ibid. p. 343, pl. 133, figs. 3–3 *c*.

Alycæus (*Charax*) *plectocheilus*, Benson, op. cit. p. 177.

Alycaeus (*Charax*) *plectochilus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 129; id., Cat. Pneum. 1899, p. 49.

Alycaeus (*Dicharax*) *plectochilus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 375.

Original description:—"Testa aperte umbilicata, depresso-turbinata, confertim striatula, striis nonnullis ad suturam elevatis, nitente, subpellucida, rufescenti-albida; spira brevi, depresso-conoidea, apice obtuso, sutura impressa; anfractibus 3½ convexis, ultimo rotundato, profunde constricto, tubulum mediocrem gerente, strictura crista angusta elevata, intus cavo-sulcata, peristoma expansum simulante, ab apertura separata; apertura vix obliqua, subcirculari, peristomate duplici, margine columellari leviter incrassato-reflexo, dextrali valde incrassato-porrecto, fortiter acutangulatim crispo-plicato, plicis quinque aperturam arctantibus, marginibus callo prominente angulato junctis. Operc. —— ?

"Diam. major 2½, minor 2, axis vix 2 mill."

Hab. India: Rungun Valley; Darjeeling (*Blanford*, *Mainwaring*); Damsang Peak, Western Bhutan, large var.

"The dimensions given are those of the largest of four specimens. The strenuously vandyked plication of the incrassate edges of the porrect dextral side of the peristome is a remarkable feature in this minute species. It recalls the curious frill in *Pterocyclos bilabiatus*, Sow., but in a more exaggerated guise, notwithstanding the smallness of the shell. The edges of the folds are thickened and slightly reflected. Its smaller size, sculpture, and wider umbilicus, and, above all, the mode of constriction, prove that it is not an exaggerated form of *crenulatus*. The deceptive appearance of the ridge or crest at first induced me to class the shell with *Dioryx*; but a closer investigation of the mode in which the ridge was attached to the true peristome, and a view of the internal sulcus, revealed the true position of the species." (*Benson.*)

"The operculum of this specimen [large var.] is multispiral, smooth and black." (*Godwin-Austen.*)

396. **Alycæus polygonoma**, *Blanford.*

Alycæus polygonoma, Blanford, J. A. S. B. xxxi, 1862, p. 140; id., op. cit. xxxiv, 1865, p. 99; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 51; Hanley & Theobald, Conch. Ind. 1874, pl. 96, figs. 2, 3; Theobald, Cat. Shells Brit. India, 1876, p. 40; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 2, fig. 11 (*polygonus*); Nevill, Hand List, i, 1878, p. 293; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 423, pl. 141, fig. 5.

Alycaeus (*Charax*) *polygonoma*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 129; id., Cat. Pneum. 1899, p. 49.

Alycaeus (Dicharax) polygonoma, Kobelt, Das Tierreich, Lief. 16, 1902, p. 375.

Original description:—"Testa aperte et perspective umbilicata, turbinata, radiato-striata, rubello-succinea. Spira conica, apice obtusula, sutura profunda. Anfr. 4 rotundati, ultimus ad latus valde inflatus, ibidem confertissime et acute costulatus; spatium constrictum longitudinis mediocris, costulato-striatum, medio in costam prominentem, intus cavo-sulcatam, 2 vel 3 costulis signatam, tumescens. Tubulum suturale mediocre, $\frac{1}{4}$ peripheriæ subsæquans. Apertura obliqua, polygonali-circularis, basi valde antice sinuata; peristoma duplex; interno vix porrecto, margine dextro ter subangulato, basi subcanaliculato; externo incrassato-expansulo, processu brevi, acuto, basali munito.

"Diam. maj. 5, min. $4\frac{1}{4}$, alt. $3\frac{1}{2}$; ap. diam. $1\frac{3}{4}$ mm."

Hab. Burma: Arakan Hills (*Ingram*); Mai-i, Sandoway District (*Theobald*); Bassein (*Blanford*); Shoukbeng, on the Prome and Tongoop road (*Blanford*).

"This species is allied to the last described [*A. succineus*] but is distinguished by its higher spire, less marked sculpture, by the strong ridge on the constriction, and by the more polygonal aperture. The incision of the base, however, is slighter, and, in this species, accompanied by a slight corresponding projection beneath, which represents, on a small scale, the large ear-like basal process in *A. prosectus*, Bens., from the Khasi Hills. The inner peristome of that species also has a slight basal indentation within the aperture." (*Blanford.*)

397. Alycæus prosectus, *Benson.*

Alycæus prosectus, Benson, A. M. N. H. ser. 2, xix, 1857, p. 203; Theobald, J. A. S. B. xxvii, 1858, p. 318; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 36; id., Novit. Conch. ser. 1, i, 1860, p. 128, pl. 35, figs. 21–23; Godwin-Austen, J. A. S. B. xl, part 2, 1871, p. 93, pl. 5, figs. 1, 1 *a*; Hanley & Theobald, Conch. Ind. 1874, pl. 92, figs. 2, 3; Theobald, Cat. Shells Brit. India, 1876, p. 40; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 6. fig. 49; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 380, pl. 143, figs. 1, 1 *a*, 1 *b*.

Alycaeus (Charax) prosectus, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 129; id., Cat. Pneum. 1899, p. 49.

Alycaeus (Dicharax) prosectus, Kobelt, Das Tierreich, Lief. 16, 1902, p. 375.

Alycæus prosectus, var., Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 381.

Original description:—"Testa mediocriter umbilicata, subcampanulato-depressa, subremote striatula, striis elevatis spiralibus remotiusculis cincta, ad spatium inflatum anfractus ultimi confertissime et acutissime costulata, albida, versus apicem mucronatum rubella; spira brevi, sutura profunda; anfractibus 4 convexis, subapicali exserto, ultimo ad latus pone stricturam valde gibboso,

tubulum suturalem mediocrem gerente, antice læviori; apertura valde obliqua, circulari; peristomate simplici vel duplici, interiori duplicis expansiusculo, exteriori dilatato, superne ad angulum et ad basin alato-producto, margine columellari angusto. Operculo concavo, lævi, multispirato.

"Diam. major 7, minor 6, axis 5 mill."

Hab. India: Teria Ghat, Khasi Hills (*Theobald*); extending west to Habiang, Garo Hills, and east to South Jaintia (*Godwin-Austen*).

"It is related to the Burmese *A. umbonalis* and to *A. strangulatus*, Hutton. Inferior in size to the former, it is easily distinguished by its sculpture and by the peculiar development of the outer lip at its insertion and base, while the narrow columellar lip gives an appearance of artificial truncation to the peristome at that part. In the variety the internal lip is not developed. The margins of the whorls in the operculum are not conspicuously raised as in *A. umbonalis*." (*Benson.*)

Godwin-Austen records a variety—unnamed—from Cherra Poonjee, in the Ponsonby collection, which is smaller than the usual typical form, and though quite similar in shape, shows a decided tendency to crenulation on the outer margin of the peristome; a similar tendency he observed in other species.

Some specimens from Teria Ghat he noted being as much as 8 mm. in major diameter, varying much in size even from this locality, fully-grown specimens being only 6 mm. From some places all are small; G. Nevill distinguished them as var. *minor*.

From Rywuk, at the foot of the Garo Hills, he found the form to differ considerably in having a tendency to a crenulate peristome.

398. **Alycæus rechilaensis**, *Godwin-Austen.*

Alycæus rechilaensis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 343, pl. 134, figs. 2, 2 *a*.

Original description:—"Shell very openly umbilicated, depressedly conoid, covered with a strong epidermis; sculpture: costulation strong, very close and regular on upper whorls, still more so next sutural tube, where 21 ribs can be counted, the tube is rather short; colour ochraceous with a green tinge; spire low, apex small; suture well impressed; whorls 4, tumid, sides rounded, the distance from the constriction to the aperture is not great, and is crossed just behind it by a well-defined ridge of regular breadth; aperture circular, obtusely angulate on upper inner margin; peristome simple, double, not reflected; operculum black, multispiral, concave, whorls rough and raised above each other.

"Major diam. 5; alt. axis 2·75 mm." (*Godwin-Austen.*)

Hab. India: Rechila Peak, Daling District, on Sikhim-Bhutan Frontier, 10,300 ft.

399. **Alycæus richthofeni**, *Blanford.*

Alycæus richthofeni, Blanford, J. A. S. B. xxxii, 1863, p. 324; Hanley & Theobald, Conch. Ind. 1874, pl. 94, figs. 5, 6; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 62; Theobald, Cat. Shells Brit. India, 1876, p. 40; Sowerby, in Reeve, Conch. Icon. xx, 1876, *Alycæus*, pl. 3, figs. 23 *a*, 23 *b*; Nevill, Hand List, i, 1878, p. 293; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 428, pl. 151, fig. 9.

Alycaeus (*Charax*) *richthofeni*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 129; id., Cat. Pneum. 1899, p. 49.

Alycaeus (*Dicharax*) *richthofeni*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 376.

Original description:—"Shell umbilicated, turbinate, rather solid, closely flexuously costulated, more strongly so on the inflated portion. Spire conical; apex rather acute; suture impressed. Whorls 5, rounded, the last moderately swollen at the side, and subangulate at the periphery, and more strongly so round the umbilicus, then much contracted, ascending slightly at the inflation, descending considerably behind the aperture. Constriction slightly costulated, crossed by a very prominent vertical ridge. Sutural tube of moderate length, about $2\frac{1}{2}$ mm. Aperture circular, very oblique. Peristome continuous, double, the inner lip projecting slightly, and waved three times on the dextral side. Outer lip broadly and flatly expanded. Operc.?

"Major diam. 5, minor ditto 4, alt. 4; diam. ap. $1\frac{1}{2}$ mm."

Hab. Burma: Moulmain (*Richthofen*).

"The species is quite distinct in type from any Indian or Burmese form with which I am acquainted; it combines a high conical spire with a strong ridge on the constriction, but it recalls somewhat the Javanese *A. jagori*, Martens." (*Blanford.*)

400. **Alycæus rugosus**, *Godwin-Austen.*

Alycæus rugosus, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 359, pl. 141, figs. 7, 7 *a*.

Original description:—"Shell globosely conical, umbilicus much constricted; sculpture: well defined, close costulation next the suture, becoming for a short distance behind finer and then at once becoming strong and distant on the upper whorls; colour whitish; spire high, conical; suture well impressed, the sutural tube not very long; whorls 5, well rounded, the last crossed by a single strong ridge between the constriction and the aperture; aperture angularly oval, oblique; peristome much crenulated, on the outer and lower margins double; columellar margin suboblique, curving.

"Major diam. 3, alt. axis 1·8 mm."

Hab. India: Burroi Gorge, Dafla Hills (*Godwin-Austen*).

"I have compared this species with *Alycæus crispatus* from the Western Khasi, Garo Frontier, and with *crispatus*, var. from the Diyung Valley, near Asalu (*vide* plate iv, figs. 1 & 2, J. A. S. B. vol. xl, 1871), and although a close ally, it differs considerably from both, being much more conical, and with a different constricted area." (*Godwin-Austen.*)

401. **Alycæus strangulatus**, *Pfeiffer.*

Cyclostoma strangulatum (Hutton), Pfeiffer, Zeits. Malak. iii, 1846, p. 86; id., Conch.-Cab., Cyclostomaceen, 1846, p. 104, pl. 17, figs. 7, 8; pl. 38, fig. 35.

Alycæus strangulatus, Gray, Nomencl. Brit. Mus. i, 1850, p. 28; Pfeiffer, Zeits. Malak. viii, 1851, p. 147; id., Cat. Phaneropn. Brit. Mus. 1852, p. 84; id., Mon. Pneum. 1852, p. 120; Adams, Gen. Rec. Moll. ii, 1855, p. 278; Blanford, A. M. N. H. ser. 3, xiii, 1864, p. 458; Hanley & Theobald, Conch. Ind. 1874, pl. 93, figs. 2, 3; Theobald, Cat. Shells Brit. India, 1876, p. 40; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 6, fig. 47; Nevill, Hand List, i, 1878, p. 290; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 337, pl. 136, figs. 1, 1 *a*.

Alycæus (*Charax*) *strangulatus*, Benson, A. M. N. H. ser. 3, iii, 1859, p. 177; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 129; id., Cat. Pneum. 1899, p. 49.

Alycaeus (*Dicharax*) *strangulatus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 376.

Original description:—"T. late umbilicata, depressa, subdiscoidea, tenuis, subtilissime costulato-striata, corneo-hyalina; spira vix elevata, obtusiuscula; anfr. 4 convexi, ultimus latera inflatus, prope aperturam strangulatus, antice angustatus; apertura obliqua, circularis; perist. simplex, album, subincrassato-expansiusculum, marginibus approximatis, callo junctis.—Operc. membranaceum, multispirum.

"Diam. $4\frac{1}{2}$, alt. $2\frac{2}{3}$ mill." (*Pfeiffer.*)

Hab. India: Simla (*Stolickza*); Naini Tal (*Oldham*); Landour (*Hutton*); Mussoorie, Kumaon (*Godwin-Austen*).

Kobelt in 'Das Tierreich' indicates Borneo as the habitat of this species, evidently a lapsus.

In Kumaon specimens Godwin-Austen found the costulation finer all over, and not so defined and distant near the sutural tube, the general form of the tube the same, the swelling near the constriction higher. Naini Tal specimens were of a similar character.

402. **Alycæus stylifer**, *Benson.*

Alycæus stylifer, Benson, A. M. N. H. ser. 2, xix, 1857, p. 204; Theobald, J. A. S. B. xxvii, 1858, p. 322; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 37; id., Novit. Conch. ser. 1, i, 1860, p. 128, pl. 35, figs. 24–27; Hanley & Theobald, Conch. Ind. 1874, pl. 92, figs. 1, 4; Theobald, Cat. Shells Brit. India, 1876, p. 40; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 6, fig. 46; Nevill, Hand List, i, 1878, p. 294; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 344, pl. 133, figs. 2–2 *c*.

Alycæus (*Charax*) *stylifer*, Benson, A. M. N. H. ser. 3, iii, 1859, p. 177; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 129; id., Cat. Pneum. p. 49.
Alycaeus (*Dicharax*) *stylifer*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 376.

Original description:—"Testa umbilicata, depressa, confertim striatula, ad spatium inflatum confertissime acute costulata, nitente, albida; spira brevi, mucronata, apice obtusulo, sutura profunda; anfractibus 4 convexis, ultimo pone stricturam gibbo,

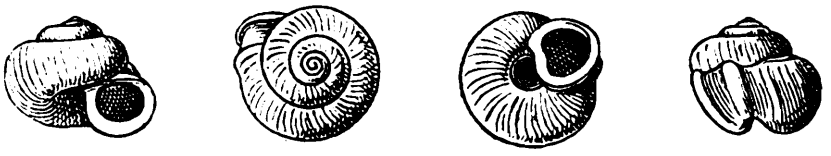


Fig. 35.—*Alycæus stylifer*. (× 2.)

tubulum mediocrem gerente, medio stricturæ costam prominentem (intus concavam) exhibente; apertura obliqua, subcirculari, irregulari, sinuata; peristomate simplici, incrassato-reflexo. Operc. ——?

"Diam. major $5\frac{1}{2}$, minor $4\frac{2}{3}$, axis $3\frac{1}{2}$ mill."

Hab. Sikhim: Darjeeling (*H. Blanford*). Damsang, Daling District, W Bhutan (*Godwin-Austen*).

"The rib behind the outer lip corresponds with a deep sulcus within the aperture. . The single specimen from which the above description was made is a dead and discoloured shell." (*Benson.*)

Godwin-Austen found the Darjeeling form the larger, with the sutural tube longer and the costulation next to it far coarser. The Damsang specimen measures: major diam. 5, alt. axis 2·5 mm..

The specimen now figured is in the British Museum.

403. **Alycæus subculmen**, *Godwin-Austen*.

Alycæus subculmen, Godwin-Austen, Proc. Zool. Soc. 1893, p. 593; id., Land & Freshw. Moll. India, ii, 1897, p. 4, pl. 63, figs. 4, 4 *a*; 1914, p. 398.
Alycaeus (*Charax*) *subculmen*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 129; id., Cat. Pneum. 1899, p. 49.
Alycaeus (*Dicharax*) *subculmen*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 377.

Original description:—"Shell globosely turbinate, solid, closely perforate; sculpture: smooth on all the upper whorls and polished, close-set ribbing on the swell of the last whorl; colour dark ochraceous; spire conical, apex rounded, blunt; suture impressed; whorls 4, round, the last swollen, contracted at base of a short sutural tube, then rising into a depressed ridge; thence expanding and spreading to the aperture; aperture circular, subvertical; peristome double, much thickened, simple, continuous.

"Major diam. 2·75; alt. axis 1·5 mm."

Hab. India: Naga Hills (*Aldrich*).

Fig. 1.

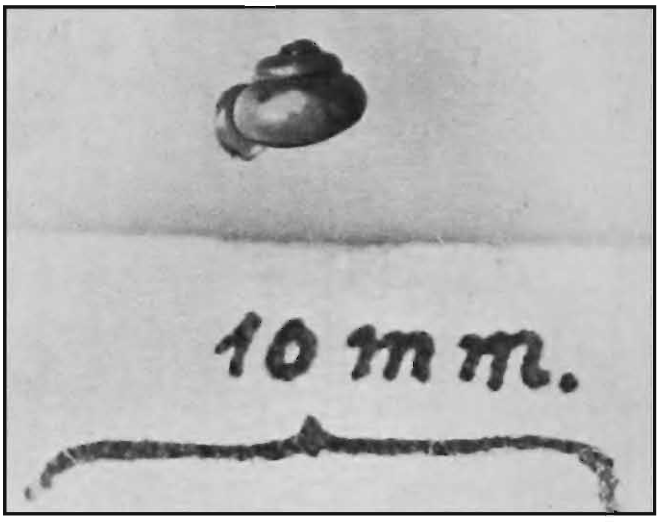
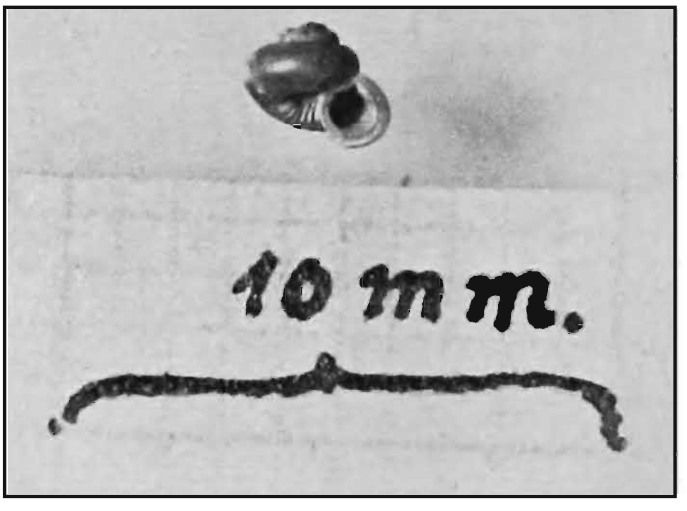


Fig. 2.



Alycaeus subhumilis.

"This is a very distinct species; in the solid, rounded peristome it approaches *A. conicus* from Jaintia and *A. vestitus* from the Arakan Hills." (*Godwin-Austen.*)

404. **Alycæus subhumilis**, *Möllendorff.*

Alycaeus (*Charax*) *subhumilis* (Nevill), Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 41; Kobelt & Möllendorff, op. cit. xxx, 1898, p. 129; id., Cat. Pneum. 1899, p. 49.

Alycaeus (*Dicharax*) *subhumilis*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 377.

Alycæus subhumilis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 344.

Original description:—"T. anguste umbilicata, depresso-globosa, solidula, subpellucida, subtiliter striatula, costulis valde distantibus deciduis sculpta. Spira convexo-conoidea, sursum rubella. Anfr. 4 convexi, ultimus a medio tumidus, basi gibbus, tum valde constrictus, post stricturam crista valde elevata, cinctus. Apertura modice obliqua, subcircularis, peristoma extus sat expansum, valde incrassatum, quasi multiplicatum, intus porrectum, vix expansum, ad insertionem et basi sinuatum, sat excisum.

"Diam. 2·8, alt. 2·2 mm." (*Möllendorff.*)

Hab. India: Darjeeling (*Hungerford*).

Specimens from Cachar? (Stoliczka) sent to Godwin-Austen as *A. subhumilis* were determined by the latter to be his *A. nongtungensis.*

405. **Alycæus succineus**, *Blanford.*

Alycæus succineus, Blanford, J. A. S. B. xxxi, 1862, p. 139; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 50; Blanford, J. A. S. B. xxxiv, 1865, p. 99; Hanley & Theobald, Conch. Ind. 1874, pl. 96, figs. 7, 10; Theobald, Cat. Shells Brit. India, 1876, p. 40; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 2, fig. 16; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 424, pl. 151, fig. 2.

Alycaeus (*Charax*) *succineus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 129; id., Cat. Pneum. 1899, p. 49.

Alycaeus (*Dicharax*) *succineus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 377.

Original description:—"Testa aperte umbilicata, depresso-turbinata, acute sinuato-costulata, succinea, translucens. Spira conoidea, apice obtusula, sutura impressa. Anfr. 4, ultimus ad latus inflatus, ibidem confertissime costulatus. Strictura longa, medio tumida, et duobus vel tribus costulis obliquis, sulculis internis correspondentibus, signata. Tubulum suturale mediocre, $\frac{1}{4}$ peripheriæ subæquans. Apertura obliqua, irregulariter circularis, superne subangulata: peristoma duplex; interno continuo, incrassato, expansulo, margine dextro bis obtuse angulato, ad basin canaliculo haud intrante perforato; externo breviter expanso, retro relicto.

"Diam. maj. 5, min. 4, alt. $3\frac{1}{4}$, ap. diam. $1\frac{1}{2}$ mm."

Hab. Burma: Moditoung, Arakan (*Blanford*).

"Some of the peculiarities of this species, such as the canaliculate base of the peristome, and the two or three small plaits on the constrictions are repeated in the next described [*A. polygonoma*]. The plaits or ridges just referred to, although they have corresponding internal hollows, are scarcely so prominent as those forming the sculpture of the upper portion of the shell. They are nearer to the mouth than to the rise of the sutural tube, and rest upon a tumidity which is scarcely sufficiently pronounced to enable the species to be assigned to the section *Charax* of Benson, although it exactly represents the well-marked ridge in the undermentioned species *A. polygonoma*. The sutural tube is, in one specimen, somewhat short of the typical length." (*Blanford.*)

406. **Alycæus teriaensis**, *Godwin-Austen.*

Alycæus teriaensis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 382, pl. 154, figs. 10, 10 *a*.

Original description:—"Shell rather closely umbilicated, globosely pyramidal; sculpture: surface smooth on the whole, distant fine costulation on the upper whorls, crossed by some 5 or 6 very distinct longitudinally fine lirate lines; strong costulation next the sutural tube; colour whitish; spire high; suture well impressed, sutural tube moderately long; whorls $4\frac{1}{2}$, sides very rounded; the distance from aperture to sutural tube short and constricted; aperture quite circular, suboblique; peristome double, broad and flat, and expanded on the outer margin, very narrow on the columellar side; operculum situated near the aperture, very dark brown, with a central circular hollow.

"Major diam. 3·9; alt. axis 2 mm."

Hab. India: Teria Ghat, foot of the Khasi Hills (*Godwin-Austen*).

"The longitudinal sculpture is a very distinguishing feature of this species. In form it is very similar to *A. inflatus* of the Naga Hills." (*Godwin-Austen.*)

407 **Alycæus theobaldi**, *Blanford.*

Alycæus theobaldi, Blanford, J. A. S. B. xxxi, 1862, p. 142; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 49; Godwin-Austen, J. A. S. B. xl, part 2, 1871, p. 93, pl. 4, figs. 4, 4 *a*, 4 *b*; Hanley & Theobald, Conch. Ind. 1874, pl. 97, figs. 2, 3; Theobald, Cat. Shells Brit. India, 1876, p. 40; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 5, fig. 44; Nevill, Hand List, i, 1878, p. 290; Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 382, pl. 145, figs. 4, 4 *a*.

Alycaeus (*Charax*) *theobaldi*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 129; id., Cat. Pneum. 1899, p. 49.

Alycaeus (*Dicharax*) *theobaldi*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 377.

Original description:—"Testa aperte umbilicata, conoideo-depressa, corneo-albida, translucens, costulis elevatis, sinuatis,

remotis ornata, inter costulas striatula. Spira depresso-conica, apice obtusula, sutura impressa. Anfractus $3\frac{1}{2}$ convexi, ultimus ad latus mediocriter tumidus, ibidem confertissime costulatus. Spatium constrictum longum, striatulum, medio tumidum. Tubulum suturale mediocre, $\frac{1}{4}$ peripheriæ subæquans. Apertura obliqua, expandens, circularis; peristoma ad anfractum penultimum breviter interruptum, marginibus callo junctis, duplex; externo expansulo, interno breviter porrecto. Operc. corneum, multispirum, externe perconcavum, nucleo centrali interno prominente papillari.

"Diam. maj. 4, min. $3\frac{1}{4}$, alt. $2\frac{1}{2}$, ap. diam. $1\frac{1}{4}$ mm."

Hab. India: Khasi Hills (*Theobald*).

"I received two specimens of this species from Mr. Theobald as *A. hebes*, Bens., of which they were supposed to be young shells. They, however, prove, on closer examination, to be fully grown and distinct, the slight swelling in the centre of the constriction contrasting strongly with the high recurved ridge in *A. hebes*. This alone would shew the present to be a different species, but it is also distinguished by its lower spire, narrower umbilicus, smaller size, and thinner and interrupted peristome, the last character not occurring in any other species of the genus. The well-marked distant costulation of the upper whorls of *A. theobaldi* is entirely wanting in *A. hebes*. The operculum of the latter does not appear to have been described. A single specimen in my possession is dark horny, indistinctly multispiral, extremely concave in front, and convex, almost conical, behind, and deficient in the central boss so prominent in most *Alycæi*.

"Although there is a swelling in the centre of the constriction in *A. theobaldi*, it does not amount to a marked ridge, such as characterizes the typical forms of the section *Charax* of Mr. Benson, e. g. *A. stylifer*, B. It is consequently not clear whether this species should be classed with the members of that section, or with those of the typical group. Several species indeed tend to connect these two subdivisions, which more recent discoveries have rendered less distinct than they appeared to be when first described." (*Blanford.*)

"This species is variable in size, retaining its principal characters. Thus from the North Khasi Scarp, near Maotherichan Trigonometrical Station, I obtained eight specimens far larger than those from Cherra Poonjee. Three of the largest measure 5 mm. in diameter as against 4 from the last named locality. It was found at Shillong and Jawai." (*Godwin-Austen.*)

Var. **solida**, *Godwin-Austen.*

Alycæus theobaldi, var. *solidus*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 383, pl. 155 fig. 10.

Original description:—"Shell depressedly and conoidly globose, openly umbilicated, solid; sculpture very distant, strong costulation above, next sutural tube, which is not very long—there are 23 ribs, nearly twice as strong as in typical *theobaldi*, which has

about 36, much closer together; colour pale ochraceous; spire low; suture impressed; whorls 4, rounded, constriction sharp, swelling slightly to the aperture, the distance being greater than in *A. theobaldi*; aperture nearly circular, angulate above, and much expanded; peristome double, inner continuous, outer much expanded but not reflected.

"Major diam. 3·5; alt. axis 1·6 mm."

Hab. India: Garo Hills (*Godwin-Austen*).

"Five of this pretty form are in the collection; although very close to *A. theobaldi*, it is easily distinguishable in its size, general form, and sculpture." (*Godwin-Austen.*)

Var. **diyungensis**, *Godwin-Austen.*

Alycæus theobaldi, var. *diyungensis*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 401, pl. 138, fig. 4.

Original description:—"Shell well umbilicated, depressedly turbinate; sculpture: rather strong, regular, close costulation extending just beyond the end of the suture, the rest of the shell smooth, finely striate, with very distant costulation; colour ochraceous, some with a green tint; spire conic, depressed; suture well impressed, the tube moderately long; whorls 4, rounded; aperture circular, slightly angulate above; peristome double, the outer, viewed from above, rather expanded; columellar margin rounded.

"Major diam. 4·2; alt. axis 2 mm."

Hab. Diyung Valley, north of Asalu, N. Cachar (*Godwin-Austen*).

"This Diyung Valley species is a departure from *A. theobaldi* of the Khasi Hills in having the apex less high and conical, the suture more impressed, the shell more openly umbilicated; costulation next suture stronger." (*Godwin-Austen.*)

408. **Alycæus toruputuensis**, *Godwin-Austen.*

Alycæus theobaldi, var., Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 175, pl. 7, fig. 10 (operculum); Nevill, Hand List, i, 1878, p. 290, no. 4.

Alycæus toruputuensis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 359, pl. 149, figs. 3, 3 *a*, 3 *b*; p. 351, pl. 145, fig. 10 (operculum).

Original description:—"Is of the same form as *A. theobaldi* from Cherra Poonjee and the Garo Hills, only that while the operculum in the latter is exceedingly closely wound, quite smooth in front, and black (and I have examined some dozens of shells), in the former the concentric whorls are wider apart, have a central circular hollow space, and are white. The ribbing of the swollen portion in the Dafla shell is exceedingly fine, and this, I note, is a common character, holding good almost without exception, of all the species in the Dafla Hills." (*Godwin-Austen*, 1876.)

"There is also a striking difference in the contraction of the whorl near the umbilicus." (*Godwin-Austen*, 1914.)

Hab. India: slopes of Toruputu Peak, Dafla Hills (*Godwin-Austen*).

409. **Alycæus woodthorpei**, *Godwin-Austen.*

Alycæus woodthorpei, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 414, pl. 155, fig. 14.

Original description:—"Shell openly umbilicated, globosely conoid; sculpture: oblique, sinuate costulation on upper whorls, rather strong and distant as it approaches the end of the sutural tube, it then becomes very fine and very close up to the constriction; colour pale sienna-brown; spire moderately high, apex small; suture well impressed; whorls 4, the constriction near the base of the sutural tube, thus enlarging into a narrow costulated ridge which is close behind the peristome; aperture oval, obtusely angulate above; peristome simple, double, thick; columellar margin curving vertically.

"Major diam. 4·3; alt. axis 2 mm."

Hab. Burma: Fort Stedman (*Woodthorpe*).

"The most distinguishing character of this shell is the extremely fine close regular costulation next the sutural tube, which, in most species of the genus, is strong and well defined; this character is met with again in species of the Abor Hills, such as *A. aborensis*, etc. This in conjunction with the fact that so large a proportion of the species in other genera inhabiting the Abor country are not found in Western Assam, is an indication of topographical connection between the Shan area and the Tsanspu drainage-system far back in geological time, closer, more direct, and unrestricted than now exists. There are grounds for thinking that the high snowy range at the head of the Irrawaddy, together with the well defined orographical feature the Assam Range to the west, may be a comparatively recent elevation compared to the main mass of the Eastern Himalayas." (*Godwin-Austen.*)

Subgenus **CYCLORYX**, *Godwin-Austen.*

Cycloryx, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 334.

TYPE, *Alycœus constrictus*, Benson.

Range. India.

"Shell perforate, ovately conoid, sculpture generally consisting of distant, fine, regular costulation on the upper whorls, stronger and closer on the short inflated portion of the last. Sutural tube extremely short, or as often clubbed or pear-shaped."

410. **Alycæus bembex**, *Benson.*

Alycæus bembex, Benson, A. M. N. H. ser. 3, iii, 1859, p. 178; Blanford, A. M. N. H. ser. 3, xiii, 1864, p. 458; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 46; Hanley & Theobald, Conch. Ind. 1874, pl. 95, figs. 2, 3; Theobald, Cat. Shells Brit. India, 1876, p. 39; Sowerby, in Reeve, Conch. Icon. xx, *Alycæus*, 1877, pl. 5, fig. 42; Nevill, Hand List, i, 1878, p. 294.

Alycæus (*Alycæus*) *bembex*, Benson, A. M. N. H. ser. 3, iii, 1859, p. 176; Kobelt, Das Tierreich, Lief. 16, 1902, p. 342.

Alycaeus (*Orthalycaeus*) *bembex*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 149; id., Cat. Pneum. 1899, p. 45.

Alycæus (*Cycloryx*) *bembex*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 346, pl. 147, figs. 1, 1 *a*.

Original description:—"Testa umbilicata, ovato-conica, lævigata, hic illic striatula, striis ventriculi confertis, ad umbilicum striatula, hyalina?; spira elevato-conica, sutura profunda, apice acutiusculo; anfractibus 5, valde convexis, ultimo compresso-rotundato, pone strictura modice tumido, tubulum suturalem brevissimum gerente, pone aperturam rursus tumidulo; apertura obliqua, subcirculari, peristomate simplici, tenui, undulato, expansiusculo, subreflexo, superne leviter emarginato. Operc. —— ?

"Diam. major 4, minor 3, axis 4, long. 5 mill."

Hab. India: Rungun Valley; Darjeeling (*Stoliczka*, *Mainwaring*, *Blanford*); Damsang, Daling District (*Godwin-Austen*).

"This is one of the most elevated in the spire among the known Himalayan *Alycæi*. The specimens sent are all weathered, but present no evidence of any considerable sculpture or colouring. The very short sutural tube is a character shared by *otiphorus* and *constrictus*; and altogether the shell is deficient in prominent features, although perfectly distinct from any of its allies, especially in its aperture (sinuous, and at its upper angle emarginate), its wider umbilicus, plainer sculpture, and more compressed whorls." (*Benson.*)

411. **Alycæus burrailensis**, *Godwin-Austen*.

Alycæus (*Cycloryx*) *burrailensis*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 403, pl. 147, figs. 6, 6 *a*.

Original description:—"Shell: perforation hidden, shell conoid; sculpture: very close, fine, and regular costulation; apex smooth; distant fine costulation between sutural tube and aperture; colour whitish, but often bright pale sienna, darker on the apex; spire high, conical, apex blunt; suture very impressed; whorls 4, strongly rounded; aperture circular; peristome double, slightly expanded on the outer margin, a slight flange covering the perforation; operculum pale ochraceous, multispiral, smooth, slightly concave.

"Major diam. 2·8; alt. axis 1·8 mm."

Hab. India: Japvo Peak, Naga Hills, 9890 ft. Munipur side of the Burrail Range, and Angaolua Peak (*Godwin-Austen*).

"Close to *A.* (*Cycloryx*) *mangutensis* of the Jaintia Hills, but differs in form of the spire, which is much broader and blunter than in that species. This species is about the same size as *A. granum*, from Margarita at foot of the Eastern Naga Hills, found there by the late Mr. W Doherty, is of more depressed form, it is much more openly umbilicate, and the close costulation coarser than in *granum*." (*Godwin-Austen.*)

412. **Alycæus burroiensis,** *Godwin-Austen.*

Alycæus burroiensis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 354, pl. 141, figs. 6, 6 *a*.

Original description:—"Shell globosely conical, umbilication narrow; sculpture next sutural tube, fine close costulation, stronger and distant on rest of the whorls, not defined on the apical; colour bleached; spire low; suture impressed, the tube short; whorls 4, the last between sutural tube and aperture crossed by two ridges, the anterior being small and indistinct; aperture quadrate, oblique; peristome double, narrow, roundly angulate on outer margin, canaliculate below; columellar margin nearly vertical.

"Major diam. 2·6; alt. axis 1·75 mm." (*Godwin-Austen.*)

Hab. India: Burroi Gorge, Dafla Hills (*Godwin-Austen*).

A globose form with a curious angulate aperture.

413. **Alycæus constrictus,** *Benson.*

Cyclostoma constrictum, Benson, A. M. N. H. ser. 2, viii, 1851, p. 188; x, 1852, p. 272; Pfeiffer, Conch.-Cab., Cyclostomaceen, 1854, p. 379, pl. 49, figs. 24, 25.

Alycæus constrictus, Pfeiffer, Zeits. Malak. viii, 1851, p. 147; id., Cat. Phaneropn. Brit. Mus. 1852, p. 85; id., Mon. Pneum. 1852, p. 120; Adams, Gen. Rec. Moll. ii, 1855, p. 278; Theobald, J. A. S. B. xxvii, 1858, p. 322; Benson, A. M. N. H. ser. 3, iii, 1859, p. 181, var. *minor*; Hanley & Theobald, Conch. Ind. 1874, pl. 95, figs. 1, 4; Theobald, Cat. Shells Brit. India, 1876, p. 39; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus,* pl. 5, fig. 41; Nevill, Hand List, i, 1878, p. 294.

Alycæus (*Alycæus*) *constrictus,* Benson, A. M. N. H. ser. 3, iii, 1859, p. 176; Kobelt, Das Tierreich, Lief. 16, 1902, p. 343.

Alycaeus (*Orthalycaeus*) *constrictus,* Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 149; id., Cat. Pneum. 1899, p. 45.

Alycæus (*Cycloryx*) *constrictus,* Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 347, pl. 147, figs. 4, 4 *a*; p. 348, pl. 154, figs. 1, 1 *a*.

Original description;—"Testa perforata, ovato-conica, glabra, costis angustis distantibus munita, translucente, albida vel rufula; spira elongato-conica, apice obtuso, sutura valde impressa; anfractibus 4 rotundatis, superioribus glabris, sequentibus remote costulatis, ultimo mox confertissime costulato-striata, pone aperturam strangulato, anticeque late constricto; apertura circulari, verticali, $\frac{3}{8}$ longitudinis æquante, peristomate undique reflexo; operculo testaceo, multispirato, sutura inconspicua.

"Diam. 2, alt. $3\frac{1}{2}$ mill."

Hab. Sikhim: Darjeeling (*Stoliczka, Mainwaring*).

"This shell has apparently an affinity with the Philippine *C. minus* of Sowerby, but differs in its more tapering form, smaller size, perforation, diverse sculpture, and in the strangulation of the last whorl behind the aperture, in which feature it exhibits an

approach to the more shortened *C. gibbum*, Fér., from Turon in Cochin China, and to the depressed *C. strangulatum*, Hutton, so abundant in the more western portion of the Himalayas." (*Benson.*)

Benson in 1859 described a var. *minor*, but Lieut.-Col. Godwin-Austen has shown * that the species varies considerably in size, and he concludes that "there is no reason why a variety should be constituted," a view in which I entirely concur.

414. **Alycæus costatus**, *Godwin-Austen.*

Alycæus graphicus var., Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 178 (part).

Alycæus (*Cyclory*) *costatus*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 360, pl. 154, figs. 2, 2 *a*.

Original description:—"Shell narrowly perforate, elongately conical; sculpture distant, well-raised costulation, continuous up to the aperture, about 7 costæ anterior to the short sutural tube; colour stony white, apex yellowy pink fading to ochraceous; spire high, sides flat, apex rather pointed; suture impressed; whorls 4, well rounded; aperture circular, vertical; peristome double, reflected.

"Major diam. 2·75; alt. axis 2 mm."

Hab. India: Dikrang Valley, Dafla Hills (*Godwin-Austen*).

" .. It is a close ally of *A.* (*Cycloryx*) *paucicostatus*, but is more elongate, spire not so pyramidal, and it is a smaller shell. It approaches specimens . . . received from the Indian Museum, Calcutta, as *constrictus*, var., but I consider them true *constrictus*. . . . This Dafla shell is of a different, more elongate shape, although the umbilical region is similar and perforate." (*Godwin-Austen.*)

415. **Alycæus difficilis**, *Godwin-Austen.*

Alycæus (*Cycloryx*) *difficilis*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 415, pl. 155, figs. 2, 2 *a*.

Original description:—"Shell ovately globose, perforation hidden; sculpture: distant well-marked costulation on the upper whorls, much finer next the sutural tube and a little closer, no costulation in front of it; colour white, neither specimen very fresh; spire moderately high; suture impressed, the tube very short and small; whorls 4, well rounded, the last slightly swollen in front of the sutural tube; aperture circular; peristome double, inner circular, continuous, the outer with a strong flange-like expansion on columellar margin, expanded and reflected on outer and upper margin.

"Major diam. 3·2; alt. axis 2·4 mm."

Hab. Burma: Shan Hills (*Fedden*).

"There is considerable similarity in this species with that of *A. thompsoni*, of Munipur, particularly in shape, but the Shan

* Land and Freshw. Moll. India, ii, 1914, p. 348.

Hills form is more compactly globose, and the costulation twice as strong, the reflection of the outer lip on the columellar side is not quite similar, and the costulation next sutural tube is altogether different." (*Godwin-Austen.*)

416. **Alycæus elegans**, *Godwin-Austen.*

Alycæus (*Cycloryx*) *elegans*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 361, pl. 147, fig. 9.

Original description:—"Shell elongately turbinate, perforate; sculpture very fine, close regular costulation; colour whitish with a burnt sienna tint; spire high, apex blunt; suture impressed; whorls $4\frac{1}{2}$, sides very convex; aperture circular; peristome double, not thickened, with a flange hiding the umbilicus.

"Major diam, 2·6; alt. axis 2 mm." (*Godwin-Austen.*)

Hab. India: Shengorh Peak, Dafla Hills (*Godwin-Austen*).

417. **Alycæus generosus**, *Godwin-Austen.*

Alycæus generosus, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 374, pl. 138, figs. 8, 8 *a*, 8 *b*.

Original description:—"Shell tumidly turbinate, umbilicus narrow, much hidden by last whorl; sculpture: only some 10 close costæ next the short suture, the rest of the shell smooth; colour pale ochraceous; spire conic, moderately high, sides flat; suture impressed, tube short; whorls 4, constriction close to sutural tube, at once followed by a ridge which slopes diagonally to the aperture, surface slightly irregular; aperture is nearly circular, subangulate at upper outer margin; peristome double, simple; columellar margin well rounded.

"Major diam. 3; alt. axis 1·4 mm."

Hab. India: Khasi Hills (*Godwin-Austen*).

"I regret that I did not record the exact locality of this shell in the Khasi Hills, as it is a very distinct species." (*Godwin-Austen.*)

418. **Alycæus granum**, *Godwin-Austen.*

Alycæus granum, Godwin-Austen, Proc. Zool. Soc. 1893, p. 593.

Alycæus (*Dioryx*) *granum*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1897, p. 4, pl. 63, fig. 6; tom. cit. 1914, p. 364.

Alycaeus (*Orthalycaeus*) *granum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 150; id., Cat. Pneum. 1899, p. 46.

Alycaeus (*Alycaeus*) *granum*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 345.

Alycæus (*Cycloryx*) *granum*, Godwin-Austen, Rec. Ind. Mus. viii, 1915, p. 503.

Original description:—"Shell perforate, globose; sculpture fine regular ribbing, closely arranged and extending to the peristome; colour ruddy ochre; spire subconical; suture well impressed;

whorls 4, rounded, a slight constriction in front of the short sutural tube; aperture suboblique, circular; peristome double, the outer reflected slightly.

"Major diam. 2·25; alt. axis 2 mm."

Hab. India: Margarita, foot of Eastern Naga Hills (*Doherty*).

"This species is only half the size of its nearest ally, a variety of *A. otiphorus* from the wooded slopes of the North Jaintia Hills. This variety was figured and described by me in the J. A. S. B. 1871 (p. 93, pl. v. fig. 6). From Mr. Aldrich I have received three specimens of it, all fully grown, and as it is so much smaller than the typical *A. otiphorus* from Sikkim (which is as much as 4·25 mm. in maj. diam.), I consider it necessary to give it a distinct title. It is also more depressed and has fewer whorls, and the umbilical area is more open than in the Darjiling form." (*Godwin-Austen.*)

419. **Alycæus graphiarius,** *Godwin-Austen.*

Alycæus graphicus var., Theobald, J. A. S. B. xxxi, 1862, p. 137; id., op. cit. xxxix, part 2, 1870, p. 398, pl. 18, figs. 3 *a*, 3 *b*; Hanley & Theobald, Conch. Ind. 1874, p. 39, pl. 95, fig. 7.

Alycæus (*Cycloryx*) *graphiarius*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 416, pl. 147, figs. 7, 7 *a*.

Original description:—"Besides the typical form described by Mr. Blanford from Arracan and Pegu, an interesting variety also occurs in the Shan States for the identification of which I am indebted to Mr. Blanford. It differs from the type by a shorter, more subtile and subglobose shape, and by the ribs on the whorls being slightly more distant from each other and very sharp. There are also some of the stronger ribs traceable even on the constriction near the aperture. The shell is pure white with the apex and the adjoining whorl beautifully pale yellow. I have given an illustration of this variety in order to facilitate comparison." (*Theobald.*)

Hab. Burma: Shan States (*Theobald*).

"The distant strong costulation is very striking, with 4 very distinct ribs behind the aperture." (*Godwin-Austen.*)

420. **Alycæus graphicus,** *Blanford.*

Alycæus graphicus, Blanford, J. A. S. B. xxxi, 1862, p. 137; id., op. cit. xxxiv, 1865, p. 99; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 46; Hanley & Theobald, Conch. Ind. 1874, pl. 95, figs. 8, 9; Theobald, Cat. Shells Brit. India, 1876, p. 39; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 4, fig. 34.

Alycaeus (*Orthalycaeus*) *graphicus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 150; id., Cat. Pneum. 1899, p. 46.

Alycaeus (*Alycaeus*) *graphicus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 345.

Alycæus (*Cycloryx*) *graphicus*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 419, pl. 146, figs. 1, 1 *a*, 1 *b*; ibid. p. 361 (var.).

Original description:—"Testa perforata, ovato-globosa, tenuis, pallide fulva, costulis filaribus subremotis sinuatis ornata. Spira

ovato-conoidea, lateribus convexis, apice obtusula, sutura impressa. Anfr. 4, rotundati, 2 primi lente, penultimus et ultimus celerius accrescentes, ultimus ad latus vix tumidus, pone stricturam spatio brevissimo confertius costulatus, tubulum suturale brevissimum gerens. Spatium constrictum læve, costula filiformi una medio plerumque signatum, prope aperturam tumidius. Apertura vix obliqua, majuscula, circularis; peristoma duplex; interno breviter porrecto, continuo; externo expanso, retro relicto, ad umbilicum reflexo, perforationem partim celante.

"Diam. maj. 3, min. $2\frac{1}{2}$, alt. 3, apert. diam. $1\frac{1}{2}$ mm."

Hab. Burma: Arakan Hills, Pegu; Moditoung (*Blanford*). India: North Cachar and Naga Hills (*Godwin-Austen*, *Chennell*); var. Burroi Gorge, Dafla Hills (*Godwin-Austen*).

"A Burmese representative of the little Darjiling group of *Alycæi*, which comprises *A. constrictus*, B., *A. bembex*, B., and *A. otiphorus*, B. *A. graphicus*, although much more globose than any of the others, is in some respects intermediate between *constrictus* and *otiphorus*, resembling the first in size and somewhat in form, and the latter in the reflexed left edge of the outer peristome. This character, however, is by no means so much developed in the Burmese as in the Darjiling species. The present has a more marked sculpture than either of its three allies and differs from them also in the very slight approximation of the costulation behind the constriction. Almost all the species of the genus *Alycæus* are more closely and strongly marked upon the tumid portion of the last whorl than on any other part of the shell, the length of the closer ribbing and of the tumidity having a general relation to that of the sutural tube." (*Blanford.*)

Var. **dihingensis**, *Godwin-Austen.*

Alycæus (*Cycloryx*) *graphicus*, var. *dihingensis*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, pp. 363, 404, pl. 146, figs. 6, 6 *a*.

Original description:—"Shell: umbilicus covered by expansion of outer lip, tumidly conical; sculpture above somewhat distant regular costulation, there are 4 costæ next the sutural tube, 3 distant well developed behind the aperture, in another specimen two only; colour very pale ochraceous; spire high, apex fine; suture impressed, the tube short and oblong; whorls 4, well rounded; aperture circular, subvertical; peristome expanded and slightly reflected, double.

"Major diam. 3·75; alt. axis 3 mm." (*Godwin-Austen.*)

Hab. India: Assam (*Ogle*); Angaoluo Peak, Naga Hills.

Var. **variabilis**, *Godwin-Austen.*

Alycæus (*Cycloryx*) *graphicus*, var. *variabilis*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 403, pl. 146, fig. 4.

Original description:—"This is another variety of *graphicus*. The costulation on the upper whorls is strong and rather distant,

much closer and much stronger next the ovate sutural tube; about six to seven costæ between the tube and peristome, there are from two to three well-marked costæ on the very slightly swollen part of the whorl." (*Godwin-Austen.*)

Hab. India: Lhota-Naga and Piknui Hills.

421. **Alycæus khunhoensis**, *Godwin-Austen.*

Alycæus (*Dioryx*) *graphicus*, var. *minor*, Godwin-Austen, J. A. S. B. xliii, part 2, 1874, p. 149, pl. 3, figs. 8, 8 *a*.

Alycæus (*Cycloryx*) *khunhoensis*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 403, pl. 147, fig. 8; pl. 144, figs. 9, 9 *a*.

Original description:—"Shell elongately conoid, rimate, thin, transparent; sculpture closely and similarly costulated throughout, no closer near the sutural tube, very unusual in the genus; apex smooth; colour pale pinkish, ochraceous on apical whorls; spire high, sides flat; suture impressed; whorls 4, very rounded, constriction close to sutural tube, flat and smooth thence to the aperture; aperture nearly circular, vertical; peristome simple, reflected; columellar margin rounded.

"Major diam. 1·9; alt. axis 1·3 mm." (*Godwin-Austen.*)

Hab. India: Khunho Peak, Naga Hills (*Godwin-Austen*).

422. **Alycæus mangutensis**, *Godwin-Austen.*

Alycæus otiphorus var., Godwin-Austen, J. A. S. B. xl, part 2, 1871, p. 93, pl. 5, fig. 6.

Alycæus (*Dioryx*) *granum*, var. *major*, Godwin-Austen, Proc. Zool. Soc. 1893, p. 594.

Alycæus (*Cycloryx*) *mangutensis*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 377, pl. 146, figs. 5, 5 *a*.

Original description:—"Shell globosely turbinate, perforation hidden by outer lip; sculpture smooth on the two apical whorls, succeeded by close, fine costulation, 5, rather close, on the short sutural tube; colour pale ochraceous, some richer, some colourless; spire moderately high, conic; apex blunt; suture impressed; whorls tumid, 4; aperture circular, nearly vertical; peristome double, not thickened; columellar margin an arc of a circle; operculum dark coloured.

"Major diam. 3·2; alt. axis 2·2 mm."

Hab. India: Mangut Valley, Jaintia Hills; Jawai (*Godwin-Austen*).

"With wider knowledge of these small shells, and a large series for comparison, I consider this species worthy of a specific distinction." (*Godwin-Austen.*)

423. **Alycæus multicostatus**, *Godwin-Austen.*

Alycæus (*Cycloryx*) *multicostatus*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 404, pl. 147, fig. 7.

Original description:—"Shell globosely turbinate, narrowly umbilicate; sculpture: very close, regular costulation, disappearing on the two apical whorls; colour white, with an ochraceous tint; spire high, pyramidal; apex rather fine; suture strongly impressed;

whorls 5, rounded on sides, swollen; aperture circular; peristome double, both thin; columellar margin nearly vertical.

"Major diam. 3·25; alt. axis 2·25 mm."

Hab. Burma: head of the Lanier River, Lahupa Naga Hills, N.E. Munipur.

"Comparing this with *A. granum*, it has for its size much closer costulation. It is more narrowly umbilicate than *A. burrailensis*, which is a much smaller shell." (*Godwin-Austen.*)

424. **Alycæus otiphorus**, *Benson*

Alycæus otiphorus (Benson), Theobald, J. A. S. B. xxvii, 1858, p. 322 (nom. nud.); Benson, A. M. N. H. ser. 3, iii, 1859, p. 178; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 46; id., Novit. Conch. ser. 1, iv, 1871, p. 18, pl. 112, figs. 28-31; Hanley & Theobald, Conch. Ind. 1874, pl. 95, figs. 5, 6; Theobald, Cat. Shells Brit. India, 1876, p. 40; Sowerby, in Reeve, Conch. Icon. xx, 1877, *Alycæus*, pl. 4, fig. 30; Nevill, Hand List, i, 1878, p. 292.

Alycæus (*Alycæus*) *otiphorus*, Benson, A. M. N. H. ser. 3, iii, 1859, p. 176; Kobelt, Das Tierreich, Lief. 16, 1902, p. 347.

Alycaeus (*Orthalycaeus*) *otiphorus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 150; id., Cat. Pneum. 1899, p. 46.

Alycæus (*Cycloryx*) *otiphorus*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 349, pl. 147, figs. 2, 2 *a*, 2 *b*.

Original description:—"Testa perforata, ovato-globosa, minutissime confertim striata, cinereo-cornea; spira conica, apice obtusiusculo, rutilo, sutura valde impressa; anfractibus 4 convexis, ultimo ventricoso, ab apertura subremote constricto, tum pone labrum tumidiusculo, lævigato, tubulum brevissimum suturalem gerente; apertura vix obliqua, peristomate duplici, interno continuo, expanso, interdum breviter porrecto, externo dilatato, reflexo, ad umbilicum processu auriculari brevi, subito reflexo, perforationem subtegente munito. Operculum normali, concaviusculo, planato.

"Long. 4½, diam. obliq. 4 mill."

Hab. India: Pankabari, 1000 ft., Rungun Valley, 4000 ft., near Darjeeling (*Stoliczka*, *Blanford*, *Mainwaring*, *Theobald*).

"This shell, which seems to be not uncommon on the west side of the Rungun Valley, as well as at a lower elevation in the Sikkim ranges, was forwarded to me by Mr. Blanford in 1857 In form it approaches *A. amphora* and *constrictus*, and, like the latter, which belongs to the same type in the mode of constriction, it is remarkable for the shortness of the sutural tube, but is at once distinguished by the process of the peristome at the umbilicus." (*Benson.*)

425. **Alycæus paucicostatus**, *Godwin-Austen.*

Alycæus (*Dioryx*) *graphicus* var., Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 178 (part).

Alycæus paucicostata, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 360, pl. 147, figs. 5, 5 *a*.

Alycæus (*Cycloryx*) *paucicostata*, id., op. cit. pp. 351, 360.

Original description:—"Shell narrowly perforate, globosely

conical, transparent; sculpture close, well-marked, regular costulation, 3 strong costæ behind aperture, one close to it inconspicuous; colour rich pale ochraceous; spire moderately high; suture impressed, 5 costæ on sutural tube; whorls 4, well rounded, constricted close to the club-like tube; aperture circular, nearly vertical; peristome closely double, reflected; operculum ochre in colour, smooth with central depression, evenly spiral.

"Major diam. 3·1; alt. axis 2·3 mm."

Hab. India: Toruputu Peak, Dafla Hills (*Godwin-Austen*).

"The species is much smaller than a closely allied one from same area." (*Godwin-Austen.*)

426. **Alycæus spratti**, *Godwin-Austen.*

Alycæus spratti, Godwin-Austen, Proc. Zool. Soc. 1888, p. 245.
Alycaeus (*Chamalycaeus*) *spratti*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 152; id., Cat. Pneum. 1899, p. 48; Kobelt, Das Tierreich, Lief. 16, 1902, p. 363.
Alycæus (*Cycloryx*) *spratti*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 417, pl. 151, figs. 10, 10 *a*.

Original description:— "Shell pyramidal, closely umbilicated; sculpture very fine close costulation, more distant between the sutural tube and the peristome; colour white, with pale lemon tinge, or horny; spire high, rapidly decreasing to apex, which is rather pointed; suture well impressed; whorls $5\frac{1}{2}$, convex, the last swollen, slightly constricted at the sutural tube, which is very short and thick, less than one millim. in length; the whorl swells again to the aperture, this is circular, oblique; peristome double, slightly reflected; operculum not seen."

Hab. Burma: Pingoung, Shan Hills, 2500 ft. (*Spratt*).

"This species is quite new; it might be at first mistaken for a small variety of *A. pyramidalis*, Bs., from the Tenasserim Valley, but the sutural tube is in that species very thread-like and nearly 3 millim. in length; the aperture is also very different in form, and not so simple and circular." (*Godwin-Austen*, 1888.)

"With the very different pyramidal form of shell as compared with *A. constrictus*, etc., the presence of the short club-like sutural tube puts this species in the section *Cycloryx*. On the other hand, in the shell-character combined with type of sculpture, it is like species in the neighbouring country to the east and south, *A. pyramidalis* and *A. gibbus*." (*Godwin-Austen*, 1914.)

427 **Alycæus summus**, *Godwin-Austen.*

Alycæus (*Cycloryx*) *summus*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 349, pl. 147, figs. 3, 3 *a*.

Original description:—"Shell globosely conoid, perforation quite hidden; sculpture fine and rather close costulation, 7 to 8 very fine adjacent to the sutural tube, which is short and pointed, not knob-like; colour pale with an ochraceous tint; spire high, conic,

apex blunt, suture impressed; whorls 4½, the constriction slight, nearly straight up to the reflected peristome and slightly rising; aperture circular; peristome simple, strong, double, outer well reflected; operculum smooth, pale horny.

"Major diam. 2·9; alt. axis 2·9 mm."

Hab. India: Rechila Peak, Western Bhutan (*Robert*).

"This is quite distinct from *A. bembex*, which I at first thought it to be, but the umbilical region differs much." (*Godwin-Austen.*)

428. **Alycæus tenellus**, *Godwin-Austen.*

Alycæus (*Cycloryx*) *tenellus*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 417, pl. 155, figs. 3, 4, 4 *a*.

Original description:— "Shell scarcely perforate, elongately conoid; sculpture: none visible on upper whorls, very fine and indistinct near the very short sutural tube; colour bleached; spire high, apex small; suture impressed; whorls 4½, sides rounded, nearly flat on side, constriction slight close up to the sutural tube, thence short and flat to the aperture; aperture circular, vertical; peristome double, the inner well reflected below, slightly flattened on the upper outer margin.

"Major diam. 2·9; alt. axis 2·4 mm." (*Godwin-Austen.*)

Hab. Burma: Shan States (*Fedden*).

429. **Alycæus thompsoni**, *Godwin-Austen.*

Alycæus (*Cycloryx*) *thompsoni*, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 404, pl. 146, figs. 3, 3 *a*.

Original description:—"Shell ovately globose, umbilicus concealed; sculpture: fine, regular, close costulations, six on the length of the sutural tube, about seven between it and the peristome indistinct; colour whitish; spire rather high, apex rather blunt; suture moderately impressed; whorls 4½, sides convex; aperture circular, with a flange close to the umbilicus and completely covering it; peristome double, thickened, continuous.

"Major diam. 3·8; alt. axis 2·5 mm." (*Godwin-Austen.*)

Hab. Burma: Munipur (*Godwin-Austen*).

Subgenus **RAPTOMPHALUS**, *Godwin-Austen.*

Raptomphalus, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 366.

TYPE (first species), *Alycæus magnificus*, Godwin-Austen.

Range. India, Burma.

"Shell globosely conoid, widely umbilicated. The margin of the umbilicus is a well-developed keel, which commences near the constriction. The peristome is strongly and irregularly crenulated, showing well behind the aperture viewed from the side, between this and the sharp constriction a well raised ridge crosses the whorl transversely."

430. **Alycæus akhaensis**, *Godwin-Austen.*

Alycæus akhaensis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 352, pl. 141, figs. 1, 1 *a*, 1 *b*.

Original description:—"Shell globosely conical, openly umbilicated; sculpture very fine, close costulation, flattened as it were, the separation indicated by a fine line next the sutural tube, which is short, smooth on anterior part of the last whorl; strong distant costulation succeeds the fine, becoming finer and more indistinct towards the apex; colour umber-brown; spire rather high; apex blunt; suture impressed; whorls 4, well rounded, the last crossed by a ridge in front of the constriction, and by another, less conspicuous, intervening between it and the peristome; peristome double, thickened; columellar margin slightly sinuate, much sinuated on the outer margin, with four indistinct crenulations, one distinct on the lower margin.

"Major diam. 3; alt. axis 1·5 mm." (*Godwin-Austen.*)

Hab. India: Barowli Gorge, Durrang District, Assam, foot of Akha Hills.

431. **Alycæus commutatus**, *Godwin-Austen.*

Alycæus commutatus, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 351, pl. 148, fig. 7.

Original description:—"Shell solid, globosely conoid, openly umbilicate; sculpture rather distant, fine costulation on the upper whorls, becoming much stronger at the sutural tube, quite strong at its base; colour dull white; spire moderately high, apex small; suture impressed, the sutural tube long and strongly formed; whorls 4, well rounded; aperture circular, subangulate above, with 3 sharp folds on the lower outer margin; peristome double, thickened, with columellar margin rounded subvertically; operculum white, shelly, multispiral.

"Major diam. 4·8; alt. axis 2·5 mm."

Hab. India: Bhutan.

"This shell Colonel Beddome had named *A. burtii*, but it is a far larger, more solid conical shell with the peristome differently crenulated, the operculum being similar." (*Godwin-Austen.*)

432. **Alycæus duoculmen**, *Godwin-Austen.*

Alycæus duoculmen, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 365, pl. 157, figs. 2, 2 *a*.

Original description:—"Shell globosely conoid, somewhat depressed, openly umbilicated; sculpture fine indistinct, costulation on upper whorls showing near the suture apex smooth, very fine and close near sutural tube; colour whitish grey above, pale ochraceous on the swollen part of the whorl; spire depressedly conoid, apex small; suture impressed, sutural tube rather short; whorls 4, the last much swollen behind the sharp constriction,

in front the whorl is crossed by a well-raised ridge, a narrow furrow, and then another ridge, narrowing to a point below; aperture angularly and widely ovate, oblique; peristome double, much thickened, reflected, subangulate above near suture, rounded on the periphery of the whorl, then descending, with indistinct crenulation up to the subvertical columellar margin, which is thickened below; operculum black, placed too far in to see the spiral.

"Major diam. 4·75; alt. axis 2·25 mm."

Hab. India: Tsanspu Valley (*Oakes*).

"Only one specimen was found, but that a most perfect one, and very distinct from such double-ridged species as *birugosus*, *multirugosis*, etc., also in the angulate form of the aperture." (*Godwin-Austen.*)

433. **Alycæus kengtungensis**, *Godwin-Austen.*

Alycæus kengtungensis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 409, pl. 139, figs. 6, 6 *a*.

Original description:—"Shell somewhat depressedly turbinate and umbilicated; sculpture: fine and rather close costulation on the upper whorls, much stronger next the sutural tube, and near the base of this peculiarly distant costæ very strong; colour white; spire conoid; suture impressed, sutural tube long; whorls 4, the last swollen, next sutural tube sharply constricted, then suddenly expanding into a rounded ridge crossing the whorl crescentically and expanding gradually forwards to the peristome; aperture oblique, horizontally oval, subangular above; peristome double, simple.

"Major diam. 5·25; alt. axis 2·4 mm." (*Godwin-Austen.*)

Hab. Burma: Kengtung, Shan Frontier (*Woodthorpe*).

434. **Alycæus lahupaensis**, *Godwin-Austen.*

Alycæus lahupaensis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 394, pl. 141, figs. 3, 3 *a*.

Original description:—"Shell globosely turbinate, umbilicus fairly open; sculpture at the sutural tube is fairly strong, regular, close costulation, becoming gradually finer towards the apical whorls; colour whitish or very pale ochraceous; spire depressedly conoid; suture impressed, the sutural tube short; whorls $4\frac{1}{2}$, well rounded, last crossed by a low ridge between the aperture and sutural tube; aperture ovate, angulated above, rounded below; peristome very solid, double, very slight crenulation visible on the outer margin but not inside the aperture; columellar margin nearly vertical, sinuate.

"Major diam. 4; alt. axis 1·8 mm."

Hab. Burma: Gaziphimi, Lahupa-Naga Hills, Munipur (*Godwin-Austen*).

"At a first glance, this shell might be taken for *G. khasiacus*, the type of which is from the Garo boundary of the

Khasi Hills; but on placing the two side by side, there is considerable difference in its size, longer sutural tube, aperture not so circular and the peristome larger, so much more thickened." (*Godwin-Austen.*)

435. **Alycæus luyorensis,** *Godwin-Austen.*

Alycæus luyorensis, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 365, pl. 157, figs. 6, 6 *a*.

Original description :—" Shell globosely turbinate, umbilicated; sculpture: very fine close regular costulation next the suture, very fine on whorls above, hardly seen on apical; colour dull white above, pale ochraceous on the swollen portion of the last whorl; spire moderately high; suture moderately impressed, sutural tube moderately long; whorls $4\frac{1}{2}$, constriction short, no swelling between sutural tube and aperture; aperture circular; peristome double, very slightly reflected, openly and expandedly crenate; columellar margin curving vertically; operculum slightly concave in front, distantly spiral.

" Major diam. 6·8; alt. axis 4 mm."

Hab. India: Luyor, Abor Hills (*Oakes*).

" The form and sculpture distinguishes this shell from the other crenulated species obtained in the valley of the Tsanspu." (*Godwin-Austen.*)

436. **Alycæus magnificus,** *Godwin-Austen.*

Alycæus (*Raptomphalus*) *magnificus,* Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 366, pl. 156, figs. 1, 1 *a*, 1 *b*.

Original description :—" Shell very openly umbilicated, bordered by a distinct keel, very globosely conoid; sculpture on the upper whorls, and as far as the end of the long sutural tube there is distant strong costulation, thence for the length of the tube it is extremely fine and close; colour white, shell old; spire moderately high, apex small, somewhat depressed; suture impressed; whorls $4\frac{1}{2}$, tumid, the constriction is sudden and close to the base of the sutural tube, it there expands considerably towards the aperture, commencing with a high ridge well raised, and this again by another broader and more rounded, which merges into the very broad expanded wavy peristome; aperture ovate, subangulate both above and below; peristome strongly crenulated, with five indentations.

" Major diam. 4·25; alt. axis 1·7 mm."

Hab. India: Yamne Valley, Abor Hills (*Oakes*).

" This is a very beautiful species. The sharp, well defined keel around the umbilicus is a character quite new to me in this genus, one which has led me to place it in a new subgenus. In the very fine costulation on the swollen portion of the last whorl it is similar to *A. aborensis.*" (*Godwin-Austen.*)

437. **Alycæus muspratti**, *Godwin-Austen.*

Alycaeus (*Orthalycaeus*) *muspratti* (nom. nud.), Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 150; id., Cat. Pneum. 1899, p. 46.

Alycæus muspratti (Beddome MS.), Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 396, pl. 148, fig. 1.

Original description:—"Shell depressedly conoid, openly umbilicated; sculpture smooth on first two whorls, then very strong, regular, somewhat close costulation, gradually more distant up to the end of the sutural tube where it suddenly becomes much finer, as far as the base of the tube, next which costæ are stronger, very fine striæ cross the inflated portion behind the peristome; colour stony white; spire low, apex blunt; suture impressed, the sutural tube long; whorls 4, somewhat flattened, last rounded and swollen next the sutural tube, then sharply constricted, and swelling into a well marked ridge, ending in a slight depression behind the lip: aperture irregularly oval horizontally; peristome viewed on side very thick, broad, expanded forward, sinuate, of many layers, in front crenulated, a strong notch at the sutural margin, 4 shallower on the outer and lower, columellar margin curving downwards; operculum burnt sienna, of many whorls; suture well seen.

"Major diam. 4·2; alt. axis 2 mm." (*Godwin-Austen.*)

Hab. India: Eastern Naga Hills (*Muspratt*).

438. **Alycæus oakesi**, *Godwin-Austen.*

Alycæus oakesi, Godwin-Austen, Land & Freshw. Moll. India, ii, 1914, p. 366, pl. 157, figs. 4, 4 *a*.

Original description:—"Shell very globosely conoid, somewhat depressed, openly umbilicate, with a strong tendency to a ridge bounding it; sculpture: costulation distant, subdued on the apical whorls, strong and coarse near base of the sutural tube, but soon becoming finer; colour, all old and bleached shells; spire moderately high, apex small; suture impressed; whorls 4, much swollen next sutural tube, the last sharply constricted, enlarging suddenly into a high sharp ridge across the whorl, flattened in front and expanding to the aperture, which is nearly circular; peristome double, the inner lip thickened, the outer less so, the shell layers are seen overlapping each other when viewed from the left side.

"Major diam. 3; alt. axis 1·3 mm." (*Godwin-Austen.*)

Hab. India: Chanjuk La, in Tsanspu Valley, 4300 ft., Lat. 29° 25′, Long. 95° 20′ (*Oakes*).

Subfamily DIPLOMMATINÆ.

Genus **NICIDA**, *Blanford.*

Nicida, Blanford, Journ. Conchyl. xvi, 1868, p. 332 (as subgenus of *Diplommatina*); id., J. A. S. B. xxvii, 1868, p. 82; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 87; Nevill, Hand List, i, 1878, p. 288; Ancey, Bull. Soc. Malac. France, iv, 1887, p. 277 (genus);

Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 130 (genus); id., Cat. Pneum. 1899, p. 50; Kobelt, Das Tierreich, Lief. 16, 1902, p. 382.

TYPE, *Diplommatina nilgirica*, Blanford.

Range. Southern India, Ceylon.

Shell imperforate, ovate, without radial costulæ, smooth or spirally lirate, shining, last whorl not constricted, columellar tooth absent; operculum corneous, indistinctly multispiral.

439. **Nicida anamullayana**, *Beddome* (emend.).

Diplommatina (*Nicida*) *anamallayana*, Beddome, Proc. Zool. Soc. 1875, p. 443, pl. 52, figs. 5, 6.
Diplommatina anamallayana, Hanley & Theobald, Conch. Ind. 1876, p. xii; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 396.
Nicida anamallayana, Theobald, Cat. Shells Brit. India, 1876, Addenda, p. ii; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. 1898, p. 130; id., Cat. Pneum. 1899, p. 50; Kobelt, Das Tierreich, Lief. 16, 1902, p. 383.

Original description:—"Shell scarcely rimate, oblong, the apex suddenly contracted, thin, whitish, shining; whorls 5, convex, the apical one small, obtuse, the second much larger, the three lower all equal in breadth (giving the shell a very oblong form), all smooth except the last, which has a very minute transverse striation, and is furnished with a basal keel; aperture circular; peristome double, externally expanded, and reflexed: total length $\frac{1}{14}$ inch [1·75 mm.].

"It is easily distinguished from all the other species by its very oblong form." (*Beddome.*)

Hab. India: banks of Peringoonda, Anamullays (*Beddome*).

440. **Nicida catathymia**, *Sykes.*

Diplommatina (*Nicida*) *catathymia*, Sykes, Proc. Malac. Soc. iii, 1898, p. 69, pl. 15, fig. 9.
Nicida cathathymia, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 130; id., Cat. Pneum. 1899, p. 50; Kobelt, Das Tierreich, Lief. 16, 1902, p. 383.

Original description:—"Testa parva, dextrorsa, rimata, cylindrica, flavido-hyalina, spira sub-cylindrica, apice obtusulo; sutura bene impressa; anfr. $6\frac{1}{2}$, valde convexi, regulariter crescentes, primi læves, reliqui (sub lente) regulariter obsolete spiraliter lirati, ultimus liris quinque (?) ornatus; apertura circularis, peristomate leviter incrassatulo et reflexo, albido.

"Alt. 2, diam. 1 mm."

Hab. Ceylon: Uda Pussellawa (*Preston*).

"This pretty little shell, specimens of which I noted previously (Proc. Malac. Soc. vol. ii, p. 237) as possibly belonging to two species, appears to be variable in relative proportions of height and breadth. It is very cylindrical, with an exceedingly deeply-cut suture, and delicate spiral sculpture. Mr. Preston found a single sinistral specimen." (*Sykes.*)

441. **Nicida ceylanica**, *Beddome.*

Diplommatina (*Nicida*) *ceylanica*, Beddome, Proc. Zool. Soc. 1875, p. 444, pl. 52, fig. 9; Nevill, Hand List, i, 1878, p. 288.
Diplommatina ceylanica, Hanley & Theobald, Conch. Ind. 1876, p. xii; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 397.
Nicida ceylanica, H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 6; Theobald, Cat. Shells Brit. India, 1876, p. 42; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 312; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 130; id., Cat. Pneum. 1899, p. 50; Kobelt, Das Tierreich, Lief. 16, 1902, p. 383.

Original description:—"Shell not rimate, subcylindrico-ovate, thin, smooth, white, rather shining; whorls 7, convex, the antepenultimate the largest, the four upper ones gradually decreasing, the last whorl ascending slightly on the penultimate, keeled rather conspicuously at its base; aperture vertical, oblique; peristome continuous, single, scarcely expanded: total length $\frac{1}{10}$ inch [2·5 mm.]." (*Beddome.*)

Hab. Ceylon: Pedrotalle, Galle (*Beddome*); Ceylon (*H. Nevill*).

442. **Nicida delectabilis**, *Preston.*

Diplommatina (*Nicida*) *delectabilis*, Preston, Journ. Malac. xii, 1905, p. 9, pl. 2, fig. 40.

Original description:—"Shell dextral, subovate, pale horn colour; whorls 7, very finely spirally striate, the antepenultimate whorl much inflated, the body-whorl ascending gradually so as to finally cover the penultimate whorl just behind the peristome; suture impressed; umbilicus narrow; peristome continuous, thick, reflexed, reddish brown, very irregular and projecting above at the point where it overlaps the penultimate whorl; aperture subcircular; columella straight.

"Alt. 2 millim.; diam. maj. 1·25. Aperture alt. 0·5 millim." (*Preston.*)

Hab. Ceylon: Kinidun.

443. **Nicida fairbanki**, *Blanford.*

Diplommatina (*Nicida*) *fairbanki*, Blanford, Journ. Conchyl. xvi, 1868, p. 335, pl. 14, fig. 4; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 89.
Diplommatina fairbanki, Hanley & Theobald, Conch. Ind. 1876, p. 56, pl. 141, fig. 9.
Nicida fairbanki, Theobald, Cat. Shells Brit. India, 1876, p. 42; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 130; id., Cat. Pneum. 1899, p. 50; Kobelt, Das Tierreich, Lief. 16, 1902, p. 384.

Original description:—"Testa non rimata, elongate conico-ovata, glabra, tenuis, pallido-cornea. Spira conica, lateribus subrectis, apice obtuso, sutura impressa. Anfr. $7\frac{1}{2}$ convexi, primi 5 gradatim

crescentes, cæteri subæquales, ultimus vix angustior, antice valde ascendens, carina basalis munitus. Apertura parum obliqua, subcircularis, sinuata; peristoma obtusum, simplex.

"Long $3\frac{3}{4}$, diam. $1\frac{2}{3}$, ap. diam. intus 1 mill." (*Blanford.*)

Hab. India: Pulney Hills, 5000 ft. (*Fairbank*).

Stated to be the largest of all species of the genus known at the time. Easily distinguished from its allies by the greater number of whorls, the last ascending more and thus covering a larger portion of the penultimate.

444. **Nicida kingiana**, *Blanford.*

Diplommatina kingiana, Blanford, J. A. S. B. xxx, 1861, p. 348, pl. 1, fig. 2; Hanley & Theobald, Conch. Ind. 1876, pl. 141, fig. 1.

Arinia kingiana, Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 91.

Diplommatina (*Nicida*) *kingiana*, Blanford, Journ. Conchyl. xvi, 1868, p. 333; Nevill, Hand List, i, 1878, p. 288.

Nicida kingiana, Theobald, Cat. Shells Brit. India, 1876, p. 42; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 130; id., Cat. Pneum. 1899, p. 50; Kobelt, Das Tierreich, Lief. 16, 1902, p. 384.

Original description:—"Testa dextrorsa, subrimata, ovato conica, glabra, tenuis cornea; spira conica, apice obtusa, sutura impressa. Anfr. $5\frac{1}{2}$ convexi; antepenultimus major, ultimus parum angustior, antice ascendens. Apertura subverticalis, circularis, plica columellari nulla; peristoma subduplex, incrassatum expansum; internum continuum.

"Long. vix 2. Diam. 1, aper. diam. $\frac{2}{3}$ mm."

Hab. India: Kolamullies, near Trichinopoly (*King*).

"This little species is a near ally of *D. nilgirica*, Blanf., but amply distinguished, both by its smaller size and by the absence of the basal keel of the Nilgiri species. The two together form a well marked section of the genus, characterized by a circular mouth and smooth whorls." (*Blanford.*)

445. **Nicida lankaensis**, *Preston.*

Diplommatina (*Nicida*) *lankaensis*, Preston, Journ. Malac. xii, 1905, p. 9, pl. 2, fig. 39.

Original description:—"Shell dextral, pyramidal, somewhat transparent, pale horn colour; whorls 8, rather coarsely spirally striate throughout, the penultimate whorl being narrower than the antepenultimate; suture impressed; umbilicus broad; peristome continuous, slightly reflexed, reddish-brown, irregular; aperture subcircular.

"Alt. 3 millim.; diam. maj. 2. Aperture, alt. 1 millim.; diam. ·75." (*Preston.*)

Hab. Ceylon: Kinidun.

446. **Nicida liricincta**, *Blanford.*

Diplommatina (*Nicida*) *liricincta*, Blanford, Journ. Conchyl. xvi, 1868, p. 336, pl. 14, fig. 5; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 87.
Diplommatina liricincta, Hanley & Theobald, Conch. Ind. 1876, pl. 141, fig. 2; Nevill, Hand List, i, 1878, p. 288.
Nicida liricincta, Theobald, Cat. Shells Brit. India, 1876, p. 42; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 130; id., Cat. Pneum. 1899, p. 42; Kobelt, Das Tierreich, Lief. 16, 1902, p. 384.

Original description:—"Testa brevissime rimata, conoideo-ovata, tenuis, pallide cornea, glabra, nitida, spiraliter lirata. Spira conoidea, lateribus convexis, apice obtuso, sutura valde impressa. Anfr. $5\frac{1}{2}$ convexi, primi 2 lævigati, tertius carinis duabus circumdatus, penultimus majusculus carina tertia subtus vix apparente, ultimus angustior, non ascendens, liris circa 6 distantibus circumdatus, earum 3 basalibus interdum sed raro deficientibus, basi rotundatus. Apertura parum obliqua, circularis; peristoma simplex, parum incrassatum, expansiusculum, vix interruptum.—Operculum parvum, tenue, corneum, structura spirali obsoleta.

"Long. $2\frac{1}{3}$, diam. $1\frac{1}{4}$. Ap. diam. intus $\frac{2}{3}$ mill." (*Blanford.*)

Hab. India: Khandalla, Western Ghats, 2000 ft. (*Fairbank*).

447. **Nicida nilgirica**, *Blanford.*

Diplommatina nilgirica, Blanford, J. A. S. B. xxix, 1860, p. 124; Hanley & Theobald, Conch. Ind. 1876, pl. 141, fig. 4.
Arinia nilgirica, Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 91.
Diplommatina (*Nicida*) *nilgirica*, Blanford, Journ. Conchyl. xvi, 1868, p. 332, pl. 14, fig. 1; Nevill, Hand List, i, 1878, p. 288, + var. *minor*.
Nicida nilgirica, Theobald, Cat. Shells Brit. India, 1876, p. 43; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 130; id., Cat. Pneum. 1899, p. 50; Kobelt, Das Tierreich, Lief. 16, 1902, p. 384, fig. 84.

Original description:—"Testa dextrorsa, imperforata, subovata, glabra, tenuis, nitida, cornea; spira conoidea, apice obtusa; anfr. 6 convexi, superne leniter crescentes, ultimus parum angustior, antice ascendens, carina costiformi circa umbilicum munitus; apertura subverticalis, circularis, perist. haud dentatum, duplex; externum breviter expansum, interruptum; internum mediocriter porrectum, continuum. Operc. corneum, subcirculare, ad suturam angulatum, planum, haud spiratum.

"Long. 3; diam. max. $1\frac{1}{4}$, apert. diam. $\frac{3}{4}$, anfr. ultimi long. 1 mm."

Hab. India: Pykara, Nilgiris (*Blanford*).

"This species is distinguished from all others of the genus yet described by the ridge around the umbilicus, which is an exact

counterpart of that in the Sikkim shell, *Megalomastoma funiculatum*, B. The perfect smoothness of *Dipl. nilgirica*, and the continuity of the internal peristome, give it a sub-generic character, yet seem insufficient alone to authorize its separation from *Diplommatina*." (*Blanford.*)

448. **Nicida nitidula**, *Blanford.*

Diplommatina nitidula, Blanford, Journ. Conchyl. xvi, 1868, p. 334, pl. 14, fig. 3.
Diplommatina (*Nicida*) *nitidula*, Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 88.
Diplommatina nitidula, Hanley & Theobald, Conch. Ind. 1876, pl. 141, fig. 5.
Nicida nitidula, Theobald, Cat. Shells Brit. India, 1876, p. 43; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 130; id., Cat. Pneum. 1899, p. 50; Kobelt, Das Tierreich, Lief. 16, 1902, p. 385.

Original description:—"Testa subrimata, conico-ovata, glabra, nitidula, subobsolete minutissime oblique striatula, tenuis, pallido-sornea. Spira conoidea, lateribus parum convexis, apice obtuso, cutura leviter impressa. Anfr. 6 convexiusculi, penultimus maximus, ultimus angustior, antice ascendens, carina mediocri basali instructus, infra carinam juxta rimam parvulam valde compressus. Apertura vix obliqua, circularis; peristoma expansiusculum, breviter interruptum, subduplex vel duplex, margine externo superne antice arcuato.

"Long. $2\frac{1}{2}$, diam. $1\frac{1}{3}$. Ap. diam. intus $\frac{3}{4}$ mill." (*Blanford.*)

Hab. India: Kulputty Hill, Wynaad, 4000 ft. (*Beddome*).

449. **Nicida pedronis**, *Beddome.*

Diplommatina (*Nicida*) *pedronis*, Beddome, Proc. Zool. Soc. 1875, p. 443, pl. 52, fig. 8; Nevill, Hand List, i, 1878, p. 288.
Diplommatina pedronis, Hanley & Theobald, Conch. Ind. 1876, p. xii; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 397.
Nicida pedronis, Theobald, Cat. Shells Brit. India, 1876, Addenda, p. ii; Jousseaume, Mém. Soc. Zool. France, vii, 1894, p. 311; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 130; id., Cat. Pneum 1899, p. 50; Kobelt, Das Tierreich, Lief. 16, 1902, p. 385.

Original description:—"Shell subcylindrico-ovate, prominently rimate, thin, smooth, of a pale dull olive colour; whorls 7, convex, the antepenultimate the largest, the four upper ones gradually decreasing, the seventh or last whorl suddenly ascending and touching the antepenultimate, inconspicuously keeled at its base; aperture oblique, subcircular, white within; peristome continuous, single, black externally, slightly reflexed and expanded: total length $\frac{1}{7}$ inch [3·5 mm.]." (*Beddome.*)

Hab. Ceylon: Pedrotalle, Galle (*Beddome*).

450. Nicida prestoni, *Sykes.*

Diplommatina (*Nicida*) *prestoni*, Sykes, Proc. Malac. Soc. ii, 1897, p. 237, pl. 16, fig. 14.
Nicida prestoni, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 130; id., Cat. Pneum. 1899, p. 50; Kobelt, Das Tierreich, Lief. 16, 1902, p. 385.

Original description:—"Testa dextrorsa, vix rimata, elongato-ovata, glabra, hyalina, nitidula; spira conoidea, apice obtusula; sutura impressa; anfr. $5\frac{1}{2}$-6, convexi, primi regulariter crescentes, ultimus angustior quam antepenultimus, regione umbilicari impressa, basi subcarinata; apertura ovato-circularis, fere ovalis, peristomate incrassatulo, brunneo.

"Alt. 3·5, lat. 1·8 mm."

Hab. Ceylon: Uda Pussellawa (*Preston*).

"A handsome little hyaline species, with a brown peristome. It may be readily separated from *D. pedronis*, its nearest ally, by its greater size and its difference in colour and shape. Traces of spiral sculpture may be seen on the last whorls." (*Sykes.*)

451. Nicida pulneyana, *Blanford.*

Diplommatina (*Nicida*) *pulneyana*, Blanford, Journ. Conchyl. xvi, 1868, p. 333, pl. 14, fig. 2; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 88; Nevill, Hand List, i, 1878, p. 288, + var. (? distinct sp.).
Diplommatina pulneyana, Hanley & Theobald, Conch. Ind. 1876, pl. 141, fig. 3.
Nicida palneyana, Theobald, Cat. Shells Brit. India, 1876, p. 43.
Nicida pulneyana, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 130; id., Cat. Pneum. 1899, p. 50; Kobelt, Das Tierreich, Lief. 16, 1902, p. 385.

Original description:—"Testa brevissime rimata, subperforata, elongato-ovata, tenuis, pallide cornea, nitidula, glabra, sub lente minutissime striis obliquis, aliisque subobsoletis spiralibus decussata. Spira lateribus convexis, apice perobtuso, sutura profunda. Anfr. 6 valde convexi, ultimus et penultimus subæquales, ille non ascendens, ad basin rotundatus. Apertura obliqua, fere diagonalis, circularis; peristoma vix incrassatum, simplex, rectum, breviter adnatum.

"Long. vix $2\frac{1}{2}$, diam. 1. Ap. diam. $\frac{1}{2}$ mill." (*Blanford.*)

Hab. India: Pulney Hills, 7000 ft. (*Fairbank*).

This species is stated to differ from *N. kingiana* by its less ovate form, more convex whorls, deeper suture, oblique aperture, and the ascending last whorl. The latter characters and the absence of basal carination separate it from *N. nilgirica*.

452. Nicida subovata, *Beddome.*

Diplommatina (*Nicida*) *subovata*, Beddome, Proc. Zool. Soc. 1875, p. 443, pl. 52, fig. 7; Nevill, Hand List, i, 1878, p. 288.
Diplommatina subovata, Hanley & Theobald, Conch. Ind. 1876, p. xii; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 396.

Nicida subovata, Theobald, Cat. Shells Brit. India, 1876, Addenda, p. ii; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 130; id., Cat. Pneum. 1899, p. 50; Kobelt, Das Tierreich, Lief. 16, 1902, p. 385.

Original description:—"Shell not rimate, conico-ovate, smooth, thin, shining, yellowish white, furnished with a subobsolete, very minute, oblique striation; whorls 6, convex, the penultimate the largest, the four upper ones gradually tapering, the apical one obtuse, the lowest whorl furnished with a rather prominent basal keel; aperture obliquely oblong; peristome single, not continuous round the penultimate whorl: total length $\frac{1}{11}$ inch [2·25 mm.].

"Allied to *Nicida nitiduda*, Blanf., but differing in its single peristome and more prominent basal keel." (*Beddome.*)

Hab. India: South Canara (*Beddome*).

Genus **OPISTHOSTOMA**, *Blanford.*

Opisthostoma, Blanford, J. A. S. B. xxix, 1861, p. 121; Dohrn, Malak. Bl. x, 1863, p. 39; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 55; Blanford, Proc. Zool. Soc. 1866, p. 448; id., A. M. N. H. ser. 3, xix, 1867, p. 305; Stoliczka, J. A. S. B. xl, part 2, 1871, p. 157; Nevill, Hand List, i, 1878, p. 284; Crosse, Journ. Conchyl. xxvii, 1879, p. 193; Fischer, Man. Conchyl. 1885, p. 740; Ancey, Bull. Soc. Malac. France, iv, 1887, p. 273; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 134; id., Cat. Pneum. 1899, p. 54; Kobelt, Das Tierreich, Lief. 16, 1902, p. 412

TYPE, *Opisthostoma nilgiricum*, Blanford.

Range. Southern India, Malacca, Borneo.

Shell pupoid, narrowly umbilicated; last whorl constricted and turned backwards and upwards at an acute angle, when it becomes inflated, and either attached to the penultimate whorl or solute; peristome double; operculum thin, corneous, composed of few whorls.

453. **Opisthostoma deccanense**, *Beddome.*

Opisthostoma deccanense, Beddome, P. Z. S. 1875, p. 444, pl. 52, figs. 10, 11; Theobald, Cat. Shells Brit. India, 1876, Addenda, p. ii; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 392; Nevill, Hand List, i, 1878, p. 284; Crosse, Journ. Conchyl. xxvii, 1879, p. 196; Ancey, Bull. Soc. Malac. France, iv, 1887, p. 274.

Opisthostoma dekkanense, Theobald, Cat. Shells Brit. India, 1876, p. 43.

Opisthostoma (*Euopisthostoma*) *deccanense*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 134; id., Cat. Pneum. 1899, p. 54.

Opisthostoma (*Opisthostoma*) *deccanense*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 412.

Original description:—"Shell irregularly rhomboidal, pale pink, with an oblique rather distant costulation, prominent on the lowest

whorl, but less so on the others; whorls 5, excentric, the two apical ones very small and depressed, and only visible as a single small speck from a side view, the third much larger, convex, the fourth, or penultimate, convex, very large, and much dilated, lowest whorl constricted as usual and in front of the constriction deflected inwards, but not concealing the umbilicus; aperture reversed, circular, quite vertical and parallel with the penultimate whorl; peristome touching the centre of the penultimate whorl, double, both lips slightly dilated, with a broad channel between them: total length $\frac{1}{18}$ inch [1·35 mm.], breadth $\frac{1}{14}$ inch [1·75 mm.].

Hab. India: Nallay-Mallay Hills, Kurnool District; Sivagherry Hills, Tinnevelly District (*Beddome*).

"A smaller shell than *O. fairbanki* (Blanf.), and the costulation less prominent; the two apical whorls are much depressed, the penultimate whorl is much larger, the deflection in front of the constriction is less sharp, and not, or only partially concealing the umbilicus; the peristome is more completely double, with a wide space between the two lips; and the aperture is quite circular." (*Beddome.*)

A specimen in my collection, although full-grown, only measures 1 mm. in length, 1·25 in breadth, incl. peristome.

454. **Opisthostoma distortum**, *Beddome.*

Opisthostoma distortum, Beddome, Proc. Zool. Soc. 1875, p. 445; Theobald, Cat. Shells Brit. India, 1876, Addenda, p. ii; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 392; Nevill, Hand List, i, 1878, p. 284; Crosse, Journ. Conchyl. xxvii, 1879, p. 196; Ancey, Bull. Soc. Malac. France, iv, 1887, p. 274.

Opisthostoma (*Euopisthostoma*) *distortum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 134; id., Cat. Pneum. 1899, p. 54.

Opisthostoma (*Opisthostoma*) *distortum*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 413.

Original description:—"Shell irregularly rhomboidal, pale coloured, with an oblique rather distant costulation; whorls 4, excentric, the upper one very minute and depressed, not visible from a side view, so that the shell appears as with only three convex whorls, second whorl moderate, third or penultimate much larger than the second or fourth, lowest whorl constricted as usual, and in front of the constriction deflected upwards, but not concealing the umbilicus; aperture subangularly circular, pointing upwards, its apex in a line with the apex of the shell; peristome touching the upper part of the penultimate whorl, double, the lips not much dilated and with little space between them: total length $\frac{1}{28}$ inch [0·9 mm.], greatest breadth $\frac{1}{18}$ inch [1·35 mm.]." (*Beddome.*)

Hab. India: Golcondah Hills, Vizagapatam, 3000 ft. (*Beddome*).

455. Opisthostoma fairbanki, *Blanford.*

Opisthostoma fairbanki, Blanford, Proc. Zool. Soc. 1866, p. 448, pl. 38, fig. 14; Crosse, Journ. Conchyl. xv, 1867, p. 98; Blanford, J. A. S. B. xxxviii, 1869, p. 140, pl. 16, figs. 6, 6 *a*; Hanley & Theobald, Conch. Ind. 1875, pl. 117, fig. 8; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 68; Theobald, Cat. Shells Brit. India, 1876, p. 43; Nevill, Hand List, i, 1878, p. 284; Crosse, Journ. Conchyl. xxvii, 1879, p. 195; Ancey, Bull. Soc. Malac. France, iv, 1887, p. 274.

Opisthostoma (*Euopisthostoma*) *fairbanki*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 134; id., Cat. Pneum. 1899, p. 54.

Opisthostoma (*Opisthostoma*) *fairbanki*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 413.

Original description:—"Testa irregulariter ovata, albida, confertim costulata, lineis impressis spiralibus minutis, vix sub lente conspicuis, sæpe obsoletis, inter costulis signata. Spira breviter subcylindrica, apice perobtuso, sutura profunda. Anfr. 5, rotundati, duo apicales parum exserti, ex axi deviantes, tertius multo major, quartus maximus, quintus brevissime constrictus, ad stricturam angulo acuto versus umbilicum deflexus, in figuram literæ S curvatus, umbilicum omnino tegens, denique sinistrorsum ascendens, anfractus penultimus undique junctus. Apertura postica verticalis, subtrigonali-rotundata; peristoma simplex, undique expansum. Operculum normale.

"Diam. incl. peristom. 1·5 mm.; perist. non incl. 1 mm., alt. 1·5 mm.; aperturæ diam. circa 0·5 mm."

Hab. India: Khandalla, Western Ghats.

"The animal was very difficult to observe, on account of its extreme shyness and minute size. Only a very small portion of the body was extruded from the shell. The foot is very short and apparently rounded, but could not be seen fairly, as the animal would not crawl up a glass but appeared to endeavour to hide itself amongst decayed leaves. The tentacles are short and blunt, the eyes at their outside base, rather high in position, but not nearly so much as in the *Aciculaceæ*. The whole animal is white and translucent, the eyes appearing as black specks, perfectly sessile. After two or three failures I succeeded in examining an operculum by breaking back the whorls of a specimen carefully until I came to it. It is lodged at the constriction in the last whorl, as long since suggested by Mr. Benson, and is distinctly horny, concentric, and paucispiral, resembling the figure of the operculum of *Diplommatina folliculus* given in Adams's 'Gen. Rec. Moll.' This entirely confirms the views I long since expressed as to the close affinity of *Opisthostoma* to *Diplommatina*, and shows the former, moreover, to be nearer to the typical costulate *Diplommatinæ* of the Himalaya than to the smooth or spirally lirate species (*Arinia*, H. & A. Ad.) of Hindustan, as the latter have the spiral structure apparently obsolete. . .

"The characters which serve to distinguish *Opisthostoma fairbanki* from *O. nilgiricum* are :—

1. The greater exsertion and smaller excentric deflection of the two apical whorls of *O. fairbanki.*

2. The simple expanded peristome and subtrigonally rounded aperture—*O. nilgiricum* having a non-expanding duplicate peristome, the outer portion retro-relict, and a circular aperture.

3. The more distant sculpture.

4. The manner of curvature of the last whorl, the posterior bend of which is much more acute in the present species. In *O. nilgiricum* the posterior half of the sigmoid curve of the last whorl is more open than the semicircular curve nearer the aperture, the umbilicus being fully exposed within the former. In *O. fairbanki* the anterior curve is the more open, and the last whorl just in front of the posterior half of the curve passes across and completely conceals the umbilicus.

"I have with some difficulty, detected in *O. fairbanki* the minute decussating striæ observed by my brother between the costulations in *O. nilgiricum.* They are very difficult to see, even under a high power and strong light, and appear to be frequently obsolete. I cannot detect them in my specimen of *O. nilgiricum*, which is in good order.

"The bluntly trigonal form of the aperture in *O. fairbanki* does not appear to be quite constant; the mouth in some specimens is nearly round." (*Blanford.*)

456. Opisthostoma macrostoma, *Blanford.*

Opisthostoma macrostoma (Beddome MS.), Blanford, J. A. S. B. xxxviii, 1869, p. 139, pl. 16, fig. 7; Hanley & Theobald, Conch. Ind. 1875, pl. 117, fig. 9; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 69; Theobald, Cat. Shells Brit. India, 1876, p. 43; Nevill, Hand List, i, 1878, p. 284; Crosse, Journ. Conchyl. xxvii, 1879, p. 196; Ancey, Bull. Soc. Malac. France, iv, 1887, p. 274.

Opisthostoma (*Euopisthostoma*) *macrostoma*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 134; id., Cat. Pneum. 1899, p. 54.

Opisthostoma (*Opisthostoma*) *macrostoma*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 413.

Original description:—"Testa perforata, conoideo-ovata, albida vel pallide rubella, subdistanter oblique filiformi-costulata, sub lente spiraliter minutissime et confertissime striata. Spira elevato-conoidea, lateribus convexis; apice acutiusculo; sutura valde impressa. Anfr. $5\frac{1}{2}$, convexi, apicales normales non diviantes, penultimus vix major, ultimus confertius costulatus, brevissime constrictus, antice sigmoideo-deflexus. Umbilicus ab anfractu ultimo non-occultus. Apertura retrorsa sub-rotunda, fere verticalis; peristoma brevissime ad anfractos duos, penultimum et ante-penultimum, adnatum, duplex, internum continuum expansiusculum, externum, expansum breviter interruptum.

"Long. 3, diam. major 3, min. 2 millim. Ap. diam. cum perist. 1½ millim."

Hab. India: Bramagiri Hills, Wynaad (*Beddome*).

"Shell perforated, conoidly ovate, white or pale reddish in colour, with sub-distant oblique filiform costulation, which becomes closer on the last whorl: beneath a microscope there is very fine close spiral striation, very difficult to detect in general, as in other species of *Opisthostoma* and many *Diplommatinæ*. Spire elongately conoid with convex sides, the apex rather acute, suture deep. Whorls 5½, convex, the apical ones not excentric as in the other Indian species; the penultimate whorl very little larger than those above it. The last whorl is constricted as usual. In front of the constriction it is deflected inwards, but less sharply so than in *O. fairbanki*, and it does not conceal the umbilicus, the curve being more as in *O. nilgiricum*. Aperture reversed, nearly circular, almost vertical, having scarcely any inclination upwards. Peristome attached for a short distance only, touching both the penultimate and ante-penultimate whorls, double, both portions expanded, the outer more broadly reflexed, and interrupted for a short distance where attached, inner peristome continuous.

"This is the largest form of the genus yet met with, exceeding even the Labuan species *O. crespigni*, H. Ad. It is much more pupa-shaped than that kind is, but much less so than the two previously described Indian forms, from both of which it may be easily distinguished—by the apical whorls not being excentric, as well as by its much greater size." (*Blanford.*)

457. **Opisthostoma nilgiricum**, *Blanford.*

Opisthostoma nilgirica, Blanford, J. A. S. B. xxix, 1860, p. 121, pl. 1, figs. 1–5; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 55.

Opisthostoma nilgiricum, Blanford, Proc. Zool. Soc. 1866, p. 449, pl. 38, fig. 13; Hanley & Theobald, Conch. Ind. 1875, pl. 117, fig. 10; Crosse, Journ. Conchyl. xxvii, 1879, p. 195.

Opisthostoma niligirica, Theobald, Cat. Shells Brit. India, 1876, p. 43.

Opisthostoma niligiricum, Ancey, Bull. Soc. Malac. France, iv, 1887, p. 274.

Opisthostoma (*Euopisthostoma*) *nilgiricum*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 134; id., Cat. Pneum. 1899, p. 54.

Opisthostoma (*Opisthostoma*) *nilgiricum*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 414.

Original description:—"Testa minima, truncate pupiformis, anguste umbilicata; spira irregulari, apice obtusa, obliqua, sutura profunda; costulata, interspatiis minutissime decussatis, albida, translucens. Anfractus rotundati, 5, quorum duo primi obliquiter contorti; ultimus constrictus, deinde inflatus, refractus, ascendens, denique sinistrorsus, anfractum penultimum contingens. Apertura subobliqua, superne versata, orbicularis. Peristoma continuum, incrassatum, duplicatum.

"Diam. maj. 1·3 mm.; alt. 1·1 mm."

Hab. India: Pykara, Nilgiris (*H. F. Blanford, W T Blanford*).

"Of this remarkable little shell the first and only known specimens were found by one of us rather more than two years since in the dead leaves of the little thickets termed 'sholas' near Pykara on the Nilgiris." (*Blanford.*)

Genus **DIPLOMMATINA**, *Benson.*

Diplommatina, Benson, A. M. N. H. ser. 2, iv, 1849, p. 193; Gray, Nomencl. Moll. Brit. Mus. i, 1850, p. 54; Pfeiffer, Zeits. Malak. viii, 1851, p. 147; id., Mon. Pneum. 1852, p. 121; Adams, Gen. Rec. Moll. ii, 1856, p. 287; Chenu, Man. Conchyl. i, part 2, 1860, p. 490; Semper, Journ. Conchyl. xiii, 1865, p. 293; Martens, Preuss. Exp. Ost-Osien, Zool. ii, 1867, p. 164; Blanford, A. M. N. H. ser. 3, xix, 1867, p. 306 (animal); Godwin-Austen, J. A. S. B. xxxix, part 2, 1870, p. 7; Stoliczka, op. cit. xl, part 2, 1871, p. 153; Nevill, Hand List, i, 1878, p. 284; Fischer, Man. Conchyl. 1885, p. 740; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 166; Ancey, Bull. Soc. Malac. France, iv, 1887, p. 277; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 135; id., Cat. Pneum. 1899, p. 55; Kobelt, Das Tierreich, Lief. 16, 1902, p. 423.

Type, *Bulimus folliculus*, Pfeiffer.

Range. India; Farther India; Malaysia; China, Japan, Formosa; New Guinea; Fiji, Samoa, and Pelew Is.

Shell minute, generally ovoid, dextral or sinistral, scarcely perforate; aperture subcircular; peristome interrupted, reflected, generally double; columellar margin generally with a narrow entering lamella; operculum thin, cartilaginous, composed of few whorls, bordered by a prominent ridge.

458. **Diplommatina acutulus**, *Godwin-Austen.*

Diplommatina acutulus, Godwin-Austen, Rec. Ind. Mus. viii, 1913, p. 577, text-fig. 4 c.

Original description:—"Shell dextral, very elongate and slender; sculpture fine regular rather close costulation; colour white, with a very pale ochraceous tint; spire turreted; suture impressed; whorls 9, regularly increasing from the apex to the 7th, which is the largest, sides convex; aperture ovate, vertical; peristome circular, double; columellar margin subvertical; tooth small, blunt.

"Major diam. 1, total length 2·4 mm."

Hab. India: Miri Hills (officers of Miri Mission, 1911–1912).

"This species recalls *D. exilis*, W Blf., from Ava, but it is far more attenuate and smaller. It is a beautiful shell, and fortunately 2 examples were found in the earth which had fallen out of empty shells of *Cyclophorus*." (*Godwin-Austen.*)

459. **Diplommatina affinis,** *Theobald.*

Diplommatina affinis, Theobald, J. A. S. B. xxxix, part 2, 1870, p. 398; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 70; Hanley & Theobald, Conch. Ind. 1876, p. xii; Theobald, Cat. Shells Brit. India, 1876, p. 41; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 181.

Diplommatina (*Eudiplommatina*) *affinis,* Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 135; id., Cat. Pneum. 1899, p. 55.

Diplommatina (*Diplommatina*) *affinis,* Kobelt, Das Tierreich, Lief. 16, 1902, p. 424.

Original description:—"Testa dextrorsa, ovata, turrita, vix rimata; anfract. 7, regulariter crescentibus, transversim leviter striatis, ultimo antice valde ascendente *D. pullulæ* modo; apertura ovali, margine columellari recto, dente parvo instructo, labro duplici, extra expansiusculo.

"Long. 18 [4·5 mm.], lat. ·08 unc. [2 mm.]."

"*D. pullula* differt magnitudine, spira minus attenuata et apertura magis rotundata." (*Theobald.*)

Hab. Burma: Upper Salween Valley, Shan States (*Theobald*).

460. **Diplommatina ambigua,** *Godwin-Austen.*

Diplommatina ambigua, Godwin-Austen, Proc. Zool. Soc. 1892, p. 513; id., Land & Freshw. Moll. India, ii, 1897, p. 8, pl. 64, fig. 2.

Diplommatina (*Eudiplommatina*) *ambigua,* Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 135; id., Cat. Pneum. 1899, p. 55.

Diplommatina (*Diplommatina*) *ambigua,* Kobelt, Das Tierreich, Lief. 16, 1902, p. 424.

Original description:—"Shell dextral, large, solid; sculpture fine, rather close costulation on all the whorls; colour horny white; spire high, sides rather flat above, apex rather acuminate; suture impressed; whorls 8, flatly convex; constriction in front, above the aperture; aperture oval, vertical; peristome strong, closely double, reflected; columellar tooth small for size of the shell, situated well in front and directed downwards.

"Major diam. 3; alt. axis 5·5 millim."

Hab. Burma: south of Burrail Range, Munipur (*Godwin-Austen*).

"This is one of the largest species from these mountains. I also got it at Kezakenomih; one specimen measuring 6·5 millim. in height of spire." (*Godwin-Austen.*)

461. **Diplommatina angulata,** *Theobald & Stoliczka.*

Diplommatina angulata, Theobald & Stoliczka, J. A. S. B. xli, part 2, 1872, p. 331, pl. 11, figs, 3, 3*a*, 3*b*; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 78; Hanley & Theobald, Conch. Ind. 1875, pl. 140, fig. 7; Nevill, Hand List, i, 1878, p. 285; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 184.

Palaiana angulata, Theobald, Cat. Shells Brit. India, 1876, p. 43.
Diplommatina (*Eudiplommatina*) *angulata*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 135; id., Cat. Pneum. 1899, p. 55.
Diplommatina (*Diplommatina*) *angulata*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 424.

Original description:—" D. testa ovato elongata, dextrorsa, vix rimata, sordide albida, anfractu penultimo latissimo, apice obtusiusculo, pallide rubido, submammillato; anfractibus sex, primis duobus lævigatis, cæteris valde convexis, ad peripheriam plus minusve distincter angulatis, transversim confertissime costellatis aut acute striatis; ultimo basi contracto; sutura profunda, simplice; apertura lati circulari, peristomate undique expanso, bilabiato, interno subrecto, ad marginem columellarem dente obliquo instructo, externo ad anfractum penultimum constrictum modice ascendente.

" Long. 2, lat. maxima 0·8, diam. apert. 0·6 mm."

Hab. Burma: Damotha, Moulmain (*Theobald*).

" The peculiar angulation of the whorls, combined with the very close transverse costulation, or almost striation, and the proportionately large aperture readily separate this species from any other as yet known. Mr. Theobald obtained numerous specimens on the limestone hill near Damotha, and also south of Moulmain, together with *D. carneola*, Stol." (*Theobald & Stoliczka.*)

462. **Diplommatina austeni**, *Blanford.*

Diplommatina austeni, Blanford, J. A. S. B. xxxvii, 1868, p. 81, pl. 3, figs. 2, 2*a*; Hanley & Theobald, Conch. Ind. 1875, pl. 119, figs. 1, 4; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 74; Theobald, Cat. Shells Brit. India, 1876, p. 41; Godwin-Austen, J. A. S. B. xlv, 1876, p. 178, pl. 7, figs. 8, 8*a* (large var.); Nevill, Hand List, i, 1878, p. 286; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 177, pl. 45, figs. 2, 2 *a*.
Diplommatina (*Eudiplommatina*) *austeni*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 135; id., Cat. Pneum. 1899, p. 55.
Diplommatina (*Diplommatina*) *austeni*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 425.

Original description:—" Testa dextrorsa non rimata, conico-ovato, albida vel succinea. Spira superna conica, non attenuata, sutura impressa, apice obtusiusculo. Anfr. 6, primi 3 gradatim crescentes, confertim minute costulati, ultimi lævigati vel costulis subobsoletis signati, antepenultimus major, ultimus aliquando lineis subdistantibus versus aperturam signatus, antice ascendens, subtus rotundatus. Apertura verticalis oblique subovalis; perist. incrassatum, mediocriter expansum, duplex, margine columellari verticali, angulo aperto subtus desinente, basali rotundato, plica columellari mediocri, callo parietali expanso.

" Long. $2\frac{1}{3}$, diam. $1\frac{1}{6}$ mill.; apertura c. perist. 1 mill. longa, intus $\frac{2}{3}$ lata."

Hab. India: Cherra Poonje and Maotherichan, Khasi Hills (*Godwin-Austen*); banks of Dikrang River, Dafla Hills, large var. (*Godwin-Austen*).

"I some years ago received a specimen of this species from Mr. Theobald as *D. polypleuris*, Bens. On comparing the series of *Diplommatinæ* collected by Captain Godwin-Austen with Mr. Benson's description, it is evident that the type of that species belonged to a different form, found abundantly by Captain Godwin-Austen with the present species on the Maotherichan ridge, part of the northern scarp of the Khasi Hills, and distinguished from the present form by its much stronger sculpture, less conical spire, deeper suture, and rounder mouth. It is a smaller form. Mr. Theobald's type specimens of *D. polypleuris* were from Nanclai, also on the northern portion of the Khasi plateau. *D. austeni* varies considerably in the sculpture of the lower whorls, which are in most specimens quite smooth. One individual sent is considerably more tumid than the type, but presents no other difference of importance." (*Blanford.*)

463. **Diplommatina blanfordiana**, *Benson.*

Diplommatina blanfordiana, Benson, A. M. N. H. ser. 3, v, 1860, p. 460; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 9; Godwin-Austen, J. A. S. B. xxxvii, 1868, p. 83, pl. 1, figs. 8, 8*a*; Theobald, Cat. Shells Brit. India, 1876, p. 41; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 169, pl. 49, figs. 10, 10*a*.

Diplommatina blanfordi, Hanley & Theobald, Conch. Ind. 1875, p. 49, pl. 119, figs. 5, 6; Nevill, Hand List, i, 1878, p. 287.

Diplommatina (*Eudiplommatina*) *blanfordiana*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1897, p. 135; id., Cat. Pneum. 1899, p. 55.

Diplommatina (*Diplommatina*) *blanfordiana*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 426.

Original description:—"Testa dextrorsa, foveato-rimato, ovato-acuminata, confertim arcuato-costulata, albida, spira ovato-pyramidata, superne attenuata, apice acutiusculo, sutura impressa; anfractibus $7\frac{1}{2}$ convexis, antepenultimo majusculo tumido, ultimo antice ascendente; apertura subverticali, late auriculari, plica columellari valida nutante munita, peristomate expanso, extus varice retrolicta remotiuscula valida aucto, infra ad sinistram subangulato, marginibus callo parietali crasso expanso appresso junctis, columellari leviter sinuato. Operc. —— ?

"Long. $4\frac{1}{2}$, diam. $2\frac{1}{3}$ mill."

Hab. India: Darjeeling (*Blanford, Stoliczka, Mainwaring*); Western Bhutan Hills (*Robert*).

"Independently of its smaller size and stronger costulation, this shell is distinguished from *D. pachycheilus* by its foveate rimation behind the thin columellar lip, and by the retrolict variciform second peristome, which is remote in its course, on the right side, from the thin actual peristome, but joins it below the umbilical cavity. In *D. pachycheilus* the peristome is thickened and bifurcate at the insertion of the outer lip, and there is no

remote varix; while the incrassate columellar lip is reflected over the rimation, and entirely conceals it. The last whorl ascends more conspicuously in front than in *D. pachycheilus*, although it rises considerably also in that shell—a feature which I omitted in the description given in the 'Annals' for 1857 The costulation of *D. pachycheilus* is very variable; in some specimens it disappears in the lower whorls, in others on the upper ones only; occasionally it pervades the whole surface." (*Benson.*)

464. **Diplommatina burti**, *Godwin-Austen.*

Diplommatina burtii, Godwin-Austen, J. A. S. B. xliv, part 2, 1875, p. 8, pl. 4, fig. 4; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 393; Hanley & Theobald, Conch. Ind. 1876, p. xii; Nevill, Hand List, i, 1878, p. 286 (*burti*).

Diplommatina (*Eudiplommatina*) *burti*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 135; id., Cat. Pneum. 1899, p. 55.

Diplommatina (*Diplommatina*) *burti*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 427.

Original description:—"Shell dextral, tumidly and ovately fusiform, colour pale umber or sienna-brown, very finely and closely costulated under lens, almost smooth to the naked eye; spire rapidly attenuate, apex sharp, suture well impressed below; whorls 8, the three last swollen and rounded, those near apex flat, penultimate the largest, the last rising slightly towards the aperture, which is vertical, broad, and well rounded below; peristome double, very thick, continuous, columellar tooth strong." (*Godwin-Austen.*)

Alt. axis 5 mm.; major diam. 2·7

Hab. India: debouchement of Burrowli River, Assam (*Burt*).

465. **Diplommatina butleri**, *Godwin-Austen.*

Diplommatina butleri, Godwin-Austin, Proc. Zool. Soc. 1892, p. 512; id., Land & Freshw. Moll. India, ii, 1897, p. 6, pl. 64, fig. 9.

Diplommatina (*Eudiplommatina*) *butleri*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 135; id., Cat. Pneum. 1899, p. 55.

Diplommatina (*Diplommatina*) *butleri*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 427.

Original description:—"Shell dextral, tumidly fusiform; sculpture, none on the last 3 whorls, very distant, strong costulation on all above; colour pale sienna-brown, fresh shells glassy and polished; spire conic, rapidly diminishing, apex small; suture well impressed; whorls $7\frac{1}{2}$, penultimate and antepenultimate about equal, sides very convex, constriction above the aperture; aperture nearly circular, vertical; peristome double, strong,

continuous; columellar margin vertical, angulate below, the tooth large, in front.

"Major diam. 2; alt. axis 4·4 millim."

Hab. Burma: Laiven Peak, Munipur (*Godwin-Austen*).

"Six specimens were obtained, together with those of *D. tumida* var., previously alluded to. This well-marked species was also found by me at Prowi, in the Lahupa-Naga Hills, at the head of the Lanier River, which drains into the Kyengdwen of Burmah, and was abundant there. I have also two specimens from Kezakenomih.

"Two specimens from Klang Sing, Naga Hills, are rather more tumid." (*Godwin-Austen.*)

466. **Diplommatina chennelli,** *Godwin-Austen.*

Diplommatina chennelli, Godwin-Austen, Proc. Zool. Soc. 1892, p. 512; id., Land & Freshw. Moll. India, ii, 1897, p. 6, pl. 64, figs. 8, 8 *a*.

Diplommatina (*Eudiplommatina*) *chennelli*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 136; id., Cat. Pneum. 1899, p. 56.

Diplommatina (*Diplommatina*) *chennelli*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 428.

Original description:—"Shell dextral, of solid form; sculpture: very fine, rather distinct ribbing, with scarcely any relief; colour pale ochraceous and sienna-brown; spire flat-sided, apex acuminate; suture rather shallow; whorls $8\frac{1}{2}$ to 9, sides flatly convex, constriction in front, the last two whorls equal in size; aperture oval, vertical; peristome thickened, strong; the columellar margin vertical and angulate below.

"(1st sp.) major diam. 2·9; alt. axis 5·9 millim.
(2nd sp.) major diam. 2·9; alt. axis 5 millim."

Hab. India: Lhota-Naga Hills (*Chennell*).

"This has close affinity to *D. labiosa* from the Khasi and Garo Hills; but, although larger (nearly double), the columellar tooth is much smaller, the spire more attenuate, and the general shape differs. I name it after the late Mr. A. Chennell, an assistant in the Indian Survey Department." (*Godwin-Austen.*)

467. **Diplommatina commutata,** *Godwin-Austen.*

Diplommatina commutata, Godwin-Austen, Proc. Zool. Soc. 1892, p. 513; id., Land & Freshw. Moll. India, ii, 1897, p. 8, pl. 64, fig. 4.

Diplommatina (*Eudiplommatina*) *commutata*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 136; id., Cat. Pneum. 1899, p. 56.

Diplommatina (*Diplommatina*) *commutata*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 428.

Original description:—"Shell dextral, elongately fusiform; sculpture, 4 apical whorls finely costulated, the last whorls nearly

smooth; colour pale sienna; spire with convex sides; suture moderately impressed; whorls 7½, sides convex, antepenultimate rather the largest; constriction in front, above the aperture, but to the right side; aperture oval, vertical; peristome double; columellar tooth sharp, well developed, directed downwards and well in front.

"Major diam. 1·75; alt. axis 3 millim."

Hab. Burma: Prowi, Lahupa-Naga Hills. (*Godwin-Austen.*)

"A large form of this I found at Tellizo Peak, Anghami-Naga Hills, on the North Munipur frontier line." (*Godwin-Austen.*)

468. **Diplommatina convoluta**, *Godwin-Austen.*

Diplommatina convoluta, Godwin-Austen, J. A. S. B. xliv, part 2, 1875, p. 9, pl. 4, figs. 8, 8*a*, 8*b*; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 393; Hanley & Theobald, Conch. Ind. 1876, p. xii; Nevill, Hand List, i, 1878, p. 286.

Diplommatina (*Eudiplommatina*) *convoluta*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1897, p. 136; id., Cat. Pneum. 1899, p. 56.

Diplommatina (*Diplommatina*) *convoluta*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 429.

Original description:—"Shell dextral, elongately fusiform, solid, pale yellowish or greenish horny, very finely costulated towards the apex, 2 last whorls smooth, striated near the aperture, spire with rather flattened sides, suture impressed; whorls 8, antepenultimate the largest, the penultimate constricted at ⅓ turn behind the peristome, the last ascends very sharply, contracting the breadth of the penultimate very considerably; aperture subvertical, lying to the right of the axis; peristome circular, solid, double, the tooth small and situated far within the columellar margin, lip scarcely reflected. Animal not seen.

"Alt. 0·25 [6·25], diam. 0·15 in. [3·75 mm.]."

Hab. India: slopes of the Eastern Burrail, 6000 ft.

"A very near ally of *D. jatingana*, G.-A., from which it is readily distinguishable by the situation and reduced size of the columellar process, its elongate flat-sided form, and very different sculpture." (*Godwin-Austen.*)

469. **Diplommatina costulata**, *Benson.*

Diplommatina costulatum (*Carychium costulatum*, Hutton MS.), Benson, A. M. N. H. ser. 2, iv, 1849, p. 194; Gray, Nomencl. Moll. Brit. Mus. i, 1850, p. 55; Pfeiffer, Zeits. Malak. viii, 1851, p. 148; id., Cat. Phaneropn. Brit. Mus. 1852, p. 86; id., Mon. Pneum. 1852, p. 122; id., Conch.-Cab., Cyclostomaceen, 1854, p. 389*, pl. 48, figs. 34, 35; Adams, Gen. Rec. Moll. ii, 1856, p. 287; Hanley & Theobald, Conch. Ind. 1875, pl. 120, figs. 8, 9; Nevill, Hand List, i, 1878, p. 287.

Diplommatina costata, Theobald, Cat. Shells Brit. India, 1876, p. 41.

Diplommatina (*Eudiplommatina*) *costulata*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 136; id., Cat. Pneum. 1899, p. 56.
Diplommatina (*Diplommatina*) *costulata*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 429.

Original description:—"Testa minima, subimperforata, cylindrico-ovata, minute costulata; costulis obliquis regularibus, approximatis; anfractibus 5, superioribus celeriter decrescentibus; ultimo angustiori, antice subascendente; sutura profunda; apice obtuso; apertura rotundata, continua, peristomate tenui, expanso, duplicato, labro secundo retromisso a costulis satis distincto.

"Long. 2 mill., diam. vix 1 mill."

Hab. India: Western Himalayas.

"It differs abundantly, in form as well as size, from *D. folliculus*, Pfr., in which also the double lip, distinct from the ribs, is strongly marked, although not noted in his characters. The present species is less than two-thirds the length of *D. folliculus*, and does not present the long conical spire of that species, decreasing more suddenly towards the apex." (*Benson.*)

470. **Diplommatina crispata**, *Stoliczka*.

Diplommatina (*Palaina*) *crispata*, Stoliczka, J. A. S. B. xl, part 2, 1871, p. 153, pl. 6, figs. 4, 4 *a*, 4 *b*; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 91; Nevill, Hand List, i, 1878, p. 289.
Palaina crispata, Theobald, Cat. Shells Brit. India, 1876, p. 43.
Diplommatina crispata, Hanley & Theobald, Conch. Ind. 1876, pl. 141, fig. 6; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 183.
Diplommatina (*Eudiplommatina*) *crispata*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 136; id., Cat. Pneum. 1899, p. 56.
Diplommatina (*Diplommatina*) *crispata*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 429.

Original description:—"Diplommatina [Pal.] testa conoidea, medio latissima, sordide albida, anfractibus 7, primis duobus (rare $1\frac{1}{2}$) mammillatis, lævigatis convexis, sequente convexiusculo, confertim lamellose striato, ceteris medio angulatis, crasse lamellatis, lamellis crebris, inæqualibus, tenuibus, undulatis et crispatis, ad peripheriam angulosam spiniforme productis, latere interiore excavatis; anf. penultimo haud distincte constricto; ultimo angustiore, basi convexiusculo; apertura perobliqua, circulari, extra dilatata, intus continua, lævi, supra leviter adnata, ad latus columellare incrassata et infra dente pliciforme, vix distinguendo, instructa, margine interno acuto, undique libero; peristomate externo tenui, lamelliforme undulato et late expanso.

"Alt. testæ 2·5; diam. anf. penult. (spinis incl.) 1·5; diam. apert. int. 0·8, d. ap. cum perist. 1 mm.

"Animal albidum, tentaculis cinereo atratis; operculum corneum." (*Stoliczka.*)

Hab. Burma: Damotha, near Moulmein.

471. **Diplommatina daflaensis**, *Godwin-Austen.*

Diplommatina austeni (large var.), Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 178.

Diplommatina daflaensis, Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 174, pl. 45, figs. 4, 4 *a*.

Diplommatina (*Eudiplommatina*) *daflaensis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 136; id., Cat. Pneum. 1899, p. 56.

Diplommatina (*Diplommatina*) *daflaensis*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 430.

Original description:—"Shell dextral, ovately fusiform, moderately thick, pale horny. Sculpture very fine, almost disappearing on the last two whorls. Sides of spire moderately flat. Whorls 7, penultimate and antepenultimate the largest, the last ascending slightly. Constriction in middle of aperture, which is circular and vertical; columellar margin rounded, tooth moderate. Peristome simple, double, rather strongly formed, the inner lip continuous.

"Alt. 0·15 [3·75 mm.], diam. 0·70 inch [? 0·07 inch = 1·75 mm.].

"This shell is very similar in form to *D. austeni*, W Blf., from the Khasi Hills, but it is much larger, that shell only being 0·90 [? 0·09] inch in length, and the two last whorls are not so smooth and show slight traces of sculpture." (*Godwin-Austen*, 1876.)

"Comparing this more closely with the form from the Khasi Hills, it differs very much in its general shape, being much smaller below, the antepenultimate being much larger in proportion to the penultimate; the apex is more attenuate, and the sculpture differs. It must therefore be distinguished as a species." (*Godwin-Austen*, 1886.)

Hab. India: Dikrang Valley, Dafla Hills (*Godwin-Austen*).

472. **Diplommatina decorosa**, *Godwin-Austen.*

Diplommatina decorosa, Godwin-Austen, Proc. Zool. Soc. 1892, p. 510; id., Land & Freshw. Moll. India, ii, 1897, p. 5, pl. 64, fig. 1.

Diplommatina (*Eudiplommatina*) *decorosa*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 136; id., Cat. Pneum. 1899, p. 56.

Diplommatina (*Diplommatina*) *decorosa*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 430.

Original description:—"Shell elongately fusiform, not rimate; sculpture, fine, close, regular costulation on all the whorls; colour pale whitish horny; spire, sides somewhat flat, apex rather acuminate, rapidly diminishing; suture moderately impressed; whorls 8, sides flatly convex, penultimate and antepenultimate

equal; constriction above the aperture, towards the outer margin; aperture ovate, rounded below; peristome thickened; columellar tooth small, in front.

"Major diam. 2·5; alt. axis 5·5 millim."

Hab. India: Anghami-Naga Hills (*Doherty*).

"There was one solitary specimen in my collection of this species from north of the Burrail, and 6 specimens, but smaller in size (4·5 millim. in height of spire), from the peak of Shiroifurar, in the Lahupa-Naga Hills, north of Munipur. Mr. Aldridge's collection contains a large number, and I have selected the type out of these.

"On the boss of trap rock near the village of Phunggam I found a number of a small variety, 4·5 millim. in height of spire, but differing in no respect, except in size, from the typical species, only that they are all of a pale sea-green tint.

"The same form occurred on Kopamedza Peak, with this difference, that the constriction was more to the right, directly over the outer margin of the peristome. From Prowi, specimens were still smaller in size, 3·8 millim." (*Godwin-Austen.*)

473. **Diplommatina depressa**, *Godwin-Austen.*

Diplommatina depressa, Godwin-Austen, J. A. S. B. xxxix, part 2, 1870, p. 2, pl. 1, fig. 2; Hanley & Theobald, Conch. Ind. 1875, pl. 120, figs. 5, 6; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 77; Theobald, Cat. Shells Brit. India, 1876, p. 42; Nevill, Hand List, i, 1878, p. 286.

Diplommatina (*Eudiplommatina*) *depressa*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1897, p. 136; id., Cat. Pneum. 1899, p. 56.

Diplommatina (*Diplommatina*) *depressa*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 430.

Original description:—"Shell dextral, not rimate, ovate, depressed; colour light amber, tinged rubescent at apex; costulation throughout close but sharply defined, more distant on body whorl; spire conoidal, apex blunt; suture deeply impressed; whorls 5, sides with considerable convexity, ante-penultimate much the largest and tumid; last whorl rises on the penultimate, almost to the suture, contracting the breadth of latter excessively; aperture vertical, broadly auriculate; peristome solid, double, the outer lip thick and strong, interrupted; the inner continuous, spreading in a broadly appressed parietal callus upwards on the sinistral side; columellar tooth large and thick; base prominent, descending.

"Operculum and animal not observed.

"Height $1\frac{1}{2}$ mm.; diameter $\frac{3}{4}$ mm.; diameter of aperture $\frac{1}{3}$ mm."

Hab. India: woods at Jawai, Jaintia Hills; Lalaingkote, 4000 ft. (*Godwin-Austen*).

"The small size, few whorls, impressed suture, obtuse apex, etc. distinguish this form readily. As in the preceding species [*D. jatingana*], the last whorl rises rapidly on the penultimate,

and to a greater extent than in most species of the genus. In all these characters, it exhibits a nearer approach to *Opisthostoma* than any species of *Diplommatina* yet described." (*Godwin-Austen.*)

474. Diplommatina diplochilus, *Benson.*

Diplommatina diplocheilus, Benson, A. M. N. H. ser. 2, xix, 1857, p. 202; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 10; Theobald, J. A. S. B. xxvii, 1858, p. 318; Pfeiffer, Novit. Conch. ser. 1, ii, 1860, p. 142, pl. 37, figs. 13–15; Godwin-Austen, J. A. S. B. xxxvii, 1868, p. 83, pl. 2, figs. 1, 1*a*; Hanley & Theobald, Conch. Ind. 1875, pl. 140, figs. 2, 3, p. 55 (*diplocheilos*); Theobald, Cat. Shells Brit. India, 1876, p. 42; Nevill, Hand List, i, 1878, p. 286.

Diplommatina (*Eudiplommatina*) *diplochilus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1897, p. 136; id., Cat. Pneum. 1899, p. 56.

Diplommatina (*Diplommatina*) *diplochilus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 431.

Original description:—"Testa dextrorsa, vix rimata, ovato-conica, subfusiformi, medio ventricosiori, solidiuscula, carneo-albida, vix translucente, leviter nitente; spira conica, apice acuto, sutura profunda; anfractibus 6½–7 convexis, primis costatis, 3 postremis lævioribus, antepenultimo majori tumido; apertura verticali subauriculari, pallide carnea, nitente, plica columellari valida nutante munita; peristomate duplici, interno continuo expanso, exteriori planato-expanso, infra sinistre angulo saliente desinente, margine sinistro sinuato, callo parietali magno, expanso, superne suturam fere attingente, subtus soluto marginem elevatum efformante. Operculo retractili.

"Long. 3, diam. 2 mill."

Hab. India: Teria Ghat, Khasi Hills (*Theobald*); Cherra Poonjee (*Blanford, Godwin-Austen*).

"This shell, although abundant, was local on limestone rocks. . . . There is a strong line of separation between the inner and outer peristome, and the relief of the parietal callus above the columella is a marked feature." (*Benson.*)

475. Diplommatina domuncula, *Godwin-Austen.*

Diplommatina domuncula, Godwin-Austen, Proc. Zool. Soc. 1892, p. 518; id., Land & Freshw. Moll. India, ii. 1897, p. 15, pl. 66, fig. 8.

Diplommatina (*Eudiplommatina*) *domuncula*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 136; id., Cat. Pneum. 1899, p. 56.

Diplommatina (*Diplommatina*) *domuncula*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 431.

Original description:—"Shell dextral, fusiform; sculpture, strong, regular, distant costulation on all the whorls, much closer

near the constriction, first two whorls smooth; colour pale whitish with an ochraceous tint; spire with convex sides, apex blunt; suture well impressed; whorls $7\frac{1}{2}$, sides convex, antepenultimate the largest, last whorl does not rise upon the penultimate; constriction above the aperture; aperture circular, subvertical, curvilinear as seen from the side; peristome double, not very much thickened; columellar tooth very minute, internal.

"Major diam. 1·3; alt. axis 3 millim."

Hab. India: Margarita, Naga Hills (*Doherty*).

"This is a very distinct form, quite new to me, and belonging to a group which is not represented, so far as I know, in the Khasi and Jaintia Hills." (*Godwin-Austen.*)

476. **Diplommatina edentula**, *Godwin-Austen.*

Diplommatina edentula, Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 185, pl. 49, figs. 7, 7 *a*.

Diplommatina (*Eudiplommatina*) *edentula*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 136; id., Cat. Pneum. 1899, p. 56.

Diplommatina (*Diplommatina*) *edentula*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 431.

Original description:—"Shell ovately fusiform, not rimate, thin; sculpture minute, longitudinal striæ, crossed by distant, strong costulation; colour whitish ochre; spire turreted, sides convex, apex rounded; suture moderately impressed; whorls 7, regularly increasing, the antepenultimate slightly the largest, the constriction above the aperture; aperture vertical, circular; peristome double, but not strongly developed; columellar tooth very small.

"Major diam. 1·3, alt. axis 2 mm."

Hab. Burma: Moulmein (*Theobald*).

"This is another of the small, toothed, dextral forms from this locality, and it cannot for a moment be confused with *D. exserta*; it may possibly be the shell referred to *D. polypleuris* and said to have been found near Moulmain." (*Godwin-Austen.*)

477. **Diplommatina elongata**, *Godwin-Austen.*

Diplommatina tumida, var., Godwin-Austen, J. A. S. B. xliv, part 2, 1875, p. 9, pl. 4, fig. 7.

Diplommatina elongata, Godwin-Austen, Proc. Zool. Soc. 1892, p. 511; id., Land & Freshw. Moll. India, ii, 1897, p. 7, pl. 64, fig. 6.

Diplommatina (*Eudiplommatina*) *elongata*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 136; id., Cat. Pneum. 1899, p. 56.

Diplommatina (*Diplommatina*) *elongata*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 432.

Original description:—"Shell elongately fusiform, thin, pale yellowish green; sculpture very faint above, quite smooth on the

three last whorls; spire attenuate, sides flat; suture moderate; whorls $8\frac{1}{2}$ to 9, the antepenultimate the largest; constriction in front above the aperture; last whorl ascends slightly; aperture oval, vertical; peristome double, thickened, slightly reflected; columellar tooth small and remote.

"Alt. 0·22 [5·5 mm.]; diam. 0·13 inch [3·25 mm.]."

Hab. India: Kezakenomih, Naga Hills (*Godwin-Austen*).

"This shell is a better type of this form of *Diplommatina* than the very tumid shell first described from Asalu; the form changes much in different localities, in some being much more solid and more distinctly and distantly sculptured near the apex; a variety from the Eastern Burrail is 0·20″ in alt., rich dark amber-coloured, has the three lower whorls smooth and glassy, the columellar tooth still more remote, and the constriction just behind the peristome; it departs so widely from the original type that it might almost be separated." (*Godwin-Austen.*)

478. **Diplommatina exilis**, *Blanford.*

Diplommatina exilis, Blanford, J. A. S. B. xxxii, 1863, p. 325; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 10; Godwin-Austen, J. A. S. B. xxxvii, 1868, p. 84, pl. 4, figs. 3, 3*a*; Theobald & Stoliczka, op. cit. xli, part 2, 1872, p. 331; Hanley & Theobald, Conch. Ind. 1875, p. 49, pl. 119, fig. 10; Theobald, Cat. Shells Brit. India, 1876, p. 42; Nevill, Hand List, i, 1878, p. 284; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 180, pl. 49, fig. 1.

Diplommatina (*Eudiplommatina*) *exilis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 136; id., Cat. Pneum. 1899, p. 56.

Diplommatina (*Diplommatina*) *exilis*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 432.

Original description:—"Shell dextral, not rimate, very slenderly subfusiform, rather solid, moderately, closely and obliquely ribbed throughout. Spire turreted with straight sides, apex obtuse, suture impressed. Whorls $7\frac{1}{2}$, rounded, antepenultimate slightly larger than the penultimate. Lower whorl rising a little near the aperture, which is subvertical, slightly inclined downwards, almost circular, the columellar margin being straightened, terminating in a right angle at the base, and bearing a moderate-sized internal tooth. Peristome double, the inner lip being prominent, slightly expanded, and continuous upon the penultimate whorl, but not forming a broad callus; outer lip slightly expanded, retro-relict. Operc.?

"Alt. 3, diam. $1\frac{1}{5}$, diam. ap. $\frac{2}{3}$ mm."

Hab. Burma: Mya Leit Doung, Ava (*Blanford*).

"The most slender species of the genus with which I am acquainted, and easily distinguished from all others by its long narrow form." (*Blanford.*)

479. **Diplommatina exserta**, *Godwin-Austen.*

Diplommatina exilis, var. *exserta* (nom. nud.), Nevill, Hand List, i, 1878, p. 284.

Diplommatina exserta, Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 184, pl. 49, figs. 2, 2*a*.

Diplommatina (*Eudiplommatina*) *exserta*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 136; id., Cat. Pneum. 1899, p. 56.

Diplommatina (*Diplommatina*) *exserta*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 432.

Original description:—"Shell elongately fusiform, not rimate; sculpture, minute spiral striæ, crossed by rather close transverse costulation, coarser and more distant on the apical whorls, less apparent on the last; colour very light sienna; spire high, turreted, sides flat, apex small; whorls 8, sides rounded, the antepenultimate the largest, the last ascending, constriction just behind the aperture; aperture vertical, oval; peristome closely double at base at right angles to the axis; columellar margin subvertical, the tooth not at all prominent, blunt and rounded.

"Major diam. 1, alt. axis 3 mm."

Hab. Burma: Damotha Cave, Moulmein (*Theobald*).

"This shell is very like *D. exilis*, the constriction, however, is much more defined; there is no spiral striation on the surface of *D. exilis*, and there is great difference in the form and size of the columellar tooth. Its abnormal form serves to characterize *D. exserta* well, and it may be compared in this respect to *D. nicobarica*." (*Godwin-Austen.*)

480. **Diplommatina fallax**, *Preston.*

Diplommatina fallax, Preston, Proc. Malac. Soc. xi, 1914, p. 24, text-fig.

Original description:—"Shell a miniature of *D. frumentum*, Preston, but rather lighter in colour, and with much coarser sculpture, the parietal callus is broader and less arched, and is furrowed at its junction with the margin of the labrum, the columella is more arched and has a rather coarser plait; the aperture also is rather sub-circular than quadrilateral, as in that species.

"Alt. 4·5, diam. maj. 2 mm. Aperture: alt. ·75, diam. ·75." (*Preston.*)

Hab. India: Naga Hills.

481. **Diplommatina folliculus**, *Pfeiffer.*

Bulimus folliculus, Pfeiffer, Symb. Hist. Helic. iii, 1846, p. 83; id., Mon. Helic. ii, 1848, p. 81; Reeve, Conch. Icon. v, 1850, pl. 87, fig. 644.

Diplommatina folliculus, Benson, A. M. N. H. ser. 2, iv, 1849, p. 194; Gray, Nomencl. Moll. Brit. Mus. i, 1850, p. 54; Pfeiffer, Zeits. Malak. viii, 1851, p. 147; id., Cat. Phaneropn. Brit. Mus. 1852, p. 86; id., Mon. Pneum. 1852, p. 122; id., Conch.-Cab.,

Cyclostomaceen, 1854, p. 388*, pl. 48, figs. 32, 33; Adams, Gen. Rec. Moll. ii, 1856, p. 287, pl. 86, fig. 5; Chenu, Man. Conchyl. i, part 2, 1860, p. 490, figs. 3623, 3624; Godwin-Austen, J. A. S. B. xxxvii, 1868, p. 83, pl. 1, figs. 1, 2 (shell); pl. 3, figs. 5, 5*a* (animal); Hanley & Theobald, Conch. Ind. 1875, pl. 140, figs. 8, 9; Theobald, Cat. Shells Brit. India, 1876, p. 42; Nevill, Hand List, i, 1878, p. 288.

Diplommatina (*Eudiplommatina*) *folliculus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 136; id., Cat. Pneum. 1899, p. 56.

Diplommatina (*Diplommatina*) *folliculus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 432, text-fig. 97 (p. 423).

"T. breviter rimata, ovato-acuminata, tenuis, distincte et oblique costata, pallide fuscescenti-albida; spira conica, acutiuscula; anfr. 7 convexi, ultimus angustior, antice subascendens, $\frac{1}{3}$ longitudinis vix æquans; apertura subverticalis subcircularis; perist. duplex, breviter expansum, marginibus approximatis, callo junctis, dextro arcuato, columellari dilatato, patente.

"Long. $3\frac{1}{2}$, diam. medio 2 mill., ap. long. 1 mill. vix superans." (*Pfeiffer*, 1852.)

Hab. India: Landour, Simla, Naini Tal (*Stoliczka*).

482. **Diplommatina frumentum**, *Preston*.

Diplommatina frumentum, Preston, Proc. Malac. Soc. xi, 1914, p. 23, text-fig.

Original description:—"Shell fusiform with acute apex, pale-yellowish horn-colour, somewhat shining; whorls 8, the first six regularly increasing, the seventh broad and convex, the eighth swollen, but smaller, sculptured with fine transverse striæ; suture impressed; columella descending vertically, bearing a rather fine, oblique plait situated well within the aperture, and diffused above into an arched, well-defined callus, which joins the upper margin of the labrum, and which is obliquely furrowed in the middle; labrum whitish, broad, somewhat thickened, reflexed; aperture subquadrilateral.

"Alt. 6·5, diam. maj. 3, min. 2·75 mm. Aperture: alt. 1·5, diam. 1 mm." (*Preston.*)

Hab. India: Naga Hills.

483. **Diplommatina garoensis**, *Godwin-Austen*.

Diplommatina garoensis, Godwin-Austen, Proc. Zool. Soc. 1892, p. 511; id., Land & Freshw. Moll. India, ii, 1897, p. 8, pl. 64, figs. 3, 3*a*.

Diplommatina (*Eudiplommatina*) *garoensis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 136; id., Cat. Pneum. 1899, p. 56.

Diplommatina (*Diplommatina*) *garoensis*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 433.

Original description:—"Shell dextral, globosely fusiform, solid; sculpture, distant, very fine ribbing on the 3 apical whorls, the rest smooth and shiny; colour pale ochraceous; spire high, side

very convex; apex acuminate, and when viewed from the side the axis is curved; suture impressed; whorls $6\frac{1}{2}$, all tumid, the antepenultimate much swollen and by far the largest; constriction above the aperture; aperture vertical, oval; peristome very much thickened and double; columellar tooth moderately large.

"Major diam. 2·3; alt. axis 3·5 millim."

Hab. India: Garo Hills (*Robert*).

"This species may be known by its very large antepenultimate whorl and the curved axis of the spire, and its strongly developed peristome and smooth lower whorls. It formed part of a collection of shells made by Mr. W Robert, of the Khasi Hills Survey Party, in the Garo Hills, during the military expedition into them in 1872–3. Ten specimens were found." (*Godwin-Austen.*)

484. **Diplommatina gibberosa,** *Godwin-Austen.*

Diplommatina gibberosa, Godwin-Austen, Proc. Zool. Soc. 1892, p. 519; id., Land & Freshw. Moll. India, ii, 1897, p. 16, pl. 66, figs. 12–12 *c*.

Diplommatina (*Eudiplommatina*) *gibberosa,* Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 136; id., Cat. Pneum. 1899, p. 56.

Diplommatina (*Diplommatina*) *gibberosa,* Kobelt, Das Tierreich, Lief. 16, 1902, p. 433.

Original description:—"Shell sinistral, ovately fusiform; sculpture, very distant fine costulation, 9 ribs on the antepenultimate whorl when viewed from the front; colour very pale greenish; spire low, sides rounded, apex blunt; suture very impressed; whorls $4\frac{1}{2}$, very swollen, sides very convex, penultimate much the largest; constriction on penultimate in centre above the aperture; aperture oval, subvertical; peristome double, strong; columellar tooth small, internal.

"Major diam. 1·5; alt. axis 2·2 millim."

Hab. India: Assam, south of the Barak River (*Godwin-Austen*).

"The nearest ally of this species is *D. jaintiaca,* G.-A.; it differs, however, much in form, particularly in the expanded penultimate whorl and in its very distant sculpture. A very large number of it were collected in the above-named locality, and a single example at Prowi in the Lahupa-Naga country.

"In the collection sent me by Mr. Aldrich in a box marked Naga Hills were about 40 specimens of this shell. The exact locality was not recorded, but I take it they were from some part of the Anghami-Naga Hills." (*Godwin-Austen.*)

485. **Diplommatina gibbosa,** *Blanford.*

Diplommatina gibbosa, Blanford, J. A. S. B. xxxvii, 1868, p. 80, pl. 2, figs. 4, 4 *a*, 4 *b*; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 79; Hanley & Theobald, Conch. Ind. 1875, pl. 120, figs. 1, 4; Theobald, Cat. Shells Brit. India, 1876, p. 42; Nevill, Hand List, i, 1878, p. 286.

Diplommatina (*Eudiplommatina*) *gibbosa*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 136; id., Cat. Pneum. 1899, p. 56.

Diplommatina (*Diplommatina*) *gibbosa*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 433.

Original description:—"Testa sinistrorsa, vix subrimata, gibboso-ovata, tumida, succinea, lævigata, parum nitida, tenuiuscula. Spira supra conoidea, sutura valde impressa, apice obtusiusculo. Anfr. 5, antepenultimus major, ventricosus, ultimus subtus rotundatus, alte ascendens. Apertura obliqua, subelliptica, plica columellari valida obliqua munita, infra plicam excavata; peristoma leviter sinuatum, expansum, duplex, externum retro relictum, internum continuum, patens, callo parietali lato, suturam fere attingente.

"Long 3, diam. 1½ mill. Ap. c. perist. 1½ mill. longa, intus vix 1 lata."

Hab. India: Habiang, Garo Hills (*Godwin-Austen*).

"This very interesting species differs widely in form from the only previously described sinistrorse *Diplommatina* inhabiting India, *D. huttoni*, Pfr., more widely than it does from some of the reversed forms met with in the Oceanic region. It shews a considerable resemblance in form to *D. martensi*, H. Ad., of unknown locality, figured in the Proc. Zool. Soc. for 1866, but which is said by its describer to belong to the section *Diancta* of Martens, characterised by a constriction at the back of the penultimate whorl. In *D. gibbosa*, as in most Indian Diplommatinæ, there is a slight tendency to constriction in front of the penultimate whorl, to which an internal rib appears to correspond, but which is covered and concealed to a great extent by the parietal callus of the peristome." (*Blanford.*)

486. **Diplommatina godwini**, *Möllendorff.*

Diplommatina concinna (non H. Adams, 1872), Godwin-Austen, Proc. Zool. Soc. 1892, p. 519; id., Land & Freshw. Moll. India, ii, 1897, p. 15, pl. 66, fig. 10.

Diplommatina (*Eudiplommatina*) *godwini* (nom. nov.), Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 136; Kobelt & Möllendorff, Cat. Pneum. 1899, p. 56.

Diplommatina (*Diplommatina*) *godwini*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 433.

Original description:—"Shell dextral, solid, fusiform; sculpture, very strong, rather distant costulation; spire tapering rapidly, apex acuminate; suture impressed; whorls 7, sides convex, penultimate and antepenultimate about equal in size; constriction hardly apparent, just above the aperture; aperture circular, vertical; columellar tooth quite minute, only an indication of it; peristome double, strongly developed.

"Alt. axis 1·6 millim."

Hab. India: Naga Hills, probably south of Margarita (*Doherty*).

"This is very distinct from any of the minute species I have hitherto examined from this part of India; it is distinguished by its thick shell and strong costulation." (*Godwin-Austen.*)

487. **Diplommatina henzadaensis**, *Godwin-Austen.*

Diplommatina henzadaensis, Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 179, pl. 46, figs. 6, 6 *a*.
Diplommatina (*Eudiplommatina*) *henzadaensis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 137; id., Cat. Pneum. 1899, p. 57.
Diplommatina (*Diplommatina*) *henzadaensis*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 434.

Original description:—"Shell dextral, ovately turreted, scarcely rimate; sculpture rather distant, fine; spire, sides convex, apex blunt; suture well impressed; whorls 6, rounded, the antepenultimate the largest, the constriction being just above the upper outer margin of the peristome; aperture circular; peristome double, continuous, solid for size, columellar tooth well developed.

"Major diam. 1; alt. axis 1·6 mm."

Hab. Burma: Kyoung Gyoung Nulla, Henzada, Pegu.

"There is only one specimen in Mr. Blanford's collection; but as it is fully grown, though so very minute, and is so unlike anything before described from Pegu, I have ventured on figuring and naming it." (*Godwin-Austen.*)

488. **Diplommatina homei**, *Godwin-Austen.*

Diplommatina homeii, Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 178, pl. 7, fig. 6.
Diplommatina homei, Nevill, Hand List, i, 1878, p. 287.
Diplommatina (*Diplommatina*) *homei*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 435.

Original description:—"Shell dextral, ovate, tumidly fusiform, strong, dull ochreous, very fresh shells often ruddy orange-coloured, sculpture very fine and filiform on the upper whorls, rather coarser on the last approaching the aperture. Spire with sides rather flat, penultimate and antepenultimate whorls about equal, the last whorl has the constriction in the middle of the aperture, and ascends to it. Aperture vertical, columellar margin angular below, the tooth well developed and placed low down; outer margin rounded. Peristome thick, double, both lips continuous and well reflected on outer margin.

"Alt. 0·24 [6 mm.], diam. 0·14 [3·5 mm.], apert. 0·08 in. [2 mm.]."

Hab. India: Toruputu and Shengorh Peaks, Dafla Hills, Assam (*Godwin-Austen*).

"This species is conspicuous from its large size and tumid flat-sided form." (*Godwin-Austen.*)

489. Diplommatina huttoni, *Pfeiffer*.

Diplommatina huttoni, Pfeiffer, Zeits. Malak. viii, 1851, p. 148 (nom. nud.); id., Proc. Zool. Soc. 1852, p. 157; id., Mon. Pneum. 1852, p. 123; id., Cat. Phaneropn. Brit. Mus. 1852, p. 86; id., Conch.-Cab., Cyclostomaceen, 1854, p. 389, pl. 48, figs. 36, 37; Adams, Gen. Rec. Moll. ii, 1856, p. 287; Guppy, A. M. N. H. ser. 3, xx, 1867, p. 95; Blanford, A. M. N. H. ser. 4, i, 1868, p. 110; Hanley & Theobald, Conch. Ind. 1875, pl. 139, figs. 5, 6; Theobald, Cat. Shells Brit. India, 1876, p. 42; Nevill, Hand List, i, 1878, p. 287; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 170, pl. 45, figs. 7, 7 *a*, 7 *b*.

Diplommatina (*Eudiplommatina*) *huttoni*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 137; id., Cat. Pneum. 1899, p. 57.

Diplommatina (*Diplommatina*) *huttoni*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 435.

Original description:—" D. testa sinistrorsa, subrimata, ovato-conica, eleganter confertim et oblique costulata, diaphana, albida; spira conica, acuta; anfract. 6 perconvexis; apertura subcirculari; perist. duplice, expanso.

" Long. $2\frac{1}{2}$, diam. 1 mill." (*Pfeiffer*.)

Godwin-Austen (*l. c.*) gives the following measurements:—Major diam. 0·83; alt. axis 1·9 mm.

Hab. India: Mussoorie, N. W. Himalayas (*Godwin-Austen*).

In 1867 the late R. J. Lechmere Guppy recorded the finding of this species in Trinidad, suggesting its migration—together with *Ennea bicolor*, Hutton—across the Tertiary Atlantis. The late William Blanford discussed this question at great length in 1868 (*loc. cit.*) and suggested the possibility of these molluscs having been transported with living plants, as others are well known thus to have been transported. Lieut.-Col. Godwin-Austen has compared specimens of *D. huttoni*, from the typical locality Mussoorie, with eighteen specimens from Trinidad, lent to him by the late Sir Rawson Rawson, and he found that the two forms were specifically distinct, and he has renamed and described the Trinidad shell as *D. occidentalis* *.

The question, however, as to which of the Indian species has been transported to America still remains unsolved. If the Trinidad form assimilated to any of the known species, Lt.-Col. Godwin-Austen, with his intimate and extensive knowledge of the Indian Fauna, would have been able to detect it. The Western Hemisphere being altogether outside the range of this genus, there can be no doubt that the species must have been carried across through human agency. The well-known case of *Eulota similaris* may be cited in this connection, this species having become distributed by similar means over a great part of the world. (*Cf.* Fauna Brit. India, Mollusca, vol. ii, 1914, p. 201.)

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* Land & Freshw. Moll. India, i, 1886, p. 173, pl. 45, figs. 8, 8 *a*, 8 *b*.

490. **Diplommatina jaintiaca**, *Godwin-Austen.*

Diplommatina, n. sp., Godwin-Austen, J. A. S. B. xxxvii, part 2, 1868, p. 84, pl. 3, figs. 3, 3 *a*, 3 *b*.

Diplommatina jaintiaca, Godwin-Austen, op. cit. xxxix, part 2, 1870, p. 4; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 80; Hanley & Theobald, Conch. Ind. 1875, pl. 120, figs. 2, 3; Theobald, Cat. Shells Brit. India, 1876, p. 42; Nevill, Hand List, i, 1878, p. 286.

Diplommatina (*Eudiplommatina*) *jaintiaca*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 137; id., Cat. Pneum. 1899, p. 57.

Diplommatina (*Diplommatina*) *jaintiaca*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 435.

Original description:—"Shell sinistral, elongately ovate, rather tumid, sub-rimate, rich amber colour, sharply very regularly and distantly costulated, rather solid; spire conical, slightly convex; whorls $5\frac{1}{2}$, sides convex, suture deep, penultimate whorl largest, last whorl strongly constricted in front of the aperture, rising very slightly behind the peristome, chiefly between the inner and outer peristome; aperture slightly oblique, sub-circular; peristome double, inner slightly expanded, scarcely thickened, terminating in a sinuation at the base of the columella; outer greatly produced, expanded, continuous; parietal callus thin moderately extended; columellar tooth blunt, moderately developed.

"Height $2\frac{2}{3}$ mm., diameter $1\frac{1}{2}$ mm., diameter of aperture with peristome, $\frac{2}{3}$ mm."

Hab. India: near Jawai, Jaintia Hills, 4500 ft.; West Khasi Hills (*Godwin-Austen*).

"This species is very near *D. gibbosa*, from the same region, and thus affording a second instance of a type intermediate between the dextral forms *D. pachycheilus*, *D. diplocheilus*, etc., and the sinistral forms from the Solomon Isles, etc. It is distinguished readily from *D. gibbosa* by its more regularly ovate form, its costulation, and the even, non-sinuated margin of the inner peristome.

"Since the transmission of specimens of *Diplommatina*, published in the Journal for 1868, to Mr. W Blanford, I have been fortunate enough to discover this species again. As the above quoted figure, on pl. iii, of the "Contributions to Indian Malacology, no. ix," was taken from a single shell, subsequently broken, the species remained unfortunately unnamed and undescribed." (*Godwin-Austen.*)

491. **Diplommatina jatingana**, *Godwin-Austen.*

Diplommatina jatingana, Godwin-Austen, J. A. S. B. xxxix, part 2, 1870, p. 1, pl. 1, fig. 1; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 72; Hanley & Theobald, Conch. Ind. 1875, pl. 139, fig. 7; Theobald, Cat. Shells Brit. India, 1876, p. 42; Nevill, Hand List, i, 1878, p. 286; Godwin-Austen, Land & Freshw. Moll. India, ii, 1897, p. 11, pl. 65, figs. 8, 8 *a*.

Diplommatina (*Eudiplommatina*) *jatingana*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 137; id., Cat. Pneum. 1899, p. 57.

Diplommatina (*Diplommatina*) *jatingana*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 436.

Original description:—"Shell dextral, ovate fusiform, solid, pale corneous; specimens, when young, often of a bright sienna, diaphanous; rather finely and sharply costulated on the four whorls near the apex, becoming fainter below, and from the ante-penultimate to the body whorl almost smooth, or with only a faint trace of ribbing; spire conic, sides flattened, apex rather acute, suture slightly impressed below; whorls $7\frac{1}{2}$, the ante-penultimate the largest; penultimate whorl slightly constricted at $\frac{1}{4}$ turn behind the peristome, last whorl ascending chiefly behind the constriction; aperture sub-vertical, broadly curiculate; peristome solid, double, columellar margin straight, right-angled at base; the usual tooth, large, coarse and blunt, sometimes descending; lips very slightly expanded, outer more so than the inner, this last continuous, forming a strong callus upon the penultimate whorl.

"Animal pale, almost colourless, tentacles brown, labial ribbon long and tapering.

"Height 4 mm.; diameter $2\frac{1}{4}$ mm.; diameter of aperture 1 mm."

Hab. India: hill at the junction of the Kayeng and Jatinga Rivers, N. Cachar Hills (*Godwin-Austen*).

"This is a very handsome and peculiar species, and one of the largest I have obtained in these hills; it was only found on the above isolated hill, where it was abundant. I have named it after the large river, the Jatinga, that flows below. The species is nearly allied to *D. blanfordiana* and *D. semisculpta*: it is, however, somewhat more tumid, and has shallower sutures than either of these forms; and while it has not the distant retro-relict peristome and rimation of the former, it appears to be less sharply angulated at the base of the peristome than the latter. But the most distinctive character is the position of the slight constriction of the penultimate whorl which, instead of being in front of, or above, the aperture, as in *D. blanfordiana*, *D. semisculpta*, and *D. pachycheilus*, is at a considerable distance, about $\frac{1}{4}$ turn behind it. Hence the suture of the last whorl rises rapidly behind the constriction, runs for a short distance in front of it parallel with the preceding suture, and finally again ascends to the margin of the peristome." (*Godwin-Austen.*)

492. **Diplommatina labiosa**, *Blanford.*

Diplommatina labiosa, Blanford, J. A. S. B. xxxvii, 1868, p. 80, pl. 2, figs. 3, 3 *a*; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 76; Hanley & Theobald, Conch. Ind. 1875, pl. 119, fig. 9; Theobald, Cat. Shells Brit. India, 1876, p. 42; Nevill, Hand List, i, 1878, p. 286.

Diplommatina (*Eudiplommatina*) *labiosa*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 137; id., Cat. Pneum. 1899, p. 57.
Diplommatina (*Diplommatina*) *labiosa*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 436.

Original description:—"Testa dextrorsa, non rimata, ovato-acuminata, pallide succinea, solidula. Spira attenuato-conica, subturrita, apice acutiusculo, sutura impressa. Anfr. $7\frac{1}{2}$–8 convexi, primi confertim costulati, 3 ultimi lævigati, nitiduli, antepenultimus major, ultimus versus aperturam interdum subdistanter costulatus, antice ascendens. Apertura verticalis, late auricularis, subcircularis, plica columellari valida munita; peristoma rectum, incrassatum, subtriplex, externum valde expansum, internum expansum, sulcatum, subduplex, margine columellari brevi, subsinuato, subtus angulo vix saliente desinente; callo parietali, tenui, mediocriter expanso.

"Long. $3\frac{3}{4}$, diam. vix 2 mill. Ap. c. peristomate $1\frac{1}{2}$ mill. longa, diam. intus circa $\frac{3}{4}$."

Hab. Mayong and Habiang, Khasi and Garo Hills (*Godwin-Austen*).

"This shell is, in some respects, intermediate between *D. pachycheilus*, Bens., and *D. diplocheilus*, Bens. It has the general form of the first, but resembles the last in its smooth lower whorls. The peristome is largely developed and peculiar, the inner portion being flatly expanded and almost divided into two portions by a groove, so that the whole lip is almost triple." (*Blanford.*)

493. **Diplommatina levigata**, *Godwin-Austen.*

Diplommatina levigatus, Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 179, pl. 7, fig. 7.
Diplommatina levigata, Nevill, Hand List, i, 1878, p. 287.
Diplommatina (*Diplommatina*) *levigata*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 437.

Original description:—"Shell dextral, tumidly fusiform, colour pale horny, very smooth throughout, slight close coloration on the four apical whorls. Spire rather rapidly diminishing towards the apex; this is rather sharp in some specimens. Suture moderately impressed. Whorls 7, antepenultimate the largest and swollen, the penultimate constricted in front of the aperture, the last ascends but slightly and is puckered on the posterior margin, corresponding with the angular projections of the outer lip. Aperture vertical; peristome solid, double, the inner lip continuous, circular, the columellar process or tooth moderate, the outer lip with an undulating margin, square below, with angular projections, two below and one on the upper outer margin.

"Alt. 0·15 in. [3·75 mm.]." (*Godwin-Austen.*)

Hab. India: Dikrang Valley, Dafla Hills, Assam (*Godwin-Austen*).

The waved margin and angular expansions on the outer lip are stated to be its most peculiar characters, and to mark at once its distinctness.

494. Diplommatina minima, *Beddome*.

Diplommatina minima, Beddome, P. Z. S. 1875, p. 442, pl. 52, figs. 3, 4; Hanley & Theobald, Conch. Ind. 1876, p. xii; Theobald, Cat. Shells Brit. India, 1876, Addenda, p. ii; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 395; Nevill, Hand List, i, 1878, p. 288; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 176, pl. 49, fig. 13.

Diplommatina (*Eudiplommatina*) *minima*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 137; id., Cat. Pneum. 1899, p. 57.

Diplommatina (*Diplommatina*) *minima*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 438.

Original description:—"Shell dextral, cylindrical, straw-coloured, not rimate; whorls $5\frac{1}{2}$, convex, all except the two upper ones minutely costulated, sutures deep; spire blunt and tapering very slightly, the antepenultimate whorl not larger than the penultimate, the latter very slightly constricted; the position of the operculum over the centre of the aperture, aperture circular; peristome shining, continuous round the lower portion of the penultimate whorl, double in its lower free portion, the columellar margin semicircular, the tooth small but plainly visible under the lens: total length $\frac{1}{16}$ inch [1·5 mm.], $2\frac{1}{2}$ times the breadth [0·6 mm.]." (*Beddome.*)

Hab. India: Gudam Hills, Golcondah Hills, Vizagapatam (*Beddome*).

495. Diplommatina munipurensis, *Godwin-Austen*.

Diplommatina munipurensis, Godwin-Austen, Proc. Zool. Soc. 1892, p. 518; id., Land & Freshw. Moll. India, ii, 1897, p. 14, pl. 66, fig. 6.

Diplommatina (*Eudiplommatina*) *munipurensis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 137; id., Cat. Pneum. 1899, p. 57.

Diplommatina (*Diplommatina*) *munipurensis*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 438.

Original description:—"Shell dextral, elongately fusiform; sculpture minute, close costulation; colour very pale greenish grey; spire symmetrical, sides slightly convex; suture well impressed; whorls $6\frac{1}{2}$, sides convex; constriction in front and immediately above the aperture; no columellar tooth, its position indicated by a slight sinuosity on the columellar margin; aperture nearly circular, subvertical; peristome closely double, very slight in form, the inner does not spread much upward on the penultimate whorl.

"Major diam. 1·5; alt. axis 2·7 millim."

Hab. Burma: south of the Barak River, between the Mao villages and Munipur (*Godwin-Austen*).

"From the number of specimens found, this appears a very abundant species; I never got anything like it in the Khasi Hills to the west." (*Godwin-Austen.*)

496. **Diplommatina nana**, *Blanford.*

Diplommatina nana, Blanford, J. A. S. B. xxxiv, 1865, p. 85; Godwin-Austen, op. cit. xxxvii, 1868, p. 84, pl. 4, figs. 4, 4 *a*; Theobald & Stoliczka, op. cit. xli, part 2, 1872, p. 331; Hanley & Theobald, Conch. Ind. 1875, pl. 140, fig. 1; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 75; Theobald, Cat. Shells Brit. India, 1876, p. 42; Nevill, Hand List, i, 1878, p. 285; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 181, pl. 49, figs. 6, 6 *a*.

Diplommatina (*Eudiplommatina*) *nana*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 137; id., Cat. Pneum. 1899, p. 57

Diplommatina (*Diplommatina*) *nana*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 439.

Original description:—"Shell not rimate, dextrorse, subovate, rather solid, amber coloured, very finely and closely filiformly costulated on the lower whorls, less closely on the upper, or, frequently, subdistantly costulated throughout. Spire conical, with sides scarcely convex above; apex rather obtuse, sometimes reddish, suture impressed. Whorls 6–6½, rounded, antepenultimate the largest, the last rising considerably upon the penultimate. Aperture vertical, ear-shaped, nearly circular, columellar margin straight for a short distance and vertical, with an internal tooth. Peristome double, both portions expanded and appressed, the inner forming a thin callus upon the penultimate whorl. Operculum?

"Length 2¼, diameter 1 millem. Aperture with peristome about ⅔ millem. in diameter." (*Blanford.*)

Hab. Burma: Akowtoung, Thondoung, and Yenangdoung, in Henzada District, Pegu (*Blanford*); near Moulmein (*Theobald*).

497 **Diplommatina nicobarica**, *Godwin-Austen.*

Diplommatina carreola, var. (? distinct species), Nevill, Hand List, i, 1878, p. 284 (part).

Diplommatina nicobarica, Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 185, pl. 46, figs. 7, 7 *a*; id., Proc. Zool. Soc. 1895, p. 454; id., Land & Freshw. Moll. India, ii, 1897, p. 16.

Diplommatina (*Eudiplommatina*) *nicobarica*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 137; id., Cat. Pneum. 1899, p. 57.

Diplommatina (*Diplommatina*) *nicobarica*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 439.

Original description:—"Shell dextral, fusiform, not rimate; sculpture very close regular costulation; colour pale brown;

spire, sides rather flattened, apex acuminate; whorls 7, sides convex, the antepenultimate the broadest, the constriction usually immediately above the aperture, but in some inclining more to the outer margin; aperture circular, suboblique; peristome closely double; columellar margin straight, only a slight indication of the usual tooth, but the thread or twist of the columella is visible within the aperture.

"Alt. axis 4·3 mm."

Hab. Nicobars: Katchall (*Roepstorf*).

"The absence of the usual columellar tooth is a conspicuous difference; it is the first species described from these islands." (*Godwin-Austen.*)

In 1895 the following note was added:—

"This species is No. 13 of Mr. G. Nevill's 'Amended Hand List' (p. 284) = *roepstorffiana*, Nevill MS., from Katchall (*de R.*).

"This species in Mr. de Roepstorff's collection bears the name of *D. carneola*, Stol., = *battemalvensis*, Nevill. In Nevill's 'Amended Hand List' I find the title *roepstorffiana* entered and the typical locality Katchall, with 3 specimens from Camorta and 20 from Battemalve, collected by Ferd. Stoliczka. It is somewhat similar to *D. carneola* from Moulmain, but it is more elongate and the costulation much closer and finer." (*Godwin-Austen.*)

Var. battemalvensis, *Godwin-Austen.*

Diplommatina carneola, var. (? distinct species), Nevill, Hand List, i, 1878, p. 284 (part).

Diplommatina nicobarica, var. *battemalvensis* (Nevill MS.), Godwin-Austen, Proc. Zool. Soc. 1895, p. 454; id., Land & Freshw. Moll. India, ii, 1897, p. 16.

Diplommatina (*Eudiplommatina*) *nicobarica*, var. *battemalvensis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 137; id., Cat. Pneum. 1899, p. 57.

"I have discovered among some shells put up by Mr. G. Nevill two specimens in a tube, labelled as above, from the island of Batte Malve; they agree in all characters with the last species [*nicobarica*], but are much larger and more tumid, the antepenultimate whorl being much larger than in *nicobarica*.

"Major diam. 1·3; alt. axis 3; body-whorl 0·9 mm." (*Godwin-Austen.*)

Hab. Nicobars: Batte Malve (*Stoliczka*).

498. Diplommatina oligopleuris, *Blanford.*

Diplommatina oligopleuris, Blanford, J. A. S. B. xxxvii, 1868, p. 82, pl. 3, figs. 4–4 *c*; Theobald & Stoliczka, op. cit. xli, part 2, 1871, p. 330 (*D. olygopleuris*); Hanley & Theobald, Conch. Ind. 1875, pl. 119, figs. 2, 3; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 74; Theobald, Cat. Shells Brit. India, 1876, p. 42; Nevill, Hand List, i, 1878, p. 285 (+ var.); Godwin-Austen, Land & Freshw. Moll. India, i, 1886, pl. 50, fig. 1 (animal).

Diplommatina (*Eudiplommatina*) *oligopleuris*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 137; id., Cat. Pneum. 1899, p. 57.

Diplommatina (*Diplommatina*) *oligopleuris*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 440.

Original description:—"Testa dextrorsa, non rimata, conico-ovata, costis distantibus obliquis ornata, fulvescenti-albida. Spira conica, apice obtuso, sutura impressa. Anfr. 6, rotundati, antepenultimus major, tumidiusculus, ultimus antice ascendens, subtus rotundatus. Apertura verticalis, late auricularis, plica columellari valida munita; perist. rectum, duplex, internum antice porrectum, expansulum, externum late expansum, margine columellari verticali, callo parietali mediocri.

"Long. 2, diam. vix $1\frac{1}{4}$ mill. Ap. c. perist. $\frac{3}{4}$ mill. longa."

Hab. India: Teria Ghat, Khasi Hills (*Godwin-Austen*).

"This is evidently a peculiar type. In some specimens the sculpture on the lower whorls appears to be more or less obsolete. The form is not unlike that of *polypleuris* and *austeni*, but it is easily recognised by its strong distinct costulation." (*Blanford.*)

499. **Diplommatina oviformis**, *Fulton.*

Diplommatina oviformis, Fulton, A. M. N. H. ser. 7, viii, 1901, p. 245.

Diplommatina (*Diplommatina*) *oviformis*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 440.

Original description:—"Shell dextral, ovate, very pale yellow, sculptured with oblique, very close-set costæ; whorls $6\frac{1}{2}$, convex, the penultimate slightly wider than the last; aperture subcircular; peristome somewhat thickened, inner margin slightly raised; columella lip almost erect, slightly incurved at the middle; columella plait prominent.

"Alt. $2\frac{3}{4}$ millim.; diam. major $1\frac{1}{2}$ millim."

Hab. India: Darjeeling.



Fig. 36.—*Diplommatina oviformis.* (× 4.)

"In general form very like *D. ungulata*, Blanf., but without the peculiar projection on upper part of the peristome, which is almost circular in *D. oviformis*, whereas in *D. ungulata* it is angular at the basal portion and turned slightly outwards towards the left hand." (*Fulton.*)

The accompanying figure has been drawn from the type specimen in the British Museum.

500. **Diplommatina pachychilus**, *Benson.*

Diplommatina pachyheilus, Benson, A. M. N. H. ser. 2, xix, 1857, p. 203; Theobald, J. A. S. B. xxvii, 1858, p. 322; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 10; Benson, A. M. N. H. ser. 3, xiii, 1859, p. 183; Pfeiffer, Novit. Conch. ser. 1, ii, 1860, p. 143, pl. 37, figs. 16–18; Godwin-Austen, J. A. S. B. xxxvii, 1868, p. 83, pl. 1, fig. 5; Hanley & Theobald, Conch. Ind. 1875, pl. 140, figs. 5, 6; Theobald, Cat. Shells Brit. India, 1876, p. 42; Nevill, Hand List, i, 1878, p. 287.

Diplommatina (*Eudiplommatina*) *pachychilus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 137; id., Cat. Pneum. 1899, p. 57.

Diplommatina (*Diplommatina*) *pachychilus*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 440.

Original description:—"Testa dextrorsa, non rimata, ovato-acuminata, lævi, obsolete costulato-striata, pallide cornea, translucente, nitente; spira attenuato-conica, apice obtusiusculo, sutura impressa; anfractibus 7 convexiusculis, antepenultimo majori tumido; apertura verticali, late auriculari, plica columellari valida, transversa, munita; peristomate subduplici, sinuato, incrassato, infra sinistre angulato, callo parietali expanso, appresso, margine columellari sinuato. Operc. —— ?

"Long. 4, diam. $2\frac{1}{3}$ mill." (*Benson.*)

Hab. India: Darjeeling (*H. Blanford*); Rungun Valley (*Benson*).

501. **Diplommatina parvula**, *Godwin-Austen.*

Diplommatina parvula, Godwin-Austen, J. A. S. B. xxxix, part 2, 1870, p. 5, pl. 1, figs. 5, 5 *a*, 5 *b*; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 77; Hanley & Theobald, Conch. Ind. 1875, pl. 139, fig. 4; Theobald, Cat. Shells Brit. India, 1876, p. 42; Nevill, Hand List, i, 1878, p. 285.

Diplommatina (*Eudiplommatina*) *parvula*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 137; id., Cat. Pneum. 1899, p. 57.

Diplommatina (*Diplommatina*) *parvula*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 440.

Original description:—"Shell dextral, ovate, tumid, depressed, thin; colour bright corneous, pale in some specimens, translucent, finely yet sharply costulated throughout; spire oval, apex very flat, and blunt. Whorls 5, with sides very concave, enlarging rapidly from the apex, antepenultimate the largest, body whorl ascends slightly within a short distance of the peristome, suture deeply impressed; aperture circular with slight obliquity, columellar margin rounded, the usual tooth absent; peristome strong, well developed, double, both outer and inner lips expanded, the former to the greatest extent, the latter forming a thick parietal callus.

"Height $1\frac{1}{2}$mm.; thickness 1 mm." (*Godwin-Austen.*)

Hab. India: Moyong, Khasi Hills (*Godwin-Austen*).

502. Diplommatina polypleuris, *Benson.*

Diplommatina polypleuris, Benson, A. M. N. H. ser. 2, xix, 1857, p. 203; Theobald, J. A. S. B. xxvii, 1858, p. 318; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 11; Godwin-Austen, J. A. S. B. xxxvii, 1868, p. 83, pl. 3, fig. 1; id., op. cit. xxxix, part 2, 1870, p. 4, pl. 1, figs. 4, 4 *a* (var.); Theobald, op. cit. xli, part 2, 1872, p. 330; Hanley & Theobald, Conch. Ind. 1875, pl. 140, fig. 10; Theobald, Cat. Shells Brit. India, 1876, p. 42; Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 178, var. *minuta* (nom. nud.); Nevill, Hand List, i, 1878, p. 285 (+ var.); Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 176, pl. 45, figs. 1, 1 *a*.

Diplommatina (*Eudiplommatina*) *polypleuris*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 137; id., Cat. Pneum. 1899, p. 57.

Diplommatina (*Diplommatina*) *polypleuris*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 441.

Original description:—"Testa dextrorsa, non rimata, oblongo-ovata, confertim oblique chordato-costulata, pallide carnea, apice obtusiusculo, hyalino, sutura profunda: anfractibus 6 convexis, antepenultimo tumidiusculo; apertura verticali, subcirculari, dente columellari munita; peristomate duplici, interiori expansiusculo, externo expanso, ad basin sinistram angulato-rotundato, callo parietali mediocri, appresso. Operc. —— ?

"Long. vix 2, diam. 1 mill." (*Benson.*)

Hab. India: Nanclai Poonjee, Assam (*Theobald*); Dafla Hills (*Godwin-Austen*), var.; North Khasi Hills (*Godwin-Austen*); Darjeeling (*Stoliczka*). Burma: Nattoung, Sandoway (*Theobald*).

503. Diplommatina pullula, *Benson.*

Diplommatina pullula, Benson, A. M. N. H. ser. 3, iii, 1859, p. 182; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 9; Godwin-Austen, J. A. S. B. xxxvii, 1868, p. 83, pl. 1, fig. 7; Hanley & Theobald, Conch. Ind. 1875, pl. 119, fig. 7; Theobald, Cat. Shells Brit. India, 1876, p. 42; Nevill, Hand List, i, 1878, p. 287; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 170, pl. 49, fig. 12.

Diplommatina (*Eudiplommatina*) *pullula*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 137; id., Cat. Pneum. 1899, p. 57.

Diplommatina (*Diplommatina*) *pullula*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 441.

Original description:—"Testa imperforata, ovato-turrita, oblique confertim costulata, fulvescenti-albida, versus apicem rubella, spira subturrita, sutura impressa, apice obtusiusculo; anfractibus 6–7 convexis, antepenultimo tumidiore, ultimo antice valde ascendente, costulis remotioribus irregularibus; apertura subverticali, vix superne spectante, oblique obovali, peristomate duplici, interno porrecto expansiusculo, externo subreflexo, marginibus callo appresso expanso junctis, columellari verticali planato

intus acute unidentato basi angulato-rotundato, dextrali valde arcuato. Operc. ——?

"Long. 3, diam. 1¼ mill."

Hab. India: Rungun Valley (*Blanford*); Darjeeling (*Blanford, Stoliczka, Mainwaring*).

"In form and size between *huttoni* and *folliculus*, Pfr.; dextrorse like the latter, though agreeing with the former in having the tooth apparent on the columellar lip. The tooth is as strong, in comparison with the size of the shell, as in the other more eastern species of the North Indian ranges. The more considerable rise of the last whorl on the penultimate is a feature also observable in the large *Dipl. macgillivrayi*, Adams. The columellar base is deficient in the sharp angle observable in the larger Khasia *diplocheilus* and Darjiling *pachycheilus*; and its elongate subturrited form at once distinguishes it from *polypleuris*." (*Benson.*)

504. **Diplommatina pupæformis**, *Theobald.*

Diplommatina pupæformis, Theobald, J. A. S. B. xxxix, part 2, 1870, p. 398; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 84; Hanley & Theobald, Conch. Ind. 1876, p. xii; Theobald, Cat. Shells Brit. India, 1876, p. 42; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 182, pl. 46, figs. 4, 4 *a*.

Diplommatina salwiniana, var. *pupæformis*, Nevill, Hand List, i, 1878, p. 285.

Diplommatina (*Eudiplommatina*) *pupaeformis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 137; id., Cat. Pneum. 1899, p. 57.

Diplommatina (*Diplommatina*) *pupaeformis*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 442.

Original description—"Testa sinistrorsa, oblongo ovali, non rimata, pallidissime cornea; sutura impressa; anfract. 7, regulariter crescentibus, transversaliter confertim striatis; apertura subcirculari, margine columellari brevi, recto, dente columellari modico instructo, labro duplici, margine externo expanso.

"Long. 0·16 [4 mm.], lat. 0·08 unc. [2 mm.]." (*Theobald.*)

Hab. Burma: Shan States (*Fedden*).

505. **Diplommatina puppensis**, *Blanford.*

Diplommatina puppensis, Blanford, J. A. S. B. xxxii, 1863, p. 324; id., A. M. N. H. ser. 3, xiii, 1864, p. 443 (*pappensis*); Godwin-Austen, J. A. S. B. xxxvii, 1868, p. 84, pl. 4, figs. 2, 2 *a*; Hanley & Theobald, Conch. Ind. 1875, pl. 139, figs. 8, 9; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 75; Theobald, Cat. Shells Brit. India, 1876, p. 42; Nevill, Hand List, i, 1878, p. 284; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 180.

Diplommatina (*Eudiplommatina*) *puppensis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 137; id., Cat. Pneum. 1899, p. 57.

Diplommatina (Diplommatina) puppensis, Kobelt, Das Tierreich, Lief. 16, 1902, p. 442.

Original description:—"Shell dextral, not rimate, elongately subovate, thin translucent, light amber in colour, very finely and closely costulated, spire with convex sides, apex pointed, not acuminate, suture impressed. Whorls 7, the antepenultimate being the largest, last whorl rising considerably upon the penultimate. Aperture vertical, nearly circular, the columellar margin being straight, with an obtuse angle at the base, and furnished with a small tooth internally. Peristome double, orange in colour; both lips expanded, the inner forming a thin callus upon the penultimate whorl. Operc. thin, horny, white, circular, flat, with no distinct spiral sculpture.

"Alt. $3\frac{1}{2}$, diam. 2, diam. ap. 1 mm."

Hab. Burma: Puppa Hill, Ava (*Blanford*).

"The largest species yet discovered in Burma and the most symmetrical, so far as I know, of all Asiatic forms. None of the Burmese representatives of *Diplommatina* shew the strongly acuminate spire, or the great swelling of the antepenultimate whorl which distinguishes the species inhabiting the Himalaya." (*Blanford.*)

506. **Diplommatina regularis**, *Fulton*.

Diplommatina regularis, Fulton, A.M.N.H. ser. 7, viii, 1901, p. 245.

Diplommatina (Diplommatina) regularis, Kobelt, Das Tierreich, Lief. 16, 1902, p. 442.

Original description:—"Shell dextral, ovate-conic, imperforate, creamy white, ornamented with very distinctly raised, thin,



Fig. 37.—*Diplommatina regularis*. (× 4.)

oblique costæ; whorls 7, very convex, first five regularly increasing in diameter, last two about equal; aperture circular; peristome slightly expanded, double; columella plait rather deeply inserted.

"Alt. $2\frac{1}{2}$ millim.; diam. major 1 millim."

Hab. India: Darjeeling.

"I know of no Indian species nearer to this than *D. pullula*, Bens., which is smaller and has closer and much less prominent costæ." (*Fulton.*)

The specimen here delineated is the type in the British Museum.

507. **Diplommatina richthofeni**, *Theobald & Stoliczka.*

Diplommatina richthofeni, Theobald & Stoliczka, J. A. S. B. xli, part 2, 1872, p. 331, pl. 11, figs. 4, 4 *a*, 4 *b*; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 78; Hanley & Theobald, Conch. Ind. 1876, pl. 141, figs. 7, 8; Theobald, Cat. Shells Brit. India, 1876, p. 42; Nevill, Hand List, i, 1878, p. 285.

Diplommatina (*Eudiplommatina*) *richthofeni*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 137; id., Cat. Pneum. 1899, p. 57.

Diplommatina (*Diplommatina*) *richthofeni*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 443.

Original description:—"Dipl. testa ovate elongata, turrita, dextrorsa, albida, rimata; spira conoidea; anfractibus septem, convexis, ad medium subangulatis, sutura simplici junctis, penultimo ultimo latiore: primis duobus apicem formantibus lævigatis, cæteris transversim conferte costellatis, ultimo basi convexo, angustato, supra ad anf. penultimum ascendente: apertura parva, circulari, peristomate duplici: interno tubuliforme modice producto atque dilatato; labio ad basin dente obliquo et magno instructo.

"Long. 2·5, lat. maxima 0·8, diam. aperturæ 0·5 mm."

Hab. Burma: Farm Caves, Moulmein (*Theobald*).

"A species closely allied to *D. angulata*, but more slender, with less distinctly angulated whorls, non-mammillated apex, with a slightly more distant costulation and with a comparatively smaller aperture." (*Theobald & Stoliczka.*)

508. **Diplommatina saltuensis**, *Godwin-Austen.*

Diplommatina saltuense, Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 178, pl. 45, figs. 6, 6 *a*.

Diplommatina (*Eudiplommatina*) *saltuensis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 138; id., Cat. Pneum. 1899, p. 58.

Diplommatina (*Diplommatina*) *saltuensis*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 444.

Original description:—"Shell dextral, not rimate, umbilicated, ovately fusiform; sculpture distant, strong costulation on all the whorls; colour ruddy ochre, strong on apex; spire conic acuminate, sides flat near apex, which is rather pointed; whorls $6\frac{1}{2}$, the three last much rounded, the antepenultimate the largest, the constriction in middle above the aperture; aperture circular, perpendicular; peristome very solid, double; columellar margin straight, the tooth pointed.

"Major diam. 1·4, alt. axis 2·4 mm."

Hab. India: Jatinga Valley, North Cachar Hills.

"This species, which assimilates in general form to *D. polypleuris* &c., yet differs considerably in the attenuation of the apex and proportion of the whorls, being more like in this respect *D. daflaensis*." (*Godwin-Austen.*)

509. **Diplommatina salwiniana**, *Theobald.*

Diplommatina salwiniana, Theobald, J. S. A. B. xxxix, part 2, 1870, p. 398; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 84; Hanley & Theobald, Conch. Ind. 1876, p. xii; Theobald, Cat. Shells Brit. India, 1876, p. 42 (*salewiniana*); Nevill, Hand List, i, 1878, p. 285.

Diplommatina (*Eudiplommatina*) *salwiniana*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 138; id., Cat. Pneum. 1899, p. 58.

Diplommatina (*Diplommatina*) *salwiniana*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 444.

Original description:—"Testa sinistrorsa, ovate turrita, non rimata, pallidissime flavescente; sutura impressa; anfractibus $7\frac{1}{2}$, convexis, regulariter crescentibus, transversim distincte striatis, striis in ult. anfractu magis distantibus; apertura rotundate ovata, margine columellari recto, dente parvo submediano instructo, margine externo uniforme curvato, tenuiter calloso.

"Long. 0·20 [5 mm.], lat. 0·10 unc. [2·5 mm.]." (*Theobald.*)

Hab. Shan States (*Fedden*).

510. **Diplommatina scalaria**, *Blanford.*

Diplommatina scalaria, Blanford, J. A. S. B. xxxvii, part 2, 1868, p. 79, pl. 2, fig. 2; Hanley & Theobald, Conch. Ind. 1875, p. 55 (*scalaris*), pl. 139, figs. 2, 3; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 72; Theobald, Cat. Shells Brit. India, 1876, p. 42; Nevill, Hand List, i, 1878, p. 286.

Diplommatina (*Eudiplommatina*) *scalaria*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 138; id., Cat. Pneum. 1899, p. 58.

Diplommatina (*Diplommatina*) *scalaria*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 444.

Original description:—"Testa dextrorsa, non rimata, ovato-acuminata, subfusiformis, costulis validis verticalibus distantibus ornata, pallide succinea. Spira conica, subturrita, apice subacuto, sutura valde impressa. Anf. 7 rotundati, duo primi lævigati, tertius confertim—, cæteri distanter—costulati, antepenultimo major, tumidus, ultimus versus aperturam ascendens, basi rotundatus. Apertura subverticalis, leviter sursum spectans, late auricularis, plica columellari mediocri intus munita: perist. duplex, internum continuum, expansum, externum expansum, fere retro-relictum, margine dextro juxta anfractum penultimum sinuato, tunc angulatim antice porrecto, subtus una cum basali recto, columellari verticali, subtus angulo obtuso desinenti, callo parietali expanso, superne suturam fere attingente.

"Long. $3\frac{1}{2}$, diam. 2 mill. Apertura c. peristomate vix $1\frac{1}{2}$ mill. longa, diam. intus circa $\frac{2}{3}$." (*Blanford.*)

Hab. India: Habiang, Garo Hills (*Godwin-Austen*).

This species is said in shape to approach the Darjeeling *D. blanfordiana*, Bens., but may be easily distinguished by the distant and prominent sculpture.

511. Diplommatina scalaroidea, *Theobald.*

Diplommatina scalaroidea, Theobald, J. A. S. B. xxxix, part 2, 1870, p. 399, pl. 18, figs. 5, 5 *a*, 5 *b*; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 80; Hanley & Theobald, Conch. Ind. 1876, p. 56 (*scalaroides*), pl. 141, fig. 10; Theobald, Cat. Shells Brit. India, 1876, p. 42; Nevill, Hand List, i, 1878, p. 285.

Diplommatina (*Eudiplommatina*) *scalaroidea*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 138; id., Cat. Pneum. 1899, p. 58.

Diplommatina (*Diplommatina*) *scalaroidea*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 445.

Original description:—"Dipl. testa ovato turrita, sinistrorsa, albida, solidula, non rimata, apice subobtusa; anfractibus 7, convexis, sutura profunda junctis, antepenultimo latissimo, penultimo supra aperturam sensim constricto; anf. primis duobus ad apicem lævigatis, ceteris costulis transversis, sub-obliquis, distantibus, filiformibus ornatis, interspaciis politis; apertura late ovato-rotundata, labio lateraliter incrassato, supra producto, adnato, medio tenuissimo; columella plica valida et infra eam incisione profunda instructa; labro duplici, incrassato, paulo dilatato, intus lævi, extra paulo reflexiusculo, prope medium insinuato.

"Alt. testæ 0·2 [5 mm.], lat. max. 0·1 [2·5 mm.]; alt. apert. 0·07 [1·75 mm.], lat. apert. circ. 0·06 [1·5 mm.]."

Hab. Burma: Mandalay (*Theobald*, *Stoliczka*).

"A very marked type of the sinistrorse *Diplommatinæ*, somewhat allied to the Assamese *D. jaintiaca*, G.-Austen, but readily distinguished from it by its more turreted shape, and by the deep incision below the columellar fold." (*Theobald.*)

512. Diplommatina semisculpta, *Blanford.*

Diplommatina semisculpta, Blanford, J. A. S. B. xxxvii, part 2, 1868, p. 78, pl. 1, fig. 6; Hanley & Theobald, Conch. Ind. 1875, pl. 120, fig. 7; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 71; Godwin-Austen, J. A. S. B. xlv, part 2, 1876, p. 178; Theobald, Cat. Shells Brit. India, 1876, p. 42; Nevill, Hand List, i, 1878, p. 287.

Diplommatina (*Eudiplommatina*) *semisculpta*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 138; id., Cat. Pneum. 1899, p. 58.

Diplommatina (*Diplommatina*) *semisculpta*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 445.

Original description:—"Testa dextrorsa non rimata, ovato-conica, solidiuscula, albida vel succinea. Spira conica, subattenuata, apice acutiusculo, sutura superne mediocriter impressa, subtus profunda. Anfr. 7 convexi, primi costulati, postremi lævigata, antepenultimus major, ventricosus, penultimus juxta aperturam leviter constrictus, ultimus antice ascendens, subtus rotundatus. Apertura verticalis late auricularis, peristoma incrassato-expansum,

subduplex vel duplex, margine dextro subrecto, columellari sinuato, angulo saliente subtus desinente basali juxta angulum fere concavo, dente columellari valida, callo parietali mediocriter expanso, tenui, appresso.

"Long. 4, diam. 2 mill.; ap. cum peristomate $1\frac{1}{2}$ mill. longa, intus 1 lata."

Hab. India: Darjeeling (*Blanford, Stoliczka, Mainwaring*); Dafla Hills (*Godwin-Austen*).

"This shell is easily distinguished from its congener *D. pachycheilus*, Bens., by the greater tenuity of the antepenultimate whorl, the absence of sculpture on the lower whorls and the more prominent angle at the left lower corner of the peristome. This last character in *D. semisculpta* is rather stronger than appears in the figure. The present species is much more closely allied to *D. diplocheilus*, Bens., which it resembles greatly in sculpture and form. The principal distinction is in the peristome which is much less developed in *D. semisculpta*, the parietal callus being quite thin and appressed instead of standing out from the last whorl as in that species. The mouth also is larger in proportion, the angle at the base of the columellar margin more salient, and the spire more acuminate." (*Blanford.*)

513. **Diplommatina sherfaiensis**, *Godwin-Austen.*

Diplommatina sherfaiensis, Godwin-Austen, J. A. S. B. xxxix, part 2, 1870, p. 3, pl. 1, fig. 3; Hanley & Theobald, Conch. Ind. 1875, pl. 119, fig. 8; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 76; Theobald, Cat. Shells Brit. India, 1876, p. 42; Nevill, Hand List, i, 1878, p. 286.

Diplommatina (*Eudiplommatina*) *sherfaiensis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 138; id., Cat. Pneum. 1899, p. 58.

Diplommatina (*Diplommatina*) *sherfaiensis*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 446.

Original description:—"Shell dextral, ovate, fusiform, subrimate, thin rubescent straw colour, diaphanous; sculpture very fine, close, filiform, shewing well on all the whorls; spire with sides slightly convex, apex subacuminate, conic; whorls 6, convex, penultimate and ante-penultimate of very nearly the same size, the former being slightly the largest and more tumid; last whorl constricted in front of peristome above the aperture, ascending; aperture sub-vertical, columellar margin much rounded, the tooth very small, and in some old specimens is hardly to be detected; peristome thin, double and close, the outer very slightly expanded, the inner distinctly so, continuous, forming a thin broad parietal callus. Animal not observed.

"Height 3 mm.; diameter $1\frac{3}{4}$ mm.; diameter of aperture $\frac{3}{4}$ mm." (*Godwin-Austen.*)

Hab. India: Cachar Hills, Sherfaisip and Marangksi Peaks (5500 ft.) (*Godwin-Austen*).

Stated to resemble *D. puppensis*, Blanford, in form and size, but readily distinguished by its fine close costulation, by the roundness of the aperture and the thinness of the peristome.

514. Diplommatina silvicola, *Godwin-Austen.*

Diplommatina silvicola, Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 178, pl. 45, figs. 3, 3 *a*, (var.) figs. 5, 5 *a*.
Diplommatina (*Eudiplommatina*) *silvicola*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 138; id., Cat. Pneum. 1899, p. 58.
Diplommatina (*Diplommatina*) *silvicola*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 446.

Original description:—"Shell somewhat depressedly ovate, not rimate; sculpture, regularly well-marked distant costulation; colour pale sienna-brown; spire conic, sides convex, apex rather blunt; whorls 6, rounded, the last rather small, penultimate the most swollen, constriction in middle and above the aperture; aperture vertical, circular; peristome double and solid, columellar margin subvertical, tooth strong.

"Major diam. 1·3, alt. axis 2·2 mm."

Hab. India: Jenta Hajuma Peak (5127 ft.), North Cachar (*Godwin-Austen*).

"I obtained only six specimens of this shell, in the dense lofty forest of the highest part of the North Cachar Hills. It approaches *D. austeni* in its general form, but is more depressed, and its sculpture is very defined." (*Godwin-Austen.*)

A dwarf form, measuring only 1·7 mm. in height, was also found in the Jatinga Valley, North Cachar Hills.

515. Diplommatina sperata, *Blanford.*

Diplommatina sperata, Blanford, J. A. S. B. xxxi, 1862, p. 143; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 10; Godwin-Austen, J. A. S. B. xxxvii, 1868, p. 84, pl. 4, figs. 1, 1 *a*; Theobald, op. cit. xli, part 2, 1872, p. 330; Hanley & Theobald, Conch. Ind. 1876, p. xii; Theobald, Cat. Shells Brit. India, 1876, p. 42; Nevill, Hand List, i, 1878, p. 284; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 179, pl. 46, figs. 5, 5 *a*.
Diplommatina (*Eudiplommatina*) *sperata*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 138; id., Cat. Pneum. 1899, p. 58.
Diplommatina (*Diplommatina*) *sperata*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 446.

Original description:—"Testa dextrorsa, non rimata, ovato-conica, subfusiformis, solidiuscula, pallide cornea, subremote verticaliter costulata. Spira conica, apice acuta, sutura impressa. Anfr. 6½ convexi; antepenultimus major, tumidus; ultimus antice vix ascendens. Apertura verticalis, subtus antice sinuata, late auricularis, plica columellari valida munita; perist. subduplex,

expansum, margine columellari sinuato et ad basin angulo acuto desinente, callo parietali mediocri.

"Long. $2\frac{1}{3}$, diam. $1\frac{1}{3}$, ap. diam. $\frac{1}{2}$ mm."

Hab. Burma: Moditoung, Arakan Hills, Pegu (*Blanford*); Mai-i, Sandoway District (*Theobald*).

"But two perfect specimens of this shell occurred to me at Moditoung on the Prome and Tongoop road. . . It resembles *D. pachycheilus*, B., in the shape of the mouth, but is distinguished by the slighter rise of the last whorl, and by its subremote costulate sculpture, which, together with its less rounded aperture, serves also to distinguish it from *D. diplocheilus*, B., *D. pullula*, B., and *D. blanfordiana*, B. the two latter of which are costulated, and the first named smooth." (*Blanford.*)

516. **Diplommatina succinea**, *Godwin-Austen.*

Diplommatina succinea, Godwin-Austen, Proc. Zool. Soc. 1892, p. 519; id., Land & Freshw. Moll. India, ii, 1897, p. 15, pl. 66, fig. 9.

Diplommatina (*Diplommatina*) *succinea*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 447.

Original description:—"Shell dextral, tumidly fusiform, thin and delicate in texture; sculpture, regular, rather close costulation; colour very pale amber, with stronger coloration on the apex; spire somewhat depressed, suture impressed; whorls 6, tumid, with convex sides; constriction above the aperture; aperture oval, vertical; columellar tooth only indicated by a slight swelling; peristome double, strong.

"Major diam. 1·3; alt. axis 2 millim."

Hab. India: Anghami-Naga Hills (*Godwin-Austen*).

"This minute species may be compared with *D. parvula* from the N. Khasi Hills, from which it differs in being larger, and in having a greater number of whorls and a much more tumid shape." (*Godwin-Austen.*)

517. **Diplommatina theobaldi**, *Godwin-Austen.*

Diplommatina theobaldi, Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 174, pl. 49, figs. 11, 11 *a*.

Diplommatina (*Eudiplommatina*) *theobaldi*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 138; id., Cat. Pneum. 1899, p. 58.

Diplommatina (*Diplommatina*) *theobaldi*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 447.

Original description:—"Shell sinistral, globosely scarcely rimate, constriction central, above the aperture ovate, somewhat gibbous; sculpture smooth, with rather close costulation, high and sharp near aperture; colour pale umber; spire bluntly conoid, apex obtuse; suture moderately impressed; whorls 5, sides flat in front, rounded at back; aperture subvertical, oval; peristome

double, not continuous; columellar margin curved, no tooth visible viewed from the front, but seen slightly well within the aperture.

"Major diam. 1·4, alt. axis 2·3 mm."

Hab. India: Darjeeling (*Theobald*).

"This interesting sinistral species, the first I have seen from the Darjeeling Hills, is another similar to *D. jaintiaca* of the mountains south of the Brahmaputra, but differs in many respects, particularly in its tumid small size and the absence of the columellar tooth." (*Godwin-Austen.*)

518. **Diplommatina tumida**, *Godwin-Austen.*

Diplommatina tumida, Godwin-Austen, J. A. S. B. xxxix, part 2, 1870, p. 6, pl. 2, fig. 2; Hanley & Theobald, Conch. Ind. 1875, pl. 139, fig. 1; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 71; Theobald, Cat. Shells Brit. India, 1876, p. 42; Nevill, Hand List, i, 1878, p. 286.

Diplommatina (*Eudiplommatina*) *tumida*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 138; id., Cat. Pneum. 1899, p. 58.

Diplommatina (*Diplommatina*) *tumida*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 447.

Original description:—"Shell dextral, ovately and tumidly fusiform, color pale corneous, or pale green; costulation fine and close throughout; spire attenuate, rather pointed. Whorls 8, lower tumid, sides rounded below, flat above, penultimate the largest; suture impressed,—a well marked constriction of penultimate whorl situated close behind the peristome, last whorl rises slightly on the penultimate; aperture vertical, circular, columellar margin rather straight, tooth large; peristome double, moderately thickened and continuous, forming a callus on the penultimate.

"Height 0·23 [5·75 mm.]; diam. 0·13 [3·25 mm.]; diam. of ap. with peristome 0·07 [1·75 mm.]." (*Godwin-Austen.*)

Hab. India: Burrail Range, near Nenglo, N. Cachar Hills (*Godwin-Austen*).

Stated to be closely allied to *D. pachychilus*, Benson, and to partake also somewhat of the character of *D. blanfordiana*, but it is more tumid, while the position of the constriction separates it well from both those species.

Var. abdita, nom. nov.

Diplommatina tumida, var., Godwin-Austen, J. A. S. B. xliv, part 2, 1875, p. 9, pl. 4, figs. 7, 7 *a*.

Original description:—"Shell elongately fusiform, thin, pale yellowish green, sculpture very faint above, quite smooth on the 3 last whorls, spire attenuate, sides flat, suture moderate; whorls $8\frac{1}{2}$ to 9, the antepenultimate the largest, constriction in front,

above the aperture, last whorl ascends slightly; aperture oval, vertical, peristome double, thickened, slightly reflected, columellar tooth small and remote.

"Alt. 0·22 [5·5 mm.], diam. 0·13 in. [3·25 mm.].

Hab. India: Kezakenomih, Naga Hills (*Godwin-Austen*).

"This shell is a better type of this form of *Diplommatina* than the very tumid shell first described from Asalu; the form changes much in different localities, in some being much more solid and more distinctly and distantly sculptured near the apex; a variety from the Eastern Burrail is 0·20" in alt., rich dark amber coloured, has the 3 lower whorls smooth and glassy, the columellar tooth still more remote, and the constriction just behind the peristome; it departs so widely from the original type that it might almost be separated." (*Godwin-Austen.*)

Var. **laisenensis**, nom. nov.

Diplommatina tumida, var., Godwin-Austen, Proc. Zool. Soc. 1892, p. 512; id., Land & Freshw. Moll. India, ii, 1897, p. 7, pl. 64, fig. 7.

Original description:—"Shell dextral, elongately fusiform, not rimate; sculpture, fine costulation on the 5 apical whorls, the last smooth; colour pale greenish; spire with convex sides, apex acuminate; suture well impressed; whorls 7½, penultimate and antepenultimate equal; constriction above the aperture, but towards the right-hand side; aperture oval, vertical; peristome thickened, double; columellar margin straight and angulate below, the tooth in front, moderately large.

"Major diam. 2·4; alt. axis 5 millim." (*Godwin-Austen.*)

Hab. Burma: Laisen Peak and Nongmaiching Trigonometrical Station, Munipur.

519. **Diplommatina ungulata**, *Blanford.*

Diplommatina ungulata, Blanford, J. A. S. B. xl, 1871, p. 42, pl. 2, figs. 5, 5 *a*; Hanley & Theobald, Conch. Ind. 1875, pl. 120, fig. 10; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 73; Theobald, Cat. Shells Brit. India, 1876, p. 42; Nevill, Hand List, i, 1878, p. 287.

Diplommatina (*Eudiplommatina*) *ungulata*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 138; id., Cat. Pneum. 1899, p. 58.

Diplommatina (*Diplommatina*) *ungulata*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 448.

Original description:—"Testa dextrorsa, ovato-conica, subrimata, tenuis, costulata, cereo-albida. Spira superne conica; sutura impressa; apex obtusulus. Anfractus 7; duo primi lævigata, ceteri confertim costulati; antepenultimus major, tumidus; penultimus supra aperturam constrictus; ultimus valde ascendens, ad basin rotundatus. Apertura subobliqua, subquadrata; plica columellaris mediocris. Peristoma subduplicatum, margine dextro

evertato, juxta suturam sinuatum, in expansionem angustam unguiformem, antice productum ; subtus rectum. Callus columellaris late appressus.

" Alt. 3 mm. ; diam. vix 2 mm.—Aperturæ alt. 1 mm., lat. 1 mm."

Hab. India : Darjeeling (*Blanford, Stoliczka*).

"The only species yet described that presents anything resembling the peculiar conformation of the lip exhibited by this species is the rare *D. scalaria*, W. Blanford, from the Khasi Hills, and it is scarcely discernible in some specimens even of this species, which moreover presents no other point of marked resemblance. In all the specimens I have seen of *D. ungulata*, it is strongly marked ; in some, however, more so than in others. . . The animal is white, with the tentacles dusky and the upper part of the rostrum reddish coloured." (*Blanford.*)

520. **Diplommatina venustula**, *Godwin-Austen.*

Diplommatina venustula, Godwin-Austen, Proc. Zool. Soc. 1892, p. 518 ; id., Land & Freshw. Moll. India, ii, 1897, p. 14, pl. 66, figs. 7, 7 *a*.

Diplommatina (*Eudiplommatina*) *venustula*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1897, p. 138 ; id., Cat. Pneum. 1899, p. 58.

Diplommatina (*Diplommatina*) *venustula*, Kobelt, Das Tierreich, Lief. 16, 1902, p. 448.

Original description :—" Shell dextral, elongately fusiform, thin ; sculpture, fine, regular, close costulation throughout ; colour pale amber ; spire high, sides flattish, apex acuminate ; suture impressed ; whorls 7½, sides convex, the penultimate the largest ; constriction in front above the aperture ; aperture widely ovate, suboblique ; peristome but slightly developed, narrowly double, expanded into a small wing on the upper and outer margin, giving it a very sinuated margin ; no columellar tooth.

" Major diam. 2·1 ; alt. axis 4 millim."

Hab. India : Japvo Peak, Anghami-Naga Hills (*Godwin-Austen*).

"This species, of which I only obtained 3 specimens, is quite distinct, as shown in the form of the spire and particularly the expanded side of the peristome, which is an unusual character." (*Godwin-Austen.*)

Subgenus **METADIANCTA**, *Möllendorff.*

Metadiancta, Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 98 (section) ; Kobelt & Möllendorff, tom. cit. p. 138 (subgenus) ; id., Cat. Pneum. 1899, p. 58 ; Kobelt, Das Tierreich, Lief. 16, 1902, p. 449.

Type, *Diplommatina dohertyi*, Godwin-Austen.

Range. Assam and Munipur.

Constriction at the last third of the penultimate whorl, no parietal folds.

521. **Diplommatina compacta**, *Godwin-Austen.*

Diplommatina compacta, Godwin-Austen, Proc. Zool. Soc. 1892, p. 515; id., Land & Freshw. Moll. India, ii, 1897, p. 11, pl. 65, figs. 7, 7 *a*, 7 *b*.

Diplommatina (*Metadiancta*) *compacta*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 138; id., Cat. Pneum. 1899, p. 58; Kobelt, Das Tierreich, Lief. 16, 1902, p. 449.

Original description :—" Shell dextral, small, tumidly fusiform; sculpture, the two apical whorls smooth, two next with fine close ribbing, the last three whorls smooth or glassy; colour pale ochraceous white; spire, sides rather flat, apex moderately blunt; suture slightly impressed; whorls $7\frac{1}{2}$, the antepenultimate the largest and tumid; constriction on the side, well behind the aperture, at about 1 millim. distant; aperture oval, vertical; peristome double; columellar tooth large in front, and directed downwards.

" Major diam. 1·8; alt. axis 3·5 millim."

Hab. Burma: south of Barak, Munipur (*Godwin-Austen*).

" A larger shell, with rather a different shaped spire 4 millim. in height, was found at Asalu, with the constriction in the same position.

" It is an allied form of *D. jatingana*, from the North Cachar Hills, which is a larger, more tumid species with the constriction farther behind the aperture.

" A single specimen, only 3 millim. in height, was sorted out of the box containing *D. chennelli*, from the Lhota-Naga Hills." (*Godwin-Austen.*)

522. **Diplommatina distincta**, *Godwin-Austen.*

Diplommatina distincta, Godwin-Austen, Proc. Zool. Soc. 1892, p. 514; id., Land & Freshw. Moll. India, ii, 1897, p. 10, pl. 65, figs. 4, 4 *a*, 4 *b*.

Diplommatina (*Metadiancta*) *distincta*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 138; id., Cat. Pneum. 1898, p. 58; Kobelt, Das Tierreich, Lief. 16, 1902, p. 449.

Original description :—" Shell dextral, small, rather depressedly fusiform; sculpture very fine close ribbing; colour pale horny; spire conoid; apex blunt; suture impressed; whorls 7, sides convex, the antepenultimate the largest; constriction on the side, well behind the aperture; aperture vertical, irregularly ovate; peristome thin; columellar tooth very large for size and in front.

" Major diam. 2; alt. axis 3·4 millim."

Hab. India: north of Burrail Range, Naga Hills (*Godwin-Austen*).

" There is only one specimen of this species, but it is very different from any of the smaller forms in having the constriction behind the aperture, and, for so small a shell, in having the columellar tooth so large." (*Godwin-Austen.*)

523. Diplommatina dohertyi, *Godwin-Austen.*

Diplommatina dohertyi, Godwin-Austen, Proc. Zool. Soc. 1892, p. 513; id., Land & Freshw. Moll. India, ii, 1897, p. 9, pl. 65, figs. 1, 1 *a*.

Diplommatina (*Metadiancta*) *dohertyi*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 138; id., Cat. Pneum. 1899, p. 58; Kobelt, Das Tierreich, Lief. 16, 1902, p. 450, fig. 98.

Original description:—"Shell dextral, very tumidly fusiform, strong, not rimate; sculpture fine rather distant costulation on all the whorls; colour very pale with a pinkish tint or ochraceous; spire, sides flat, rapidly diminishing, apex acuminate; suture impressed; whorls 8, last 3 whorls with convex sides, the penultimate the largest; constriction on side, well behind the aperture; the last whorl rises near peristome; aperture nearly circular, subvertical, rounded below; peristome double, outer somewhat reflected, and sinuous on margin; columellar tooth small, blunt, situated within the aperture, in many specimens it is not seen when viewed directly in front.

"Major diam. 3; alt. axis 6·4 millim." (*Godwin-Austen.*)

Hab. India: Margarita, Upper Assam (*Doherty*).

524. Diplommatina japvoensis, *Godwin-Austen.*

Diplommatina sherfaiensis, var., Godwin-Austen, J. A. S. B. xliv, part 2, 1875, p. 9, pl. 4, fig. 5.

Diplommatina japvoensis, Nevill, J. A. S. B. l, part 2, 1881, p. 150 (nom. nud.); Godwin-Austen, Proc. Zool. Soc. 1892, p. 516; id., Land & Freshw. Moll. India, ii, 1897, p. 12, pl. 66, figs. 11, 11 *a*.

Diplommatina (*Metadiancta*) *japvoensis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 138; id., Cat. Pneum. 1899, p. 58; Kobelt, Das Tierreich, Lief. 16, 1902, p. 450.

Original description:—"Shell dextral, fusiform, thin texture; colour pale ochraceous; spire conic, apex blunt; suture moderately impressed; whorls 7½, sides convex, swollen below; constriction in front, towards the outer margin of the peristome; aperture oval, vertical; columellar tooth fairly developed, blunt; peristome closely double, of weak structure.

"Major diam. 2·4; alt. axis 3·8 millim."

Hab. India: Japvo Peak, Anghami-Naga Hills, 10,000 ft. (*Godwin-Austen*).

"This is larger than the other species from this peak and elevation." (*Godwin-Austen.*)

525. Diplommatina khunhoensis, *Godwin-Austen.*

Diplommatina khunhoensis, Godwin-Austen, Proc. Zool. Soc. 1892, p. 515; id., Land & Freshw. Moll. India, ii, 1897, p. 10, pl. 65, figs. 3, 3 *a*.

Diplommatina (*Metadiancta*) *khunhoensis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 138; id., Cat. Pneum. 1899, p. 58; Kobelt, Das Tierreich, Lief. 16, 1902, p. 450.

Original description:—"Shell dextral, ovately fusiform, not

rimate; sculpture, fine regular costulation on the 3rd, 4th, and 5th whorls, the 2 apical smooth, the last whorls polished and glassy; colour pale sienna; spire, side flattened near the apex, which is somewhat acuminate; suture impressed; whorls 8, the antepenultimate the largest; constriction behind the aperture on the penultimate whorl; aperture oval and vertical; peristome double, strong, continuous; columellar tooth well developed, rather remote.

"Major diam. 2·2; alt. axis 4·8 to 5·2 millim."

Hab. India: Khunho Peak and Trigonometrical Station, 8809 ft. above the Mao villages, Naga Hills (*Godwin-Austen*).

"A form rather longer and less swollen occurs in the same range; about 30 specimens were obtained at Gnameh Peak (5585 ft.), near the Barak River.

"There is another form much smaller, being only 3·5 in length, with the same glassy whorls and the constriction rather further back, behind the aperture. Examples of this were also found at Sikhamih, in the Lahupa-Naga Hills. I distinguish this variety as *khunhoensis*, var. *minor*." (*Godwin-Austen.*)

526. **Diplommatina lapillus**, *Godwin-Austen.*

Diplommatina lapillus, Godwin-Austen, Proc. Zool. Soc. 1892, p. 515; id., Land & Freshw. Moll. India, ii, 1897, p. 11, pl. 65. figs. 6, 6 *a*.

Diplommatina (*Metadiancta*) *lapillus*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 139; id., Cat. Pneum. 1899, p. 59; Kobelt, Das Tierreich, Lief. 16, 1902, p. 450.

Original description:—"Shell dextral, elongately fusiform, tumid below, not rimate; sculpture fine, regular, close costulation, which is often much worn down; colour (bleached); spire with sides flattened, apex acuminate; suture shallow; constriction of the penultimate whorl on the side, well behind the aperture; aperture oval, subvertical; peristome thickened, double, rounded below; columellar tooth small and far back within the aperture.

"Major diam. 3, alt. axis 6 millim."

Hab. Burma: Kopamedza Peak, Lahupa-Naga Hills, 8375 ft. (*Godwin-Austen*).

"Three specimens marked from the 'North of Burrail Range.'" (*Godwin-Austen.*)

527. **Diplommatina miriensis**, *Godwin-Austen.*

Diplommatina miriensis, Godwin-Austen, Rec. Ind. Mus. viii, 1917, p. 577, text-fig. 4 D.

Original description:—"Shell dextral, tumidly fusiform; sculpture regular, strong, fairly distant costulation; colour pale with an ochre tinge; spire tapering rapidly, apex blunt; suture impressed; whorls 5, tumid, constriction above the aperture,

aperture vertical, oval: peristome double, strong, broadly ovate; columellar margin nearly vertical, with a strong tooth.

"Major diam. 0·9; alt. axis 1·5 mm." (*Godwin-Austen.*)

Hab. India: Miri Hills (*Officers, Miri Mission*, 1911–1912).

528. **Diplommatina mucronata**, *Godwin-Austen.*

Diplommatina mucronatus, Godwin-Austen, Rec. Ind. Mus. viii, 1917, p. 576, text-fig. 4 B.

Original description:—"Shell ovately acuminate, rimate; sculpture regular, somewhat distant costulation on the 4th and 5th whorls, becoming finer and closer on the two last, the first 2 whorls smooth; colour white; spire pyramidal, becoming rapidly attenuate, apex fine, blunt; suture well impressed; whorls 7, penultimate the largest, sides well rounded, tumid; aperture oval, subvertical; peristome well thickened, distinctly double.

"Major diam. 2·5; alt. axis 4·75 mm." (*Godwin-Austen.*)

Hab. India: Changjuk La, Tsanspu Valley.

529. **Diplommatina nengloensis**, *Godwin-Austen.*

Diplommatina nengloensis, Godwin-Austen, Proc. Zool. Soc. 1892, p. 514; id., Land & Freshw. Moll. India, ii, 1897, p. 10, pl. 65, figs. 3, 3 *a*.

Diplommatina (*Metadiancta*) *nengloensis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 139; id., Cat. Pneum. 1899, p. 59; Kobelt, Das Tierreich, Lief. 16, 1902, p. 451.

Original description:—"Shell dextral, elongately fusiform, large, solid; sculpture very fine, moderately distant ribbing; colour pale ochraceous; spire high, with flat sides, apex acuminate; suture shallow; whorls $8\frac{1}{2}$, sides flatly convex; constriction some distance behind the aperture, on side; aperture widely ovate, expanded towards the outer margin; peristome double, not thickened; columellar margin subvertical, the tooth very small and remotely situated.

"Major diam. 2·9; alt. axis 5 millim."

Hab. India: Nenglo, North Cachar Hills (*Godwin-Austen*).

"This is a very distinct shell; in its very ovate aperture and small columellar process or tooth it is unlike any other I have in my collection." (*Godwin-Austen.*)

530. **Diplommatina perobesa**, *Preston.*

Diplommatina perobesa, Preston, Rec. Ind. Mus. viii, 1915, p. 540, text-fig. 5; Godwin-Austen, tom. cit. 1918, p. 576, text-figs. 5, 5 *a*.

Original description:—"Shell obliquely ovate with exserted spire, pale flesh colour, solid, opaque; whorls 7, the first two submammillary, the third, fourth, and fifth regularly increasing, the sixth large, tumid, the last contracted and abandoning the direction of the axis of the shell, sculptured with coarse, obsolete, oblique,

transverse costulæ; suture well impressed; columella margin vertically descending, bearing a strong, downwardly bent, entering lamella above, sharply angled at the base, diffused above into a thick, outwardly expanded, well defined, parietal callus which joins the upper margin of the labrum and gives to it a continuous appearance; labrum consisting of an outwardly expanded and slightly reflexed, shelf-like projection from which springs an erect, rather thick rim; aperture subcircular.

"Alt. 4·5, diam. maj. 2·5 mm. Aperture alt. 1·25, diam. 1·5 (nearly) mm." (*Preston.*)

Hab. India: Upper Rotung, 2000 ft. (*Kemp, Oakes*).

531. **Diplommatina thomsoni**, *Godwin-Austen.*

Diplommatina thomsoni, Godwin-Austen, Proc. Zool. Soc. 1892, p. 514; id., Land & Freshw. Moll. India, ii, 1897, p. 9, pl. 65, figs. 2, 2 *a*.

Diplommatina (*Metadiancta*) *thomsoni*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 139; id., Cat. Pneum. 1899, p. 59; Kobelt, Das Tierreich, Lief. 16, 1902, p. 451.

Original description:—"Shell dextral, elongately fusiform; sculpture, 3 apical whorls smooth, all the rest with very fine regular, rather close ribbing; colour whitish; spire rather high, sides flattened; apex rather blunt; suture moderately impressed; whorls 7½, sides convex, the antepenultimate the largest, last whorl ascending near the aperture; constriction lies directly behind and adjacent to the peristome; aperture oval; columellar tooth small for size of shell and lying within the aperture; peristome as usual.

"Major diam. 2·4; alt. axis 5 millim."

Hab. Burma: South Burrail (*Godwin-Austen*).

"In general form this shell is like *D. pachycheilus*, Bs., a Darjiling species, but the columellar tooth is never so large as in that species." (*Godwin-Austen.*)

Subgenus **SINICA**, *Möllendorff.*

Sinica, Möllendorff, Jahrb. Deuts. Malak. Ges. xii, 1885, p. 369 (section); Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 139 (subgenus); id., Cat. Pneum. 1899, p. 59; Kobelt, Das Tierreich, Lief. 16, 1902, p. 455.

Type (1st species), *D. collarifera*, Schmacker & Boettger (*D. labiosa*, Martens non Blanford).

Range. India, Burma, Farther India, China, Japan, Formosa, Malay Archipelago, New Guinea.

Shell generally dextral, last whorl constricted at its commencement, a tooth on the columellar margin, another on the penultimate whorl and facing the latter a palatal fold, visible from outside.

532. Diplommatina animula, *Godwin-Austen.*

Diplommatina animula, Godwin-Austen, Proc. Zool. Soc. 1892, p. 516; id., Land & Freshw. Moll. India, ii, 1897, p. 12, pl. 66, fig. 2.

Diplommatina (*Sinica*) *animula*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 139; id. Cat. Pneum. 1899, p. 59; Kobelt, Das Tierreich, Lief. 16, 1902, p. 455.

Original description:—"Shell dextral, ovately fusiform, thin and delicate, and glassy texture; sculpture, rather distant well-marked costulation; colour whitish grey; spire moderately high, sides convex, apex blunt; suture impressed; whorls 6, tumid, sides very convex, antepenultimate the largest; constriction in centre, above the aperture; aperture widely ovate, vertical, angulate on the lower margin of the columella; the tooth large and well developed; peristome very strong.

"Major diam. 1·3; alt. axis 2 mm."

Hab. Burma: Prowi, Lahupa-Naga Hills, Munipur (*Godwin-Austen*).

"This is another minute shell, differing from all others I have seen in the strong peristome and large columellar tooth. *D. delicata* is its nearest ally." (*Godwin-Austen.*)

533. Diplommatina canarica, *Beddome.*

Diplommatina canarica, Beddome, Proc. Zool. Soc. 1875, p. 442, pl. 52, fig. 1; Hanley & Theobald, Conch. Ind. 1876, p. xii; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 394; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 175, pl. 46, figs. 3, 3 *a*.

Diplommatina kanarica, Theobald, Cat. Shells Brit. India, 1876, Addenda, p. ii.

Diplommatina (*Sinica*) *canarica*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 140; id., Cat. Pneum. 1899, p. 60; Kobelt, Das Tierreich, Lief. 16, 1902, p. 458.

Original description:—"Shell dextral, broadly ovate, scarcely or very inconspicuously rimate, flesh-coloured; whorls $6\frac{1}{2}$, convex, all except the apical obtuse one closely, regularly, and sharply costulated; interstices smooth, spire conical; the fifth whorl much the largest, and projecting much more than the penultimate; the penultimate with the constriction just in front of the centre of the circular aperture; peristome shining, continuous round the penultimate whorl, slightly canaliculate in its free portion below; columellar margin much incurved; the tooth prominent, slightly deflexed: total length $\frac{1}{10}$ inch [2·5 mm.].

"Allied to *D. carneola* (Stoliczka); but the columellar margin is very different, and it is a stouter shell." (*Beddome.*)

Hab. India: Yellapore, North Canara (*Beddome*).

534. **Diplommatina carneola**, *Stoliczka*.

Diplommatina carneola, Stoliczka, J. A. S. B. xl. part 2, 1871, p. 152, pl. 6, figs. 3, 3 *a*, 3 *b*; Hanley & Theobald, Conch. Ind. 1875, pl. 140, fig. 4; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 76; Theobald, Cat. Shells Brit. India, 1876, p. 42; Nevill, Hand List, i, 1878, p. 284 (*carreola*); Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 182, pl. 49, figs. 8, 8 *a*.

Diplommatina (*Sinica*) *carneola*, Kobelt & Möllendorff. Nachr. Deuts. Malak. Ges. xxx, 1898, p. 140; id., Cat. Pneum. 1899, p. 60; Kobelt, Das Tierreich, Lief. 16, 1902, p. 459.

Original description:—"Diplommatina testa ovato elongata, turrita, vix rimata, carnea, seu carneo-luteola; anfractibus 7, valde convexis, suturis profundis junctis, primis duobus lævigatis, luteis, ceteris costulis obliquis, modice distantibus, ornatis, penultimo maxime inflato, ad terminationem valde constricto, ultimo minore, ad basin rotundato; apertura rotundata, marginibus paulo dilatatis et incrassatis, ad anfractum penultimum conspicuiter ascendentibus, intus lævigatis; labio adnato, paulo expanso, labro duplici, extus prope marginem costa tenui et acuta instructo, columella fere recta, infra dente unico instructa, ad basin vix angulata.

"Diam. anfr. penult. 1·2; alt. tot. testæ 2·6, apert. alt. 0·8, ejusdem diam. 0·8 mm."

"Animal carneo-luteolum, tentaculis, rostro ad terminationem, interdumque dorso supero, plus minusve distincte atratis; oculis magnis in latere basali tentaculorum sitis, atris, pede angusto, postice acuminato; operculum corneum, tenuissimum, concentrice multispiratum."

Hab. Burma: Damotha, near Moulmain (*Stoliczka*).

"This species is somewhat allied to *D. puppensis*, Blf., differing from it by its constant smaller size, more tumid or convex, and more widely costulated whorls, and by the aperture being at the columellar base rounded or nearly so, instead of deeply angular and canaliculate, as it always appears to be in *puppensis*.

"The present species was found to be very common on the perpendicular limestone cliffs at Damotha, especially in localities where a little water trickled down the rock. The animals seemed to feed on the minute algæ which were growing in the locality." (*Stoliczka.*)

535. **Diplommatina delicata**, *Godwin-Austen*.

Diplommatina delicata, Godwin-Austen, Proc. Zool. Soc. 1892, p. 517; id., Land & Freshw. Moll. India, ii, 1897, p. 13, pl. 66, fig. 5.

Diplommatina (*Sinica*) *delicata*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 140; id., Cat. Pneum. 1899, p. 60; Kobelt, Das Tierreich, Lief. 16, 1902, p. 462.

Original description:—"Shell dextral, very small, tumidly fusiform; sculpture, very distant, strong costulation; colour pale

horny; spire rather depressed, sides convex, apex blunt; suture well impressed; whorls 6, sides convex, swollen, antepenultimate the largest; constriction above the aperture; aperture ovate, vertical; columellar tooth well marked; peristome as usual.

"Alt. axis 1·75 millim." (*Godwin-Austen.*)

Hab. India: E. Naga Hills (*Doherty*).

536. **Diplommatina gracilis**, *Beddome.*

Diplommatina gracilis, Beddome, Proc. Zool. Soc. 1875, p. 442, pl. 52, fig. 2; Hanley & Theobald, Conch. Ind. 1876, p. xii; Theobald, Cat. Shells Brit. India, 1876, p. 42; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 394; Nevill, Hand List, i, 1878, p. 288; Godwin-Austen, Land & Freshw. Moll. Ind. i, 1886, p. 175, pl. 46, figs. 1, 1 *a*, 1 *b*; var. pl. 46, fig. 2.

Diplommatina (*Sinica*) *gracilis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 140; id., Cat. Pneum. 1899, p. 60; Kobelt, Das Tierreich, Lief. 16, 1902, p. 464.

Original description:—"Shell dextral, narrowly ovate, straw-coloured, not rimate; whorls $6\frac{1}{2}$, all except the apical or 2 upper ones rather distantly and prominently costulated, interstices smooth; spire rather slender, the fifth whorl the largest and projecting a little more than the penultimate, the penultimate with the constriction over the centre or right centre of the aperture, aperture reniform; peristome continuous round the penultimate whorl, prominently angled, below the tooth double, the outer lip expanded and reflexed, columellar margin nearly straight, the tooth prominent, a little deflexed: total length $\frac{1}{8}$ inch [3 mm.]." (*Beddome.*)

Hab. India: Gudam Hills, Golcondah Hills, Vizagapatam (*Beddome*); Jeypur Hills, Madras (*Beddome*).

Lieut.-Col. Godwin-Austen figures (pl. 46, fig. 2) a variety sent to him by Col. Beddome from the Jeypur Hills, which has rather more tumid whorls and is less acuminate than the type. In three out of eight specimens he notices another point of difference, *i. e.* the right margin of the peristome being sharply sinuate, a character not shown in the Golcondah Hill specimens.

537 **Diplommatina subrubella**, *Godwin-Austen.*

Diplommatina subrubella, Godwin-Austen, Proc. Zool. Soc. 1892, p. 517; id., Land & Freshw. Moll. Ind. ii, 1897, p. 13, pl. 66, figs. 3, 3 *a*.

Diplommatina (*Sinica*) *subrubella*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 142; id., Cat. Pneum. 1899, p. 62; Kobelt, Das Tierreich, Lief. 16, 1902, p. 474.

Original description:—"Shell dextral, small, fusiform; sculpture, fine, regular, rather close costulation; colour pale reddish; spire high, sides convex, apex blunt; suture impressed; whorls $6\frac{1}{2}$, sides convex, penultimate and antepenultimate equal; constriction in front, above the peristome; aperture circular, nearly vertical;

columellar tooth very small and internal; peristome closely double, not thickened.

"Major diam. 1·4; alt. axis 2·6 millim." (*Godwin-Austen.*)

Hab. India: Japvo Peak, Anghami-Naga Hills, 10,000 ft. (*Godwin-Austen*).

Stated to be a close ally of *D. sherfaiensis*, but much smaller and with a coarser sculpture.

538. **Diplommatina subtilis**, *Godwin-Austen.*

Diplommatina subtilis, Godwin-Austen, Proc. Zool. Soc. 1892, p. 517; id., Land & Freshw. Moll. India, ii, 1897, p. 13, pl. 66, figs. 4, 4 *a*.

Diplommatina (*Sinica*) *subtilis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 142; id., Cat. Pneum. 1899, p. 62; Kobelt, Das Tierreich, Lief. 16, 1902, p. 474.

Original description:—"Shell dextral, elongately ovate, thickened; sculpture, fine, close, regular costulation throughout; colour pale sienna-brown; spire with convex sides, apex blunt; suture impressed; whorls 6, sides convex, penultimate slightly the largest, the last does not rise much upon the penultimate; constriction in front, but not well marked; aperture circular, suboblique; columellar tooth well developed for the size of the shell; peristome double, strong.

"Major diam. 1; alt. axis 1·5 millim."

Hab. India: Margarita, Naga Hills (*Doherty*).

"This is a good species, one of the smallest; its elongate form separates it at once from *D. parvula*, the finer costulation and larger size from *D. minuta*." (*Godwin-Austen.*)

539. **Diplommatina unicrenata**, *Godwin-Austen.*

Diplommatina unicrenata, Godwin-Austen, Proc. Zool. Soc. 1892, p. 516; id., Land & Freshw. Moll. India, ii, 1893, p. 12, pl. 66, fig. 1.

Diplommatina (*Sinica*) *unicrenata*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 142; id., Cat. Pneum. 1899, p. 62; Kobelt, Das Tierreich, Lief. 16, 1902, p. 476.

Original description:—"Shell dextral, ovately fusiform, subrimate, rather thin; sculpture, distant strong costulation on all the whorls; colour white, with a pale lemon-yellow tint in fresh shells; spire with sides convex, apex somewhat blunt; suture well impressed; whorls 7½, antepenultimate the largest, sides convex, the constriction above the aperture, in front; aperture circular, vertical; peristome double, outer wavy in outline, with one very marked and decided crenulation on the upper outer margin, and a slight sinuation on the left lower margin; columellar tooth large and directed downwards.

"Alt. axis 4 millim."

Hab. India: Eastern Naga Hills (*Doherty*).

". . . . This is a very beautiful new species, the only shell approaching it that I know from this region being *D. angulata* of Moulmain." (*Godwin-Austen.*)

Genus **GASTROPTYCHIA**, *Kobelt & Möllendorff.*

Paxillus, Adams, A.M.N.H. ser. 2, vii, 1851, p. 63 (as subgenus of *Diplommatina*), (non *Paxillus*, MacLeay, 1819); Pfeiffer, Mon. Helic. iii, 1853, p. 585 (genus); Adams, Gen. Rec. Moll. ii, 1856, p. 288 (subgenus); Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 14; Chenu, Man. Conchyl. i, part 2, 1860, p. 490 (subgenus); Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 12 (genus); Martens, Preuss. Exp. Ost-Asien, Zool. ii, 1867, p. 164 (genus); Stoliczka, J. A. S. B. xl, part 2, 1871, p. 157; Issel, Ann. Mus. Civ. Genova, vi, 1874, p. 440 (genus); Fischer, Man. Conchyl. 1885, p. 740 (section); Heude, Mém. Hist. Nat. Emp. Chin. i, 1890, p. 131 (genus); Möllendorff, Nachr. Deuts. Malak. Ges. xxiv, 1892, p. 20 (genus); Kobelt & Möllendorff, op. cit. xxx, 1898, p. 142 (genus); id., Cat. Pneum. 1899, p. 62 (genus).

Gastroptychia, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxxii, 1900, p. 186; Kobelt, Das Tierreich, Lief. 16, 1902, p. 481.

TYPE, *P. adversus*, Adams.

Range. India, China, Borneo, Natuna Is., Philippines.

Shell pupæform, rimate, generally sinistral; spire acuminate; aperture semi-ovate, ascending on the body-whorl; inner lip adnate, spreading, flexuous; columella with a single, prominent, tooth-like plait; two or more palatal folds; outer lip with a double peristome, emarginate anteriorly; umbilical region with a spiral, elevated ridge, terminating in a notch at the fore part of the aperture. Operculum almost circular, thin, with few, indistinct whorls and a somewhat excentric nucleus.

540. **Gastroptychia insignis**, *Godwin-Austen.*

Diplommatina insignis, Godwin-Austen, J. A. S. B. xxxix, part 2, 1870, p. 6, pl. 2, fig. 1; Hanley & Theobald, Conch. Ind. 1875, pl. 139, fig. 10; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 79; Theobald, Cat. Shells Brit. India, 1876, p. 42; Nevill, Hand List, i, 1878, p. 286; Godwin-Austen, Land & Freshw. Moll. India, i, 1886, p. 168, pl. 50, figs. 3, 5, 6, 9.

Paxillus insignis, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 142; id., Cat. Pneum. 1899, p. 62.

Gastroptychia insignis, Kobelt, Das Tierreich, Lief. 16, 1902, p. 482.

Original description :—" Shell sinistral, acuminately oval, colour corneous or pink, costulation close and strong on the upper whorls, obsolete on the two last; spire rather pointed. Whorls 8, lower rounded, at apex flat-sided; penultimate the largest, the constriction of this last situated in front and covered by the parietal callus; suture impressed, aperture vertical, oval; peristome double, outer much thickened, inner continuous, callus strong; columellar margin rounded, the tooth-like process moderate.

"Operculum thin, spiral, no boss at the back. Animal pale colored, tentacles black, rostrum pink; the body spotted with black which shews through the shell in fresh specimens.

"Height 0·27 inch [6·75 mm.]; diam. 0·13 [3·25 mm.]; diam. of ap. with peristome 0·10 inch [2·5 mm.]."

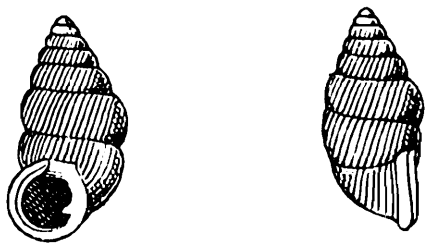


Fig. 38.—*Gastroptychia insignis.* (× 3.)

Hab. India: Burrail Range, Asalu (3000 ft.).

"This fine sinistral form is up to the present time the largest known species from India. It is a well marked shell, and differs widely from the other sinistral species from these hills . " (*Godwin-Austen.*)

The specimen now figured is in the British Museum and measures: alt. 6·25, diam. 3 mm.

Genus **CLOSTOPHIS**, *Benson.*

Clostophis, Benson, A. M. N. H. ser. 3, v, 1860, p. 95; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 11; Stoliczka, J. A. S. B. xl, part 2, 1871, p. 157; Fischer, Man. Conchyl. 1885, p. 740; Ancey, Bull. Soc. Malac. France, iv, 1887, p. 281; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxxi. 1899, p. 138; id., Cat. Pneum. 1899, p. 106; Kobelt, Das Tierreich, Lief. 16, 1902, p. 484.

TYPE (only species), *C. sankeyi*, Benson.

Range. Burma.

Shell almost biconical; penultimate whorl the largest, last whorl descending, solute, smaller, practically in the direction of the axis; aperture entire, dentate. Operculum and animal unknown.

541. **Clostophis sankeyi**, *Benson.*

Clostophis sankeyi, Benson, A. M. N. H. ser. 3, v, 1860, p. 95; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 12; Theobald, Cat. Shells Brit. India. 1876, p. 43; Ancey, Bull. Soc. Malac. France, iv, 1887, p. 43; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxxi, 1899, p. 138; id., Cat. Pneum. 1899, p. 106; Kobelt, Das Tierreich, Lief. 16, 1902, p. 484, text-fig. 103.

Original description:—"Testa late umbilicata, sub-biconica, lævi, spira turrito-conica, lateribus cavis, apice obtuso, sutura profunda; anfractibus 5, primis angustis convexiusculis, penultimo multo majore cylindrico, ultimo antice rapide descendente, soluto,

tubuliformi, quoad peripheriam antepenultimi minore; apertura integra, subaxiali, subumbilicali, valde obliqua, subcirculari, intus superne dente 1 submarginali loco quasi parietali munita, peristomate tenui, expanso.

"Diam. major $1\frac{1}{2}$, alt. $1\frac{3}{4}$ mill." (*Benson.*)

Hab. Burma: Farm Caves, Moulmein (*Sankey*).

The specimen from which this species was described was found by Benson in earth filling the cavity of a decayed specimen of *Sophina schistostelis* sent to him by Major Sankey.

Genus **OTOPOMA**, *Gray.*

Otopoma, Gray, Nomencl. Moll. Anim. Brit. Mus. i, 1850, p. 35; Pfeiffer, Zeits. Malak. viii, 1851, p. 157; id., Mon. Pneum. 1852, p. 179; Adams, Gen. Rec. Moll. ii, 1856, p. 292 (as subgenus of *Cyclostomus*); Chenu, Man. Conchyl. i, part 2, 1860, p. 492 (as subgenus of *Tropidophora*); Blanford, A. M. N. H. ser. 3, xiii, 1864, p. 464; Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 167; Bourguignat, in Revoil, Faune & Flore Pays Çomalis, vi, 1882, p. 57; Fischer, Man. Conchyl. 1885, p. 747 (as subgenus of *Cyclostoma*); Godwin-Austen, Land & Freshw. Moll. India, ii, 1897, p. 29, pl. 67 (anatomy); Martens, Besch. Weichth. Deuts. Ost-Afr. 1897, p. 7; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 157; id., Cat. Pneum. 1899, p. 77; Godwin-Austen, in H. O. Forbes, Nat. Hist. Sokotra, 1903, p. 161; Kobelt, Conch.-Cab., Cyclophoridae, ii, 1913, p. 986.

TYPE, *Turbo foliaceus*, Chemnitz.

Range. India, N.E. Africa, South Arabia.

Shell umbilicated, subglobose, solid, with an ear-like process from the inner side of the mouth, covering part of the axis; mouth circular; peristome simple, or slightly reflected.—Operculum shelly, solid; whorls convex in the centre, with simple edges.

542. **Otopoma hinduorum**, *Blanford.*

Otopoma clausum (non Sowerby), Benson, A. M. N. H. ser. 3, iv, 1859, pp. 92, 95.

Otopoma hinduorum, Blanford, op. cit. xiii, 1864, p. 464; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 122; Hanley & Theobald, Conch. Ind. 1870, pl. 6, fig. 5; fig. 6 (var.); Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 167; Theobald, Cat. Shells Brit. India, 1876, p. 35; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 158; id., Cat. Pneum. 1899, p. 78.

Cyclostoma (*Otopoma*) *hinduorum*, Blanford, J. A. S. B. xxxix, part 2, 1870, p. 12, pl. 3, fig. 6; Nevill, Hand List, i, 1878, p. 307.

Otopoma (*Georgia* ? *Cyclotopsis*?) *hinduorum*, Kobelt, Conch.-Cab., Cyclophoridae, ii, 1913, p. 1006, pl. 148, figs. 15, 16, pl. 150, figs. 9–12.

Original description:—"Testa imperforata, clausa, umbilicata globoso-turbinata, solidula, nitida, striata, juxta suturam et circa umbilicum lævis, extus versus peripheriam liris spiralibus sub-

confertis nonnunquam obsoletis circumdata, carnea vel albido-carnea; apice plerumque nigro; spira conoideo-convexa; sutura impressa. Anfr. $4\frac{1}{2}$ convexi, ultimus teres, antice descendens, varicem imperfectum interdum pone aperturam gerens. Apertura fere verticalis, rotunda; peristoma obtusum, marginibus disjunctis, externo antice arcuato, basali expansiusculo, columellari sub-late expanso, umbilicum omnino callo complente. Operc. testaceum, intus membranaceum, paucispirale, margine interno anfractuum elevato, nucleo excentrico.

"Diam. maj. 12, min. 11, axis 9, ap. diam. 6 mm."



Fig. 39.—*Otopoma hinduorum.*

Hab. India: Kathiawar (*Theobald*).

"From *Cyclostoma* (*Otopoma*) *clausum*, Sow., to which Mr. Benson referred the present form, it is distinguished by being much smoother, with a less excavated umbilical region and a higher spire.

"It is the most eastern form of the sub-genus known, other forms assigned to *Otopoma* found in the Indian and Burmese areas having been shewn to belong to the *Cyclophoridæ*." (*Blanford.*)

The specimen now figured is in the British Museum, Cuming collection. It is larger and more elevated than the type, measuring: $13{\cdot}5 \times 12 \times 12{\cdot}25$ mm.

Genus **CYCLOTOPSIS**, *Blanford.*

Cyclotopsis, Blanford, A. M. M. H. ser. 3, xiii, 1864, p. 447; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 111; Suppl. 3, 1875, p. 161; Fischer, Man. Conchyl. 1885, p. 747; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 156; id., Cat. Pneum. 1899, p. 76.

Type, *Cyclostoma semistriatum*, Sowerby.

Range. India.

Shell widely umbilicate, depressed or depressed-turbinate, furnished with spiral liræ; aperture subrotundate; peristome thin; operculum multispiral, double, the inner membranous, the outer calcareous, the edges raised.

543. **Cyclotopsis montana**, *Pfeiffer.*

Cyclostoma (*Cyclotus*?) *montanum*, Pfeiffer, Proc. Zool. Soc. 1854, p. 300.

Cyclotus montanus, Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 23; Reeve, Conch. Icon. xiv, 1863, *Cyclotus*, pl. 9, fig. 58.

Cyclostoma (*Cyclotopsis*) *montanum*, Nevill, Hand List, i, 1878, p. 308.

Cyclotopsis montana, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 156; id., Cat. Pneum. 1899, p. 76.

Original description:—"C. testa umbilicata, turbinato-depressa, solida, superne confertim spiraliter lirata, alba, fusculo obsolete maculata et fasciata; spira turbinata, acutiuscula; anfr. 4 convexis, rapide accrescentibus, ultimo non descendente, subtus lævigato, in umbilico mediocri, profundo, spiraliter striato; apertura parum obliqua, angulato-rotundata; perist. simplice, recto, breviter adnato, margine columellari reflexiusculo.—Operc. —— ?

"Diam. maj. 12½, min. 10, alt. 8 mill." (*Pfeiffer.*)

Hab. India: Nilgiris (*Mus. Cum.*).

544. **Cyclotopsis semistriata**, *Sowerby*.

Cyclostoma semistriatum, Sowerby, Thes. Conch. i, 1843, p. 91, pl. 23, fig. 6; Pfeiffer, Conch.-Cab., Cyclostomaceen, 1849, p. 147, pl. 20, figs. 10-12.

Cyclotus semistriatus, Sowerby, Proc. Zool. Soc. 1843, p. 29; Pfeiffer, Zeits. Malak. viii, 1851, p. 133; id., Cat. Phaneropn. Brit. Mus. 1852, p. 11; Adams, Gen. Rec. Moll. ii, 1855, p. 274, pl. 85, figs. 1, 1*c*; Reeve, Conch. Icon. xiv, 1863, *Cyclotus*, pl. 4, fig. 16; Hanley & Theobald, Conch. Ind. 1870, pl. 4, fig. 9; id., op. cit. 1876, p. xiv.

Cyclotopsis semistriatus, Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 112.

Cyclotopsis semistriatum, Theobald, Cat. Shells Brit. India, 1876, p. 35.

Cyclostoma (*Cyclotopsis*) *semistriatum*, Nevill, Hand List, i, 1878, p. 308.

Cyclotopsis emistriata, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 156; id., Cat. Pneum. 1899, p. 76.

Original description:—"Shell of a somewhat depressed orbicular form; thin, whitish, with narrow pale brown interrupted bands; spire rather prominent, its apex rather obtuse; volutions 4 to 5, rounded, spirally striated on the upper side, but smooth beneath; suture distinct; aperture circular, slightly acuminated at the upper part; peritreme thin, with a sharp edge, very slightly reflected; umbilicus large; operculum with a deep spiral groove outside, having from 4 to 5 volutions." (*Sowerby.*)

Major diam. 12, min. 10, alt. 5·75 mm.

Hab. India: Poonah (*Humphrey*).

545. **Cyclotopsis spurca**, *Grateloup*.

Cyclostoma spurca, Grateloup, Act. Soc. Linn. Bordeaux, xi, 1839, pp. 169, 444, pl. 3, fig. 18.

Otopoma spurcum, Pfeiffer, Zeits. Malak. viii, 1851, p. 158; id., Mon. Pneum. 1852, p. 187; id., Cat. Phaneropn. Brit. Mus. 1852, p. 131.

Cyclotus spurcus, Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 16; Reeve, Conch. Icon. xiv, 1863, *Cyclotus*, pl. 7, fig. 38.

Cyclotopsis spurca, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 157; id., Cat. Pneum. 1899, p. 77.

Original description:—"C. testa orbiculato-turbinata, obconica,

spurco-albida, late umbilicata, longitudinaliter striata ; spira brevi, acuta ; anfractibus convexis ; apertura patula, rotundata ; labro simplici acuto.

" Quoique cette coquille ressemble à une Hélice, c'est un véritable Cyclostome, puisque son péristome est continu ; sa couleur est d'un blanc sale : sa surface parait lisse, mais examinée attentivement on y decouvre des stries longitudinales, très fines, très serrées, et très régulières. L'ombilic est assez large et profond. L'ouverture est grande, arrondie, dilateé et relevée ; les bords sont simples et tranchants. La spire est courte et acuminée, à revolutions convexes." (*Grateloup.*)

Height 15, diam. 20 mill.

Hab. India : Bombay.

This meagre description by Grateloup has been amplified by Pfeiffer in 1858 (*l. c.*), from a specimen in the Cuming collection, as follows :—

" T. umbilicata, depressiusculo-turbinata, solida, confertim striatula, nitidula, lutescenti-albida ; spira turbinata, apice acutiuscula ; anfr. 5 convexi, rapide accrescentus, ultimus rotundatus ; umbilicus conicus $\frac{1}{6}$ diametri occupans ; apertura parum obliqua, rotundato-ovalis, superne subangulata ; perist. rectum, acutum, marginibus approximatis, columellari subincrassato, expansiusculo—. Operc.——?

" Diam. maj. 18, min. 15, alt. 11 mill. Ap. 9 mill. longa, 8 lata."

546. **Cyclotopsis subdiscoidea**, *Sowerby.*

Cyclostoma subdiscoideum, Sowerby, Thes. Conch. i, 1850, p. 161*, pl. 31 *b*, figs. 304, 305 ; Pfeiffer, Conch.-Cab., Cyclostomaceen, 1854, p. 318, pl. 41, figs. 33, 34.

Cyclotus subdiscoideus, Pfeiffer, Zeits. Malak. viii, 1851, p. 134 ; id., Mon. Pneum. 1852, p. 31 ; id., Cat. Phaneropn. Brit. Mus. 1852, p. 17 ; Adams, Gen. Rec. Moll. ii, 1855, p. 275 ; Reeve, Conch. Icon. xiv, 1863, *Cyclotus*, pl. 4, fig. 21 ; Hanley & Theobald, Conch. Ind. 1876, p. xiv, p. 2.

Cyclotopsis subdiscoideus, Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 112 ; Theobald, Cat. Shells Brit. India, 1876, p. 35.

Cyclostoma (*Cyclotopsis*) *subdiscoideum*, Nevill, Hand List, i, 1878, p. 308.

Cyclotopsis subdiscoidea, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 157 ; id., Cat. Pneum. 1899, p. 77.

Cyclostoma aratum, Benson, A. M. N. H. ser. 2, viii, 1851, p. 190.

Cyclotus aratus, Pfeiffer, Zeits. Malak. viii, 1851, p. 134 ; id., Mon. Pneum. 1852, p. 31.

Cyclostoma rusticum, Pfeiffer, Proc. Zool. Soc. 1851, p. 250.

Cyclotus pfeifferi, Gray, Nomencl. Moll. Brit. Mus. part 1, 1850, p. 9 (nom. nud.).

Original description :—" Shell suborbicular, rather discoid, spirally grooved, whitish, with an interrupted zone of a pale brownish colour ; spire depressedly conical, obtuse ; volutions, four, rounded ;

suture very slightly channeled; aperture circular; peritreme thin, whitish, slightly reflected, and spreading a little posteriorly over the last volution; umbilicus very large, showing the four volutions within." (*Sowerby.*)

Major diam. 17, min. 13; alt. 10·5 mm.

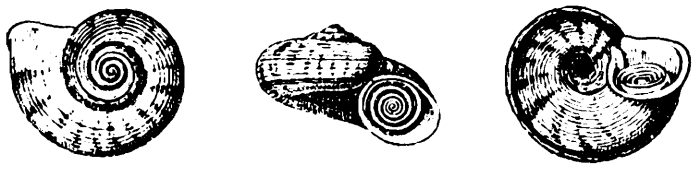


Fig. 40.—*Cyclotopsis subdiscoidea.*

Hab. S. India.

The specimen here illustrated is in the British Museum.

547 **Cyclotopsis trailli,** *Pfeiffer.*

Cyclotus trailli, Pfeiffer, Proc. Zool. Soc. 1862, p. 116, pl. 12, fig. 4; Reeve, Conch. Icon. xiv, 1863, *Cyclotus*, pl. 9, fig. 56; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 29.

Cyclostoma (*Cyclotopsis*) *trailli*, Nevill, Hand List, i, 1878, p. 308 (as synonym of *C. subdiscoideum*).

Cyclotopsis trailli, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 157; id., Cat. Pneum, 1899, p. 77.

Original description:—"T. sublate umbilicata, depresso-turbinata, solidula, liris confertis, subtus minoribus sculpta, carneo-albida fusculo-variegata, et fascia 1 rufa infraperipherica notata; spira breviter turbinata, acutiuscula; anfr. 4½ convexi, celeriter accrescentes, juxta suturam lævigati, ultimus teres, antice vix descendens; apertura obliqua, subangulato-circularis; perist. tenue, vix expansiusculum, ad anfr. contiguum subinterruptum.—Operc. Cycloti subdiscoidei.

"Diam. maj. 14, min. 12, alt. 10½ mill." (*Pfeiffer.*)

Hab. India: Russel-Canda, Madras (*Traill*).

Allied to *C. subdiscoidea*, Sowerby, but smaller, with a narrower umbilicus, a higher spire, and the last whorl smooth near the suture.

Genus **OMPHALOTROPIS,** *Pfeiffer.*

Omphalotropis, Pfeiffer, Zeits. Malak. viii, 1851, p. 176; id., Proc. Zool. Soc. 1852, p. 151; id., Mon. Pneum. 1852, p. 306; id., op. cit. Suppl. 2, 1865, p. 175; Blanford, A. M. N. H. ser. 4, iii, 1869, p. 340 (radula); id., J. A. S. B. xliv, part 2, 1875, p. 46; Fischer, Man. Conchyl. 1885, p. 748.

Hydrocena (*Omphalotropis*), Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 155.

Realia (*Omphalotropis*), Pfeiffer, Mon. Pneum. Suppl. 3, 1879, p. 209.

Type (1st species), *Cyclostoma aurantiaca*, Deshayes.

Range. Mascarene Is., Andaman and Nicobar Is., S. India, Malaysia, Polynesia.

Shell narrowly umbilicated or perforate, turreted or globose-turbinate, keeled around the umbilical perforation; aperture ovate, peristome not continuous, straight or slightly reflected. Operculum thin, corneous, paucispiral, subovate, angular; nucleus excentric.

548. **Omphalotropis andersoni**, *Blanford.*

Realia (*Omphalotropis*) *andersoni*, Blanford, J. A. S. B. xlix, part 2, 1880, p. 216, pl. 2, fig. 18.
Omphalotropis (*Eurytropus*) *andersoni*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 148; id., Cat. Pneum. 1899, p. 68.

Original description:—"Shell perforate, ovately conical, thin, reddish brown in colour, smooth, not polished, obliquely striated. Spire conical, with sides nearly straight, apex acute, suture slightly impressed. Whorls 7, rather flat; the last with a hair-like keel at the periphery (the keel sometimes appearing on the upper whorls just above the suture), convex, smooth, and radiately striated below, and furnished with an obtuse, subobsolete keel around the umbilicus, the space inside the umbilical keel being smooth, not ribbed. Aperture ovate, oblique, nearly diagonal, a little shorter than the spire. Peristome obtuse, the margins approaching each other, and joined by a thin callus; outer edge straight, basal expanded, columellar expanded below, but emarginate and cut away into a re-entering angle near the perforation. Operculum?

"Length 7, diam. 5; length of aperture $3\frac{1}{4}$, breadth $2\frac{3}{4}$ mm." (*Blanford.*)

Hab. Andaman Is. (*Anderson*).

This species is stated closely to resemble *O. rubens* of Mauritius in form, but to differ in sculpture, the shape of the whorls, etc. The umbilical keel is but faintly marked.

549. **Omphalotropis aurantiaca**, *Deshayes.*

Cyclostoma aurantiaca, Deshayes, in Bélanger, Voy. Ind. Orient. Zoologie, 1832, p. 416, pl. 1, figs. 16, 17; id., in Lamarck, Hist. Nat. Anim. s. vert. Ed. 2, viii, 1838, p. 373.
Cyclostoma belangeri, Pfeiffer, Zeits. Malak. iii, 1846, p. 82; id., Conch.-Cab., Cyclostomaceen, 1849, p. 181, pl. 30, figs. 1–3.
Hydrocena belangeri, Pfeiffer, Zeits. Malak. iv, 1847, p. 112.
Realia belangeri, Gray, Nomencl. Moll. Brit. Mus. part 1, Cyclophoridæ, 1850, p. 63.
Omphalotropis aurantiaca, Pfeiffer, Zeits. Malak. viii, 1851, p. 177; id., Proc. Zool. Soc. 1852, p. 151; id., Mon. Pneum. 1852, p. 309; Adams, Gen. Rec. Moll. ii, 1854, p. 300; Pease, Journ. Conchyl. xvii, 1869, p. 143; Theobald, Cat. Shells Brit. India, 1876, p. 15.
Realia aurantiaca, Gray, Cat. Phaneropn. Brit. Mus. 1852, p. 220.
Hydrocena (*Omphalotropis*) *aurantiaca*, Pfeiffer, Proc. Zool. Soc. 1854, p. 307; id., Mon. Pneum. Suppl. 1, 1858, p. 167.
Realia (*Omphalotropis*) *aurantiaca*, Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 231.

Omphalotropis (*Eurytropis*) *aurantiaca*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 148; id., Cat. Pneum. 1899, p. 68.

Original description:—" C. testa conica, elongata, turrita, apice acuta, basi perforata, leviter striata; anfractibus planis, ultimo ad peripheriam subcarinato; apertura ovato-circulare, intus lutea; marginibus incrassatis albidis, colore externe crocea." (*Deshayes.*)

" T. perforata, ovato-conica, solidula, concentrice minutim et confertim striata, rubra; spira conica, acuta; anfr. 6–7 vix convexiusculi, ultimus longitudinaliter striatus, medio linea elevata munitus; apertura obliqua, ovalis, intus concolor; perist. subincrassatum, album, expansiusculum, marginibus disjunctis, columellari simplice, superne dilatato.—Operc. normale.

" Long. $9\frac{1}{2}$, diam. $5\frac{1}{2}$ mill. Ap. $4\frac{2}{3}$ mill. longa, $3\frac{1}{2}$ lata." (*Deshayes.*)

Hab. India: Pondicherry (*Belanger*).

Its occurrence in India has been disputed, Benson * stating that it is a Mauritian species, which may possibly have been imported with plants.

550. **Omphalotropis brevis**, *Godwin-Austen.*

Omphalotropis (*Realia*) *brevis*, Godwin-Austen, Proc. Zool. Soc. 1895, p. 455.

Omphalotropis (*Eurytropis*) *brevis*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 149; id., Cat. Pneum. 1899, p. 69.

Original description:—" Shell dextral, elongately turbinate, rimate; sculpture smooth, covered with a fine epidermis, having a few indistinct lines of growth; colour pale yellowish horny; spire conical, sides flat; apex sharp; suture impressed; whorls 6, the last slightly carinate with a hair-like keel, which is seen in the whorl above; below a hair-like keel round the umbilical region; aperture ovate; peristome thin, not complete in specimen.

" Maj. diam. 1·8; alt. axis 2·8 mm." (*Godwin-Austen.*)

Hab. Nicobar Is.: Camorta (*Roepstorf*).

551. **Omphalotropis distermina**, *Benson.*

Omphalotropis distermina. Benson, A. M. N. H. ser. 3, xii, 1863, p. 425; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 178; Theobald, Cat. Shells Brit. India, 1876, p. 15; Hanley & Theobald, Conch. Ind. 1876, pl. 145, fig. 10; Nevill, Hand List, i, 1878, p. 321.

Realia (*Omphalotropis*) *distermina*, Pfeiffer, Mon. Pneum. Suppl. 3, 1875, p. 225.

Omphalotropis (*Eurytropis*) *distermina*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 149; id., Cat. Pneum. 1899, p. 69.

Original description:—" O. testa perforata, globoso-conica, oblique striatula, supra suturam, ad peripheriam, et circa umbilicum oblique vel radiatim costulato-striata, sub epidermide fusca

* A. M. N. H. ser. 2, viii, 1851, p. 194.

non nitente albida; spira acuminato-conica, apice acutiusculo, sutura profunda; anfractibus 6, convexis, ultimo ad peripheriam et circa umbilicum subcarinato, carina umbilicali extus linea impressa notata; apertura subobliqua, angulato-ovata, spiram æquante; peristomate recto, acuto, marginibus remotioribus callo tenui junctis; columellari subincrassato. Operc. —— ?

"Long. 3, diam. $2\frac{1}{2}$ mill." (*Benson.*)

Hab. Andaman Is. (*Theobald*).

552. **Omphalotropis sordida**, *Frauenfeld.*

Assiminea sordida (Behn), Frauenfeld, Verh. K. K. zool.-bot. Ges. Wien, xiii, 1863, p. 212.

Omphalotropis sordida, Mörch, Journ. Conchyl. xx, 1872, p. 318; id., op. cit. xxiv, 1876, p. 362.

Original description (in German):—"Shell turbinate, acute, rather solid, dull, opaque, brown, with two indistinct clear spiral bands; whorls 5–6, increasing gradually, flattened, suture very slightly impressed; last whorl suddenly descending. Aperture moderately, the upper part rather prominently angular. Margins not united, acute, columellar thickened, somewhat reflected, leaving only a narrow umbilical perforation.

"Length 4·4, width 3 mm." (*Frauenfeld.*)

Hab. Nicobar Is.: Sambelong (*Reinhardt*).

Genus **REALIA**, *Gray.*

Realia, Gray, Synopsis Cont. Brit. Mus. Ed. 42, 1840, first issue p. 149 (nom. nud.); id., Ed. 44, 1842, p. 91 (nom. nud.); id., Proc. Zool. Soc. 1847, p. 182 (nom. nud.); id., Nomencl. Moll. Brit. Mus. part 1, Cyclophoridæ, 1850, p. 63; Pfeiffer, Zeits. Malak. viii, 1851, p. 175; Gray, Cat. Phaneropn. Brit. Mus. 1852, p. 217; Pfeiffer, Mon. Pneum. 1852, p. 305; Adams, Gen. Rec. Moll. ii, 1856, p. 299 (as subgenus of *Hydrocena*); Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 153; id., Suppl. 2, 1865, p. 170; id., Suppl. 3, 1875, p. 207 (+ *Omphalotropis*); Cooke, Cambridge Nat. Hist. iii, 1895, p. 414 (as subgenus of *Omphalotropis*); Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 148; id., Cat. Pneum. 1899, p. 68.

TYPE, *Realia egea*, Gray.

Range. Andaman Is., New Zealand, Marquesas.

Shell perforate or narrowly umbilicated, turreted or globose-turbinate, keeled around the perforation. Aperture ovate, peristome continuous, straight or expanded. Operculum thin, corneous, paucispiral.

553. **Realia decussata**, *Blanford.*

Realia decussata, Blanford, J. A. S. B. xlix, part 2, 1880, p. 218.

Original description:—"Shell perforate, ovately conical, rather thin, finely marked with oblique striæ of growth and minute

decussating spiral lines (only visible beneath the lens), costulately striated on the upper whorls (except the two uppermost) and close to the suture on the lower whorls, pale rufescent brown, with a pale band round the body whorl. Spire conical, apex sharp, suture impressed. Whorls 6, convex; the last rounded at the periphery and below, radiately striated beneath, more strongly in the umbilicus, and having an impressed line at the base around the umbilicus in the place of a keel. Aperture oblique, oval, but little higher than broad, about $\frac{3}{7}$ of the length. Peristome thin, the margins approaching each other and united by a thin callus; the outer and basal edges simple, columellar margin slightly expanded below, curved back into a shallow re-entering sinus close to the perforation. Operc.?

"Length $3\frac{3}{4}$, diam. $2\frac{3}{4}$; length of aperture $1\frac{3}{4}$, breadth $1\frac{1}{2}$ mm."

Hab. Andaman Is. (*Anderson*).

"Independently of sculpture, the species may be distinguished from *O. distermina* by its less globose form, and by the absence of the keel around the periphery; from *R. andersoni* by its much smaller size, more rounded whorls, and by the absence of the keel; and from *R. pallida* by rounder whorls, by colour, and by its rather more turreted form." (*Blanford.*)

554. **Realia pallida**, *Blanford.*

Realia pallida, Blanford, J. A. S. B. xlix, part 2, 1880, p. 217, pl. 2, fig. 19.

Original description:—"Shell perforate, ovately conical, thin, whitish horny, smooth, moderately polished, with faint subobsolete vertical striation. (There is also, beneath the lens, a faint indication of minute spiral striation, but I am not sure that this is not an individual peculiarity.) Spire conical, apex acute, suture impressed. Whorls 6, slightly convex, the last rounded at the periphery and below, radiately striated around the perforation. Aperture nearly vertical, ovate, shorter than the spire. Peristome thin, margins approaching each other, joined by a thin callus; the outer lip simple, the columellar slightly expanded.

"Length $4\frac{1}{4}$, diam. 3; length of aperture 2, breadth $1\frac{1}{2}$ mm." (*Blanford.*)

Hab. Andaman Is. (*Anderson*).

The author states that neither this species nor *O. andersoni* can be confounded with the globose *O. distermina* with its costulate striation near the suture and inside the umbilicus, its rounded whorls, and its aperture equal in length to the spire.

Family TRUNCATELLIDÆ.

Genus **TRUNCATELLA**, *Risso.*

Truncatella, Risso, Hist. Nat. Alp. Marit. iv, 1826, p. 124; Lowe, Zool. Journ. v, 1832, p. 299; Pfeiffer, Zeits. Malak. iii, 1846, p. 177; id., Mon. Auric. Viv. 1856, p. 175; Adams, Gen. Rec. Moll. ii, 1856, p. 310; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 6; Chenu, Man. Conchyl. i, 1859, p. 498; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 3; id., Suppl. 3, 1875, p. 11; Fischer, Man. Conchyl. 1885, p. 751; Cooke, Cambridge Nat. Hist. iii, 1896, p. 414.

Erpetometra, Lowe, Zool. Journ. v, 1832, p. 300.

Choristoma, Cristofori & Jan, Cat. Rer. Nat. Mus. Sect. 2 *a*, part 1, 1832, p. 6.

TYPE, *Truncatella lævigata*, Risso.

Range. Ceylon, Malaysia, Philippine Is., Japan, Arabia, Morocco, Mascarene Is., Australia, New Caledonia, Polynesia, Central America, West Indies, S. Europe.

Shell subcylindrical, apex truncated, mammillate; suture deep; aperture ovate, slightly acuminate on the dextral side; peristome continuous, reflexed. Operculum thin, corneous, nucleus basal.

555. **Truncatella ceylanica**, *Pfeiffer.*

Truncatella ceylanica, Pfeiffer, Proc. Zool. Soc. 1856, p. 336; id., Mon. Auric. Viv. 1856, p. 186; id., Mon. Pneum. Suppl. 1, 1858, p. 7; Suppl. 2, 1865, p. 5; Suppl. 3, 1875, p. 11; Nevill, Hand List, 1878, p. 253; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 76; id., Cat. Pneum. 1899, p. 4.

Original description:—"Tr. testa subrimata, attenuato-cylindracea, striatula, pellucida, nitida, corneo-rufa vel flavescente; anfr. superst. 4, supremis 2 rotundatis, reliquis planioribus, omnibus ad suturam plicato-crenatis, ultimo basi non compresso; apertura verticali, ampla, angulato-subovali; perist. continuo, margine dextro tenui, expansiusculo, columellari leviter arcuato, appresso.

"Long. 6, diam. 2 mill." (*Pfeiffer.*)

Hab. Ceylon.

Family ASSIMINEIDÆ.

Genus **ACMELLA**, *Blanford.*

Acmella, Blanford, A. M. N. H. ser 4, iii, 1869, p. 178 (as subgenus of *Acicula*); Nevill, Hand List, i, 1878, p. 251; Fischer, Man. Conchyl. 1885, p. 738: Cooke, Cambridge Nat. Hist. iii, 1895, p. 415; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 153; id., Cat. Pneum. 1899, p. 73.

TYPE, *Cyclostoma tersum*, Benson.

Range. India, Burma, Andaman and Nicobar Is., Comoro Is., Philippine Is., New Guinea, New Caledonia, Polynesia, Loo Choo Archipelago and Hainan.

Shell corneous, subcylindraceous, subimperforate, striated longitudinally. Peristome a little thickened, margins joined by a thin callus. Operculum corneous, very thin, paucispiral; nucleus sinistral.

556. **Acmella hyalina**, *Theobald & Stoliczka.*

Acmella hyalina, Theobald & Stoliczka, J. A. S. B. xli, part 2, 1872, p. 333, pl. 11, fig. 7; Theobald, Cat. Shells Brit. India, 1876, p. 15; Hanley & Theobald, Conch. Ind. 1876, p. xii; Nevill, Hand List, i, 1878, p. 251.

Georissa (*Acmella*) *hyalina*, Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 293.

Acmella (s. s.) *hyalina*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 153; id., Cat. Pneum. 1899, p. 73.

Original description:—"Ac. testa ovato conica, modice perforata, hyalina, sordide albida; spira obtusa; anfractibus $4\frac{1}{2}$ convexiusculis, sutura simplici et profunda junctis, ad suturam subtruncatis, lævigatis, ultimo spira paulo breviore, basi convexo; apertura regulariter ovata, supra (vel postice) subangulata, haud obliqua, peristomate tenui fere continuo.

"Long. 1, lat. 0·7 mm. (operculum deest)."

Hab. Burma: Moulmain (*Stoliczka*).

"Of the two known species of the genus, *A. tersa* and the doubtful *milium* the present new form closely agrees in the shape of the shell with the first, and in the smoothness of the surface with the second." (*Theobald & Stoliczka.*)

557. **Acmella mellilla**, *Godwin-Austen.*

Acmella mellilla, Godwin-Austen, Proc. Zool. Soc. 1895, p. 453, text-fig. *c*.

Acmella (s. s.) *mellilla*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 153; id., Cat. Pneum. 1899, p. 73.

Original description : — "Shell dextral, ovately turreted; sculpture oblique, fine, close costulation; colour pale umber; spire depressedly conic; apex very blunt, suture impressed; whorls 5, sides flat; aperture oval, subobliique; peristome double, with a strong callus on the body-whorl.

"Maj. diam. 1·25, alt. axis 1·75 mm." (*Godwin-Austen.*)

Hab. Andaman Is.: South Andaman (*Roepstorf*).

558. **Acmella milium**, *Benson.*

Cyclostoma milium, Benson, A.M. N. H. ser. 2, xi, 1853, p. 285.
Cyclophorus milium, Pfeiffer, Malak. Blätt. i, 1854, p. 84; Adams, Gen. Rec. Moll. ii, 1855, p. 280.
Hydrocena milium, Benson, A. M. N. H. ser. 2, xvii, 1856, p. 232; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 158.
? *Cyathopoma milium*, Blanford, A. M. N. H. ser. 4, iii, 1869, p. 178.
? *Pupa plicidens*, juv., Godwin-Austen, P. Z. S. 1872, p. 515, pl. 30, fig. 3.
Acmella milium, Theobald & Stoliczka, J. A. S. B. xli, 1872, p. 333; Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 153; id., Cat. Pneum. 1899, p. 73.
Georissa milium, Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 292.

Original description:—"Testa aperte umbilicata, minutissima, trochiformis, lævigata, albida, spira conica, sutura profunda, apice obtuso; anfractibus $4\frac{1}{2}$ convexis, ultimo inflato rotundato; apertura obliqua, diagonali, subcirculari; peristomate expansiusculo, margine recto acuto, integro, breviter adnato; umbilico margine angulato, compressiusculo.

"Long $1\frac{1}{4}$, diam. vix 1 mill." (*Benson*).

Hab. India: Musmai, near Cherrapoonjee, Assam.

This species and *A. tersa* were found by Benson in moss.

559. **Acmella moreletiana**, *Nevill.*

Acmella moreletiana, Nevill, Hand List, i, 1878, p. 251; Godwin-Austen & Nevill, Proc. Zool. Soc. 1879, p. 737, pl. 59, fig. 4.
Acmella (s. s.) *moreletiana*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 153; id., Cat. Pneum. 1899, p. 73.

Original description:—"Shell smaller than *A. tersa*, larger than *A. hyalina*. Whorls fine [$5\frac{1}{2}$], more convex than in either of the above; the last whorl globosely rounded, with a much more open umbilicus; sculpture round the umbilicus in a very characteristic manner with regular distinct plications; beneath the suture, a faint striation is discernible, by the aid of a lens.

"Long. 2, diam. $1\frac{1}{3}$ mill." (*Nevill.*)

Hab. Nicobar Is.: Batti Malve (*Stoliczka*).

560. **Acmella roepstorfiana**, *Nevill.*

Acmella roepstorffiana, Nevill, Hand List, i, 1878, p. 251; Godwin-Austen & Nevill, Proc. Zool. Soc. 1879, p. 737, pl. 59, fig. 5.

Acmella (s. s.) *roepstorfiana*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 153; id., Cat. Pneum. 1899, p. 73.

Original description:—"Shell not quite so large as the preceding [*A. tersa* and *A. hyalina*], with less convex whorls, less globose last whorl, and less open umbilicus; in these respects it is nearer *A. hyalina*; the last whorl is, however, more produced and contracted than in *A. hyalina*. The sculpture differs altogether from that of the other described species of the genus; it is throughout regularly, closely, evenly striated, the striæ incised and oblique-excavated at the suture.

"Long. $1\frac{1}{2}$; diam. 1 mill."

Hab. Nicobar Is.: Katchall (*Stolizcka*).

"The shell is of a silky, translucent and shining texture, with 5 almost cylindrically turreted whorls, the last a trifle compressed at the periphery; the umbilicus is exceedingly narrow and partially overlapped by the thickened peristome, which here and there, under the lens, clearly shows a duplex character; the aperture is very small, unusually broad in proportion to its height, and almost circular, with the margins almost but not quite continuous." (*Nevill.*)

561. **Acmella tersa**, *Benson.*

Cyclostoma tersum, Benson, A. M. N. H. ser. 2, xi, 1853, p. 285.
Cyclostomus tersus, Pfeiffer, Malak. Blätt. i, 1854, p. 93; Adams, Gen. Rec. Moll. ii, 1856, p. 291.
Hydrocena tersa, Benson, A. M. N. H. ser. 2, xvii, 1856, p. 232; Pfeiffer, Mon. Pneum. Suppl. 1, 1858, p. 158; id., op. cit. Suppl. 2, 1865, p. 172.
Acicula (*Acmella*) *tersa*, Blanford, A. M. N. H. ser. 4, iii, 1869, p. 178, pl. 16, fig. 2.
Acmella tersa, Theobald & Stoliczka, J. A. S. B. xli, 1872, p. 333; Theobald, Cat. Shells Brit. India, 1876, p. 15; Hanley & Theobald, Conch. Ind. 1875, pl. 117, fig. 1; Nevill, Hand List, i, 1878, p. 251.
Georissa tersa, Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 292.
Acmella (s. s.) *tersa*, Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxx, 1898, p. 153; id., Cat. Pneum. 1899, p. 73.

Original description:—"Testa subperforata, minuta, ovato-conica, albida, longitudinaliter (radiatim) sub lente striis exilissimis eleganter insculpta; sutura impressa, apice obtusiusculo; anfractibus 5 convexis; apertura angulato-ovata, verticali, tertiam partem testæ æquante; peristomate simplici, crassiusculo, marginibus callo tenui junctis.

"Diam. 1, long. 2 mill." (*Benson.*)

Hab. India: Musmai, near Cherrapoonjee, Khasi Hills, Assam.

This species and *A. milium* were found by Benson in moss.

Family HELICINIDÆ.

Genus **HELICINA**, *Lamarck.*

Helicina, Lamarck, Ann. Mus. Hist. Nat. Paris, v, 1804, p. 91 ; id., Hist. Nat. Anim. s. vert. vi, part 2, 1822, p. 102; Gray, Zool. Journ. i, 1824, p. 62 ; Guilding, op. cit. iii, 1828, p. 528; Deshayes, Hist. Nat. Anim. s. vert. (new ed.) viii, 1838, p. 153; Pfeiffer, Mon. Pneum. 1852, p. 338 ; id., Suppl. 1, 1858, p. 178 ; Chenu, Man. Conchyl. 1859, p. 495; Pfeiffer, op. cit. Suppl. 2, 1865, p. 216; id., Suppl. 3, 1876, p. 243; Fischer, Man. Conchyl. 1885, p. 794; Cooke, Cambridge Nat. Hist. iii, 1895, p. 410; Wagner, Denks. K. Akad. Wiss. Wien, lxxvii, 1905, p. 212; id., Conch.-Cab., Helicinidæ, 1910, p. 269.

TYPE, *Helicina neritella*, Lamarck.

Range. Intertropical America, Antilles, Seychelles, Burma, Andaman and Nicobar Is., Malaysia, New Guinea, China, Japan.

Shell imperforate, turbinate, globular or depressed, base flattened and callous ; spire short, few-whorled ; aperture triangular or semi-ovate, entire ; peristome simple, straight or thickened, reflected, frequently dilated at the base; columella callous, straight; operculum testaceous or corneous, semi-ovate.

Subgenus **SULFURINA**, *Möllendorff.*

Sulfurina (genus), Möllendorff, Ber. Senck. Naturf. Ges. 1893, p. 141 ; Wagner, Denks. Kaiserl. Akad. Wiss. Wien, lxxvii, 1905, p. 371.

TYPE, *Helicina citrina*, Gould.

Range. Andaman and Nicobar Is., Malaysia, New Guinea, Polynesia.

Shell conical or depressed conoid, bright yellow when fresh, rather thin ; aperture scarcely oblique; peristome little thickened, reflexed.

562. **Helicina behniana**, *Pfeiffer.*

Helicina behniana, Pfeiffer, Proc. Zool. Soc. 1859, p. 29; id., Mon. Pneum. Suppl. 2, 1865, p. 237 ; id., Malak. Blätt. xxiv, 1877, p. 156 ; Nevill, Hand List, i, 1878, p. 324.

Helicina (Pachystoma) behniana, Mörch, Journ. Conchyl. xx, 1872 p. 318 ; id., op. cit. xxiv, 1876, p. 363.

Helicina behaniana, Sowerby, Thes. Conch. iii, 1866, p. 281, pl. 268, fig. 76; Reeve, Conch. Icon. xix, 1873, *Helicina*, pl. 5, fig. 37.

Sulfurina behniana, Wagner, Denks. Kaiserl. Akad. Wiss. Wien, lxxvii, 1905, p. 375, pl. 2, figs. 9*a*–9*c*; id., Conch.-Cab., Helicinidae, 1907, p. 24, pl. 3, figs. 19–21.

Original description:—"T. conoideo-depressa, tenuiuscula, sub lente leviter striatula, oleoso-micans, flavida; spira regulariter conoidea, acutiuscula; anfr. $4\frac{1}{2}$ vix convexiusculi, ultimus peripheria subangulatus; apertura obliqua, integra, triangulari-semiovalis; columella brevissima, subincrassata, callum emittens tenuem, diffusum; perist. sublate expansum, margine columellari leviter arcuato. Operc. solidulum, concolor.

"Diam. maj. $7\frac{1}{3}$, min. $5\frac{2}{3}$, alt. $4\frac{1}{2}$ mill." (*Pfeiffer.*)

Hab. Nicobar Is.: Sambelong, Pulo Panjang (*Reinhardt*); Katchal (*Roepstorf*).

563. **Helicina bensoni**, *Wagner.*

Sulfurina bensoni, Wagner, Conch.-Cab., Helicinidæ, 1907, p. 26, pl. 4, figs. 1–3.

Original description (in German):—"Shell small, conical, with rounded base; yellow-brown, with two white bands at suture and keel; upper whorls light red-brown; the sculpture consists of very fine radial lines of growth and a few spiral lines, almost obliterated and only visible under a lens. The conical spire consists of four flattened whorls, increasing slowly and regularly, the last bluntly keeled, descending very little and slowly below the keel; the bluntly triangular aperture is slightly oblique, the peristome scarcely thickened and a little expanded; the sinuosity at the junction of the basal margin with the columella is slight, the angle being distinctly visible. The rather thick basal callus is distinctly circumscribed.

"Diam. maj. 3·6, min. 3·3, alt. 2·6 mm.

"Operculum yellowish-white on either side, with a rather thick, finely granulated calcareous lamella and distinctly raised sigmoid edge." (*Wagner.*)

Hab. Nicobar Is.

Stated to agree somewhat with the description of *H. scrupulum*, but smaller, while the two red bands above the periphery are absent; the last whorl is decidedly bluntly keeled and the aperture not lunate.

564. **Helicina zelebori**, *Pfeiffer.*

Helicina zelebori, Pfeiffer, Verh. K. K. zool.-bot. Ges. xvii, 1867, p. 807; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 247.

Pachystoma zelebori, Frauenfeld, Verh. K. K. zool.-bot. Ges. xix, 1869, p. 879; Mörch, Journ. Conchyl. xx, 1872, p. 331.

Helecina (*Pachystoma*) *zelebori*, Mörch, Journ. Conchyl. xxiv, 1876, p. 364.

Sulfurina zelebori, Wagner, Denks. Kaiserl. Akad. Wiss. Wien, lxxvii, 1905, p. 380, pl. 3, figs. 5*a*–5*c*; id., Conch.-Cab., Helicinidae, 1907, p. 32, pl. 5, figs. 1–3.

Original description:—"T. parvula, conoidea, solida, lævigata, nitida, pallide straminea; spira breviter conoidea, vertice obtusiusculo; sutura levis; anfr. 4 vix convexiusculi, ultimus latus, subdepresso-rotundatus, subtus parum convexus, medio callo concolore parum expanso munitus; columella brevissima, triangularis; apertura obliqua, late semiovalis; perist. simplex, rectum, margine basali cum columella angulum obtusum formante.

"Diam. maj. $4\frac{2}{3}$, min. 4, alt. 3 mm." (*Pfeiffer.*)

Hab. Nicobar Is. (*Novara Expedition*).

The species is compared by the author with *Helicina pisum*, Phil., which it resembles, but from which it may be distinguished by the rounded last whorl, thin peristome, etc. From *H. nicobarica* it is said to differ in the higher spire, absence of keel, and the simple straight peristome.

Var. **amphibola**, *Wagner.*

Sulfurina zelebori amphibola, Wagner, Denks. Kaiserl. Akad. Wiss. Wien, lxxvii, 1905, p. 380, pl. 3, fig. 4; id., Conch.-Cab., Helicinidae, 1907, p. 32, pl. 5, fig. 4.

Original description (in German):—"Shell conoid, yellowish-corneous or brownish-yellow, frequently with dark apex and two translucent dark bands on a milky-white clouded ground; the last whorl is more rounded and descends more in front; the peristome is more dilated and reflexed. Operculum typical.

"Diam. 5, height 3·8 mm." (*Wagner.*)

Hab. Andaman Is.

The author states on several occasions he received this form labelled "*Helicina scrupulum*, Benson."

Subgenus **APHANOCONIA**, *Wagner.*

Aphanoconia (genus), Wagner, Denks. Kaiserl. Akad. Wiss. Wien, lxxvii, 1905, p. 388; id., Conch.-Cab., Helicinidae, 1910, p. 158; Bourne, Proc. Zool. Soc. 1911, p. 762.

TYPE, *Helicina verecunda*, Gould (1st species).

Range. Burma, Andaman and Nicobar Is., Seychelles, Malaysia, Philippines, New Guinea, S. China, Japan, Micronesia, Melanesia.

Shell small, conoid; peristome somewhat thickened, not reflexed or slightly so; operculum triangular-rotundate with acute upper angle; sigmoid margin rather depressed and only slightly S shaped.

565. **Helicina andamanica**, *Benson.*

Helicina andamanica, Benson, A. M. N. H. ser. 3, vi, 1860, p. 194; Pfeiffer, Mon. Pneum. Suppl. 2, 1865, p. 244; Hanley & Theobald, Conch. Ind. 1870, pl. 6, fig. 10; id., op. cit. 1876, p. xv; Theobald, Cat. Shells Brit. India, 1876, p. 43; Nevill, Hand List, i, 1878 p. 43 (+ var. minor).

Aphanoconia andamanica, Wagner, Denks. Kaiserl. Akad. Wiss. Wien, lxxvii, 1905, p. 406, pl. 6, figs. 11 *a*–11 *c*; id., Conch.-Cab., Helicinidae, 1908, p. 177, pl. 34, figs. 11–13; Bourne, Proc. Zool. Soc. 1911, pl. 41, fig. 63 (radula).

Original description:—"Testa sublenticulari, solidiuscula, striis confertissimis sub lente decussata, rugis spiralibus obsoletis, subtus magis conspicuis, munita, albida, superficie citrina, linea peripherica rubente suturam sequente ornata; spira convexo-conoidea, apice obsolete mucronato, sutura lineari, marginata; anfr. 4½ planulatis, ultimo acute compresso-carinato, subtus convexiusculo; apertura obliqua, triangulari, albida, peristomate acuto, expansiusculo, margine columellari brevi, sinuato, callum subcircularem emittente, calli basi elevatiore, versus marginem aperturæ obtuse angulata. Operculo tenui, albido, medio obsolete granulato, intus lutescente.

"Diam. maj. 9, minor 7½, axis 5 mill." (*Benson.*)

Hab. Andaman Is. (*Theobald*).

Allied to *H. nicobarica*, Philippi, but larger.

566. **Helicina arakanensis**, *Blanford.*

Helicina arakanensis, Blanford, J. A. S. B. xxxiv, 1865, p. 85; Hanley & Theobald, Conch. Ind. 1870, pl. 6, fig. 9; Theobald, Cat. Shells Brit. India, 1876, p. 43; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 283; Nevill, Hand List, i, 1878, p. 325.

Aphanoconia merguiensis aracanensis, Wagner, Denks. Kaiserl. Akad. Wiss. Wien, lxxvii, 1905, p. 402, pl. 6, figs. 7 *a*, 7 *b*.

Original description:—"Shell depressly turbinate, sublenticular, rather thin, obliquely striated above, radiately and very minutely beneath, polished, flesh-coloured, with a darker red band in the centre of the whorls above, and another on the last whorl, just below the periphery; apex yellow. Spire convexly conoid; apex acute. Whorls 4, the last compressed and sharply keeled, moderately convex at the base, furnished with a polished subgranulate central callus; columella very short. Aperture diagonal, triangular; peristome white, slightly expanded. Operculum light grey, shelly,

"Major diameter 6, minor 5, axis 3½ millem." (*Blanford.*)

Hab. Burma: Ramri Island, Coast of Arakan.

A smaller variety, measuring—major diameter 5, minor 4¼, axis 3 millim., is mentioned as being abundant in the southern portion of the Bassein District.

Stated to be related to *H. merguiensis*, Pfr., and *H. andamanica*, Bens., but smaller than either, mainly distinguished from the former by the absence of the close spiral striation, so marked in that species, and from the latter by different colouring, higher spire, and closer sculpture.

While merging this species as a subspecies of *H. merguiensis* in 1905, Dr. Wagner subsequently reduced it to a synonym of *H. nicobarica* *.

* Conch.-Cab., Helicinidae, 1908, p. 176.

567. **Helicina dunkeri**, *Zelebor.*

Helicina dunkeri, Zelebor, Verh. K. K. zool.-bot. Ges. xvii, 1867, p. 808; Pfeiffer, Mon. Pneum. Suppl. 3, 1876, p. 285; id., Malak. Blätt. xxiv, 1877, p. 156; Nevill, Hand List, i, 1878, p. 324.

Pachystoma dunkeri, Frauenfeld, Verh. K. K. zool.-bot. Ges. xix, 1869, p. 879; Mörch, Journ. Conchyl. xx, 1872, p. 331.

Helicina (Pachystoma) dunkeri, Mörch, Journ. Conchyl. xxiv, 1876, pp. 363, 366.

Aphanoconia dunkeri, Wagner, Denks. Kaiserl. Akad. Wiss. Wien, lxxvii, 1905, p. 407, pl. 6, figs. 12*a*–12*c*; id., Conch.-Cab., Helicinidae, 1908, p. 179, pl. 34, figs. 14–19.

Original description:—"T. sublenticularis, carinata, solida, confertissime capillaceo-striata, sericea, carnea, saturatius variegata; spira breviter conoidea, vertice minuto; sutura levis, marginata; anfr. 4½ planiusculi, ultimus acute compresso-carinatus, basi convexiusculus, levius striatus, medio callo crasso, albido, subcircumscripto munitus; apertura diagonalis, triangularis, ad carinam subcanaliculata; perist. simplex, margine dextro anguste expanso, basali reflexiusculo, cum columella brevissima, callosa angulum distinctum formante.—Operculum solidum, margaritaceum.

"Diam. maj. 10, min. 9, alt. 5 mm." (*Zelebor.*)

Hab. Nicobar Is.: Camorta and Preparis (*Stoliczka*).

Stated to be nearest to *H. rosaliæ*, a Philippine species, but much larger, shining, the carina less pronounced, the peristome a little more expanded, while there is no fold at the base of the columella.

568. **Helicina gratulata**, *Sowerby.*

Helicina gratulata (Blanford), Sowerby, Thes. Conch. iii, 1866, p. 295, pl. 278, fig. 457; Reeve, Conch. Icon. xix, 1873, *Helicina*, pl. 11, fig. 96.

"Hel. testa trochiforme, straminea, spira subacuminata, anfractibus convexiusculis; ultimo anfractu subcompresso, medio acute carinato, supra infraque convexo, columella tenui, obliqua, labio externo tenuissimo.

"Shell trochiform, straw coloured, spire subacuminated, whorls rather convex; last whorl rather compressed, acutely keeled in the middle, convex above and below, columella thin, oblique; outer lip very thin." (*Reeve.*)

Diam. maj. 8·5, alt. 7 mm. (ex icon.).

Hab. Burma: Pegu.

569. **Helicina merguiensis**, *Pfeiffer.*

Helicina merguiensis, Pfeiffer, Proc. Zool. Soc. 1857, p. 111; id., Mon. Pneum. Suppl. 1, 1858, p. 216; Theobald, Cat. Shells Brit. India, 1876, p. 43.

Aphanoconia merguiensis, Wagner, Denks. Kaiserl. Akad. Wiss. Wien, lxxvii, 1905, p. 401, pl. 6, figs. 6*a*–6*e*; Bourne, Proc. Zool. Soc. 1911, pl. 35, fig. 27 (anatomy), pl. 42, fig. 64 (radula).

Original description:—"T. depresse turbinata, tenuiuscula, oblique striata et spiraliter confertissime sulcata, nitidula, carnea;

spira conoidea, apice lutea, acutiuscula; antr. 4½ planulati; ultimus compresse et acute carinatus, basi modice convexus, callo centrali nitido, granulato munitus; columella brevissima, basi obsolete tuberculata; apertura diagonalis, triangularis; perist. album, breviter expansum, margine basali cum columella subangulatim juncto.—Operc. margaritaceum.

"Diam. maj. 7½, min. 6⅔, alt. 4 mill." (*Pfeiffer.*)

Hab. Burma: Mergui.

In his later work on the genus *Helicina* (Conch.-Cab. 1908, p. 176) Wagner reduces *H. merguiensis* and *H. arakanensis* to synonyms of *H. nicobarica*.

570. **Helicina nicobarica**, *Pfeiffer.*

Helicina nicobarica (Philippi), Pfeiffer, Zeits. Malak. iv, 1847, p. 149; id., Conch.-Cab., Helicinaceen, 1850, p. 62, pl. 2, figs. 19–21; id., Cat. Phaneropn. Brit. Mus. 1852, p. 293; id., Mon. Pneum. 1852, p. 402; Tryon, Amer. Journ. Conch. v, 1869, p. 111; Stoliczka, J. A. S. B. xxxix, part 2, 1870, p. 88; Reeve, Conch. Icon. xix, 1873, *Helicina*, pl. 21, figs. 187 *a*, 187 *b*; Pfeiffer, Malak. Blätt. xxiv, 1877, p. 157; Nevill, Hand List, i, 1878, p. 324.

Helicina nicobaricus, Sowerby, Thes. Conch. iii, 1866, p. 293, pl. 276, figs. 381, 382.

Helicina (*Pachystoma*) *nicobarica*, Adams, Gen. Rec. Moll. ii, 1856, p. 304; Mörch, Journ. Conchyl. xx, 1872, p. 318; id., op. cit. xxiv, 1876, p. 363.

Aphanoconia merguiensis nicobarica, Wagner, Denks. Kaiserl. Akad. Wiss. Wien, lxxvii, 1905, p. 402, pl. 6, figs. 5*a*–5*c*.

Aphanoconia nicobarica, Wagner, Conch.-Cab., *Helicina*, 1908, p. 176, pl. 34, figs. 20–22.

Original description:—"T. lenticularis, tenuiuscula, lævigata, nitidula, albida vel carnea, fasciis 1–2 angustis rubris plerumque ornata; spira brevis, obtusa; anfr. 4, planiusculi, ultimus acute carinatus, basi convexior, interdum striis elevatis spiralibus obsolete cinctus; apertura subobliqua, obtuse triangularis; columella brevis, obsolete tuberculata; perist. acutum, brevissime expansum; callus basali nitidus, linea albida circumscriptus.—Operc. tenue, carneum.

"Diam. 5½, alt. 3½ mill." (*Pfeiffer.*)

Hab. Nicobar Islands (*Philippi*); Kar Nicobar and Batti Malve (*Stoliczka*); Sambelang (*Reinhardt*); Katchal and Nancouri (*Roepstorf*).

Nevill mentions a var. *minor* (? distinct species) from Batti Malve, but gives no description or measurements.

Stoliczka (*l. c.*) was of opinion that *H. nicobarica* might perhaps be identical with *H. scrupulum*; the figures of the two forms do not support this view.

571. **Helicina rogersi**, *Bourne.*

Aphanoconia rogersii, Bourne, P. Z. S. 1911, p. 801, pl. 42, fig. 65 (radula), figs. 66–68 (shell), fig. 69 (operculum).

Original description:—"Shell oblately spheroidal, the surface

marked with closely set radial growth-lines; colour light orange-yellow marked with more or less distinct reddish-brown radial bands; spire of $4\frac{1}{2}$ whorls, increasing regularly and somewhat rapidly in size, the last whorl obtusely keeled, the keel produced into a prominent angular projection at the peristome. Aperture semi-lunar, very oblique, the outer margin thickened and expanded. Basal callus not very thick, hardly differing in colour from the rest of the shell, of rather small extent, its limits clearly defined above, as well as below. The whole shell deeper in proportion to its breadth than in *A. andamanica* and the spire more prominent.

"Operculum yellowish white in colour, the calcareous plate rather thin, the sigmoid curve pronounced, the upper angle produced.

"Radula with small diamond-shaped median tooth; the first admedian tooth more than twice as long as broad, the anterior edge incurved and bearing four denticulations; second and third admedian teeth each with four denticulations; the lateral teeth normal, the stalk rather long, the articular excavation deep, the aliform process bearing seven round denticulations." (*Bourne.*)

Hab. Andaman Is. (*Rogers*).

572. **Helicina scrupulum**, *Benson.*

Helicina scrupulum, Benson, A. M. N. H. ser. 3, xii, 1863, p. 425; Hanley & Theobald, Conch. Ind. 1875, pl. 133, figs. 8, 9; Theobald, Cat. Shells Brit. India, 1876, p. 43; Nevill, Hand List, i, 1878, p. 325.

Original description:—"H. testa parva, sublenticulari, crassiuscula, sublævigata, vix nitidula, minutissime oblique striatula, superne fuscescente, anfractu ultimo albido-cornea, supra peripheriam fasciis 2 rufescentibus inferiore latiore ornata; spira depresso-conoidea, apice obtuso, sutura lineari; anfractibus $4\frac{1}{2}$, superioribus vix convexiusculis, ultimo obtuse angulato; apertura obliqua, subtriangulari-lunata; peristomate expanso, reflexiusculo, marginibus callo magno incrassato subcirculari retrorsum expanso polito junctis. Operculo tenui, albido.

"Diam. 5, alt. 3 mill." (*Benson.*)

Hab. Andaman Is.: Mt. Harriet, Andaman Is. (*Nevill*); Nicobars? (*Stoliczka*).

APPENDIX.

The following figures, taken from specimens in the British Museum, were omitted in the text:—



Fig. 41.—*Cyathopoma filocinctum* (p. 135).



Fig. 42.—*Rhaphaulus blanfordi* (p. 164).

The next two species have not hitherto been figured. Their types, now in the Senckenberg Museum in Frankfurt a/M., are represented on the two plates accompanying this volume, reproduced from photographs kindly furnished by Dr. F. Haas, who has charge of the Mollusca in that institution.

Leptopomoides valvatus (p. 21), Pl. I.
Alycæus subhumilis (p. 271), Pl. II.

Doubtful and Spurious Records.

Cyclostoma filosum, Sowerby, in Zoology, Capt. Beechey's Voyage in H.M.S. 'Blossom,' 1839, p. 146, pl. 38, fig. 31; id., Thes. Conch. i, 1843, p. 96, pl. 23, fig. 14.

Stated to have been brought from India, but not found since.

Cyclostoma (*Cyclostomus*?) *gradatum*, Pfeiffer, Proc. Zool. Soc. 1854, p. 303; id., Mon. Pneum. Suppl. 1, 1858, p. 115; Suppl. 2, 1865, p. 126; Suppl. 3, 1878, p. 173.

In his latest reference Pfeiffer reduces this to a synonym of *Bithynia marginata*.

Cyclostoma planorbulum, Sowerby, Thes. Conch. i, 1843, p. 110, pl. 25, figs. 83–86.

Originally recorded from Bengal, but reduced to a synonym of *Cyclotus variegatus*, Swains., a Philippine species, by Kobelt & Möllendorff, Nachr. Deuts. Malak. Ges. xxix, 1897, p. 117; id. Cat. Pneum. 1899, p. 30.

Cyclostoma punctatum, Grateloup, Act. Soc. Linn. Bordeaux, xi, 1841, p. 440, pl. 3, fig. 10; Pfeiffer, Conch.-Cab., Cyclostomaceen, 1847, p. 40, pl. 5, figs. 12, 13; id., Mon. Pneum. 1852, p. 67; Kobelt, Das Tierreich, Lief. 16, 1902, p. 142.

Recorded from Ceylon by Grateloup. China was indicated as its habitat by Pfeiffer on the authority of Sowerby. Kobelt gives Hong Kong.

Cyclostoma tricarinata, Lamarck, Hist. Nat. Anim. s. vert. vi, 2, 1822, p. 144; Sowerby, Thes. Conch. i, 1843, p. 120, pl. 26, fig. 122 (*tricarinatum*); Pfeiffer, Conch.-Cab., Cyclostomaceen, 1847, p. 25, pl. 3, fig. 8 (not pl. 4, figs. 16, 17); id., Mon. Pneum. 1852, p. 198; Suppl. 2, 1865, p. 125; Nevill, Hand List, i, 1878, p. 305.

Sowerby gave India as habitat, but Pfeiffer in 1865 (*l. c.*) indicated Madagascar.

Cyclostoma undulatum, Sowerby, Thes. Conch. i, 1843, p. 99, pl. 23, figs. 29, 30; Pfeiffer, Conch.-Cab., Cyclostomaceen, 1848, p. 97, pl. 12, figs. 24–26; id., Mon. Pneum. 1852, p. 223; Morelet, Ser. Conch. 1860, p. 100.

Originally recorded from Bengal by Sowerby. Pfeiffer in 1852 (*l. c.*) gave Mauritius as the habitat on the authority of Petit and Benson.

Pterocyclus biciliatus, Mousson, Land- u. Süssw. Moll. Java, 1849, p. 49, pl. 20, fig. 9; Pfeiffer, Zeit. Malak. viii, 1851, p. 137; Theobald, Cat. Shells Brit. India, 1876, p. 38; Nevill, Hand List, i, 1878, p. 263.

Originally recorded from Java. Pfeiffer indicated Burma as its habitat, but Borneo, given by Nevill and Theobald, is more likely to be correct.

The following are *nomina nuda* :—

Leptopoma alticolum, H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5.

Leptopoma radicicolum, H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 6; Theobald, Cat. Shells Brit. India, 1876, p. 37.

Leptopoma setiferum, H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; Theobald, Cat. Shells Brit. India, 1876, p. 37.

Cyclophorus kandyanus, H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 6; Theobald, Cat. Shells Brit. India, 1876, p. 36.

Cyclophorus moerchianus (Roepstorf MS.), Godwin-Austen, Proc. Zool. Soc. 1895, p. 452.

Cyclophorus recognitus, H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 4.

Micraulax asper, Theobald, Cat. Shells Brit. India, 1876, Addenda, p. ii.

Cyathopoma alticolum, H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 6; Theobald, Cat. Shells Brit. India, 1876, p. 38.

Cyathopoma (*Jerdonia*) *bicarinatum* (Bedd.), G. Nevill, Hand List, i, 1878, p. 259.

Cyathopoma kunurense (W Blanf.), Theobald, Cat. Shells Brit. India, 1876, p. 38.

Pterocyclus zebrinus, H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 6; Theobald, Cat. Shells Brit. India, 1876, p. 38.

Mychopoma lauta (Bedd.), Theobald, Cat. Shells Brit. India, 1876, p. 39.

Cataulus leucostoma (Fow.), H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 5; Theobald, Cat. Shells Brit. India, 1876, p. 41.

Alycæus jawaiensis (Godwin-Austen), Theobald, Cat. Shells Brit. India, 1876, p. 39.

Alycæus scepticus (Blanford), Theobald, J. A. S. B. xxxii, 1863, p. 377; Blanford, op. cit. xxxiv, 1865, p. 101 (*A. ingrami*, var.).

Nicida chrysalidea, H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p. 6; Theobald, Cat. Shells Brit. India, 1876, p. 42.

Nicida unicarinata, H. Nevill, Enum. Helic. Pneum. Ceylon, 1871, p, 6; Theobald, Cat. Shells Brit. India, 1876, p. 43.

Diplommatina glaber (W Blanf.), Theobald, Cat. Shells Brit. India, 1876, p. 42.

Diplommatina politus (W. Blanf.), Theobald, Cat. Shells Brit. India, 1876, p. 42.

Helicina crocea (Bens.), Theobald, Cat. Shells Brit. India, 1876, p. 43; G. Nevill, Hand List, i, 1878, p. 324.

Corrigenda.

On p. 49: *Cyclophorus menkeanus*, delete reference Reeve, Conch. Icon.

On p. 63: *Cyclophorus indicus*, under *Cyclostoma indicum*, delete reference Sowerby, Thes. Conch.

On p. 261, lines 32 and 33: for *nongtunensis* read *nongtungensis*.

On p. 301, line 30: for *acutulus* read *acutula*.

After line 29 add Subgenus **DIPLOMMATINA**, s. s.

ALPHABETICAL INDEX.

(All names printed in italics are synonyms.)

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