

MOLLUSCA OF H.M.S. 'CHALLENGER' EXPEDITION.—Part XI.  
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Fam. PLEUROTOMIDÆ

(continued from Vol. XV. p. 475).

PLEUROTOMA, *Lam.*

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| 65. <i>Pleurotoma</i> ( <i>Drillia</i> ) <i>exsculpta</i> ,<br>n. sp.<br>66. <i>P.</i> ( <i>D.</i> ) <i>tholoïdes</i> , n. sp.<br>67. <i>P.</i> ( <i>D.</i> ) <i>amblia</i> , n. sp. | 68. <i>Pleurotoma</i> ( <i>Drillia</i> ) <i>aglaophanes</i> , n. sp.<br>69. <i>P.</i> ( <i>D.</i> ) <i>lophoëssa</i> , n. sp., with<br>var. <i>platia</i> .<br>70. <i>P.</i> ( <i>Chionella</i> ) <i>quadruplex</i> , n. sp. |
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These six species, of which the description follows, have fallen out of place from the difficulty of deciding where they should go. After much and contradictory advice, they are classed here tentatively. In all of them the style of the shell is rather that of a *Pleurotoma* than of any thing else; but they can hardly be said to have a labral sinus.

65. PLEUROTOMA (DRILLIA) EXSCULPTA, n. sp.

St. 24. March 25, 1873. Lat. 18° 38' 30" N., long. 65° 5' 30" W. North of Culebra Island, St. Thomas, Danish W. Indies. 390 fms. Coral-mud.

*Shell*.—High, narrow, conical, scalar, ribbed, with a short conical base, a bluntish apex, and having the colour of thin pale flint. *Sculpture*. Longitudinals—on the last whorl there are about 20 (on the first regular whorl about 12) narrow rounded ribs, which originate in the suture; just below this they rise into little rounded tubercles; at the periphery they project in larger and slightly elongated tubercles, below this point they incline to the right, become feebler on the base, and disappear on the snout: the lines of growth are fine, but irregular and somewhat indistinct. Spirals—below the suture a slight rounded thread connects the costal tubercles; at the peripheral row of tubercles is a keel; feeble, remote, rounded threads appear on the whole surface, becoming



stronger on the base, and still more so on the snout. *Colour* that of pale flint when seen in thin flakes. *Spire* high, narrow, conical, scalar. *Apex* consists of  $1\frac{1}{2}$  embryonic whorls, which form a blunt, smooth, small top, with the extreme tip somewhat immersed; these whorls are very finely, but not quite regularly, microscopically spirally scratched. *Whorls* nearly 9, rather short, with a drooping shoulder and a blunt carination, from which they contract with a scarcely convex profile to the lower suture; the base is conical, very lop-sided, scarcely convex, and prolonged into a very short snout. *Suture* sharp and well-defined by the swelling of the whorl above, and by the row of tubercles round the top of the whorl below. *Mouth* oblong, a little oblique, pointed above, prolonged into a shortish oblique canal below. *Outer lip* well arched, with a very slight and open sinus above. *Inner lip*—a very thin glaze runs across the concave line of the body and down the pillar, which is obliquely cut off in front and has a twisted and slightly patulous inner edge. H. 0.65. B. 0.21. Penultimate whorl, height 0.11. Mouth, height 0.25, breadth 0.1.

In general form this species is slightly like a large *Pleurotoma cerinum*, Stimp. and Kurtz, but is obviously quite distinct. It is a good deal like *P. (D.) tholoïdes*, Wats., but is more scalar, is smaller in the apex, longer in the base, and different in sculpture.

66. PLEUROTOMA (DRILLIA) THOLOÏDES, n. sp. (θολοειδής, dome-shaped, see the apex.)

St. 122. Sept. 10, 1873. Lat.  $9^{\circ} 5' S.$ , long.  $34^{\circ} 50' W.$  Off Pernambuco. 350 fms. Mud.

*Shell*.—High, narrow, conical, ribbed, strong, with a rather short conical base, a very blunt dome-shaped apex, and having the texture and colour of flint. *Sculpture*. Longitudinals—there are on each whorl about 17 not very distinct, narrow, slightly swollen ribs, which are a little convex backwards; they run from suture to suture, but die out on the base, and toward the mouth they become a little crowded and indefinite; besides these there are a great many fine, regular, hair-like lines of growth. Spirals—there is on each whorl, above the middle, an angulated carination, bearing a thread on its top, which rises into rounded low tubercles where it crosses the ribs; below this, a little above the middle, is another thread, finer, less prominent, and with feebler tubercles, which also marks a slight keel; three other threads of about the



same strength as this last, and at very nearly equal distances, appear on the base: there are faint indications of others besides, as also of microscopic scratches. *Colour* like pale flint in thin flakes; but the apex is white. *Spire* high, narrow, conical. *Apex* consists of  $2\frac{1}{4}$  embryonic whorls, which form a blunt, smooth, round dome, with the extreme tip immersed but not hid. *Whorls* 9-10, pretty high, angulated, a little constricted and concave above the keel, and very slightly convex below it; the base is conical, very slightly concave and prolonged into a short, slightly reverted snout. *Suture* sharp, and slightly canaliculated in consequence of the squarish edge of the inferior whorl not quite reaching the first basal thread; between these two the suture lies in a minute square-cut depression. *Mouth* club-shaped, being oval above, with a short, somewhat oblique canal in front. *Outer lip* well arched, with an extremely slight shallow and open sinus. *Inner lip*—a very narrow glaze spreads across the slightly concave body, and down the pillar, which is short, rather narrow, and somewhat bent to the left in front; and here the inner edge is strong, sharp, a little twisted, and runs out to a sharp point at the end of the pillar. H. 0.66. B. 0.23. Penultimate whorl, height 0.12. Mouth, height 0.23, breadth 0.11.

The place of this shell is very doubtful; but there is a very slight upward and backward drawing of the lip below the suture; and this is further prolonged in a slight concavity, which may be reckoned as a sinus.

67. PLEUROTOMA (DRILLIA) AMBLIA, n. sp. ( $\alpha\mu\beta\lambda\acute{\upsilon}\varsigma$ , blunt.)

St. 24. March 25. Lat.  $18^{\circ} 38' 30''$  N., long.  $65^{\circ} 5' 30''$  W. Culebra Island, St. Thomas, Danish W. Indies. 390 fms. Coral-mud.

*Shell*.—High, narrow, conically cylindrical, with a blunt bulbous apex, a contracted base, and an elongated snout, bluntly angulated, ribbed, an impressed suture; porcellaneous. *Sculpture*. Longitudinals—the whorls are crossed from suture to suture by slightly curved, hardly oblique ribs, whose convexity is to the left; they do not extend to the base of the last whorl; they are narrow, rounded on the top, feeble above and below, and prominent in the middle; they are parted by unequal furrows broader than themselves; there are 17 on the last whorl, and they decrease up the spire, only 12 being found on the first and second regular whorls; the lines of growth, which agree with the ribs, are fine,



smooth, and unequal. Spirals—there are none but fine, regular, very faint microscopic scratches; though a few regular equidistant impressed lines cross the snout. *Colour* siliceous yellowish-white. *Spire* conically cylindrical, the body-whorl being narrow, and the highest whorls rather broad; the profile-lines are very much interrupted by the prominence of the keels and the contraction of the sutures. *Apex* consists of  $1\frac{1}{4}$  swollen rounded smooth whorls, of which the extreme tip lies over on one side, but, though somewhat compressed, is still a little prominent, and is well defined by the impressed suture. *Whorls*  $8\frac{1}{2}$ , of very slow increase, rather high, the last small; the projection on the longitudinal ribs forms a sharpish keel above the middle of the whorls; but the whorls themselves are not really carinated; the base contracts rather slowly, and runs out into a longish snout. *Suture* fine, superficial, well marked from the contraction in which it lies. *Mouth* club-shaped, small; but it and the pillar are a good deal broken in the only specimen. *Outer lip* very regularly convex to the canal-edge, where it becomes concave and then straight; it retreats on leaving the body; but the sinus is excessively shallow, open, and slight. *Inner lip* narrow; it is slightly concave on the body, and then straight on the singularly strong pillar. H. 0.45. B. 0.14. Penultimate whorl, height 0.06. Mouth, height 0.17, breadth 0.1.

For both height and breadth I have had here to make allowance, in consequence of the broken condition of the last whorl.

68. PLEUROTOMA (DRILLIA) AGLAOPHANES, n. sp. (ἀγλαοφανής, bright.)

St. 24. March 25, 1873. Lat.  $18^{\circ} 38' 30''$  N., long.  $65^{\circ} 5' 30''$  W. Culebra Island, St. Thomas, Danish W. Indies. 390 fms. Coral-mud.

*Shell*.—High, narrow, conically cylindrical, with a blunt, flatly rounded apex, a short conical base, and scarcely any snout, hardly angulated, ribbed, contracted in the sinus-area, but barely so at the suture; grey, with a silvery sheen. *Sculpture*. Longitudinals—the whorls are crossed from suture to suture by low, sharpish, subangulately projecting, sinistrally convex, hardly oblique ribs, which run continuously, but slightly diminishing in number, up the spire, there being about 15 on the last and 11 on the first regular whorl; on the base they bend strongly to the left, and



die out at the point of the snout; they are parted by hollowed furrows which are rather broader than they; both ribs and furrows are scratched with very fine, almost microscopic lines of growth, which coincide with the course of the ribs; in the furrows a few of these lines are slightly stronger than the rest. Spirals—below the sinus-area is a very slight angular projection of the whorls, which is made more marked by a thickening and elevation of the ribs at this point; this is a feature which on the earlier whorls is very distinct, the whole rib being individualized by the central nodule into which it rises; but further on these nodules lose in importance. At the top of each whorl and close to the suture lies a small flattened thread, rising into minute longitudinal nodules at the ribs; below this and above the angulation is a slight furrow where the scars of the old sinuses occur. In all this part the surface of the shell is covered by minute spiral threads which lower down become stronger; they are parted by minute furrows of about the same breadth as the threads; these are all exquisitely fretted by the longitudinal scratches. *Colour* greyish, polished with a very beautiful silvery sheen on the whole surface. *Spire* conically cylindrical, the body-whorl being small and the apex broad in proportion to the size of the shell; the profile-lines are hardly interrupted by the sutures. *Apex* consists of  $1\frac{1}{4}$  broad, depressed, and flatly rounded, smooth whorls. *Whorls* 8, of very slow increase, short, the last very small, being scarcely at all more tumid than the rest, and having a short conical base; the snout is very short; there is a small constriction round the top of each whorl; and the profile-lines are faintly angulated, but are very slightly convex. *Suture* fine, but well marked, being slightly impressed and defined by the slight swelling round the top of the inferior whorl; the superior whorl scarcely contracts towards it. *Mouth* pear-shaped, with a slight angulation at the top and a very short canal below. *Outer lip* evidently thickened, but chipped in the only specimen present; it runs with an almost continuous slightly convex curve from the body to the canal, where the curve is slightly and shortly flattened; the sinus is very shallow and open. *Inner lip* thickened and raised on a small but defined callus; it runs straight across the body to the base of the short, thick pillar, down which it proceeds direct and parallel to the slightly prominent callus-edge on the left; the point of the pillar is rounded and blunt,



and hardly advances to the end of the snout, the canal-edge being thick and rounded, cut off obliquely upwards, but not at all reverted. H. 0.3. B. 0.1. Penultimate whorl, height 0.03. Mouth, height 0.1, breadth 0.06.

This is an extremely peculiar little shell, remarkable in its narrow cylindrical and compact form, its sculpture, and its slight silvery sheen, from which last feature its name is derived.

69. PLEUROTOMA (DRILLIA) LOPHOËSSA, n. sp. (λοφώεις, crested.)

St. 120. Sept. 9, 1873. Lat.  $8^{\circ} 37'$  S., long.  $34^{\circ} 28'$  W. Pernambuco. 675 fms. Mud.

St. 122. Sept. 10, 1873. Lat.  $9^{\circ} 5'$  S., long.  $34^{\circ} 50'$  W. Pernambuco. 350 fms. Mud. Var. PLATIA (πλατύς).

*Shell*.—High, narrow, conically cylindrical, with a blunt round apex, a contracted conical base, and shortish snout; it is angulated, and the angulation crested with little conical points; there are feeble ribs and an impressed suture. *Sculpture*. Longitudinals—there are 12–13 ribs on each whorl from the second regular whorl onwards; but they are in no way connected from whorl to whorl; they originate below the sinus-area in a little sharpish rounded nodule; crowning an angulation of the whorl at that point, they run forward direct but obliquely to the inferior suture; on the base they die out with a backward curve to the left, and do not reach the snout; in the sinus-area above the nodule they are just traceable in a slight irregularity of the surface and a minute nodule at the suture; the lines of growth are quite independent of the ribs, and are very faint except towards the point of the base. Spirals—at the top of each whorl is a minute projecting band beset by very small conical nodules corresponding to the longitudinal ribs. About one third down the whorls there is an angulation accentuated by the rib-nodules; halfway between this and the inferior suture a minute sharpish thread appears on the penultimate whorl, while other four, similar and equally parted, appear on the base; all these five threads rise on the ribs into minute sharpish nodules. On the snout there are neither ribs nor spiral threads, only obsolete lines of growth. *Colour* pale greyish-white. *Spire* conically cylindrical, the last whorl being very small and the earlier ones broad; the profile-lines are interrupted by the nodulous angulation and the im-



pressed suture. *Apex* consists of  $1\frac{1}{2}$  smooth, globularly rounded whorls, the extreme point of which has the slightest possible prominence. *Whorls*  $7\frac{1}{2}$ -8, of very slow increase, short, the last scarcely more tumid than the rest, with a contracted conical base and a shortish snout; they are angularly convex, with a slight contraction into the suture both at the top and bottom of each whorl. *Suture*: there is a minute angular impression at the line of suture, which is margined below and is made yet more distinct by the contraction of the whorls above and below. *Mouth* pear-shaped, small, with a slight angulation above and a rather wide and open canal below. *Outer lip* forms a regular curve, steeper above, and more drawn out below towards the point of the shell; on leaving the body it retreats, at once and very much, to the left; after forming a shallow, open, rounded sinus, it advances to the right and forward as a small low-shouldered pinion, retreating along the edge of the canal to the point of the shell. *Inner lip* narrow, slightly sunken, so that the surface of the shell slightly projects at the edge of it; its line across the body is straight, being neither convex nor concave. The pillar is narrow, strong, and very short, being obliquely cut off early, with an angularly rounded, slightly twisted edge and a backward truncated point. H. 0.3. B. 0.11. Penultimate whorl, height 0.05. Mouth, height 0.1, breadth 0.07.

This is another of that curious group which have a tendency to a cylindrical form, a long spire, many short whorls, a broad apex, and a short base.

I have with some hesitation united to this species as a var. *PLATIA* (πλατύς, broad) the specimens from St. 122. As the name indicates, they are broader in proportion to height; they are also less cylindrical, the embryonic whorls in particular, the tip being rather smaller and the basal part of the apex broader; the threads on the base of the shell are weaker. On the other hand, the whole form of the whorls and the details of sculpture are identical. In these circumstances it is probably wiser to unite them all in one species, attributing the differences partly to habitat and partly to the specimens of the variety being not fully grown.

70. *PLEUROTOMA* (*CLIONELLA*) *QUADRUPLIX*, n. sp.

St. 73. June 30, 1873. Lat.  $30^{\circ} 30' N.$ , long.  $31^{\circ} 14' W.$



W. of Azores. 1000 fms. *Globigerina*-ooze. Bottom-temperature  $39^{\circ}4$ .

*Shell*.—Very high and narrow, conical, scalar, ribbed, bluntly keeled, with a very short conical base. *Sculpture*. Longitudinals—below the suture is a double collar of small close-set tubercles prolonged downward into folds; below these at the keel are swellings, whence descend flat, rounded, rather feeble ribs, which die out before they reach the lower suture; the surface is closely scored with unequal straight lines of growth. Spirals—there are very many strongish rounded threads parted by fine shallow rows of equal width; these are crowded on the shoulder. On the middle of the body-whorl a feebler thread appears, like a shadow in the furrows. *Colour*: it is bleached dead white. *Spire* very high and narrow, scalar. *Apex* broken. *Whorls*: only 5 remain; they are high and narrow, droopingly shouldered above, bluntly keeled, cylindrical, but contracting from the keel to the lower suture; the last is narrow, small, and cylindrical, but a very little swoln, with a short very one-sided conical base. *Suture* strong, irregular, a little constricted. *Mouth* narrowly oval, small, bluntly pointed above. *Outer lip* flatly arched. *Inner lip* slightly excavated, concave above, with a straight, shortish, and strong pillar. H. 1.9. B. 0.57. Penultimate whorl, height 0.38. Mouth, height 0.8, breadth 0.35.

This is a singularly attenuated form of great beauty, unhappily much broken. The generic sinus exists merely in the form of a very slight retreat of the lip from the suture to the keel. In classing it with *Clionella* I have followed the advice and example of Mr. E. A. Smith, while Adams regards that group as freshwater and allied to *Melania*. The name is derived from the very remarkable structure of the shell, which consists of 4 layers: the inmost of these is porcellaneous and very thin; the next is made up of spiral fibres; the third consists of longitudinal fibres (both of these being comparatively thick), while the outside is membranaceously cretaceous.

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