

NOTES ON THE FAMILY AMPULLARIIDÆ.

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(Continued from Vol. VIII, pp. 345-364, and Vol. IX, pp. 56-64.)

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Genus LANISTES, Montfort, 1810.

THE genus *Lanistes* embraces all the sinistral species of the family,¹ and I see no valid reason for separating *Meladomus* (Swainson) from it; still less can I agree with Bourguignat in dropping the name *Lanistes* in favour of *Meladomus*. Bourguignat gives as his reason that the prior name was used by Humphrey (*Museum Calonnianum*, 1797) for a species of *Mytilus*, but it has been very properly decided that these mere catalogue names should have no status as to priority. Moreover, my copy of the Mus. Calonn. makes no mention of "*Lanistes*", but "*Lanatus*" stands for a variety of *Mytilus discors*.

The genus *Leroya*, Grandidier (Bull. Soc. Malac. France, iv, 1887, p. 185), I place as a sub-genus having spiral sculpturation.

In compiling the following list of species and synonyms I have been compelled, after comparing numerous examples, to place in the synonymy many names that have generally been accepted as applied to valid species. There are others of which I have not seen sufficient numbers to enable me to decide whether they are good species or not; these I have allowed provisionally to stand.

1. LANISTES CARINATUS, Olivier.

Helix bolteniana, Chemnitz, Conch. Cab., vol. ix, 1786, p. 83 [non binom.].

Cyclostoma carinatum, Olivier, Voy. Emp. Ottom., vol. ii, 1804, p. 39.

Ampullaria carinata, Lamarck, Anim. sans Vert., vol. vi, pt. 2, 1822, p. 179.

A. bolteniana, Philippi, Mon. Amp., 1850, p. 20, pl. vi, figs. 4, 5.

A. aegyptica, Ehrenberg, [MS. in] Mus. Berol., Jickeli, Fauna Moll. N.-O. Afrika, Nova Acta Acad. Cæs.-Leop., xxxvii, 1874, p. 227.

Meladomus boltenianus, Bourguignat, Moll. Égypte, 1879, p. 41.

Ampullaria bicarinata, Nevill, Moll. Ind. Mus. Calcutta, Pt. ii, 1884, p. 14. This is scarcely separable even as a variety. The peripheral and umbilical keels are generally more or less prominent in the earlier stages of development.

A. depressa, Nevill, Moll. Ind. Mus. Calcutta, Pt. ii, 1884, p. 14. The more or less depressed examples cannot be definitely separated from the typical form.

¹ The only sinistral *Ampullaria* of which I have heard is a "subvar. sinistrorsa" of *A. globosa*, described by Nevill in the Indian Museum, Calcutta, which is probably unique (Hand List Moll. Ind. Mus., pt. ii, 1884, p. 2).

Lanistes duveyrarianus, Revoil, Bull. Soc. Malac. France, vol. ii, 1885, p. 99, pl. vi, fig. 5.

Hab.—River Nile.

2. *LANISTES BOURGUIGNONI*, Putzeys.

Putzeys, Bull. Soc. Roy. Malac. Belg., vol. xxvii, 1898, p. 23.

Hab.—Mouth of Linoma River, Congo.

3. *LANISTES CONGICUS*, Böttger.

In Schepman's notes on Leyden Mus., vol. xiii, 1891, p. iii.

Hab.—Congo.

4. *LANISTES FOAI*, Germain.

Bull. Mus. Hist. Nat. Paris, vol. xi, 1905, p. 256.

Hab.—Upper Congo.

5. *LANISTES GRASSETI*, Morelet.

Journ. de Conch., vol. xi, 1863, p. 267, pl. x, fig. 2.

Hab.—Madagascar.

In this species the vertical riblets are unusually prominent, giving the shell somewhat the appearance of a bulbous *Epitonium*.

6. *LANISTES GUINAIUS*, Lamarck.

Cochlea guinaica, Chemnitz, Conch. Cab., vol. ix, 1786, p. 8 [non binom.].

Ampullaria guinaica, Lamarck, Anim. sans Vert., vol. vi, pt. 2, 1822, p. 178.

Hab.—Lagos, Gaboon, etc.

7. *LANISTES HOLOSTOMA*, Morelet.

Journ. de Conch., vol. viii, 1860, p. 191.

Hab.—Guinea.

8. *LANISTES INNESI*, Pallory.

Bull. Inst. Égypt., ser. iv, No. 3, 1902, p. 91.

Hab.—Upper Nile.

9. *LANISTES INTORTUS*, Lamarck.

Ampullaria intorta, Lamarck, Anim. sans Vert., vol. vi, pt. 2, 1822, p. 179.

A. intorta, Philippi, Mon. Amp., 1850, p. 23, pl. vi, fig. 3.

Lanistes plicatus, Martens, Novitates, vol. v, 1877-9, p. 191, pl. clvi, figs. 3-5.

Hab.—Zambi (Mayumbe), Congo (Dupuis & Putzeys).

10. *LANISTES JOUBERTI*, Bourguignat.

Meladomus jouberti, Bourg., Icon. Anim. Moll. Tanganyika, 1888, pl. vi, fig. 6.

Hab.—Lake Tanganyika.

This may prove to be a gigantic form of *L. ovum*.

11. LANISTES LETOURNEUXI, Bourguignat.

Meladomus letourneuxi, Bourg., Moll. Abyss. Égypte, 1879, p. 41.

Lanistes letourneuxi, Smith, Proc. Zool. Soc., 1881, p. 276.

Hab.—South Egypt.

12. LANISTES LYBICUS, Morelet.

Ampullaria lybica, Morelet, Rev. Zool., 1848, p. 354.

A. lybica, Philippi, Mon. Amp., 1850, p. 25, pl. vi, fig. 8.

A. bernardiana, Morelet, Journ. de Conch., vol. viii, 1860, p. 190.

Meladomus vignoni, Bourg., Moll. Afr. Équat., 1889, p. 177.

M. pfeifferi, Bourg., ib., p. 173.

M. alexandri, Bourg., ib., p. 178. Evidently an immature shell.

Var. *nsendweensis*, Dupuis & Putzeys, Ann. Roy. Soc. Malac. Belg., vol. xxxvi, 1901, p. 54.

Hab.—Gaboos, Assinia, Congo, Guinea, etc.

This species, though subject to much variation, is easily separable from all others. The forms which authors have named as species are scarcely varieties, but denote differences in age and development.

13. LANISTES SCHWEINFURTHI, Ancey.

Mém. Soc. Zool. France, vol. vii, 1894, p. 223.

Hab.—Victoria Nyanza.

14. LANISTES MAGNUS, Furtado.

Journ. de Conch., vol. xxxiv, 1886, p. 147, pl. vi, fig. 3.

Hab.—Luapula River.

15. LANISTES NEAVEI, Melvill & Standen.

Mem. and Proc. Manchester Lit. and Sci. Soc., vol. xli, 1907, p. 6.

Hab.—Mtesize River, Loangua, and Zambezi River.

16. LANISTES NILOTICUS, Sowerby.

In Swainson's Zool. Illust., ser. II, 1831, pl. xxxviii, fig. 3.

Hab.—River Nile.

17. LANISTES NYASSANUS, Dohrn.

Proc. Zool. Soc., 1877, p. 715, pl. lxxiv, fig. 8.

Hab.—Lake Nyassa.

18. LANISTES OVUM, Peters.

Ampullaria ovum, Peters, Arch. Natur., 1835, p. 215; Philippi, Mon. Amp., 1851, p. 22, pl. vi, fig. 2.

Lanistes ellipticus, Pfeiffer, Novit. Conch., 1866, p. 294, pl. lxx, figs. 9, 10.

L. ovum, var. *elatio*r, Pfeiffer, Novit. Conch., vol. ii [1870], p. 291, pl. lxx, figs. 7, 8.

L. affinis, Smith, Proc. Zool. Soc., 1877, p. 716, pl. lxxiv, fig. 7.
After comparing a large number of specimens, I am compelled to unite this with *L. ovum*.

L. ellipticus, var. *trapeziformis*, Furtado, Journ. de Conch., vol. xxxiii, 1885, p. 150.

L. ellipticus, var. *luapulensis*, Furtado, Journ. de Conch., vol. xxxiii, 1885, p. 151.

L. zambezianus, Furtado, Journ. de Conch., vol. xxxiv, 1886, p. 148, pl. viii, fig. 1.

Meladomus ambiguus, Bourg., Moll. Équat. Afr., 1889, p. 172.

M. deguerryanus, Bourg., Moll. Équat. Afr., 1889, p. 175. Evidently a young shell.

Lanistes affinis, var. *manayarana*, Sturany, in Baumann, Durch Massailand, 1894, p. 310, taf. xxiv, fig. 32.

Hab.—Mozambique, Angola, Lake Nyassa, etc.

19. LANISTES PALUSTRIS, Morelet.

Ampullaria palustris, Morelet, Journ. de Conch., vol. xii, 1864, p. 158.

Hab.—Senegal.

20. LANISTES OLIVACEUS, Sowerby.

Paludina olivacea, Sowerby, Gen. of Shells [No. 41, 1834, *Paludina*, fig. 3].

Ampullaria purpurea, Jonas, Arch. Naturg., 1839, p. 242, pl. x, fig. 1.

Bulimus tristis, Jay, Cat. of Shells, 1839, p. 121, pl. vii, fig. 1.

Meladomus bulimoides, Swainson, Treat. on Malacology, 1840, p. 340.

M. olivaceus, Sow. (selected as the type of the genus), Gray, Proc. Zool. Soc., 1847, p. 148.

M. olivaceus (Sow.), H. & A. Adams, Gen. of Shells, i, 1858, p. 349, pl. xxxvi, fig. 6.

M. pyramidalis, Letourneux, in Bourg. Moll. Égypte, Abyssinia, etc., 1879, p. 36.

Ampullaria procera, Martens, Novit. Conch., vol. ii [1870], p. 292, pl. lxxi, figs. 1, 2.

Meladomus nitidissimus, Bourg., Moll. Équat. Afr., 1889, p. 171.

M. bloyeti, Bourg., ib., 1889, p. 171.

Hab.—Mozambique, Zanzibar, Ousaghara, Congo, etc.

A very variable and widely distributed species. The shells are generally pyramidal in form, but they sometimes partake of a more oblong-oval shape. Some are distinctly umbilicated, others almost or quite imperforate.

21. LANISTES SINISTRORSUS, Lea.

Paludina sinistrorsa, Lea, Trans. Amer. Phil. Soc., vol. vi, 1839, p. 98, pl. xxiii, fig. 78.

Ampullaria sinistrorsa, Philippi, Mon. Amp., 1850, p. 64, pl. xxi, fig. 3.

Hab.—Usagara, and Lake Tanganyika.

22. LANISTES SOLIDUS, Smith.

Proc. Zool. Soc., 1877, p. 716, pl. lxxiv, figs. 10, 11.

Hab.—Lake Nyassa.

23. LANISTES SUBCARINATUS, Sowerby.

Ampullaria subcarinata, Sowerby, Gen. of Shells, [No. 4, 1822].

Hab.—Congo.

24. LANISTES STUHLMANNI, Martens.

Besch. Weichth. Ost. Afr. (Deutsch-Ost-Afrika, vol. iv), 1898, p. 171, pl. vi, fig. 37.

Hab.—Congo (Dupuis & Putzeys).

Sub-genus LEROYA, Grandidier.

Bull. Soc. Malac. France, vol. iv, 1887, p. 185.

25. LANISTES (LEROYA) CHARMETANTI, Grandidier.

Leroya charmetanti, Grandidier, Bull. Soc. Malac. France, vol. iv, 1887, p. 193.

Hab.—Lake Tanganyika.

26. LANISTES (LEROYA) BOURGUIGNATI, Grandidier.

Leroya bourguignati, Grandidier, Bull. Soc. Malac. France, vol. iv, 1887, p. 182.

Hab.—Lake Tanganyika.

27. LANISTES (LEROYA) CILIATUS, Martens.

Lanistes ciliatus, Martens, Monatsber. K. Acad. Wiss. Berlin, 1875, p. 296, pl. ii, figs. 8–10.

Hab.—Zanzibar.

28. LANISTES (LEROYA) FARLERI, Craven.

Lanistes farleri, Craven, Proc. Zool. Soc., 1880, p. 218.

L. sculptus, Martens, Sitz. Ber. Naturf. Freunde Berlin, 1887, p. 96.

Hab.—Magela, Usambasa.

AMPULLARIA.

The following names have been omitted:—

154. AMPULLARIA (PILA) POLITA, Deshayes.

Encyc. Méth. Vers., vol. ii, 1830, p. 31; Reeve, Conch. Icon., sp. 35.

Ampullaria virescens, Deshayes, Dict. Class. Hist. Nat., tom. xvii, 1831, pl. lxxxvii, fig. 2.

A. pagoda, Morelet, Journ. de Conch., vol. xiii, 1865, p. 227.

A. polita, var. *compressa*, Nevill, Moll. Ind. Mus., Pt. ii, 1884, p. 7.

A. polita, var. *major*, Dautz. & Fisch., Journ. de Conch., vol. liii, 1906, p. 426.

A. brohardi, Granger, Le Naturalist, 1892, p. 79.

The last is a remarkable abnormal form (E. A. Smith, Proc. Malac. Soc., vol. iv, 1900, p. 40).

Hab.—Cambodia.

155. AMPULLARIA (PILA) RUFILINEATA, Reeve.

Conch. Icon. Amp., sp. 7.

Hab.—Pegu.

156. AMPULLARIA IMPERFORATA, Swainson.

Philos. Mag., 1823, p. 401.

I am quite unable to identify this, as the description is very vague and the habitat unknown. Swainson takes it for a western form, but not knowing the operculum he says "operculum corneum?"

ADDITIONAL SYNONYMIC NAMES.

Ampullaria conica, Swainson = VIRENS, Lamarck (see Proc. Malac. Soc., vol. ix, p. 61).

A. borealis, Valenciennes = NATICA HEROS, Say.

A. caliginosa, Reeve = PALUDOSA, Say, Proc. Malac. Soc., vol. viii, p. 358; vol. ix, p. 64.

A. rugosa, Valenciennes = URCEUS, Müller, Proc. Malac. Soc., vol. viii, p. 358.

INDEX TO THE NAMES CITED IN THESE NOTES.

adusta, Reeve, ix, 56.
ægyptica, Ehren., xii, 65.
affinis, Smith, xii, 67.
africana, Marts., ix, 56.
alexandri, Bourg., xii, 67.
alucinans, Sow., ix, 63.
amazonica, Reeve, viii, 346, 363.
ambiguus, Bourg., xii, 68.
ampullacea, Linn., ix, 56.
aperta, Phil., ix, 57.
aperta, Reeve, viii, 349.
archimedis, Spix, viii, 359.
aulanieri, Hupé, viii, 346.
auriformis, Reeve, viii, 346.
aurostoma, Reeve, viii, 347.
australis, Orb., viii, 352, 353.
autumnalis, Reeve, viii, 357.
avellana, Sow., viii, 360.
baeri, Dautz., viii, 346.
balanoidea, Gould, ix, 57.
balteata, Phil., viii, 350.
begini, Morlet, ix, 57.
belizensis, Cr. & F., viii, 352, 363.
bernardianus, Morel., xii, 67.
bicarinata, Nev., xii, 65.
bilineata, Reeve, ix, 57.
bloyeti, Bourg., xii, 68.
bolteniana, Ch., xii, 65.
boreatis, Val., xii, 70.
borneensis, Phil., ix, 57.
bourguignati, Billotti, ix, 60.
bourguignati, Grand., xii, 69.
bourguignonii, Put., xii, 66.
bridouxii, Bourg., ix, 60.
bridgesi, Reeve, viii, 346.
brohardi, Grang., xii, 69.
brownii, Jay, viii, 347.
bulimoides, Swains., xii, 68.
bullæ, Reeve, viii, 346.
buxea, Reeve, viii, 346.

caliginosa, Reeve, xii, 70.
canaliculata, Lam., viii, 346, 363.
canaliculata, Orb., viii, 348.
canaliculata, Deless., viii, 350.
canaliculata, Reeve, viii, 346; ix, 61.
carinata, Lam., xii, 65.
carinata, Swains., ix, 61.
carinatus, Oliv., xii, 65.
cassidiformis, Reeve, viii, 349.
castelloi, Sow., viii, 346.
catamarcensis, Sow., viii, 347.
cecillei, Phil., ix, 57.
celebensis, Quoy & G., ix, 56.
cerasum, Hanley, viii, 347.
charmetanti, Grand., xii, 69.
chemnitzii, Phil., viii, 354.
chevalieri, Germ., ix, 57.
chiquitensis, Orb., viii, 359.
ciliatus, Marts., xii, 69.
cinerea, Reeve, ix, 58.
cingulata, Phil., viii, 347.
citreum, Reeve, viii, 347.
columellaris, Gould, viii, 347.
compacta, Reeve, ix, 57, 62.
complicata, Reeve, ix, 57.
compressa, Nev., xii, 69.
congius, Böttg., xii, 66.
conica, Gray, ix, 57.
conica, Swains., Lam., xii, 70.
conoidea, Marts., viii, 347.
cornuarietis, Linn., viii, 359.
cornucopia, Reeve, viii, 347.
corrugata, Swains., ix, 58.
costaricana, Marts., viii, 347.
cousini, Jouss., viii, 347.
crassa, Swains., viii, 347.
crocostoma, Phil., viii, 350.
crosseana, Hid., viii, 348.
cubensis, Reeve, viii, 350.
cumingi, King, viii, 348.

- cuprina*, Reeve, viii, 351.
cyclostoma, Spix, viii, 348.
dacostæ, Sow., viii, 359.
dalyi, Blan., ix, 56, 58.
decocta, Mab., ix, 58.
decussata, Moric., viii, 348.
dequerryanus, Bourg., xii, 68.
depressa, Say, viii, 351.
depressa, Nev., xii, 65.
dira, Reeve, ix, 58.
dolioides, Reeve, viii, 348.
dolium, Phil., viii, 358.
d'orbignyana, Phil., viii, 348, 363.
dubia, Guild., viii, 350.
dumesmiliana, Billotti, ix, 60.
duvayrarianus, Revoil, xii, 66.
dysoni, Hanley, viii, 352; ix, 64.
effusa, Müller, viii, 350.
elator, Pfr., xii, 67.
electrina, Reeve, viii, 349.
elegans, Orb., viii, 348.
ellipticus, Pfr., xii, 67, 68.
encaustica, Reeve, ix, 59.
erogata, Cr. & F., viii, 349.
erronea, Nev., viii, 349.
erythrocheila, Dtz. & F., ix, 61.
erythrostoma, Reeve, viii, 349, 363.
eumicra, Cr. & F., viii, 349.
exigua, Phil., ix, 58.
eximea, Dkr., viii, 349.
expansa, Miller, viii, 349.
expansa, Nev., ix, 56.
exumbilicata, Spix, viii, 347.
farleri, Craven, xii, 69.
fasciata, Lam., ix, 56.
fasciata, Reeve, viii, 353.
fasciata, Han. & Th., ix, 59.
fasciata, Roissy, ix, 56.
fasciata, Swains., viii, 354.
figulina, Spix, viii, 349.
filosa, Reeve, ix, 59.
fischbeini, Dohrn, ix, 62.
flagellata, Say, viii, 352.
flatilis, Reeve, viii, 352.
foai, Germ., xii, 66.
fuliginea, Phil., ix, 58.
fumata, Reeve, viii, 352.
georgi, Williams, viii, 353.
geveana, Phil., viii, 350.
geveanensis, Desh., viii, 350.
ghiesbreghti, Reeve, viii, 349.
gigantea, Trist., viii, 350.
gigas, Spix, viii, 350.
glauca, Linn., viii, 350.
globosa, Swains., ix, 58.
gordonii, Smith, ix, 59.
gossei, Reeve, viii, 351.
gracilis, Lea, ix, 59.
gradata, Smith, ix, 59.
granulosa, Sow., viii, 351.
grasseti, Morel., xii, 66.
gruneri, Phil., ix, 56.
guadeloupensis, Marts., viii, 350.
guatemalensis, Morelet (?), viii, 352.
guayanensis, Lam., viii, 351, 363.
guinaicus, Lam., xii, 66.
hæmastoma, Reeve, viii, 349, 363.
hanleyi, Reeve, viii, 356.
haustrum, Reeve, viii, 351, 363.
hepataria, Reeve, viii, 351.
holostoma, Morel., xii, 66.
hondurasensis, Reeve, viii, 352.
hopetonensis, Lea, viii, 351, 363; ix, 64.
immersa, Reeve, viii, 351, 363.
imperforata, Swains., xii, 70.
impervia, Phil., viii, 353, 363.
incrassatula, Nev., ix, 59.
innesi, Pall., xii, 66.
innexa, Cr. & F., viii, 353.
inops, Morel., ix, 57.
insularum, Orb., viii, 353, 363.
intermedia, Fér., viii, 357.
interrupta, Sow., viii, 361.
intortus, Lam., xii, 66.
intropicta, Reeve, viii, 348.
javanica, Reeve, ix, 58.
jouberti, Bourg., xii, 66.
knorri, Phil., viii, 359.
kordofana, Parr., ix, 60.
labiosa, Koch., viii, 354.
lamarcki, Phil., viii, 352.
largillierti, Phil., ix, 59.
largillierti, Reeve, ix, 61.
latticei, Reeve, viii, 354.
layardi, Reeve, ix, 62.
lemniscata, Cr. & F., viii, 352, 363.
leopoldvillensis, Putz., ix, 59.
letourneuxi, Bourg., ix, 59; xii, 67.
leucostoma, Swains., viii, 358.
levior, Sow., viii, 361.
lineata, Spix, viii, 354.
linnæi, Phil., viii, 354.
livescens, Reeve, viii, 352.
longispira, Nev., ix, 59.
luapalensis, Furt., xii, 68.
lubrica, Reeve, ix, 58.
lucida, Parr., ix, 60.
luteostoma, Swains., viii, 350.
luzonica, Reeve, ix, 59.
lybicus, Morel., xii, 67.
lymnæformis, Reeve, viii, 354.
madagascariensis, Smith, ix, 60.
magnifica, Dkr., ix, 56.
magnus, Furt., xii, 67.
magior, Dautz. & F., xii, 69.
malabarica, Phil., ix, 62.
malleata, Jonas, viii, 352.

- manayarana*, Sturany, xii, 68.
marginatra, Jonas, viii, 359.
martensiana, Nev., viii, 352.
martinezi, Hid., viii, 354.
maura, Reeve, ix, 62.
megastoma, Sow., viii, 359.
melanocheila, Reeve, viii, 357.
metcalfei, Reeve, viii, 354.
miamensis, Pilsb., viii, 354.
niltocheilus, Reeve, viii, 348.
modesta, Busch., viii, 354.
mæsta, Reeve, ix, 60.
monacha, Cr. & F., viii, 354.
naticoides, Orb., viii, 356.
neavei, Melv. & Stand., xii, 67.
neritoides, Orb., viii, 359.
nigricans, Sow., ix, 63.
nigrilabris, Phil., viii, 355.
niloticus, Sow., xii, 67.
nitidissimus, Bourg., xii, 68.
nobilis, Reeve, viii, 355.
notabilis, Reeve, viii, 355.
novægranadæ, Busch., viii, 355.
nsenduensis, Dup. & Put., xii, 67.
nubila, Reeve, viii, 353, 363.
nux, Reeve, ix, 61.
nyanzæ, Smith, ix, 60.
nyassanus, Dohrn, xii, 67.
oblonga, Swains., viii, 355.
occidentalis, Mouss., ix, 60.
occlusa, Cr. & F., viii, 352, 363.
occulus-communis, Gmel., viii, 350.
ochracea, Jay, ix, 56.
olea, Reeve, ix, 60.
olivacea, Spix, viii, 355.
olivaceus, Ad., xii, 68.
olivaceus, Sow., xii, 68.
olivieri, Desh., viii, 347.
orbata, Perry, ix, 56.
orientalis, Phil., ix, 58.
oronocensis, Reeve, viii, 351.
ovata, Oliv., ix, 60.
oviformis, Desh., viii, 355.
ovum, Peters, xii, 66, 67.
pachystoma, Phil., viii, 350.
pagoda, Morel., xii, 69.
pallens, Phil., ix, 62.
paludinoides, Ph., ix, 57, 62.
paludosa, Say, viii, 352; ix, 64; xii, 70.
palustris, Morel., ix, 61; xii, 68.
papyracea, Spix, viii, 355.
pealeana, Lea, viii, 355.
perakensis, Morgan, ix, 56, 61.
pernambucensis, Reeve, viii, 355.
peristomata, Orb., viii, 348.
pertusa, Sow., viii, 355.
petiti, Crosse, viii, 356, 363.
pfeifferi, Bourg., xii, 67.
phæostoma, Phil., viii, 353.
physis, Hupé, viii, 356.
physoides, Reeve, viii, 356.
picta, Reeve, viii, 356.
pilula, Reeve, ix, 56.
pinei, Dall, viii, 356.
planorbula, Phil., viii, 359.
plata, Maton, viii, 356.
plata, Orb., viii, 356.
plicosus, Marts., xii, 66.
polita, Desh., xii, 69.
porphyrostoma, Reeve, viii, 353.
procera, Marts., xii, 68.
producta, Reeve, viii, 356.
prunulum, Reeve, viii, 350.
pulchella, Anton, viii, 348.
pulchra, Gray, viii, 356.
puncticulata, Swains., viii, 356.
puntaplaya, Cousin, viii, 356.
purpurascens, Guppy, viii, 356.
purpurea, Jonas, xii, 68.
pyramidalis, Letour., xii, 68.
pyramidalis, Phil., viii, 353.
pyrum, Phil., viii, 353, 359.
quercina, Spix, viii, 355.
quinquidensis, Miller, viii, 357.
quitensis, Busch., viii, 348.
raymondi, Bourg., ix, 60.
reflexa, Swains., viii, 353.
retusa, Olfers, viii, 353.
reyeri, Cousin, viii, 357.
robusta, Phil., viii, 357.
roissyi, Orb., viii, 348.
rotula, Mouss., viii, 359.
rotundata, Say, viii, 357.
rufilineata, Reeve, viii, 357; xii, 69.
rugosa, Lam., viii, 358.
rugosa, Sow., ix, 58; xii, 68.
rugosa, Val., xii, 70.
saxea, Reeve, ix, 61.
scalaris, Orb., viii, 357.
schrammi, Crosse, viii, 357.
schweinfurthi, Ancey, xii, 67.
sculptus, Marts., xii, 69.
scutata, Mouss., ix, 58.
semitecta, Mouss., viii, 357.
simplex, Reeve, viii, 357.
sinamarina, Bourg., viii, 357.
sinistrorsa, Nev., ix, 59.
sinistrorsus, Lea, xii, 68.
solidus, Smith, xii, 68.
sordida, Swains., viii, 357.
speciosa, Phil., ix, 61.
sphærica, Hanley & T., ix, 59.
spixi, Orb., viii, 348.
sprucei, Reeve, viii, 347.
stoliczkana, Nev., ix, 58.
storeria, Jay, viii, 358.
strebeli, Marts., viii, 358.
stuhlmanni, Marts., xii, 69.

subampullacea, Nev., ix, 61.
subcarinatus, Sow., xii, 69.
subglobosa, Nev., ix, 61.
subscutata, Mouss., ix, 61.
sumatrensis, Phil., ix, 56.
swainsoni, Phil., viii, 354, 358.
swainsoni, Reeve, viii, 354.
tamsiana, Phil., viii, 358, 364.
tenuissima, Jonas, viii, 358.
testudinea, Reeve, viii, 358.
theobaldi, Hanley, ix, 61.
trapeziformis, Furt., xii, 68.
tristis, Jay, xii, 68.
trochulus, Reeve, viii, 358.
turbinis, Lea, ix, 56, 61.
turbinoides, Reeve, ix, 58.
urceus, Müll., viii, 358: xii, 70.
venetus, Reeve, viii, 352.

vermiformis, Reeve, viii, 353, 363.
vexillum, Reeve, viii, 356.
vignoni, Bourg., xii, 67.
villata, Marts., viii, 350.
violacea, Val., viii, 358.
virens, Lam., ix, 61; xii, 70.
virescens, Desh., xii, 69.
vitrea, Born., ix, 62.
vittata, Reeve, ix, 62.
wellesleyana, De Morg., ix, 56.
wellesleyensis, De Morg., ix, 62.
wernei, Phil., ix, 62.
winkleyi, Pilsb., ix, 62.
woodwardi, Dohrn, ix, 62.
yatesi, Reeve, viii, 358.
yucatanensis, Cr. & F., viii, 353.
zambezianus, Furt., xii, 68.
zonata, Spix, viii, 359.



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