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A REVIEW OF THE AUSTRALIAN TUN SHELLS

BY

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(Plates xxxix-xliv.)

For a century Lamarck's name of "*Dolium*[1]" dating from 1801 has been employed for the Tun shells. But Mörch[2] pointed out that *Tonna* of Brunnich, proposed in 1772, to say nothing of *Cadus*, Bolten, introduced in 1798, had precedence and this improved nomenclature is now generally adopted.

Tun shells are among the largest of Gasteropods, the huge "Beer-barrel" from New South Wales is now recorded with a capacity of four and a quarter pints and a length of nearly ten inches. But this size is exceeded by that of a giant from Sicily, mentioned by Philippi[3], which had a length of eleven inches.

For various reasons, not much critical examination has been bestowed on the Tun Shells. Specimens do not often occur on the beaches, the bulk of some is inconvenient for ordinary collections and yet their wide range of variation demands a large series for satisfactory study. None have yet been recorded from the coasts of Tasmania or Victoria, though this deficiency will probably be remedied when the deeper waters of those States are searched. The appearance of an unknown species from this coast has induced the writer to examine the series in the Australian Museum and to offer the following review.

In an analysis of the Australian species, the tropical *T. perdix*, for which Montfort[4] created a genus, *Perdrix*, may be distinguished by its slender form and with it may be grouped *T. canaliculata*. The remainder may be divided into those with a toothed and reflected lip, viz.:—*T. costata*, Menke, *T. parvula*, Tapparone Canefri, and *T. sulcosa*, Born, and those with a sharp simple lip:—*T. ampullacea*, Philippi, *T. cerevisina*, Hedley, *T. cumingii*, Reeve, *T. picta*, Schepman, *T. tetracotula*, Hedley, and *T. variegata*, Lamarck. In the latter group there is a colour scheme which oscillates from spots to bands.

In 1847, when in H.M.S. "Rattlesnake," the veteran collector John MacGillivray gathered a larval mollusc a little to the south of Cape Byron, New South Wales, which he described[5] in a letter to his friend, Prof. E. Forbes. This was afterwards called *Macgillivrayia pelagica*[6], and types of it are preserved in the Royal Scottish Museum, Edinburgh. Subsequently Dr. Paul Fischer[7] classified *M. pelagica* as a *Dolium*. It would not be wise to attempt to identify this larval shell with any particular species of the genus. The admission[8] of *Tonna perdix* to the fauna of New South Wales as a synonym of *M. pelagica*, following Dr. Fischer is regretted.

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[1] Lamarck—Syst. Anim. sans Vert., 1801, p. 79.
[2] Mörch—Malak. Blatt., xviii., 1871, p. 16.
[3] Philippi—Moll. Siciliæ, i., 1836, p. 219.
[4] Montfort—Conch. Syst., ii., 1810, p. 447.
[5] MacGillivray—Ann. Mag. Nat. Hist. (2), ii., 1848, p. 31.
[6] MacGillivray—Voy. Rattlesnake, i., p. 45, ii., 1852, p. 383, pl. iii., fig. 8.
[7] Fischer—Journ. de Conch., xi., 1863, p. 149.
[8] Hedley—Journ. Roy. Soc. N.S.Wales, li., 1918, p. M 68.

Tonna ampullacea, *Philippi*.

(Plate xliv., fig. 7.)

Dolium ampullaceum, Philippi, Zeitschr. malak., ii., 1845, p. 147. *Id.*, Philippi, Abbild. Beschr., iii., 1849, p. 11, pl. ii. *Id.*, Kuster, Conch. Cab., 1857, p. 68, pl. lx. *Id.*, Hanley, Proc. Zool. Soc., 1859, p. 491. *Id.*, Dunker, Novitat. Conch. Mar., 1867, p. 105.

Tryon has reduced this to a synonym of *T. costata*, but the larger size, simple lip and intermediate riblet of *T. ampullacea* seem to me to support Philippi's judgment of its independence. I cannot find that a definite locality has ever been recorded for this rare species. So the following record of an imperfect example 130 mm. in length obtained by Messrs. J. W. Christie and Godfrey, is of interest.

Loc.—Point Charles, Port Darwin, Northern Territory (rare).

Tonna cerevisina, *n. sp.*

(Plates xxxix-xli., figs. 1-3.)

Dolium variegatum, Reeve, Conch. Icon., v., 1849, pl. v., fig. 7a. *Id.*, Angas, Proc. Zool. Soc., 1867, p. 197. *Id.*, von Martens, Forsch. Gazelle, iii., 1889, p. 263. *Id.*, Melvill & Standen, Journ. Linn. Soc., Zool., xxvii., 1899, p. 164. *Id.*, Roth, Bull. N. Queensland Ethnography, iii., 1901, p. 18. *Id.*, Hedley, Mem. Austr. Mus., iv., 1903, p. 341.

Tonna variegata, Hedley, Proc. Linn. Soc. N.S.Wales, xxxii., 1907, p. 483 (not *Dolium variegatum*, Lamarck).

Shell globose, of great size but comparatively light and thin. Whorls five plus a turbinate, horny protoconch of three whorls.

Colour.—The young shell is buff or cream, often with three or four pale bands each as broad as one or two of the ribs, large dashes of burnt sienna are irregularly disposed, they are restricted to the paler bands and do not transgress from the rib to the groove, these spots vary in number and distribution, being most frequent on the spire, on the side of the shell the spots may be crowded till spaced by their own width, or they may be scattered at the rate of four or five to a whorl, they become more rare in the adult, which on a buff ground is usually streaked and clouded with shades of chocolate and cinnamon. The epidermis is thin, membranous and rather persistent.

The ribs are seventeen to twenty in number, the topmost usually double, six ribs continue on the spire, and generally the ribs are broad and flat-topped with narrow interstices, exceptionally the ribs are narrower and more round-backed and are then parted by grooves as wide as the ribs; sometimes the ribs are obliquely malleated.

Aperture ample, semi-lunate; outer lip simple; inner lip a thin smear of callus. Interior corrugated by the impress of the external ribbing, hazel or rufous in colour. Columella twisted above, perpendicular below, broadly reflected over a wide spiral umbilicus, beyond which is a prominent funicle. Canal short, up-turned with a wide, oblique, U-shaped notch.

Length, 240 mm., major diameter, 210 mm., minor diameter, 160 mm. Weight, one pound, two ounces. Capacity, four and a quarter pints.

Probably *Dolium marginatum*, Philippi and *D. reevei*, Hanley, are related to the species under discussion but the figures of those species do not admit of serviceable comparison.

Loc.—The type specimen was taken by Mr. J. Brazier in mud from 13 fathoms off George's Head, Port Jackson. The "Thetis" took it outside the Heads in depths down to 66 fathoms. From Queensland it has been reported from Moreton Bay (Gazelle), Mast Head Island (Hedley), Cape Grafton (Roth), and Torres Strait (Haddon).

Tonna cerevisina, *var.* hauraKiensis, *var. nov.*

Tonna variegata, Suter, Manual N.Zealand Mollusca, 1913, p. 314, pl. xlvii. (not *Dolium variegatum*, Lamarck).

Compared to the typical form from Sydney, this is a thinner shell, smaller and more oval; that is with a higher spire and a diameter less in proportion to height.

A specimen trawled January, 1919, in the Hauraki Gulf, by the Municipal Fishing-boat "Cowan" has five whorls, exclusive of the protoconch, a height of 185 mm., major diameter 132 and a minor diameter of 110 mm.

Loc.—North of Tauranga (North Island), New Zealand.

Tonna cumingii, *Reeve.*

Dolium cumingii, Reeve, Conch. Icon., v., 1849, pl. viii., fig. 13b, 13c (not 13a). *Id.*, Kuster, Conch. Cab., 1857, p. 77, pl. lxiv., fig. 2. *Id.*, Hanley, Proc. Zool. Soc., 1859, p. 491. *Id.*, Kobelt, Jahrb. deut. malak. Gesell., ii., 1875, p. 265. *Id.*, Smith, Proc. Zool. Soc., 1891, p. 412. *Id.*, Hidalgo, Revist. R. Acad. Ciencias., i., 1904, p. 370.

Dolium olearium var. *cumingii*, Tryon, Man. Conch., vii., 1885, p. 262. *Id.*, Melvill & Standen, Proc. Zool. Soc., 1901, p. 385.

Dolium testardi, Montrouzier, Journ. de Conch., xi., 1863, pp. 75, 166, pl. v., fig. 6.

The picture by Reeve of this species is not satisfactory. By examination of the specimens in the Macleay Museum, I find that the record of *Dolium chinense* from Queensland by Mr. Brazier[9] is based on this species. A specimen from Port Stephens corresponds well to Montrouzier's excellent figure. The small dints on the ribs are useful specific recognition marks.

Loc.—Cape Grenville and Low Island (Chevert Expedition); Wide Bay (Smith); Moreton Bay, Queensland (Hargraves coll.); Port Stephens (Brazier); and Broken Bay, New South Wales (Hargraves coll.).

[9] Brazier—Proc. Linn. Soc. N.S.Wales, i., 1877, p. 234.

TONNA PICTA, *Schepman.*

Dolium pictum, Schepman, Notes from the Leyden Museum, xv., 1893, p. 276 (Not *Dolium latesulcatum*, var. *picta*, Hanley, Proc. Zool. Soc., 1859, p. 489).

This unfigured species has, naturally, not been again recognised. It is described as near *D. dunkeri*, Hanley, spotted on the earlier whorls with white and brown, on the later whorls irregularly streaked, sculptured with hair like striæ and twenty-three ribs. Size 56 x 43 mm. The type is in the Leyden Museum.

Loc.—? New Holland (Schepman).

TONNA TETRACOTULA, *sp. nov.*

(Plates xlii.-xliii., figs. 4-5.)

Shell large, ovate-globose, rather solid. Spire conical, rather elevated. Whorls five, plus a three-whorled horny protoconch; after the second whorl, the suture runs in a continuously deepening trench.

Colour.—Ground colour white to pale orange, often uniform but sometimes three spiral bands of hazel brown are more or less developed, the uppermost sometimes ascending the spire, each may cover a rib and one or both of the adjoining furrows, they are apt to be evanescent on the back of the last whorl and they may be entirely absent; when the apex is worn it appears blackish brown. The interior is white stained with cinnamon. The surface of the shell is glossy, the whole corded with nineteen to twenty-one (not counting the interstitial riblets) rather elevated ribs, four or five of which ascend the spire; those on the base are narrow and closer than the others; on the fourth and fifth whorls an interstitial riblet appears in each main groove of the upper half of the shell.

Aperture ample, semilunate; outer lip simple, inner lip a smear of callus. Throat corrugated by the external imprint of the ribs. Columella vertical, smooth, reflected over a narrow spiral umbilicus. Snout twisted, spirally grooved and decussated by growth striæ. Canal notch not produced.

Height (of type), 198 mm., major diameter, 150 mm., minor diameter, 117 mm. Another specimen, 187; 150; 105 mm. Weight eight ounces, capacity two pints.

This species seems to be a representative of *T. fasciata*, from which *T. tetracotula* differs by much larger size, more globose form and by the riblet which runs between the major ribs on the shoulder of the shell. Besides in *T. fasciata*, the lip is sharply reflected and denticulated and the first adult whorl has a reticulated sculpture caused by radiating threads absent in *T. tetracotula*.

Loc.—Off Green Cape, New South Wales, 40 to 80 fathoms.

TONNA VARIEGATA, *Lamarck.*

(Plate xliv., fig. 6.)

Dolium variegatum, Lamarck, An. s. vert., vii., 1822, p. 261. *Id.*, Blainville, Dict. Sci. Nat., xxiv., 1829, p. 502. *Id.*, Kiener, Coq. Viv., 1835, p. 9, pl. ii., fig. 3. *Id.*, Menke, Moll. Nov. Holl., 1843, p. 22. *Id.*, Hanley, Proc. Zool. Soc., 1859, p. 490.

Tonna variegata, Verco, Trans. Roy. Soc. S.Austr., xxxvi., 1902, p. 216 (not *D. variegatum* of Philippi, Reeve, Tryon or Angas).

Dolium kieneri, Philippi, Abbild. Besch., iii., 1847, p. 36.

This, which Peron collected in Shark Bay, Western Australia, was the first to be reported from this Continent, but its name and identity has been involved in much confusion. Lamarck in 1822 completed by dictation, being overcome by blindness, his history of invertebrate animals. Here he introduced Peron's shell under the name of *Dolium variegatum*. He said that it had a short spire, that the ribs were close and round backed. some red, others white, the white ones tesselated with red spots and that the length was two inches eight lines.

In 1835, Kiener figured as from the Lamarckian Collection and as *D. variegatum*, two dissimilar shells, Dolium, Plate ii., figs. 3 and 3a. Observing this discrepancy, Philippi in 1845 proposed the name of *Dolium marginatum* for Kiener's figure 3a. He continued in 1847, by stating that the remaining figure 3 was not in accord with Lamarck's description and distinguished it as a new species, *Dolium kieneri*. In support of this contention he presented original figures[10] of a shell that he conjectured to be the real *D. variegatum*. These figures so closely resemble the type figures of *D. chinense*, Dillwyn[11], that I suggest their identity.

Probably the figures of Kiener are considerably reduced and since the count of ribs in front differs from behind, are also a little inaccurate, the basal funicle is curved more like that of *Dolium testardi*, Montrouzier, than like that of the shell here named *variegata*.

Philippi's conclusions were not accepted by subsequent writers; Reeve in 1849 figured for *Dolium variegatum* two different forms, neither of which agreed with Kiener's or with Philippi's meaning of Lamarck's species. Tryon in 1885 considered that *Dolium variegatum* and *D. chinense* were varieties of one species. So that by different authors, at different times, at least five different forms have been called *Dolium variegatum*.

Only reference to the Lamarckian type, now probably in the Geneva Museum, can decide what *D. variegatum* really is. Meanwhile, as a working hypothesis, I assume that Lamarck based his species on a half-grown individual of a common Western Australian form; that Kiener figured, though not very accurately, the real *D. variegata* as his fig. 3. Consequently I regard *D. kieneri* as a synonym of *D. variegatum*. But whichever view be taken of the identity of *D. variegatum*, it is improbable that Reeve was correct in embracing a giant species from New South Wales under that name.

In the adult state, size alone will distinguish the species from Western Australia and that from New South Wales. A specimen of *Tonna variegata* of four and a half whorls is 95 mm. long, while one of that now called *T. cerevisina* of four and a half whorls is 170 mm. long. Besides *T. variegata* is narrower in proportion to height and carries on the upper half of the whorl an interstitial riblet in each groove, that is absent in *T. cerevisina*.

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[10] Philippi—Abbild. Beschr., iii., 1847, pl. i., figs. 2a, 2b.
[11] Chemnitz—Conch. Cab., xi., 1795, pl. clxxxviii., figs. 1804, 1805.

In young stages the species are more difficult to discriminate, but apart from the proportion of size to number of whorls, *T. variegata* has the ribs a little closer and higher and the colour inclines to an orange tone.

The possibility is not excluded that a complete geographical series from tropical Australia may in future link by intermediate gradations the small *T. variegata* to the large *T. cerevisina*.

A shell from Western Australia figured for this species is rather solid, oval in shape, with an elevated spire. It has four and a half whorls, exclusive of the protoconch and is 92 mm. long, and 72 mm. broad. On a cinnamon ground there are four white bands carrying widely spaced chocolate spots. Two immature shells from the Irwin River mouth, Western Australia, have similar colouring. But another specimen from Geraldton, in the same State, is painted as in Kiener's figure.

Loc.—The type locality is Shark Bay, Western Australia.

TONNA COSTATA, *Menke.*

Dolium costatum, Menke, Synop. Meth. Moll. [1828, *fide* von Martens]; ed. 1830, p. 63, for Martini, iii., pl. cxviii., fig. 1082.

Dolium costatum, Deshayes (anew), An. s. vert., 2nd. ed., x., 1844, p. 144 for Kiener, Coq. Viv., pl. iv., fig. 6. *Id.*, Reeve, Conch. Icon., v., 1849, pl. v., fig. 8. *Id.*, Kuster, Conch. Cab., 1857, p. 61, pl. lvi., fig. 3, pl. lvii., fig. 3. *Id.*, Martens in Mobius, Faun. Mauritius, 1880, p. 264. *Id.*, Jack and Etheridge, Geol. and Palæont. of Queensland and New Guinea, 1892, p. 694. *Id.*, Pilsbry, Cat. Marine Moll. Japan, 1895, p. 171. *Id.*, Smith, Faun. Maldive Laccadive, 1904, p. 611. *Id.*, Schepman, Siboga Exped., Prosobranchia, 1909, p. 125. *Id.*, Odhner, K. Sven. Vet. Akad., vol. lii., 1917, p. 11.

Tonna costata, Shirley, Proc. Roy. Soc. Queensland, xxii., 1911, p. 98.

Dolium latesulcatum, Hanley, Proc. Zool. Soc., 1859, p. 489. *Id.*, Roth, North Queensland Ethnography, Bull., iii., 1901, p. 18.

Loc.—Torres Strait (Shirley); Annam River mouth and Green Island (Hedley); Cape Grafton, Queensland (Roth); Broome, Western Australia (Mjoberg).

TONNA PARVULA, *Tapparone Canefri.*

Dolium fimbriatum, Brazier, Proc. Linn. Soc. N.S.Wales, i., 1877, p. 235.

Dolium fimbriatum var. *parvulum*, Tapparone Canefri, Bull. Soc. Zool. France, 1878, p. 257, pl. vi., fig. 4.

Tonna fimbriata, Shirley, Proc. Roy. Soc. Queensland, xxiii., 1911, p. 98 (not *Dolium fimbriatum*, Sowerby, Genera Rec. Foss. Shells, ii., 1827, pl. ccxlii., fig. 2).

Loc.—Murray Island, Queensland (Shirley).

TONNA SULCOSA, *Born.*

Buccinum sulcosum, Born, Index Mus. Caes. Vindob., 1778, p. 230 (*fide* Brauer, K. Akad. Wiss., lxxvii., 1878, p. 43). *Id.*, Born, Test. Mus. Caes. Vindob., 1780, p. 241. *Id.*, Dillwyn, Descr. Cat., ii., 1817, p. 584.

Buccinum fasciatum, Bruguière, Encycl. Meth., vers, i., 1789, p. 249 (not *Buccinum fasciatum*, Muller, 1774).

Cadus fasciatus, Bolten, Mus. Bolt., 1798, for Martini, iii., fig. 1081.

Dolium fasciatum, Lamarck, An. s. vert., vii., 1822, p. 260. *Id.*, Kiener, Coq. Viv., 1835, p. 11, pl. iii., fig. 5. *Id.*, Reeve, Conch. Icon., v., 1849, pl. vii., fig. 11. *Id.*, Kuster, Conch. Cab., 1857, p. 62, pl. lvi., fig. 4. *Id.*, Hanley, Proc. Zool. Soc., 1859, p. 489. *Id.*, Dunker, Index Moll. Mar. Jap., 1882, p. 57. *Id.*, Fischer, Cat. Moll. Indo-Chine, 1891, p. 68. *Id.*, Thurston, Madras Museum Bull., iii., 1894, p. 124. *Id.*, Hidalgo, Revist. R. Acad. Cienc., i., 1904, p. 370. *Id.*, Hirase, Illustr. Thousand Shells, No. 1, 1914, pl. v., fig. 19.

Loc.—Nickol Bay, Western Australia (Hargraves coll.).

TONNA PERDIX, *Linne.*

Buccinum perdix, Linne, Syst. Nat., x., 1758, p. 734. *Id.*, Hanley, Ips. Linn. Conch., 1855, p. 240 (cites Martini, Conch. Cab., fig. 1079 as typical).

Cadus perdix, Bolten, Mus. Bolt., 1798, p. 150.

Dolium perdix, Lamarck, An. s. vert., vii., 1822, p. 261. *Id.*, Quoy and Gaimard, Voy. Astrolabe, Zool., ii., 1833, p. 598, pl. xli., figs. 1-8 (animal from life). *Id.*, Troschel, Gebiss der Schnecken, i., 1863, p. 226, pl. xix., fig. 3 (radula). *Id.*, Dunker, Index Moll. Mar. Jap., 1882, p. 58. *Id.*, Watson, Chall. Exped., Zool., Rep. xv., 1886, p. 412. *Id.*, Melvill & Standen, Journ. Linn. Soc., Zool., xxvii., 1899, p. 164. *Id.*, Schepman, Siboga Exped., Prosobranchia, 1909, p. 230.

Tonna perdix, Oliver, Trans. N.Z. Inst., xlvii., 1914 (1915), p. 529.

Perdrix reticulatus, Montfort, Conch. Syst., ii., 1810, p. 446.

Loc.—Dirk-Hartog Island, Shark Bay, Western Australia (Quoy and Gaimard); Torres Strait (Haddon); Green Island, Queensland (Hedley).

TONNA PERDIX *var.* RUFA, *Blainville.*

Dolium rufum, De Blainville, Dict. Sci. Nat., liv., 1829, p. 503. *Id.*, Hanley, Proc. Zool. Soc., 1859, p. 492.

Loc.—? Australasia (Blainville).

TONNA CANALICULATA, *Linne.*

Bulla canaliculata, Linne, Syst. Nat., x., 1758, p. 727. *Id.*, Mus. Ulricae, 1764, p. 588. *Id.*, Hanley, Journ. Linn. Soc., iv., 1860, p. 67.

Buccinum olearium, Bruguière, Encycl. Meth., vers, i., 1792, p. 243 (not *Buccinum olearium*, Linn. Syst. Nat., x., 1758, p. 734).

Dolium olearium, Quoy and Gaimard, Voy. Astrolabe, Zool., ii., 1833, p. 600, pl. xli., fig. 9 (animal from life). *Id.*, Deshayes, An. s. vert., x., 1844, p. 140. *Id.*, Morch, Cat. Conch. Kierulf., 1850, p. 13. *Id.*, Schmeltz, Cat. Godeffroy Mus., iv., 1869, p. 97. *Id.*, Langdon, Journ. of Conch., i., 1875, p. 73. *Id.*, Martens in Mobius, Faun. Mauritius, 1880, p. 264. *Id.*, Smith, Proc. Zool. Soc., 1891, p. 412. *Id.*, Thurston, Bull. Madras Mus., iii., 1895, p. 124. *Id.*, Martens, Rumphius gedenkboek, 1902, p. 117. *Id.*, Smith, Faun. Maldive Laccadive, ii., 1904, p. 611. *Id.*, Schepman, Siboga Exped. Prosobranchia, 1909, p. 125. *Id.*, Odhner, K. Sven. Vet. Akad., Vol. lii., No. 16, 1917, p. 11.

Cadus cepa, Bolten, Mus. Bolt., 1798, p. 150.

Dolium cepa, Hanley, Proc. Zool. Soc., 1859, p. 489.

The type of this species should be in the Uppsala Museum, Sweden. Hanley announced in 1859 his discovery that the Linnean *B. canaliculata* was what almost all conchologists had erroneously called *Dolium olearium*, and that the real *Buccinum olearium* was that Japanese species which Philippi had so beautifully figured[12] as *Dolium crenulatum*. Zoologists have since been deaf to Hanley's remarks.

This common Oriental shell called the "onion-peel" by the French, has not hitherto been recorded from Eastern Australia.

Loc.—Broome, Western Australia (Mjoberg) and Trinity Bay, Queensland (Austr. Mus. Coll.).

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[12] Philippi—Abbild. Beschr., iii., 1847, Dolium, pl. i., fig. 1.

EXPLANATION OF PLATE XXXIX.

Fig. 1. *Tonna cerevisina*, Hedley. From the type, an almost uniform brown shell, with five adult whorls in a length of 240 mm., taken in 13 fathoms in Sydney Harbour.

Fig. 1

C. CLUTTON, photo., Austr. Mus.

EXPLANATION OF PLATE XL.

Fig. 2. *Tonna cerevisina.* A specimen banded with brown and white with spots which are restricted to the pale belts. Four and three quarter whorls in a length of 185 mm. From 40-80 fathoms off Green Cape, New South Wales.

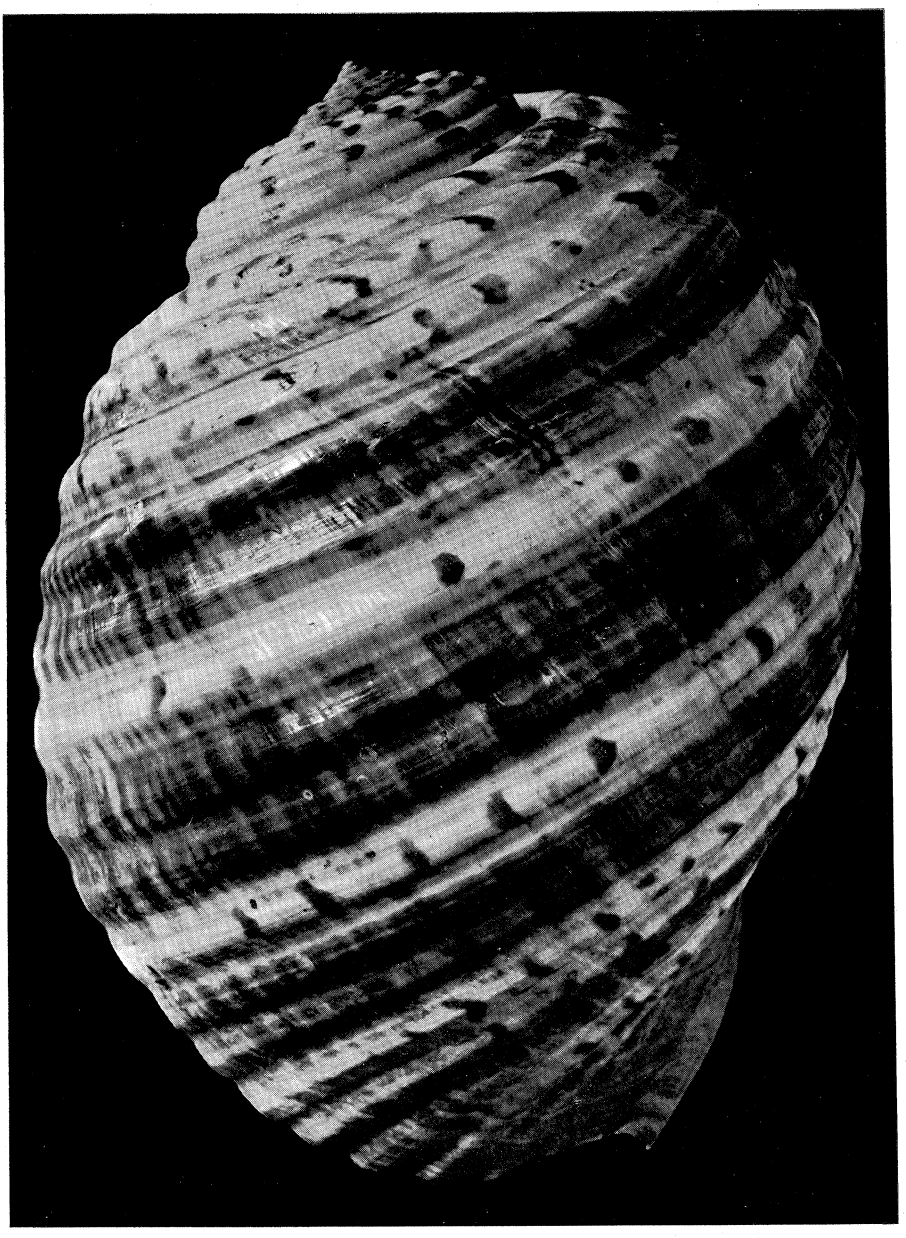

Fig. 2

C. CLUTTON, photo., Austr. Mus.

EXPLANATION OF PLATE XLI.

Fig. 3. *Tonna cerevisina.* A specimen without any brown bands and with spots uniformly distributed. Four adult whorls in a length of 130 mm. From 40-80 fathoms off Green Cape, New South Wales.

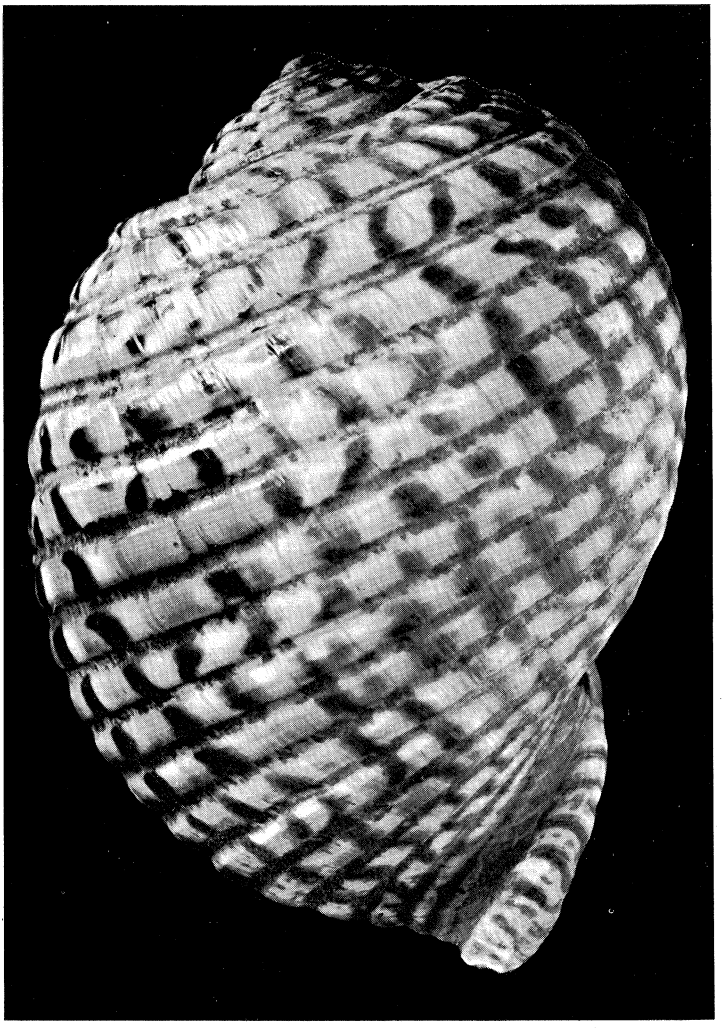

Fig. 3

C. CLUTTON, photo., Austr. Mus.

EXPLANATION OF PLATE XLII.

Fig. 4. *Tonna tetracotula*, Hedley. From the type, which has five adult whorls in a length of 198 mm. From 40-80 fathoms off Green Cape, New South Wales.

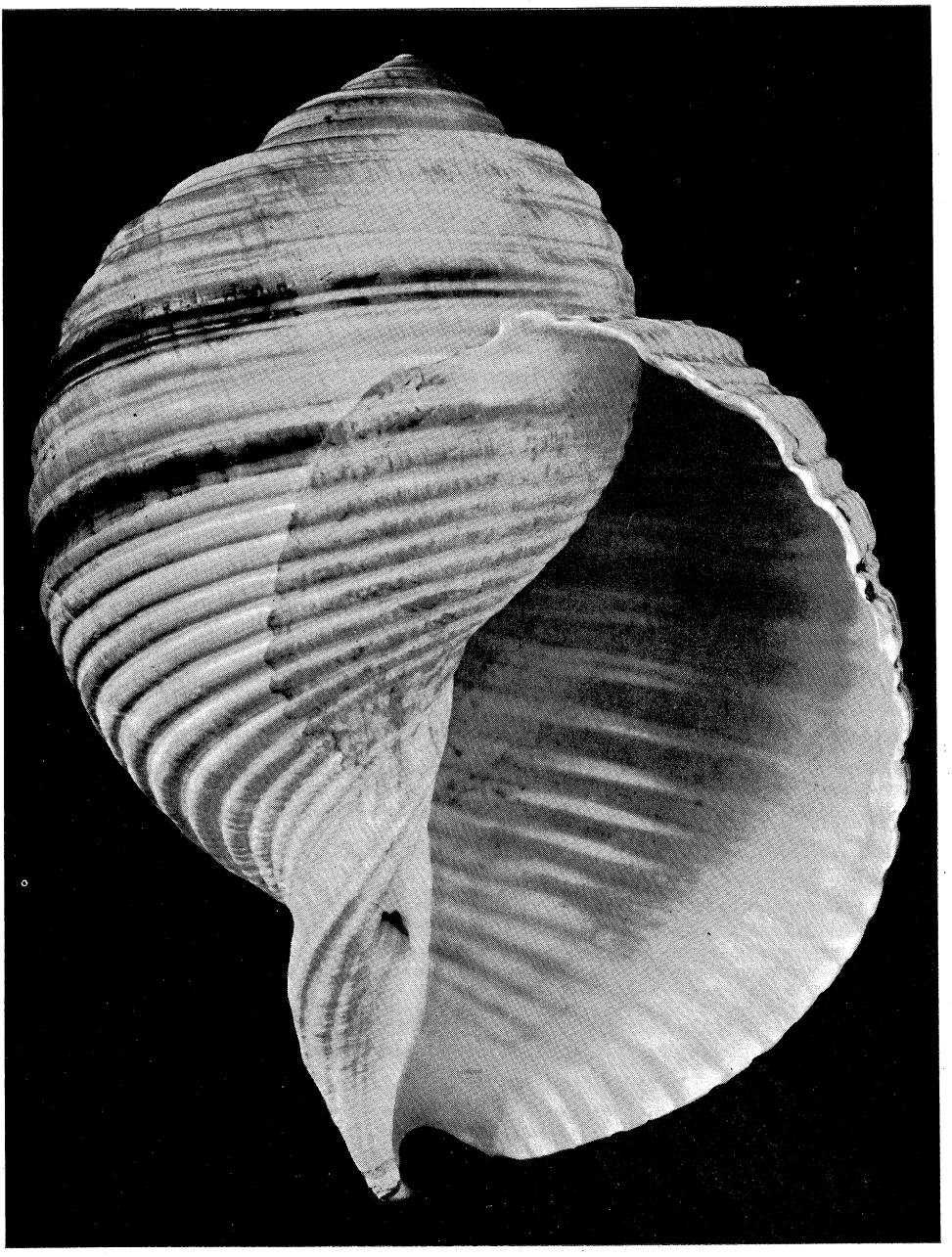

Fig. 4

C. CLUTTON, photo., Austr. Mus.

EXPLANATION OF PLATE XLIII.

Fig. 5. *Tonna tetracotula*, Hedley. Dorsal view of another specimen similar in size and locality.

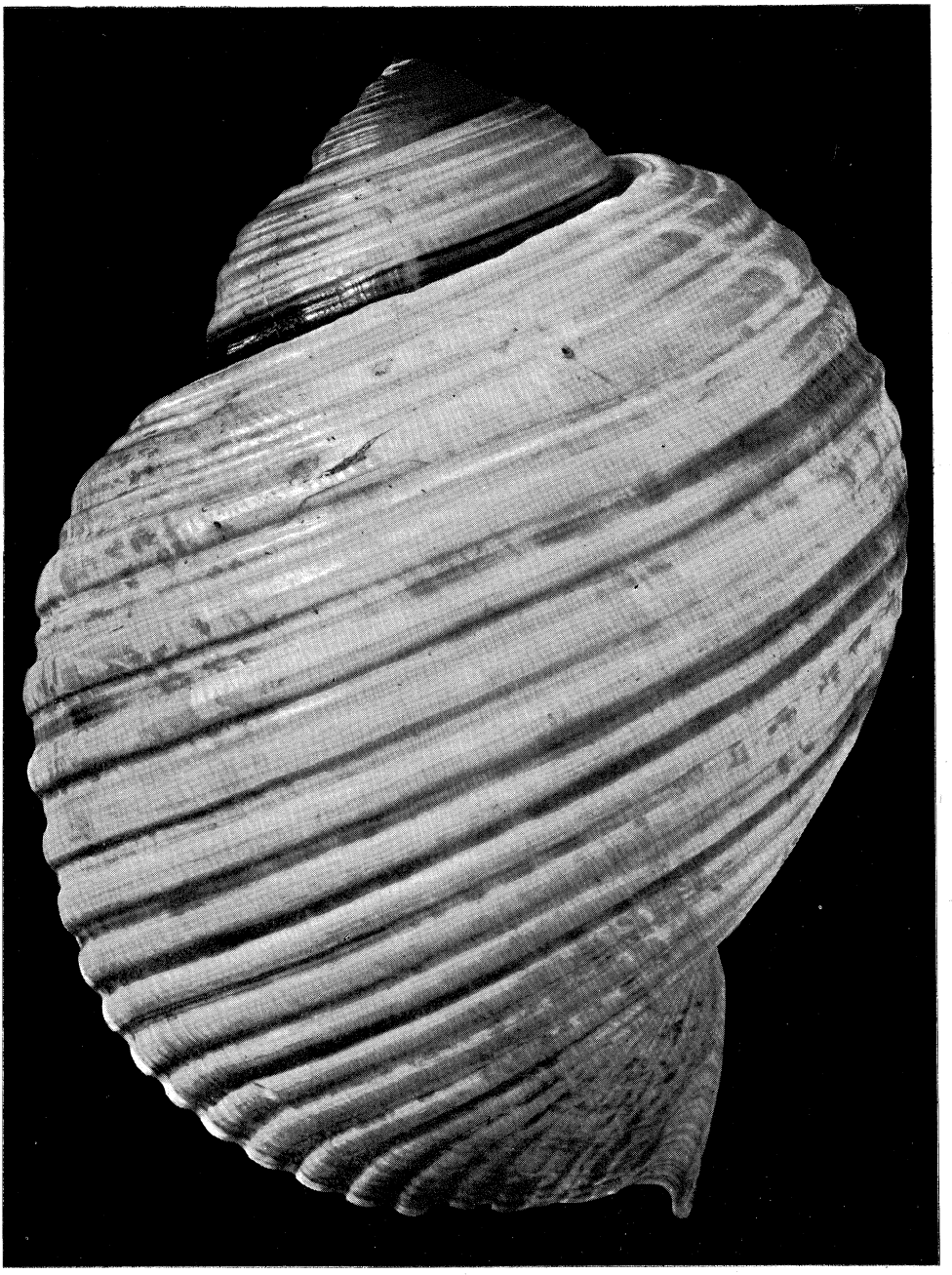

Fig. 5

C. CLUTTON, photo., Austr. Mus.

EXPLANATION OF PLATE XLIV.

Fig. 6. *Tonna variegata*, Lamarck. A specimen having four and a half whorls in a length of 92 mm. from Western Australia.

Fig. 7. *Tonna ampullacea*, Philippi. A broken specimen from Port Darwin, approximately 130 mm. long.

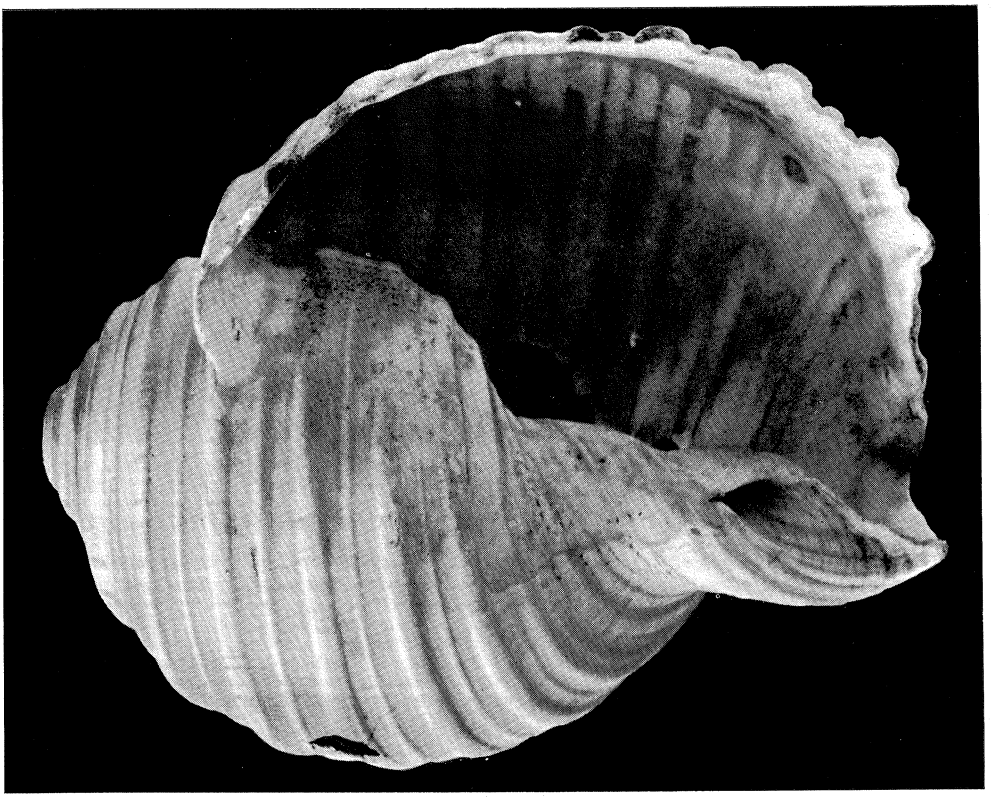

Fig. 7

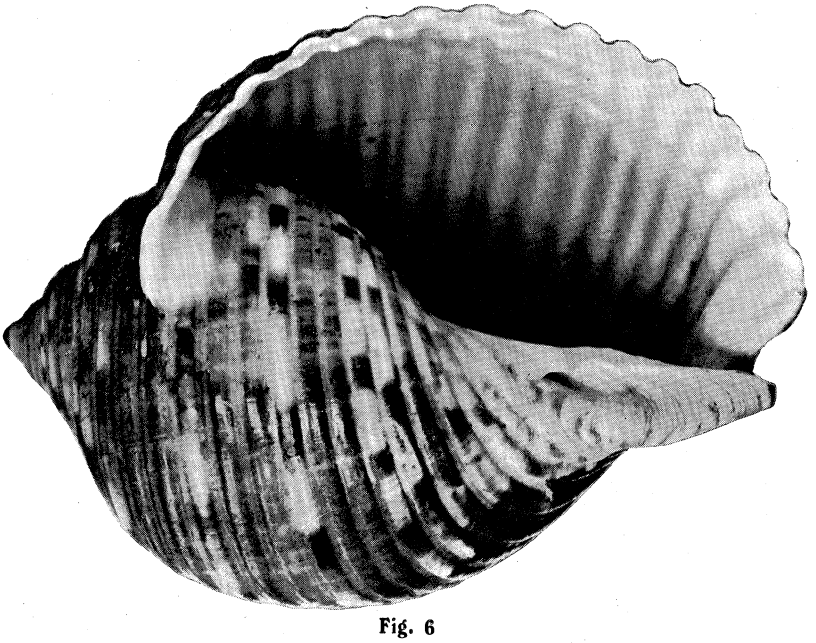

Fig. 6

C. CLUTTON, photo., Austr. Mus.