

MOLLUSC TYPE-SPECIMENS IN THE SOUTH AUSTRALIAN MUSEUM

2. GASTROPODA: CONIDAE

by

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ABSTRACT

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Type-specimens of 21 species of *Conus* in the South Australian Museum are catalogued and illustrated. All are holotypes or syntypes. Of these at least three, *C. cumingii* Reeve, 1848, *C. metcalfei* Angas, 1877 and *C. sydneyensis* Sowerby, 1887 are almost certainly not types while the status of another two, *C. kermadecensis* Iredale, 1912 and *C. rossiteri* Brazier, 1870 is in doubt. Only 10 of the specimens are from Australian waters, another 10 are from various South Pacific islands and one is from Mauritius. Species are listed alphabetically according to the original name of the species or variety. In addition, four species of cones recorded as types for which no reference can be found are listed in an Appendix.

INTRODUCTION

Most of the indigenous Conidae collection in the South Australian Museum (SAM) was collected, or otherwise obtained by Sir Joseph C. Verco around the turn of the century. However, most of the exotic species were acquired by purchasing other people's collections. One of the most significant of these was the A. F. Kenyon collection which the Museum purchased early this century. Mrs Kenyon accumulated a considerable collection and acquired many types, particularly of cowries and cones. She also acquired much of the J. W. Brazier collection which accounts for about half of the cone types listed here and only three of Brazier's species are not represented: *C. cooki* Brazier, 1870 (two syntypes in Australian Museum, Sydney), *C. coxeni* Brazier, 1875 (type in Coxen collection—lost?) and *C. sophiae* Brazier, 1875 (type in Australian Museum, Sydney). Unfortunately, several of the original labels are missing and the type status of some specimens is in doubt. There are also a number of specimens which have been labelled "type" but for which no reference can be found and these are listed in the Appendix and are only included because future workers may stumble upon a reference to them.

The South Australian Museum holds 21 *Conus* "types" of which three, *C. cumingii* Reeve, 1848, *C. metcalfei* Angas, 1877 and *C. sydneyensis* Sowerby, 1887 are almost certainly not types while the status of another

two, *C. kermadecensis* Iredale, 1912 and *C. rossiteri* Brazier, 1870 is in doubt.

The species are listed under the original name at the time of description and in alphabetical order of species or variety. All of the types are represented by shells only, and only two have the operculum with them indicating that they were alive when collected. Measurements for height and maximum width are given for each specimen, as these were often inaccurate or not given in the original description. Each specimen has also been photographed (Figs. 1-3) as the types were rarely figured and photographs of only a few have appeared in recent publications.

The present status of each species is, in most cases, according to Walls (1978).

LIST OF TYPES

Conus kenyonae var. *arrowsmithensis* Brazier, 1896
(Fig. 1a)

Proc. Linn. Soc. New South Wales 21: 346.
Holotype: SAM Reg. No. D5459. Kenyon No. 337.
Dimensions, 35.5 × 20.5 mm (Brazier gives 36 × 21 mm).

Type-locality: Arrowsmith Island, Marshall Islands; collected by J. Brazier, 22.ix.1872.

Present Status: Synonym of *C. distans* Hwass, 1792.
Remarks: A very worn specimen with Brazier's original label. Considered a juvenile of *C. distans*. Type figured by Cotton (1945), pl. 4, Fig. 4.

Conus barbara Brazier, 1898

(Fig. 1b)

Proc. Linn. Soc. New South Wales 22: 781.
Holotype: SAM Reg. No. D6176. Kenyon No. 83.
Dimensions, 40.0 × 20.3 mm (Brazier gives 40 × 20 mm).

Type-locality: Solomon Islands; collected by Mrs A. F. Kenyon, date of collection unknown.

Present Status: Synonym of *C. monachus* Linnaeus, 1758.

Remarks: A worn specimen with Brazier's original label. Type figured by Cotton (1945), pl. 4, Fig. 2.

Conus cumingii Reeve, 1848

(Fig. 1c)

Conchologia Iconica 1 (*Conus* Suppl.): Pl. 3, species 282.

Holotype: SAM Reg. No. D6208, Kenyon No. 372.

Dimensions, 48.5 × 24.5 mm (Reeve gives none).

Type-locality: None given on any labels but Island of Mindanao, Philippines; collected by Mr Cuming, according to Reeve.

Present Status: Valid species.

Remarks: This specimen cannot be Reeve's type of *C. cumingii* despite the label which says "Reeve's type". It does not agree with Reeve's description and is too large for the species. It seems to be *C. anemone* Lamarck, 1810 and was not listed by Cotton (1945).*Conus flindersi* Brazier, 1898

(Fig. 1d)

Proc. Linn. Soc. New South Wales 22: 780.

Holotype: SAM Reg. No. D14129, Kenyon No. 139.

Dimensions, 28.0 × 15.0 mm (Brazier gives 29 × 19 mm).

Type-locality: Flinders, Western Port, Victoria, under stone at low water. (Not Flinders Island, Bass Strait). Probably collected by Mrs A. F. Kenyon, date of collection unknown.

Present Status: Synonym of *C. anemone* Lamarck, 1810.

Remarks: This specimen does not match up with the dimensions given by Brazier, but as the original label by Brazier is present and in the absence of any other possible types, we must accept it as Brazier's type and conclude that his measurements are inaccurate, Cotton (1945) maintained that he had not seen the type.

Conus frostiana Brazier, 1898

(Fig. 1e)

Proc. Linn. Soc. New South Wales 22: 781.

Holotype: SAM Reg. No. D6170, Kenyon No. 138.

Dimensions, 18.2 × 9.5 mm (Brazier gives 18 × 10 mm).

Type-locality: Solomon Islands; collected by Mrs A. F. Kenyon, date of collection unknown.

Present Status: Uncertain. Walls (1978) thinks this species could be synonymous with *C. nigropunctatus* Sowerby 1858 or *C. monachus* Linne, 1758 or even *C. magus* Linne, 1758. I am inclined to believe that the type may be a small *C. monachus*.

Remarks: Specimen with Brazier's original label.

Conus kenyonae Brazier, 1896

(Fig. 1f)

Proc. Linn. Soc. New South Wales 21: 346.

Holotype: SAM Reg. No. D14194, Kenyon No. 336.

Dimensions, 42.0 × 23.5 mm (Brazier gives 43 × 24 mm).

Type-locality: Shark's Bay, Western Australia; collected by Mr Podesta, date of collection unknown.

Present Status: Synonym of *C. distans* Hwass, 1792.

Remarks: A very worn specimen with Brazier's original

label. Considered a juvenile of *C. distans*. Type figured by Cotton (1945), pl. 4, Fig. 6.*Conus kermadecensis* Iredale, 1912

(Fig. 1g)

Proc. Mal. Soc. Lond. 10(3): 227, pl. 9, Figs. 15 and 16.

Syntype: SAM Reg. No. D6169, Kenyon No. 420.

Dimensions, 43.0 × 23.4 mm.

Type-locality: Original label lost? Iredale gives Sunday (=Raoul) Island, Kermadec Group.

Present Status: Valid species.

Remarks: Specimen with operculum, corresponding generally to Iredale's description. The type status of the specimen, however, is in doubt as Iredale stated that the type would go to the Canterbury Museum, New Zealand (which apparently has two) and the paratypes would go to the Australian Museum, Sydney. The Australian Museum has three lots of *C. kermadecensis* collected by Iredale and Oliver from the type-locality, but none have been designated type or paratypes. Since Iredale mentions only three specimens, and two are accounted for, the above could be a syntype corresponding to the one Iredale measured as 42 × 25 mm. Cotton's (1945) measurement of 45 mm for this specimen is obviously an error.*Rhizoconus klemae* Cotton, 1953

(Fig. 1h)

Trans. Roy. Soc. South Aust. 76: 24, pl. 3, Figs. 1 and 3.

Holotype: SAM Reg. No. D14465. Dimensions: 46.5 × 26.0 mm (Cotton gives 47 × 26 mm).

Type-locality: Corny Point, Yorke Peninsula, South Australia; collected by Miss M. Klem, date of collection unknown.

Present Status: *Conus klemae* (Cotton, 1953), valid species.

Remarks: Most of the specimens mentioned by Cotton (1953) are in the SAM collections but none were designated paratypes. A juvenile specimen (SAM Reg. No. D16233), collected with the type, was also figured by Cotton (pl. 3, Fig. 2).

Conus metcalfei Angas, 1877

(Fig. 2a)

Proc. Zool. Soc. (London); 173, pl. 26, Fig. 13.

Holotype: SAM Reg. No. D6207, Kenyon No. 200. Dimensions, 17.6 × 9.5 mm (Angas gives 21.2 × 12.7 mm).

Type-locality: Dredged at "Sow and Pigs" reef, Port Jackson, New South Wales; probably collected by J. Brazier, date of collection unknown.

Present Status: Synonym of *C. angasi* Tyron, 1883.

Remarks: This specimen is almost certainly not the type. The original label is missing and the measurements do not correspond to those given by Angas. The type is most likely in the Australian Museum, Sydney who have a specimen (C103598) with an old label marked "Type" measuring 20.5 × 11.4 mm which is a closer

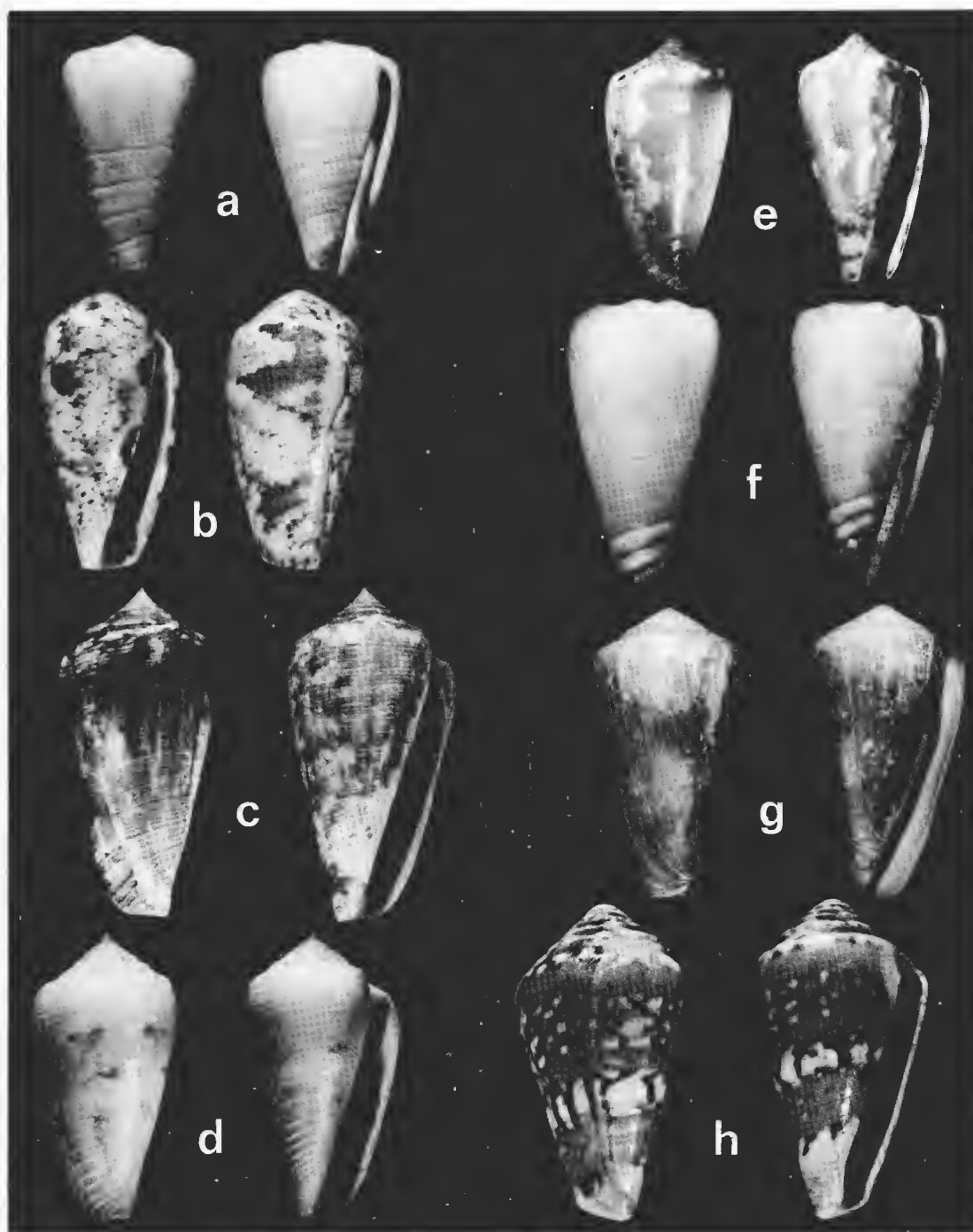


FIG. 1. a. *Conus kenyonae* var. *arrowsmithensis*, holotype 35.5 × 20.5 mm (×1); b. *Conus barbara*, holotype 40.0 × 20.3 mm (×1); c. *Conus cumingii*, 48.5 × 24.5 mm (×1); d. *Conus flindersi*, holotype 28.0 × 15.0 mm (×1.5); e. *Conus frostiana*, holotype 18.2 × 9.5 mm (×2); f. *Conus kenyonae*, holotype 42.0 × 23.5 mm (×1); g. *Conus kermadecensis*, ? syntype 43.0 × 23.4 mm (×1); h. *Rhizoconus klemae*, 46.5 × 26.0 mm (×1).

approximation to Angas's description. Not to be confused with *C. metcalfei* Reeve, 1843.

Kenyonia pulcherrima Brazier, 1896

(Fig. 2b)

Proc. Linn. Soc. New South Wales 21: 347.

Holotype: SAM Reg. No. D6181. Kenyon No. 175. Dimensions, 28.0 × 9.4 mm (Brazier gives 28 × 10 mm).

Type-locality: New Hebrides; collected by Mrs. A. F. Kenyon, date of collection unknown.

Present Status: Uncertain. This is almost certainly not

a cone. It is most likely a turrid similar to *Conopleura* Hinds, 1844 (Cernohorsky, 1974).

Remarks: A worn specimen with Brazier's original label. Not to be confused with *Conus pulcherrimus* Brazier, 1894 or *Conus pulcherrimus* Heilprin, 1879—a fossil.

Conus pulcherrimus Brazier, 1894

(Fig. 2c)

Proc. Linn. Soc. New South Wales 9(1): 187.

Holotype: SAM Reg. No. D6172. Kenyon No. absent. Dimensions, 80.0 × 27.2 mm (Brazier gives none)

Type-locality: Tanna, New Hebrides, on beach after



FIG. 2. a. *Conus metcalfei*, 17.6 × 9.5 mm (×2); b. *Kenyonia pulcherrima*, holotype 28.0 × 9.4 mm (× 1.5); c. *Conus pulcherrimus*, holotype 80.0 × 27.2 mm (× 0.5); d. *Conus remo*, lectotype 35.0 × 17.5 mm (×1); e. *Conus rossiteri*, ?holotype 10.6 × 6.4 mm (×3); f. *Floraconus saundersi*, holotype 57.0 × 32.0 mm (×1); g. *Floraconus singletoni*, holotype 43.5 × 22.0 mm (×1); h. *Conus superstes*, syntype 3.3 × 1.7 mm (×10).

submarine volcanic eruption; collected in 1878; collector unknown.

Present Status: Synonym of *C. excelsus* Sowerby, 1908. Remarks: A worn specimen with Brazier's original label indicating the species and locality but not the fact that it was Brazier's type. Cotton (1945) apparently ignored the original label and did not realize that Brazier had given a short description under "Notes and exhibits" and thus described this specimen as the unique type of a new species, *Asprella tannaensis*.

Not to be confused with *Kenyonia pulcherrima* Brazier, 1896 which is now considered a turrid or *C. pulcherrimus* Heilprin, 1879—a fossil.

Conus remo Brazier, 1898

(Fig. 2d)

Proc. Linn. Soc. New South Wales 23: 271.

Lectotype: SAM Reg. No. D14128. Kenyon No. 186. Selected by Cotton (1945), p. 265, pl. 4, Fig. 9. Dimensions, 35.0 × 17.5 mm (Cotton gives none but Brazier gives 35 × 15½-17 mm for the type).

Type-locality: San Remo, Port Phillip Bay, Victoria; collected by Mrs A. F. Kenyon, date of collection unknown.

Paralectotypes: SAM Reg. No. D15948, 8 specimens with same collection data as type.

Present Status: Synonym of *C. anemone* Lamarck, 1810.
Remarks: Specimens with Brazier's original label but the type had not been indicated.

Conus rossiteri Brazier, 1870

(Fig. 2e)

Proc. Zool. Soc. (London) (1870): 109.

Holotype: SAM Reg. No. D5975. Kenyon No. 312. Dimensions, 10.6 × 6.4 mm (Brazier gives approx. 16 × 8 mm).

Type-locality: Cape Solander, Botany Bay, New South Wales; collected by J. Brazier; date of collection unknown.

Present Status: Synonym of *C. anemone* Lamarck 1810.
Remarks: This is a doubtful type-specimen as it is much smaller than the measurements given by Brazier. Also the original label is missing and there is no indication that this is the type apart from the museum register referring to it as "type" and Cotton's (1945, 1958) reference to it as the type. The Australian Museum, Sydney, has a specimen registered as type in 1902, from material purchased from Brazier in 1889, measuring 14.5 × 9 mm.

Floraconus saundersi Cotton, 1945

(Fig. 2f)

Rec. S. Aust. Mus. 8(2): 264, pl. 4, Fig. 8.

Holotype: SAM Reg. No. D14198. Dimensions, 57.0 × 32.0 mm (Cotton gives none).

Type-locality: Levens Beach, Edithburgh, Yorke Peninsula, South Australia; collector and date of collection unknown.

Present Status: Synonym of *C. anemone* Lamarck, 1810.
Remarks: Two specimens, SAM Reg. No. D16232, were with the holotype and may have been used in the original description but were not designated paratypes.

Floraconus singletoni Cotton, 1945

(Fig. 2g)

Rec. S. Aust. Mus. 8(2): 263, pl. 4, Fig. 10.

Holotype: SAM Reg. No. D14195. Dimensions, 43.5 × 22.0 mm (Cotton gives 45 × 22 mm).

Type-locality: Western Port, Victoria; collected by C. J. Gabriel, date of collection unknown.

Present Status: Synonym of *C. anemone* Lamarck, 1810.
Remarks: Considered an albino variant of *C. anemone*. Two specimens, SAM Reg. No. D16236, were with the type but were not designated paratypes.

Conus superstes Hedley, 1911

(Fig. 2h)

Zool. Results F.I.S. Endeavour 1904-10, part 1: 111, pl. 20, Figs. 35, 36.

Syntypes: SAM Reg. No. D15904, 11 specimens, the specimen figured here measures 3.3 × 1.7 mm.

Type-locality: Forty miles south of Cape Wiles, South Australia in 100 fms; collected by F.I.S. *Endeavour*; 28.viii.1909.

Present Status: The species description is based on small juveniles, so that it would be difficult to determine the specific status until the life histories of South Australian cones are better known.

Remarks: Specimens with the original label with the word "Co-type" and registration number "E.3800".

Conus sydneyensis Sowerby, 1887

(Fig. 3a)

Thesaurus Conchylorum, 5 (*Conus Suppl.*): 260, pl. 32 (510), Fig. 694.

Holotype: SAM Reg. No. D6183. Kenyon No. 192. Dimensions, 17.0 × 9.0 mm (Sowerby gives 24 × 12 mm).

Type-locality: Port Jackson, New South Wales, collected by Brazier; date of collection unknown.

Present Status: Synonym of *C. aplustre* Reeve, 1843 according to Walls (1978) or of *C. angasi* Tyron, 1883 according to Cotton (1945). The specimen at hand looks more like *C. angasi* than *C. aplustre*.

Remarks: This specimen cannot be Sowerby's type, even though the original label with the specimen, designating it as a type, appears to be in Brazier's handwriting. The locality data is given as Port Stephens and the measurements do not agree with the original description given by Sowerby. According to Moolenbeek (pers. comm.) the type appears to be in the Institut Royal des Sciences Naturelles de Belgique (Brussels).

Asprella tannaensis Cotton, 1945

(Fig. 2c)

Rec. S. Aust. Mus. 8(2): 270, pl. 4, Fig. 3.

Holotype: SAM Reg. No. D6172.

Remarks: Based on the same specimen as the type of *C. pulcherrimus* Brazier, 1894 also listed in this paper.

The operculum figured with the type by Cotton (1945) probably belongs to another species as the type is worn and faded and was obviously collected devoid of the animal.

Hermes triggi Cotton, 1945

(Fig. 3b)

Rec. S. Aust. Mus. 8(2): 267, pl. 4, Fig. 11.

Holotype: SAM Reg. No. D14324. Kenyon No.—absent. Dimensions, 61.5 × 27.4 mm (Cotton gives 60 × 27 mm).

Type-locality: New Hebrides; collector and date of collection unknown.

Present Status: Synonym of *C. ximenes* Gray, 1839.

Remarks: Described from a unique specimen from the Kenyon collection.

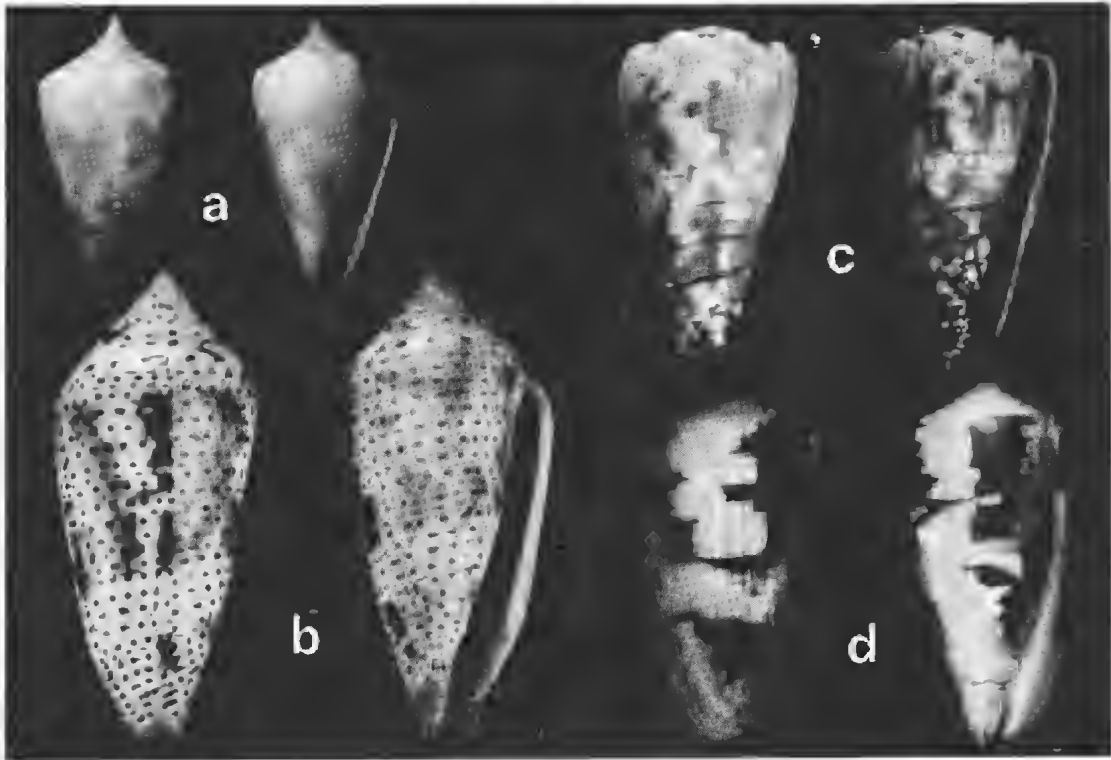


FIG. 3. a. *Conus sydneyensis*, 17.0 × 9.0 mm (×2); b. *Hermes triggi*, holotype 61.5 × 27.4 mm (×1); c. *Conus waterhouseae*, holotype 28.5 × 16.0 mm (×1.5); d. *Conus worcesteri*, holotype 47.6 × 24.5 mm (×1).

Conus waterhouseae Brazier, 1896

(Fig. 3c)

Proc. Linn. Soc. New South Wales 21: 471.

Holotype: SAM Reg. No. D5786. Kenyon No.—absent. Dimensions, 28.5 × 16.0 mm (Brazier gives 30 × 15 mm).

Type-locality: Solomon Islands; collected by Mrs. G. J. Waterhouse, date of collection unknown.

Present Status: Synonym of *C. distans* Hwass, 1792.

Remarks: Specimen with Brazier's original label. Type figured by Cotton (1945) pl. 4, Fig. 2. Another specimen (SAM Reg. No. D5787) with the type and marked "type of variety" was also figured by Cotton (pl. 4, Fig. 7). This specimen, from Mauritius, was introduced as a new variety by Kenyon (1906) who gave a brief description but it was not given a name as it was considered to be a juvenile of *C. distans*.

Comus (Chelyconus) worcesteri Brazier, 1891

(Fig. 3d)

Proc. Linn. Soc. New South Wales 6: 276, pl. 19, Fig. 4.

Holotype: SAM Reg. No. D6178. Kenyon No. 155. Dimensions, 47.6 × 24.5 mm (Brazier gives 48 × 25 mm).

Type-locality: Island of Mauritius; collected by Mr Robillard, date of collection unknown.

Present Status: Synonym of *C. magus* Linnaeus, 1758.

Remarks: The original label by Brazier is missing but there is little doubt that this is the type. The specimen was collected live as the operculum is present. Type figured by Cotton (1945), pl. 4, Fig. 1.

ACKNOWLEDGMENTS

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APPENDIX

Specimens labelled or registered as "type" for which no reference can be found.

Conus noumeensis Brazier, SAM Reg. No. D5729. Kenyon No. 69. (68.5 × 39.5 mm).

Locality: Anse Vata, Noumea, New Caledonia.

Remarks: Specimen with Brazier's label marked "Type specimen". Cotton refers to this specimen and says that

it is *C. chenui* Crosse, 1857 and has nothing to do with *C. suffusus* var. *Noumeensis* Crosse, 1872 which is a synonym of *C. marmoreus* Linnaeus, 1758.

Conus pilcheri Brazier, SAM Reg. No. D6171. Kenyon No. 247 (22.3 × 14.0 mm).

Remarks: Specimen with Brazier's label marked "Type specimen" but no locality data. It is very similar to *C. cyanostoma* A. Adams, 1854.

Conus sydneyensis var. *sowerbyi* Kenyon, SAM Reg. No. D6184. Kenyon No. 192 (27.0 × 15.5 mm).

Locality: Port Stephens, New South Wales.

Remarks: Specimen with Kenyon's label marked "type". Another specimen with a similar label but not marked "type" is also in the collection. The specimens seem to be juvenile *C. purpurascens* Sowerby, 1933.

Conus wisemani Brazier, SAM Reg. No. D6179. Kenyon No. 199. (28.2 × 17.3 mm).

Locality: Low Island, Trinity Bay, north Queensland.

Remarks: Specimen with Brazier's label but not marked "type" yet registered as a type in Museum register. It seems to be a white form of *C. suturatus* Reeve, 1844.