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Alphabetical revision of the (sub)species in recent Conidae
5. baccatus to byssinus, including Conus brettinghami nomen novum

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INTRODUCTION

This is the fifth part in this series, in which all recent *Conus* names beginning with the letter *b* are discussed. The Conidae continue to keep the attention of both professional and amateur malacologists. Dr. Alan J. Kohn (1981) has published the sixth article in his historical review of the genus since 1963; he has designated lectotypes of some *Conus* species to which we referred in parts 3 and 4 (1980, 1981). Dr. G. Richard (1981) has also started a revision of the Conidae, based on subgenera, in a new journal 'Xenophora'. We have seen issues 1 and 2 (1980) of another new journal 'Cone Shell Alert', written and privately published by J. K. Tucker. A book on 'Cone Shells from Cape Verde Islands' by Röckel c.s. (1980) has also appeared in print.

The constant flow of 'new species' in the Conidae is still going on, often more to the benefit of the authors than to science. Descriptions are found in both respected and obscure journals, often without proper research in the literature or comparative studies, sometimes based on single specimens, with a dubious locality, and the type stored in a private collection. Some authors do not realize that already more than two thousand *Conus* names are available.

The zoological nomenclature gives us the possibility to name genera, subgenera, species and subspecies. This division is in accordance with the storage of zoological objects in collections, and may please the curator or collector. Nature, however, is not always willing to follow curatorial activities. The present authors are using the term 'species' as commonly accepted to represent a group of natural, actually or potentially interbreeding, populations, which are reproductively isolated from other such groups. A 'subspecies' is a group of local populations in a geographical subregion of the species, and taxonomically separated from other such populations. All infrasubspecific taxa are recorded as 'forma'; they do not show a sharp taxonomic separation from related taxa. Formae within the Conidae mostly have extreme colour patterns, and were originally described as nominal (sub)species or varieties. When the interrelationship between a number of closely related Conidae cannot be expressed yet in terms of valid species, subspecies and formae, we call it a 'species complex'. It may include superspecies, sibling species, semispecies, and clines.

Assistance from colleagues as regards loan or donation of specimens, literature, photographs, advice or otherwise, is acknowledged with the species concerned. The photographs were made by Mr. L. van der Laan (except those on the last two plates, which were received from BMNH), the maps were drawn by Mr. J. Zaagman. The authors are especially

grateful to the editors of Basteria, not only for always critically reading the manuscripts, but also for their advice with taxonomical problems.

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GENUS *CONUS* LINNÉ, 1758

Valid names of species, subspecies, and formae are printed in heavy type in the alphabetical list. A junior synonym, homonym, nomen dubium or nomen nudum is printed in normal type. A name misspelt in the literature is generally mentioned under its correct spelling.

baccatus
fig. 197

Conus baccatus Sowerby III, 1877, Proc. zool. Soc. Lond. 1876: 753-754, pl. 75 fig. 5

Type. – The holotype is present in the National Museum of Wales (no. 34.01.29), ex Melvill-Tomlin collection; the measurements are 22.2 x 14.2 mm (fig. 197).

Type locality. – Not mentioned, but on the plate is indicated 'New shells from the eastern hemisphere'.

Remarks. – We have studied the holotype (fig. 197), which is the only known specimen. The shell is short, about eight whorls; body whorl convex and granulated, shoulder of the last whorl double-angled, the upper angle is continuing as a spiral ridge on the earlier whorls; spire low and concave. Colour whitish with orange blotches arranged in three bands, inside of aperture white, width 2 mm.

There is no relation to *C. mindanus* Hwass, 1792, as was suggested by Walls (1979: 726). Provisionally we consider *C. baccatus* a valid species, but the holotype might be a juvenile shell of an earlier described species.

Distribution. – Unknown. No specimens have been recorded since its description.

The authors are grateful to Dr. P. G. Oliver (National Museum of Wales) for the loan of the type specimen.

badius
figs. 172, 191-193

Conus badius Kiener, 1845, Coq. viv. 2: 89-90, pl. 33 fig 3

Type. – The holotype was in the Verreaux collection; its present whereabouts are unknown. The type figure is reproduced here (fig. 191); the dimensions are 60 x 37 mm.

Type locality. – Not mentioned. We herewith designate the Red Sea coast near Obhur, Saudi Arabia, type locality.

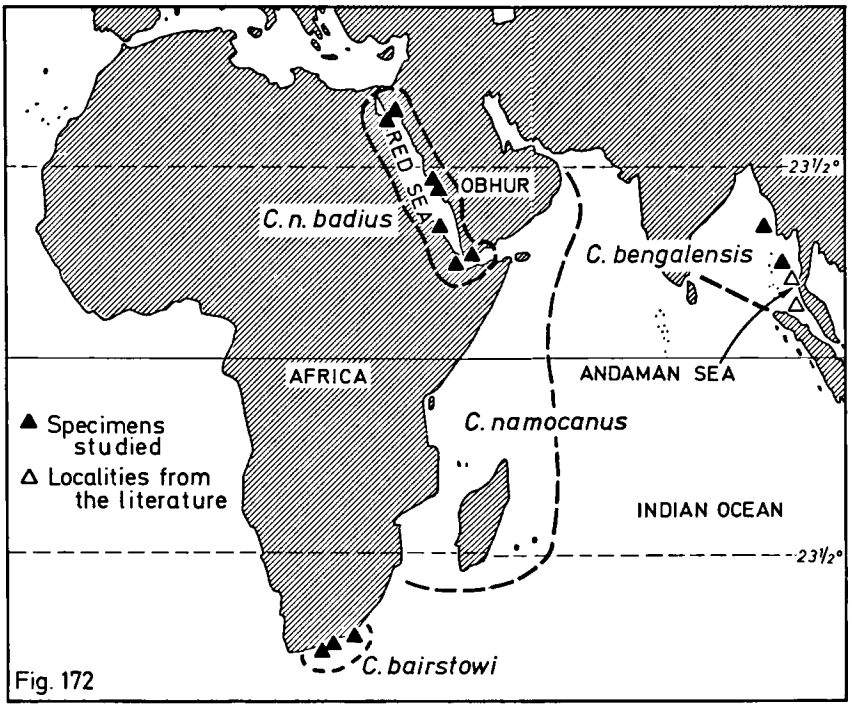

Fig. 172. Distribution of *Conus namocanus badius, C. bairstowi,* and *C. bengalensis.*

Remarks. – *Conus badius* is generally considered a junior synonym of *C. namocanus* Hwass, 1792. However, both nominal species are distinct in shell morphology and distribution. The shell of *C. badius* is smaller, but wider at the shoulder, and has a flatter spire than *C. namocanus.* The last whorl of *C. badius* is covered with many thin undulating reddish brown lines (figs. 191-193); in *C. namocanus* these lines are less numerous and thicker. We consider *C. badius* a subspecies: *C. namocanus badius.*

The shell of *C. trigonus* Reeve, 1848, from Australia is distinguished in having a light coloured base. The lines on the last whorl are dissolved into dots, and there is a pleat on the base of the columella.

Distribution. – *C. namocanus badius* is known from the Red Sea and Gulf of Aden (fig. 172). ZMA has specimens from Hurghada (Egypt), Obhur (Saudi Arabia), Eilat (Israel), and Obock (Djibouti). In addition we have studied specimens from Coral Island in the Gulf of Aqaba, Jeddah, Dissei (Dahlak Archipelago), and Aden (coll. Wils).

C. namocanus s.s. occurs in the western Indian Ocean from Mozambique to Oman, around Madagascar and the Mascarenes (fig. 172).

We are grateful to Mr. W. F. Hoffmann for donating specimens to ZMA.

baileyi
figs. 177, 189

Conus baileyi Roeckel & Da Motta, 1979, La Conchiglia 11 ("124-125", error for 126-127): 9, with ill.

Type. – The holotype is present in MHNG, ex coll. Röckel; the measurements are 29.2 x 13.8 mm (fig. 189). Nine more specimens were mentioned and figured with the original description.

Type locality. – 'dredged in depths of about 60 fathoms in rubble and sandy bottom, off Russel Island, Solomon Sea.'

Remarks. – In recent years a number of related Conidae was described from deeper water between southern Japan and the Philippines: *Conus wakayamaensis* (Kuroda, 1956); *C. memiae* (Habe & Kosuge, 1970), syn. *C. adonis* Shikama, 1971; *C. otohimeae* Kuroda & Ito, 1971, and *C. aphrodite* Petuch, 1979. *C. baileyi* also belongs to this species group; the original authors stated that in appearance it is close to *C. memiae*. According to Walls (1980: 3) *C. baileyi* is a junior synonym of *C. memiae*, because the minor differences may fall within the range of variation of a single species. We found that the graph of the length/width ratio in Röckel & Da Motta is not sufficiently significant to prove a distinction between both nominal species; in addition this graph has not been plotted correctly.

The present authors have studied the holotype of *C. baileyi* (fig. 189); we have seen too little material in this complex to give a definite opinion about its taxonomic status. On account of the distinct ranges of *C. memiae* and *C. baileyi* (fig. 177), the latter is provisionally considered a valid species.

The name *C. baileyi* should not be confused with *C. baylei* Jousseaume.

Distribution. – Next to the type locality, *C. baileyi* is recorded from the Capricorn Channel, Queensland, by Coucom (1980: 1).

The authors are grateful to Dr. D. Röckel for the loan of the type specimen.

bairstowi
figs. 172, 194-196

Conus bairstowi Sowerby III, 1889, J. Conch. Lond. 6: 9, pl. 1 fig. 12

Type. – The holotype was in the S.D. Bairstow collection, which is kept in the Oxford University Museum (Barnard, 1951: 52). A request to borrow the type remained unanswered. The type figure is reproduced here (fig. 195); the dimensions are 50 x 27 mm.

Type locality. – 'Port Elizabeth, South Africa'.

Remarks. *Conus bairstowi* is a valid species. The shell is white with spiral rows of squarish brown dots, and a brown base (figs. 195-196). In other specimens the dots on the body whorl unite axially, resulting in a flame pattern (fig. 194).

Distribution. – No live collected specimens are known. Empty shells are rarely found on the South African coast east of Cape Agulhas to Transkei (fig. 172). ZMA has specimens from Port Elizabeth and Jeffreys Bay. We have studied shells from New Brighton Beach near Port Elizabeth, East London (in Natal Museum), and Algoa Bay (coll. Wils).

Our thanks are due to Mr. R. N. Kilburn (Natal Museum) for the loan of specimens.

bajanensis
figs. 96, 190

Conus bairstowi Sowerby III, 1889, J. Conch. Lond. 6: 9, pl. 1 fig. 12

Type. – A holotype was not designated with the original description; however, Usticke (1971: 20) mentioned a 'holotype' (actually a lectotype) in a later publication, with 'length 32 mm, greatest width 18 mm'. Presently this specimen is in AMNH (no. 195451); the exact measurements are 31.4 x 17.8 mm (fig. 190).

Type locality. – 'Found by Bajan shrimpers S. of Barbados'.

Remarks. – For the validity of the taxa described by Usticke, we refer to the introduction of the 4th part in this series (Basteria 45: 3, 1981).

We have studied the 'holotype' of *Conus bajanensis* (fig. 190), and compared it to the type material of *C. guyanensis* Van Mol, 1973, which is a junior synonym. *C. bajanensis* is considered a subspecies of *C. armiger* Crosse, 1858, discussed before (vide Basteria 45: 21, fig. 136, 1981).

Distribution. – ZMA and RMNH have specimens of *C. armiger bajanensis* from off Surinam (fig. 96).

The authors are grateful to Dr. E. Gittenberger (RMNH) and Mr. W. E. Old (AMNH) for the loan of type material.

balteatus
figs. 173, 198-201

Conus balteatus Sowerby I, 1833, in Sowerby II, Conch. Ill. (Conus): 3, pl. 37 fig. 58

Type. – The holotype is not in BMNH and must be considered lost. The type figure is reproduced here (fig. 198); the dimensions are 32 x 20 mm.

Type locality. – Not mentioned; we herewith designate the Mascarenes type locality.

Remarks. – Sowerby dit not supply a description for this species. He only indicated that it is 'probably a variety of *C. lividus*'. Presently *C. balteatus* is considered a valid species, distinct from *C. lividus* Hwass, 1792, by spiral grooves on the body whorl, whereas *C. lividus* has spiral rows of granules. Typical shells of *C. balteatus* from the Mascarenes are white with two chocolate brown bands on the last whorl, bulbous shaped and narrower towards the base (figs. 198-199). The apex is red; inside of aperture violet.

Specimens from Indonesia (figs. 200-201) and the W. Pacific have a straight and more brown body whorl, but the nodules on the shoulder and the spire are always white. A subspecific relation may be suggested.

Distribution. – Known from the Mascarenes and the Maldives in the Indian Ocean, around Indonesia, and in the tropical West Pacific from S. Japan to northern Australia and Fiji (fig. 173). ZMA has specimens from Mauritius, Indonesia (Djakarta Bay, Roti Id., and the Moluccas), and the Philippines. We have studied material from Sumatra (Nias and Tapa Tuan) in RMNH, the Loyalty Islands (ZMUC), and from the Maldives, Okinawa, Marinduque (Philippines), Rabaul, and Broome (Australia) in coll. Wils.

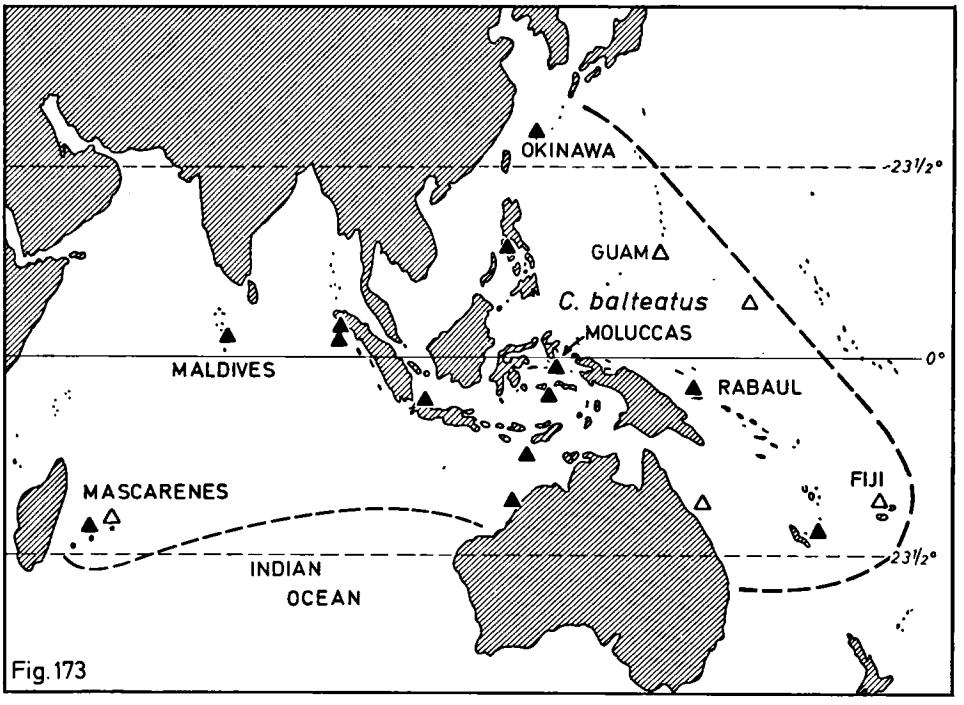

Fig. 173. Distribution of *Conus balteatus*.

balteus
fig. 202

Conus balteus Wood, 1828, Suppl. Index Testac.: 8, pl. 3 fig. 5

Type. – The holotype was originally in the cabinet of Mrs. Mawe; the present whereabouts are unknown. The type figure is reproduced here (fig. 202). The original figure of the shell measures only 15 mm, but the indication 'a +' means that the specimen is 1½ inch long (about 38 mm).

Type locality. – 'U'. (= Unknown).

Remarks. – Wood did not give a description of *Conus balteus*; he only wrote that the shell is 'girdled'. The main colour is chocolate brown.

C. balteus has often been considered the first name for *C. cuneolus* Reeve, 1843; however, because of its large size this can be hardly correct. *C. venulatus* Hwass, 1792, and *C. nux* Broderip, 1833, have also been suggested to be conspecific with *C. balteus*. We have studied specimens of *C. ateralbus* Kiener, 1845, which in size and pattern are close to *C. balteus*.

Since there is no type specimen of *C. balteus*, no type locality, no description, and because the minute type figure may represent several species, we consider *C. balteus* a nomen dubium.

bandanus
figs. 174, 204-206

Conus bandanus Hwass in Bruguière, 1792, Encycl. Méth.: 611, no. 5

Type. – The type specimen, figured in the Tableau Encyclopédique vol. 23 (1798: pl. 318 fig. 5), is present in MHNG (no. 1107/10); the dimensions are 77 x 45 mm. This shell was considered the holotype by Kohn (1968: 443-444, pl. 3 fig. 18), and correctly designated lectotype by Walls (1979: 695).

Type locality. – 'l'isle de Banda, l'une des Moluques' (the island of Banda, one of the Moluccas).

Remarks. – Although a very common shell with a wide distribution, the status of *Conus bandanus* and its relation to *C. marmoreus* Linné, 1758, has been a matter of discussion for many years. They are considered distinct species (Cernohorsky, 1964: 69), synonyms (Walls, 1979: 695), or *C. bandanus* is considered a colour form (Wagner & Abbott, 1978: 25-022). For reasons given by Kohn (1968) and Johnson (1977: 4), in addition to the distribution of both taxa (fig. 174), we consider *C. bandanus* a valid species. The species complex of *C. marmoreus* and *C. bandanus* contains more taxa, of which only these two may reach a size of over 8 cm, to a maximum of 13 cm.

The shell of *C. bandanus* is characterized by two darker bands in the marmorated pattern (fig. 204), but the name 'bandanus' was given after its type locality. When these bands are becoming wider, the shell has a darker appearance (fig. 205). The name *'C. nocturnus'* is incorrectly used for these specimens, but *C. equestris* (Röding, 1798) seems to be the valid name. We consider it the dark colour form of *C. bandanus*. In the type specimen of *C. nocturnus* Lightfoot, 1786, including its granulated forma *deburghiae* Sowerby II, 1857-1858, the body whorl is convex above and concave at the base, giving the shell a pyriform shape. The outline of the last whorl in *C. equestris* is straight; the largest specimen in ZMA measures 69 mm.

The populations of *C. bandanus* from East Africa may show a distinct pattern. Juvenile shells from the Philippines are sometimes confused with *C. vidua* Reeve, 1843. Granulated shells of *C. bandanus* are known; ZMA has one specimen from the island of Florida (Solomon Is.)

A dwarf subspecies of *C. bandanus* (adult shells with an average length of 4 cm to a maximum of 6 cm, see Purtymun, 1977: 3, with fig.) occurs at Samoa (fig. 206). The colour pattern in these specimens varies to very dark and almost completely black; they were described as *C. nigrescens* Sowerby II, 1859.

Distribution. – The range of *C. bandanus* covers a very large area in the tropical Indo-Pacific from East Africa (south of Kenya to Mozambique, and Madagascar) as far east as Hawaii and the Tuamotu Archipelago, except the coast of India and Ceylon (fig. 174). The distribution of *C. marmoreus* is more restricted; this species does not live in East Africa, Thailand, Hawaii or French Polynesia, but it does occur on the coast of Queensland where *C. bandanus* is not found (fig. 174).

ZMA has specimens of *C. bandanus* from Tanzania (Tanga, Zanzibar, Dar-es-Salaam), the Philippines (Cebu, Palawan, Sulu Archipelago), North Borneo (Mandi Darrah Id.), Indonesia (Banda, Amboina, Moluccas, Flores, Timor, Schouten Is.), Admiralty Is. (Manus), and Solomon Is. (Florida, Ata'a Malaita). In addition we have studied material from Butung and Alor Id. (Indonesia) in RMNH, and from Nosi Bé (Madagascar) in coll. Wils.

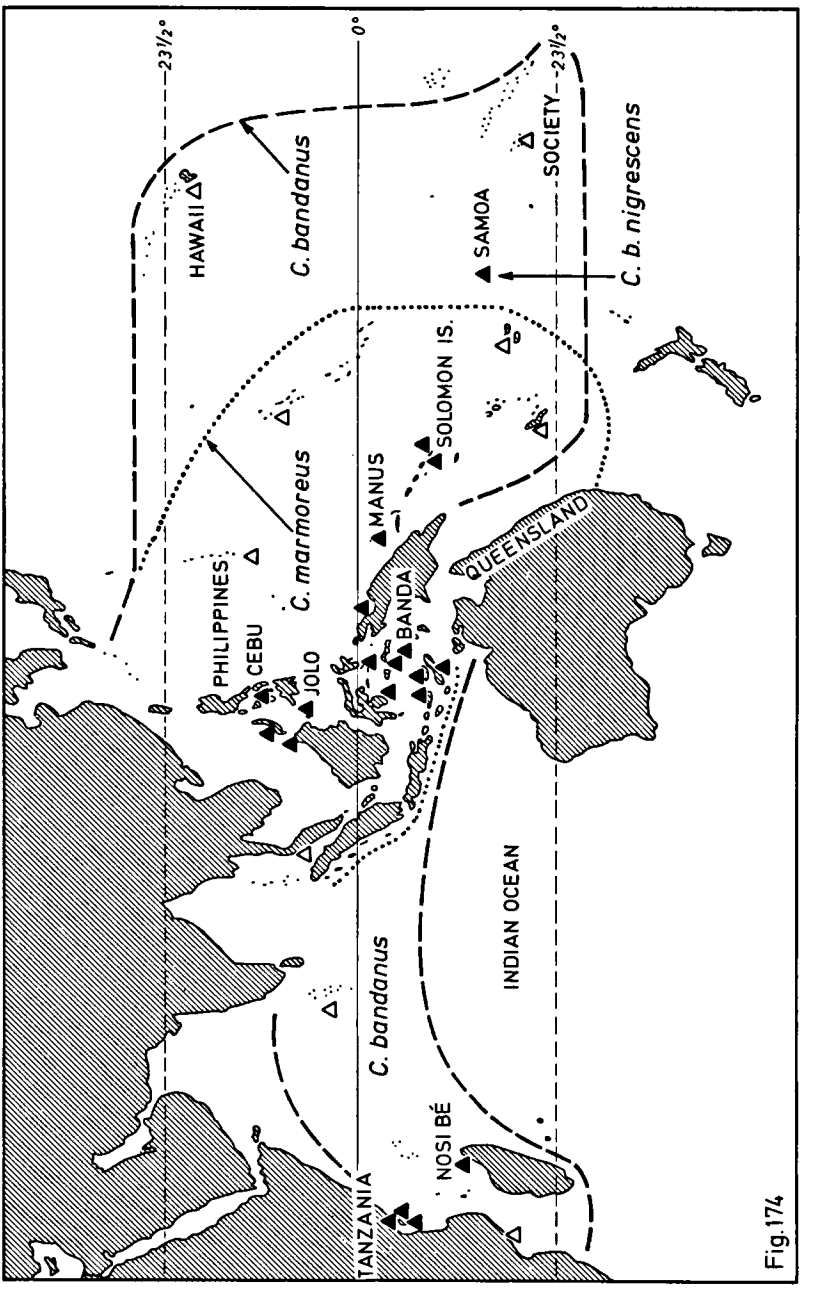

Fig. 174. Distribution of *Conus bandanus* (broken line), compared to the distribution of *C. marmoreus* (dotted line). The locality data refer to *C. bandanus* only.

The colour form *equestris* (= 'nocturnus' of authors, non Lightfoot) is restricted to the Moluccas (many specimens in ZMA from several islands), and sympatric with the nominate form.

The subspecies *C. bandanus nigrescens* is restricted to Samoa (fig. 174).

The authors are grateful to Mrs. G. Pini, Mrs. Th. Whitehead, and Mr. A. Rombouts about information on the distribution of *C. bandanus* and *C. marmoreus* in Queensland.

bandatus
fig. 203

Conus bandatus Perry, 1811, Conchology: pl. 25, no. 4

Type. – The holotype, figured by Perry, is lost. The type figure is reproduced here (fig. 203); the dimensions are 44 x 33 mm.

Type locality. – Not mentioned.

Remarks. – This shell is unrecognizable, because the author only gives a short description ('Shell white, and banded with red and blue streaks placed transversely and alternately; the mouth white'), with a poor figure (fig. 203) and no locality.

For these reasons we consider *Conus bandatus* a nomen dubium.

barathrum

figs. 207-208

Cucullus barathrum Röding, 1798, Mus. Bolten. 2: 43, no. 548/59

Type. – Röding studied one specimen in the Bolten collection, which must be considered lost. Kohn (1975: 196-197, pl. 1 fig. 10) has designated a lectotype; it is the shell figured in Martini (1773: pl. 55 fig. 607). The type figure is reproduced here (fig. 207); the dimensions are 60 x 33 mm.

Type locality. – Not mentioned by Röding. Martini (1773: 250) listed 'St. Croix', 'Guinea' and 'spanischen Amerika'. We herewith designate St. Croix, Virgin Islands, type locality for *C. barathrum*.

Remarks. – Röding named this species 'Die weitmündige Tute' (the Cone with the wide aperture).

According to Kohn (l.c.) the type figure of *C. barathrum* 'most probably represents a specimen of *C. testudinarius* Hwass, 1972'; he therefore tentatively concluded it to be a junior synonym of that species.

We have studied the type figure and the other figures in Martini (1733: 248-250, pl. 55 figs. 603-604, 606-607), and compared these with his text. Martini stated that these four figures represent two species, which is correct. Figs. 603 and 604 show *C. ermineus* Born, 1778 (syn. *C. testudinarius*), whereas figs. 606 and 607 depict *C. spurius* Gmelin, 1791. The three localities listed by Martini (see above) are in accordance with the distribution of *C. ermineus* (both sides of the tropical Atlantic) and *C. spurius* (West Indies).

Our conclusion is that *C. barathrum* is a colour form of *C. spurius*, which form was described later as *C. ochraceus* Lamarck, 1810. In the shell of *C. spurius* forma *barathrum*

most of the dots have merged into large irregular areas (figs. 207-208) of an ochre colour. In *C. spurius* s.s. the shell is covered with many dotted rows (figs. 144, 149, 214).

ZMA has specimens of *C. spurius* forma *barathrum* from St. Croix (the type locality), and from the West Indies in general.

barbadensis
fig. 209

Conus barbadensis Hwass in Bruguière, 1792, Encycl. Méth.: 632, no. 29

Type. – A lectotype was designated by Kohn (1968: 444, pl. 3 fig. 19) from the Hwass collection in MHNG (no. 1106/47); the dimensions are 29 x 19½ mm (fig. 209).

Type locality. – 'les côtes de l'isle de la Barbade, de la Guadeloupe & de St. Domingue' (the coasts of the islands Barbados, Guadeloupe and Santo Domingo), see below.

Remarks. – Hwass recognized two varieties in *Conus barbadensis*. The lectotype belongs to var. A, the specimen is conspecific with *C. miliaris* Hwass, 1792. We agree with Kohn that *C. barbadensis* is just a junior synonym of this common Indopacific species.

The variety B of *C. barbadensis* is not an Indopacific species, but hails from the West Indies. This explains the name *C. barbadensis*, after Barbados, one of the islands from the type locality. *C. barbadensis* var. B. is considered a junior synonym of *C. mus* Hwass, 1792.

Dr. Cl. Vaucher (MHNG) has kindly sent us a photograph of the lectotype.

barbara
fig. 210

Conus barbara Brazier, 1898, Proc. Linn. Soc. N.S.W. 22: 781

Type. – The holotype is present in the South Australian Museum (no. D. 6176), ex collection A. F. Kenyon; the measurements are 40.1 x 20.3 mm (fig. 210).

Type locality. – 'Solomon Islands'.

Remarks. – The shell was not figured by the original author, who compared it to *C. achatinus* Gmelin, 1791. The type specimen of *C. barbara* was studied and figured by Cotton (1944: 242, pl. 4 fig. 2); he considered it a worn and damaged shell of *C. monachus* Linné, 1758. The present authors have studied the holotype (fig. 210) and agree with Cotton that *C. barbara* is a junior synonym of *C. monachus*, which species is known from the Solomon Islands.

We are grateful to Dr. W. Zeidler (SAM) for the loan of the type specimen.

barthelemyi
figs. 175, 211

Conus barthelemyi Bernardi, 1861, J. Conchyl., Paris 9: 285-286;
ibid. 10 (1862): 46-47, pl. 1 fig. 12

Type. – The holotype is in the National Museum of Wales, Cardiff, ex coll. Liénard; the dimensions are 70 x 37 mm.

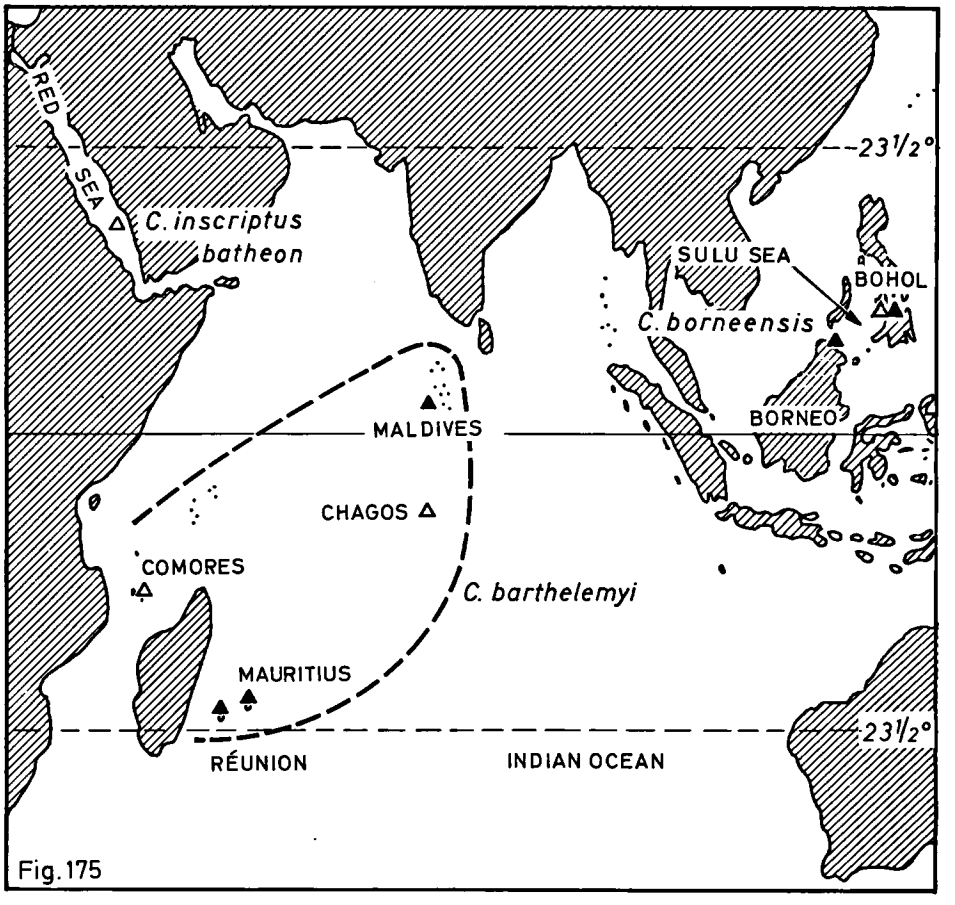

Fig. 175. Distribution of *Conus barthelemyi*. Known localities of *C. inscriptus batheon* and *C. borneensis*.

Type locality. – In 1861: 'les six îles, archip. Chagos', and in 1862: 'les îles de l'Archipel Chagos ou Diego Garcia (mer des Indes)', (the six islands of the Chagos or Diego Garcia Archipelago in the Indian Ocean).

Remarks. – *Conus barthelemyi* is a valid species. The large and heavy shell is easily recognized by its brownish red to orange colour, with dark spots on the spire and last whorl (fig. 211). In some specimens from the Comoros and Mauritius the dark spots on the body whorl are missing. *C. paradiseus* Shikama, 1977, described from the Indian Ocean, is a junior synonym.

C. gauguini Richard & Salvat, 1973, from the Marquesas Islands, has a salmon-coloured shell without spots on the last whorl, but is otherwise almost identical to *C. barthelemyi*. Richard (1981: 12), after comparing more than twenty shells of *C. gauguini* to over fifty specimens of *C. barthelemyi*, considers both names not to be synonyms, although some other authors prefer to do so. A subspecific relation may be considered.

Distribution. *C. barthelemyi* is known only from some island groups in the western Indian Ocean (fig. 175) at depths of about 20-40 m. Next to the type locality the species is reported from the Mascarenes (Clover, 1971: 12; Walls, 1979: 145), and the Comoros (Fair, 1974: 10). We have studied specimens from Réunion (ZMA), Mauritius (coll. Wils), and the Maldives (coll. Röckel).

bartschi

figs. 90, 176, 212

Conus bartschi Hanna & Strong, 1949, Proc. Calif. Acad. Sci. (4) 26: 271, pl. 5 fig. 5

Type. – The holotype is in the collection of the California Academy of Sciences (Dept. Geol. no. 9296); the measurements are 49.7 x 30.7 mm (fig. 212). For a colour figure see Hanna (1963: pl. 6 fig. 3).

Type locality. – 'dredged off Cape San Lucas, Lower California, in 20-25 fms'.

Remarks. – *Conus bartschi* is considered a junior synonym of *C. brunneus* Wood, 1828, by Keen (1971: 661) and by Wagner & Abbott (1978: 25-012). However, we agree with Wils c.s. (1969-1973: 49), Kerstitch (1979: 38-41) and Walls (1979: 203) that they represent two distinct species. We have studied the type specimen of *C. bartschi* (fig. 212); the whorls of the spire do not have the strong spiral grooves which are present in *C. brunneus* (figs. 266-267).

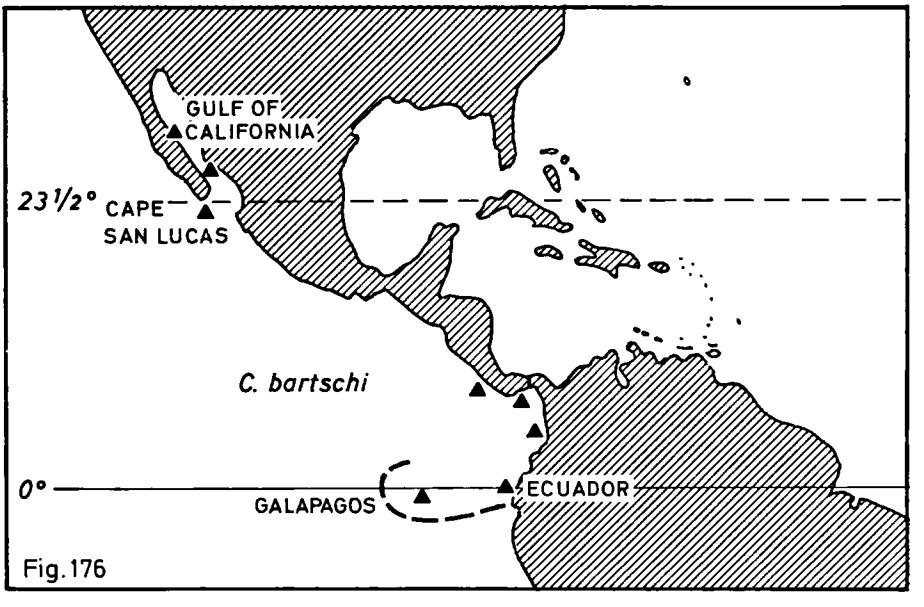

Fig. 176. The disjunct distribution of *Conus bartschi*.

Tucker (1979: 43) favours the opinion that *C. interruptus* Wood, 1828, might be the first available name for *C. bartschi*, instead of being a junior synonym of *C. varius* Linné, 1758. This matter will be discussed later in this series.

Conus andrangae Schwengel, 1955 (vide Basteria 44: 36, fig. 90) is a junior synonym of *C. bartschi*.

Distribution. – *C. bartschi* is an uncommon species from subtidal water (10-70 m) in the tropical Eastern Pacific (fig. 176), concentrated in two areas: the Gulf of California, and from Costa Rica to Ecuador (1° S). Next to the holotype, we have studied specimens from the Gulf of California, Costa Rica, Panama, Colombia, Ecuador, and the Galapagos Islands (all in Los Angeles County Museum of Natural History).

Our thanks are due to Dr. B. Roth (California Academy of Sciences) for the loan of the holotype.

batheon

figs. 175, 213

Conus planiliratus Sowerby III var. *batheon* Sturany, 1904, Denkschr. k. Akad. Wiss. Wien 74 (Exped. 'Pola' Rothe Meer): 227-228, pl. 4 figs. 6a-c, 7a-b

Type. – The type lot consisted of five shells, of which two were figured by Sturany. We herewith designate the specimen of pl. 4 fig. 6a-c lectotype of *Conus batheon*; the dimensions are 36 x 18½ mm. The type figure is reproduced here (fig. 213). The dimensions of the four paralectotypes are 38½ x 22, 40 x 20, 41 x 22, and 44½ x 21 mm. The whereabouts of the type material of *C. batheon* are unknown. Dr. E. Wawra informed us (in litt.) that the specimens could not be traced in the Naturhistorisches Museum at Vienna.

Type locality. – 'Von den Stationen 127, 128, 143, 145 (212-800 m)'. Pola Expedition. The station numbers are all situated in the vicinity of the Dahlak Archipelago, southern Red Sea.

Remarks. – Sturany described *C. batheon* as a deepwater variety of *C. planiliratus* Sowerby III, 1870 (non *planiliratus* Sow. II, 1850) = *C. maculospira* Pilsbry & Johnson, 1921, new name.

We agree with Sturany that *C. batheon* belongs to the species complex of *C. inscriptus* Reeve, 1843, together with *C. maculospira* and *C. adenensis* (vide Basteria 43: 82, 101 middle fig.). The shell of *C. batheon* is more bulbous than that of *C. inscriptus*, and the last whorl is covered with many spiral ridges (fig. 213). The colour pattern of *C. batheon* consists of dark yellow dots on a pale yellow or white base, mainly on the body whorl, and also on the spire. Aperture white.

Description, type figures and the distinct range have led us to conclude to a subspecific status: *C. inscriptus batheon*.

Distribution. – The subspecies is known from between 200-800 m depth in the southern Red Sea (fig. 175). *C. inscriptus* s.s. occurs along the coast of the Indian Ocean from Natal to Thailand.

bayani
figs. 177, 215-217

Conus bayani Jousseaume, 1872, Rev. Mag. Zool. (2) 23: 200-202, pl. 18 fig. 1

Type. – The holotype is present in MNHN; the correct measurements are 51 x 24 mm (Jousseaume: 55 x 23 mm). The type figure is reproduced here (fig. 215).

Type locality. – 'Bourbon' (= Réunion). Jousseaume stated that he found this shell in a collection from Bourbon and neighbouring islands. This locality is sometimes doubted (Kohn, 1978: 304), because the label of the holotype indicates 'Bourbon? Madagascar?'.

Remarks. – We have studied the type specimen and conclude that *Conus bayani* is a valid species. The pattern on the body whorl is variable (figs. 215-217), but the base is always white. The author mentioned that the shell is very light in weight. In this character *C. bayani* is distinct from the sturdy shells of *C. monile* Hwass, 1792, and *C. generalis* Linné, 1758; the last mentioned has a dark base.

Distribution. – *C. bayani* is known from moderately deep water (20-100 m) in the Indian Ocean around India and Ceylon, and from the southern Red Sea (fig. 177). Locality data from 'Taiwan' are based on misidentifications. Next to the holotype we have studied

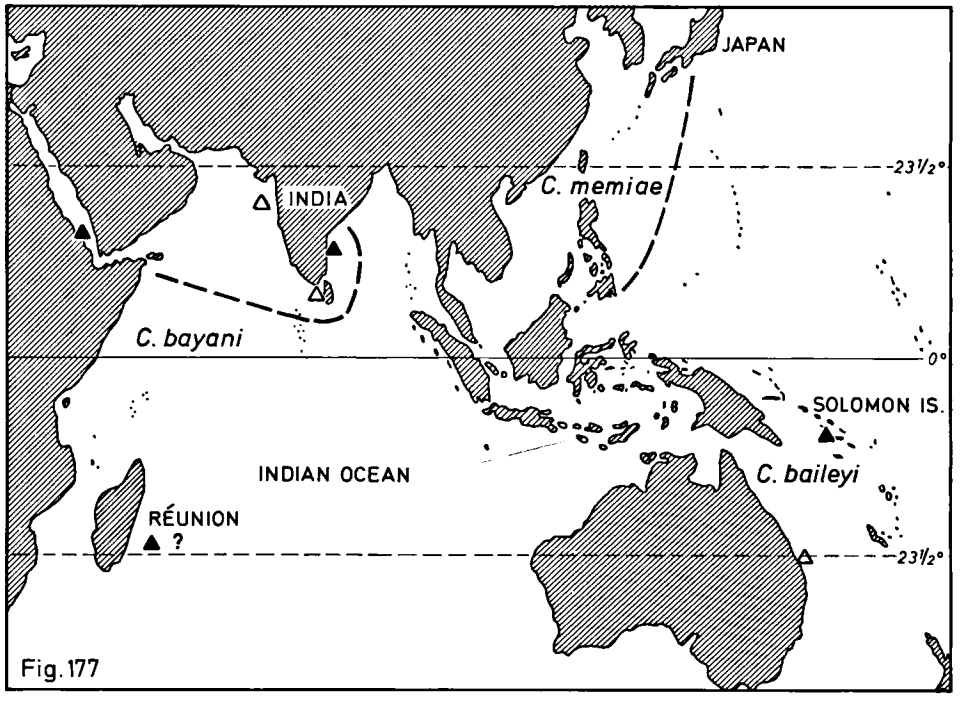

Fig. 177. Distribution of *Conus bayani*. Known localities of *C. baileyi* compared to the distribution of *C. memiae*.

specimens from off Madras, India (ZMA), and the island Um es Sarig, Erithraea (cf. Mienis, 1978).

The authors are grateful to Dr. G. Richard (MNHN) for his aid, and to Mr. H. K. Mienis, (HUJ) for the loan of a specimen.

baylei
fig. 214

Conus baylei Jousseaume, 1872, Rev. Mag. Zool. (2) 23: 198-200, pl. 18 fig. 2

Type. – The holotype (fig. 214) is present in MNHN; the exact measurements of the shell are 31.0 x 17.1 mm (Jousseaume: 32 x 17 mm).

Type locality. – Not mentioned.

Remarks. – We have studied the type specimen, from which must be concluded that *Conus baylei* is a junior synonym of *C. spurius* Gmelin, 1791, from the West Indies.

The name *baylei* should not be confused with *C. baileyi* Röckel & Da Motta.

Our thanks are due to Dr. Ph. Bouchet (MNHN) for the loan of the type specimen.

beckeri
fig. 284

Conus beckeri Sowerby III, 1911, Proc. malac. Soc. Lond. 9: 352, ill.

Type. – The holotype is present in BMNH (no. 1911.8.21.1); the measurements are 50 x 27 mm (fig. 284). The whereabouts of the malformed paratype, with raised spire, are unknown.

Type locality. – 'St. Francis Bay, South Africa'.

Remarks. – After studying the holotype we agree with Kilburn (1971: 43-44) that *Conus beckeri* is a junior synonym of *C. pictus* Reeve, 1845. The type locality of *C. beckeri* is within the known range of *C. pictus*, from Jeffreys Bay to East London, S. Africa.

The authors are grateful to Dr. J. D. Taylor (BMNH) for providing photographs of the holotype.

beddomei
figs. 178, 253-256, 282

Conus beddomei Sowerby III, 1901, J. Malac. 8: 101, pl. 9 fig. 1

Type. – The holotype is in BMNH (no. 1902.5.28.65); the measurements are 27 x 16 mm (fig. 282).

Type locality. – 'West Indies', herewith restricted to the Grenadines, Lesser Antilles.

Remarks. – For a long time the holotype was the only known specimen. On account of the type locality, *Conus beddomei* was placed in the synonymy of *C. jaspideus* Gmelin, 1791, by both Clench (1942: 10) and Abbott (1958: 88).

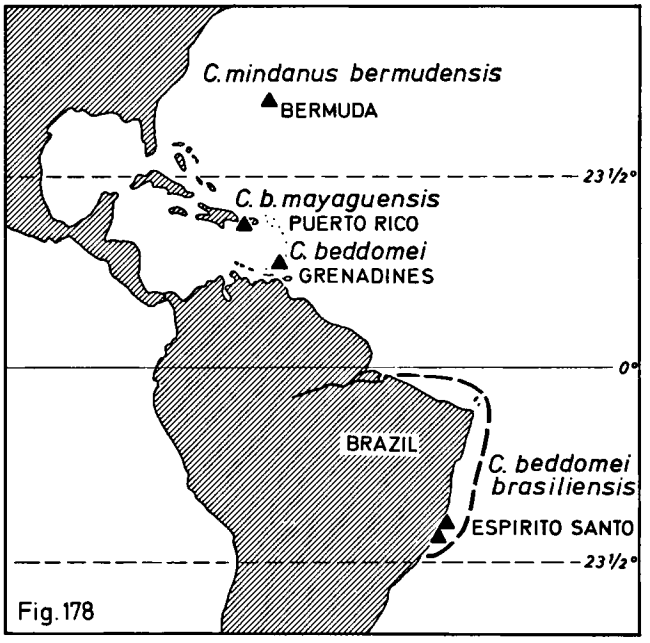

Fig. 178. Distribution of the *Conus beddomei* complex, and the restricted range of *C. mindanus bermudensis*.

In recent years some specimens of *C. beddomei* were recorded from the Grenadines (Petuch & Anders, 1979: 61, fig), misidentified as '*C. couderti*'. At these islands more shells were collected and discussed by Vink (1980: 3-4, figs. 1-2), who recognized the separate identity of *C. beddomei*.

The present authors have studied the material of Mr. Vink (fig. 253) and compared the shells with the faded holotype of *C. beddomei* (fig. 282); we agree that they are conspecific. *C. beddomei* is considered a valid species.

Walls (1979: 210) placed *C. brasiliensis* Clench, 1942, in the synonymy of *C. beddomei*. The shell pattern of *C. brasiliensis* is variable (figs. 254-256), and some specimens exhibit zigzag stripes close to those of *C. beddomei*. A subspecific relation is suggested, in which *C. beddomei* is the oldest name and thus the nominate.

C. mayaguensis Usticke, 1968, from the southwest coast of Puerto Rico also belongs to this species complex (Van Mol, Tursch & Kempf, 1967: 237-238).

Distribution. -- As far as known *C. beddomei* s.s. lives in shallow water near coral reefs at Grenada and the Grenadines, Lesser Antilles (fig. 178). We have studied specimens from two islands of the Grenadines (ZMA and coll. Vink).

The authors are grateful to Dr. J. D. Taylor (BMNH) for the photographs of the holotype, to Mr. D. L. N. Vink (Wassenaar) for his information and donation of material, and to Dr. F. Sander (Bellairs Institute, Barbados) for a fine specimen of *C. beddomei* from Mustique.

bengalensis
figs. 172, 218

Darioconus bengalensis Okutani, 1968, Venus 26: 66-69, pl. 7 fig. 2

Type. – The holotype was tentatively preserved in the Tokai Regional Fisheries Research Laboratory at Tokyo. Dr. T. Okutani informed us (in litt., 1982) that the specimen is now deposited in the National Science Museum at Tokyo (no. NSMT Mo.-59973). The dimensions are 96.7 x 31.1 mm.

Type locality. – 'Bay of Bengal, about 50 m in depth'.

Remarks. – *Conus bengalensis* is considered a valid species (fig. 218). The shell is more slender than that of *C. gloriamaris* Chemnitz, 1772 (from the Western Pacific), whereas *C. milneedwardsi* Jousseaume, 1894 (East Africa to western India), is distinguished by its higher spire.

Distribution. – The Bay of Bengal and Andaman Sea (fig. 172), in deeper water. We have studied specimens from the Andaman Sea, N.E. of Port Blair (ZMA), and from off Burma (RMNH, and coll. Wils).

benten
fig. 224

Textilia dusaveli benten Shikama & Oishi, in Shikama, 1977, Science Rep. Yokohama natn. Univ. (II) 24: 21, pl. 4 figs. 4a-b, pl. 5 fig. 9

Type. – The holotype was in the Shikama collection and will be deposited in the Kanagawa Prefectural Museum at Yokohama; the dimensions are 78.8 x 29.5 mm. The type figure is reproduced here (fig. 224).

Type locality. – 'Off Senkaku Island, East China Sea', N.E. of Taiwan.

Remarks. – *Conus dusaveli* (H. Adams, 1872) is smaller (length of type specimen 50.7 mm) and has a relatively higher spire than the holotype of *C. benten*. The type locality of *C. dusaveli*, 'Mauritius, gained from the stomach of a fish in 60 fathoms', is dubious. It is suggested (Janowsky, 1979: 8) that the type specimen of *C. dusaveli* is a subadult shell, whereas *C. benten* is fully adult.

We consider *C. benten* a junior synonym of *C. dusaveli*.

In recent years more specimens were collected in deeper water (50-200 m) off Cebu, Philippines (coll. R. & S. Martin), and Okinawa, Ryukyu Archipelago.

berdulinus
figs. 182, 220-221

Conus berdulinus Veillard, 1972, Sea and Shore 3: 176-177, with figs.

Type. – The holotype is in MNHN; the measurements are 68.3 x 36.3 mm (fig. 220).

Type locality. – 'off the coast of Reunion, near the port of Pointe des Galets'. Habitat: 'slimy sand – depth of 140 meters'.

Remarks. – We have studied the holotype (fig. 220). The base of the shell is slightly damaged, so the length was somewhat larger (Veillard: 70 x 37 mm). The specimen was live collected, the colour of the animal is red brown, the length of the operculum 11 mm, according to the original author. Presently only the shell is available for study, the periostracum was removed before the shell was donated to the Paris museum in 1978.

Veillard described the shell very briefly and his figures are vague. He stated that the shape of *Conus berdulinus* is identical to that of *C. virgo* Linné, 1758. We can add to the description that the last whorl of *C. berdulinus* is smooth and shiny. At the shoulder edge of the body whorl a very fine whitish spiral cord is present. The spire has a bluish apex, the earlier whorls are white and coronated; the other whorls are concave and smooth with only growth-lines visible, not coronated and of the same colour as the last whorl. Aperture very pale mauve, but not white. *C. berdulinus* is considered a valid species.

Distribution. – Except for the type locality, hardly any records are available (fig. 182). We have studied a specimen (fig. 221) from off Madras, which is considered conspecific (cf. Röckel, 1980: Nr. 68).

Specimens of '*C. berdulinus*' from the Philippines are *C. kintoki* (vide Coomans & Moolenbeek, 1982: 136-137).

Our thanks are due to Dr. Ph. Bouchet (MNHN) and to Dr. D. Röckel for the loan of specimens.

bermudensis

figs. 178, 222

Conus bermudensis Clench, 1942, Johnsonia 1 (6): 34-35, pl. 13 fig. 4

Type. - The holotype is in MCZ (no. 141965); the measurements are 43.1 x 23.0 mm (fig. 222). Clench also mentioned paratypes, of which three are present in MCZ (no. 146895), with measurements: 48.0 x 26.1, 46.6 x 25.0, and 45.6 x 24.6 mm.

Type locality. – 'Dyer Island, Bermuda'.

Remarks. – We have studied the type material, and conclude that *Conus bermudensis* must be considered a subspecies of *C. mindanus* Hwass, 1792 (vide Basteria 43: 88-89, 1979). The subspecies *bermudensis* is distinct from the nominate form by its paler colour and larger size; the length of the shell is up to 56 mm.

Clench (1942: 33-36) also described *C. bermudensis lymani* from Florida; the holotype has a length of 34 mm. We consider *C. lymani* a junior synonym of *C. mindanus*, since description, length, and distribution fully agree with *C. mindanus* s.s.

Distribution. – *C. mindanus bermudensis* is only known from the Bermuda Islands (fig. 178). Clench states that one specimen of the type material of *C. agassizii* Dall, 1886, also belongs to *C. bermudensis*. This shell measures 45 x 23 mm and was found at Bermuda.

The authors are grateful to Dr. K. J. Boss and Mr. D. L. MacHenry (MCZ) for the loan of the type material.

bernardii
figs. 225-226

Conus bernardii Kiener, 1845, Coquilles vivantes 2: 220-221, pl. 100 fig. 2

Type. – The holotype was in the collection of A. C. Bernardi, but its present whereabouts are unknown. The type figure is reproduced here (fig. 225); the dimensions are 44 x 20 mm.

Type locality. – Not mentioned.

Remarks. – *Conus bernardii* is generally considered a colour form of *C. cinereus* Hwass, 1792. The shell of *C. bernardii* is brownish yellow to brown with a few whitish spots, whereas *C. cinereus* is bluish grey with brown markings. Tucker (1980b) distinguished these as two valid species, mainly because 'the spiral grooves on the spire whorls of *C. cinereus* are lost at an early growth stage (after the third of fourth whorl) whereas they are persistent in *C. bernardii*'. However, spiral grooves are not visible on the type figure (fig. 225) and are not mentioned by Kiener in the description. ZMA has a specimen of *C. bernardii* (fig. 226) almost identical to the type figure, also without grooves on the spire. Regarding the colour pattern, we have studied intermediates between *C. cinereus* and *C. bernardii*. Therefore the status of a form seems to be correct: *C. cinereus* forma *bernardii*.

In the Philippines and Indonesia *C. cinereus* is found together with the forma *bernardii*. ZMA has specimens of forma *bernardii* from the Moluccas, Amboina, and Timor.

We are grateful to Mr. A. d'Attilio, for providing us with a copy of Tucker's publication.

betulinus
figs. 61, 179, 219

Conus betulinus Linné, 1758, Syst. Nat. 10 ed., 1: 715, no. 266

Type. – The holotype is present in the Linnean collection at London; the shell measures 101 x 67 mm and was illustrated by Kohn (1963: 746, pl. 1 fig. 6).

Type locality. – Not mentioned. We herewith designate the island of Java, Indonesia, type locality of *Conus betulinus*.

Remarks. – *C. betulinus* is a valid species. The large shell is well known (fig. 219); it may reach a length of 177 mm. The maculated pattern is variable, in which Dautzenberg (1906: 27; 1937: 48-50) recognized six varieties. These must be considered colour forms only; the forma *alternans* Dautzenberg was discussed before (Basteria 44: 22, fig. 61, 1980).

Distribution. – *C. betulinus* is a common species in the Indian Ocean (fig. 179), and via Indonesia to S. Japan, rare near New Guinea and eastern Queensland; it does not occur in the Red Sea.

ZMA has specimens from Mozambique (Inhaca Id.), Somalia (Djibouti), Oman (Muscat), Ceylon, Sumatra (Tjalang, Idi), Java (P. Panaitan, Sunda Straits, Tjilauteurun, Bay of Prigi), Borneo (Balikpapan), Celebes (Makassar), and Moluccas (Batjan, Amboina). In RMNH there are specimens from Aden, Madagascar (Nosi Bé), and Indonesia (Madura,

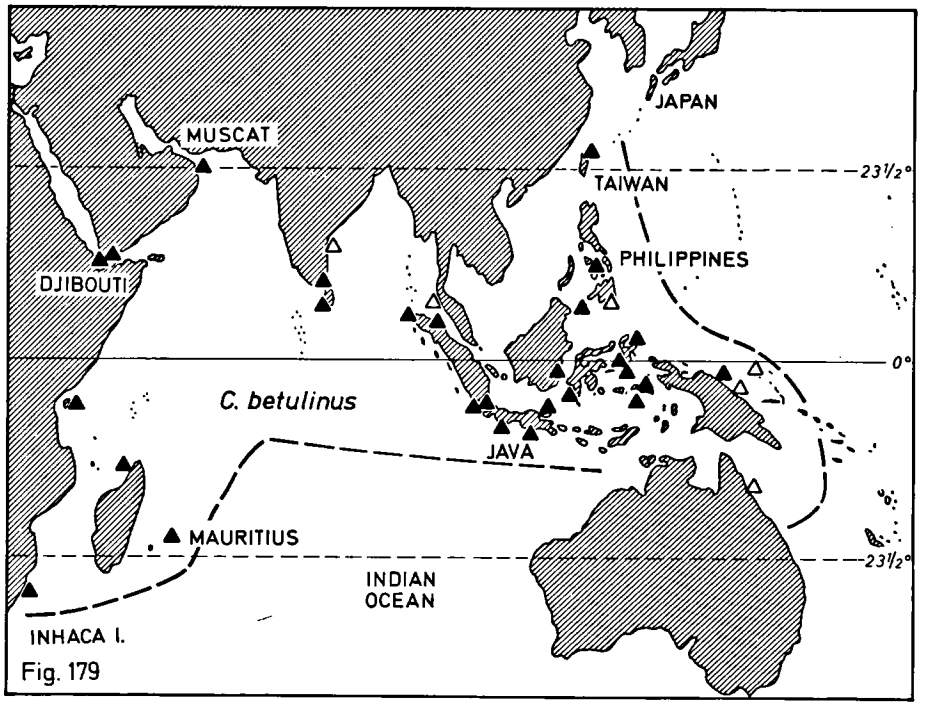

Fig. 179. Distribution of *Conus betulinus*.

Halmaheira, Ceram, Djajapura). In addition we have studied material from Mauritius (coll. H. de Brauwer), and from Zanzibar, India (Tamilnadu), the Philippines (Jolo, W. Negros) and Taiwan (Taipei) in coll. Wils.

bicinctus
fig. 227

Conus bicinctus Donovan, 1826, Natur. Repos. 5: pl. 170

Type. – The whereabouts of the type specimen are unknown. The type figure is reproduced here (fig. 227); the dimensions are 55 x 27 mm.

Type locality. – 'Indian seas'.

Remarks. – The title page of The Naturalist's Repository, vol. 5, is dated 1834; however, plate 170 mentions 'Dec. 1, 1826'. Donovan described the 'two-banded cone' as: 'Shell somewhat cylindrical, white and fuscous clouded; with transverse lines dotted with black, and two orange belts; lip within fulvous'.

According to Tomlin (1937: 219) *Conus bicinctus*: 'Looks like a shell with faked bands'. We agree that the type figure (fig. 227) of this shell with two peculiar orange

bands is unrealistic. No author has recognized this species since Donovan described it. The shell looks like *C. achatinus* Gmelin, 1791 (vide Basteria 43: figs. 11-12, 1979), but the shoulder of *C. bicinctus* is slightly coronated.

Without a type specimen available we consider *C. bicinctus* a nomen dubium.

bicolor

The name *Conus bicolor* was used three times in 1833 by Sowerby I for different species. He renamed two of these during the same year. The shells are figured in the 'Conchological Illustrations'.

bicolor
fig. 45

Conus bicolor Sowerby I, 1833 (March), Conch. Ill. (Conus): 1, pl. 24 fig. 2

Remarks. – This species was renamed *Conus albomaculatus* Sowerby I, 1833, and discussed before (vide Basteria 43: 97, fig. 45, 1979). It is considered a granulated form of *C. litoglyphus* Hwass, 1792. The whereabouts of the holotype are unknown. The specimen in ZMUC at Copenhagen, with identical measurements as the type figure, differs in colour pattern.

bicolor
fig. 228

Conus bicolor Sowerby I, 1833 (May), Conch. Ill. (Conus): 1, pl. 28 fig. 18

Type. – The type specimen seems to be lost. The type figure is reproduced here (fig. 228); the dimensions are 35 x 24 mm.

Type locality. – Not mentioned.

Remarks. – From the type figure this specimen of *Conus bicolor* can be identified as a juvenile shell of *C. pulcher* Lightfoot, 1786, and therefore the former becomes a junior synonym.

bicolor
fig. 229

Conus bicolor Sowerby I, 1833 (past July), Conch. Ill. (Conus): 2, pl. 37 fig. 56

Type. – The holotype seems to be lost. The type figure is reproduced here (fig. 229); the dimensions are 36 x 19 mm.

Type locality. – 'China'.

Remarks. – This species was renamed *Conus sinensis* Sowerby I, 1833 (non *C. sinensis* Gmelin, 1791), and will be discussed later in this series under that name.

Reeve (1843, spec. 76, pl. 15 fig. 77a) misidentified a cone shell as '*C. sinensis* Sowerby', which he renamed later *C. sowerbii* (Reeve, 1849, emendations: 2). The figured specimen of *C. sowerbii* is present in BMNH; the dimensions are 36 x 15 mm, locality Fiji islands. This shell must be regarded the holotype of *C. sowerbii* Reeve (non *C. sowerbei* Nyst, 1836, a fossil). The first valid name for *C. sowerbii* Reeve is *C. praecellens* A. Adams, 1854.

We do not agree with Tomlin (1937: 309) and Cernohorsky (1965: 334-335) that *C. sowerbii* Reeve is a new name for *C. sinensis* Sowerby. These are two distinct species. The holotype of *C. sowerbii* Reeve is different in shape, colour, pattern, and locality from that of the type figure and locality of *C. sinensis* Sowerby (fig. 229).

bifasciatus
fig. 230

Conus bifasciatus Gmelin, 1791, Syst. Nat. 13 ed., 1: 3392, no. 54

Type. – In the description Gmelin referred to the shell figured by Born (1780: pl. 7 fig. 10). This specimen was designated lectotype of *Conus bifasciatus* Gmelin by Kohn (1966: 81-82); however, as a single shell it is the holotype. The shell is in the Naturhistorisches Museum, Vienna, and is also the holotype of *C. centurio* Born, 1778. The type figure is reproduced here (fig. 230); the dimensions are 36 x 22 mm.

Type locality. – Not mentioned.

Remarks. – We agree with Kohn that *C. bifasciatus* Gmelin is an objective junior synonym of *C. centurio*, since both are based on the same specimen.

It is surprising that Gmelin coined another name for a species of which he did not have a specimen, whereas he knew that the shell was already named and described in 1778, and two years later figured by Born.

bifasciatus
fig. 233

Conus bifasciatus Sowerby II, 1857-1858, Thes. Conch. 3: 23 spec. 186, pl. 14 fig. 302
(non *C. bifasciatus* Gmelin, 1791)

Type. – *Conus bifasciatus* Sowerby is a nomen novum for *C. fasciatus* A. Adams, 1854 (non *fasciatus* Schröter, 1803). There are three syntypes of *C. fasciatus* Adams in BMNH, originally from the Cuming collection; the dimensions are 27 x 14, 22 x 12, and 22 x 11 mm. None of these was figured by Adams. The largest specimen was illustrated by Sowerby and is herewith designated lectotype of *C. fasciatus* A. Adams, and subsequently of *C. bifasciatus* Sowerby II. The type figure is reproduced here (fig. 233).

Type locality. – Not mentioned.

Remarks. – We have studied the type material; the shells are conspecific with *C. ustickei* Miller in Usticke, 1959, from the Antilles. Therefore *C. bifasciatus* Sowerby is a senior synonym of *C. ustickei*, and a junior homonym of *C. bifasciatus* Gmelin, 1791.

See also under *C. attenuatus* Reeve, in Basteria 45: 28, 1981.

biliosus

figs. 180, 231-232

Cucullus biliosus Röding, 1798, Mus. Boltenianum 2: 39, no. 489/15

Type. – The single specimen in the Bolten collection is considered lost. Kohn (1975: 197, pl. 1 fig. 11) designated the shell figured by Chemnitz (1788: pl. 139 fig. 1294) lectotype of *Conus biliosus*. The type figure is reproduced here (fig. 231); the dimensions are 45 x 26 mm.

Type locality. – Not mentioned by Röding. Chemnitz (1788: 36) stated that the shell was from 'Ostindischen Meeren' (East Indian seas). We herewith designate the Gulf of Mannar, between India and Ceylon, type locality of *C. biliosus*.

Remarks. – After the studies of Kohn (1975: 197) the name *C. biliosus* was restored as the earliest name for the species known for a long time as *C. piperatus* Dillwyn, 1817 (= *C. punctatus* Hwass, 1792, non Gmelin, 1791). *C. biliosus* is considered a valid species. Röding called it 'Die braungelbe Tute' (the brownish yellow cone); the type figure indeed has this colour. However, dark axial stripes are often present on the last whorl (fig. 232).

C. biliosus meyeri Walls, 1979, was described as a subspecies from Natal. The shell is distinct from *C. biliosus* by an almost uncoronated shoulder and a dark base. We have studied specimens of *C. meyeri*, presently known from Natal to S. Mozambique (Inhaca). This taxon certainly belongs to the species group of *C. biliosus*, together with *C. parvulus* Link, 1807 (from Indonesia and western Pacific), and *C. imperator* (Woolacott, 1956) from Queensland, but their relationship needs further research.

Conus ardisiaceus Kiener, 1845 is a distinct species (vide Basteria 45: 14, figs. 97, 125-126), and not a subspecies of *C. biliosus*, as was suggested by Walls (1979: 2-3).

Distribution. – *C. biliosus* is living along the coast of East Iran, Pakistan, India, and Ceylon (fig. 180). ZMA has specimens from Pakistan (Manora, Karachi), India (Kilakkarai),

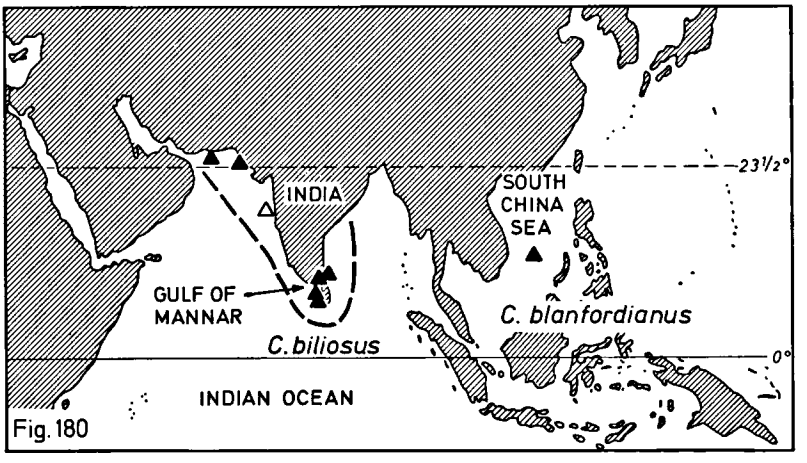

Fig. 180. Distribution of *Conus biliosus*, and the known localities of *C. blanfordianus*.

and Ceylon (Wattala). In addition we have studied specimens from Chahbar (Iran) in RMNH, and from Tamilnadu and Rameswaram (India), Hikkaduwa and Pearl Banks (Ceylon) in coll. Wils.

bizona

figs. 98, 131

Conus arenatus bizona Coomans, Moolenbeek & Wils, 1981, Basteria 45: 16-18, figs. 98, 131

Remarks. – We may refer to the above mentioned reference of this subspecies.

Distribution. – Since the description of *Conus arenatus bizona* we have studied more material which extends the range eastward in the Indian Ocean to Ceylon and the Andaman Sea. Recently Moolenbeek collected *C.a. bizona* at Trincomalee, Ceylon (ZMA). Now there are reasons to doubt the locality Ceylon for *C. a. arenatus* (cf. fig. 98); we consider it a false record from an old collection.

A number of specimens of *C. a. bizona* was received from Phuket, Thailand (leg. A. J. da Motta). These shells have pronounced nodules at the shoulder and two dark bands on the last whorl, but the shape of the body whorl is somewhat convex (not straight), and the pattern is not uniformly spotted as in typical *C. a. bizona* from East Africa.

bizonata

Conus arachnoideus Gmelin var. *bizonata* Crosse, 1858, Rev. Mag. Zool. (2) 10: 204

Remarks. – Crosse's reference to his variety *bizonata* reads: 'Peplum, Chemn. = Arachnoideus, Gm., var. bizonata'. It may be regarded as another name for *C. peplum* in Chemnitz (1788, vol. 10: pl. 144 A figs. c-d = *C. araneosus* Solander, 1786, syn. *C. arachnoideus* Gmelin, 1791). However, we prefer to consider *bizonata* a nomen nudum, because Crosse did neither supply a description of the variety, nor the year, page and figure of Chemnitz' work.

The name *bizonata* is not mentioned in the Conidae catalogues by Tomlin (1937) and Wagner & Abbott (1978).

blainvillei

fig. 234-235

Conus blainvillei Kiener, 1845, Coquilles vivantes 2: 358, pl. 111 fig. 1
(non *C. blainvillii* Vignard, 1829)

Type. – The type specimen was originally in the Verreaux collection, the present whereabouts are unknown. The type figure is reproduced here (fig. 234); dimensions 37 x 22 mm. Kiener indicated a length of 38 mm.

Type locality. – Not mentioned.

Remarks. – It is surprising that Kiener used the name *Conus blainvillei*, because he knew of the existence of *C. blainvillii* Vignard (see below), which Kiener (1847: 135) considered a variety of *C. ammiralis* Linné. Although there is only one letter difference, *C. blainvillei* is not a junior homonym of *C. blainvillii* (cf. ICZN art. 57-58).

C. blainvillei is considered a colour form of *C. fumigatus* Hwass, 1792, known from the Red Sea. The last whorl in forma *blainvillei* has brown punctate spiral lines (figs. 234-235), whereas the shell of *C. fumigatus* is brown, with white bands at the shoulder and on the middle of the body whorl.

ZMA has a specimen of *C. fumigatus* forma *blainvillei* from the Red Sea; the measurements are 44 x 26 mm (fig. 235).

blainvillii

figs. 54, 78-79, 236-237

Conus blainvillii Vignard, 1829, Descr. Cône nouveau: 3-8, figs.

Type. – Vignard stated that he had two specimens in his collection, of which the largest was illustrated. This shell is herewith designated lectotype; the whereabouts of the specimens are unknown. The type figure is reproduced here (fig. 236); the dimensions are 64 x 31 mm. The author's name is often misspelt 'Vignart'.

Type locality. – 'les mers de la Chine' (the seas of China). This locality is erroneous. We designate Conducia Bay, Mozambique, type locality.

Remarks. – *Conus blainvillii* was discussed before (vide Basteria 44: 31, 1980), and considered the coronated subspecies of *C. ammiralis* Linné, 1758. Vignard already described it as the 'coronated admiral', on his plate the name was misprinted 'Blainvilii'.

In the literature *C. ammiralis blainvillii* is sometimes referred to as '*C. ammiralis coronatus*', '*C. architalassus*' or '*C. archithalassus*'. However, these names apply to the granulated form of *C. ammiralis* (vide Basteria 45: 10-12, 1981).

Kiener (1845: pl. 21 fig. 1c; 1847: 135) was the first author using the name *C. blainvillei* Vignart (sic) for the coronated *C. ammiralis*, whereas Sowerby (1857-1858: pl. 2 figs. 24-25) gave a correct locality 'Mauritius'. Walls (1979: 88, 90) discussed this Indian Ocean subspecies, but not having seen the original description of *C. blainvillii*, he considered the shell nameless.

Distribution. – *C. ammiralis blainvillii* is known from East Africa (fig. 54). The Seychelles may be added to the locality data, because we have seen specimens from these islands in RMNH and ZMUC; Röckel (1980: Nr. 133) figured a Seychelles shell.

A disjunct population of *blainvillii* is living in the Andaman Sea near Phuket, Thailand (fig. 79). The average length of these shells is less than those from East Africa, and granulated specimens often do occur (Da Motta & Lenavat, 1979: pl. 2 figs. 22-23).

Our thanks are due to Dr. G. Richard (MNHN) for providing us with a copy of Vignard's rare publication and the loan of a specimen.

blanfordianus
figs. 180, 238-239

Conus blanfordianus Crosse, 1867, J. Conchyl., Paris 15: 66-68, pl. 2 fig. 1

Type. – The whereabouts of the type specimen are unknown. The type figure is reproduced here (fig. 238); dimensions 36 x 19 mm.

Type locality. – Not mentioned. When the range of *Conus blanfordianus* is defined, a type locality may be selected.

Remarks. – Hardly any specimens of *C. blanfordianus* are recorded. In the literature it is synonymized with *C. spectrum* Linné, 1758; however, the latter has a larger shell (to 60 mm) with a flame pattern. The shell of *C. blanfordianus* is smaller (under 40 mm) and characterized by spiral series of square brown dots.

We have studied only one specimen of *C. blanfordianus* (fig. 239); it is not a juvenile of *C. spectrum*. The last mentioned is slender with a yellowish aperture, whereas *C. blanfordianus* has a more bulbous shape and a white to pale purplish aperture.

Provisionally *C. blanfordianus* is considered a valid species; too little material has been studied to express a definite opinion.

Distribution. – Not yet known. No specimens in ZMA; one specimen from the South China Sea (fig. 180) in coll. Wils.

blatteus
figs. 184, 240

Conus (Leporiconus) blatteus Shikama, 1979, Sci. Rep. Yokosuka City Mus. 26: 1-2, pl. 1 figs. 1-2

Type. – The holotype is in the collection of Mr. R. Kawamura, and will be deposited later in the National Science Museum, Tokyo; the measurements are 33.6 x 11.0 mm (fig. 240).

Type locality. – 'Off Taiwan'.

Remarks. – *Conus blatteus*, based on a single specimen in a private collection, was described in a posthumous publication of Shikama. According to the author it is near '*C. tenuisulcatus* Sowerby, 1882', but we suppose that it should read '*C. tenuistriatus* Sowerby II, 1857-1858'. In the description it is stated that *C. blatteus* is only distinct by three light coloured bands with brown patches on the last whorl.

We have studied the holotype of *C. blatteus* (fig. 240); it has a thin shell, in which it is different from the sturdy shell of *C. tenuistriatus*.

Describing a new species from a single shell is usually not advisable. Without having seen more material, we are unable to give a definite opinion on the taxonomic status; provisionally *C. blatteus* is considered a valid species.

Distribution. – Only known from the type locality (fig. 184).

The present authors are grateful to Dr. Y. Kanie for sending the publication of Shikama and to Dr. A. Matsukuma for his information and meditation in borrowing the holotype from the Kawamura collection.

bocagei
fig. 241

Conus bocagei Trovao, 1978, Bolm. Centr. Port. Activ. subaq. 4(4): 17-18, pl. 1 fig. 2, pl. 2 figs. 3-4, pl. 3 fig. 1

Type. – Holotype in Laboratorium of Malacology of CPAS (Centro Português de Actividades Subaquáticas), Lisbon, no. LAB-256, the measurements are 27.2 x 16.8 mm. One paratype in MNHN (fig. 241), one in coll. Soares, the remaining in CPAS.

Type locality. – 'Lobito'. The paratypes were collected on the Angolan coast between Benguela and Moçâmedes.

Remarks. – To 'prove' the validity of *C. bocagei*, Trovão compared it to unrelated South African and Mediterranean species. But he failed to compare it to the Angolan species *C. bulbus* Reeve, 1843, *C. africanus* Kiener, 1845, and *C. obtusus* Kiener, 1845, with which *C. bocagei* is synonymized in recent literature.

The present authors have studied paratype no. 3 (fig. 241) from Benguela (20.9 x 13.0 mm) and other specimens from Angola (coll. Saunders, and coll. Wils). We must conclude that *C. bocagei* belongs to the polymorphic complex of *C. africanus* (vide Basteria 43: 87-88, figs. 27, 34, 1979); this was also suggested by Clover (1978: 20, fig. 1) and Richard (1980: 96).

We are grateful to Dr. Ph. Bouchet (MNHN) for the loan of a paratype.

bocki

figs. 181, 242

Conus bocki Sowerby III, 1881, Proc. zool. Soc. Lond. 1881: 636-637, pl. 56 fig. 7

Type. – The holotype is present in the National Museum of Wales at Cardiff, ex. coll. Melvill-Tomlin; the exact measurements are 57.8 x 32.6 mm (Sowerby: 60 x 32 mm) (fig. 242).

Type locality. – 'Amboyna', one of the Moluccan islands in Indonesia.

Remarks. – The original author compared *Conus bocki* to *C. sulcatus* Hwass, 1792. The latter species has a spirally sulcate body whorl, the shoulder is undulate, and the colour is creamy to light brown. Granulated specimens of *C. sulcatus* were already figured by Chemnitz (1795: pl. 181 fig. 1747).

We have studied the holotype (fig. 242) and other specimens of *C. bocki*. The shell has a smooth upper part and ridges at the base only, the shoulder is not coronated. Its colour is darker brown, sometimes with lighter tinged spiral lines, whereas the spire is white with brown spots. Granulated shells also occur in this species.

On account of these different characters, in addition to the disjunct ranges, *C. bocki* is provisionally considered a subspecies. This was also suggested by Old (1973: 6).

The name *'Conus kinai'* is used twice in anonymous articles in Hawaiian Shell News (vol. 20, no. 4: supplement, 1972; vol. 21, no. 4: 5, 1973); this is a nomen nudum. The figured shells are *C. sulcatus bocki*, a smooth and granulated specimen respectively. The localities mentioned (Okinawa and Bangkok) are dubious.

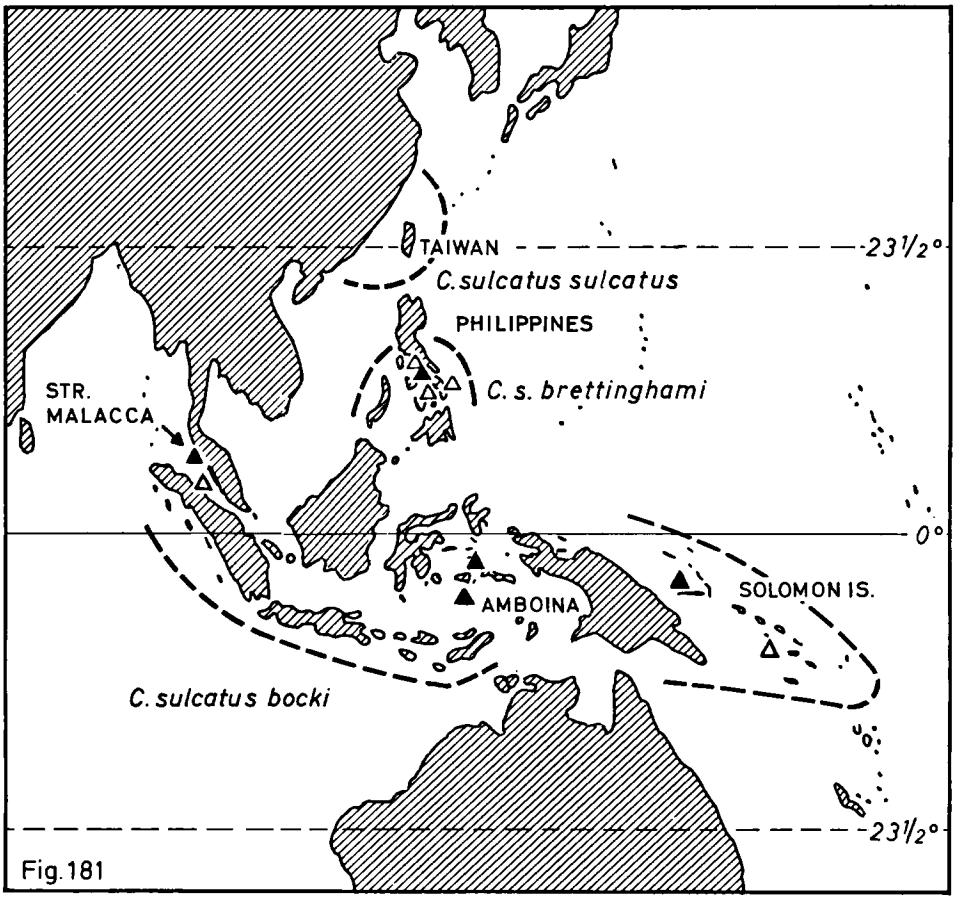

Fig. 181. Known localities of *Conus sulcatus bocki* and *C. s. brettinghami* nom. nov., compared to the distribution of *C. s. sulcatus*.

C. undulatus Sowerby, 1857-1858 (non Solander, 1786) is also considered a subspecies of *C. sulcatus*. See under *brettinghami* in this publication.

Distribution. – There are few records (fig. 181) of *C. sulcatus bocki*. It is reported from the Straits of Malacca (Old, 1973: 7; Da Motta & Lenavat, 1979: 6-7) and the Solomon Islands (Hinton, 1972: 90-91, figs. 3-4; Walls, 1979: 640). ZMA has specimens from the Moluccas, and from Rabaul, New Britain. In coll. Wils the subspecies is represented from Phuket, Thailand.

The nominate form *C. sulcatus* has a northern range near Taiwan in the East and South China Seas.

Our thanks are due to Dr. P. G. Oliver (National Museum of Wales) for the loan of the type specimen.

boeticus
figs. 182, 244-246

Conus boeticus Reeve, 1843, Proc. zool. Soc. Lond. 11: 174; Conch. Icon. I, Conus: pl. 42 spec. 226 (1844)

Type. – The holotype was originally in the Stainforth Museum, ex coll. Cuming. In BMNH there are three specimens (no. 196119) from the Philippines, also from the Cuming collection. Mrs. K. M. Way kindly checked whether any of these could be the shell figured by Reeve, but the result was negative. Therefore the type specimen of *Conus boeticus* must be considered lost. The type figure is reproduced here (fig. 244); the measurements are 38 x 19 mm.

Type locality. – 'Philippine Islands'.

Remarks. – *C. boeticus* is a valid species (fig. 245). In old literature the name *C. baeticus* is used, whereas *boeticulus* Kiener, 1845, is an error.

Several colour formae may be recognized, originally described as nominal species, viz. *C. cerinus* Reeve, 1848, and *C. lachrymosus* Reeve, 1849. Juvenile to subadult shells, with a length of about 15-20 mm, a more yellowish colour and dark spiral lines, were described as *C. nitidus* Reeve, 1843.

Granulated specimens are known as *C. boeticus* forma *rivularis* Reeve, 1849. Wils c.s. (1969-1974: 61) stated that the shells of this forma grow larger than those of *C. boeticus* s.s. ZMA material confirms that statement: 26 specimens of *C. boeticus* from several islands of the Moluccas have an average length of 22 mm (range 17-28 mm), whereas 12 specimens of fa. *rivularis* from these islands are 33 3/4 mm (range 28-40 mm). Reeve mentioned that *C. boeticus* is 'granulated towards the base'; the type figure indicates a shell length of 38 mm, which is large for typical *C. boeticus*.

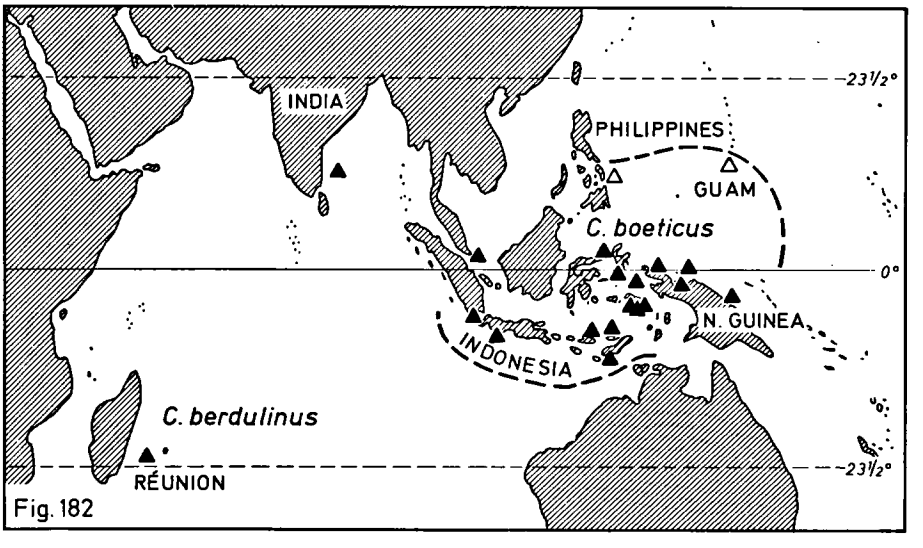

Fig. 182. Known localities of *Conus berdulinus*, and distribution of *C. boeticus*.

The closely related *C. pauperculus* Sowerby I, 1834, from Japan, and *C. ruppellii* Reeve, 1848, from the northern Philippines are considered distinct species.

Distribution. – *C. boeticus* is known from Indonesia, New Guinea, the southern Philippines, and Guam (fig. 182). ZMA has specimens from Indonesia: Java (Sunda Straits and Tjilauteureun), Flores, Celebes (Kaju Ragi), the Moluccas (inclusive of Amboina, Nusa Laut, Ceram), and New Guinea (Manokwari, Wasior, Biak, and Djajapura). In RMNH we have studied specimens from Java (Tjilatjap), Sumbawa (Bima), Timor, and the Lingga Archipelago (Sebangka Id.).

boholensis
figs. 175, 250

Conus boholensis Petuch, 1979, Nemouria 23: 12-14, figs. 20-21

Type. – The holotype and two paratypes are present in the Delaware Museum of Natural History (nos. 126400, 126401). The measurements of the holotype are 38.4 x 17.3 mm (fig. 250), lengths of the paratypes 26 and 17 mm.

Type locality. – 'Approximately 250 m depth off Panglao, Bohol Is., Philippines' (fig. 175).

Remarks. – Petuch compared *Conus boholensis* to *C. cancellatus* Hwass, 1792, which has a cancellated sculpture on the spire, whereas *C. boholensis* only has growth lines. Tucker (1981: 11) mentioned resemblance to juvenile *C. sieboldii* Reeve, 1848, known from Taiwan and S. Japan.

We have studied the holotype of *C. boholensis* (fig. 250), and compared it to juvenile shells of *C. sieboldii*. The spires are similar, but the body whorl of juvenile *C. sieboldii* is more slender.

After comparing *C. boholensis* with the juvenile paralectotype of *C. borneensis* (see this publication, fig. 249), we must conclude that they are conspecific. Therefore *C. boholensis* is a junior synonym of *C. borneensis* Adams & Reeve, 1848.

Our thanks are due to Mr. R.H. Jensen (DMNH) for the loan of the type specimen.

boivini
fig. 243

Conus boivini Kiener, 1845, Coquilles vivantes 2: 282-283, pl. 64 fig. 2

Type. – The holotype was originally in coll. A. Boivin, presently in MNHN; the measurements are 60.0 x 29.1 mm (Kiener indicated a length of 62 mm) (fig. 243). The outer lip is damaged.

Type locality. – Not mentioned. The specimen was obtained by Boivin at the sale of an old collection at Le Havre (vide Reeve, 1849: suppl. pl. 8). Part of the label reads 'Côte Est d'Afrique, d'après Weinkauff, in Tryon' (coast of East Africa, after Weinkauff, in Tryon). This locality was added later; it is mentioned by Weinkauff (1847: 284), and in Tryon (1884: 86).

Remarks. – Kiener compared *Conus boivini* to *C. striatus* Linné, 1758, whereas Reeve (1849: suppl. pl. 8 spec. 276) supposed a relation to *C. gubernator* Hwass, 1792.

The present authors have studied the holotype (fig. 243), the only known specimen. The apex is pink, which is not mentioned in the original description. The grooves at the base are *not* punctured as is shown in the type figure, which was copied by later authors. We consider *C. boivini* a junior synonym of *C. gubernator*, which species is known from East Africa and Madagascar. *C. boivini* is distinct in having a flat spire and about ten spiral grooves below the shoulder.

It is an aberrant specimen, or possibly a mutant. This aberration, i.e. a flat spire in combination with shoulder grooves, is also known in a specimen of *C. spectrum* Linné, 1758, from Swains Reef, Queensland (figured in Marsh, 1964: pl. 16 fig. 11, as *C. conspersus*). In *C. adamsonii* Broderip, 1836 (vide Basteria 43: fig. 24), these characters are specific.

We are grateful to Dr. Ph. Bouchet (MNHN) for the loan of the type specimen.

borbonicus
fig. 283

Conus (Chelyconus) borbonicus H. Adams, 1868, Proc. zool. Soc. Lond. 1868: 288-289, pl. 28 fig. 1

Type. – The holotype is present in BMNH (no. 1879.2.26.10); the dimensions are 12 x 5 mm (fig. 283).

Type locality. – 'Isle of Bourbon' (= Réunion).

Remarks. – The type specimen of *C. borbonicus* is a juvenile shell of *C. tulipa* Linné, 1758, and thus a junior synonym. *C. tulipa* is a common species with a wide range in the Indopacific. ZMA has juvenile specimens which agree with the holotype of *C. borbonicus*.

Dr. J. D. Taylor (BMNH) kindly supplied us with a photograph of the type specimen.

borgesi
figs. 247-248

Conus borgesi Trovão, 1979, Amphitrite 1 (1): 6-8, pl. 1 fig. 4, pl. 2 fig. 4

Type. – The holotype is present in the collection of J. P. Borges, but will be deposited in BMNH. The type figure is reproduced here (fig. 247); the dimensions are 26.1 x 15.1 mm. Five paratypes are mentioned, lengths of the shells 21.8-31.1 mm; these have been dispersed over several private collections.

Type locality. – 'Baia das Gatas, Ilha da Boavista, arquipélago de Cabo Verde'. Depth 2-40 m. Paratype 1 is from the type locality, the others from Sta. Luzia and Brava islands.

Remarks. – The description, in Portuguese, has appeared in a journal on scuba diving, of which only one issue was published so far. Trovão compared *Conus borgesi* to *C. cuneolus* Reeve, 1843, a very variable species from the Cape Verde Islands. The species from these islands were treated recently by Röckel, Rolán & Monteiro (1980), but the variability and interrelationship of the species needs further research. These authors (pp. 56-59) consider *C. borgesi* a distinct species.

We have studied some specimens of *C. borgesi* (fig. 248) in ZMA, including integrates to *C. crotchii* Reeve, 1849 (coll. G. D. Saunders). At present we must conclude that it is an extreme colour form: *C. crotchii* forma *borgesi*. Although *C. crotchii* was described originally from Saldanha Bay, South Africa; its distribution is restricted to the Cape Verde Islands.

The authors are grateful to Dr. E. Rolán, Dr. B. M. Tursch, and Mr. G. D. Saunders for the donation and loan of specimens.

borneensis
figs. 175, 249-250, 285

Conus borneensis Adams & Reeve, 1848, Moll. Voy. Samarang: 18, pl. 5 figs. 8a-d

Type. – Two syntypes are figured with the original description, a juvenile (figs. a, b) and an adult shell (figs. c, d). Only the adult specimen is present in BMNH (no. 1980119) and labelled as 'holotype', which cannot be correct. This specimen is herewith designated lectotype (fig. 285); the dimensions are 42 x 20 mm. The figure of the paralectotype is reproduced here (fig. 249); the dimensions are 29 x 13 mm.

Type locality. – 'North-east coast of Borneo (in ten fathoms, sandy and stony bottom).'

Remarks. – Despite its well defined type locality, *Conus borneensis* is mentioned in the literature as a junior synonym of *C. arcuatus* Broderip & Sowerby, 1829, from the tropical Eastern Pacific.

We have studied the lectotype of *C. borneensis* (fig. 285); the lower part of the last whorl is grooved, but the upper half is smooth, and the shoulder keeled. The juvenile paralectotype (fig. 249) has grooves all over the body whorl. However, the adult shell of *C. arcuatus* (vide Basteria 45: 12, figs. 96, 122-123) exhibits grooves which become weaker near the shoulder, and the shoulder is not keeled.

Conus borneensis Adams & Reeve is considered a valid species; *C. boholensis* Petuch (see this article, fig. 250) from the same area is a junior synonym. The species is related to *C. sieboldii* Reeve, 1848, from more northern waters around Taiwan and southern Japan.

Distribution. – *C. borneensis* is known only from the Sulu Sea, off shore to deeper water (fig. 175). Mr. R. Martin informed us (in litt.) that he collects '*C. boholensis*' at 70-80 fathoms near Cebu, Philippines.

Our thanks are due to Dr. J. D. Taylor (BMNH) for providing us with a photograph of the lectotype.

borneensis
fig. 286

Conus borneensis Sowerby II, 1866, Thes. Conch. 3: 329, spec. 439, pl. 28 fig. 648
(non *C. borneensis* Adams & Reeve, 1848)

Type. – The holotype is present in BMNH (no. 1874.12.11.279), ex coll. T. L. Taylor; the dimensions are 32 x 15 mm (fig. 286).

Type locality. – 'Borneo'.

Remarks. – *Conus borneensis* Sowerby is generally accepted to be conspecific with *C. magus* Linné, 1758, which species is known for its variability.

The present authors have studied the type specimen (fig. 286), and after comparing it with many shells of *C. magus* from Indonesia we agree that *C. borneensis* Sowerby is a junior synonym of *C. magus*.

The name *C. borneensis* Sowerby, 1866, is a junior homonym of *C. borneensis* Adams & Reeve, 1848. However, being also a junior synonym, there is no need for a new name.

We are grateful to Dr. J. D. Taylor for the photograph of the holotype.

boschi

figs. 183, 251-252

Conus (Chelyconus) boschi Clover, 1972, Venus 31: 117-118, figs. 1-5

Type. – The holotype (27.8 x 15.7 mm) and one paratype (26.0 x 15.4 mm) are present in the National Science Museum, Tokyo (nos. NSMT-Mo. 41638 and 41639).

Type locality. – 'Museera Is. to Muscat Oman in South East Arabia' (Museera = Masirah).

Remarks. – We have studied specimens of *Conus boschi* from Oman. The peculiar pattern on the last whorl is also found in *C. lucidus* Wood, 1828, and in *C. melvilli* Sowerby III, 1879. But the spire of *C. boschi* has a characteristic mamillate protoconch (figs. 251-252). *C. boschi* is considered a valid species.

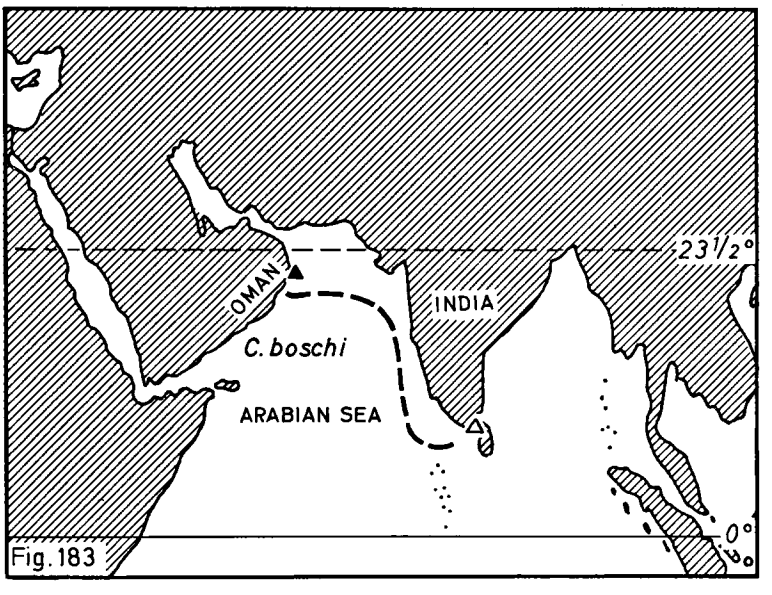

Fig. 183. Distribution of *Conus boschi*.

Specimens from S. India (Jonklaas, 1976: 9) are relatively wider at the shoulder, and partly with spiral grooves on the body whorl. Röckel (1979: Nr. 2) suggests a distinction into two subspecies.

Distribution. – Known from the coast of Oman and the Gulf of Mannar (fig. 183). Next to the type range, the species is reported from Rameswaram and Tuticorin, S. India (Kohn, 1978: 307, fig. 29). ZMA has specimens from Masirah Island, Oman, generously donated by Dr. D. T. Bosch.

boubeeae
figs. 223, 289

Conus boubéeae Sowerby III, 1903, J. Malac. 10: 76, pl. 5 fig. 5

Type. – Sowerby stated that he had found several specimens in the collection of Madame Boubée, after whom he named this species. The holotype is present in BMNH (no. 1903.11.5.5); the dimensions are 16 x 8½ mm (fig. 289). Two specimens from coll. Boubée were recently discovered in IRScNB, Brussels (ex coll. Dautzenberg); the measurements of these paratypes are 14.7 x 8.0, and 14.0 x 7.7 mm (fig. 223).

Type locality. – Not mentioned.

Remarks. – In the literature *Conus boubeeae* is united with *C. jaspideus* Gmelin, 1791, or with *C. mindanus* Hwass, 1792, both from the West Indies. We have studied the type material of *C. boubeeae*; the shells have a smooth last whorl, except at the base, like *C. mindanus*, whereas *C. jaspideus* is generally grooved all over. The colour is greyish, mottled with yellow brown, and the shell is covered by many interrupted spiral lines of brown and white, inside of aperture light violet. After comparing *C. boubeeae* with the holotype of *C. duvali* Bernardi, 1862, from Guadeloupe (MNHN), we must conclude that they are conspecific, and thus *C. boubeeae* is a junior synonym.

We have studied recently collected material of *C. duvali* from Guadeloupe (coll. Wils) and from Espirito Santo, Brazil (ZMA, ex coll. H. Saesen), which belongs to the species complex of *C. mindanus*. *C. agassizii* (figs. 28, 39-41, 47), *C. anaglypticus* (fig. 86), and *C. bermudensis* (figs. 178, 222) of this complex have already been discussed.

Our thanks are due to Mrs. K. M. Way (BMNH) for providing us with the original description and a photograph of the holotype, to Dr. J. van Goethem (IRScNB) for the loan of paratypes, and to Mr. H. Saesen (Antwerp) for the donation of specimens.

bougei
figs. 287-288

Conus bougei Sowerby III, 1907, Proc. malac. Soc. Lond. 7: 299, pl. 25 figs. 1-2

Type. – The type material in BMNH consists of two shells (no. 1907.8.28.31/2) labelled 'syntypes'. However, Sowerby described only one specimen (his fig. 1), which according to ICZN (art. 73, b) must be considered the holotype (fig. 287); the dimensions are 21 x 11 mm.

The second specimen was called 'var. β' by Sowerby (his fig. 2); this paratype measures 22½ x 12 mm (fig. 288).

Type locality. – 'Monac Island, New Caledonia'.

Remarks. – Next to *Conus bougei* some closely related taxa have been described from New Caledonia: *C. cabritii* Bernardi, 1858, *C. vayssetianus* Crosse, 1872, *C. taylorianus* E. A. Smith, 1880, and *C. optimus* Sowerby III, 1913. These five nominal species are considered to represent two valid species by Cernohorsky (1978: 133-134): *C. bougei* and *C. cabritii*, although his descriptions of these two are almost identical. Estival (1981: 11) recognizes three distinct species among the material from New Caledonia.

The present authors are of the opinion that *C. exiguus* Lamarck, 1810 (type locality: The Seas of Asia), is the earliest name in this species complex. The holotype of *C. exiguus* is present in MHNG; the measurements are 18½ x 10 mm (Kohn, 1981: 319, fig. 45), which is wider than the shell figured in Kiener (1845: pl. 11 fig. 1). The paratype of *C. bougei* (fig. 288) is brown with large blotches of white; this pattern is found in *C. exiguus*, and also known from the other nominal species in this complex. They are confined to New Caledonia and the Loyalty Islands. A live specimen is figured by Leehman (1980:9).

The holotype of *C. bougei* (fig. 287) is brown with many white flake-like spots. This pattern is known from more specimens (Estival, 1980: 10-11) and may be considered to represent a colour form: *C. exiguus* forma *bougei*.

We are grateful to Mrs. K. M. Way (BMNH) for providing us with photographs of the type material.

branhamae
fig. 259

Conus jaspideus branhamae Clench, 1953, Johnsonia 2(32): 364-365, pl. 181 fig. 2

Type. – The holotype was in the private collection of Mrs. H. Branham at Florida, which collection could not be traced. The type figure is reproduced here (fig. 259), the dimensions of the shell are 27½ x 13 mm.

Type locality. – 'on a coral mud flat at Green Turtle Cay, Great Abaco, Bahama Islands'.

Remarks. – This subspecies is based on a single specimen. Clench described *Conus j. branhamae* as distinct from *C. jaspideus* Gmelin, 1791, in being larger, with a straight and more elevated spire, and having a weaker sculpture. These characters of *C. branhamae* also occur in *C. mindanus* Hwass, 1792. However, the colour of *C. branhamae*, dark mahogany brown spots on the last whorl and spire, and a brownish aperture, is like that of *C. jaspideus*.

Since the type specimen is not available, we can base our conclusion only on the original description and poor type figure. *C. branhamae* may belong either to *C. jaspideus* or to *C. mindanus*; both are polytypic species with large ranges in the West Indies.

brasiliensis

figs. 178, 254-256

Conus brasiliensis Clench, 1942, Johnsonia 1 (6): 24-25, pl. 12 fig. 2

Type. – The holotype is present in MCZ (no. 146894); the measurements are 21.9 x 12.9 mm (fig. 254), according to Clench 22.2 x 13 mm. Two paratypes (no. 146878) measure 23.1 x 13.6 and 20.9 x 11.8 mm.

Type locality. – 'Victoria, Brasil. Thayer Expedition, 1865-1866'. This is Vitória, Est. Espirito Santo (Dick, 1977: 24, fig. 6).

Remarks. – Walls (1979: 210) stated that *Conus brasiliensis* is a junior synonym of *C. beddomei* (see this publication). We have studied the type material and other specimens of both nominal species. The pattern of the body whorl of *C. brasiliensis* is variable (figs. 254-256); typical shells have two mottled brown bands, separated by a white area with brown dots (fig. 254). *C. mayaguensis* Usticke, 1968, from Puerto Rico has a similar pattern, in addition to a white base. The last whorl of *C. beddomei* is brown with a more or less white zigzag pattern (fig. 253); this is occasionally found in *C. brasiliensis* (fig. 256).

The distinct range and the different design on the last whorl, may point to a subspecific relation; *Conus beddomei* Sowerby, 1901, being the oldest name, becomes the nominate form.

The shell of *C. beddomei brasiliensis* may reach a greater size than the type specimens; the largest we have studied measured 34.1 x 19.3 mm (coll. D. Vink).

Distribution. – *C. beddomei brasiliensis* occurs on the Brazilian coast south of the Amazone R. to the State of Espirito Santo (fig. 178), in depths of 20-90 m, on rocky and coral bottoms (Van Mol, Tursch & Kempf, 1967: 237-238; Rios, 1975: 123). The type locality is at the southernmost limits. We have studied specimens from the State Espirito Santo: Praia do Canto (ZMA), and Guarapari (coll. D. Vink).

The authors are grateful to Dr. K. J. Boss (MCZ) for the loan of the type material.

brazieri

fig. 257

Conus brazieri Sowerby III, 1881, J. Conch. Lond. 3: 234, pl. 1 fig. 9

Type. – The holotype is present in the National Museum of Wales, ex Melvill-Tomlin collection; the exact measurements are 72.8 x 32.5 mm (fig. 257; Sowerby: 75 x 32 mm). One paratype was in coll. Brazier at Sydney.

Type locality. – 'Solomon Islands'.

Remarks. – We have studied the holotype. The last whorl is yellow with a white band below the shoulder, one in the middle, and a light yellow area at the base. The shoulder and spire are pink with dark brown dots, the last whorl shows some very minute brown spots; the inside of the outer lip is white.

Conus brazieri must be considered a junior synonym of *C. circumcisus* Born, 1778, which shell is covered with many brown dots. In very large adult shells the last whorl becomes spotless, which is the *C. brazieri* pattern. Within the aperture at the columellar side of the holotype of *C. brazieri* the brown dots are still present.

ZMA has some specimens of *C. circumcisus* from the Moluccas and Guadalcanal (Solomon Is.) showing the *brazieri* pattern.

The authors are grateful to Dr. P. G. Oliver for the loan of the holotype.

Conus brettinghami

nomen novum
figs. 181, 258

Conus undulatus Sowerby II, 1857-1858, Thes. Conch. 3, Conus: 34 no. 294, pl. 4 fig. 63 (non *C. undulatus* Solander, 1786)

Type. – The holotype is present in BMNH; the measurements are 43 x 21 mm. The type figure is reproduced here (fig. 258a). There are two more shells in the type lot (41 x 20 and 38 x 19 mm); these specimens were not described by Sowerby.

Type locality. – Not mentioned. We herewith designate the island of Marinduque, Philippines, type locality of *C. undulatus* Sowerby, and therefore also of *C. brettinghami*.

Remarks. – Because the name *Conus undulatus* is preoccupied by Solander in 1786, we herewith replace the junior homonym *C. undulatus* Sowerby by *C. brettinghami* nomen novum. It is considered a subspecies of *C. sulcatus* Hwass, 1792.

C. sulcatus s.s. has a sturdy shell with a spirally sulcate body whorl, often granulated, colour brownish grey; it occurs in the Straits of Formosa between Taiwan and Hongkong (fig. 181).

The shell of *C. sulcatus brettinghami* (fig. 258a) is lighter in weight and more slender, the upper half of the last whorl is smooth, and the colour is yellowish brown; granulated specimens often do occur (fig. 258b).

The type figure of *C. sulcatus* var. *philippinensis* D. W. Smith, 1913, which was described as a Pliocene fossil from Masbate Island, Philippines, shows more likeness to *C. grangeri* Sowerby III, 1900. Another fossil species, *C. ornatissimus* Martin, 1883, from the Tertiary of Java, might be the ancestor of *C. sulcatus brettinghami* (cf. Martin, 1895: 12, pl. 1 figs. 8-10); ZMA has fossil specimens from Madura Id., Indonesia.

See also under *C. bocki* in this publication.

Distribution. – *C. sulcatus brettinghami* is common around the Philippines (fig. 181) in rather deep water (50-200 m); it is reported from Marinduque (fig. 258b), Tayabas Bay, Cebu and Samar. The southern limits are unknown, it may occur as far south as the north coast of New Guinea.

Etymology. – The name *brettinghami* is derived from the middle name of George Brettingham Sowerby.

breviculus

fig. 265

Conus breviculus Sowerby I, 1833, in Sowerby II, Conch. Ill. (Conus): 2, pl. 37 fig. 55

Type. – The whereabouts of the holotype are unknown. The type figure is reproduced here (fig. 265); the dimensions are 41 x 24 mm.

Type locality. – Not mentioned.

Remarks. – There is no description of *Conus breviculus*; Sowerby only indicated '*C. proteus* Lam. *leoninus* Lam. var.?'. For this reason *C. breviculus* was considered a junior synonym of *C. spurius* Gmelin, 1791 (including *C. proteus* Hwass, 1792, and *C. leoninus* Hwass, 1792). The present authors do not agree with this synonymy, since the pattern of *C. spurius* consists of many irregular spots on a white background (figs. 144, 149, 214). The type figure of *C. breviculus* (fig. 265) shows many dark, interrupted spiral lines on a pinkish and brown background. This pattern is known to exist in *C. pulcher*. Therefore we consider *C. breviculus* a junior synonym of *C. pulcher* Lightfoot, 1786.

C. breviusculus in Weinkauf (1874: 245) is an error for *C. breviculus*.

brevis
fig. 290

Conus brevis E. A. Smith, 1877, Ann.Mag.nat.Hist. (4) 19: 222-223
(non *C. brevis* J. de C. Sowerby, 1840, a fossil)

Type. – The holotype is in BMNH (no. 1980120); the dimensions are 18½x 11 mm (fig. 290).

Type locality. – Not mentioned.

Remarks. – The original author stated that the specimen 'may not be quite adult'. This is correct, the type specimen of *Conus brevis* Smith is a juvenile shell of *C. caracteristicus* Fischer, 1807, and thus the former name is a junior synonym of the latter.

C. brevis Smith is a junior homonym of the fossil species *C. brevis* Sowerby, 1840. However, for a junior synonym a new name is not required.

We are grateful to Mrs. K. M. Way (BMNH) for a photograph of the holotype.

broderipii

figs. 184, 260-261, 291

Conus broderipii Reeve, 1843, Proc. zool. Soc. Lond. 11: 179;
Conch. Icon. I, Conus: pl. 46 spec. 254 (1844)

Type. – The holotype is present in BMNH (no. 1842.10.21.62); the measurements are 27 x 15 mm (fig. 291).

Type locality. – Not mentioned by Reeve. On the tablet of the type specimen is written 'Moluccas (Sow.)'. ZMA contains specimens of *Conus broderipii* from the Moluccas; these islands are herewith designated type locality.

Remarks. – Tomlin (1937: 222) considered *C. broderipii* an immature specimen of *C. spectrum* Linné, 1758. We have studied the holotype and other shells of *C. broderipii* and have compared these to material of *C. spectrum*. Typical specimens of *C. broderipii* from the Moluccas (fig. 260) are characterized by a fragile shell (length to about 30 mm); the body whorl is grooved and marked with spiral series of light orange-brown blotches and the inside of the aperture is pink. Specimens from the Sulu Sea (figured as '*C. conspersus*' in Walls, 1979: 244) are somewhat larger (to 40 mm) and shiny, with an axial flame pattern (fig. 261). The shell of *C. spectrum* is larger (to 60 mm), more sturdy, and has a white to yellowish aperture.

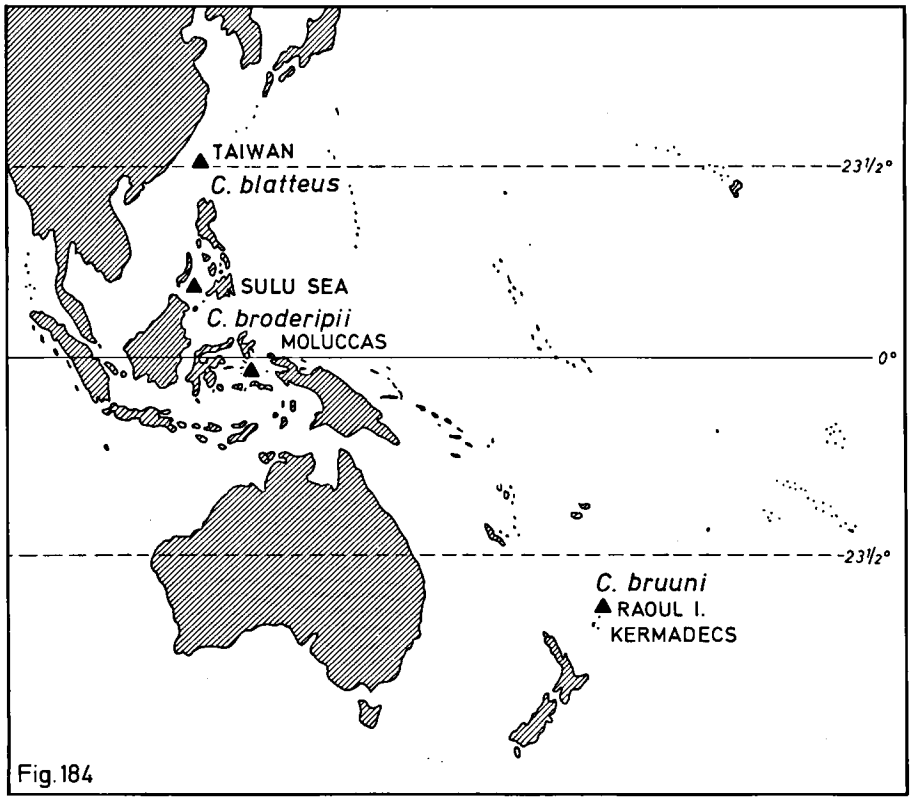

Fig. 184. Known localities of *Conus blatteus, C. broderipii,* and *C. bruuni.*

Our conclusion is that *C. broderipii* is a distinct and valid species.

Distribution. – The species is known so far from the Moluccas and Sulu Sea (fig. 184; both ZMA).

The authors are grateful to Mrs. K. M. Way (BMNH) for providing a photograph of the holotype.

brontodes
fig. 262

Conus (Strioconus) brontodes Shikama, 1979, Sci. Rep. Yokosuka City Mus. 26: 4-5, pl. 1 figs. 13-14

Type. – The holotype is in the collection of Mr. R. Kawamura, but will be deposited in the National Science Museum, Tokyo (according to Dr. A. Matsukuma). The measurements are 46.2 x 23.6 mm (fig. 262).

Type locality. – 'Off Taiwan'.

Remarks. – We have studied the holotype and compared it to specimens of *C. kinoshitai* (Kuroda, 1956) from the same area. Our conclusion is that *C. brontodes* is a juvenile specimen of *C. kinoshitai*, of which the adult shell may reach a length of 90 mm. The outer lip of *C. brontodes* is filed and the shoulder is somewhat flattish, therefore its shape is different from normal juvenile *C. kinoshitai*.

We are grateful to Drs. Y. Kanie and A. Matsukuma for the literature and additional information, and to Mr. R. Kawamura for the loan of the type specimen.

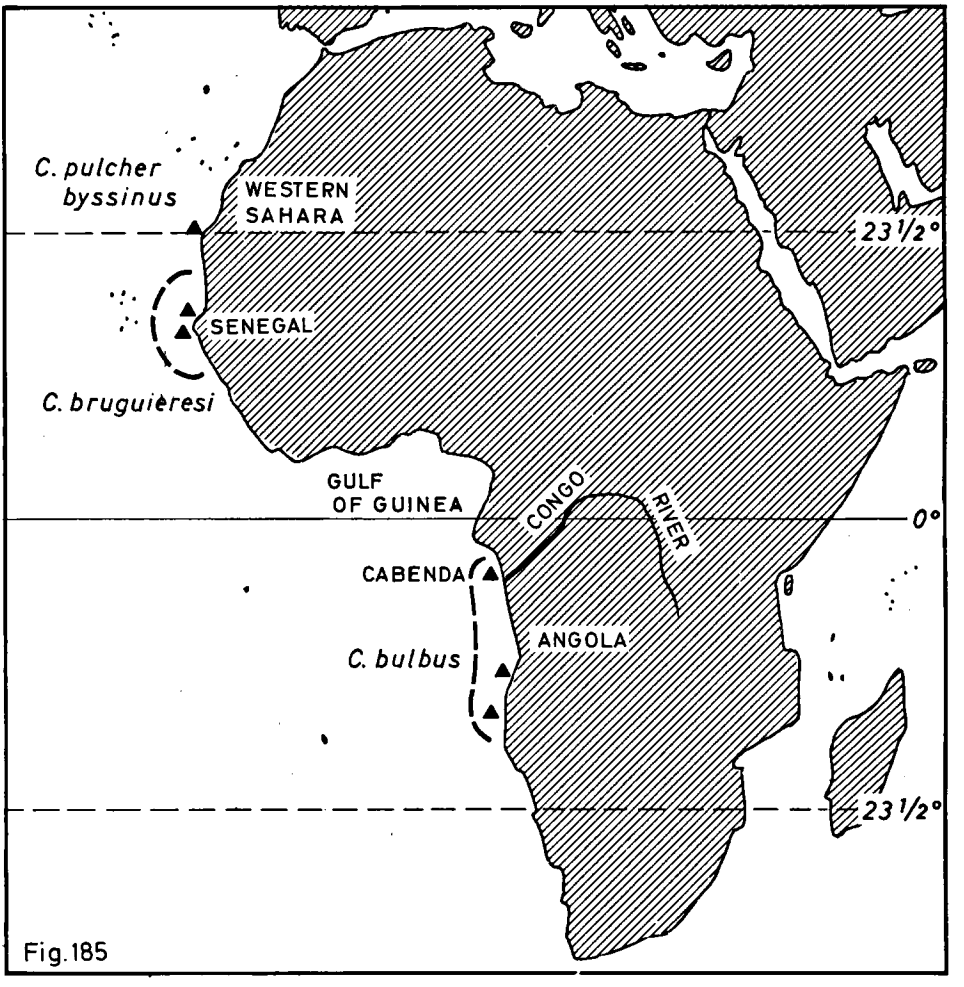

Fig. 185. Distribution of *Conus bruguieresi* and *C. bulbus*; known localities of *C. pulcher byssinus*.

bruguieresi
figs. 185, 263-264

Conus bruguieresi Kiener, 1845, Coquilles vivantes 2: 221-222, no. 190, pl. 56 fig. 2
(non *C. bruguierii* Nyst, 1843, a fossil)

Type. – The type specimen was in the collection of Madame Dupont, the present whereabouts are unknown. The type figure is reproduced here (fig. 263); the dimensions are 38 x 17 mm.

Type locality. – Not mentioned. We herewith designate Dakar, Senegal, type locality for *Conus bruguieresi*.

Remarks. – Kiener used three different spellings for this species, which was named after De Bruguière. The first name with the figure (1845) is *C. bruguieresi*. In the text (1848) it reads '*bruguieri*', the index (1850) mentioned '*bruguierei*'. We have accepted the first spelling, not only by being the oldest name, but also to prevent confusion with the fossil *C. bruguierii* Nyst, 1843, of which *C. bruguieri* Kiener is a junior homonym.

Although Kiener stated that *C. bruguieresi* is identical to the variety B of *C. jamaicensis* Hwass, 1792, it is not a nomen novum for this variety: Kiener described *C. bruguieresi* as a new species. The shell (figs. 263-264) is characterized by its cylindrical shape and smooth surface; apical angle about 60°-70°. The colour is dark greyish to olive brown, the last whorl with many brown spiral lines interrupted by white and a pale band just below the middle; suture marked with a brown line and inside of aperture bluish violet. The holotype (38 mm) is the largest of all specimens we have studied (22-35 mm).

C. bruguieresi is considered a valid species. It belongs to the species complex of *C. guinaicus* Hwass, 1792 (including *C. adansonii* Lamarck, 1810), but can be distinguished by its elongate shape, high spire, and almost smooth spire whorls. In *C. adansonii* (fig. 25) the shoulder is more pronounced, the aperture is wider at the base, the spire whorls are grooved and the apical angle is about 90°. *C. adansonii* is common on the coast of Senegal.

Distribution. – *C. bruguieresi* seems to be restricted to an area around Cape Vert, Senegal, in shallow water (fig. 185). We have studied specimens from Ile Goree (BMNH), Dakar (coll. H. Saesen), and Point Almadies (coll. Wils).

brunneus
figs. 186, 266-267

Conus brunneus Wood, 1828, Suppl. Index Test.: 8, pl. 3 fig. 1

Type. – The holotype was in the Mawe collection, but the present whereabouts are unknown. The type figure is reproduced here (fig. 266). On the original plate the shell measures 16 mm, but Wood's indication 'b' means that the specimen is 2 inches long (about 52 mm).

Type locality. – 'U.' (= unknown). In the second edition of the Index Testaceologicus, edited by Hanley (1856: 207), the locality 'Panama' was mentioned. Specimens of *Conus brunneus*, with a roundish body whorl like the type figure, are abundant at the Galapagos (Hanna, 1963: 14, pl. 4 figs. 4, 6); these islands are herewith designated type locality.

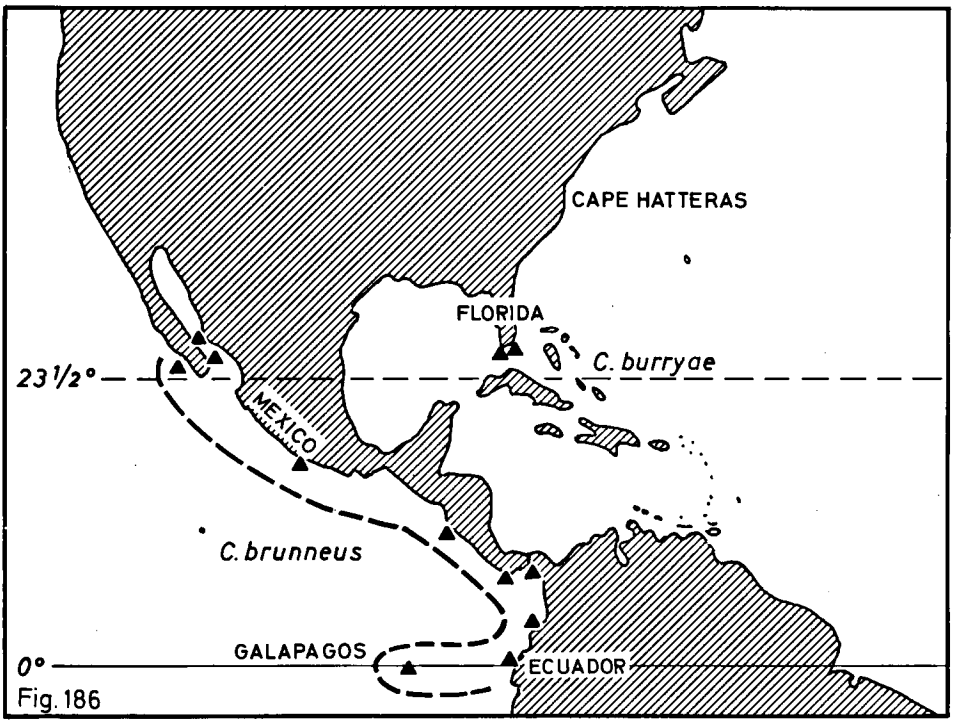

Fig. 186. Distribution of *Conus brunneus* and *C. burryae.*

Remarks. – Wood did not give a description of *C. brunneus*; he only indicated that the shell is brown. The last whorl may be almost completely brown (fig. 267a), or may exhibit a pale band in the middle (fig. 267b). The shoulder is coronated and the whorls of the spire have strong spiral grooves.

C. brunneus is a valid species. See also under *C. bartschi* in this publication.

Distribution. – It is a common species from the tropical Eastern Pacific (fig. 186), living in the southern half of the Gulf of California, and from Magdalena Bay (W. Mexico) to N. Ecuador, and at the Galapagos Islands. ZMA has specimens from Baha California, W. Mexico, Panama, and Colombia (Gorgona Id.), and Galapagos (Baltra Id.). In addition we have studied material from localities in the Gulf of California, S. Mexico, Costa Rica, Panama, Ecuador and the Galapagos Is. (in RMNH, the Los Angeles County Museum of Natural History and San Diego Natural History Museum).

bruuni
figs. 184, 268

Conus (Dauciconus) bruuni Powell, 1958, Rec. Auckl. Instit. Mus. 5: 84, pl. 10 fig. 3

Type. – The holotype is owned by ZMUC, Copenhagen, but on long term loan to the Auckland Institute and Museum, New Zealand. The measurements are 43.6 x 21.0 mm (fig. 268).

Type locality. – 'Galathea St. 674, 29°15' S.; 177°57' W., off Raoul Island, Kermadecs, 75-85 metres, 3:3:1952'.

Remarks. – We have studied the type specimen (fig. 268), which according to Cernohorsky (1976: 3) is a subadult shell, although fully adult specimens do not grow much larger. *Conus bruuni* is a valid species. The pink colour and pattern of brown maculate bands on the body whorl are similar to those of the shells of *C. kinoshitai* (Kuroda, 1956) and *C. tamikoana* Shikama, 1973 (justified emendation for *C. tamikoae*), described from S. Japan and Taiwan. However, these species have much larger shells of a different shape.

Distribution. – All specimens so far collected are from off Raoul Island, Kermadecs (fig. 184). No specimens in ZMA.

We are grateful to Mr. W. O. Cernohorsky (Auckland) for the loan of the type specimen.

bulbus
figs. 185, 269, 292

Conus bulbus Reeve, 1843, Proc. zool. Soc. Lond. 11: 171;
Conch. Icon. 1, Conus (1844): pl. 30, spec. 169

Type. – Reeve mentioned four specimens collected by and present in the collection of Lt. Hankey. Two shells were figured, of which only one (his fig. 169b) is now in BMNH, incorrectly labelled 'holotype'. This specimen is herewith designated lectotype of *Conus bulbus*; the measurements are 24 x 14 mm (fig. 292).

Type locality. – 'Cabenda, west coast of Africa (found at the depth of five fathoms in soft mud, washed down by the waters of the Congo)'.

Remarks. – *C. bulbus* is the oldest name in a species complex of Angolese *Conus*, and is considered a valid species. *C. angolensis* Paes da Franca, 1957, discussed earlier (Basteria 44: 39) is a junior synonym. The shell is characterized by irregular brown flames on the body whorl (figs. 269, 292). The paralectotype of *C. bulbus* figured by Reeve (169a), has in addition a brown band around the shoulder and a brown base.

One, or both, remaining paralectotypes were described by Reeve as *'Variety β'*, with an entirely brown shell.

Distribution. – *C. bulbus* is known from the coast of Angola (fig. 185); the type locality is just north of the mouth of the Congo river. ZMA has specimens (fig. 269) from Moçamedes Bay, S. Angola, and coll. Wils from Canata Bay. We were not able to verify the locality Fernando Poo (Walls, 1979: 173).

The authors are grateful to Mrs. K. M. Way (BMNH) for photographs of the supposed holotype.

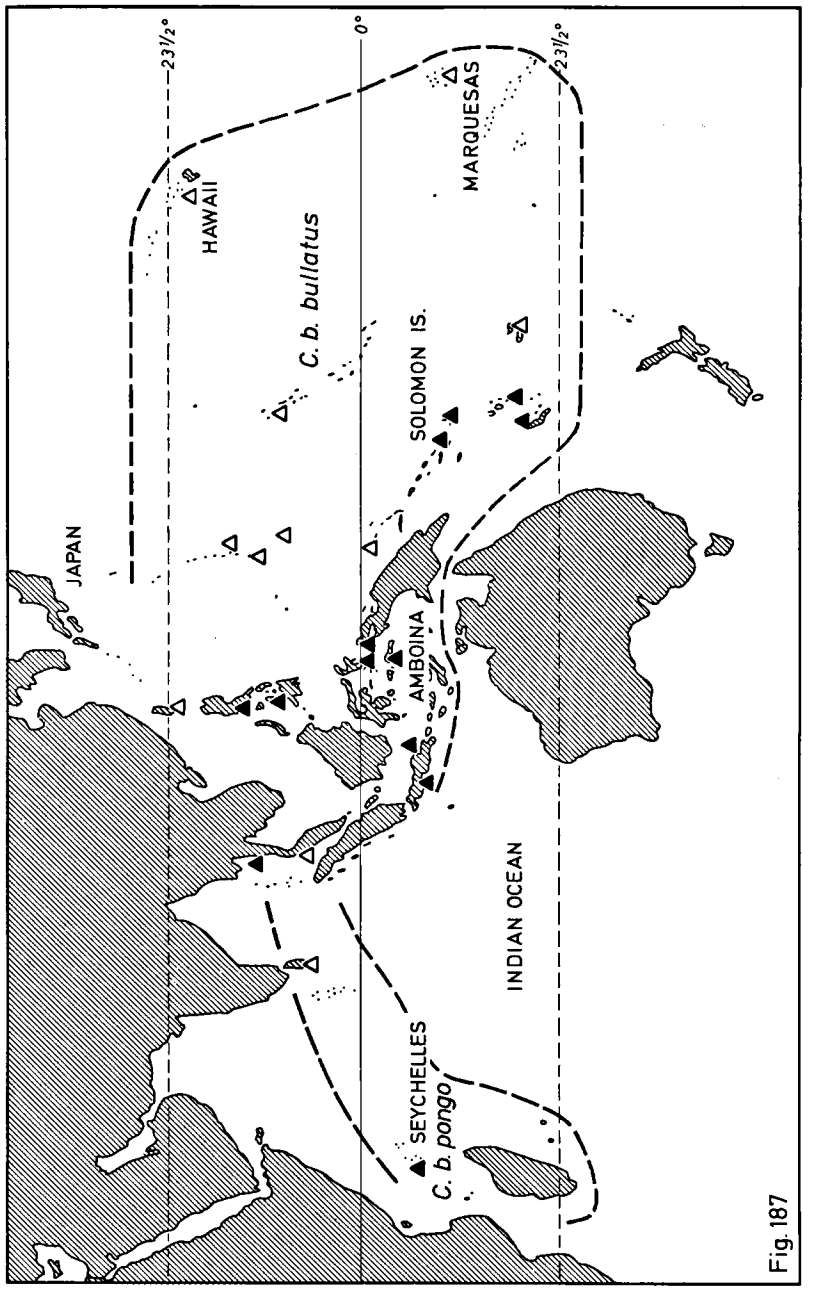

Fig. 187. Distribution of *Conus bullatus* and *C. b. pongo*.

bullatus
figs. 139, 187, 270-272

Conus bullatus Linné, 1758, Syst. Nat. 10 ed., 1: 717, no. 281

Type. – The Linnean collection does not contain a specimen; Kohn (1963: 746, figs. 7-8) designated a neotype from the Museum Ludovicae Ulricae collection at Uppsala; the dimensions are 59 x 30 mm.

Type locality. – Not mentioned. We herewith designate the island of Amboina, Indonesia, type locality of *C. bullatus*.

Remarks. – *Conus bullatus* is a valid species. The shell is well-known with its bulbous shape and pale red cloudy pattern (fig. 270).

The forma *articulata* Dautzenberg, 1937 (non *C. articulatus* Sowerby), was discussed before (Basteria 45: 22-23, fig. 139).

Shikama & Oishi (in Shikama, 1977: 21-22, pl. 4 fig. 5, pl. 5 fig. 5) described deep orange-red and more slender shells as forma *pongo*. We have studied some specimens (figs. 271-272) and can add to its description that the shell has fine axial red lines in the lighter areas of the body whorl. Being described after 1961 as 'forma' *pongo*, it has no nomenclatorial status, which was already mentioned by Shikama (1977: 22, footnote). However, with his colour figure (pl. 5 fig. 5) was printed 'subsp. nov.'. We agree with this subspecific status, because the ranges of *C. b. bullatus* and *C. b. pongo* are disjunct.

Distribution. – *C. bullatus* s.s. is uncommon around the islands in the Central Pacific as far east as Hawaii and the Marquesas; in the Western Pacific it occurs south of Japan to Indonesia and New Guinea (fig. 187). ZMA has specimens from Indonesia (Madura, Amboina, and the Moluccas); in RMNH from Java (Tjilatjap), New Guinea (Misool) and New Caledonia; in coll. Wils from the Philippines (Tayabas Bay and Negros), the Solomon Islands (S. Cristobal and S. Cruz), and the New Hebrides (Ile de Vaté).

C. bullatus pongo is restricted to the tropical Indian Ocean (fig. 187); the type locality 'East China Sea' is doubtful. We have studied specimens from the Seychelles (east of Mahé), and the Andaman Sea (coll. Wils). The shell is figured from Ceylon (Lan, 1980: 32-33, fig. 10), and Phuket, Thailand (Da Motta & Lenavat, 1979: 6-7, figs. 20-21; Walls, 1979: 176 below). We have not studied material of *C. b. pongo* from S.W. Madagascar and Mauritius, from where *C. bullatus* was reported.

burryae
figs. 186, 273-274

Conus floridanus burryae Clench, 1942, Johnsonia 1(6): 29-30, pl. 14 figs. 3-4

Type. – Holotype in MCZ (no. 145296); the measurements are 34.5 x 16.2 mm (fig. 273). – Paratype 1 (34 x 15.6 mm), from the type locality, was in the collection of Mrs. G. R. Fearing. – Paratype 2 (35.2 x 17.8 mm, fig. 274), from Ragged Key, is in MCZ (no. 145428). This specimen was figured by Clench (1942: fig. 4) as 'Paratype', but not mentioned under his type material. – Paratype 3 (32.8 x 16.4 mm), from the Florida Reefs, also in MCZ (no. 146819). For the identification of this shell see under our remarks. – Paratype 4 is from Grassy Key, but further details were not given by the original author.

Type locality. – 'off Lower Matecumbe Key, Lower Florida Keys', collected by Mrs. L. A. Burry. For the localities of the paratypes see above.

Remarks. – Clench described *Conus burryae* as a subspecies; later authors considered it a form only, but Getter & Petuch (1980: 177) favour subspecific status.

We have studied the holotype and the two paratypes of *C. burryae* in MCZ, and compared these to specimens of *C. floridanus* Gabb, 1868, including its forma *floridensis* Sowerby, 1870. *C. floridanus* (figs. 83-84) may reach a length of 50 mm, has a relatively high spire, and a flat sided last whorl; the colour is mottled yellow, base white (see *C. anabathrum* in Basteria 44: 34). This species is found south of Cape Hatteras to both sides of peninsular Florida. The colour form *floridensis* is shaped like *C. floridanus* s.s.; the shell is mottled tan with dark brown interrupted spiral lines, base white. It occurs together with *C. floridanus* s.s.

The shell of *C. burryae* (figs. 273-274) is distinct from *C. floridanus* in its smaller size (under 40 mm) and narrower shape with slightly convex last whorl; the ground colour is uniform reddish brown with a dark to blackish brown base, body whorl with many dark brown continuous spiral lines. On account of these conchological characters *C. burryae* must be considered a valid species, although closely related to *C. floridanus*.

From the type material studied, the holotype of *C. burryae* (fig. 273) and one paratype, from Ragged Key (fig. 274), agree with the description. However, the paratype from Florida Reefs belongs to *C. floridanus* s.s.

Distribution. – *C. burryae* is restricted to the Florida Keys (fig. 186), where this species is sympatric with *C. floridanus*. It is uncommon; no specimens in ZMA.

buxeus
fig. 277

Cucullus buxeus Röding, 1798, Mus. Boltenianum 2: 42, no. 530/49

Type. – Röding mentioned five specimens in the Bolten collection, which shells are considered lost. Kohn (1975: 197-198, pl. 1 fig. 12) designated the shell figured in Martini (1773: pl. 59 fig. 656) lectotype of *Conus buxeus* (Röding). The type figure is reproduced here (fig. 277); the dimensions are 62 x 36 mm.

Type locality. – Not mentioned by Röding. According to Martini (1773: 300-301) this shell is from Amboina, which locality was copied from Rumphius (1705).

Remarks. – Röding called it the 'Buxbaumholz-Tute' after the plant *Buxus sempervirens*. We agree with Kohn that *C. buxeus* (Röding) is a junior synonym of *C. figulinus* Linné, 1758. The lectotype of *C. buxeus* is identical to *C. figulinus* (fig. 278): the shell is brown and covered with many dark spiral lines and the spire is somewhat elevated.

According to Tucker (1980a: 1, 4) *C. buxeus* (including subsp. *loroisii* Kiener, 1845) is a valid species, distinct from *C. figulinus*. We consider *C. loroisii* a subspecies of *C. figulinus*; the shell of *C. loroisii* is plain gray coloured with a more flattish spire (vide *C. agrestis* in Basteria 43: 90-91, figs. 29, 42, 57).

buxeus
figs. 275-276

Conus buxeus Reeve, 1843, Proc. zool. Soc. Lond. 11: 180;
Conch. Icon. 1, Conus, pl. 47 spec. 265 (1844)
(non *C. buxeus* (Röding, 1798))

Type. – The holotype was in the Stainforth Museum, the present whereabouts are unknown. The type figure is reproduced here (fig. 275); the dimensions are 37 x 16 mm.

Type locality. – Not mentioned.

Remarks. – In the description Reeve stated that *Conus buxeus* is very closely allied to *C. lignarius* Reeve, 1843, and in the 'Emendations' (1849: 2-3) he added that it might be regarded a variety.

The shell of *C. buxeus* is yellowish brown; the body whorl is encircled with brown dotted spiral lines (fig. 275), whereas in *C. lignarius* these lines are solid. Both nominal species are generally considered colour forms of *C. furvus* Reeve, 1843, a polytypic species occurring around the Philippines. In coll. Wils there is a specimen of *C. furvus* forma *buxeus* from Negros (fig. 276).

C. buxeus Reeve, 1844, is a junior secondary homonym of *C. buxeus* (Röding, 1798). Creating a new name for *buxeus* Reeve is advisable nor necessary, since it is only a colour form; *C. cecilei* Kiener, 1845, seems to be a synonym.

byssinus

figs. 185, 279-280

Cucullus byssinus Röding, 1798, Mus. Boltenianum 2: 41, no. 518/40

Type. – The four specimens from the Bolten collection are considered lost. Kohn (1975: 198, pl. 1 fig. 13) designated the shell figured in Martini (1773: pl. 60 fig. 669) lectotype of *Conus byssinus* (Röding). The type figure is reproduced here (fig. 279); the dimensions are 67 x 42 mm.

Type locality. – Not mentioned by Röding. He called it 'Die arabische Tute' (the arab cone) which refers to the pattern on the shell. According to Martini (1773: 316) the species is from 'Ostindien und Afrika'. We herewith designate Villa Cisneros, Western Sahara, type locality of *C. byssinus*.

Remarks. – From the type figure Kohn supposed that *C. byssinus* most likely represents *C. pulcher* Lightfoot, 1786. About ten nominal species were described in the *C. pulcher* complex, and further research about the interrelationship is needed.

Walls (1979: 177, 251) considered *C. byssinus* a valid species, found along the coast from the Spanish Sahara to Senegal, the adult shell being 30-60 mm long. We agree with Walls that the type figure of *C. byssinus* (fig. 279), with its well defined pattern of squarish black-brown dots and orange bands, most probably is a shell (cf. fig. 280) from the coast of the Western Sahara region (formerly the Spanish Sahara). Specimens from Mauritania have a pattern with more punctate spiral lines (fig. 281) like the shell of *C. papilionaceus* Hwass, 1792, of which the type specimen is 53 mm long.

We consider *C. byssinus* to belong to the *C. pulcher* species complex, with subspecific status: *C. pulcher byssinus*.

Distribution. – The *C. pulcher* complex shows clinal variation, with populations at the Canary Islands (offshore, 25-50 m deep), on the coast of the Western Sahara (*C. pulcher byssinus*, fig. 185), and from Mauritania to Senegal (*C. papilionaceus* and *C. pulcher* s.s.). The type figure of *C. pulcher* measures 76 mm, but specimens of up to 150 mm are known.

The subspecies *C. pulcher prometheus* Hwass, 1792, has a southern distribution along the Gulf of Guinea to Angola, in relatively deeper water; the shell may reach over 200 mm in length.

SUMMARY

Based on the type material and the original descriptions, on the *Conus* collection of the Zoological Museum Amsterdam and other museums and private collections, the (sub)specific names in the recent Conidae are revised. Illustrations and distribution maps are supplied. In the fifth part the following *Conus* names are discussed:

baccatus Sow. – provisionally considered a valid species; juvenile?

badius Kien. – subspecies of *C. namocanus* Hw. – Red Sea; coast near Obhur designated type locality.

baileyi Röckel & Da Motta – provisionally considered a valid species – Solomon Sea and Queensland.

bairstowi Sow. – valid species – east coast of S. Africa.

bajanensis Usticke – subspecies of *C. armiger* Crosse – off the Guyanas.

balteatus Sow. – valid species – Indian Ocean, Indonesia and tropical W. Pacific; Mascarenes designated type locality.

balteus Wood – nomen dubium.

bandanus Hw. – valid species – tropical Indo-Pacific from E. Africa to Hawaii and Tuamotu Archipelago.

bandatus Perry – nomen dubium.

barathrum (Röding) – colour form of *C. spurius* Gmel. – St. Croix designated type locality.

barbadensis Hw. – junior synonym of *C. miliaris* Hw.

barbara Braz. – junior synonym of *C. monachus* L.

barthelemyi Bern. – valid species – western Indian Ocean.

bartschi Han. & Str. – valid species – tropical eastern Pacific.

batheon Sturany – subspecies of *C. inscriptus* Rve; lectotype designated – southern Red Sea.

bayani Jouss. – valid species – off India and Ceylon, S. Red Sea.

baylei Jouss. – junior synonym of *C. spurius* Gmel.

beckeri Sow. – junior synonym of *C. pictus* Rve.

beddomei Sow. – valid species – type locality restricted to the Grenadines. Three subspecies are recognized: *C. b. beddomei* – southern Lesser Antilles; *C. b. brasiliensis* Clench – Brazil; *C. b. mayaguensis* Ust. – Puerto Rico.

bengalensis (Okutani) – valid species – Bay of Bengal.

benten (Shik. & Oishi) – junior synonym of *C. dusaveli* (Ads.).

berdulinus Veill. – valid species – Indian Ocean.

bermudensis Clench –subspecies of *C. mindanus* Hw. – Bermuda.

bernardii Kien. – colour form of *C. cinereus* Hw.

betulinus L. – valid species – Indian Ocean and W. Pacific; Java designated type locality.

bicinctus Don. – nomen dubium.

bicolor Sow. (March 1833) – renamed *C. albomaculatus* Sow., a form of *C. litoglyphus* Hw.

bicolor Sow. (May 1833) – junior synonym of *C. pulcher* Lightf.

bicolor Sow. (past July 1833) – renamed *C. sinensis* Sow.

bifasciatus Gmel. – objective junior synonym of *C. centurio* Born.

bifasciatus Sow. – junior homonym; nomen novum for *C. fasciatus* Ads., lectotype designated; senior synonym of *C. ustickei* Mill.

biliosus (Röding) – valid species – coasts of Pakistan, India and Ceylon; Gulf of Mannar designated type locality.

bizona Coom., Mool. & Wils – subspecies of *C. arenatus* Hw. – Indian Ocean.
bizonata Crosse – nomen nudum.
blainvillei Kien. – colour form of *C. fumigatus* Hw.
blainvillii Vign. – subspecies of *C. ammiralis* L., lectotype designated – E. Africa and Andaman Sea; Conducia Bay in Mozambique designated type locality.
blanfordianus Crosse – provisionally considered a valid species – S. China Sea.
blatteus Shikama – provisionally considered a valid species – off Taiwan.
bocagei Trov. – junior synonym (or form) of *C. africanus* Kien.
bocki Sow. – subspecies of *C. sulcatus* Hw. – Thailand, Indonesia to Solomon Is.
boeticus Rve – valid species – S. Philippines, Indonesia, New Guinea.
boholensis Petuch – junior synonym of *C. borneensis* Ads & Rve.
boivini Kien. – aberrant specimen of *C. gubernator* Hw.
borbonicus Ads – junior synonym of *C. tulipa* L., juvenile.
borgesi Trov. – colour form of *C. crotchii* Rve.
borneensis Ads & Rve – valid species; lectotype designated – Sulu Sea.
borneensis Sow. – junior homonym; junior synonym of *C. magus* L.
boschi Clover – valid species – Arabian Sea.
boubeeae Sow. – junior synonym of *C. duvali* Bern. – two paratypes discovered.
bougei Sow. – colour form of *C. exiguus* Lam.
branhamae Clench – systematic status uncertain.
brasiliensis Clench – subspecies of *C. beddomei* Sow. – off Brazil.
brazieri Sow. – junior synonym of *C. circumcisus* Born.
brettinghami nom. nov. – new name for *C. undulatus* Sow. (non Solander) – subspecies of *C. sulcatus* Hw. – Philippines; Marinduque designated type locality.
breviculus Sow. – junior synonym of *C. pulcher* Lightf.
brevis Smith – junior synonym of *C. caracteristicus* Fischer; juvenile. Junior homonym of the fossil species *C. brevis* Sow.
broderipii Rve – valid species – Moluccas and Sulu Sea; Moluccas designated type locality.
brontodes Shikama – junior synonym of *C. kinoshitai* (Kuroda); juvenile.
bruguieresi Kien. – valid species – Senegal; Dakar designated type locality.
brunneus Wood – valid species – tropical eastern Pacific; Galapagos Is. designated type locality.
bruuni Powell – valid species – Kermadec Is.
bulbus Rve – valid species; lectotype designated – Angola.
bullatus L. – valid species – Amboina designated type locality. Two subspecies are recognized: *C. b. bullatus* – Indonesia, tropical western and central Pacific; *C. b. pongo* Shik. & Oishi – Indian Ocean.
burryae Clench – valid species – Florida Keys.
buxeus (Röding) – junior synonym of *C. figulinus* L.
buxeus Rve – junior secondary homonym; colour form of *C. furvus* Rve.
byssinus (Röding) – subspecies of *C. pulcher* Lightf. – Western Sahara coast; Villa Cisneros designated type locality.

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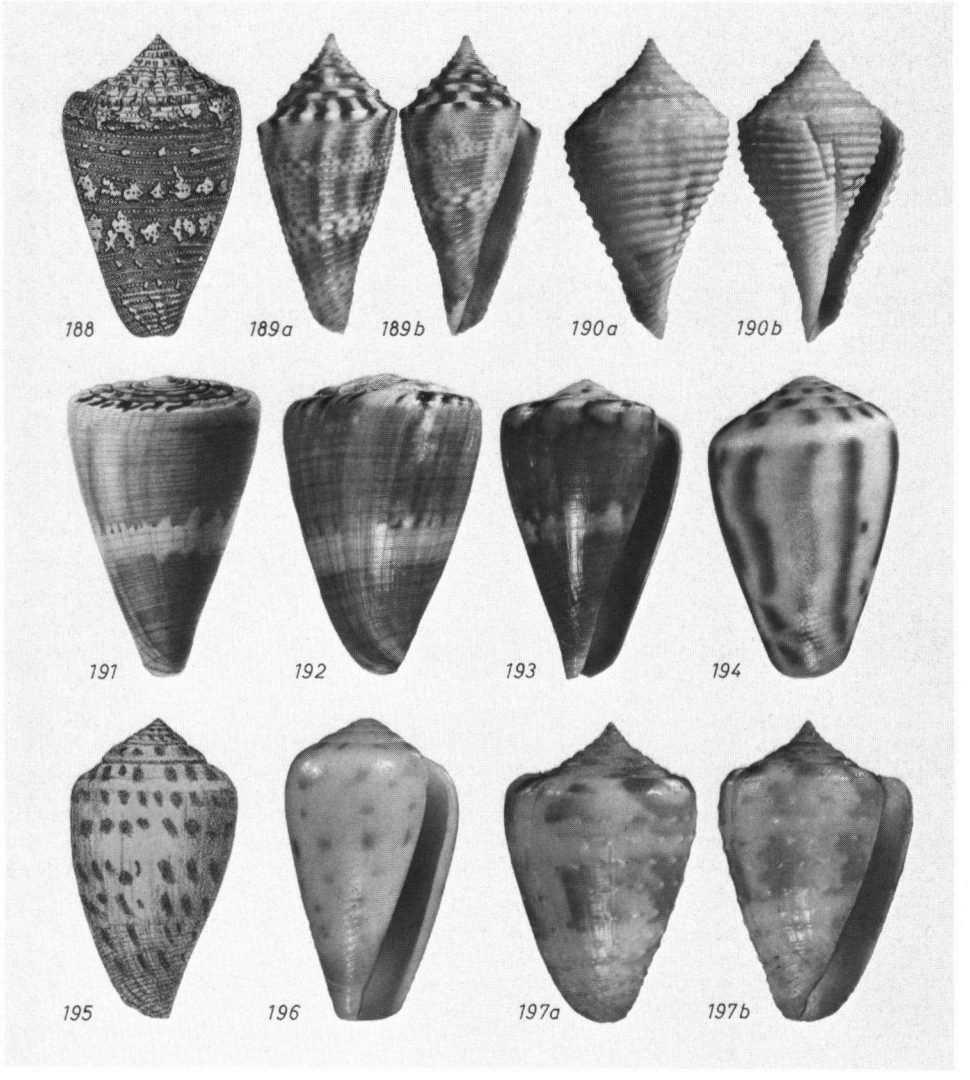
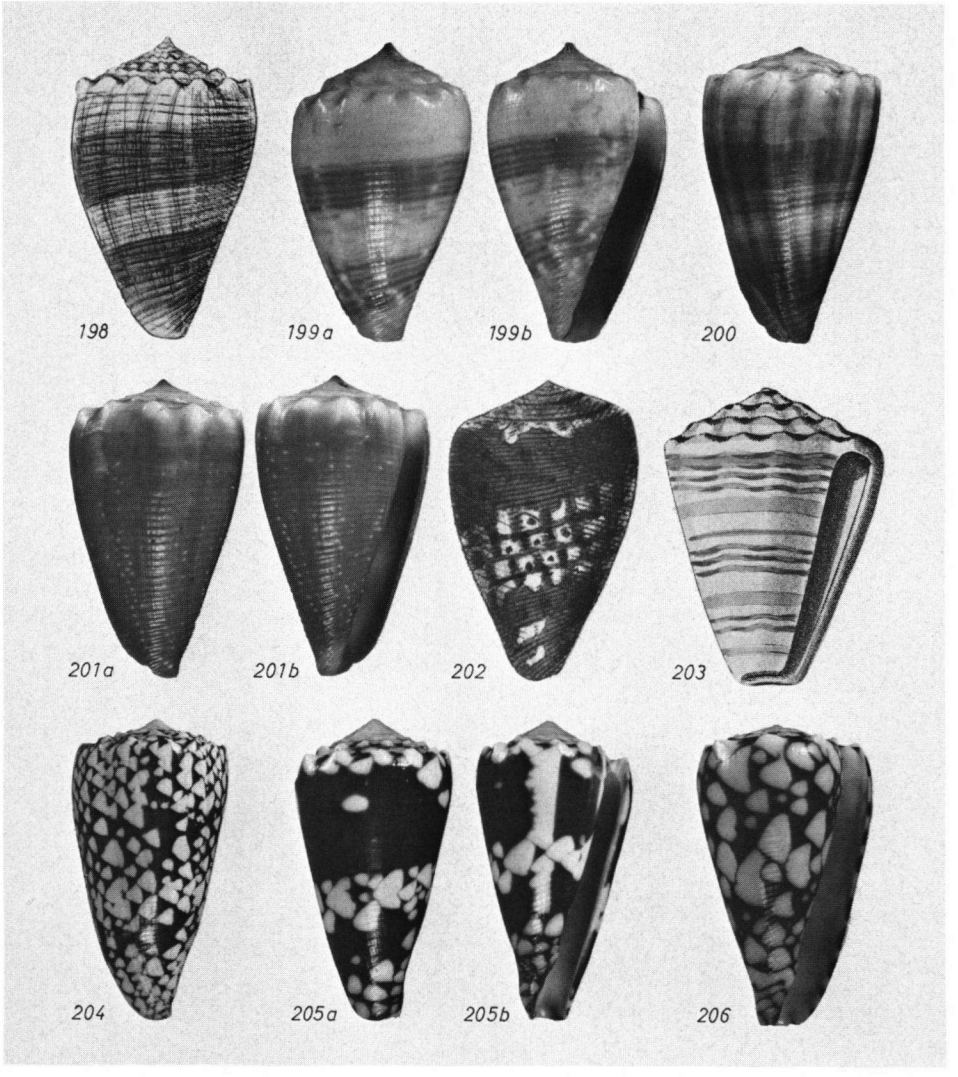
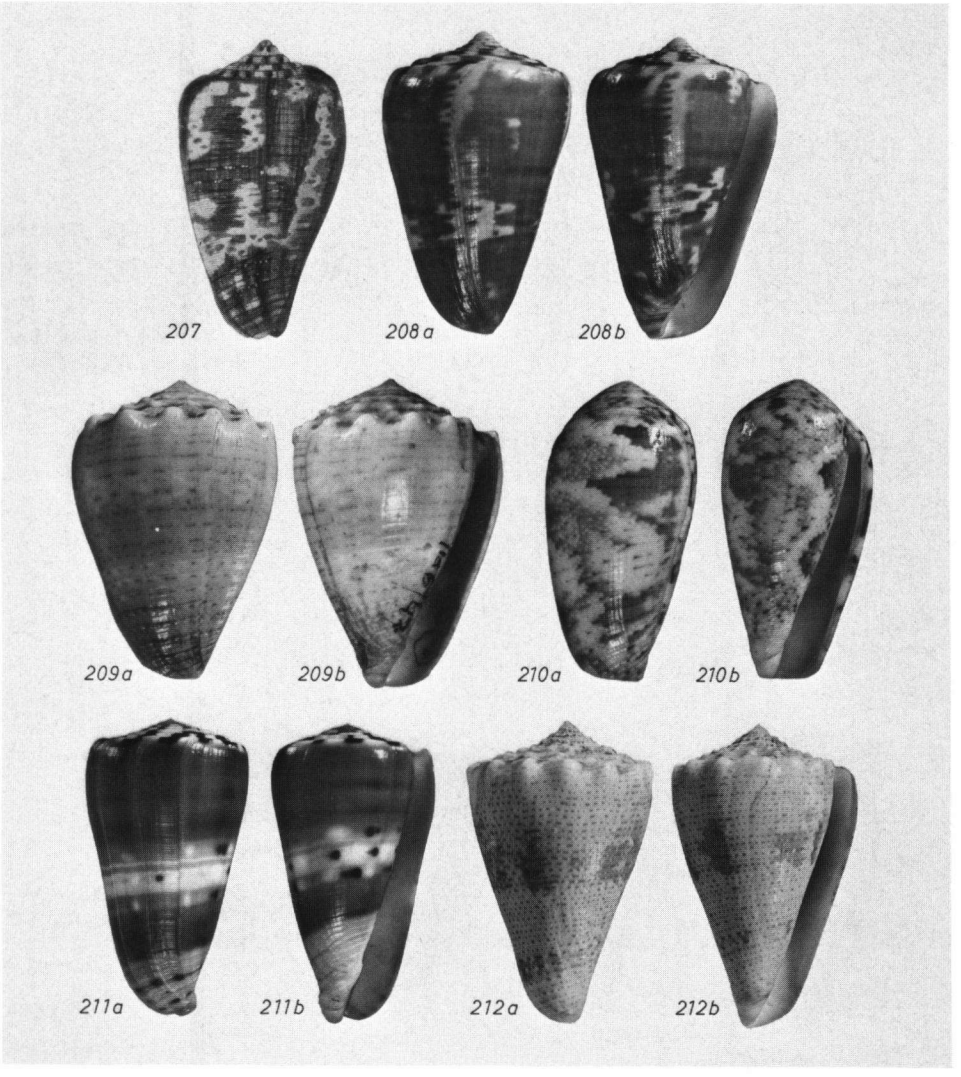


Fig. 188. *Conus cedonulli* L. Type figure of *C. amiralis* Hw., S. America, length 44 mm (after Hwass). See Basteria 45: 55, 1981.
Fig. 189. *C. bailevi* Röckel & da Motta, holotype, Russel Id. Solomon Sea, length 29.2 mm (MHNG).
Fig. 190. *C. armiger bajanensis* Usticke. Holotype of *C. bajanensis*, S. of Barbados, length 31.4 mm (AMNH).
Figs. 191-193. *C. namocanus badius* Kien. 191. Type figure of *C. badius*, length 60 mm (after Kiener). 192. Saudi Arabia, Obhur, length 66.1 mm. 193. Djibouti, Obock, length 41.3 mm.
Figs. 194-196. *C. bairstowi* Sow. 194. Port Elizabeth, length 25.9 mm. 195. Type figure, Port Elizabeth, length 50 mm (after Sowerby). 196. Jeffreys Bay, length 21.0 mm.
Fig. 197. *C. baccatus* Sow., holotype, length 22.2 mm (National Museum of Wales).

Unless otherwise stated, specimens in ZMA.



Figs. 198-201. *Conus balteatus* Sow. 198. Type figure, length 32 mm (after Sowerby). 199. Mauritius, length 22.2 mm. 200-201. Moluccas, length 36.4 and 27.9 mm.
Fig. 202. *C. balteus* Wood, type figure, length about 38 mm (after Wood).
Fig. 203. *C. bandatus* Perry, type figure, length 44 mm (after Perry).
Fig. 204. *C. bandanus* Hw., Moluccas, Banda, length 112.6 mm.
Fig. 205. *C. bandanus* fa. *equestris* (Röding), Moluccas, length 48.0 mm.
Fig. 206. *C. bandanus nigrescens* Sow., banded specimen, Upolu, W. Samoa, length 35.2 mm.



Figs. 207-208. *Conus spurius* fa. *barathrum* (Röding). 207. Type figure of *C. barathrum*, 'St. Croix', length 60 mm (after Martini). 208. West Indies, length 64.7 mm.
Fig. 209. *C. miliaris* Hw., holotype of *C. barbadensis* Hw., length 29 mm (MHNG). Photo G. Dajoz, MHNG.
Fig. 210. *C. monachus* L., holotype of *C. barbara* Braz., Solomon Is., length 40.1 mm (SAM).
Fig. 211. *C. barthelemyi* Bern., Réunion, length 75.6 mm.
Fig. 212. *C. bartschi* Han. & Str., holotype, Cape San Lucas, length 49.7 mm (California Academy of Sciences).

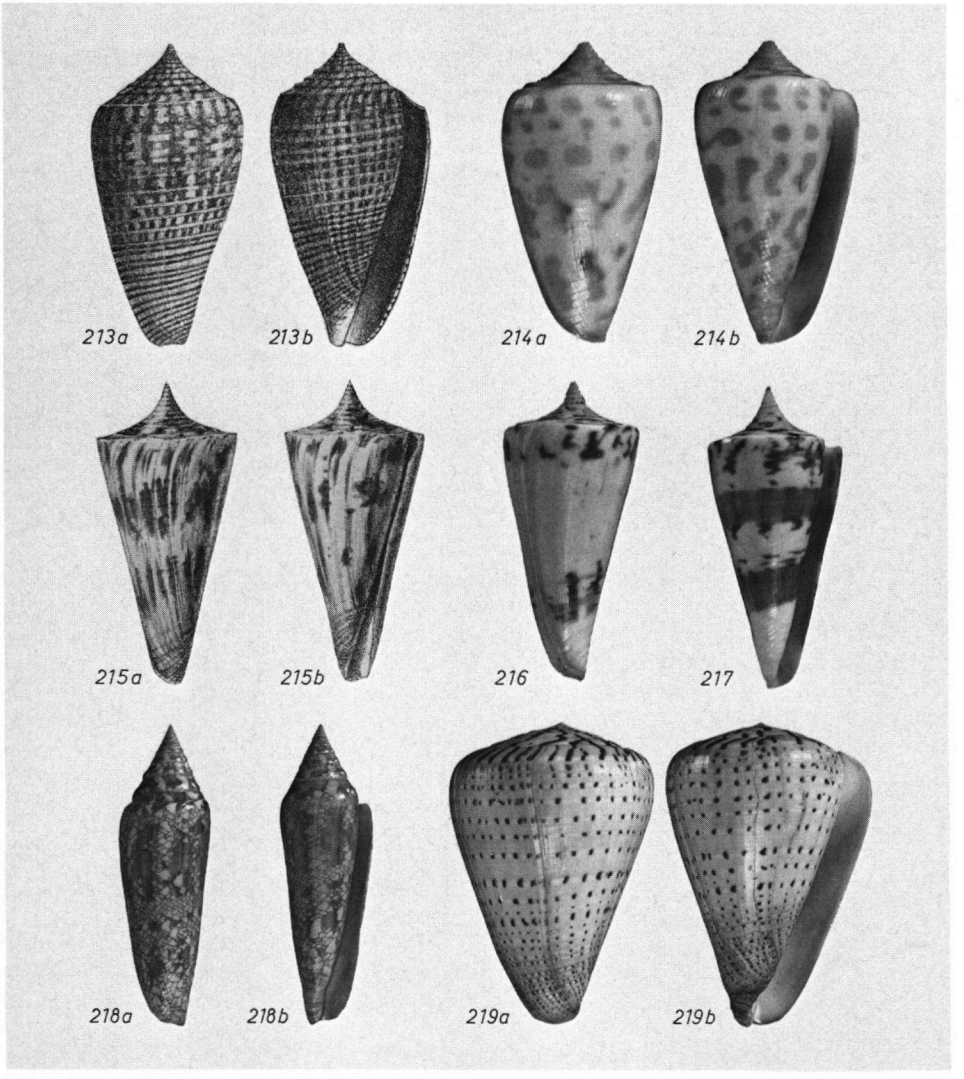
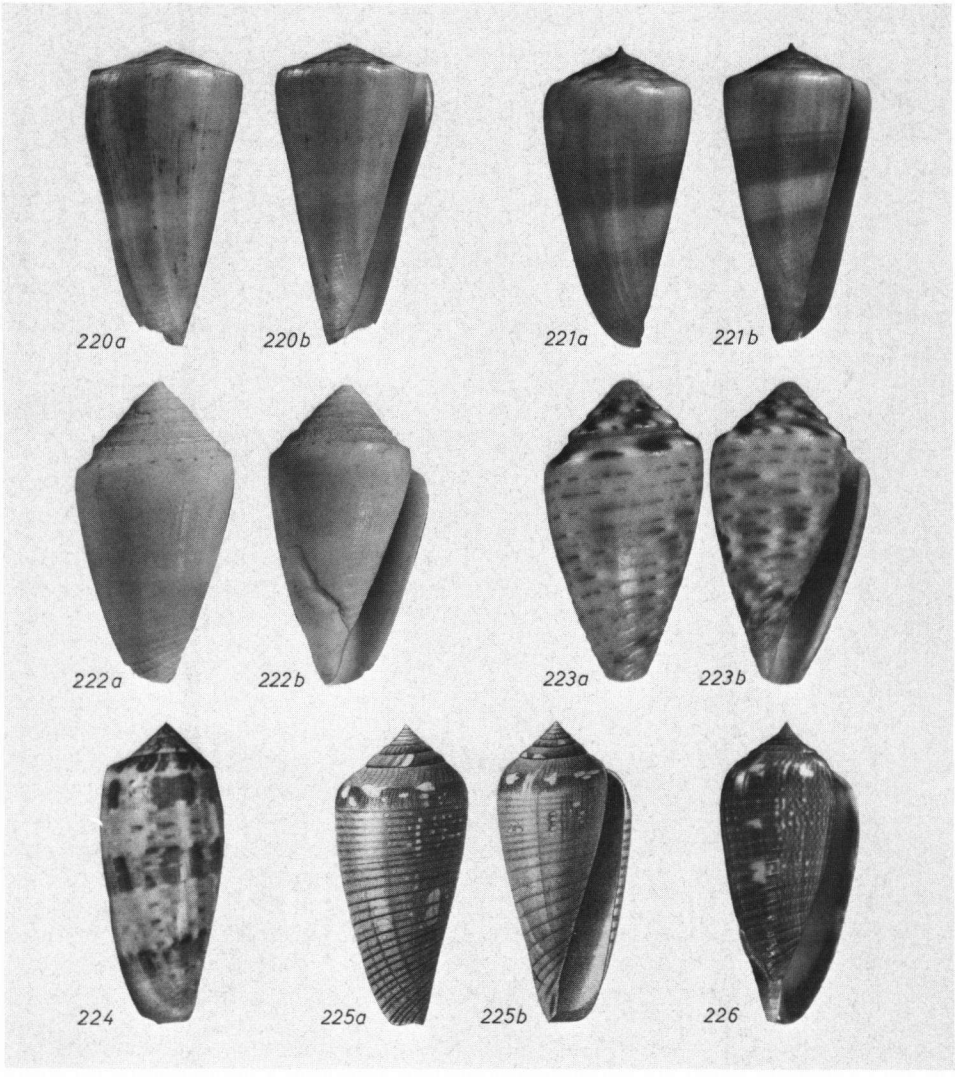


Fig. 213. *Conus inscriptus batheon* Sturany, figure of lectotype of *C. planiliratus* var. *batheon*, Red Sea, Dahlak Archipelago, length 36 mm (after Sturany).
Fig. 214. *C. spurius* Gmel., holotype of *C. baylei* Jouss., length 31 mm (MNHN).
Figs. 215-217. *C. bayani* Jouss. 215. Type figure, length 51 mm (after Jousseaume). 216-217. India, Madras, length 47.1 and 45.8 mm.
Fig. 218. *C. bengalensis* (Okutani), N. E. of Port Blair, Andaman Sea, length 101.0 mm.
Fig. 219. *C. betulinus* L., Moluccas, length 128.9 mm.



Figs. 220-221. *Conus berdulinus* Veillard. 220. Holotype, Réunion, length 68.3 mm (MNHN).
221. Off Madras, length 53.9 mm (coll. D. Röckel).
Fig. 222. *C. mindanus bermudensis* Clench, holotype of *C. bermudensis*, Dyer Island, Bermuda, length 43,1 mm (MCZ).
Fig. 223. *C. duvali* Bern. (= ? *mindanus* Hw.), paratype of *C. boubeeae* Sow., length 14.0 mm (IRScNB).
Fig. 224. *C. dusaveli* (Ads.), type figure of *C. dusaveli benten* (Shikama & Oishi), East China Sea, length 78.8 mm (after Shikama).
Figs. 225-226. *C. cinereus* fa. *bernardii* Kien. 225. Type figure, length 44 mm (after Kiener).
226. Moluccas, length 41.6 mm.

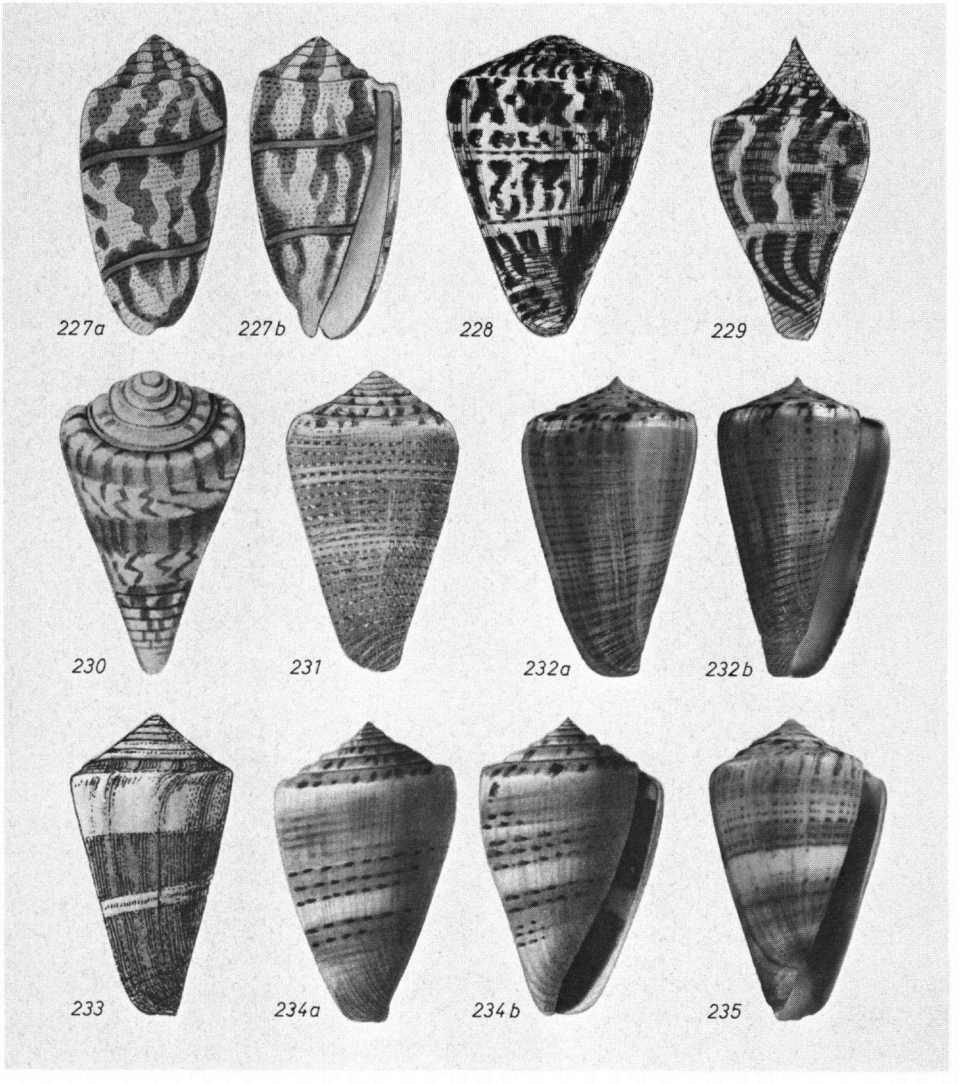
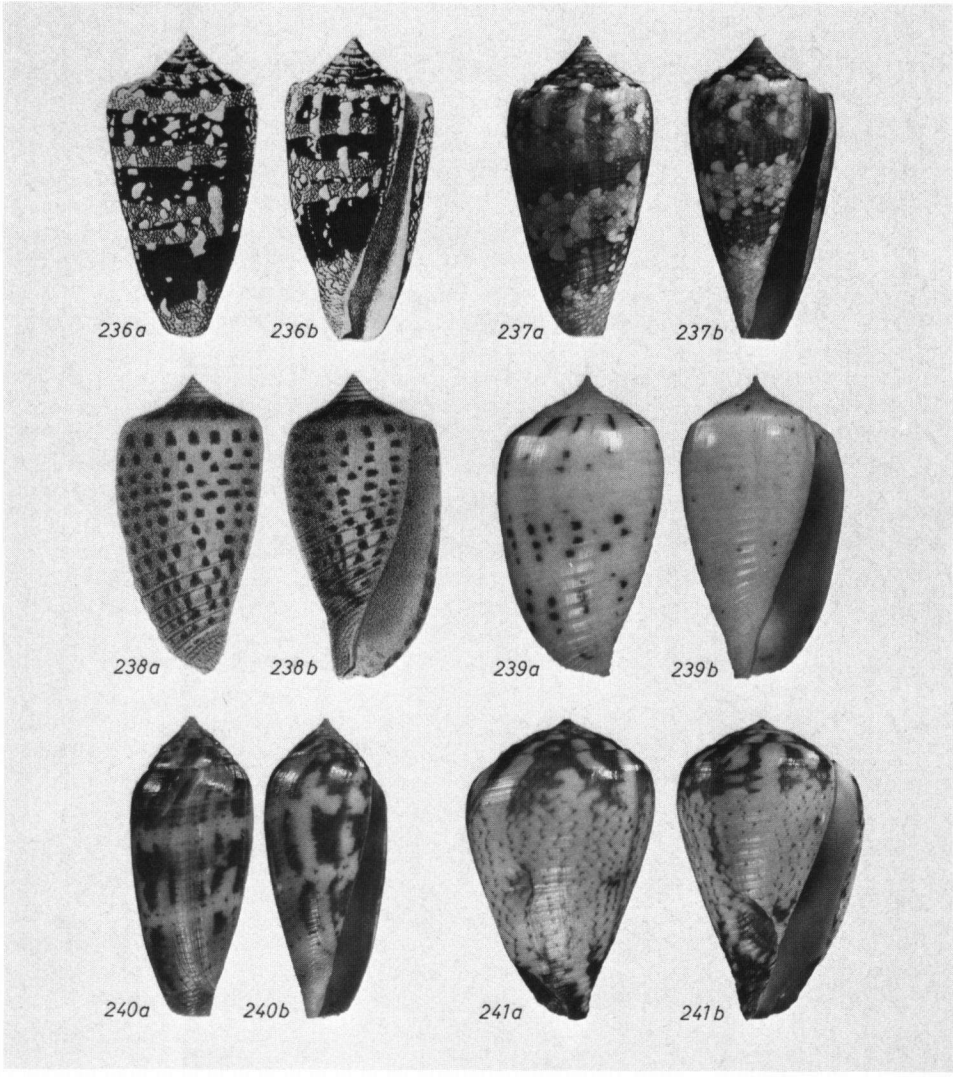


Fig. 227. *Conus bicinctus* Don., type figure, length 55 mm (after Donovan).
Fig. 228. *C. pulcher* Lightf., type figure of *C. bicolor* Sow., length 35 mm (after Sowerby).
Fig. 229. *C. sinensis* Sow., type figure of *C. bicolor* Sow., length 36 mm (after Sowerby).
Fig. 230. *C. centurio* Born, type figure of *C. bifasciatus* Gmel., length 36 mm (after Born).
Figs. 231-232. *C. biliosus* (Röding). 231. Type figure, length 45 mm (after Chemnitz). 232. India, Kilakkarai, length 50.2 mm.
Fig. 233. *C. ustickei* Miller in Usticke, type figure of *C. bifasciatus* Sow., length 27 mm (after Sowerby).
Figs. 234-235. *C. fumigatus* fa. *blainvillei* Kien. 234. Type figure of *C. blainvillei* Kien., length 37 mm (after Kiener). 235. Red Sea, length 44.3 mm.



Figs. 236-237. *Conus ammiralis blainvillii* Vign. 236. Type figure of *C. blainvillii*, length 64 mm (after Vignard). 237. Asia, length 43.5 mm (MNHN).
Figs. 238-239. *C. blanfordianus* Crosse. 238. Type figure, length 36 mm (after Crosse). 239. South China Sea, length 27.5 mm (coll. Wils).
Fig. 240. *C. blatteus* Shikama, holotype, Taiwan, length 33.6 mm (National Science Museum Tokyo).
Fig. 241. *C. africanus* Kien., paratype of *C. bocagei* Trov., Angola, Benguela, length 20.9 mm (MNHN).

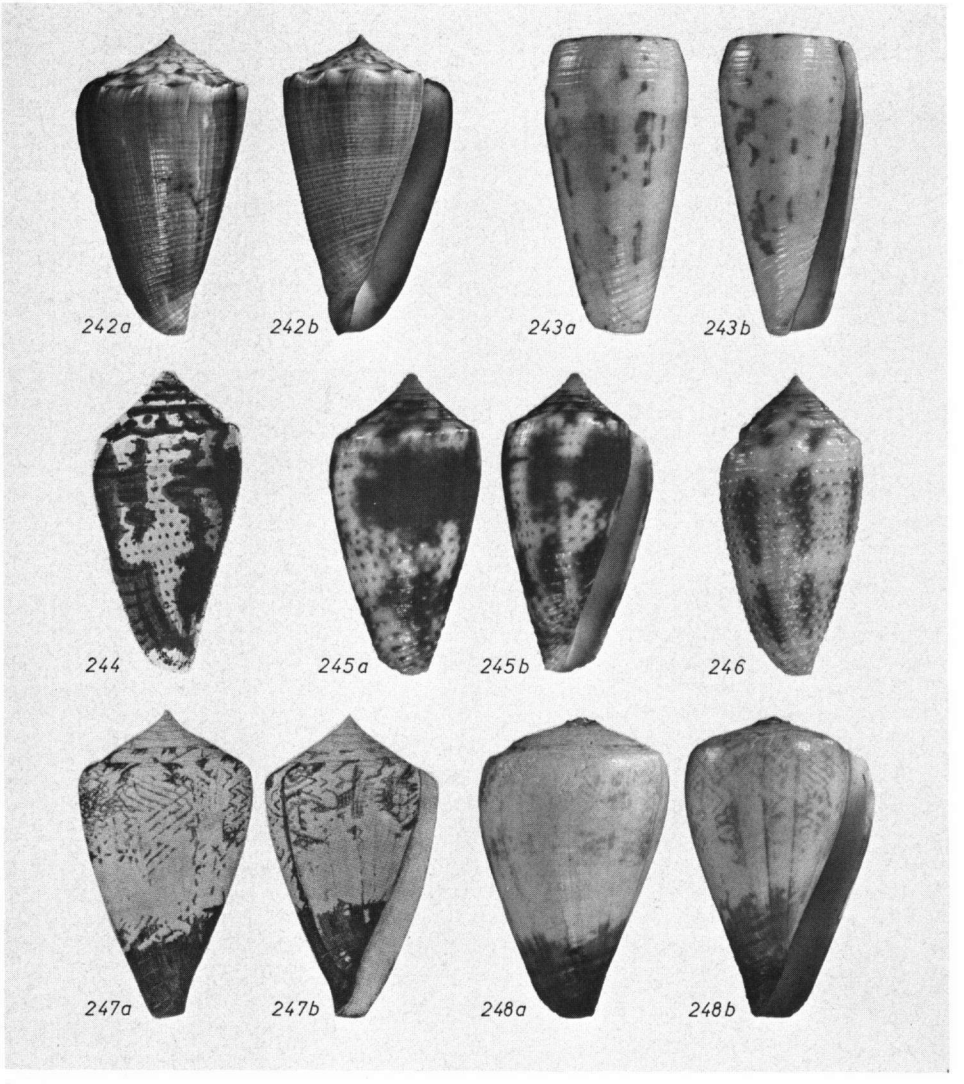
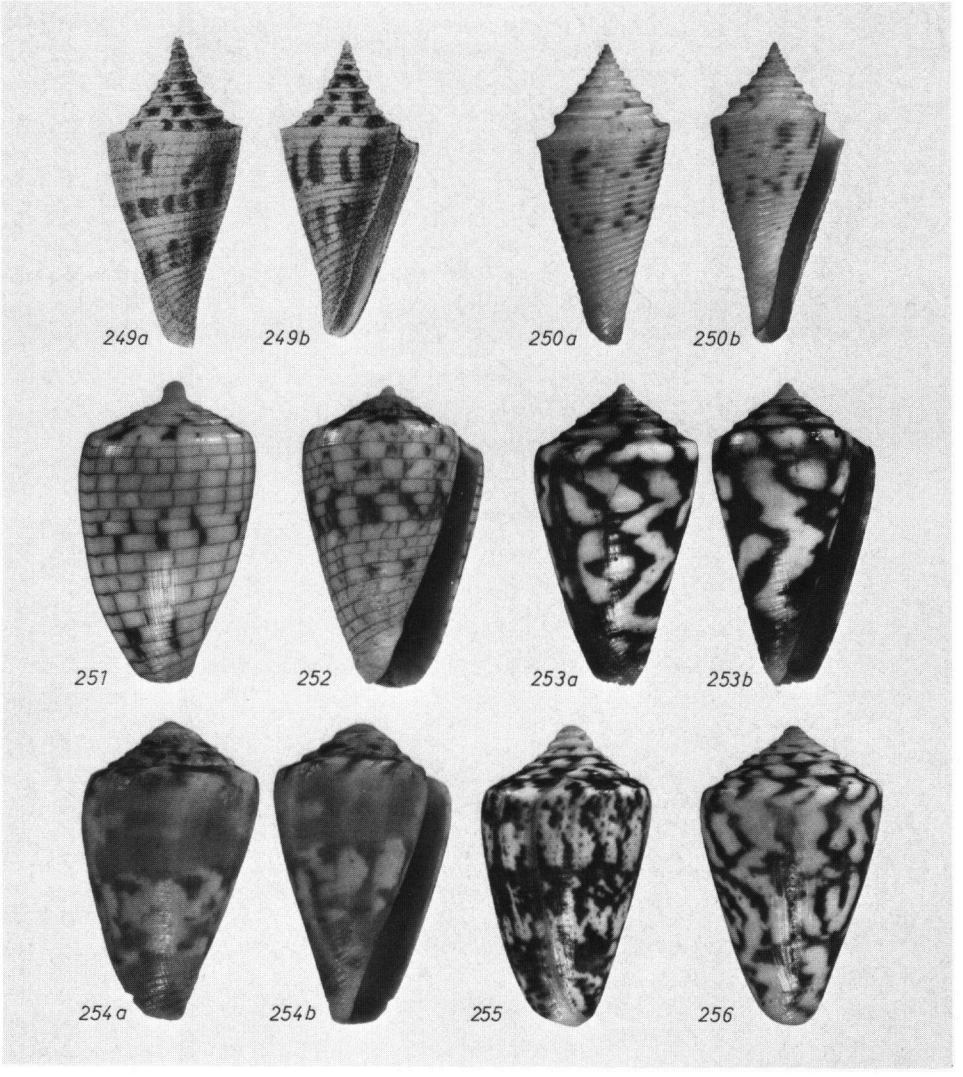


Fig. 242. *Conus sulcatus bocki* Sow., holotype of *C. bocki*, Amboyna, length 57.8 mm (National Museum of Wales).
Fig. 243. *C. gubernator* Hw., malformed. Holotype of *C. boivini* Kien., length 60.0 mm (MNHN).
Figs. 244-245. *C. boeticus* Rve. 244. Type figure, Philippines, length 38 mm (after Reeve).
245. Moluccas, length 23.0 mm.
Fig. 246. *C. boeticus* fa. *rivularis* Rve, Moluccas, length 36.0 mm.
Figs. 247-248. *C. crotchii* fa. *borgesi* Trov. 247. Type figure of *C. borgesi*, Boavista, Cape Verde Is., length 26.1 mm (after Trovão). 248. San Nicolai, Cape Verde Is., length 24.5 mm.



Figs. 249-250. *Conus borneensis* Ads & Rve. 249. Figure of paralectotype, N. E. Borneo, length 29 mm (after Adams & Reeve). 250. Holotype of *C. boholensis* Petuch, Bohol, Philippines, length 38.4 mm (DMNH).

Figs. 251-252. *C. boschi* Clover, Masirah Island, Oman. Length 18.0 and 19.1 mm.

Fig. 253. *C. beddomei* Sow., Grenadines, length 22.3 mm (coll. D. Vink).

Figs. 254-256. *C. beddomei brasiliensis* Clench. 254. Holotype of *C. brasiliensis*, Vitória, Brazil, length 21.9 mm (MCZ). 255-256. Espirito Santo, Brazil, length 25.0 and 21.3 mm (coll. D. Vink).

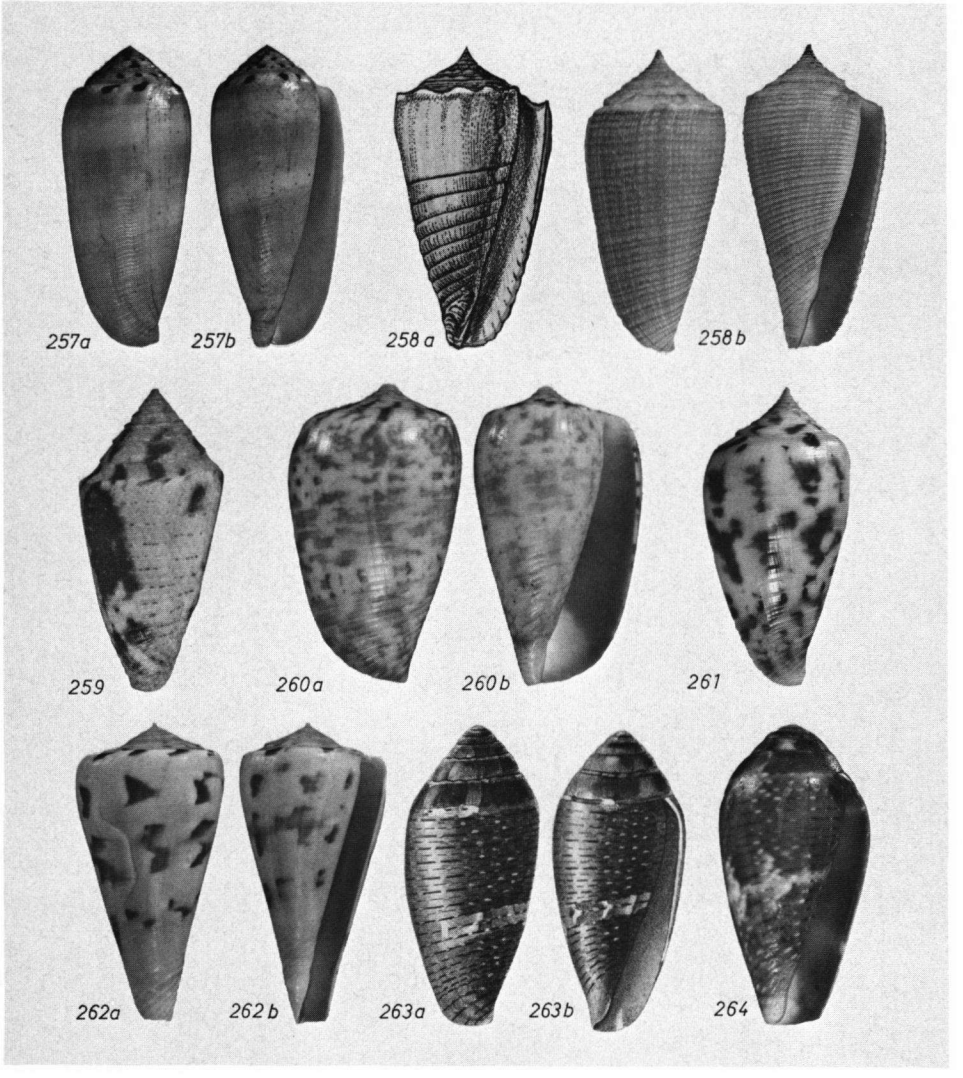


Fig. 257. *Conus circumcisus* fa. *brazieri* Sow., holotype of *C. brazieri*, Solomon Is., length 72.8 mm (National Museum of Wales).

Fig. 258. *C. sulcatus brettinghami* nom. nov. 258a. Type figure of *C. undulatus* Sow., length 43 mm (after Sowerby). 258b. Granulated specimen, Marinduque, Philippines, length 51.9 mm.

Fig. 259. *C. branhamae* Clench, type figure, Great Abaco, Bahamas, length 27½ mm (after Clench).

Figs. 260-261. *C. broderipii* Rve. 260. Moluccas, length 26.9 mm. 261. Philippines, length 35.6 mm.

Fig. 262. *C. kinoshitai* (Kuroda), juvenile. Holotype of *C. brontodes* Shikama, Taiwan, length 46.2 mm (National Science Museum, Tokyo).

Figs. 263-264. *C. bruguieresi* Kien. 263. Type figure, length 38 mm (after Kiener). 264. Senegal, length 22.2 mm.

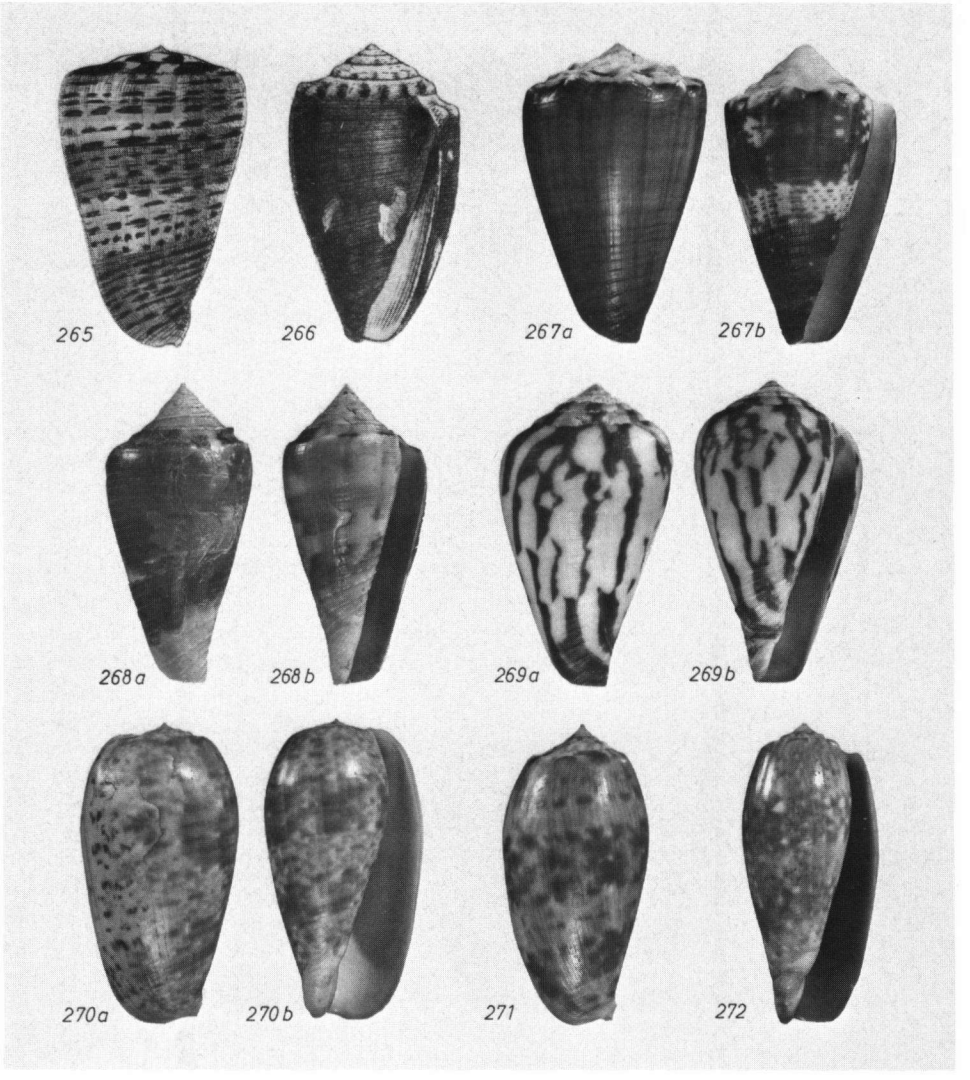
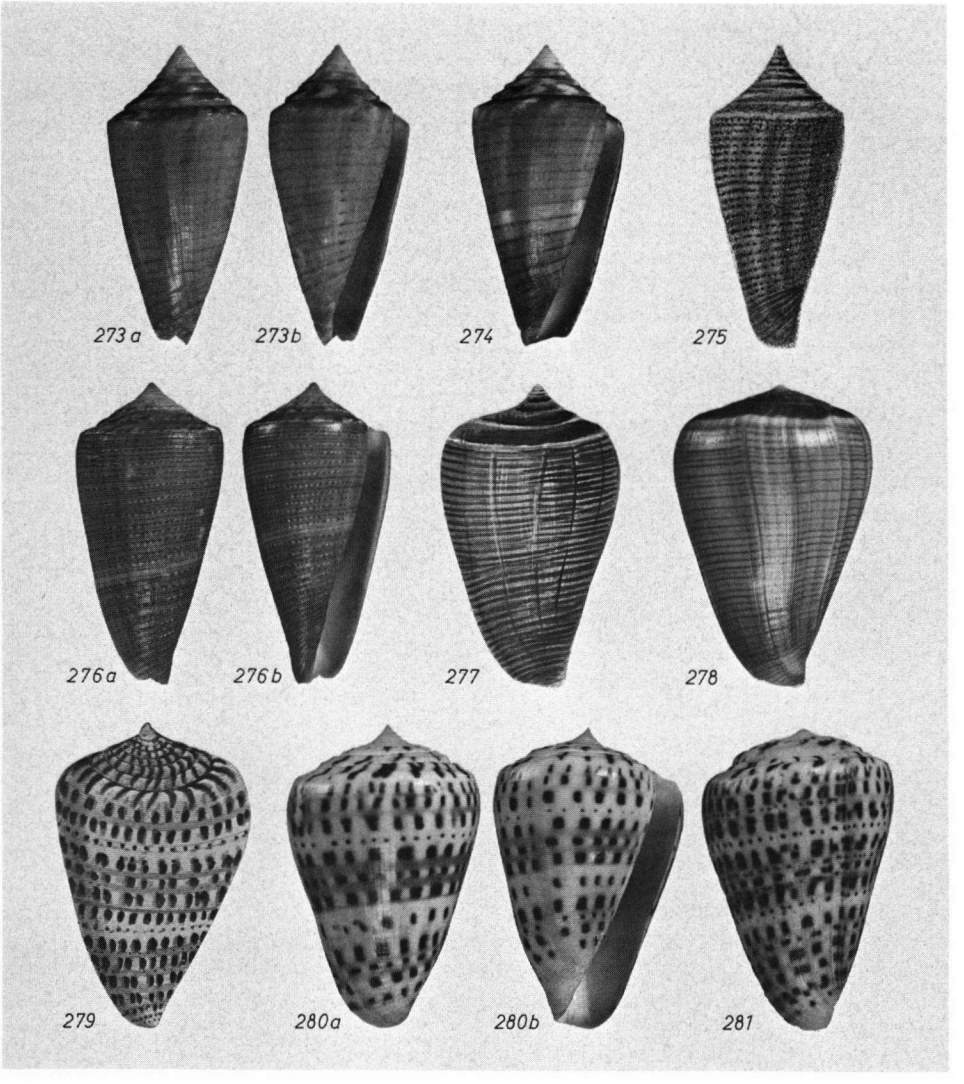


Fig. 265. *Conus pulcher* Lightf., type figure of *C. breviculus* Sow., length 41 mm (after Sowerby).
Figs. 266-267. *C. brunneus* Wood. 266. Type figure, length about 52 mm (after Wood). 267a. Lower California, length 40.6 mm. 267b. W. Mexico, length 45.8 mm.
Fig. 268. *C. bruuni* Powell, holotype, Raoul Island, Kermadecs, length 43.6 mm (ZMUC).
Fig. 269. *C. bulbus* Rve, Moçamedes Bay, Angola, length 18.9 mm.
Fig. 270. *C. bullatus* L., Moluccas, length 66.2 mm.
Figs. 271-272. *C. bullatus pongo* Shikama. 271. Andaman Sea, length 55.8 mm (coll. Wils). 272. W. Mahé, Seychelles, length 59.2 mm (coll. H. Saesen).



Figs. 273-274. *Conus burryae* Clench. 273. Holotype of *C. floridanus burryae*; Matecumbe, Florida Keys, length 34.5 mm (MCZ). 274. Paratype, Ragged Key, length 35.2 mm (MCZ).
Figs. 275-276. *C. furvus* fa. *buxeus* Rve. 275. Type figure of *C. buxeus*, length 37 mm (after Reeve). 276. Negros, Philippines, length 42.1 mm (coll. Wils).
Figs. 277-278. *C. figulinus* L. 277. Type figure of *C. buxeus* (Röding), length 62 mm (after Chemnitz). 278. Moluccas, length 76.8 mm.
Figs. 279-280. *C. pulcher byssinus* (Röding). 279. Type figure of *C. byssinus*, length 67 mm (after Martini). 280. Villa Cisneros, Western Sahara, length 47.5 mm (coll. H. Saesen).
Fig. 281. *C. pulcher papilionaceus* Hw., Cansado, Mauritania, length 57.2 mm.

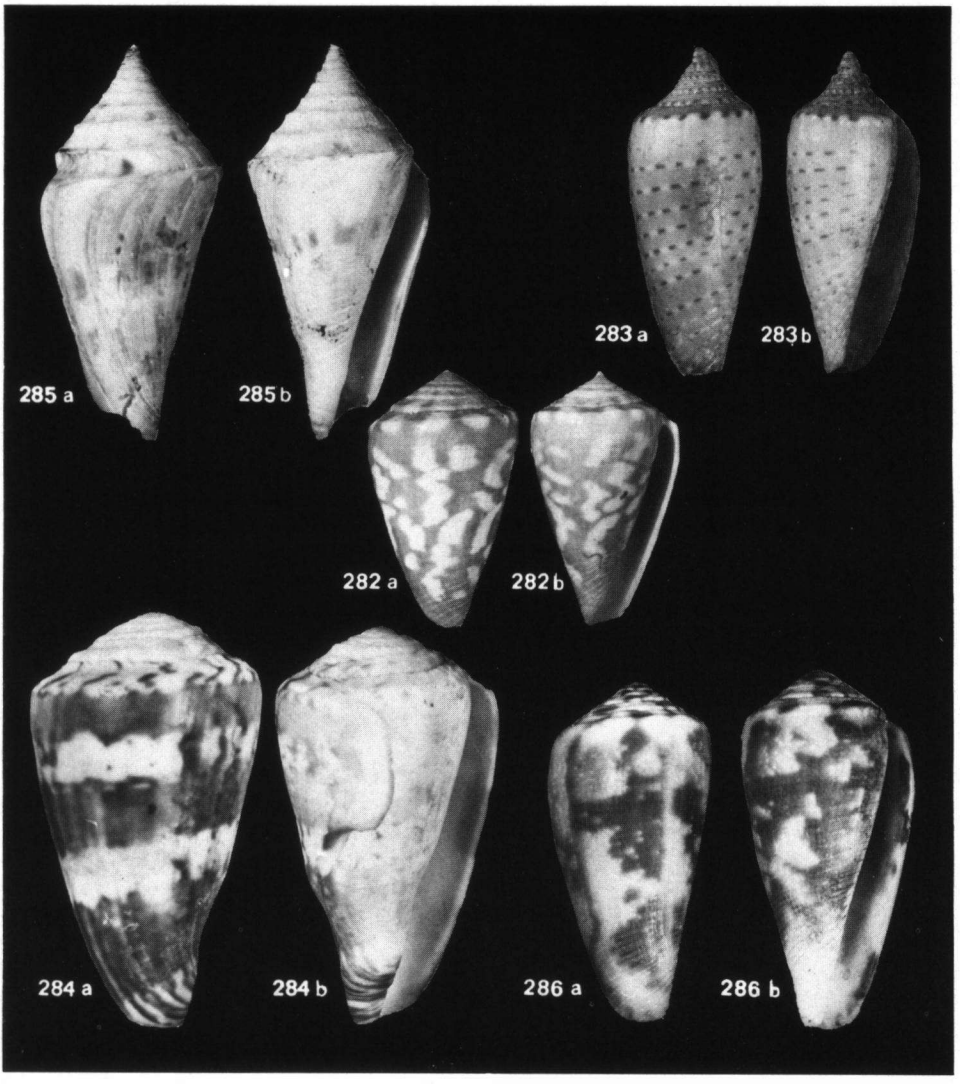


Fig. 282. *Conus beddomei* Sow., holotype, West Indies, length 27 mm (BMNH).
Fig. 283. *C. tulipa* L., juvenile. Holotype of *C. borbonicus* H. Ads., Reúnion, length 12 mm (BMNH).
Fig. 284. *C. pictus* Rve, holotype of *C. beckeri* Sow., St. Francis Bay, S. Africa, length 50 mm (BMNH)
Fig. 285. *C. borneensis* Ads & Rve, holotype, N. E. Borneo, length 42 mm (BMNH).
Fig. 286. *C. magus* L., holotype of *C. borneensis* Sow., Borneo, length 32 mm (BMNH).
Photographs on this plate courtesy BMNH.

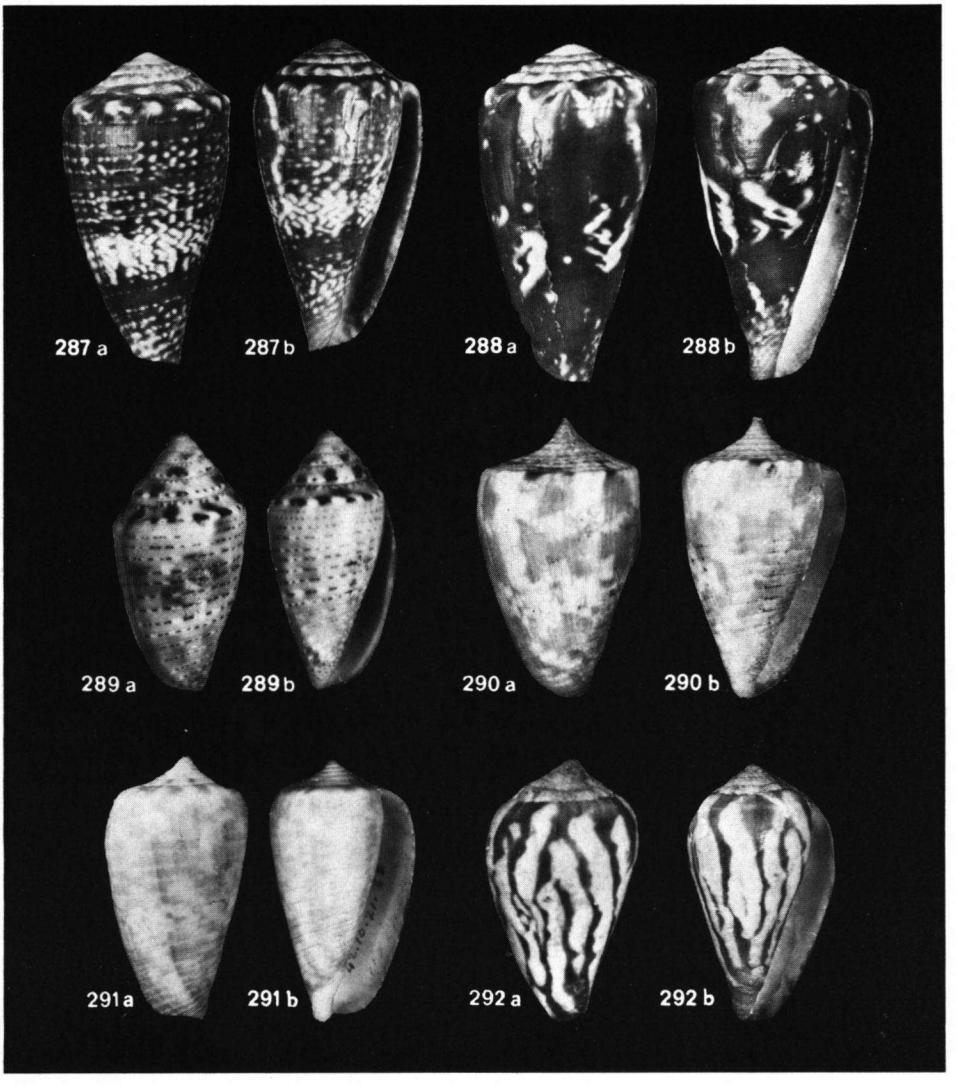


Fig. 287. *Conus exiguus* fa. *bougei* Sow., holotype of *C. bougei*, New Caledonia, length 21 mm (BMNH).
Fig. 288. *C. exiguus* Lam., paratype of *C. bougei* Sow., New Caledonia, 22½ mm (BMNH).
Fig. 289. *C. duvali* Bern., holotype of *C. boubeeae* Sow., length 16 mm (BMNH).
Fig. 290. *C. caracteristicus* Fischer, juvenile. Holotype of *C. brevis* Smith, length 18½ mm (BMNH).
Fig. 291. *C. broderipii* Rve, holotype, length 27 mm (BMNH).
Fig. 292. *C. bulbus* Rve, lectotype, Cabenda, W. Africa, length 24 mm (BMNH).
Photographs on this plate courtesy BMNH.