

Alphabetical revision of the (sub)species in recent Conidae  
2. *adansoni* to *albuquerquei*

H.E. COOMANS, R.G. MOOLENBEEK & E. WILS

Zoological Museum, Amsterdam

INTRODUCTION

This is the second part in the series on (sub)specific names in recent Conidae. Just before the publication of part 1 earlier this year (Basteria 43: 9-26) the book "Cone Shells" by J.G. Walls (1979) had been published. Walls has also used the alphabetical order; his book is illustrated in colour. We will, however, continue our studies, since the basis and goal of this series are different from Walls' intention and opinions.

An alphabetical catalogue of names described in the Conidae from 1937 to 1976, being a supplement to the catalogue by Tomlin (1937), was published by Kohn & Riggs (1979).

In general we refer to the introduction of the first part. Species names ending on "-a", as they were originally described in another genus than *Conus*, are changed to "-us" when appropriate, because *Conus* has masculine gender.

Whenever reference is made to a figure being the type of a (sub)species, this must be understood as referring to the specimen represented by the figure.

For the common Mediterranean species we will use the name *Conus mediterraneus* Hwass, 1792 and not *C. ventricosus* Gmelin, 1791, for reasons mentioned by Bandel & Wils (1977: 34). A thorough study of this polymorphic species is recommended, for the time being the many "varieties" described in *C. mediterraneus* mostly will be considered as formae.

Assistance from colleagues all over the world, for lending specimens or otherwise, is acknowledged with the species concerned. The authors are grateful to Mrs. Dr. M.I. Gerhardt, for translating original descriptions from Latin. The photographs were made by Mr. L. van der Laan, the maps were drawn by Mr. J. Zaagman.

## 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.

*adansoni*

*Conus adansoni* "Lamarck" Reeve, 1843, Conch. Icon. 1, Conus, pl. 36, spec. 193, fig. 190f; pl. 43 (1844), spec. 193, fig. 193

*Conus adansoni* "Lamk" Sowerby II, 1857, Thes. Conch. 3: 38, spec. 331, pl. 13, figs. 286-289 (non *Conus adansonii* Lamarck, 1810, see Coomans c.s., 1979: 21-22)

Remarks. — Since Lamarck (1810) described *Conus adansonii* from Senegal, this name was used by later authors, spelled "*adansoni*" (with one *i*) for different species, said to be from the Red Sea. It caused much confusion when more names were introduced (*C. decurtata* Dautzenberg, 1910, and *C. elatensis* Wils c.s., 1971), and relationships with *Conus magus* L. and *C. nigropunctatus* Sow. II were suggested.

*Conus adansoni* "authors" has no nomenclatorial status (art. 33 ICZN).

*adenensis*

fig. 31

*Conus adenensis* E.A. Smith, 1891, Proc. zool. Soc. Lond. 1891: 401-402, pl. 33, fig. 1.

Type. — The type specimen is in BMNH, it measures 48 x 21½ mm. Together with the holotype, there are two more specimens in the type collection in the British Museum. They measure 37½ x 18 and 28 x 13 mm. These two specimens were not mentioned by Smith in his description.

Type locality. — "Aden".

Remarks. — *C. adenensis* is considered a form of *C. inscriptus* Reeve, 1843. In general *C. inscriptus* has a more concave and rather low spire, whereas the forma *adenensis* (fig. 31) has a higher and more straight spire. Otherwise there are no differences, and the locality of fa. *adenensis* is within the range of *C. inscriptus* in the Indian Ocean.

*adonis*

*Conus (Asprella) adonis* Shikama, 1971, Science Rep. Yokohama natn. Univ. (II) 18: 33-34, pl. 3, figs. 25-28

Type. — The two syntypes were in the private collection of Shikama (who passed away in December 1978), they measure 34.0 x 17.8 and 25.8 x 14.7 mm. Walls (1979: 448) selected the latter to be the lectotype.

Type locality. — "Kashiwajima Island, southwestern Kôchi Prefecture", Japan.

Remarks. — This species was described one year earlier as *Asprella memiae* Habe & Kosuge, 1970, from the South China Sea. Therefore *C. adonis* is a junior synonym of *Conus memiae*.

Specimens are known to us from the Philippines: around Cebu (coll. R. & S. Martin) and Bohol.

### adriaticus

*Conus mediterraneus* var. *adriaticus* Nardo, 1847, Sinon. moderna: 39-40

Type. — This variety was originally described and figured in a manuscript by Stefano Chierighini in 1802. Chierighini's collection was dispersed over several collections and museums. The whereabouts of the type material of *adriaticus* are unknown.

Type locality. — "Golfo Veneto", Gulf of Venice in the Adriatic Sea.

Remarks. — Nardo (1847) described this variety as (translated from the Latin): "shell cone-shaped, ashgrey to white, distinguished by one spiral band and another at the shoulder". The specimens were found on the sponge *Spongia officinalis*. Although Nardo referred to "f. 505-508", his work was not illustrated.

*Conus mediterraneus* forma *adriaticus* Nardo is considered one of the many colour forms of this species.

The authors are grateful to Mr. H.K. Mienis (Hebrew University, Jerusalem) for his information.

### adustus

fig. 32

*Conus adustus* Sowerby II, 1857, Thes. Conch. 3: 25, spec. 204, pl. 17, fig. 403

Type. — The BMNH contains two syntypes, dimensions 24 x 14 and 23 x 13 mm, of which we designate the largest as lectotype. This is the specimen figured by Sowerby.

Type locality. — "Red Sea".

Remarks. — Although Sowerby compared *C. adustus* with "*C. tessellatus*" (error for *C. tessulatus* Born, 1778), we unite it with *Conus erythraeensis* Reeve, 1843. In general the colour pattern of *C. erythraeensis* consists of regular rows of squarish dots, in the forma *adustus* a number of these dots merges (fig. 32). Intermediates between *C. erythraeensis* s.str. and fa. *adustus* are known as *C. dillwynii* Reeve, 1849 (= *C. piperatus* Reeve, 1844, non Dillwyn, 1817).

ZMA has one specimen of *C. erythraeensis* forma *adustus*, ex coll. Sowerby (fig. 32).

**advertex**

fig. 35

*Rhizoconus advertex* Garrard, 1961, J. malac. Soc. Aust. 1 (5): 30-31, pl. 1, fig. 1

Type. — The holotype and one paratype are in the Australian Museum, Sydney (no. C. 63348). Two more paratypes are in the National Museum of Victoria, Melbourne. The holotype measures 30 x 19 mm.

Type locality. — "Trawled in 80 fathoms off Moreton Is., Q." (ueensland).

Remarks. — In Australian literature (Marsh, 1964: 77, 99, and Wilson & Gillett, 1971: 152) *Conus advertex* (Garrard) and *C. angasi* Tryon, 1883 are considered distinct species. In *C. advertex* the spire is flat to slightly elevated (fig. 35), in *C. angasi* the spire should be somewhat higher.

After studying specimens of both species, the authors consider *C. advertex* a flat spired form of *C. angasi*. They are identical in all other characters, and intermediates are known. They are found in the same area (deep water off Queensland and New South Wales). Both have a remarkable fold at the inside of the base of the columella (fig. 35b), also known in *Conus trigonus* Reeve, 1848.

Specimens of *C. angasi* forma *advertex* (Garrard) are present in ZMA from Queensland, Moreton Bay, 80 fathoms, and Wide Bay, 70 fathoms (fig. 35).

**aegrotus**

fig. 36

*Conus aegrotus* Reeve, 1849, Conch. Icon. 1, Conus, suppl. pl. 5, spec. 250

Type. — The holotype is present in BMNH; it measures 49 x 27 mm.

Type locality. — Not mentioned. West Negros (Philippines) is herewith designated type locality.

Remarks. — *C. aegrotus* has a cream coloured shell, marked with rows of very minute pale brown dots, the base is brown. It is generally considered a colour form of *Conus furvus* Reeve, 1843.

Distribution. — *C. furvus* forma *aegrotus* Reeve is living together with typical *C. furvus*: around the Philippines and North Borneo.

ZMA has specimens from Mindanao Island, West Negros (fig. 36), and Malawi Channel (N. Borneo).

**aemulus**

figs. 26, 33, 37

*Conus aemulus* Reeve, 1844, Conch. Icon. 1, Conus, pl. 46, spec. 256

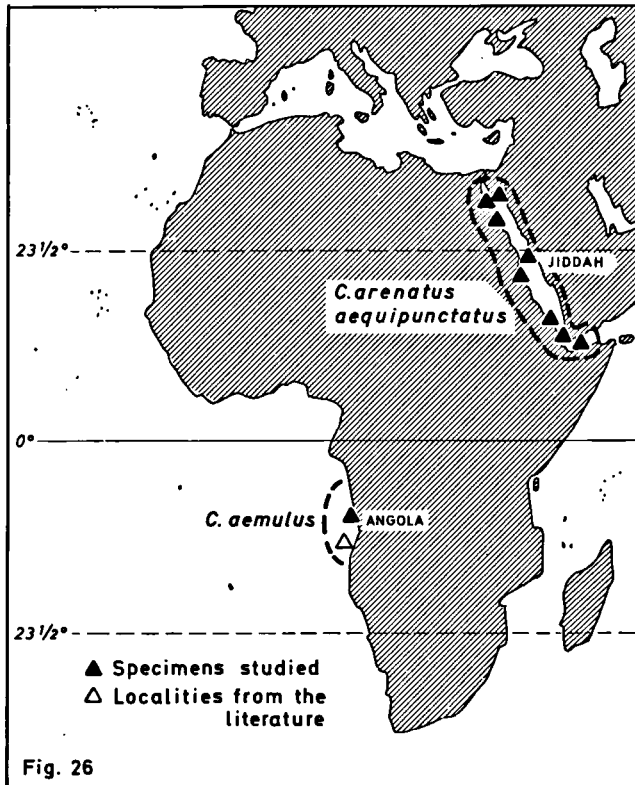


Fig. 26. Distribution of *Conus aemulus* and *C. arenatus aequipunctatus*.

Type. — Two specimens in BMNH, measurements 34 x 19 and 37 x 20.5 mm. The smallest specimen (fig. 37) was figured by Reeve, and designated lectotype by Bandel & Wils (1977: 40).

Type locality. — Not mentioned. The species is known to us from Mussulo Bay, Angola, which is herewith designated type locality.

Distribution. — The coast of Angola (fig. 26).

ZMA has specimens from Angola in general and from Mussulo Bay (fig. 33), in addition we have studied specimens from Luanda Bay. Walls (1979: 65) also recorded Novo Redondo.

Remarks. — Reeve (1844) mentioned that *C. aemulus* "was allied in some measure to the *Conus guinaicus*, but presenting a very different style of painting." In recent literature *C. aemulus* is often considered a synonym of *C. guinaicus* Hwass, 1792, which is not correct. Through the courtesy of Mrs. K.M. Way we were able to study the type material of *C. aemulus*. These and other specimens were compared with *C. guinaicus*. They are distinct in the following characters. *Conus aemulus* has a smooth spire, the outlines of the last whorl are almost straight, the design shows a number of white spiral lines regularly

covered with dark brown dots. The largest specimen we have seen measures 47 x 26.5 mm. The species is living at the West African coast south of the equator.

The spire of *Conus guinaicus* has 2-3 spiral grooves, the last whorl is more rounded, the pattern is very variable, generally flamed, and the base of the columella is often light coloured. Its distribution is Lusitanic (S. Spain to Senegal and Canary Islands).

Our conclusion is, in accordance with Reeve, that *C. aemulus* and *C. guinaicus* represent two distinct species.

### aequipunctatus

figs. 26, 38

*Conus arenatus* Hwass, 1792, var. *aequipunctata* Dautzenberg, 1937,  
Mém. Mus. r. Hist. nat. Belg. hors serie 2(18): 31, pl. 1, fig. 2

Type. — The type specimen is present in IRScNB at Brussels, it measures 55 x 32 mm. The authors express their thanks to Dr. J. van Goethem who allowed us to study the Dautzenberg collection.

Type locality. — Not mentioned in the original description, and not on the label with the type specimen. We designate the Red Sea coast at Jiddah (Saudi Arabia) to be the type locality.

Remarks. — Dautzenberg (1937) described his unique specimen of *aequipunctata* as being completely covered with small brown spots at equal distance from each other, and with three yellow brown bands on the last whorl. Another character, not mentioned by Dautzenberg, is formed by the almost straight sides of the last whorl (fig. 38), whereas typical *C. arenatus* is more roundish. The authors have found this combination of characters only in specimens of *Conus arenatus* from the Red Sea area. For this reason we consider it a subspecies, *C. arenatus aequipunctatus* Dautzenberg.

Distribution. — Endemic to the Red Sea and Gulf of Aden (fig. 26).

The collection of ZMA contains specimens from the Red Sea near Jiddah and Obhur (Saudi Arabia), Discht, Abu Minghar (Egypt), Elat and Ras el Burka (Gulf of Akaba), and Port Sudan. In addition we have studied material from the Dahlak Archipelago, North Yemen, and the Gulf of Aden at South Yemen (coll. Wils).

### affinis

*Conus affinis* Gmelin, 1791, Syst. Nat. 13 ed.: 3391, no. 50

Type. — No type specimen. Kohn (1968: 77) designated the figure of "Der admiral-artige Bötgersbohrer von Oranien" in Martini (1773, pl. 52, fig. 571) as lectotype of *C. affinis*. Dimensions 44 x 19 mm.

Type locality. — Not given by Gmelin. Martini mentioned "Oranien" as locality for his specimen.

Remarks. — The authors agree with Kohn (1968: 77) that *Conus affinis* Gmelin, 1791, is a junior synonym of *C. circumcissus* Born, 1778.

**africanus**

figs. 27, 34

*Conus africanus* Kiener, 1845, Coquilles vivantes 2: 260, pl. 104, fig. 2

Type. — The holotype was figured by Kiener; this specimen was in the collection of Largilliert, but its present whereabouts are unknown. It measured 30 x 17 mm.

Type locality. — "l'océan Atlantique, la côte de Guinée". The "coast of Guinea" in Kiener's time consisted of a large part of the African west coast (south of Senegal as far as Angola).

Distribution. — Angola (fig. 27).

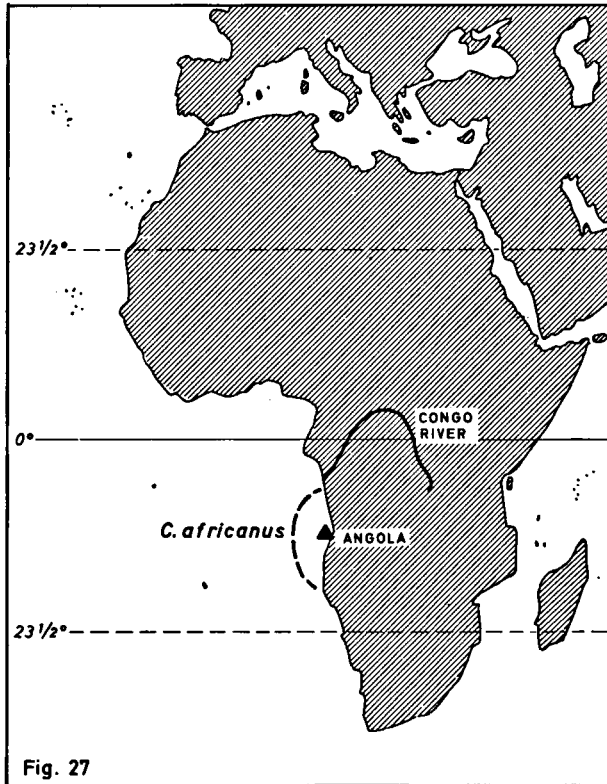


Fig. 27. Distribution of *Conus africanus*.

No specimens in ZMA. The figured specimen (fig. 34) was collected near Lobito, Angola (coll. H. Saesen).

Remarks. — Because of the great variability in colour and pattern, there is much confusion about the taxonomy of the West African Conidae (cf. Clover, 1978; Ramalho & Soares, 1979). In recent years about ten "new" *Conus* species from Angola were described by Paes da Franca and Trovão. However, it is not impossible that these belong to only a few valid species in one species complex. The first described species in this complex is *Conus bulbosus* Reeve, 1843, from Cabinda, north of the mouth of the Congo river.

Provisionally we consider *Conus africanus* Kiener to be a valid species.

### agassizii

figs. 28, 39-41, 47

*Conus agassizii* Dall, 1886, Bull. Mus. comp. Zool. 12: pl. 9, fig. 8  
(Name and figure only); *ibid.* 18 (1889): 68-69

Type. — Dall (1889) mentioned specimens from Bermuda, Santa Cruz, and Barbados. The shell from Bermuda, 45 x 23 mm, was placed later in *C. bermudensis* Clench, 1942.

The specimen figured by Dall (1886, pl. 9, fig. 8, reproduced here as fig. 47) was designated lectotype of *Conus agassizii* by Clench (1942: 35). Dr. A.J. Kohn informed us that this lectotype is present in the National Museum of Natural History, Smithsonian Institution (USNM) (no. 37472) at Washington, D.C. The length was given as 30.0 mm; however, the measurements are 24.4 x 11.3 mm. Another specimen in this lot is 29.8 x 14.1 mm. After studying these two shells it is obvious that the smaller and nicest one was figured by Dall. The locality is Santa Cruz.

Two juvenile paralectotypes are also in USNM (no. 37471); Barbados, length 14.7 and 15.2 mm, the largest being slightly granulated.

The remaining type material is present in the Museum of Comparative Zoology (MCZ) at Harvard; these shells were studied by the present authors. They include two paralectotypes from off Santa Cruz (MCZ no. 7019), dimensions 26.8 x 12.8 mm (fig. 39), and 18.5 x 8.1 mm. Three juveniles from off Barbados (MCZ no. 7023) are not conspecific with *C. agassizii*. One of these may be the specimen figured in Dall (1886, pl. 9, fig. 8a); the shell is deeply grooved all over and granulated at the suture. According to Clench (1942: 35) it "may be a very young example of *C. mazei* Deshayes".

Type locality. — The type material was collected off Santa Cruz (= St. Croix, Virgin Is.), 115 fathoms ("Blake" sta. 132), and off Barbados, 76 fathoms ("Blake" sta. 272).

Distribution. — Known from deeper water around the Lesser Antilles, from the Virgin Islands to Barbados (fig. 28).

ZMA has specimens from off western Barbados, 153 m (leg. D. Hunt).

Remarks. — After *C. agassizii* was described by Dall, and studied by Clench (1942), additional material and more details were obtained about this species. The present authors do not agree with Clench and Wagner & Abbott (1978: 24-010) that *C. agassizii*



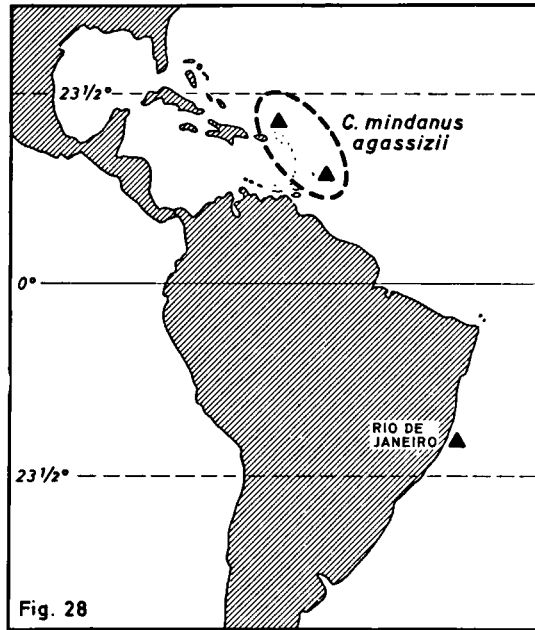


Fig. 28. Distribution of *Conus mindanus agassizii*.

is a junior synonym of *C. villepini* Fischer & Bernardi, 1857. We consider *C. agassizii* to belong to the species complex of *C. mindanus* Hwass, consisting among others of the following Conidae:

*Conus mindanus mindanus* Hwass, 1792, syn. *C. elventinus* Duclos, 1833, *C. rosaceus* Tomlin, 1937 (non Dillwyn, 1817), and *C. lymani* Clench, 1942.

A shallow water subspecies, living from Florida through the Antilles to as far south as Brasil. The pure white *C. cretaceus* Kiener, 1849, might be a bleached specimen.

*Conus mindanus* forma *karinae* Usticke, 1968.

A granulated form, described from St. Croix and Aruba as a full species. The granulated form was already known by Duclos (1833) and described by him as a variety of *C. elventinus*. Reeve (1843, pl. 20, spec. 115b) incorrectly considered *C. elventinus* the granulated variety of *C. mindanus*.

*Conus mindanus bermudensis* Clench, 1942.

A large sized subspecies, length up to 50 mm, from Bermuda.

*Conus mindanus agassizii* Dall, 1886.

A subspecies from deeper water (about 100-200 m), found off the Lesser Antilles (fig. 40). Recently we examined some large specimens (fig. 41) of *C. mindanus* from Estado Rio de Janeiro, Brazil (fig. 28); except for their size they proved to be very similar to *C. agassizii*.

Other Conidae like *C. duvali* Bernardi, 1862, *C. boubeeae* Sow. III, 1903, and *C. caribbaeus* Clench, 1942, also may belong to this species complex.

The authors are grateful to Dr. K.J. Boss and Mr. D.L. MacHenry (MCZ), and to Dr. R.S. Houbrick (USNM) and Dr. A.J. Kohn (University of Washington) permitting us to study their material.

**agrestis**

figs. 29, 42

*Conus (Dendroconus) agrestis* "Spgl. mus." Mörch, 1850,  
Cat. Conch. Kierulf: 16, 31, no. 405

Type. — The type specimen from the Kierulf collection was sold at the auction in 1850 and must be considered lost.

Mörch also referred to "Ch. tom. XII tab. 216, f. 3049, 50". This reference is not correct. "Chemnitz, vol. 12" (= Schubert & Wagner, 1829) pl. 216 represents Volutidae; fig. 3049 (on pl. 219) is *Fusus tessellatus*, and fig. 3050 (on pl. 220) is *Conus caledonicus*.

Mörch stated that he had studied eight specimens of *Conus agrestis*. We suppose these belong to the Spengler collection, which is presently in the Zoologisk Museum at Copenhagen (ZMUC). Dr. J. Knudsen and one of the authors (Moolenbeek) searched the Conidae at ZMUC. One of these paratypes was found, the measurements are 76.0 x 49.7 mm (this specimen will be figured in the next issue of this series).

Type locality. — The lost holotype was from the "Insulas Nicobaricas". The paratype is from "Tranquebar", which is situated on the coast of India north of Ceylon.

Remarks. — Mörch's description of *Conus agrestis* is translated here from the Latin: "Intermediate between *C. glaucum* and *C. betulinum*. Shell short cone shaped, swollen, somewhat constricted in the middle, thick, heavy, grooved anteriorly; bluish light-green, with two narrow white bands, one in the middle, the other at the shoulder of the last whorl; interior white, within the aperture the edge of the outer lip and the columella are orange-brown; apex short but mucronated, spire flat with obscure stripes on the whorls, the last whorl of the spire somewhat concave.

Length 63, width 39, length of aperture 59 mm. Loc. Nicobar Islands.

I have studied eight specimens, of which one was 80 mm long."

*Conus agrestis* is considered a form of *C. figulinus* Linné, 1758, subspecies *loroisii* Kiener, 1845. *Conus figulinus* s.s. is characterized by many dark brown spiral lines on the last whorl and a somewhat elevated spire; it has a large distribution in the tropical Indian Ocean and Western Pacific. The subspecies *loroisii* is plain grey coloured with a more flattish spire; it has a limited distribution in the Indian Ocean. The forma *agrestis* is also grey and has in addition two light coloured bands, one in the middle and another at the shoulder of the last whorl (fig. 42); rarely a third light band is present near the base. The paratype has only one light band around the shoulder.

According to Kohn (1978: 310, 314-315) *Conus figulinus* and *C. loiroisii* are two distinct species; most authors consider them as synonyms.

Distribution. — *C. figulinus loiroisii* forma *agrestis* can be found together with the subspecies *loroisii* in the Bay of Bengal and Indonesia (fig. 29).

ZMA has specimens from India, Cuddalore (fig. 42) and from Indonesia (Sumatra, Java, Borneo, Moluccas).

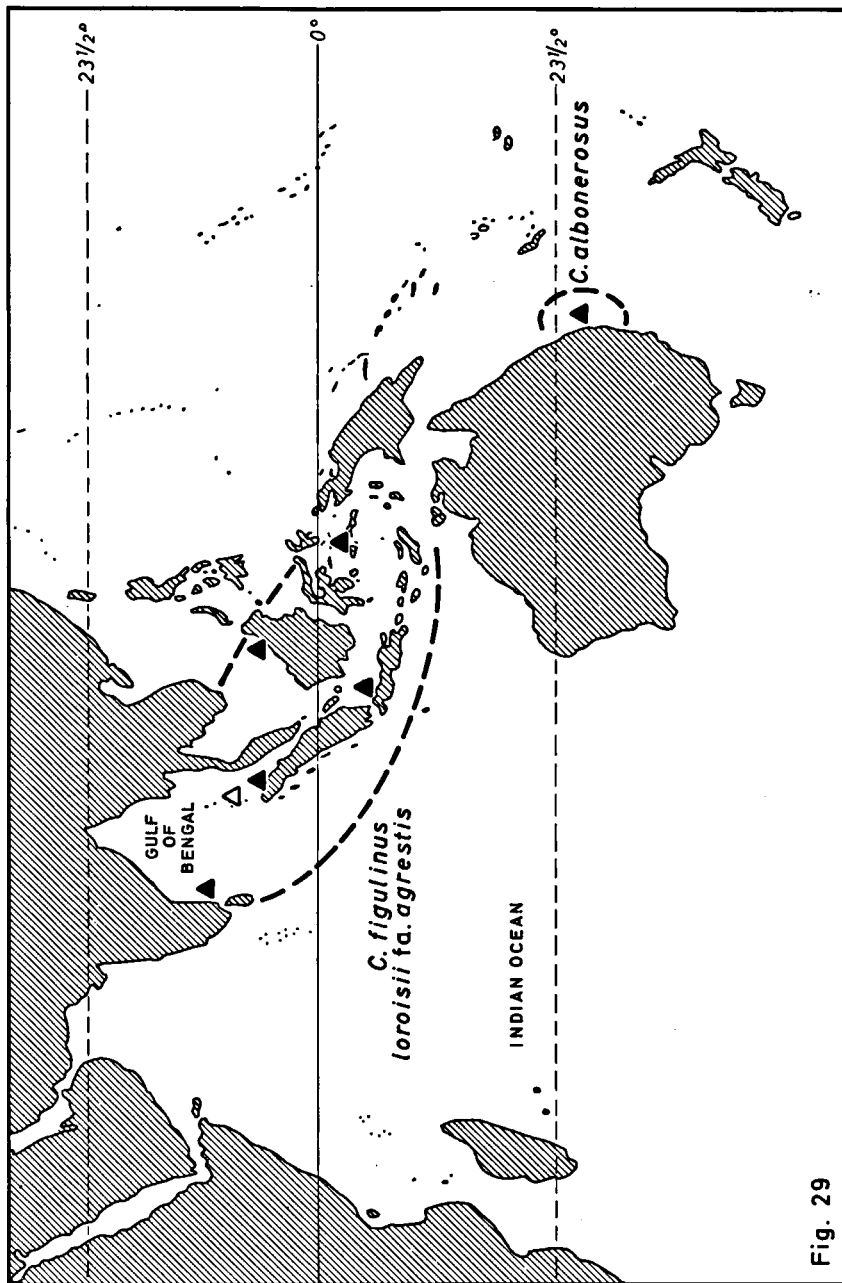


Fig. 29

Fig. 29. Distribution of *Conus albonerosus* and *C. figulinus loroisii* forma *agrestis*.

### akabensis

*Conus akabensis* Sowerby III, 1887, Thes. Conch. 5: 273, spec. 528, pl. 36, figs. 752-753

Type. — The type specimen is present in BMNH; it measures 44 x 23 mm (according to Sowerby 46 x 22 mm).

Type locality. — "Akaba (Red Sea)".

Remarks. — The type of *Conus akabensis* has the shape of specimens of *C. quercinus* from the northern part of the Red Sea, with an elevated spire. However, the shell is pure white, without the *quercinus* pattern. For these reasons we consider *C. akabensis* an albino specimen of *C. quercinus* Solander, 1786.

See also *Conus albus* Shaw, 1915 (non *albus* Sowerby III, 1887).

### alabaster

figs. 30, 43, 48

*Conus alabaster* Reeve, 1849, Conch. Icon. 1, Conus, Suppl. pl. 6, spec. 257

Type. — There is no type specimen of *C. alabaster* in BMNH. It was already lost in the last century, as Sowerby II (1857-1866: 49) mentioned that *C. alabaster* was "Unknown to me". The specimen which Sowerby (ibid.: 330, pl. 26, fig. 631) found later, was from the Taylor collection.

Reeve also referred to "Adams and Reeve, Moll. Voy. Samarang", but in that work *C. alabaster* is not mentioned.

According to Reeve the figure of the holotype is not of any value for the identification of *C. alabaster*, as he added to the description: "The accompanying figure, I regret to say, gives a very inadequate idea of this very pure white and delicately sculptured species, the shell being enveloped by a dirty fibrous epidermis".

To establish the well known name of *Conus alabaster*, of which there is no type specimen and an inadequate figure of the holotype, we designate herewith the specimen, figured by Sowerby II (1857-1866: 330, spec. 445, pl. 26, fig. 631), as the neotype (fig. 48). This specimen is present in BMNH (no. 1874.12.11.288). Through the courtesy of Mrs. K.M. Way the authors have studied this specimen, it measures 27.0 x 13.3 mm, and its characters are in accordance with Reeve's description which follows here:

"Shell somewhat fusiformly turbinated, a little recurved at the base, encircled throughout with delicate narrow ridges in pairs, interstices striated and cancellated, spire channelled, sharply and closely striated, apex raised, very sharp; clear bluish-white, faintly tessellated towards the apex with light brown."

Type locality. — Reeve mentioned the "China Sea". According to Sowerby the locality of the neotype is unknown, although on the label of this specimen in BMNH is written "China Sea".

Distribution. — The locality records for *C. alabaster* are so scarce, that we are not able yet to state its definite range. Specimens are known to us from the Bay of Bengal and western Indonesia (fig. 30).

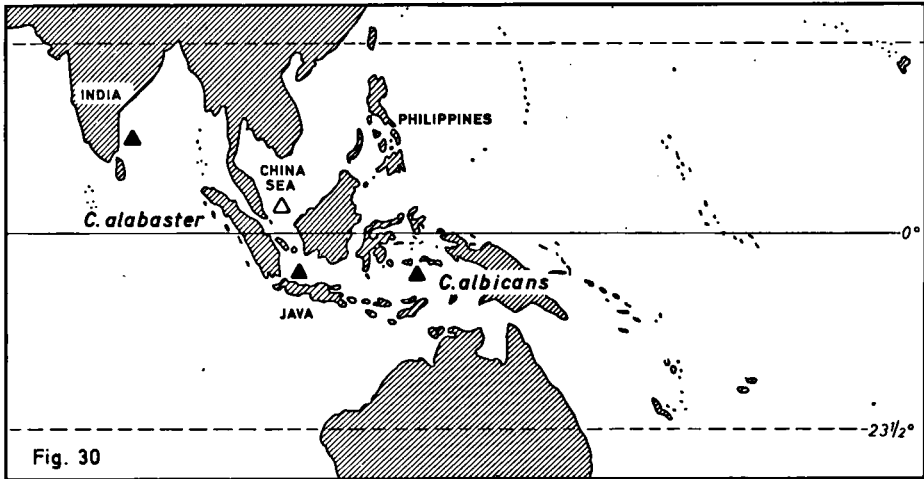


Fig. 30. Known localities of *Conus alabaster* (China Sea, India, and Java; also Arakan, Burma, see text), and *C. albicans* (Moluccas).

The species is recorded from the Philippines in the literature; however, these specimens are not conspecific with *C. alabaster*.

ZMA has specimens from Djakarta Bay, Java (fig. 43), and from off Madras, India. RMNH has one specimen from the coast of Burma at Arakan.

Remarks. — *Conus alabaster* Reeve is considered a valid species. Some specimens we studied have brown blotches on the last whorl, in addition to the brown spots on the spire.

#### alabasteroides

*Asprella alabasteroides* Shikama, 1963, Science Rep.  
Yokohama natn. Univ. (II) 10: 65, pl. 1, figs. 9a, b

Type. — Type specimen in collection Shikama (Geological Institute, Yokohama University). The dimensions were not mentioned; on the figure the holotype measures 36 x 20 mm.

Type locality. — "Tatsugahama, Wakayama Pref.", S. Japan.

Remarks. — According to Shikama this species is very much like *Conus australis* Holten, 1802, but "distinguished from it by relatively broader and straight interspace between the spiral cords".

After studying the variability of *C. australis*, the authors conclude that *Conus alabasteroides* (Shikama) must be considered a junior synonym of *C. australis*, which is living around S. Japan, Ryukyu Is., and Taiwan.

## alalmus

*Conus mediterraneus* var. *alalmus* de Gregorio, 1885, Bull. Soc. malac. Ital. 11: 112

Type. — In University of Palermo (cf. Palmer, 1945: 35). Length of the shell 17 mm. Type locality. — "Zona dell spugne Barberia" (sponge zone, Algeria).

Remarks. — The description (translated from the Italian, with our thanks to Mr. B. Bujama) reads:

"Of small dimension (17 mm), the last and penultimate whorls very angulated, last whorl ornamented with many spiral striae (about 23) at equal distant from each other, becoming threadlike."

This "variety" is one of the many forms which were described in the polymorphic *Conus mediterraneus* Hwass, 1792.

## alatus

*Conus alatus* Fischer von Waldheim, 1807, Museum Demidoff 3: 143, no. 173,174

Type. — The type specimen was in the collection of Paul de Demidoff; however, the main part of this collection was destroyed during the Moscow fire in 1812. The remaining part is present in the Zoological Museum of Moscow State University. Dr. Victor N. Goryachev kindly informed us that of the six species of *Conus*, described by Fischer von Waldheim (1807), only the types of *C. characteristicus* and *C. fusiformis* are available. Therefore the type specimen of *Conus alatus* has been lost; the species was not figured by Fischer von Waldheim.

Type locality. — Unknown.

Remarks. — The description of *C. alatus*, translated from the Latin and French, reads as follows:

"Shell brown, marked with white wing shaped dots, on two parallel bands, spire elevated, canaliculated. This nice shell, of which I do not know the locality, was not yet described by any author. It is 1 inch 9 lines long and 1 inch wide."

Since no type specimen and no figure are available, and because the species is unrecognizable from its description, without a locality, we consider *Conus alatus* Fischer von Waldheim a nomen dubium.

## alba

*Conus (Chelyconus) mediterraneus* Bruguière var. *alba*  
"Monterosato" Coen, 1933, R. Comit. Talassogr. Ital. 192: 70

Remarks. — Coen mentioned the variety *alba* without any description or figure. "Monterosato" should be the author, but Coen does not give a reference. The specimens, collected in the Adriatic Sea, are present in the Museum of Venice, and in the Zoological Museum of the Hebrew University of Jerusalem (ex coll. Coen, no. 7938). Through the

courtesy of Mr. H.K. Mienis we have studied the specimen from the Coen collection. It is very worn, the apex is missing and the outer lip damaged. The colour is white through fading, but remains of the original colour can still be seen. This makes the name "alba" inconceivable. The specimen is nothing but a *C. mediterraneus*, the locality on the label reads Dalmatia.

*Conus mediterraneus* var. *alba* Coen must be considered a nomen nudum; it is a homonym of *C. albus* Sowerby III, 1887.

### albeolus

*Cucullus albeolus* Röding, 1798, Mus. Boltenianum 2: 47, no. 594/91

Type. — No type specimen is available. A lectotype was designated by Kohn (1975: 193), being the figure of the "weissen Bohrer" in Martini (1773: 228-229, pl. 52, fig. 577). Dimensions (on the figure) 51 x 23½ mm, Kohn (1975: 225) stated "Estimated shell size 48 x 22 mm".

Type locality. — Not mentioned.

Remarks. — We agree with Kohn (1975: 193) that *Conus albeolus* (Röding) is a junior synonym of *C. terebra* Born, 1778, since both authors refer to the same figure in Martini.

### albicans

figs. 30, 44, 49

*Conus albicans* Sowerby II, 1857, Thes. Conch. 3:3, spec. 13, pl. 5, fig. 98

Type. — The holotype was figured by Sowerby; this figure is reproduced here (fig. 49), the dimensions are 45 x 22 mm. There is no type specimen in BMNH.

Type locality. — Not mentioned. Whenever more data become available, a type locality may be selected.

Remarks. — *Conus albicans* is a characteristic species, the shell is white with a brown base, and a coronated shoulder. It will be recognized easily whenever specimens are collected. Data on this species are very scarce. Tryon (1884: 47) mentioned two specimens without a locality, present in the Academy of Natural Sciences at Philadelphia. Through the courtesy of Mrs. E.V. Scott (ANSP) one of these specimens was studied by the authors, it is hardly coronated and more slender in shape than the type figure of *C. albicans*.

ZMA has one specimen (fig. 44) with a light brown base from the Moluccas, Indonesia (fig. 30), which matches the figure in Sowerby (fig. 49).

Provisionally we consider *Conus albicans* Sowerby II a valid species, it shows some resemblance with *C. furvus* Reeve, 1843.

## albidus

*Conus albidus* Schröter, 1803, Arch. Zool. Zoot. 3 (2): 70

Type. — Schröter mentioned two specimens, of which one measured about 33 x 25 mm.

Dr. Hildegard Zeissler (Naturwissenschaftliches Museum, Leipzig) kindly informed us (in litt.) that she had searched years ago in East Germany for the collection of Johann Samuel Schröter, unfortunately without success. Recent studies by Friess (1978: 87) have disclosed that the shell collection of Schröter may still be present in Gotha, although partly destroyed during World War II. Presently Dr. A.J. Kohn is trying to get more information about the Schröter collection for the continuation of his studies on the Conidae.

Type locality. — Not mentioned.

Remarks. — Schröter described *Conus albidus* as follows (translated from the German): "In shell collections one can find enough white cones, but most of them are faded. This cone however, has its natural colour, as I cleaned it myself from its greyish-brown epidermis, and I also possess a smaller second specimen with its epidermis. The length is 1.25 inch, and almost 1 inch wide. Dorsally are very fine spiral lines, hardly visible to the eye, they are stronger and better visible at the base. The smooth spire is short, convex and brownish, the remainder of the shell is white on outside and inside." Without a type specimen or a figure of the type, and no locality, the identity of *Conus albidus* Schröter remains questionable. Unless a specimen will be found in the Schröter collection, we consider it a nomen dubium.

## albina

*Conus mediterraneus* var. ex colore 8, *albina* "Monterosato"  
Bucquoy, Dautzenberg & Dollfus, 1882, Moll. Mar. Roussillon 1: 84

Type. — Not available. There are no specimens in collection Dautzenberg at IRScNB, Brussels, and there was no figure with the description.

Type locality. — Not mentioned, although it should be the Mediterranean Sea at the coast of Roussillon.

Remarks. — According to Bucquoy c.s. the completely white specimens were found only in sponges. These authors were not correct in referring the name *albina* to Monterosato (1879: 230), as in that publication only *C. mediterraneus* var. *minor* was described.

*Conus mediterraneus* forma *albina* B.D.D. is considered the white colour form of this species.



**albomaculatus**

fig. 45

*Conus albo-maculatus* Sowerby I, 1833, Conch. Ill. (Conus): 1, pl. 24, fig. 2

Type. — The holotype was figured by Sowerby, but there is no type specimen in BMNH. The measurements of the holotype, according to the figure, are  $17\frac{1}{2} \times 9\frac{1}{2}$  mm (a specimen with exactly these dimensions is present in the Universitetets Zoologiske Museum at Copenhagen, on the label it is named "albimaculatus", without a locality).

Type locality. — Not mentioned. We herewith designate the Moluccas, Indonesia, as type locality.

Remarks. — Reeve (1849, emendations: 3) stated that *Conus "albimaculatus"* (error for *albomaculatus*) resembles very young specimens of *C. litoglyphus* Hwass, 1792.

We consider *C. albomaculatus* the granulated form of *C. litoglyphus*, cf. Coomans (1973: 321).

Distribution. — ZMA has one specimen from the Moluccas (fig. 45). Sowerby (1857-1866: pl. 6, fig. 113) mentioned the island of Masbate, Philippines.

**albonerosus**

figs. 29, 46

*Cleobula albonerosa* Garrard, 1966, J. malac. Soc. Aust. 1 (10): 11-12, pl. 1, fig. 1

Type. — The holotype is in the Australian Museum, Sydney (no. C. 64807), measurements 110 x 62 mm, one paratype in collection Garrard.

Type locality. — "Trawled in 35 fathoms off Wide Bay, southern Queensland."

Distribution. — Known only from off S. Queensland, Australia (fig. 29). No specimens in ZMA.

Remarks. — This species was mentioned and figured by Marsh (1964: 112, pl. 15, fig. 17) as *Conus* sp.nov. According to Garrard (1966) *Conus albonerosus* has a large heavy shell which has a superficial likeness to *C. quercinus* Solander, a common species in the Indo-Pacific. It is considered a synonym of *C. quercinus* by Walls (1979: 822-823).

The authors have studied a specimen (fig. 46) of *Conus albonerosus* (Garrard) from Queensland. The shell is whitish and the spire does not have the spiral grooves present in *C. quercinus*, which has a yellow shell with brown lines. The periostracum of *C. albonerosus* is dark brown to black, whereas *C. quercinus* has a golden brown periostracum.

For these reasons, in addition to its restricted range, *Conus albonerosus* (Garrard) is considered a valid species.

## albospira

*Conus albospira* E.A. Smith, 1880, Proc. zool. Soc. Lond. 32: 480, pl. 48, fig. 4

Type. — Type specimen present in BMNH, measurements are 27.5 x 14.5 mm.

Type locality. — Not mentioned. We designate herewith the Andaman Sea as type locality.

Remarks. — The name "albospira" indicates a white spire, although Smith mentioned in the description that "The spire is pure white, with the exception of the first five whorls forming the apex, which is of a pale fleshy tint."

We have studied the type specimen, which has irregular vague light yellowish dots on the last whorl (they might have been brown originally), spiral whorls with three grooves, and a smooth last whorl with a few spiral grooves at the base. The type specimen is identical to white spired juvenile specimens of *C. collisus* Reeve, which are known to us from the Andaman Sea.

*Conus albospira* E.A. Smith is therefore considered a junior synonym of *C. collisus* Reeve, 1849.

## albuquerquei

fig. 50

*Conus albuquerquei* Trovão, 1978, Bolm. Centr. Port.  
Activ. subaq. 4(4): 11-12, pl. 1, fig. 1, pl. 2, fig. 2, pl. 3, fig. 5

Type. — Holotype in Laboratorium of Malacology of CPAS (Centro Português de Actividades Subaquáticas) at Lisbon, no. LAB-624, measurements 12.7 x 7.5 mm (fig. 50). Ten paratypes also are in CPAS, one paratype was in Museum Bocage at Lisbon (which was destroyed by fire in March 1978), one paratype in MNHN at Paris, and two in collection Soares.

Type locality. — "B. Sta. Maria", 12°32' E, 13°26'S, S. Angola.

Distribution. — From Benguela to Moçamedes, Angola.

Remarks. — The description of this species is in Portuguese. We agree with Trovão (1978: 12) that *Conus albuquerquei* is identical to "*C. hieroglyphicus* Duclos" in Kiener, 1845 (non *C. hieroglyphus* Duclos, 1833). According to article 33 of the ICZN, the name "*Conus hieroglyphicus* Kiener" cannot be used as a senior synonym of *C. albuquerquei*. It is remarkable that Trovão did not discuss the relationship between *C. africanus* Kiener and *C. albuquerquei*.

Trovão's work was criticized by Walls (1978: 15), and by Clover (1978: 20). They synonymize *C. albuquerquei* with *C. aemulus* Reeve (figs. 33, 37) and *C. variegatus* Kiener respectively, which synonymies are not correct in our opinion.

We have examined one paratype of *C. albuquerquei* Trovão (in MNHN at Paris) from which is concluded that it can be placed in the species complex of *C. africanus* Kiener (fig. 34).

## SUMMARY

Based on the original descriptions and on the *Conus* collection of the Zoological Museum at Amsterdam, the (sub)specific names in the recent Conidae are revised. Illustrations and distribution maps are supplied. In the second part the following *Conus* names are discussed:

*adansonii* "authors" — no nomenclatorial status.

*adenensis* E.A. Smith — form of *C. inscriptus* Rve — Indian Ocean.

*adonis* Shikama — junior synonym of *C. memiae* (Habe & Kosuge).

*adriaticus* Nardo — form of *C. mediterraneus* Hw. — Adriatic Sea.

*adustus* Sow. — form of *C. erythraeensis* Rve, lectotype designated — Red Sea.

*advertex* (Garrard) — form of *C. angasi* Tryon — Queensland, N.S. Wales.

*aegrotus* Rve — form of *C. furvus* Rve — Philippines, West Negros designated type locality.

*aemulus* Rve — valid species — Angola, Mussulo Bay designated type locality.

*aequipunctatus* Dautz. — subspecies of *C. arenatus* Hw. — Red Sea, Jiddah designated type locality.

*affinis* Gmel. — junior synonym of *C. circumcissus* Born.

*africanus* Kien. — valid species — Angola.

*agassizii* Dall — subspecies of *C. mindanus* Hw. — Lesser Antilles.

*agrestis* Mörch — form of *C. figulinus lotoisii* Kien., paratype discovered — Bay of Bengal and Indonesia.

*akabensis* Sow. — albino of *C. quercinus* Solander.

*alabaster* Rve — valid species, neotype designated — Indonesia, India.

*alabasteroides* (Shikama) — junior synonym of *C. australis* Holten.

*alalmus* Gregorio — form of *C. mediterraneus* Hw. — Algeria.

*alatus* Fischer von Waldheim — nomen dubium.

*alba* Coen — nomen nudum.

*albeolus* (Röding) — junior synonym of *C. terebra* Born.

*albicans* Sow. — provisionally considered valid species — Indonesia.

*albidus* Schröter — nomen dubium.

*albina* B.D.D. — form of *C. mediterraneus* Hw. — Roussillon.

*albomaculatus* Sow. — granulated form of *C. litoglyphus* Hw. — Moluccas designated type locality.

*albonerosus* (Garrard) — valid species — Queensland.

*albospira* E.A. Smith — junior synonym of *C. collisus* Rve — Andaman Sea designated type locality.

*albuquerquei* Trovão — junior synonym of *C. africanus* Kien.

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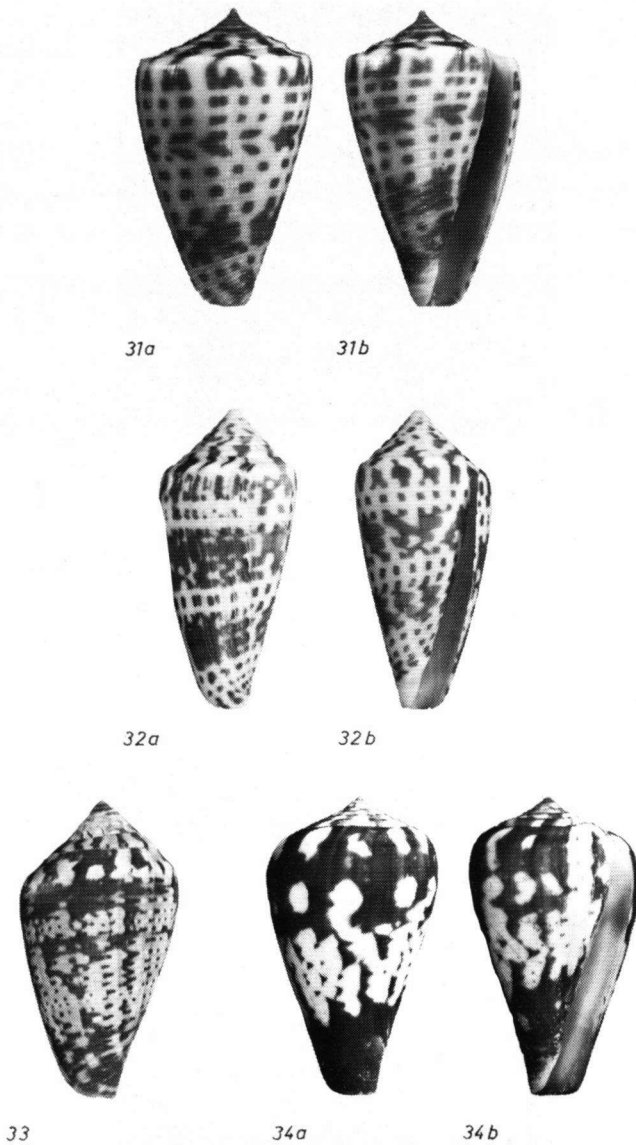


Fig. 31. *Conus inscriptus* fa. *adenensis* E.A. Smith, Mozambique, Massinga, length 44.5 mm (coll. Wils).  
Fig. 32. *C. erythraeensis* fa. *adustus* Sow., Red Sea, length 20.0 mm.  
Fig. 33. *C. aemulus* Rve, Angola, Mussulo Bay, length 33.2 mm.  
Fig. 34. *C. africanus* Kiener, Angola, Lobito, length 19.3 mm (coll. Saesen).  
Unless otherwise stated, specimens in ZMA.

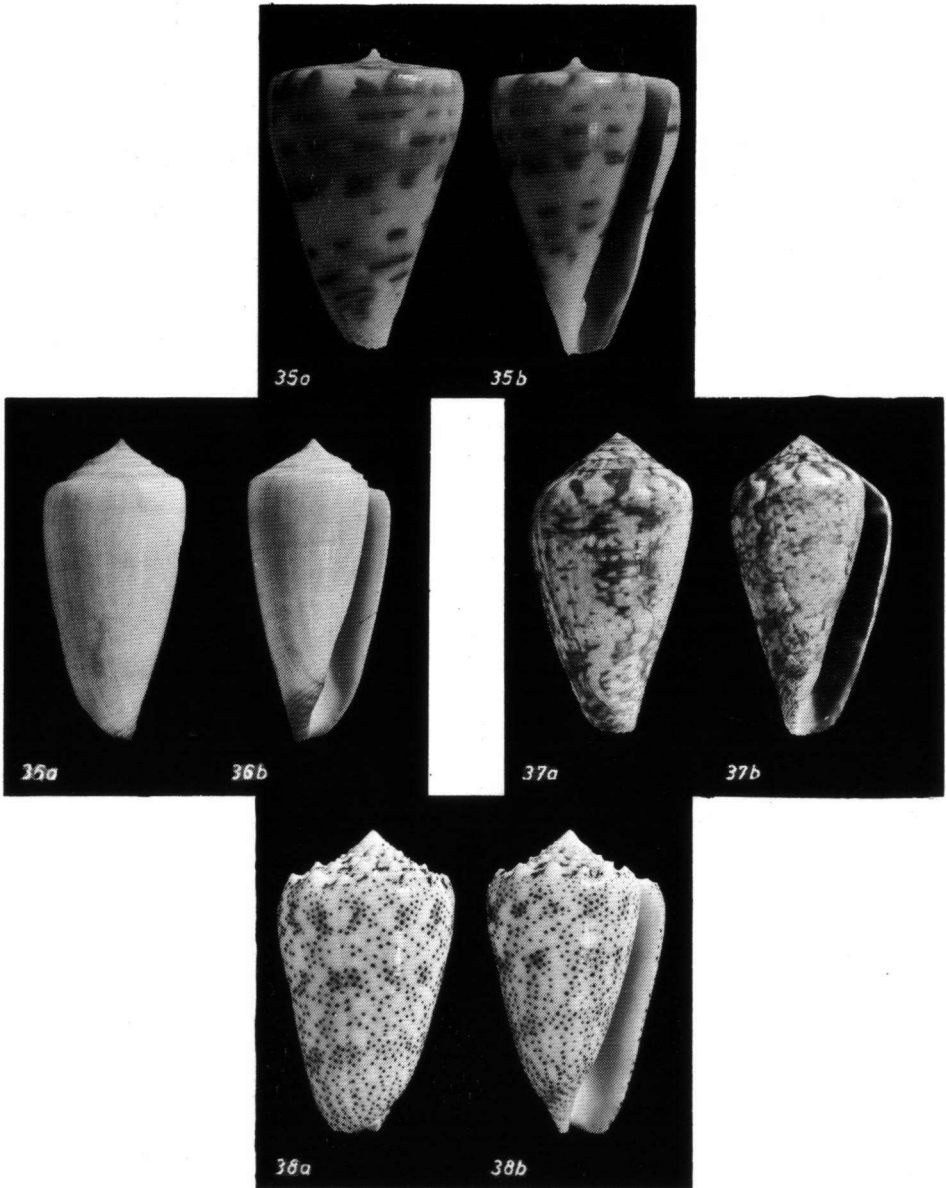


Fig. 35. *Conus angasi* fa. *advertex* (Garrard), Queensland, Wide Bay, length 31.7 mm.

Fig. 36. *C. furvus* fa. *aegrotus* Rve, Philippines, West Negros, length 47.0 mm.

Fig. 37. *C. aemulus* Rve, lectotype, length 34 mm (BMNH, no. 196173).

Fig. 38. *C. arenatus aequipunctatus* Dtz., Saudi Arabia, Jiddah, length 33.7 mm.



Figs. 39-40. *Conus mindanus agassizii* Dall. 39. Paralectotype, Virgin Is., Santa Cruz, length 26.8 mm (MCZ, no. 7019). 40. Barbados, length 30 mm (coll. Sander).  
Fig. 41. *C. mindanus* cf. *agassizii* Dall, Brazil, Rio de Janeiro, length 51.4 mm (coll. Saesen).  
Fig. 42. *C. figulinus loroisii* fa. *agrestis* Mörch, India, Cuddalore, length 62.8 mm.

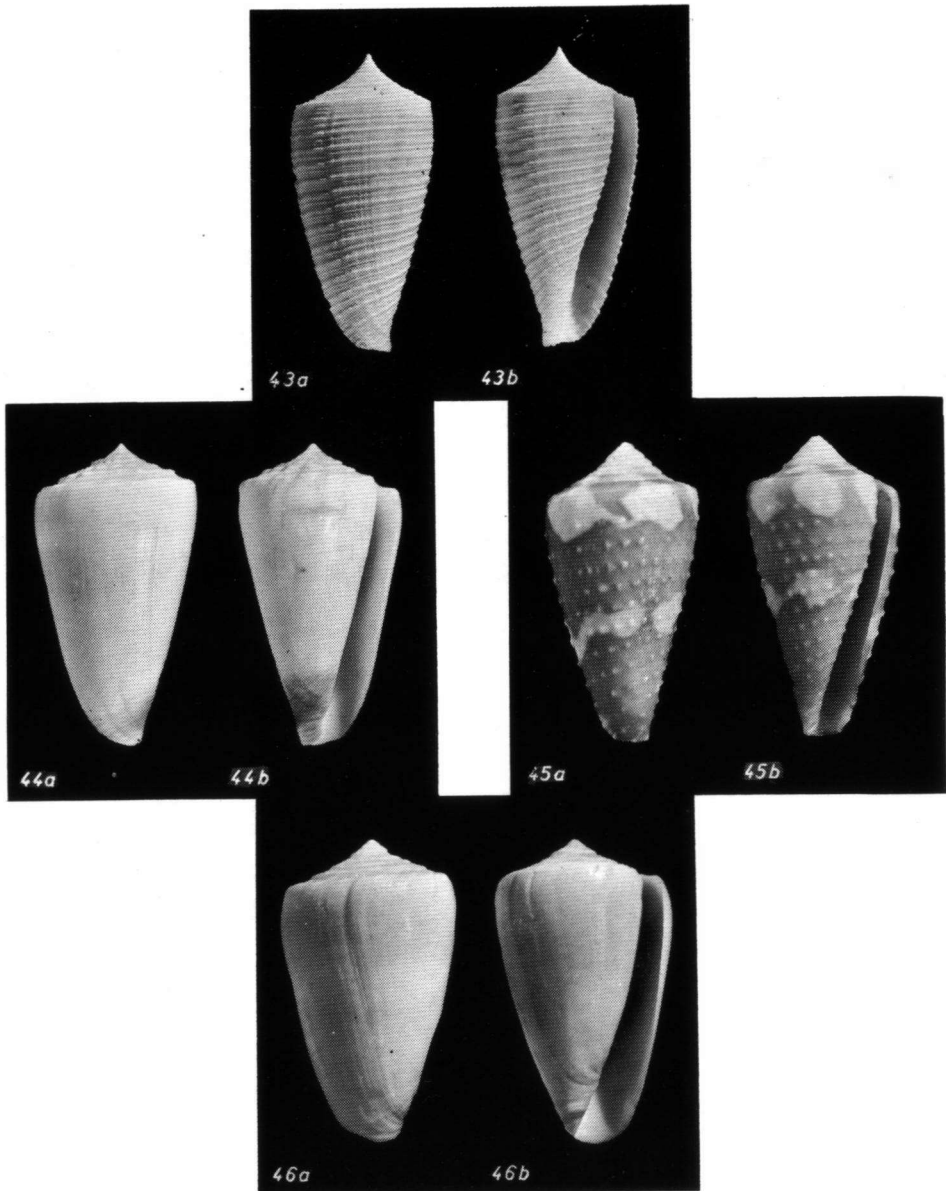


Fig. 43. *Conus alabaster* Rve, Indonesia, Djakarta Bay, length 31.9 mm.

Fig. 44. *C. albicans* Sow., Indonesia, Moluccas, length 42.0 mm.

Fig. 45. *C. litoglyphus* fa. *albomaculatus* Sow., Indonesia, Moluccas, length 23.1 mm.

Fig. 46. *C. albonerosus* (Garrard), Australia, Queensland, length 60.1 mm (coll. Wils).



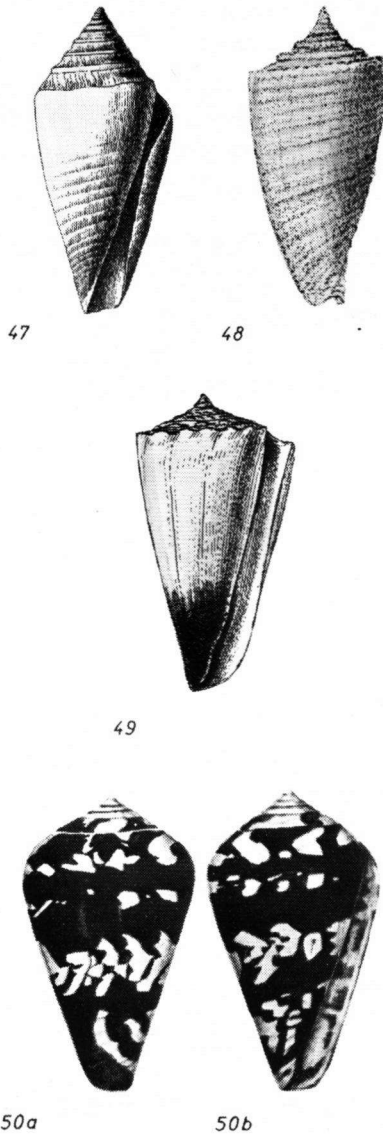


Fig. 47. *Conus mindanus agassizii* Dall, (after Dall), lectotype, actual length of specimen 24.5 mm (see text).

Fig. 48. *C. alabaster* Rve, (after Sowerby), neotype, length 27.0 mm.

Fig. 49. *C. albicans* Sow., (after Sowerby), holotype, length 45 mm.

Fig. 50. *C. africanus* Kiener, holotype of *C. albuquerquei* Trovão, (after Trovão), length 12.7 mm.