

***Conus nobilis* Linnaeus and *Conus victor* Broderip**

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Some time ago the Zoological Museum of the University of Amsterdam (ZMA) and the Rijksmuseum van Natuurlijke Historie at Leiden (RNHL) received from brother M. VIANNEY a series of specimens of a form of *Conus* not represented in the collections of these institutes. These fresh shells, apparently from specimens collected alive, came from Flores Strait between Flores and Solor, Lesser Sunda Islands, Indonesia. Brother M. VIANNEY writes us that he never saw this form of *Conus* among shells from other localities in the neighbourhood. The specimens were identified as *Conus victor* Broderip (1842, p. 54), which identification was confirmed by comparison with the type specimen in the British Museum (Natural History).

At that moment no data about the distribution of *Conus victor* had been published, except the vague indication 'Philippines' by WEINKAUFF (1875, p. 366). The form was sometimes regarded as a mere variety of *Conus nobilis* L. (1758, p. 714). Therefore we resolved to study these two nominal species more closely. In VAN NOSTRAND's Standard Catalogue of Shells edited in 1964 by J. L. WAGNER and R. TUCKER ABBOTT, of which we received a copy in January 1965, *Conus nobilis* L. (including *C. cordigera* Sow.) is said to come from the southern Philippines, while *C. marchionatus* Hinds from Polynesia and *C. victor* Broderip from Indonesia are considered subspecies of *C. nobilis*. We think that this statement is essentially

almost right, but we are able to give more detailed and additional information. *Conus marchionatus* Hinds will not occupy us here.

For getting an insight into the material of *C. nobilis* and *C. victor* present in a number of important collections we asked fifteen of our colleagues for information. They obliged us by kindly providing, or letting provide, all the data we had asked for, and, therefore, we wish to express our indebtedness to: Dr. R. TUCKER ABBOTT (Academy of Natural Sciences, Philadelphia, ANSP), Prof. Dr. W. ADAM (Institut Royal des Sciences Naturelles de Belgique, Bruxelles, IRSN), Dr. E. BINDER (Muséum d'Histoire Naturelle, Genève, MHNG), Dr. W. J. CLENCH (Museum of Comparative Zoology, Cambridge, Mass., MCZ), Drs. H. E. COOMANS (then American Museum of Natural History, New York, AMNH), Mr. S. P. DANCE (British Museum (Natural History), London, BM), Prof. Dr. E. FISCHER (Muséum National d'Histoire Naturelle, Paris, MNHP), Dr. R. KILIAS (Zoologisches Museum der Humboldt Universität, Berlin, ZMB), Mr. J. KNUDSEN (Universitetets Zoologiske Museum, København, ZMK), Dr. A. KOHN (University of Washington, Seattle), Dr. J. P. E. MORRISON (United States National Museum, Washington, D.C., USNM), Mr. C. MATHESON (National Museum of Wales, Cardiff, NMW), Mr. L. DE PRIESTER (Vlissingen, Netherlands), Dr. A. SOLEM (Chicago Natural History Museum, CNHM), Dr. A. ZILCH (Natur-Museum Senckenberg, Frankfurt am Main, SMF). In the following the institutes mentioned will be indicated by the abbreviations given above.

According to the labels in these collections and those of the ZMA and the RHNL we got following preliminary picture of the distribution of *Conus nobilis* and *C. victor*.

Conus nobilis L.:

No locality (AMNH, BM, IRSN !, MNHP, NMW, RNHL !)

Oceania (MNHP)

Pacific Ocean (MHNG)

Philippines (AMNH, ANSP (var. *cordigera*) !, BM, IRSN (var. *cordigera*) !, NMW, ZMB, ZMK)

Cuyo I., Philippines (BM)

Cuyo I., Calamianes Province, Philippines (USNM)

Cuyo I., Palawan Province, Philippines (ANSP !)

Palawan (AMNH)

Bancalan and Balabac Is., Palawan Province, Philippines (USNM)

Balabac I., Palawan Province, Philippines (ANSP, CNHM, USNM)

East Indies (MHNG, ZMK)

Mandi Darrah I., North Borneo (AMNH, ANSP !, USNM)

Marudu Bay, North Borneo (KOHN)

Moluccas (AMNH, BM, IRSN (var. *cordigera*) !, RNHL !)
 Amboina (Vienna Museum fide KOHN)
 Sumatra (ZMA !)
 Batu Is., West coast of Sumatra (ZMA !)
 Nicobar Is. (ZMK)
 Andaman Is. (AMNH, ANSP, BM, CNHM, IRSN (with var. *cordigera*) !, NMW, RNHL !, ZMA ! ZMK)
 Port Blair, Andaman Is. (BM, NMW, USNM)
 Port Louis, Andaman Is. (BM and ZMK fide KOHN)
 Indian Ocean (ZMB)
 Mauritius (MHNP fide KOHN)

Conus victor Brod.:

No locality (AMNH, BM (holotype), IRSN !)
 East Indies (MHNG)
 Philippines (IRSN !)
 off Burias I., Philippines USNM !)
 Bali, Lesser Sunda Is., Indonesia (MCZ !)

It was impossible for us to check all these records. Besides the material in the Dutch museums we could, however, examine the shells in the DAUTZENBERG collection (IRSN) and we received on loan some lots from American museums which seemed crucial for the study of our problem. The samples we examined are indicated by a !

We cannot agree with the identification of the specimens recorded as *Conus victor* from the Philippines. To substantiate this view a discussion of variation in *Conus nobilis* is necessary (Plate 1 fig. 1-6). The measurements (in mm) of some specimens are:

	Height	Breadth
No locality, Pl. 1 fig. 5	62	30
Philippines, Pl. 1 fig. 4	56 $\frac{1}{2}$	27
Cuyo I., Palawan Prov., Pl. 1 fig. 3	42 $\frac{1}{2}$	22 $\frac{1}{2}$
Andaman Is., Pl. 1 fig. 1	41 $\frac{1}{2}$	22

In *Conus nobilis* two forms can be distinguished as to the shape:

- (1) the most common one with nearly straight sides,
 - (2) the form in which the sides are clearly convex,
- and three as to colour pattern:

- (a) the heart shaped white spots are evenly distributed over the brownish yellow ground colour; mostly each of them is bordered in front by a somewhat darker margin,
- (b) the ground colour forms two more or less continuous spiral zones at about $\frac{1}{3}$ and $\frac{2}{3}$ of the height of the shell,

- (c) spirals consisting of minute brown dots occur on the dark zones at $\frac{1}{3}$ and $\frac{2}{3}$ of the height of the shell; sometimes they cover a greater part of the body whorl, in extreme cases from $\frac{4}{5}$ of the height downwards.

Transitions occur between these forms.

The specimen of unknown locality in the Linnean collection which is considered the holotype of *Conus nobilis* has been figured by KOHN (1963, pl. 3 fig. 28); it belongs to form (1) (a).

Conus cordigera Sowerby (1866, p. 329) is said to differ from *C. nobilis* by: a white instead of a pink apex, the heart shaped white spots not being bordered with a line of strong colour on the front side, the intervening spaces being narrower and not crossed by articulated lines, the more convex outlines of the shell, and the whorls of the spire being flatter. These characters should always be correlated in *C. cordigera*. According to TOMLIN (1937, p. 234) *Conus cordigera* is based on three syntypes from the Philippines. The specimen figured by SOWERBY (1858, pl. 207 fig. 498), which we take to be the holotype, has the white spots arranged in axial rows in a more regular way than in any of the shells we examined. We found all sorts of transitions between *C. nobilis* and *C. cordigera* as the analysis of five specimens may show.

	apex white	no dark border in front of white spots	no articulated spiral lines	outlines of shell convex	whorls of spire flat
Cuyo I., Pl. 1 fig. 3	+	+	+	+	+
'Moluccas', Pl. 1 fig. 2	+	+	+	+	—
Mandi Darrah I. (ANSP, 255577)	+	+	+	—	—
Andaman Is., Pl. 1 fig. 1	+	—	+	—	—
Philippines, Pl. 1 fig. 4	—	—	—	—	—

Plate 1. Fig. 1-6. *Conus nobilis nobilis* L. 1: form (1) (a), Andaman Is. (RNHL, 63c), height $41\frac{1}{2}$ mm; 2: form (2) (b), "Moluccas" (RNHL, 63b), height 33 mm; 3: form (2) (b), Cuyo I. (ANSP, 223426), height $42\frac{1}{2}$ mm; 4: form (1) (c), Philippines (ANSP, 33858), height $56\frac{1}{2}$ mm; 5: form (1) (c), locality unknown (RNHL, 63a), height 62 mm; 6: form (1) (c), Philippines (IRSN, Dautzenberg collection, s. n. *Conus nobilis* L. var. *victor* Brod.), height $45\frac{1}{2}$ mm.

Fig. 7-9. *Conus nobilis victor* Brod. 7: Bali (MCZ, 206587), height $43\frac{1}{2}$ mm; 8, 9: Flores Strait (RNHL, 325a), height 34 and $46\frac{1}{2}$ mm.

Fig. 10. *Conus ammiralis* L., monstrosity, off. N. E. Burias (USNM, 237007, s. n. *Conus victor* Brod.), height 54 mm.

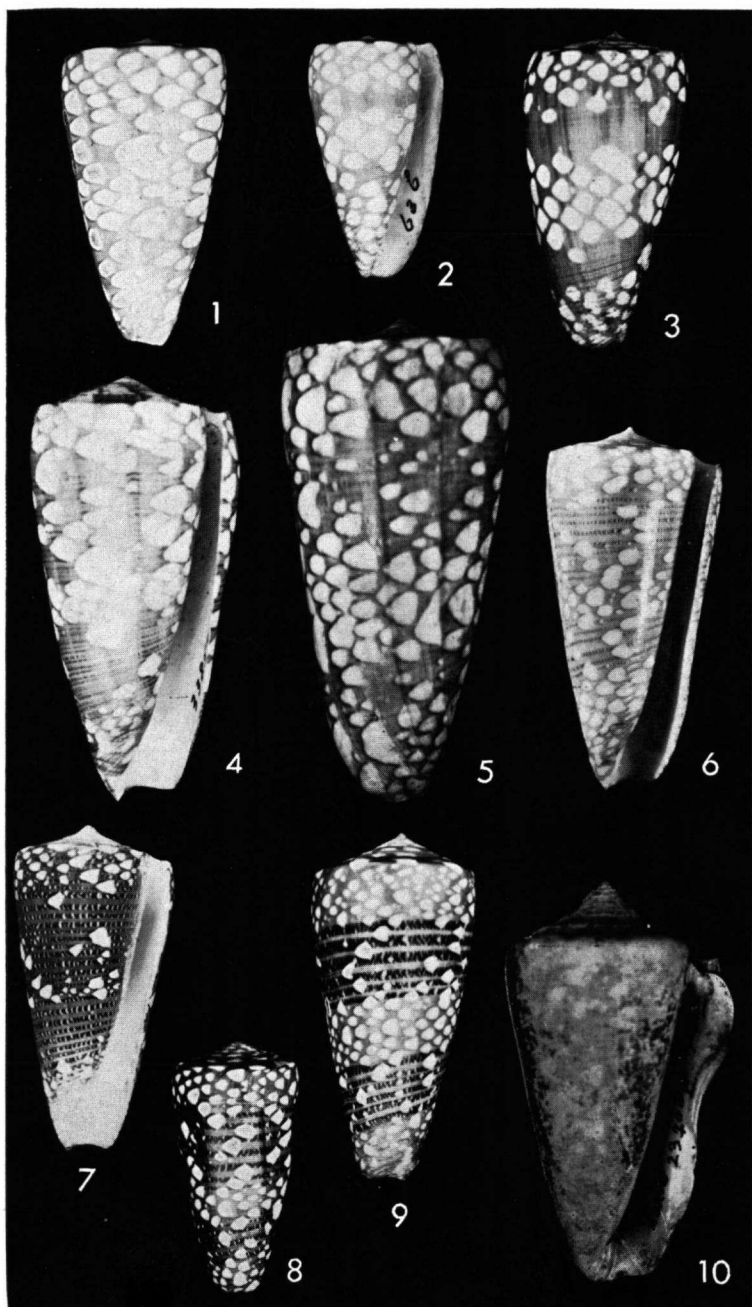
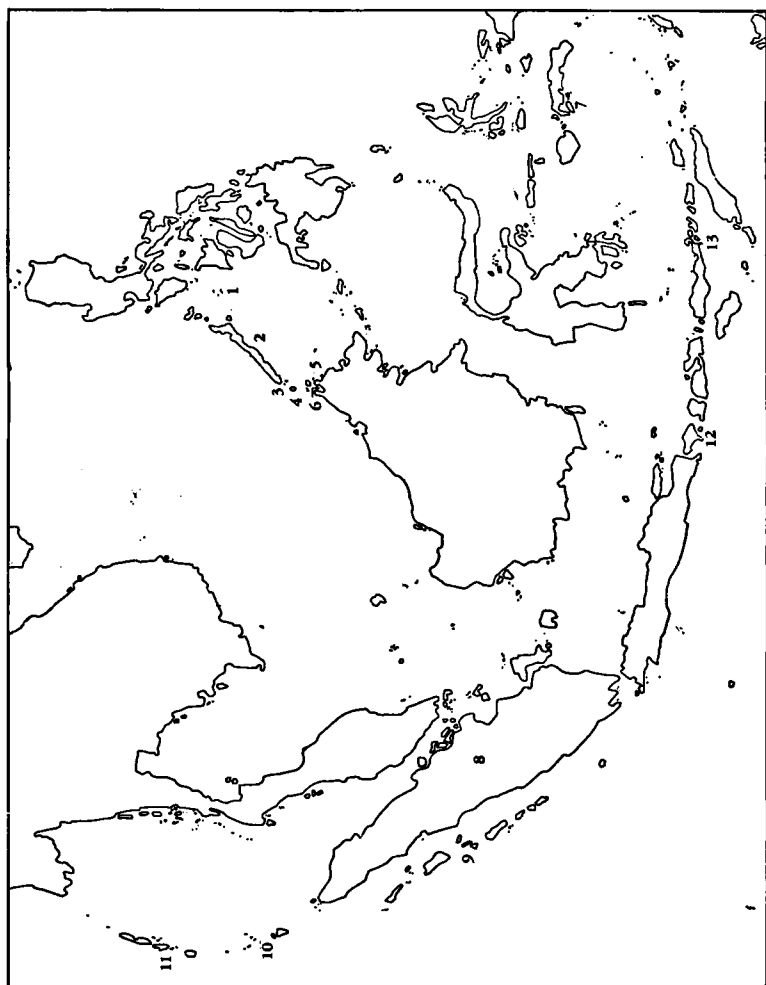


PLATE 2



As *C. cordigera* occurs in the same area as the typical *nobilis* we consider it as a form of that species characterized by a certain combination of characters which vary more or less independently.

The colour pattern type (c) is nearest to *C. victor* and specimens belonging to it have been taken for *C. victor* by DAUTZENBERG (Pl. 1 fig. 6). *Conus victor* is, however, characterized by having (1) the spiral rows of minute dots much darker, black instead of brown, (2) the ground colour darker, and (3) the white spots smaller. Generally the spire is higher in *C. victor* than in *C. nobilis*. The following are the measurements (in mm) of some specimens of *C. victor* we examined.

	Height	Breadth
No locality, holotype (BM)	32	16 $\frac{1}{2}$
Bali, Pl. 1 fig. 7	43 $\frac{1}{2}$	21 $\frac{1}{2}$
between Flores and Solor, Pl. 1 fig. 9	46 $\frac{1}{2}$	22 $\frac{1}{2}$
ibidem (ZMA)	38 $\frac{1}{2}$	18 $\frac{1}{2}$
ibidem (ZMA)	35 $\frac{1}{2}$	18
ibidem (ZMA)	35 $\frac{1}{2}$	16 $\frac{1}{2}$
ibidem (ZMA)	18 $\frac{1}{2}$	8 $\frac{1}{2}$

Conus victor is so near to form (1) (c) of *C. nobilis*, that we agree with WAGNER & ABBOTT (l. c.) in considering it a subspecies of the latter which seems to be restricted to the Lesser Sunda Islands.

The specimen identified as *C. victor* in the USNM (Pl. 1 fig. 10) is abnormal. The very heavy shell is relatively wider and has a higher spire with more concave sides than any *C. nobilis victor* or *C. nobilis nobilis* we saw; its height is 54, its width 30 mm. The body whorl shows signs of very irregular growth and the outer lip is folded back at about $\frac{1}{3}$ and $\frac{2}{3}$ of the height. A great part of the body whorl is covered by encrustation; the colour pattern is vaguely visible on the ventral side. After close comparison we have come to the conclusion that it is an abnormal *C. ammiralis* L.

The following is an annotated list of the figures of *C. nobilis nobilis* and *C. nobilis victor* which we found in literature.

Plate 2. Distribution of *Conus nobilis nobilis* L. (loc. 1-6, ? 7, 8-11) and of *C. nobilis victor* Brod. (loc. 12, 13). 1: Cuyo I., 2: Palawan I., 3: Bancalan I., 4: Balabac I., 5: Mandi Darrah I., 6: Marudu Bay, 7: Amboina (Ambon I.), 8: Sumatra, 9: Batu Is., 10: Nicobar Is., 11: Andaman Is., 12: Bali, 13: Flores Strait.

1. [d'ARGENVILLE], 1742, Lithologie & Conchyliologie, pl. 15 fig. M: *nobilis* form (1) (a), = no. 2.
2. [d'ARGENVILLE], 1757, Conchyliologie, ed. 2, pl. 12 fig. M: = no. 1.
3. SEBA, 1761, Locupl. Rer. Nat. Thes. Acc. Descr., vol. 3, pl. 42 fig. 13: *nobilis* form (1) (c), spiral lines of minute dots hardly developed.
4. SEBA, 1761, Op. cit., pl. 42 fig. 14: *nobilis* form (1) (c), spiral lines of minute dots covering great part of body whorl.
- [5. MARTINI, 1773, Syst. Conch. Cab., vol. 2, pl. 62 fig. 689: *C. striatus* L. var. = no. 13.]
6. FAVANNE, 1780, d'Argenville's Conchyliologie, ed. 3: pl. 14 fig. E2: *nobilis* form (1) (a), very bad figure.
7. CHEMNITZ, 1788, Syst. Conch. Cab., vol. 10, pl. 141 fig. 1312: *nobilis* form (1) (c), = no. 12.
8. CHEMNITZ, 1788, Op. cit., pl. 141 fig. 1313, 1314: *nobilis* form (1) (c), very near *C. victor*, but the spire is almost flat and the spiral lines of minute dots less pronounced, brown instead of black. The specimen is said to come from the Nicobars, = no. 11.
9. [LAMARCK], 1798, Tabl. Enc. Méth. (Vers), vol. 3, pl. 339 fig. 7: probably *C. victor*.
10. [LAMARCK], 1798, Op. cit., pl. 339 fig. 8: *nobilis* form (1) (c), a great part of the body whorl covered by spiral lines of minute dots.
11. KÜSTER, 1837, Syst. Conch. Cab. (2), vol. 4 (2), pl. 4 fig. 5, 6: = no. 8.
12. KÜSTER, 1837, Op. cit., pl. 4 fig. 7: = no. 7.
- [13. KÜSTER, 1838, Op. cit., pl. 18 fig. 7: = no. 5.]
14. DE LESSERT, 1841, Rec. Coq. Lamarck, pl. 40 fig. 10a, b: *nobilis* form (1) (c), = no. 23, and probably = no. 19 (MERMOD, 1947: 196).
15. REEVE, 1843, Conch. Ic., vol. 1, *Conus*, pl. 1 fig. 2a: *nobilis* form (1) (c), rather near *victor*, = 29.
16. REEVE, 1843, Op. cit., pl. 1 fig. 2b: *nobilis* form (2) (b), = no. 24, = no. 30.
17. REEVE, 1843, Op. cit., pl. 1 fig. 2c: *nobilis* form (1) (c).
18. REEVE, 1843, Op. cit., pl. 1 fig. 5: *victor*, holotype, = no. 26, = no. 28, = no. 31.
19. KIENER, 1846, Coq. Viv., genre Cône, pl. 49 fig. 1: *nobilis* form (1) (c), probably = no. 14 and no. 23 (Mermod, 1947: 196).
20. KIENER, 1846, Op. cit., pl. 49 fig. 1a: *nobilis* form (1) (c).

21. KIENER, 1846, Op. cit., pl. 49 fig. 1b: *nobilis* form (1) (c).
22. KIENER, 1846, Op. cit., pl. 49 fig. 1c: *victor*.
23. CHENU, 1847, Ill. Conch. Conus, pl. 4 fig. 10a, b: = no. 14 and probably = no. 19 (non vidimus, fide MERMOD, 1947: 196).
24. SOWERBY, 1858, Thes. Conch., vol. 3, pl. 207 fig. 498: = no. 16 and = no. 30, holotype of *cordigera* Sowerby.
25. SOWERBY, 1858, Op. cit., pl. 207 fig. 499: *nobilis* form (1) (c).
26. SOWERBY, 1858, Op. cit., pl. 208 fig. 524 = no. 18, = no. 28, = no. 31.
27. CHENU, 1859, Man. Conch., vol. 1, fig. 1479; *nobilis* form (1) (b).
28. WEINKAUFF, 1875, Syst. Conch. Cab. (2), vol. 4 (2), pl. 67 fig. 11: = no. 18, = no. 26, = no. 31.
29. TRYON, 1884, Man. Conch., vol. 6, Conidae, pl. 8 fig. 47: = no. 15.
30. TRYON, 1884, Op. cit., pl. 8 fig. 48: = no. 16, no. 24.
31. TRYON, 1884, Op. cit., pl. 8 fig. 49: = no. 18, = no. 26, = no. 28.
32. WEBB, 1951, Handb. Shell Coll., ed. 9, pl. 10 fig. 9: *nobilis* form (1) (a-b), not in ed. 3 (1935), other editions not seen.
33. KAICHER, 1956, Indo-Pac. Sea Shells, vol. 5, pl. 6 fig. 3: *nobilis* form (2) (a).
34. KOHN, 1963, J. Linn. Soc. London (Zool.), vol. 44, pl. 3 fig. 28: *nobilis* form (1) (a), holotype.

When discussing the distribution of *Conus nobilis*, we leave its occurrence in Oceania out of consideration. It seems probable that the species is represented in that area by *Conus marchionatus* Hinds, described from the Marquesas Islands, and that the records from Oceania and Pacific Ocean refer to that form. The distributional area of *Conus nobilis nobilis* L. appears to be discontinuous and to consist of two parts. The first part (Plate 2, loc. 1-6) is in the south-western Philippines from Cuyo I. through Palawan to North Borneo. The second part (Plate 2, loc. 8-11) is at the south-western edge of South East Asia: from the Andaman Is. through the Nicobars to the Batu Is. We found no differences of taxonomic significance between the shells from these two areas. We distrust the localities "Moluccas" and "Amboina" (Plate 2, no. 7). Of old Amboina has been a centre of shell trade and, therefore, the reliability of this record on a label should always be checked. On labels from old collections "Moluccas" is often synonymous with "East Indies". Among the large, reliably labelled material from the Moluccan islands present in Dutch collections there are no specimens of *Conus nobilis*

or a near ally. Also the record "Mauritius", with which Dr. KOHN provided us from his notes, seems to need confirmation.

The exact localities of *Conus nobilis victor* are in the Lesser Sunda Islands (Plate 2, loc. 12, 13). Specimens intermediate between the two subspecies could be expected from the South coast of Java. But among the large quantities of shells we saw from that coast nothing is like *C. nobilis nobilis* or *C. nobilis victor*.

SUMMARY

Conus nobilis nobilis L. is variable and some of its variations approach *C. n. victor* Broderip. The latter may, however, always be distinguished by its spiral rows of much darker minute dots, darker ground colour, and smaller white spots. The distributional area of *C. n. nobilis* is discontinuous and consists of two parts: one having its centre in Palawan I. in the south-western Philippines, the other stretching from the Andaman Is. to the Batu Is. *C. n. victor* comes from the Lesser Sunda Is.

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SAMENVATTING

De musea in Amsterdam en Leiden ontvingen van frater M. VIANNEY een serie van de zeer zeldzame *Conus victor* Brod. uit Straat Flores (Pl. 1 fig. 8, 9). Deze vorm is te beschouwen als een ondersoort van *Conus nobilis* L. Waarschijnlijk is *Conus marchionatus* Hinds de vorm, die deze soort in Oceanië vertegenwoordigt. *Conus nobilis nobilis* is nogal variabel (Pl. 1 fig. 1-6) en heeft een discontinu verspreidingsgebied. Hij komt voor in de zuidwestelijke Philippijnen tot Noord-Borneo en van de Andaman Eilanden tot de Batoe Eilanden (Pl. 2: 1-6, 8-11). *Conus nobilis victor* is tot dusver alleen bekend van de Kleine Soenda Eilanden (Pl. 2: 12, 13).