

BULLETIN ZOOLOGISCH MUSEUM

 UNIVERSITEIT VAN AMSTERDAM

Vol. 10 No. 25 1986

STUDIES ON CONIDAE (MOLLUSCA, GASTROPODA), 6.
CONIDAE OF THE CHESTERFIELD ISLANDS, WITH DESCRIPTION OF
CONUS LUCIAE NOVA SPECIES

R.G. MOOLENBEEK

ABSTRACT

About 50 species of the genus *Conus* are recorded from the Chesterfield Islands, which are situated between New Caledonia and Queensland. *Conus luciae* is described as a new species from Banc Nova from depths around 300 m.

INTRODUCTION

The central part of the Coral Sea between New Caledonia and Queensland (fig. 6) comprises several island and reef groups (Bellona, Chesterfield, Bampton) and submerged banks, which have so far hardly been malacologically investigated. The area has at least two endemic marine gastropods, the volutes *Cymbiolacca thatcheri* (M'Coy, 1868) and *Lyría grangei* Cernohorsky, 1980, which probably reflect the degree of isolation of the reef areas from surrounding land masses.

The "Chalcal" expedition 1984 (R.V. "Coriolis"), under the direction of Dr. B. Richer de Forges (ORSTOM, Nouméa), sampled benthos using

dredging, trawling and SCUBA diving. A description of the Chalcal cruise 1984 and station list is presented by Richer de Forges & Pianet (1984); it contains a preliminary list of molluscs taken during the expedition. The list is reproduced in Gerbault (1985), together with a popular account of the cruise.

The malacological material is deposited in the Muséum National d'Histoire Naturelle (MNHN) at Paris. The cones were submitted to me for identification and the present paper is a report on that family. Not all species listed by Gerbault (1985) are present in the collection. Previous literature concerning the Conidae from the Chesterfield Islands comprises Brazier (1871: 585) and Byrne (1971).

Table I. *Conus* species from the Chesterfield area.

species	"Chalcal" Stns. 1984	Brazier (1871)	Byrne (1971)	Gerbault (1985)	
<i>adamsonii</i> Broderip, 1836	-	X	-	-	
<i>ammiralis</i> Linnaeus, 1758	P6, D17, D27, D56	-	X	X	
<i>arenatus</i> Hwass, 1792	D56	-	X	X	
<i>articulatus</i> Sowerby, 1873	D7, D41, D55	-	-	-	1)
<i>balteatus pigmentatus</i> Adams & Reeve, 1848	P5	-	-	-	
<i>bandanus</i> Hwass, 1792	P5	-	-	-	
<i>bougei</i> Sowerby, 1907	D15, D24, D26, D49	-	-	X	
cf. <i>bruuni</i> Powell, 1958	D64	-	-	-	1)
<i>capitaneus</i> Linnaeus, 1758	P5, P6, D1, D39, D52	-	-	X	
cf. <i>circumactus</i> Iredale, 1929	P4	-	-	-	
<i>coccineus</i> Gmelin, 1791	D2, D7, D9, D40	-	-	X	
<i>crocatus</i> Lamarck, 1810	-	X	-	X	
<i>distans</i> Hwass, 1792	Recif Boby	-	X	X	
<i>ebraeus</i> Linnaeus, 1758	-	-	X	X	
<i>eburneus</i> Hwass, 1792	-	-	X	-	
<i>emaciatu</i> s Reeve, 1849	-	-	-	X	
<i>flavidus</i> Lamarck, 1810	P5	-	X	X	
<i>floccatus</i> Sowerby, 1839	P4, P5, D26, D56	X	-	X	
<i>floridulus</i> Adams & Reeve, 1848	-	-	-	X	
<i>generalis</i> Linnaeus, 1767	P2	-	-	X	
<i>geographus</i> Linnaeus, 1758	-	-	-	X	
<i>imperialis</i> Linnaeus, 1758	P2	-	X	X	
<i>kimioi</i> Habe, 1965	D38	-	-	-	1)
<i>leopardus</i> (Röding, 1798)	-	-	-	X	
<i>litoglyphus</i> Hwass, 1792	P4	-	-	X	
<i>litteratus</i> Linnaeus, 1758	P2 P5	-	X	X	
<i>lividus</i> Hwass, 1792	-	-	X	X	
<i>luciae nova species</i>	D66, D68	-	-	-	
<i>luteus</i> Sowerby, 1833	D40, D51	-	-	-	
<i>magnificus</i> Reeve, 1843	P5, D24, D46	-	-	-	1)
<i>marmoreus</i> Linnaeus, 1758	-	-	-	X	
<i>miles</i> Linnaeus, 1758	P5	-	-	X	
<i>miliaris</i> Hwass, 1792	P5	-	X	X	
<i>moreleti</i> Crosse, 1858	P5	-	-	X	
<i>muriculatus</i> Sowerby, 1833	D19, D24, D34	-	-	X	
<i>musicus</i> Hwass, 1792	D8, D56	-	-	X	
<i>nussatella</i> Linnaeus, 1758	-	-	-	X	
<i>omaria</i> Hwass, 1792	-	-	-	X	
<i>orbignyi</i> Audouin, 1831	D64	-	-	-	1)
<i>pertusus</i> Hwass, 1792	-	-	-	X	
<i>planorbis</i> Born, 1778	P5	-	-	X	
<i>rattus</i> Hwass, 1792	-	-	X	-	
<i>sazanka</i> Shikama, 1970	D40	-	-	-	1)

species	"Chalcal" Stns. 1984	Brazier (1871)	Byrne (1971)	Gerbault (1985)
<i>sponsalis</i> forma <i>nanus</i> Sowerby, 1833	D8, D24	-	-	X
<i>striatellus</i> Link, 1807	-	-	X	X
<i>sugillatus</i> Reeve, 1844	-	-	-	X ¹⁾
<i>terebra</i> Born, 1778	P5	-	-	X
<i>tessulatus</i> Born, 1778	D1, D7, D37, D40, D54	-	X	X
<i>textile</i> Linnaeus, 1758	-	-	X	X
<i>varius</i> Linnaeus, 1758	-	-	-	X
<i>vexillum</i> Gmelin, 1791	-	-	-	X
<i>virgo</i> Linnaeus, 1758	-	-	-	X
<i>vitulinus</i> Hwass, 1792	-	-	X	-

¹⁾: see remarks

REMARKS

Some species may have been misidentified earlier or are mentioned by a synonym name. For example, what I call *C. magnificus* might have been identified by Gerbault (1985) as *C. omaria*, whereas *C. floridulus* and *C. sugillatus* are junior synonyms or perhaps formae of *C. muriculatus*. *C. articulatus* was recorded before from nearby areas (Papua New Guinea, Fiji Islands). However, amongst the three samples of this species is one specimen, which differs from *C. articulatus* in minor conchological characters. It might be a sibling species and when more material becomes available a definite opinion can be formed.

C. bruuni is a rare species so far only known from the Kermadec Islands. Compared to the type material, this specimen is large (74.2 x 36.5 mm). Unfortunately it was not collected alive and its shell is in a rather bad condition.

C. kimioi. One dead specimen of this very peculiar species was dredged. It forms a considerable range extension, since this species was only known from southern Japan, Taiwan and northern Philippines.

C. orbigny. Not previously recorded from this area. Only one dead specimen was collected.

C. sazanka. A few juvenile shells of this rare species were found. It is new for the

Coral Sea.

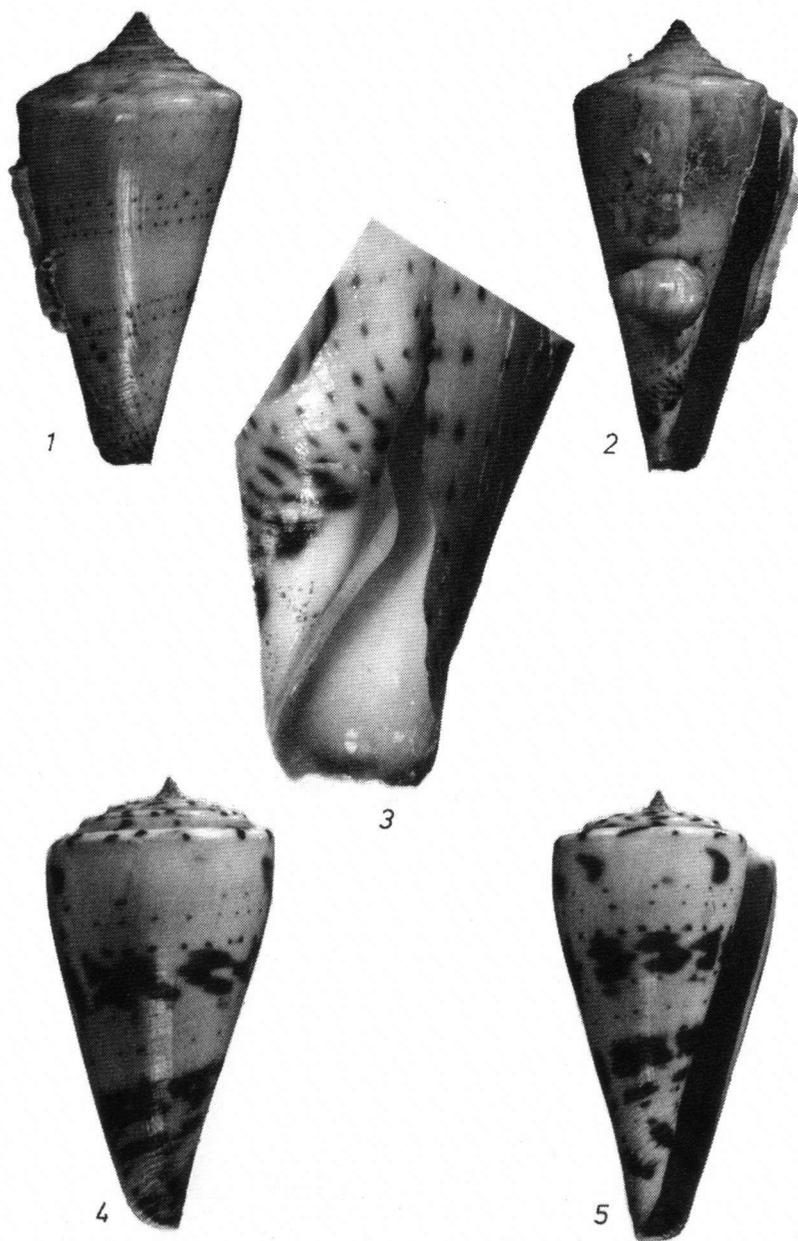
A few juvenile shells could not be identified to species. Amongst them some shells which are figured by Estival (1981: figs. 105-106). It can be the juvenile stage of *C. leopardus* or *C. litteratus* but a closer research is needed.

CONUS LUCIAE n. sp.

(figs. 1-3)

Description of the holotype.-

Shell elongate, obconical, thin, porcelaneous and glossy; sides of the body whorl almost straight, towards the shoulder a little convex. Spire slightly concave and consisting of nine whorls. Apical angle about 110°. Protoconch damaged, the first 5 postnuclear whorls have small nodules which become weaker towards the last whorl, and with about 5 grooves. On the last whorl only 3-4 grooves remain visible. Whorls stepped with a deep suture. Body whorl smooth even on the anterior part where grooves are hardly visible. Shoulder rounded and a little extended. Aperture moderately wide, outer lip thin (its upper part broken). The basis of the columella has a strong projecting fold (fig. 3). Colour: spire with irregular light brown blotches on a whitish background. Shoulder with some irregular brown stripes. Body whorl lilac with widely spaced spiral rows of small brown



Figs. 1-3. *Conus luciae* n. sp., holotype, Banc Nova, Coral Sea, length 55.6 mm (MNHN). 1, dorsal side with annelid on; 2, ventral side with a *Hipponix* species near the aperture; 3, detail of the fold on the columella.

Figs. 4-5. *Conus ione* Fulton, 1938, N.E. Taiwan, length 53.6 mm (coll. J. Camp).

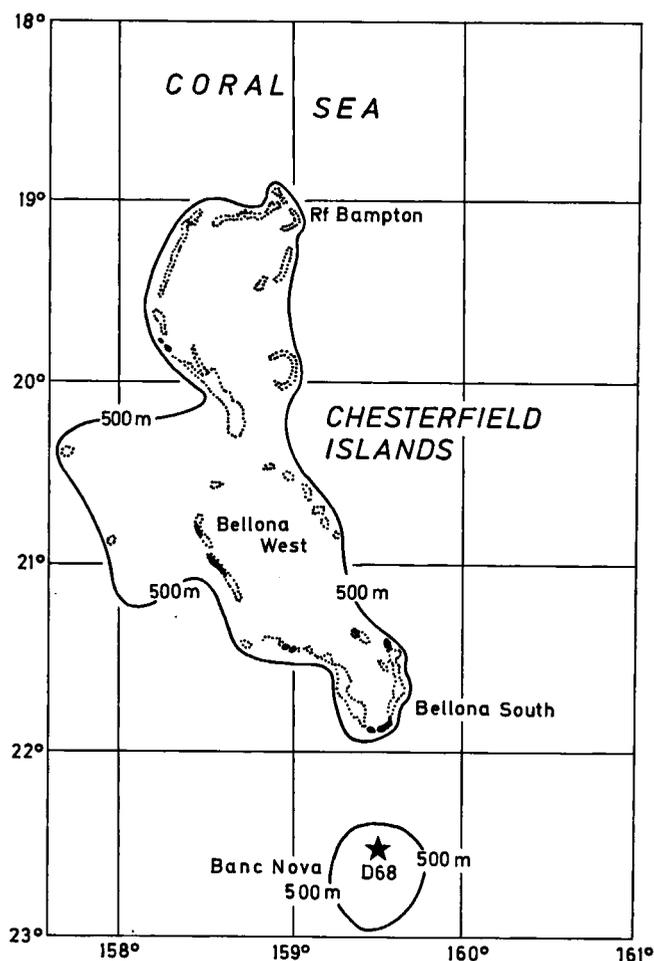


Fig. 6. Coral Sea, Chesterfield area.

dots. Just below the shoulder a row of small axial stripes, followed by a spiral row of minute spots. Just above the midbody a band of three spiral rows of brown spots. Lower third of body whorl with 11 spiral lines of punctuated brown spots; in between these are a few larger brown irregular dots; near the base the spots become larger. Base of the columella and plicae are white.

The soft parts of the animal and the periostracum are unknown.

Variability.-

Only the holotype and one paratype are available. The paratype is rather damaged and heavily encrusted with annelids. Therefore the brown spiral lines on the body whorl are less visible. Its spire is relatively higher than that

of the holotype and the coronation on the post-nuclear whorls is more expressed.

Both the holotype and the paratype of *C. luciae* have scars or still animals of the gastropod *Hippontis* spec. (fig. 2) attached to the shells, situated just beside the aperture.

Type locality.-

Coral Sea, Banc Nova (22°35'20 S - 159°15'50 E), depth 296 m (Chalcal 1984 Stat. D68). Holotype: length 55.6 mm, width 28.2 mm (MNHN).

The locality of the paratype is Coral Sea, Banc Nova (22°26'40 S - 159°19'80 E), depth 320 m (Chalcal 1984 Stat. D66). Paratype: length 62.2 mm, width 29.4 mm (ZMA Moll. no. 3.86.001).

Etymology.-

This new species is named in honour of Mrs Lucia M.T. Coomans-Loff (1928-1985), who passed away so unexpectedly.

Discussion.-

Conus luciae is distinct from closely related congeners in the following characters.

Conus ione Fulton, 1938 (figs. 4-5) has strong concave whorls with heavily curved axial ridges. Also the anterior grooves of the teleoconch are much more pronounced. Spire is straight with its whorls distinctly stepped. It lacks the plica on the columella. The colour pattern is very close to that of *C. luciae*. Its distribution ranges from southern Japan to the Philippines. Kosuge (1985: 59) mentions a range extension to North-western Australia.

Conus howelli Iredale, 1929 has a completely different colour pattern consisting of a white basic colour with many axial wavy lines of reddish brown. Like the former, it lacks the fold on the columella. Its distribution ranges from southern Queensland to northern New Zealand (Marshall, 1981) so it could live sympatrically with the new species.

Conus lozeti Richard, 1980. In 1978, I studied the specimen in MNHN, on which Richard founded his new species in 1980. At the time, I identified it as *C. amadis* Gmelin, 1791, with an abnormal plica on the columella. It differs from *C. luciae* in its more convex sides of the body whorl, a flat spire with canaliculated whorls and an "amadis"-like colour pattern. The holotype from Madagascar is the only known specimen.

Conus wallangra Garrard, 1961. This species seems, based on morphological shell characters, closely related to the new species. It has the same strong projecting fold on the columella but differs in being generally smaller and more triangular in shape. The shoulder is more carinated and there are about 5-7 distinct grooves on the whorls of the spire. It is known from off southern Queensland and New South Wales (Australia), so a sympatric occurrence is possible.

ACKNOWLEDGEMENTS

I am grateful to Dr. Philippe Bouchet (MNHN,

Paris) for making the Chalcal 1984 material available for study and for valuable comments on the manuscript. Mr. Ian Loch (Australian Museum) is thanked for the loan of the type material of *C. howelli*. Mr. John Camp (The Netherlands) allowed me to photograph his specimens of *C. ione*. The photographs were made by Mr. Louis van der Laan (ZMA) and Mr. J. Zaagman (ZMA) drew the map.

REFERENCES

- BRAZIER, J., 1871. Notes on the localities of *Dolium melanostoma* and other shells found in Australia and the adjacent islands in the Australian Seas.- Proc. zool. Soc. Lond., 1871: 585-587.
- BYRNE, D., 1971. *Cymbiolacca thatcheri* found alive.- Keppel Bay Tidings, 10 (2): 3-4.
- ESTIVAL, J.C., 1981. Cônes de Nouvelles-Calédonie et du Vanuatu: 1-126. (Tahiti).
- FULTON, H.C., 1938. Descriptions and figures of new Japanese marine shells.- Proc. malac. Soc. Lond., 23: 55-56.
- GARRARD, T.A., 1961. Mollusca collected by m.v. "Challenge" off the East coast of Australia.- J. malac. Soc. Australia, 1 (5): 2-37.
- GERBAULT, A., 1985. Chalcal 84 aux îles Chesterfield du 12 au 30 juillet 84.- Rossiniana, 26: 9-10.
- IREDALE, T., 1929. Mollusca from the continental shelf of eastern Australia.- Rec. Aust. Mus., 17: 157-189.
- KOSUGE, S., 1985. Noteworthy Mollusca from North-western Australia (1).- Preliminary report.- Bull. Inst. Mal., 2 (3): 58-59.
- MARSHALL, B.A., 1981. New records of Conidae from the New Zealand region.- N.Z. J. Zool. 8: 493-501.
- RICHARD, G., 1980. *Conus* (*Leptoconus*) *lozeti* sp. nov. de l'Océan Indien et liste des types de Conidae conservés au Muséum national d'Histoire naturelle de Paris.- Cah. Indo-Pacif., 2: 91-100.
- RICHER DE FORGES, B. & R. PIANET., 1984. Résultats préliminaires de la campagne Chalcal à bord du N.O. Coriolis (12-31 juillet 1984).- Rapps. sci. techn., 32: 1-30.

R.G. Moolenbeek,
Instituut voor Taxonomische Zoölogie,
(Zoölogisch Museum),
Postbus 20125,
1000 HC Amsterdam,
The Netherlands.

Received : 18.II.1986

Distributed : 18.VII.1986