

THE CONIDAE (GASTROPODA) OF THE MALDIVE AND CHAGOS ARCHIPELAGOES

By A. J. KOHN AND R. ROBERTSON

Department of Zoology, University of Washington, Seattle, Washington, U.S.A.
and *Academy of Natural Sciences of Philadelphia, Philadelphia, Pennsylvania, U.S.A.*

THE current surge of interest in the biota of the Indian Ocean has been marked by several biological expeditions to its remote archipelagoes. One of the early fruits of such activities has been an important increase in available faunistic information, enabling compilation of significantly improved faunal lists for taxa and regions of zoogeographic interest. Collections made during two recent expeditions, the Yale Seychelles Expedition (1957) and *Te Vega* Cruise B of the U.S. Program in Biology, International Indian Ocean Expedition (1964) have provided the basis for this list of species of the gastropod genus *Conus* known to occur on atoll reefs in the Maldive and Chagos Archipelagoes. In addition, specimens dredged in Maldive lagoons during the latter cruise are also included.

The Yale Seychelles Expedition visited North Male, Fadiffolu, South Malosmadulu and Addu Atolls in the Maldives, and Peros Banhos Atoll in the Chagos Islands. During the expedition, A.J.K. collected 754 specimens of 30 species of *Conus* in connection with ecological studies presently in preparation and to be published separately. Kohn (1964) described the habitats studied. *Te Vega* Cruise B visited Male, Fadiffolu, Miladummadulu, Tiladummati, North Malosmadulu, Ari, South Nilandu, and Addu Atolls in the Maldives, where R.R. collected 90 lots containing about 300 specimens of 30 species of *Conus*.

Table I lists species of *Conus* considered valid at the present time and known to occur in the Maldive and Chagos Archipelagoes. Records from earlier literature are indicated according to the code following the Table. Citations to the Yale Seychelles Expedition and *Te Vega* Cruise B refer only to collection of living specimens, but empty shells or fragments of other species are added at the foot of the Table.

Several species cited as occurring in Chagos by Liénard (1877) have been excluded from Table I. Our disposition of these is as follows: *C. archiepiscopus* Hwass in Bruguière, *C. panniculus* Lamarck, *C. pyramidalis* Lamarck, and *C. tigrinus* Sowerby are probably all synonyms of *C. textile* Linnaeus and *C. canonicus* Hwass in Bruguière. *C. clavus* Linnaeus and *C. minimus* Linnaeus are names on the Official Index of Rejected and Invalid Specific Names in Zoology (ICZN Opinion 753, 1965). The former may refer to *C. terebra* Born, otherwise unreported from this region; the latter may refer to *C. coronatus* Gmelin or *C. aristophanes* Sowerby, closely related but distinguishable species according to Cernohorsky (1964). Smith (1906) also listed '*C. minimus*' as collected by J. S. Gardiner at Addu and at Minikoi, Laccadive Islands. His specimens from the latter locality, now in the University Museum of Zoology, Cambridge, conform in general to Cernohorsky's redescription of *C. aristophanes*, as do certain specimens collected by the Yale Seychelles Expedition in the Maldives.

TABLE I

Species of Conus known to occur in the Maldive and Chagos Archipelagoes

Species	Maldives		Chagos	
	Previous Records	New Records	Previous Records	New Records
<i>acutangulus</i> Lamarck		..... T		.....
<i>aristophanes</i> Sowerby	S ¹	..... Y		.....
<i>arenatus</i> Hwass in Bruguière	S	..... Y, T	L, ME	.....
<i>aulicus</i> Linnaeus		..... Y	L, ME*	.....
<i>balteatus</i> Sowerby		..... Y		.....
<i>bandanus</i> Hwass in Bruguière		..... Y, T	L	.....
<i>barthelemyi</i> Bernardi		..... T	B	.....
<i>betulinus</i> Linnaeus	S	.....	L, P	.....
<i>canonicus</i> Hwass in Bruguière		..... Y	L, ME	.....
<i>capitaneus</i> Linnaeus		..... Y	L, F	.....
<i>catus</i> Hwass in Bruguière	S	..... Y	L	..... Y
<i>chaldaeus</i> (Röding)		..... Y, T	L ² , F, VM	..... Y
<i>consors</i> Sowerby	S	.....		.....
<i>coronatus</i> Gmelin	K	..... Y, T	L ¹	..... Y
<i>crocatus</i> Lamarck (= <i>pen-naceus</i> Born ?)		.....	L	.....
<i>cylindraceus</i> Broderip & Sowerby			L	.....
<i>distans</i> Hwass in Bruguière	S	..... Y, T	L, ME, VM	.....
<i>ebraeus</i> Linnaeus	MA, S	..... Y, T	L, ME	..... Y
<i>eburneus</i> Hwass in Bruguière	S	..... T		.....
<i>emaciatu</i> s Reeve		..... Y, T		.....
<i>episcopus</i> Hwass in Bruguière		.....	L, ME	.....
<i>figulinus</i> Linnaeus		.....	C	.....
<i>flavidus</i> Lamarck	S	..... Y	L, ME	..... Y
<i>frigidus</i> Reeve		..... Y, T		..... Y
<i>generalis</i> Linnaeus	F, S	.....	L, F	.....
<i>geographus</i> Linnaeus		.....	L, P	.....
<i>glans</i> Hwass in Bruguière	S	..... T	L ³	.....
<i>gubernator</i> Hwass in Bruguière		.....	L,*	.....
<i>imperialis</i> Linnaeus		.....	L, ME	.....
<i>legatus</i> Lamarck		.....	L	.....
<i>leopardus</i> (Röding)		..... Y, T	L ⁴	..... Y
<i>litoglyphus</i> Hwass in Bruguière	S	..... T	L, F	.....
<i>litteratus</i> Linnaeus		..... Y, T		.....
<i>lividus</i> Hwass in Bruguière	S, K	..... Y, T	L, F, ME	..... Y
<i>longurionis</i> Kiener (= <i>C. aculeiformis</i> Reeve ?)		..... T		.....
<i>maldivus</i> Hwass in Bruguière	BR	.....		.....
<i>marmoreus</i> Linnaeus		.....	L, F	.....
<i>miles</i> Linnaeus	S	..... Y, T	L, F ₁	..... Y
<i>millaris</i> Hwass in Bruguière	K	..... Y, T	L, F, ME	..... Y
<i>moreleti</i> Crosse		..... Y ₁		.....
<i>musicus</i> Hwass in Bruguière	S ²	..... Y, T		..... Y
<i>mustelinus</i> Hwass in Bruguière		.....	L, F	.....

TABLE I (contd.)

Species	Maldives		Chagos	
	Previous Records	New Records	Previous Records	New Records
<i>namocanus</i> Hwass in Bruguière		....	L ⁶	....
<i>nussatella</i> Linnaeus	S	....	L	....
<i>obscurus</i> Sowerby		....	L	....
<i>omaria</i> Hwass in Bruguière		....	L ⁷	....
<i>pennaceus</i> Born	S, K	.... Y, T	*	....
<i>pertusus</i> Hwass in Bruguière		.... T	L	....
<i>planorbis</i> Born		....	L, F	....
<i>pulicarius</i> Hwass in Bruguière		....	L, F, ME	....
<i>quercinus</i> Solander in [Lightfoot]	S	.... T	L, F	....
<i>raitus</i> Hwass in Bruguière		.... Y, T	ME	.... Y
<i>sponsalis</i> Hwass in Bruguière		.... Y	L	.... Y
<i>striatus</i> Linnaeus		....	L, F	....
<i>sugillatus</i> Reeve	**	....	L, ME ⁸	....
<i>relatus</i> Reeve		....	L	....
<i>tessulatus</i> Born	S	.... Y, T	F, P	....
<i>textile</i> Linnaeus	S	....	L, P	....
<i>timorensis</i> Hwass in Bruguière		....	L	....
<i>tulipa</i> Linnaeus	S	.... Y, T	L, ME	....
<i>varius</i> Linnaeus		.... Y, T	L	....
<i>vexillum</i> Gmelin		....	L, F, ME	....
<i>violaceus</i> Gmelin	S ⁹	.... T		....
<i>virgo</i> Linnaeus		.... Y, T	L	....
<i>zonatus</i> Hwass in Bruguière	S	.... Y, T		....

Notes:—B, Bernardi (1861); BR, Bruguière (1792); C, Cotton (1945); F, Fischer (1891); K, Kohn (1961); L, Liénard (1877); MA, Marrat (1879); ME, Melvill (1909); P, Poisson (1954); S, Smith (1906); VM, Von Martens (1903); *, Dautzenberg Collection, Institut Royal des Sciences Naturelles de Belgique, Brussels; **, British Museum (Natural History) (coll. J. S. Gardiner); Y, Yale Seychelles Expedition (Specimens to be deposited in Peabody Museum of Natural History, Yale University); T, *Te Vega* Cruise B, IOE, (Specimens deposited in Academy of Natural Sciences of Philadelphia).

- ¹. lists *C. minimus* Linnaeus, see text.
- ². listed as *C. vermiculatus* Lamarck, a junior synonym.
- ³. listed as *C. tenuistriatus* Sowerby, probably a junior synonym.
- ⁴. listed as '*C. multipunctatus* Lamarck.'
- ⁵. listed as '*C. ceylonensis* Hwass.'
- ⁶. listed as '*C. nemocanus* Bruguière' and *C. laevigatus* Sowerby.
- ⁷. listed as *C. convolutus* Sowerby.
- ⁸. listed as a variety of *C. lividus* Hwass in Bruguière.
- ⁹. listed as *C. tendineus* Hwass, a junior synonym.

Empty shells or fragments of the following additional species were collected in the Maldives: *C. geographus* Linnaeus, *C. mustelinus* Hwass in Bruguière, *C. nussatella* Linnaeus, *C. sugillatus* Reeve, and *C. vexillum* Gmelin on *Te Vega* Cruise B by R.R.; *C. episcopus* Hwass in Bruguière on Yale Seychelles Expedition by A. J. K.

One dredge haul made during *Te Vega* Cruise B contained specimens of three species of *Conus* that were not collected on reef platforms by either expedition. This haul was made at a depth of 45-49 m. in Miladummadulu Lagoon, southwest of the faro reef of Kendikolu Is. (5°56'N., 73°23'E.) on a substrate of sand with the green alga *Microdictyon*. It contained three specimens of *C. acutangulus* Lamarck, three of a species tentatively identified as *C. longurionis* Kiener, and one of *C. quercinus* Solander in [Lightfoot].

DISCUSSION AND SUMMARY

A total of 64 species of *Conus* are reported to occur in the Maldive and Chagos Archipelagoes, following examination of prior literature, study of material in European and American museums, and collections made by the authors during the Yale Seychelles Expedition and the International Indian Ocean Expedition. Of necessity, information from the early literature has been incorporated rather uncritically, as it has not been possible to examine most of the specimens cited. In particular, 14 species recorded from Chagos by Liénard (1877) have not been confirmed by subsequent authors.

The two recent expeditions have raised the number of species of *Conus* known from the Maldive Islands from 25 to 46, and the number known from the Chagos Islands from 51 to 53.

All of the species listed have been reported from the Indian Ocean previously, and all but one are known to be widely distributed throughout the tropical Indo-West Pacific region. The exception is *C. barthelemyi*, apparently previously known only from the holotype, collected in the Chagos Islands by Liénard and now in the National Museum of Wales, and a very few specimens in other museums.

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