

## CONTRIBUTION TO THE KNOWLEDGE OF THE CLICK BEETLES OF THE MALDIVES (COLEOPTERA: ELATERIDAE)

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**Abstract:** Three species of click beetles, *Dicronychus stolatus* (Erichson, 1860), *Phorocardius maldivianus* n. sp. and *Ryukyucardiophorus insularis* n. sp., are recorded for the first time from the Maldives Republic.

**Key words:** Coleoptera, Elateridae, *Ryukyucardiophorus*, *Phorocardius*, *Dicronychus*, new species, new records, Maldives Republic.

### Contribución al conocimiento de los elatéricos de las Maldivas (Coleoptera: Elateridae)

**Resumen:** Se citan de las Maldivas por primera vez las especies *Dicronychus stolatus* (Erichson, 1860), *Phorocardius maldivianus* n. sp. y *Ryukyucardiophorus insularis* n. sp.

**Palabras clave:** Coleoptera, Elateridae, *Ryukyucardiophorus*, *Phorocardius*, *Dicronychus*, especies nuevas, citas nuevas, República de Maldivas.

**Taxonomy / Taxonomía:** *Ryukyucardiophorus insularis* n.sp., *Phorocardius maldivianus* n.sp.

### Introduction

In this paper are illustrated the results of a study on some click-beetles recently collected in some atolls of the Maldives Republic and sent me by the colleague Sergio Riese of Genoa. According to the literature (Schenkling, 1925-27) and more recent papers no click-beetles were known from the maldivian Archipelago. In this material I have recognized three species of the subfamily Cardiophorinae Candèze, 1860 and belonging to the genera *Dicronychus* Brullé, 1832, *Phorocardius* Fleutiaux, 1931 and *Ryukyucardiophorus* Ohira, 1973. The species of *Dicronychus* is *D. stolatus* (Erichson, 1840) widespread in India and Sri Lanka. The species of *Phorocardius* (type-species: *Cardiophorus florentini* Fleutiaux, 1894) (Fleutiaux, 1931) is an undescribed species; the genus was established by Fleutiaux for some species, previously described under *Cardiophorus* Eschscholtz, 1829, from South East Asia, with bifid claws and actually includes about ten species from N India to Taiwan. The species of *Ryukyucardiophorus* (type-species: *Paracardiophorus loochooensis* Miwa, 1934) (Ohira, 1973a) is too an undescribed species. The genus was established to separate some species, previously included in *Paracardiophorus* Schwarz, 1895 with claws dilated basally. Actually it includes some species from Japan, Taiwan and one species from Turkey.

### Material and methods

**Measurements** – Body length is measured along the midline from the anterior margin of frons to apex of the elytra; width is measured across the broadest part of the body. Pronotal length is measured along the midline; the width is at the broadest part, usually at hind angles.

**Abbreviations.** The names of museums and collections providing material for this study are abbreviated as follows:

CPG, collection of G. Platia, Gatteo (Italy); CRG, collection of S. Riese, Genoa (Italy); MCSNG, Civic Museum of Natural History, Genoa.

The subfamilial placement of genera listed below follows Bouchard *et al.* (2011).

### Results

#### Subfamily CARDIOPHORINAE Candèze, 1859

#### *Ryukyucardiophorus insularis* n.sp.

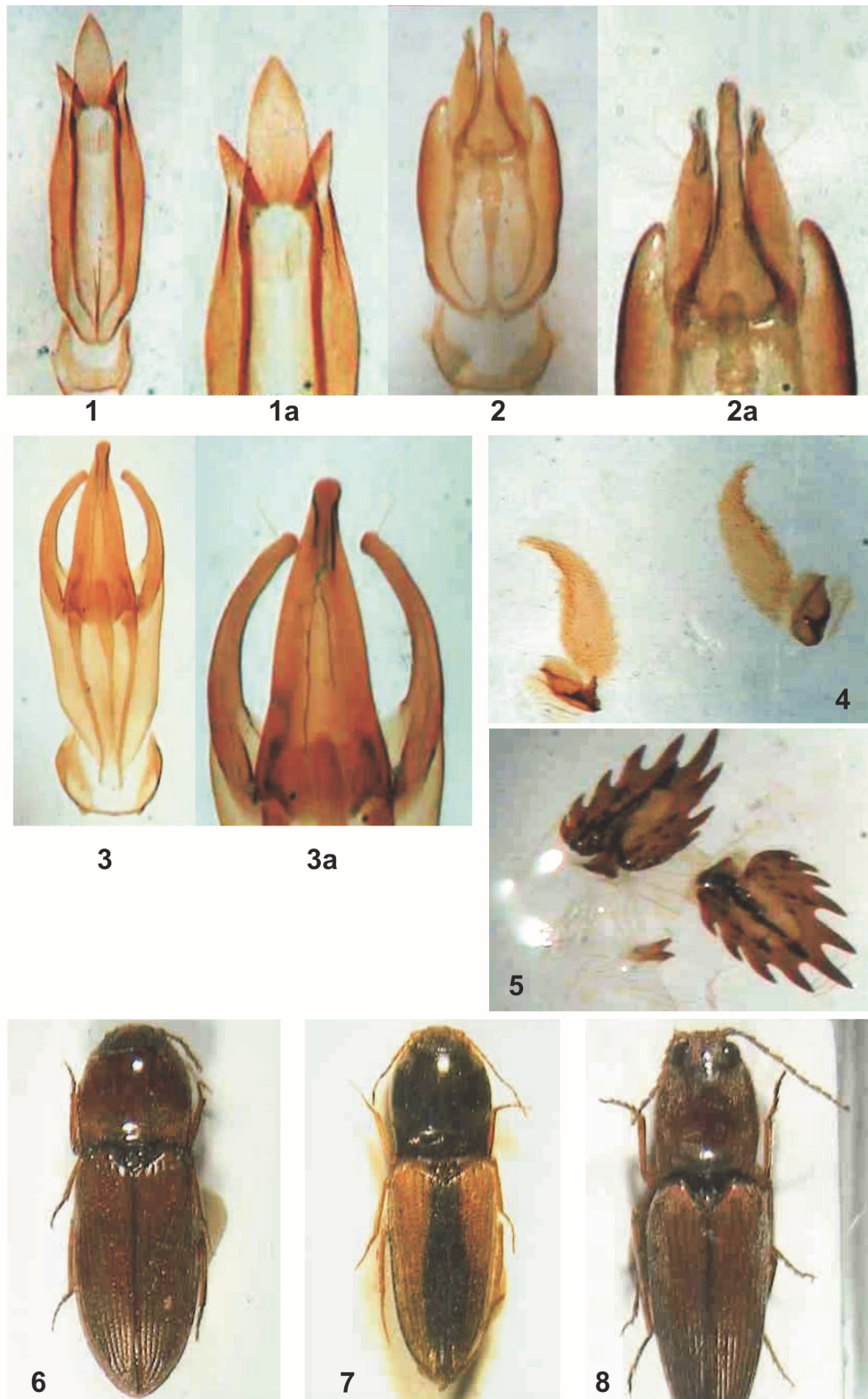
Fig. 1, 1a, 4, 6.

**MATERIAL EXAMINED.** Holotype ♀ - Maldives Rep.: Meemu Atoll, Kureli Island (2°46'49"N, 73°22'24"E), 15-16.XII.2011, N. & S. Fischer, A. & R. Saldaitis (CRG don. MCSNG). 11 Paratypes (2♂, 9♀) - same data as HT (8); North-Malé (Kaafu) Atoll, Asdhoo Island (4°27'56"N, 73°39'37"E), 18-19.XII.2011, N. & S. Fischer, A. & R. Saldaitis.(2); Vaavu Atoll, Hulhidhoo Island (3°29'36"N, 73°31'58"E), 13.XII.2011, N. & S. Fischer, A. & R. Saldaitis. (1) (CPG; CRG).

**DESCRIPTION.** Female. Shiny; entirely yellow-ferruginous covered with dense yellow-golden pubescence.

Frons convex, flat at the anterior margin, the latter moderately thickened, arcuate and just protruding above the clypeus; punctures fine, simple, with intervals equal to larger than their own diameters.

Antennae not reaching for about one article the apices of posterior angles of pronotum, slightly serrate from fourth articles on, second and third article subcylindrical, subequal in length, taken together, just longer than fourth; fourth-tenth subtriangular, subequal in length, slender, more twice longer than wide, last as long as penultimate, subellipsoidal.



**Fig. 1-3.** Male genitalia in dorsal view. **1, 1a.** *Ryukyucardiophorus insularis* n. sp.; **2, 2a.** *Dicronychus stolatus* (Erichson); **3, 3a.** *Phorocardius maldivianus* n. sp. **Fig. 4-5.** Sclerites of bursa copulatrix. **4.** *Ryukyucardiophorus insularis* n. sp.; **5.** *Dicronychus stolatus* (Erichson) (Sri Lanka). **Fig. 6-8.** Habitus. **6.** *Ryukyucardiophorus insularis* n. sp., ♀; **7.** *Dicronychus stolatus* (Erichson), ♂; **8.** *Phorocardius maldivianus* n. sp.

Pronotum 1.17x wider than long, widest at middle, strongly convex, sides arcuate, from middle very gradually and regularly converging to the posterior angles, the latter short, truncate, not divergent; from the apices of posterior angles depart a substraight carina nearly reaching the anterior margin and visible in a dorsal view there to the middle; punctuation moderate and irregularly distributed, much more fine and few apparent in the basal slope, punctures simple, of double diameters, larger punctures are more or less regularly mixed with very fine with very short shiny intervals.

Scutellum subpentagonal with straight base, sides subparallel from base to the middle then converging to the apex, at middle of sides are present two small sphaeric notches.

Elytra 2.5x longer than pronotum and just wider than it, convex, sides ovaliform, widest at middle; striae well marked and punctured for all its length, interstriae convex, finely punctured.

Claws very curved and dilated in the first half.

Bursa copulatrix sclerified as in fig. 4.

Male. Extremely similar to the female and difficult to separate by the external characters.

Aedeagus as in fig. 1, 1a (length 0.78 mm).

Size. Length 4.0-4.7 mm; width 1.37-1.56 mm.

**ETYMOLOGY.** The name is derived as a species living in islands.

#### ***Dicronychus stolatus* (Erichson, 1840)**

*Dicronychus stolatus*. Ohira, 1973b: 38.

Fig. 2, 2a, 5, 7.

**MATERIAL EXAMINED.** 1 spcm. ♂ - Maldives Rep.: Meemu Atoll, Kureli Island (2°46'49"N, 73°22'24"E), 15-16.XII. 2011, N. & S. Fischer, A. & R. Saldaitis. (CRG).

**NOTES.** Bursa copulatrix sclerified as in fig. 5 on a female from Sri Lanka (CPG).

Aedeagus as in fig. 2, 2a (length 0.85 mm).

**DISTRIBUTION.** Described from Oriental India (Ostindien). India; Sri Lanka. New species for the Maldives.

#### ***Phorocardius maldivianus* n.sp.**

Fig. 3, 3a, 8.

**MATERIAL EXAMINED.** Holotype ♂ - Maldives Rep.: Meemu Atoll, Kureli Island (2°46'49"N, 73°22'24"E), 15-16.XII. 2011, N. & S. Fischer, A. & R. Saldaitis. (CRG don. MCSNG). 40 Paratypes ♂ - same data as Ht (28); Vaavu Atoll, Hulhidhoo Island (3°29'36"N, 73°31'58"E), 13.XII. 2011, N. & S. Fischer, A. & R. Saldaitis. (11); South Malé Atoll, Embudu vill., 15.II.1993, L. Saltini. (CPG; CRG).

**DESCRIPTION.** Male. Entirely yellow-ferruginous, generally with pronotum a little darker than elytra; covered with dense, fine, recumbent, yellow-golden pubescence.

Frons flat, slightly impressed at the anterior margin, the latter thickened, regularly arcuate, protruding above the clypeus; punctures irregularly distributed, of variable diameters, simple or umbilicate with very short intervals or contiguous.

Antennae nearly reaching or just exceeding the apices of posterior angles of pronotum, slightly serrated from third article on; second article subcylindrical, less twice longer than wide, third triangular, 1.6x longer than second and twice longer than wide; fourth-tenth triangular, slenderer, on average more twice longer than wide, last as long as penultimate, subellipsoidal.

Pronotum 1.1x longer than wide, widest just behind the middle, very convex on the disk with a vestige of mid - longitudinal smooth impressed line at basal slope; sides moderately arcuate, sinuate immediately before the posterior angles, the latter short, obliquely truncate, not divergent, with a very short, few apparent carina directed inside; lateral suture-like margins complete, substraight; punctuation variable and generally uniformly distributed; punctures very fine, simple, rather variable in diameters and with shiny intervals equal to their diameters or larger.

Scutellum heart-shaped, as long as wide, impressed in the first half and deeply emarginate at middle of base.

Elytra 2.5x longer than pronotum and a little wider than it, convex, widest at the anterior third, sides regularly converging from base to the apices; striae well marked and deeply punctured for all its length, interstriae moderately convex, very finely punctured.

Claws bifid before the apex.

Aedeagus as in fig. 3, 3a (length 1.62 mm).

Female unknown.

Size. Length 7.0- 9.5 mm; width 2.0-2.5 mm.

**ETYMOLOGY.** The name is derived from Maldives, where the species was collected.

### **Bibliography**

- BOUCHARD P., Y. BOUSQUET, A.E. DAVIES, M.A. ALONSO-ZARAZAGA, J.F. LAWRENCE, C.H.C. LYAL, A.F. NEWTON, C.A.M. REID, M. SCHMITT, S.A. ŚLIPINŃSKI & A.B.T. SMITH 2011. Family-group names in Coleoptera (Insecta). *ZooKeys*, **88**: 1-972.
- FLEUTIAUX, E. 1931. Les Élatérides de l'Indochine Française (Catalogue raisonné). Quatrième partie. *Bulletin de la Société zoologique de France*, **56**: 306-334.
- OHIRA, H. 1973. Elaterid-beetles from the Ryukyu Archipelago collected by Mr. Makihara in 1968-1970 (Coleoptera). *Bulletin of the Japan Entomological Academy*, **7**(2): 27-33.
- OHIRA, H. 1973b. Coleoptera: Elateridae from Ceylon. *Entomologica Scandinavica*, **4**: 27-38.
- SCHENKLING, S. 1925-1927. *Coleopterorum Catalogus auspiciis et auxilio W. Junk*. Pars 80-88, Elateridae I-II. In: *Junk, W. Berlin*. Pp. 1-636.