

## A new species of *Cryptarcha* (Coleoptera: Nitidulidae) from Madagascar

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**Abstract.** *Cryptarcha jenisi* sp. nov. from Madagascar is described and illustrated, and a key to the Madagascan species of *Cryptarcha* Shuckard, 1839, is provided.

**Key words.** Coleoptera, Nitidulidae, *Cryptarcha*, taxonomy, new species, key, Madagascar

### Introduction

*Cryptarcha* Shuckard, 1839, is a cosmopolitan genus of the subfamily Cryptarchinae of the family Nitidulidae. Despite recent systematic developments by JELÍNEK (1974) and KIREJTSHUK (1981, 1987, 1997), the genus is probably paraphyletic (AUDISIO 1993). One likely monophyletic group within the genus includes species displaying a prosternal process gradually dilated to a subtruncate apex. Judging from conditions in other Cryptarchinae, this character seems to be synapomorphic, and is shared with the type species, *Cryptarcha strigata* (Fabricius, 1787).

Two species of *Cryptarcha* have been known from Madagascar, and were keyed by GROUVELLE (1906): *Cryptarcha klugii* Reitter, 1876, and *C. sicardi* Grouvelle, 1906. KIREJTSHUK (1981) subdivided the Afrotropical and Madagascan species of *Cryptarcha* into four species-groups, unfortunately defined only by the included species. He placed *C. klugii* and *C. sicardi* in the *Cryptarcha strigata* and *C. senegalensis* species-groups, respectively. Nevertheless, both species share a similarly shaped prosternal process and thus seem to be closely related. A third Madagascan species described in this paper, *Cryptarcha jenisi* sp. nov., occupies an isolated position among Afrotropical – Madagascan species of the genus as suggested by the combination of its oblong-oval body, narrow and subparallel-sided prosternal process and a characteristic colour pattern.

## Material and methods

Dry-mounted specimens were studied under a binocular stereomicroscope MBS-10. Habitus drawings were made with an ocular micrometer. For the study of external genitalia, specimens were softened in 5% ammonia solution and subsequently dissected under the stereomicroscope. Genitalia were rinsed with water, then transferred in propylalcohol and embedded in a drop of Euparal placed on the same label as the relevant specimen. Drawings of genitalia and other morphological detail were executed with a camera lucida attached to the modified microscope Epignost. The term P/A index is defined as the ratio of the distance of posterior pronotal angles to the distance of anterior pronotal angles.

The following codens are used to indicate the depository of specimens:

ALBP	Andrzej Lason collection, Białystok, Poland;
MUSB	Museum of Upper Silesia, Bytom, Poland;
NMPC	National Museum, Praha, Czech Republic;
PARI	Paolo Audisio collection, Roma, Italy;
ZMAS	Zoological Institute, Russian Academy of Sciences, St. Peterburg, Russia.

## Taxonomy

### *Cryptarcha jeni* sp. nov.

(Figs. 1-4, 6-7, 9)

**Type locality.** Madagascar, Mahajanga province, Mahajamba river, environs of Ampatika.

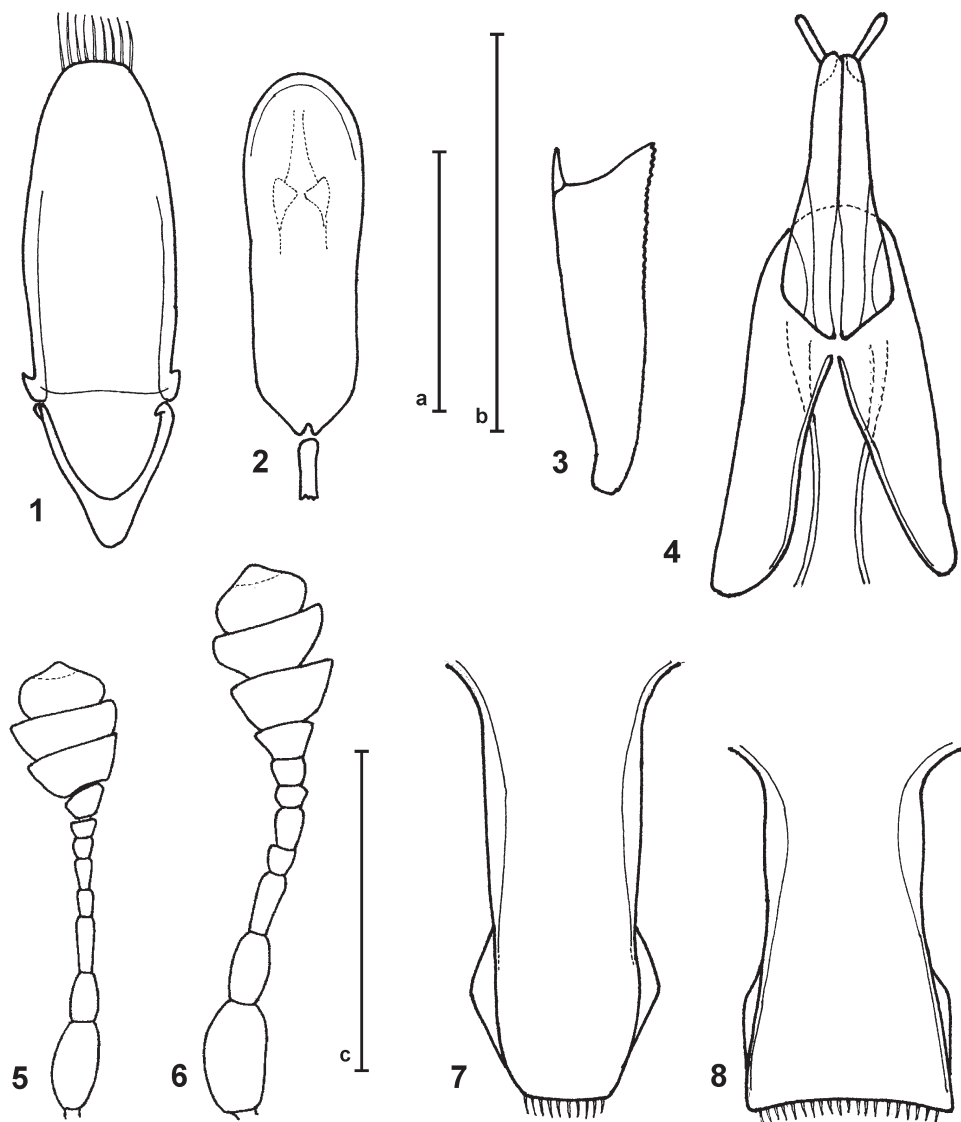
**Type material.** HOLOTYPE: ♂, **MADAGASCAR:** MAHAJANGA province., Mahajamba riv., Ampatika env., 10.-12.xii.1996, Ivo Jeniš lgt. (NMPC). PARATYPES: same data as holotype, 7 ♂ 7 ♀; **MADAGASCAR:** ANTSIRANANA province, Ankarana, Ambondronifehy, 5.-6.xii.1996, Ivo Jeniš lgt., 1 ♂; MAHAJANGA province, Mahajanga env., 1.-10.xii. 1996, Ivo Jeniš lgt., 6 spec.; MAHAJANGA province, Ampatika env., 17.-20.xi.1995, J. Stolarczyk lgt., 1 ♂ 1 ♀. Paratypes deposited in NMPC, MUSB, PARI, ZMAS and ALBP.

**Diagnosis.** Oblong oval, transversely convex. Black-brown, extended sides of frons and anterior portion of head, sides of pronotum and elytra as well as tips of elytra red-brown; ventral surface, legs, antennae, pygidium and explanate sides of pronotum and elytra brown-yellow. Each elytron with three orange spots: one broadly ovate at base and at inner side of humeral bulge; second, round, at one third of the length of elytron; and third, transversely oval, situated at about two thirds of the length of elytron (Fig. 9). Pubescence long, semirecumbent, concolorous with background.

**Description.** Length 3.9-4.7 mm, width 1.8-2.3 mm.

**Male** (holotype). Head subtriangular, eyes large, coarsely faceted, asymmetrically convex with top in posterior half, and little projecting from outline of head capsule. Temples short, converging posteriorly. Frons flat, extended over antennal insertions, its margins in front of eyes rectilinear, converging anteriorly. Labrum broadly triangular, separated from clypeus by narrow impunctate strip. Punctures in anterior portion of frons fine, smaller than eye facets and separated by several diameters, becoming gradually larger and closer both laterally and posteriorly, on vertex almost as large as eye facets and separated by 1-1.5 their diameter; interspaces smooth. Right mandible long, falcate, with acute tip and small retinaculum. Left mandible shorter and wider with blunt tip and larger blunt retinaculum. Terminal segments of

maxillary and labial palpi approximately three times as long as wide, subcylindrical, narrowly truncate apically. Mentum three and a half times as wide as long, with rectilinear and subparallel anterior and posterior edges and narrowly rounded sides; its surface sparsely punctate, with broad shallow oval impressions laterally and with sharp raised rim. Postmentum concave,



Figs. 1-8. 1-4 – *Cryptartcha jenisi* sp. nov. 1 – tegmen; 2 – median lobe; 3 – protibia; 4 – ovipositor. 5 – *C. sicardi* Grouvelle, 1906, antenna. 6-7 – *C. jenisi* sp. nov. 6 – antenna; 7 – prosternal process. 8 – *C. klugii* Reitter, 1876, prosternal process. Scale bars = 0.5 mm, a (Figs. 1-4), b (Figs. 7-8), c (Figs. 5-6).

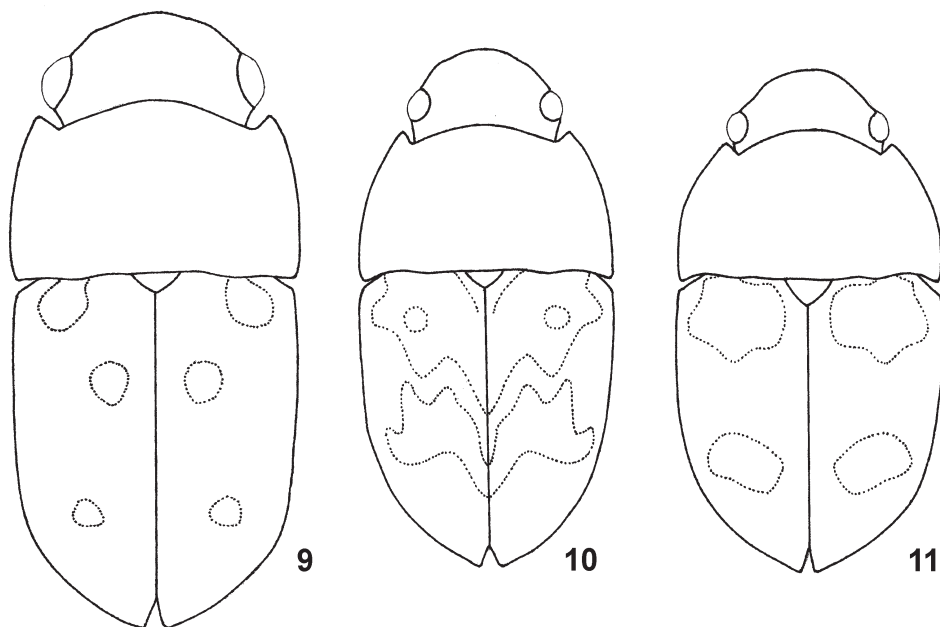
paraglossae broad, falcate, bluntly pointed; surface microscopically transversely alutaceous with a few fine, widely scattered, punctures. Antennal furrows deep, sharply delimited by narrow raised edges, arcuately converging posteriorly.

Antennae shorter than minimum width of frons between eyes. Antennomeres 2 and 3 equally long, longer than wide, 4, 6 and 7 nearly as long as wide, 5 somewhat longer than the adjacent segments. Antennal club ovate, 1.53 times as long as wide (Fig. 6).

Pronotum widest at basal third, 1.73 times as wide as long along midline, more strongly narrowed anteriorly than posteriorly; P/A index = 1.29. Anterior margin broadly obtusely angulate in middle, sides distinctly bordered. Anterior angles prominent and acute with narrowly rounded apices. Basal margin completely bordered, slightly emarginate beside scutellum. Posterior angles obtuse, not prominent. Sides broadly arcuate, fringed with short dense setae; explanate border narrower than antennal flagellum at anterior angles and gradually diminished posteriorly. Surface broadly vaulted, sparse punctation composed of two kinds of punctures: larger ones, nearly equal in size to largest punctures on head and bearing long semirecumbent setae, smaller ones half diameter of larger ones and bearing long fine recumbent setae. Pubescence on disc oriented posteromesad. Spaces between punctures densely microscopically punctate, moderately shining. Scutellum transverse, subtriangular, microscopically punctulate, with a few small punctures in middle.

Prosternum transversely convex, smooth with fine widely scattered punctures, shallowly concave in front of procoxae, microscopically isodiametrically reticulate, at sides impunctate. Prosternal process one fifth narrower than protibia, subparallel-sided, rounded apically (Fig. 7). Mesosternum with completely bordered subtriangular prepectus, between mesocoxae feebly swollen anteriorly and shallowly impressed posteriorly, without microsculpture, at sides concave and microreticulate, with large punctures separated by about one diameter. Posterior intercoxal process of mesosternum arcuately emarginate. Metasternum without distinct mediolongitudinal line, broadly longitudinally impressed behind midlength, smooth with small, feebly rasp-like punctures separated by 2-3 diameters, at sides microscopically punctate. Caudal marginal lines of mesocoxae interconnected in middle, closely bordering mesocoxal cavities, outer recurrent portion diminishing at midlength of metasterno-metepisternal suture. Metacoxae approximately twice as far apart as mesocoxae, posterior intercoxal margin of metasternum broadly angulate-emarginate. Ratio of lengths of abdominal sterna 1-5 equal to 40:15:15:19:24. Sterna 1-4 with posterior edges bordered by fine line with tightly spaced setiferous punctures. Punctuation of sternum 1 analogous to that of metasternum, following sterna with larger and closer punctures separated by approximately one diameter. Hypopygium broadly rounded apically, feebly concave beside apex.

Elytra widest before midlength, 1.20 times as long as their combined width, moderately narrowed posteriorly and jointly rounded apically. Sides flatly arcuate, fimbria similar to that of pronotum and narrowly explanate. Humeral angles obtuse, with short raised transverse edge running from lateral margin inward. Punctures less differentiated, equal to larger ones of pronotum, separated by 1.5-2 diameters in basal portion, becoming finer and sparser posteriorly, bearing long semirecumbent setae. Interspaces densely microscopically punctate, micropunctures more pronounced than on pronotum, elytra consequently slightly duller than pronotum. Sutural line very fine, distinct only in apical portion of elytra.



Figs. 9-11. Body shape and colour pattern. 9 – *Cryptarcha jenisi* sp. nov.; 10 – *C. klugii* Reitter, 1876; 11 – *C. sicardi* Grouvelle, 1906.

Pro- and mesofemora 2.4 times as long as wide, metafemora 2.6 times as long as wide, broadly canaliculate for reception of tibiae, metafemora with strongly arcuate anterior margin, widest at midlength. Protibiae (Fig. 3) gradually widened distad, outer margin rectilinear, finely crenulate, outer subapical angle acute, not prominent, inner one subrectangular with two short spurs (dorsal one curved). Ventral edge of terminal cavity with sparse comb of five short spines. Three basal tarsomeres of protarsus bilobed and dilated, reaching three fourths of maximum width of tibia. Tarsomere 5 one third longer than the preceding ones combined. Tarsal claws somewhat angulate at base, not dentate. Meso- and metatibiae about four times as long as wide, lateral edges with dense blunt spines separated by less than their length, dorsal surface with rasp-like punctures bearing short semirecumbent setae, ventral apical edge with 5-6 blunt spines. Both inner and outer edges of mesotibia rectilinear, those of metatibia gently convex and concave respectively. Meso- and metatarsi nearly half width of tibiae.

Pygidium with dense, rasp-like punctures, broadly rounded apically.

Genitalia. Tegmen in distal half gradually narrowed towards broadly and flatly rounded apex (Fig. 1). Median lobe of aedeagus 3.2 times as long as wide, widest at apical fourth, regularly rounded apically (Fig. 2).

**Female.** In general appearance similar to male. Pronotum generally more strongly narrowed anteriorly, P/A index = 1.32-1.38 (1.21-1.34 in males), elytra subacuminate apically, 1.24-1.33 times as long as their combined width (1.16-1.22 times so in males). Mandibles symmetrical. Basal tarsomeres of protarsi about half as wide as tibia. Metasternum flattened

with small oval impunctate area behind midlength. Hypopygium distinctly angulate apically. Ovipositor with central point at midlength; gonocoxites parallel-sided, contiguous, with long styli in subapical position (Fig. 4).

**Variation.** Extent and distinctness of red-brown colouration at sides of pronotum and elytra variable, sometimes occurring to a lesser extent also at anterior and posterior margins of pronotum and/or at basal portion of elytral suture.

**Differential diagnosis.** *Cryptarcha jenisi* sp. nov. differs from other Madagascan *Cryptarcha* especially in its oblong body, narrow and parallel-sided prosternal process, and conspicuous colour pattern. All three Madagascan species can be distinguished by the key below.

**Etymology.** This new species is dedicated to its discoverer, Moravian coleopterist Ivo Jeniš (Náklo, Czech Republic).

**Distribution.** Northern Madagascar.

### *Cryptarcha klugii* Reitter, 1876

(Figs. 8, 10)

**Material examined. MADAGASCAR:** RANOMAFANA prov., Fianarantsoa, 1.-6.ii.1995, J. Moravec lgt., 2 spec. (NMPC).

### *Cryptarcha sicardi* Grouvelle, 1906

(Figs. 5, 11)

**Material examined. MADAGASCAR:** TAMATAVE prov., Moramanga env., 21.-24.xii.1996, Ivo Jeniš lgt., 3 spec. (NMPC).

## Key to the *Cryptarcha* species of Madagascar

- 1 (2) Antennomere 4 nearly as long as wide (Fig. 6). Base of pronotum completely bordered by fine uninterrupted line, subtruncate beside posterior angles, posterior angles obtuse and not projecting posteriorly (Fig. 9). Elytra 1.16-1.33 times as long as their combined width. Sutural lines very fine, indistinctly developed and apparent only in apical fourth of elytra. Prosternal process parallel-sided, narrowly rounded apically (Fig. 7). Each elytron with three yellow spots. Length 3.9-4.7 mm. .... *C. jenisi* sp. nov.
- 2 (1) Antennomere 4 distinctly longer than wide (Fig. 5). Base of pronotum with bordering line interrupted in front of scutellum, distinctly concave beside posterior angles, posterior angles projecting posteriorly (Figs. 10-11). Elytra less than 1.10 times as long as their combined width. Sutural lines distinctly developed at least in posterior half of elytra. Prosternal process broad, widest at apex and subtruncate, shallowly concave (Fig. 8). Colour pattern not as above. .... 3
- 3 (4) Dorsum piceous, margins of frons and pronotum rusty. Periscutellar area brown-yellow, nearly subtriangular in shape, reaching humeral bulges laterally and midlength of elytra posteriorly and thus enclosing small round black spot on each elytron. Waved transverse brown-yellow band present behind midlength of elytra (Fig. 10). Pubescence of pronotum dark on the dark-pigmented disc; spots of yellow hairs in corners, in front of scutellum and (two pairs) on disc. Antennae concolorous brown-yellow. Length 3.2-3.6 mm. .... *C. klugii* Reitter, 1876

- 4 (3) Dorsum black, margins of frons not rusty. Pronotum entirely black with concolorous black pubescence except for narrowly explanate and reddish-translucent sides. Each elytron with two transversely oval large orange spots situated at base and behind mid-length, both spots covered with orange pubescence (Fig. 11). Antennal club black, darker than funicle. Length 3.2-3.6 mm. .... *C. sicardi* Grouvelle, 1906

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