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NEW AND OTHERWISE NOTEWORTHY CETONIINE BEETLES

by

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ABSTRACT

Five new species are diagnosed and illustrated: Mecinonota interrupta (Celebes), Oncosterna taruna (Sangihe Islands), Oncosterna aberrans (Celebes), Microlomaptera pygidialis (New Guinea), Celidota sibling (Madagascar). The monotypic Indian genus Costinota Schürhoff is diagnosed and the first known female is recorded.

The cases assembled in this paper are all by-products of long-term work aimed at a generic reclassification of the scarabaeoid subfamily Cetoniinae. The present notes are published because it is considered unnecessary to wait until some kind of synoptic report seems opportune. The genera dealt with are *Mecinonota* Kraatz, *Oncosterna* Thomson (both Asian), *Microlomaptera* Kraatz (Papuasian), and *Celidota* Burmeister (Madagascan), in which new species are described. In *Costinota* Schürhoff (a monotypic Indian genus) the first known female is recorded and illustrated, while a concise generic diagnosis is presented.

Unless mentioned otherwise the specimens treated below are in the Leiden museum, abbreviated L. Two further abbreviations used for collections incorporated in L are:

J — O. E. Janson (collection acquired by Valck Lucassen in 1928).

VL — F. T. Valck Lucassen (collection acquired by Leiden museum in 1940).

Approximate total lengths were measured with head of beetles extended.

I. A NEW MECINONOTA FROM CELEBES

The genus *Mecinonota* Kraatz, as defined by Mikšić (1976), is a group comprising two subgenera and 12 species, all inhabiting the Indo-Australian

archipelago. One species, *M. regia* (Fabricius), ranges from Indo-China to New Guinea. To the four or five species recorded from Celebes I can add the following new one.

Mecinonota (Mecinonota) interrupta sp. nov. (figs. 1-6, pl. 2)

Holotype (male). — Approximate length 17.5, width 7, height 5 mm. Black; clypeus anteriorly, antennae, mouthparts, femora, tibiae, reddish brown; entire body with distinctive pattern of cretaceous markings. Derm largely punctate-setose, hence dull; pilosity pale brownish or yellowish, or black, according to part of body. Habitus, plate 2 fig. 1.

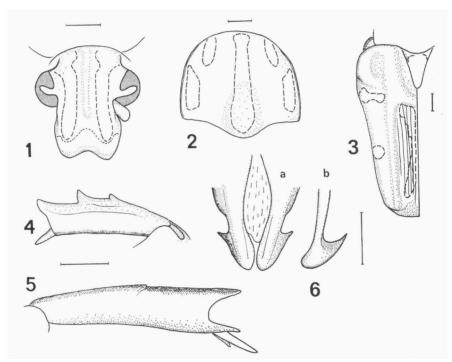
Cephalic contours and disposition of yellow-white markings, fig. 1. Clypeus immarginate, contiguously punctate. Frontovertex with narrow smooth longitudinal costa, surface on either side contiguously punctate to punctate-striolate. Maximum width of head capsule (including eyes) 2.95, of clypeus 1.9 mm.

Pronotal contours and disposition of yellow-white markings, fig. 2; general surface of pronotum feebly convex, mediobasal area depressed; lateral borders marginate, posterolateral angles shortly rounded. Derm of pronotum very densely punctate, anterolaterally striolate; punctures halfway pronotum with densities of ca. 40/0.25 sq. mm, their diameters ca. 0.05 mm; setae erect, of equal width in lateral view, basally wide and distally tapering in frontal view. Median length of pronotum 4.2, maximum width 4.8 mm. Scutellum (fig. 3) cretaceous and punctate-setose.

Elytral contours and disposition of yellow-white markings, fig. 3; prediscal area depressed, juxtasutural zone strongly raised posteriorly, humeral impression shallow; paradiscal costa strongly pronounced, impunctate posteriorly; apicosutural angle ca. 90°; discal impression very shallow, with several longitudinal parallel striolae (4 beginning at anterior border of discal marking); punctation abundant on elytral base and on discal depression, humeral depression as well as lateral and apical declivities strongly striolate; setae on humeral depression and lateral declivities squamiform. Sutural length of elytra 7.3, maximum (humeral) width combined 6.8, maximum (longitudinal) length 10.1 mm.

Antennal club long, almost as long as rest of antenna. Pectoral and abdominal parts with cretaceous markings as follows: lateral parts of propectus entirely; most of mesepimeron; anterior and posterior margins of metasternal wings, broadly; anterior third of metepisternum; visible abdominal sternites 1-4 posterolaterally with large transverse marking, reflexed dorsal side with posterior patch; pygidium with median elliptic marking; reddish brown fore

coxae with elongate patch, and lateral surface of hind coxae with extensive marking. Protrusion between middle coxae simple, rounded, small, not projecting beyond coxae (lateral view). Metasternal disc with very feebly impressed midline; metasternal wings and metepisternum abundantly punctate-setose. Lateral crest of abdomen obtuse (in cross-section), not canaliculate; abdominal sternites 1-5 abundantly punctate-setose, punctures distinctly longitudinal on 1-4, more or less horse-shoe-shaped and substriolate on 5; anal sternite (6) transversely striolate. Pygidium slightly convex, with scabrous contiguous punctation; setae on cretaceous marking whitish, on rest of pygidium black.



Figs. 1-6. Mecinonota interrupta, holotype (1-5) and paratype (6a). Contours of: 1, head, full-face; 2, pronotum; 3, elytron, dorsal; 4, right fore tibia; 5, left hind tibia; 6, tips of parameres (a) compared with tip of right paramere (b) of M. vidua (Wallace). Dashes = limits of cretaceous area. Scale lines = 1 mm.

Fore tibia (fig. 4) with 3 infuscated external denticles; terminal spur long, acuminate, reaching halfway tarsal segment 2. Middle and hind tibiae (fig. 5) with one poorly pronounced external elevation, their apices inferiorly bidentate; terminal spurs simply tapering. Tarsi all slender, with large sickle-shaped claws. Femora slender.

Aedeagus of paratype illustrated (fig. 6).

Variation. — Length $\delta \circ 16.5$ -17.5 mm. Sexual dimorphism not evident. The discal band extending alongside the elytral suture to the elytral apex is interrupted twice in a female from South Celebes (a different subspecies?): on the disc and on the distal declivity. The derm of this specimen is entirely black.

Identification. — *Mecinonota interrupta* can be recognized from the interrupted lateral pronotal and discal elytral bands of tomentum. Contrary to most other species, the discal elytral band runs directly alongside the suture. The densely striolate lateral declivities of the elytra have two large patches of tomentum. In Mikšić's key (1976) the new species runs down to *M. vidua* (Wallace) from the Philippines, but that species differs in characters of sculpture, colour pattern of derm, pattern of tomentum, mesometasternal protrusion, lateral crest of abdomen, and aedeagus (compare figs. 6a and b).

Material examined. — Holotype male, from North Sulawesi: Minahassa, from Dr. Platen, L ex VL—J—Van de Poll. One male and two female paratypes same data. The variety mentioned above (excluded from typeseries) from South Sulawesi: Rantepao: Nanggala, 900 m, ii.1938, F. C. Drescher, L ex VL.

2. Two new Oncosterna from Celebes and the Sangihe Islands

With the VL—J collection the Leiden museum acquired an aberrant Oncosterna (plate 1), which, like its congeners, came from Celebes. Another interesting Oncosterna in the same collection came from the Sangihe Islands. Having seen all the named species, I conclude that both are novelties warranting a description.

Oncosterna aberrans sp. nov. (figs. 7-13, pl. 1)

Holotype (female). — Approximate length 20.5, width 9.5, height 7 mm. Largely black; elytra, palpi, antennae, tibiae and tarsi, medium to light brown; largely dull due to heavy microsculpture; head, elytra and venter with whitish tomentous markings; pilosity yellowish (ventral side) to pale brown (head, pronotum), and black (elytra). Habitus, plate 1.

Cephalic contours and dispositions of white markings, fig. 7. Clypeofrons entirely densely punctate-setose; setae rather long, (sub)erect; midline slightly costate; clypeus immarginate. Maximum width of head capsule (including eyes) 3.6, of clypeus 2.5 mm.

Pronotal contours, fig. 8; posteromedian surface of pronotum shallowly concave, elsewhere feebly convex; lateral border marginate, more strongly so

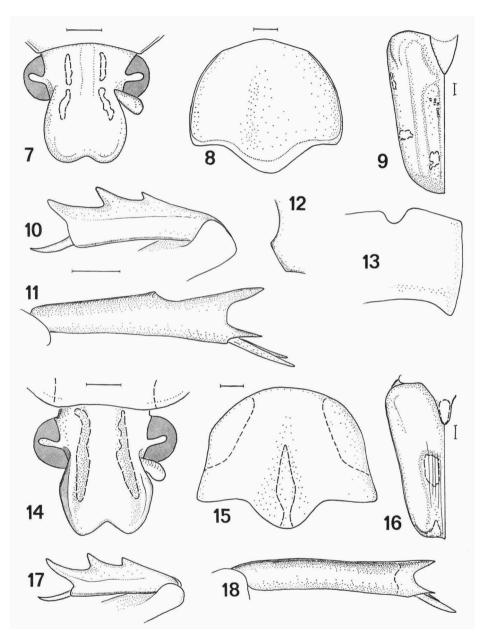
on anterior section; posterolateral section in dorsal view virtually rectangular. Derm of pronotum very densely punctate-setose, rugulate-setose laterad, due to completely confluent punctation; densities of punctures on pronotal centre 7-9/0.25 sq. mm, their diameters 0.15 mm; setae suberect or semierect, rather short. Median length of pronotum 5.2, maximum width 6.1 mm. Scutellum (fig. 9) large, derm densely sharply striolate-setose.

Elytral contours and disposition of white markings, fig. 9; parascutellar-prediscal area depressed, juxtasutural margin raised, humeral impression shallow; paradiscal costa and humeral umbone strongly pronounced; apico-sutural angle ca. 100°, slightly rounded off; paradiscal costa and humeral protrusion almost impunctate, remainder of elytral derm with sharply pronounced, braided striolation; striolate derm with sparse, inconspicuous, short black setae. Sutural length of elytra 9.1, maximum (humeral) width combined 9.3, maximum (longitudinal) length 12.7 mm.

Antennal lamellae distinctly longer than clypeus. Pro- and mesopectus almost entirely striolate-setose; metasternal disc sparsely punctate-setose, metasternal wings and metepisternum densely striolate-punctate-setose; metasternal setae very long, subappressed; mesometasternal protrusion small (fig. 12). Abdomen laterally subcarinate, spiracles of sternites 3 and 4 situated on crest; abdominal sternites 1-5 abundantly punctate-setose, punctation laterally consisting of short, transverse striolae; setae recurved, longest sublaterally; anal sternite (6) basally densely, finely transversely striolate. Pygidium with slightly convex general surface; centre shallowly impressed, base on either side with roundish shallow impression; derm with dense brown pilosity sprouting from squamiform microsculpture.

Fore tibia (fig. 10) with 3 external denticles; terminal spur long, acuminate, slightly curved apically, reaching apex of tarsal segment 2. Middle and hind tibiae (fig. 11) with one distinct external elevation, their apices inferiorly bidentate; terminal spurs simply tapering. Tarsi all slender, with large sickle-shaped claws. Femora slender. Hind coxa with slightly protruding posterolateral angle of ca. 85° (fig. 13).

Identification. — Oncosterna aberrans would run down to celebensis (Wallace) in Mikšić's key (1976: 220) but differs from that species, and irom the closely related castanea (Wallace) and taruna sp. nov., in numerous characters, such as (compare with figures of O. taruna): the long antennal club; the shape of the middle and hind tibiae; the protrusion between the middle coxae; the dorsal outline of the pronotum; the general microsculpture. The heavily microsculptured dorsum gives aberrans a dull aspect, whereas the other Oncosterna are much more shiny. If the male of aberrans should turn



Figs. 7-13. Oncosterna aberrans, holotype. Contours of: 7, head, full-face; 8, pronotum; 9, elytron, dorsal; 10, right fore tibia; 11, left hind tibia; 12, mesometasternal protrusion, lateral; 13, lateral part of left hind coxa, ventral. Figs. 14-18. Oncosterna taruna, holotype. Contours of: 14, head, full-face; 15, pronotum; 16, elytron, dorsal; 17, right fore tibia; 18, left hind tibia. Dashes = limits of cretaceous area. Scale lines = 1 mm.

out to be equally different from the males of the other *Oncosterna* species a generic separation might be considered.

Material examined. — Holotype female, from South Sulawesi: Bua-Kraeng, ii. 1896, H. Fruhstorfer, Lex VL—J—Van de Poll.

Oncosterna taruna sp. nov. (figs. 14-18, pl. 2)

Holotype (female). — Approximate length 22, width 9.5, height 7 mm. Largely black, shiny; sides of thorax, most of metasternum, coxae, femora, tibiae (except apex) orange-brown, mouthparts brown; white cretaceous markings on dorsum (figs. 14-16), and on venter as follows: proepisternum along prosternal ridge; posterior margin of mesepimeron, anterolateral margin of metasternal wing, posterolateral margin of abdominal sternites 1-4 (counted from hind coxae), and an elongate spot on pygidial midline; pilosity sparse, dorsally black or brown, ventrally yellowish, erect or semierect. Punctures of abdomen somewhat elongate, of other parts generally roundish, varying from sparse (elytra) to dense (head). Habitus, plate 2 fig. 2.

Cephalic countours and disposition of white markings, fig. 14. Clypeofrons with elevated, posteriorly impunctate midline; lateral borders of clypeus with ill-pronounced ridge; setae abundant, erect, rather short. Maximum width of head capsule (including eyes) 3.8, of clypeus 2.6 mm.

Pronotal contours and disposition of white markings, fig. 15; posteromedian surface of pronotum shallowly concave, elsewhere feebly convex; lateral border immarginate. Pronotum posteromedially and on orange-brown surface abundantly punctate-setose, elsewhere impunctate, glabrous. Median length of pronotum 5.3, maximum width 7.0 mm. Scutellum (fig. 16) large, almost completely with cretaceous cover.

Elytral contours and disposition of white markings, fig. 16; parascutellar area slightly depressed, juxtasutural margin raised posteriorly; humeral umbone well pronounced, lacking impression, apical umbone sharply protuberant (lateral view); apicosutural angle ca. 90°; elytral disc with four longitudinal striolae, lateral declivity sparsely hemipunctate-setose. Sutural length of elytra 9.6, maximum (humeral) width combined 9.4, maximum (longitudinal) length 12.6 mm.

Antennal lamellae distinctly shorter than clypeus. Pectus almost entirely rather densely punctate-setose; mesometasternal protrusion plump, evenly rounded (in cross-section). Abdomen laterally abruptly inflexed; spiracles of sternites 3 and 4 situated above-inside lateral crest; abdominal sternites 1-5 abundantly punctate-setose, densities of punctures increasing laterad, punctural shape increasingly elongate laterad; anal sternite (6) basally densely,

finely, transversely striolate. Pygidium with slightly convex general surface, centre very shallowly impressed; derm with dense black pilosity sprouting from squamiform microsculpture.

Fore tibia (fig. 17) with 3 external denticles; terminal spur long, acuminate, slightly curved apically, reaching base of tarsal segment 3. Middle and hind tibiae (fig. 18) without external elevation, their apices inferiorly bidentate; terminal spurs simply tapering. Tarsi all slender, with large sickle-shaped claws. Femora slender. Hind coxa with slightly protruding posterolateral angle of ca. 85°.

Identification. — Oncosterna taruna is closely allied to celebensis (Wallace) but differs in the broader protrusion between the middle coxae and in the general colour pattern. The protrusion between the middle coxae is in celebensis broadly transversely rounded behind, more tapering (almost prowshaped) in front. The elytral derm is entirely black in taruna, largely orange-brown in celebensis celebensis and the southern subspecies c. toradja Heller.

Material examined. — Holotype female, from "Taruna/1500-2000'/Gr. Sangir//W Doherty", L ex VL—J.

3. Remarks on the genus *Costinota* Schürhoff, a rare monotypic genus from India

In the Leiden museum there is a peculiar female cetoniine from Nandidrug in South India, labelled with the name "Macronota/campbelli, Jans./Type ?". This species seemed undescribed, but on checking the literature not mentioned in Schenkling's catalogue (1921), I found fitting diagnoses in both Costinota decora Schürhoff (1933: 30) and Macronota rotundicollis Arrow (1941: 81), from Dehra Dun and Shevaroys, respectively. These names are synonymous, as already suggested by Mikšić (1976). Unfortunately, Mikšić proposed a new genus Pseudoixorida to accommodate the species, considering Schürhoff's senior generic and specific names unpublished, because he knew them only from a label on the type of C. decora, not from Schürhoff's published diagnoses (l.c.). Recently Mikšić (1977: 398) corrected this error, misspelling the name as Costinata. Clearly Schürhoff's generic name Costinata has priority. Because no illustrations have been published and no female has been recorded, a photograph is given of the above-mentioned specimen that started these remarks (plate 2 fig. 3). The thorax of this female is blackish, the appendages and the remainder of the body are predominantly mediumbrown, while there are large white tomentous markings throughout. Length ca. 15.5 mm.

Judged from the limited material known at present, *Costinota* can be distinguished from members of closely related genera by the following combination of characters:

Clypeus elongated, fully founded in front, not bisinuate; general surface of clypeofrons almost flat. Pronotum laterally finely marginate, evenly rounded to distinct posterolateral angles. Pronotal base bisinuate with short median lobe. Median longitudinal zone of pronotum broadly impressed. Post-humeral emargination of elytron distinct but shallow. Antennal lamellae of male long, of female short. Middle coxae narrowly separated by small mesosternal protuberance. Abdominal sides visible from above; dorso-ventral transition of sternites gradually rounded, not ridged. Fore tibia with 3 well-developed external denticles; underside with distal denticle. Middle tibia with 1 or 2 external protrusions, hind tibia with 1 external protrusion, apices of these tibiae with 2 and 3 denticles, respectively. Parameres symmetrical. Medium-sized, total length ca. 1.5 cm. Habitus, pl. 2 fig. 3.

Type-species. — Costinota decora Schürhoff, by original designation.

4. A NEW MICROLOMAPTERA FROM NEW GUINEA

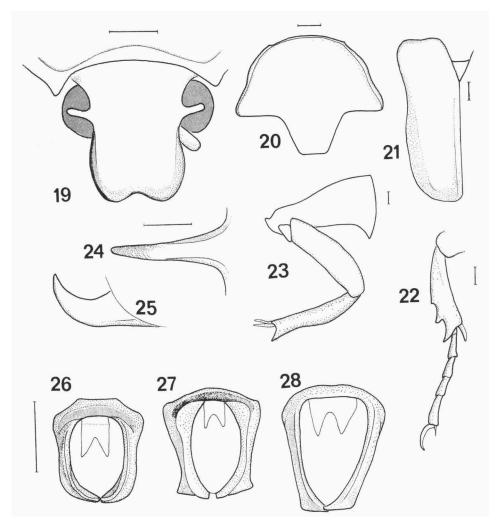
During an expedition to the Wissel Lakes region the late Professor H. Boschma collected a third species of the genus *Microlomaptera* Kraatz. The first species was described by Kraatz (1885), the second by Heller (1897), while Valck Lucassen (1961) and Krikken (1971) gave generic characters of this apparently rare group in the *Lomaptera* section of the Gymnetini. The old species were based on single specimens, the new one is based on four. I have seen the type of *M. nisbeti* Heller from the Berlin museum; the type of *aenea* Kraatz is in L.

Microlomaptera pygidialis sp. nov. (figs. 19-28, pl. 2)

Holotype (male). — Approximate length 15.5, width 7, height 5 mm. Brown, with tinge of blue, metallic, very shiny, and the following parts shiny yellow: lateral margins of pronotum, lateral elements of pectus, femora (infuscated, more or less brownish); pilosity yellowish. Habitus, pl. 2 fig. 4.

Cephalic contours, fig. 19. Clypeal disc almost imperceptibly convex, sides ditto impressed: head abundantly punctate, punctures more or less isodiametric; micropunctation very sparse, just distinct at \times 50. Maximum width of head capsule (including eyes) 2.9, of clypeus 1.8 mm.

Pronotal contours, fig. 20; general surface of pronotum evenly, feebly convex; apex and lateral borders broadly marginate; derm abundantly punctate, primary punctures of variable size, more or less isodiametric; sparse



Figs. 19-28. Microlomaptera species; 19-26, pygidialis, holotype; 27, aenea, holotype; 28, nisbeti, holotype. Contours of: 19, head, full-face; 20, pronotum, 21, elytron, dorsal; 22, right fore tibia; 23, left hind leg; 24, 25, mesometasternal projection, ventral and lateral views; 26-28, aedeagus. Scale lines = 1 mm.

secondary punctation just distinct at \times 12; and abundant, evenly distributed tertiary punctation just distinct at \times 25; microreticulation distinct at \times 50. Median length of pronotum 4.6, maximum width 7.0 mm. Scutellum (fig. 21) with striola paralleling lateral border.

Elytral contours, fig. 21; parascutellar area depressed, distal section of juxtasutural zone raised, limited by striola; humeral and apical umbones distinct; apicosutural angle of elytron distinct, obtuse; humeral impression

shallow; discal striolation limited by vague longitudinal costae on either side; posterior half of lateral declivity obliquely sinuate-striolate; derm very sparsely punctate, microreticulate (\times 50). Sutural length of elytra 7.3, maximum (humeral) width combined 7.0, maximum (longitudinal) length 9.7 mm.

Antennal club as long as segments 2-7 combined. Sides of propectus and mesosternum striolate, other parts of pectus very sparsely striolate-punctate. Mesometasternal process (figs. 24, 25) long, tapering, tip recurved, dorsal crest sharp. Abdominal sternites 1-4 behind coxae very sparsely, irregularly punctulate; base of sternite 5 striolate-punctate, anal sternite (6) finely transversely striolate; sternites 2-4 with white hypoelytral tomentum; median impression of abdominal venter shallow but distinct. Pygidial width/height ratio ca. 2; surface of pygidium evenly convex, with fine subconcentric striolation; anal border finely marginate.

Fore tibia (fig. 22) with 3 external denticles; terminal spur of fore tibia slender, acuminate, with curved tip reaching to about halfway tarsal segment segment 2. Middle and hind tibiae (fig. 33) with bidentate apices; external protrusion of middle tibia distinct, of hind tibia subobsolete. Femora (fig. 23) slender, acuminate, with curved tip reaching to about halfway tarsal punctate, locally striolate. Anterior side of fore femur, posterior side of middle femur and internal side of hind tibia, with dense fringe of long yellowish setae. Hind coxa (fig. 23) laterally evenly convex, posterolateral angle acute. Tarsi (fig. 22) all long and slender, with large sickle-shaped claws.

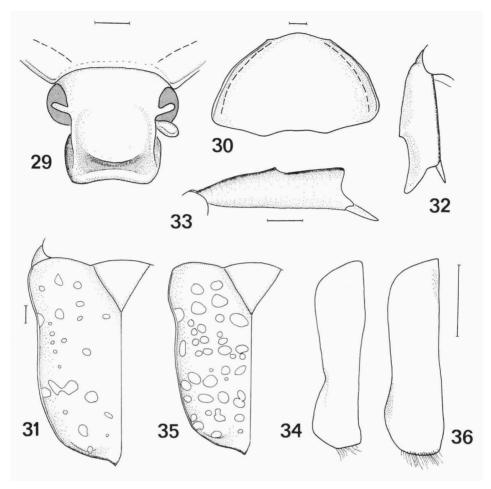
Aedeagus, fig. 26.

Variation and sexual dimorphism. — Length (with head extended) 15-16 mm. Tinge of dorsal colour bluish or bronze.

Females lacking impression of abdominal venter, pygidium more convex; fringes of setae on posterior side of middle femur and internal side of hind tibia thinned out compared to those of male.

Identification. — The differences between the males of the three *Microlomaptera* species can be summarized as follows (see figures):

	pygidialis	nisbeti	aenea
ı, pygidium	very wide	moderately wide	moderately wide
2, inside of hind tibia	hairy	hairy	nearly glabrous
3, posterolateral angle of hind coxa	acuminate, long	shortly angulate	acuminate, long
4, hind coxae, mesipimeron, sides of pronotum	yellow	yellow	darker (brown, ± metallic)
5, aedeagus	fig. 26, with deep basal impression	fig. 28, lacking basal impression	fig. 27, with deep basal impression



Figs. 29-36. Celidota species; 29-34, sibling, holotype; 35, 36, stephens. Contours of: 29, head, full-face; 30, pronotum; 31, 35, elytron, dorsal; 32, right fore tibia; 33, left hind tibia; 34, 36, left paramere. Scale lines = 1 mm.

Material examined. — Holotype male, from West New Guinea: Araboebivak 3°46′ S-136°35′ E, 1760 m, 5.x.1939; one male and two female paratypes from Paniai 3°50′ S-136°15′ E, 1750 m, 26.ix (δ), 12.xi (\$\parallel\$), 18.xi. 1939 (\$\parallel\$); all collected by H. Boschma during the 1939 expedition of the Royal Netherlands Geographical Society (see Boschma, 1943), kept in L.

5. An unrecognized species of the Madagascan genus Celidota

Until now seven species had been recognized in the Madagascan genus Celidota Burmeister, last reviewed by d'Olsoufieff (1933). All these species

are represented in the Leiden collection, five of them even by type-material, so that I am in a reasonably good position to settle the status of six specimens kept separate by VL. They belong to an undescribed species extremely closely allied to, and probably always confounded with, C. stephens (Gory & Percheron). The strong similarity of the new species to C. stephens (common in collections), plus the illustrations given here (figs. 29-36, plate 3), render a long description unnecessary.

Celidota sibling sp. nov. (figs. 29-34, pl. 3)

Identification. — At first sight this species is more robust and the elytra are less patchy, so that it can without much difficulty be selected from series of *stephens* for further checking. The differences can be summarized as follows (see figures):

	sibling	stephens
I, yellow markings on elytra	covering a small area, less distinctly seriate	covering a large area, very distinctly seriate
2, abdominal venter of male medially	not impressed	impressed (oblique view)
3, anteapical denticle of fore tibia	distinct	subobsolete
4, shape of parameres	fig. 34, apically with sparse setae	fig. 36, apically with abundant setae
5, habitus	very plump	less plump

Variation. — Length 39 19.5-22 mm. Holotype is ca. 21 mm.

The number of yellow spots per elytron is variable, and may on *stephens* specimens even be less than on *sibling*, but the percentage of area covered is, presumably without exception, greater in *stephens* than in *sibling*.

Material examined. — Holotype male, from Madagascar: Diego Suarez, in L ex VL. One male paratype from same locality, 1911, Dengal (L ex VL—J); further paratypes from Nosi Bé, Volamar 1912 (1Å, L ex VL—J), and Madagascar without details (1Å, 2 \, L ex VL).

C. sibling is probably also represented among stephens in other collections.

ACKNOWLEDGEMENTS

Some types in the British Museum (Natural History), London (R.D. Pope), and the Museum für Naturkunde, Zoologisches Museum, Berlin (F. Hieke), have been studied.

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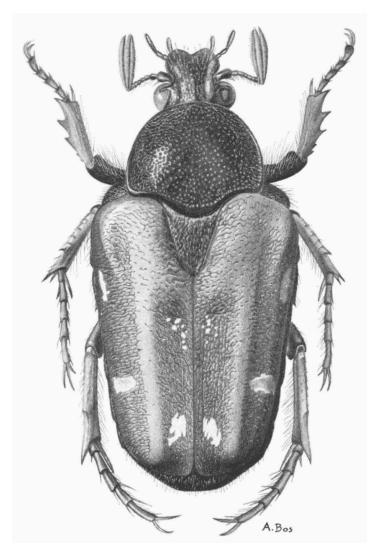
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Oncosterna aberrans, holotype.

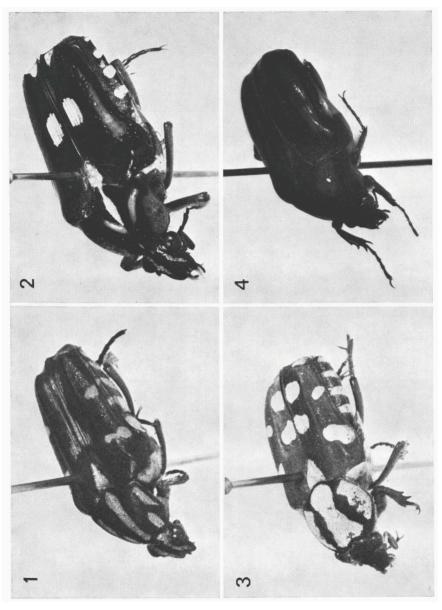


Fig. 1, Mecinonota interrupta, holotype; 2, Oncosterna taruna, holotype; 3, Costinota decora, female; 4, Microlomaptera pygidialis, holotype.

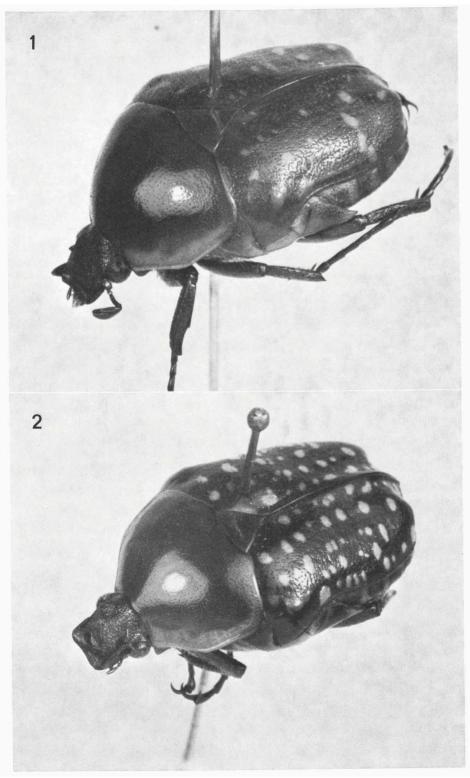


Fig. 1, Celidota sibling, holotype; 2, C. stephens, male.