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NOTES ON ASIAN CREMASTOCHILIFORM GENERA, WITH DESCRIPTIONS OF TWO NEW SPECIES (COLEOPTERA: CETONIIDAE)

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With 16 text-figures and one plate

ABSTRACT

A key to the Asian cremastochiliform genera is given. Three synonymies are emphasized: *Clinterocera* Motschulsky (= *Callynomes* Westwood); *Campsiura* Hope (= *Macroma* Gory & Percheron); *Spilophorus* Schaum (= *Pseudospilophorus* Kraatz). A new synonymy is: *Periphanesthes* Kraatz (= *Bonsiella* Ruter). The authorship of one species is established: *Praona niveosparsa* (Mohnike). The publication dates of Westwood's *Thesaurus Entomologicus Oxoniensis* are discussed. The type-material of the Leiden museum is listed; six lectotypes are designated. Two new species are described and illustrated: *Campsiura celebensis* (Sulawesi) and *Parapilinurgus hiekei* (Assam).

Schenkling (1921: 353-384) catalogued 11 genera from Oriental Asia as Cremastocheilini. No novelties were reported since, and one genus is removed here (note 4, below). The 10 remaining genera constitute a rather heterogeneous lot (as a group certainly not monophyletic), now accommodating ca. 75 Asian species.

The discovery of the two new species described here gives me the opportunity to present some revisional notes on these genera, including a concise key. It is relatively easy to draw up a regional key, since extra-regional transitions can be disregarded as long as the key is merely considered a means of identification, as is done here. Further information on the genera will be included in a proposed analysis of the world fauna of cremastochiliform beetles.

I have added (note 6) a list of types I found in the Leiden museum; for six species-group names lectotypes are designated. It is clear that the species-group taxonomy and corresponding nomenclature need further revision.

KEY TO ASIAN CREMASTOCHILIFORM GENERA

1. Middle coxae widely separated, interspace with more or less pronounced process. Prosternum lacking anteromedian apophysis. Mentum not greatly expanded laterally, occasionally inflated in front . . . 8
— Middle coxae strongly approximated or contiguous; mesosternal part of intercoxal space at most slightly protuberant. Prosternum usually with anteromedian apophysis 2
2. Mentum not strongly expanded, in some cases inflated or slightly expanded in front. Anteromedian apophysis of prosternum usually distinct 3
— Mentum strongly expanded from its anterior part and frequently concealing prosternal apophysis 6
3. General surface of clypeofrons simply convex; anterior margin usually bilobate, neither ridged nor reflexed. Cretaceous or tomentous markings dorsally absent. — Asia (25-30 species); Africa *Coenochilus* Schaum
— General surface of clypeofrons flat or concave, with discal and/or marginal elevation(s). Derm frequently with cretaceous or tomentous markings 4
4. Dorsal outline of pronotum approximately cordiform (base bisinuate). — Asia (3 species) . . . . . *Centrognathus* Guérin
— Dorsal outline of pronotum approximately circular or hexagonal (base simply convex) 5
5. Clypeal margin more or less semielliptic, with ridge; genae of males with antler-like projection. Pygidium nasiform. — Asia (4 species) . . . . . *Goliathopsis* Janson
— Clypeus more or less elongate, only apex reflexed; genae of males lacking antler-like projection. Pygidium simply convex. — Asia (2 species) . . . . . *Parapilinurgus* Arrow
6. Tarsi consisting of 4 segments. Antennal scapus greatly inflated-dilated. — Asia (18 species) . . . . *Clinterocera* Motschulsky (see note 1)
— Tarsi consisting of 5 segments. Antennal scapus more or less claviform 7
7. Dorsal outline of pronotum cordiform (base bisinuate). Pygidium with transverse and/or longitudinal ridge(s). — Asia (3 species) . . . . . *Platysodes* Westwood
— Dorsal outline of pronotum circular, elliptic, or approximately hexagonal, base more or less convex. General surface of pygidium simply convex, lacking ridges. — Asia (2 species) . . *Praona* Westwood (see note 1)
8. Base of pronotum with pair of striolate impressions. Elytra with distinct red markings. — Asia (1 species); Africa . . . *Cymophorus* Kirby

— Base of pronotum lacking pair of impressions 9
9. Dorsal outline of pronotum approximately trapeziform (base not bisinuate). Derm usually not uniformly black, lacking whitish markings. — Asia (14 species); Africa . . . . *Campsiura* Hope (see note 2)
— Dorsal outline of pronotum cordiform (base bisinuate). Derm usually black, with cretaceous spots or whitish tomentum. — Asia (2 species); Africa . . . . . *Spilophorus* Schaum (see note 3)

Notes

1. *Clinterocera* and its synonyms

There can be no doubt that *Clinterocera* Motschulsky (1857: 112) is the valid generic name for the species currently combined with *Callynomes* Westwood (1873: 26); Medvedev (1964: 336) treated his species correctly. *Cholerastoma* Mohnike (1872: 91) is another junior synonym. *Callynomes niveosparsa* Mohnike (1873: 241; Schenkling, 1921: 365) is the same as *Praona niveosparsa* Westwood (1873: 20; Schenkling, 1921: 357), being based on the same specimen. *Praona* Westwood (1873: 20) appears distinct from *Clinterocera* (see key), whereas *Callynomes niveosparsa* Mohnike has priority (see note 5); consequently, the species must be cited *Praona niveosparsa* (Mohnike).

All the other names mentioned under *Callynomes* by Schenkling (1921: 364-365) must be combined with *Clinterocera*. Further transfers are: *Clinterocera donckieri* (Bourgoin, 1924: 138), *exaratipennis* (Seillière, 1910: 329), *raui* (Paulian, 1961: 9), *vitalisi* (Bourgoin, 1924: 138), all from *Callynomes*.

2. *Campsiura* versus *Macroma*

The species currently combined with *Campsiura* Hope (1831: 25) and *Macroma* Gory & Percheron (1833: 37), reputedly Asian and African respectively, are here considered congeneric; consequently, all the names mentioned under *Macroma* by Schenkling (1921: 353-355) must be combined with *Campsiura*.

The designation of a type-species for *Macroma* by Arrow (1910: 217) is inacceptable, *Macroma cognata* Schaum not belonging to the originally included species. I have not found another designation, and therefore select *Macroma scutellaris* Gory & Percheron (1833: 148) as the type-species of *Macroma*.

3. *Spilophorus*, authorship, type-species and synonymy

Spilophorus was first proposed by Schaum (1848: 61), who attributed this name to a manuscript of Westwood (apparently a draft for the Thesau-

rus). Schaum referred to descriptive data of four named species: *Cetonia lugubris* Fabricius; *Centrognathus lugubris* Burmeister (which he named *Spilophorus plagosus*, attributed to Westwood again); *Cremastocheilus maculatus* Gory & Percheron; *Cetonia cretosa* Hope (which he incorrectly synonymized with *maculatus*). These are all available names. Kraatz (1899: 63) re-diagnosed *Spilophorus* and designated a type-species, *Spilophorus maculatus* Gory & Percheron. He also proposed (l.c.) *Pseudospilophorus* for *Spilophorus plagosus* Schaum; Arrow's subsequent designation (1910: 201) of a type-species (*Cremastocheilus maculatus* Gory & Perch.) is inacceptable. Contrary to Kraatz (1899: 62), I found no difference justifying the separation of the Asian and African forms (*Spilophorus* and *Pseudospilophorus* sensu Schenkling, 1921: 362-363) and merge them, as some authors have already done (e.g., Arrow, l.c.).

4. *Periphanestes*, senior synonym of *Bonsiella*

The generic name *Periphanestes* Kraatz (1880: 213) is a senior synonym of *Bonsiella* Ruter (1965: 206; Mikšić, 1974: 755). The former name was recently overlooked because of its incorrect position in the Cremastocheilini in Schenkling's catalogue (1921: 357). Furthermore, the unique species, *P. aurora* (Motschulsky) (= *Coryphocera blanda* Jordan, **syn. nov.**), seems incorrectly reported from Amboina.

5. Westwood's *Thesaurus Entomologicus Oxoniensis*

The Leiden museum acquired a copy of Westwood's Thesaurus with the four parts uncut in original wrappers. Part I has a printed date on the front side of the wrappers reading 1873, whereas all the bibliographies I consulted mention 1874 for the whole work. On my request some research was conducted by Mr. E. Taylor (Oxford), who wrote (letter of 13th April 1976):

"We have ... ascertained from the archives of the University Press that permission was given on the 14th November 1873 for this work to be published in four parts.

"In an old sale catalogue we found that the first 56 pages, 1 plain plate and 9 coloured plates were offered for sale as *Part 1, Oxford 1873*".

The light blue original wrappers of the Leiden copy of the Thesaurus are printed on their front side with the same text as the title page for the whole work, i.e. page [i], except for: the year at the bottom of Part I ("M.DCCC.LXXIII"); "Part I", "Part II", "Part III", "Part IV" respectively, top left; "to Subscribers £ 1 5s", top right. The back sides of Parts I-III have an Advertisement dated October 1873, identical to the one in Part IV, with an addition at the bottom reading:

"The Work will be published, in the first instance, by Subscription, in Four Parts, each containing ten Plates and corresponding letterpress; the price of each Part to Subscribers being £ 1 5s. The Parts will, it is expected, be published at intervals of three months. [It is assumed here that this has been the case].

The Work, when complete, will be published at £ 7 10s".

At the bottom of Part IV it is merely stated that "This Part completes the Work". On the basis of both this information and the exact collation of the four parts at hand, I suggest the following dates of publication.

Part I: pages 1-56, plates 1-10. — December 1873.
II: pages 57-112, plates 11-20. — March 1874.
III: pages 113-168, plates 21-30. — June 1874.
IV: pages 169-205, [i]-xxiv, plates 31-40. — September 1874.

With regard to the priority of *Praona niveosparsa* mentioned in note 1, Mr. Taylor wrote that in the Radcliffe Science Library copy of the Archiv für Naturgeschichte 39 the date stamp on page 129 (i.e. in the relevant issue) reads "2 Sep. 73" (date when received). This apparently settles the authorship of the name *niveosparsa,* Mohnike describing the specimen concerned a few months before Westwood under the same name, though in a different genus.

6. Type-material in Leiden

The following types of Asian cremastochiliform species were found in the Rijksmuseum van Natuurlijke Historie, Leiden:

Campsiura flavoguttata (Snellen van Vollenhoven, 1864: 159, sub *Macroma*); 2 syntypes: one ♀, one specimen lacking abdomen; the former designated lectotype, bearing a printed label "Schwaner,/*Borneo*", and a type-label in C. Ritsema's handwriting.

Campsiura superba (Neervoort van de Poll, 1889: 143, sub *Macroma*); one ♂ syntype, here designated lectotype, with labels in O. E. Janson's handwriting, "Mt Carin,/E. of Tongu/IV.1887//Leon./Fea/e. coll. v. d. Poll", and a type-label.

Centrognathus sumatranus Roepke, 1934: 4; one ♂ and one ♀ syntype, the ♂ here designated lectotype, bearing a printed locality label reading "Sibolangit S.O.K. [= Sumatra's East Coast]/Roepke/5.29 [date written]", and Roepke's type-labels.

Clinterocera anthracina (Heller, 1897: 179, sub *Callynomes*); holotype ♂ from Tapanuli (Sumatra).

Clinterocera vollenhovii (Westwood, 1873: 26, sub *Callynomes*); one ♂

syntype, here designated lectotype, with round label in Snellen van Vollenhoven's handwriting, reading "Macklot/Java".

Coenochilus bicarinatus Schein, 1953: 33; holotype ♀ from Kediri (Java).

Coenochilus celebensis Schein, 1953: 32; holotype ♂ from Patumnang (Sulawesi).

Coenochilus javanicus Westwood, 1873: 45; lectotype (not sexed) here designated, labelled "Blume/Java", round label in Snellen van Vollenhoven's handwriting.

Coenochilus obscurus Westwood, 1883: 64; holotype ♀ from Kepahian (Sumatra).

Coenochilus pygidialis Janson, 1901: 185; holotype ♀ from Belgaum (India).

Coenochilus sumatranus Westwood, 1883: 62; holotype ♂ from Bungamas near Palembang (Sumatra).

Goliathopsis despectus (Westwood), types of two junior synonyms: *Goliathopsis capreolus* Gestro, 1888: 118; three syntypes from Moulmein (Burma); all females, and therefore no lectotype designated here. — *Goliathopsis cervus* Janson, 1881: 610; one ♂ and one ♀ syntype, the ♂ designated lectotype, with label "Siam/e. coll. A. Murray", in O. E. Janson's handwriting, plus type-labels.

Platysodes jansoni Arrow, 1910: 20; holotype ♂ from Khasi Hills (India).

Platysodes verloreni Westwood, 1873: 23; holotype ♀ from Java.

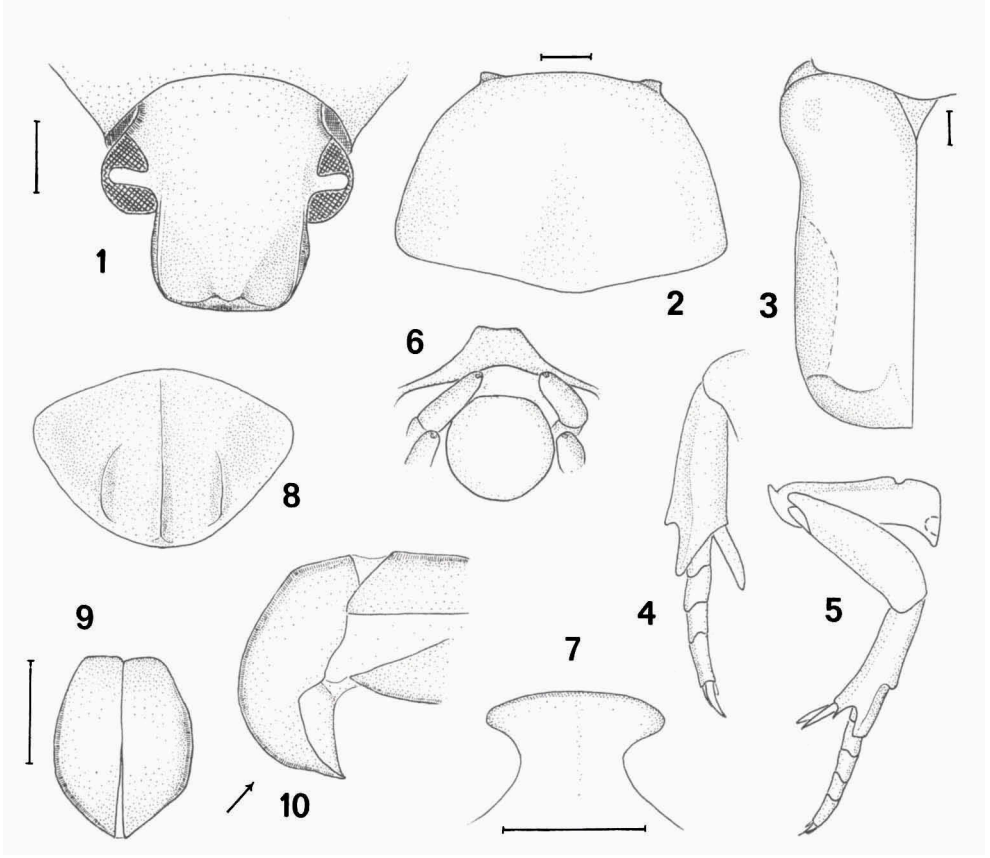
The following novelty is to be added to this list.

Campsiura celebensis sp. nov. (figs. 1-10, 17)

Description (holotype, male). — Approximate length 19, width 9, height 6 mm. Derm generally black, shiny; mentum, and spot on posterior part of metepisternum and coxal apex, yellow. Dorsum glabrous, ventral pilosity brownish, largely restricted to parts of pectus and legs. Derm generally arcuate-striolate and transversely braidedly striolate. Habitus deplanate, slender (fig. 17).

Cephalic contours, fig. 1. Clypeal apex nasiform, all margins distinctly raised; disc longitudinally rugulate, opaque; depressed anterolateral surface scarcely sculptured (× 25); clypeofrontal suture vague. Frons medially raised; superficially rugulate-punctate. Vertex striolate-punctate medially, longitudinally striolate laterally. Maximum width of head 3.6 mm.

Pronotal contours, fig. 2; disc near base feebly depressed; anterolateral noto-pleural transition gradual; posterolateral angle rounded off; apex, lateral borders and base immarginate. Pronotum finely, abundantly punctate



Figs. 1-10. *Campsiura celebensis*, holotype. Contours of: 1, head, full-face; 2, pronotum, dorsal; 3, left elytron, dorsal; 4, right fore tibia and tarsus; 5, left hind leg; 6, mentum, palpi, and anterior margin of clypeus; 7, process between middle coxae, ventral; 8, pygidium, full-face; 9, parameres, viewed as indicated by arrow in 10, parameres, lateral. Scale lines = 1 mm; 1, 4: same scale; 2, 8: same scale; 3, 5: same scale; 6, 9, 10: same scale.

discally, braidedly striolate anterolaterally, arcuate-striolate laterally; density of discal punctures 5-10/0.25 sq. mm, diameters ca. 0.07 mm. Median length of pronotum 4.40, maximum width 6.65 mm; ratio l/w 0.66. Scutellum (fig. 3) deltoid, very sparsely punctate.

Elytral contours, disposition of striolation, fig. 3; sutural zone of elytra proximally depressed; humeral umbone distinct; disc and humeral part of elytron abundantly finely punctate, their densities 11-15/sq. mm, diameters 0.05-0.10 mm; behind humerus a dense striolation converging to posterolateral angle; distal half of lateral declivity densely transversely striolate; elytral apex with curvilinear ridge. Sutural length of elytron 8.4,

maximum length 10.2, maximum width combined 8.4 mm; ratio maximum l/w 1.22.

Mentum strongly inflated, its outline approximately circular in ventrofrontal view (fig. 6). Antennal scape club-shaped. Prosternum anteromedially simply carinate, posteromedially unmodified. Mesosternum and lateral parts of pectus densely striolate. Intercoxal space wide, fig. 7; metasternal disc smooth and glabrous. Seven abdominal sternites visible; sternites 1-5 largely finely, sparsely arcuate-striolate to striolate-punctate; sternite 6 densely striolate, basal zone abundantly striolate-punctate; sternite 7 superficially transversely striolate. Pygidium clearly visible from above; with three longitudinal ridges (fig. 8); ridges sharp, laterals angulate distally, median rounded; pygidial surface entirely, densely striolate; pygidiopleuron very wide, transversely striolate basally, punctulate apically.

Fore tibia (fig. 4) with two external denticles; terminal spur acuminate, long, extending to near apex of tarsal segment 3. Middle and hind tibiae (fig. 5) with elevation at ca 0.35 from apex; terminal spurs acuminate, long, extending to apex of tarsal segment 2 (middle) and halfway tarsal segment 3 (hind leg). Segments of tarsi subcylindrical, apparently telescoped, their surface smooth. Derm of tibiae and femora hemipunctate-setose to striolate-setose.

Parameres (figs. 9, 10) strongly reflexed.

Identification. — *Campsiura celebensis* looks superficially very much like the series of black *Oncosterna* from the same locality among which it was found. No other *Campsiura* has been recorded from Celebes.

Three other species from Asia have a mentum swollen as with *Campsiura celebensis* (fig. 6), viz. *C. flavoguttata* (Snellen van Vollenhoven), *triguttulata* (Mohnike) (possibly a junior synonym of *flavoguttata*), and *javanica* (Gory & Percheron). Especially *C. javanica* subsp. *cingalensis* Arrow, being predominantly black, may superficially be confounded with *celebensis*.

Campsiura celebensis differs from all these by the following set of characters (in order of importance). Clypeal apex nasiform. All pygidial ridges very sharp. Colour virtually uniformly black (chief exception: mentum yellow). Posterolateral angle of hind femur acute, projecting. General appearance, especially legs, very slender. Anterior side of declivity between middle coxae straight (ventral view).

Material examined. — Holotype male, from Indonesia: South Sulawesi: Rantepao: Nanggala, xi-1937, from F. C. Drescher via F. T. Valck Lucassen (Leiden museum). Paratype male, with same data, very similar, slightly smaller (length 18.5 mm).

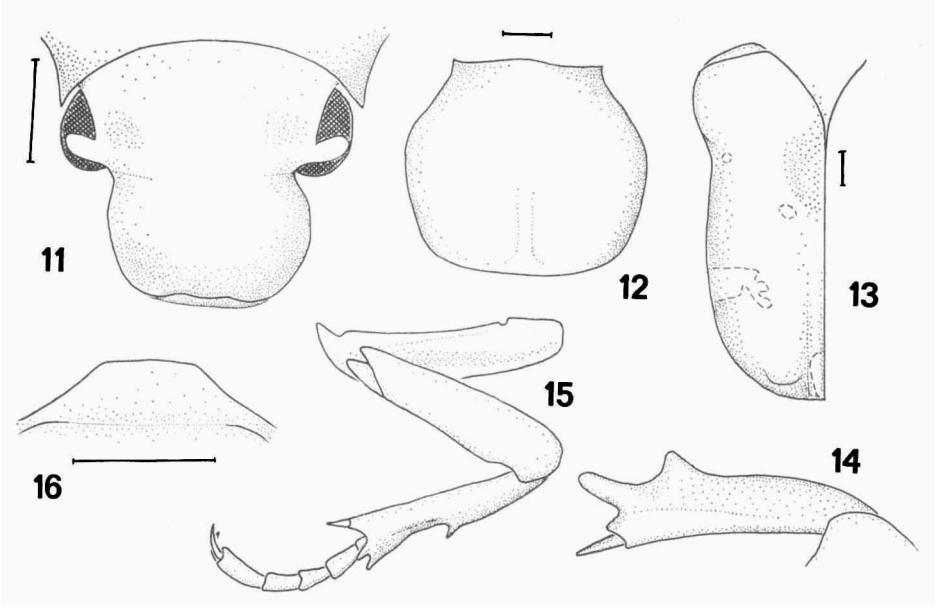
Parapilinurgus hiekei sp. nov. (figs. 11-16, 18)

Description (holotype, female). — Approximate length 14.5, width 7.5, height 5.5 mm. Derm black, opaque, with white or pale-brown tomentum. Sculpture arcuate- and annulate-striolate, most units with a short inconspicuous seta. Habitus, fig. 18.

Cephalic contours, fig. 11. Anterior margin of clypeus produced-reflexed (fig. 16). Cephalic surface densely to contiguously punctate, punctures on clypeofrons transversely confluent; sculpture of lateral declivities of clypeus more or less effaced. Genal area slightly elevated. Maximum width of head 2.80 mm.

Pronotal contours, fig. 12. Disc of pronotum generally convex; anterolateral noto-pleural transition gradual; posterolateral angle rounded off; base almost straight medially; borders all non-marginate. General sculpture of pronotum arcuate- to annulate-striolate; densities of separate units on disc 20-25/sq. mm, their diameters ca. 0.12 × 0.17 mm; pronotum with scattered tomentum. Median length of pronotum 4.30, maximum width 4.85 mm; ratio l/w 0.89. Scutellum (fig. 13) with striolation similar to that of pronotum.

Elytral contours, disposition of white tomentum (inside dashes), fig. 13.



Figs. 11-16. *Parapilinurgus hiekei*, holotype. Contours of: 11, head, full-face; 12, pronotum, dorsal; 13, left elytron, dorsal; 14, right fore tibia; 15, left hind leg; 16, reflexed anterior margin of clypeus. Scale lines = 1 mm; 11, 14: same scale; 12, 15: same scale.

Elytra with prediscal depression; juxtasutural zone of apical declivity raised; humeral and apical umbone well pronounced; disco-lateral transition gradual; apicosutural angle rounded off. Elytron densely, variably arcuate- to annulate-striolate, with scattered brown and white tomentum. Sutural length of elytron 7.35, maximum length 9.70, maximum width combined 7.75 mm; ratio maximum l/w 1.25.

Mentum thickened, slightly expanded caudad. Antennal scape slightly inflated-dilated, apex rounded. Anteromedian ridge of prosternum with short apophysis; postprosternum unmodified. Ventrolateral parts of prothorax with braided striolation and brownish tomentum. Meso- and metapectus (except metasternal disc) strongly striolate and tomentous. Metasternal disc more or less shiny, with dense sculpture of seta-bearing arcuate striolae; midline of metasternum shallowly impressed. Abdomen with (1) + 6 visible sternites; sternites 2-5 laterally convex in dorsal view; transition hind coxa to sternite 2 concave; sternite 6 slightly constricted across base; propygidial spiracle scarcely produced; sternite 7 narrow, transverse; sternites 2-5 abundantly arcuate-striolate and strongly tomentous. Pygidium slightly transverse, with raised midline; apex convex, finely marginate; very densely arcuate-striolate, strongly tomentous; propygidium normally covered by elytral apices.

Fore tibia (fig. 14) with two strong external denticles; superior side longitudinally striolate, elsewhere more or less punctate; inferior side behind tarsi with rounded elevation (lateral view); terminal spur long, slender, acuminate. (Fore tarsi largely missing). Middle and hind tibiae (fig. 15) with acute external denticle about halfway tibial length; apex trilobate inferiorly; terminal spurs robust, acuminate, extending to tarsal segment 2. Middle and hind tarsi (fig. 15) robust, segments subcylindrical to club-shaped; claws large, sickle-shaped. Femora robust, with seta-bearing arcuate striolae.

Identification. — The exact position of this female remains uncertain, as strong sexual dimorphism is known in two allied genera, *Goliathopsis* Janson and *Centrognathus* Guérin. The shape of both head and pygidium fully fit *Parapilinurgus*, a genus hitherto considered monotypic. Some differences between (females of) the two species are:

hiekei sp. nov.	*variegatus* Arrow
Clypeus short (l<w)	elongate (l = w)
Reflexed clypeal apex broad	narrow
Prosternal apophysis very short	long and slender
Mentum swollen, expanded caudad	not swollen and expanded
Derm with short inconspicuous setae	with abundant long setae
Elytron with distinct white tomentous spots	with yellowish tomentum throughout

Material examined. — One female from India: Khasia Hills, vii-1894 (Berlin museum).

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Mr. E. Taylor (Hope Dept. of Entomology, Oxford) supplied interesting information regarding the matter discussed in note 5.

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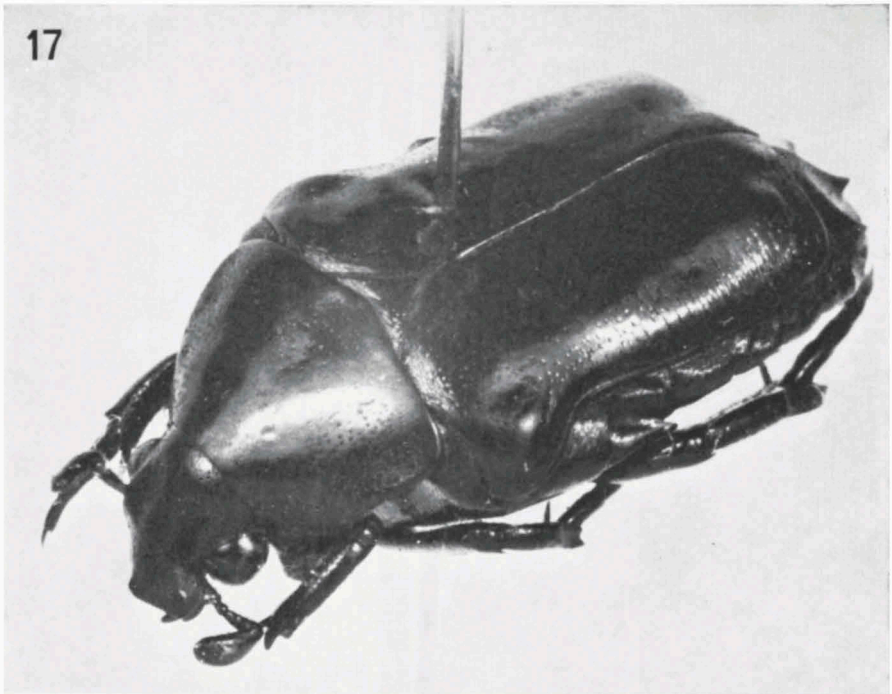

Fig. 17, *Campsiura celebensis*, holotype. Fig. 18, *Parapilinurgus hiekei*, holotype.