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TAXONOMIC REVIEW OF THE NEW GUINEA SUBGENUS *HOMOEOPSOPHA* SCHÜRHOFF OF *ISCHIOPSOPHA* GESTRO (COLEOPTERA: CETONIIDAE)

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With 23 text-figures and one plate

ABSTRACT

The subgenus *Homoeopsopha* Schürhoff (stat. nov.) of *Ischiopsopha* Gestro is diagnosed and discussed. The 7 species are keyed, and a checklist is given; new records are given, a lectotype is designated, and one new species is described and figured: *Ischiopsopha* (*Homoeopsopha*) *jansoni* from New Guinea; the other species are briefly described.

INTRODUCTION

This study is the direct result of my unsuccessful attempts to identify some New Guinea lomapterines in the Leiden museum by means of published descriptions. Only by comparison with type-specimens could the identity of these lomapterines reliably be established. In this paper the group concerned, *Homoeopsopha* Schürhoff, subgenus of *Ischiopsopha* Gestro, is diagnosed and discussed; a key to the species and an annotated checklist are given; a new species is described, a lectotype is designated, and further new material is recorded and briefly described. Work on other lomapterine groups is in progress.

Unless mentioned otherwise the specimens treated below are kept in the Rijksmuseum van Natuurlijke Historie, Leiden, abbreviated L. Two further abbreviations concerning collections incorporated in L are: J — O. E. Janson (collection acquired by F. T. Valck Lucassen in 1928); VL — F. T. Valck Lucassen (collection acquired by L in 1940).

In the checklist each species name is followed by: author and reference to first description; original status, if different from present; location of type(s); approximate known distribution, type-locality.

Approximate total lengths were measured with head of beetles extended. Magnifications mentioned in the descriptions are those at which a particular microsculptural feature is very distinct. Different size classes of microsculptural features mixed on a particular surface are denoted primary (the largest), secondary, etc. Dense = microsculptural units mostly separated by their own diameter or width or less; sparse = mostly separated by at least 5 times their own diameter or width; intermediate stages are termed abundant. Distomarginal surface of elytron = broad marginal area from halfway elytron to distal declivity.

In view of the primary objectives of my work on Cetoniidae (supra-specific classification and revision of material kept in L.), this study can only be limited. Therefore, all who use this paper are requested to report any new data, either to me, or by direct publication.

Ischiopsopha Gestro

Subgenus **Homoeopsopha** Schürhoff

This New Guinea group of lomapterines was originally attributed full generic rank (Schürhoff, 1934). This seems unjustified, because too few diagnostic characters remain, and because the monophyletic nature of the group is doubtful. Neither the characters in the original diagnosis (Schürhoff, 1934), nor those given by Valck Lucassen (1961: 3, 5) are sufficient for a separation between *Homoeopsopha* and *Ischiopsopha* Gestro. Schürhoff even described an *Ischiopsopha* that is probably very closely related to the four species he originally included in *Homoeopsopha*. After having seen virtually all the species so far placed in *Homoeopsopha* and *Ischiopsopha* the only notable difference that I found, i.e. the only one contradicting a full synonymy, is the structure of the lateral (ventro-dorsal) parts of the abdominal sternites (cf. diagnosis given below). Considering this difference, two described species have to be transferred from *Ischiopsopha* to *Homoeopsopha* in addition to those included by Schürhoff. One new species (already mentioned by Valck Lucassen, 1961: 3) is described in this review, bringing the total to seven.

Several of the *Homoeopsopha* recorded below were collected by A. S. Meek, who described his travels in a book published in 1913.

Subgeneric diagnosis. — Ventro-dorsal (lateral) transition of visible abdominal sternites 1-4 gradual, without longitudinal ridge that fits against elytral border (as in subgenus *Ischiopsopha*). Colours black and/or brown (to rufous), never metallic green, blue, cupreous, etc.

Clypeus deeply excised-bilobate; lateral surface not impressed; transition to lateral declivity more or less gradual. Basal lobe of pronotum (almost) completely covering scutellum. Elytral disc more or less deplanate, without punctate longitudinal grooves. Antennal club ($\delta\text{♀}$) slightly longer than segments 2-7 combined. Mesometasternal process long, different according to species. Metasternal wings with distinct posterior impression. Visible sternites 3 and 4 laterally with stridulatory surface. Pygidium strongly transverse, with arcuate (dorsal view) crest, its apex (dorso-ventral transition, lateral view) shortly rounded or more or less sharply angulate. Fore tibia with 3 external denticles. Middle and hind tibiae without external protrusion, their apices bidentate, general shape subcylindrical (cross-section halfway is more or less elliptic). Tarsi with subcylindrical segments. Parameres symmetrical, lobiform, more or less curved, never greatly modified. Habitus *Lomaptera*-like; total length 2-3.5 cm. Sexual dimorphism primarily evident in concave abdominal venter of males.

Type-species. — *Ischiopsopha castaneipennis* Moser, by original designation.

Affinities. — The species included in *Homoeopsopha* are undoubtedly extremely close relatives of *Ischiopsopha* sensu stricto, but whether, as a subgenus, they constitute a monophyletic group remains to be seen. Although not all the lomapterines have been adequately examined, the only closer relative of *Ischiopsopha* I could find is *Morokia* Janson ¹⁾, a New Guinea genus distinguished by striate-grooved elytra and asymmetrical parameres. Usually, however, *Thaumastopeus* auctorum ¹⁾, an Oriental genus, is considered to include the closest relatives of *Ischiopsopha*, but I cannot see a direct link, and certainly not a synapomorphy joining these genera. Both *Morokia* and *Thaumastopeus* lack the abdominal stridulatory files that characterize the two *Ischiopsopha* subgenera.

Infrageneric classification. — First of all, the user of this paper should bear in mind that (1) the material of *Homoeopsopha* at hand is very limited, and that (2) the coloration of the species may vary geographically.

Seven species are here recognized, one of them with some local varieties (or subspecies?). Although the males of three species are still unknown, the shape of the male genitalia appears a most important character for the identification of the species. Further useful characters are the shape of the mesometasternal process between the middle coxae ²⁾, the shape of the elytra (on cross-section), the colours of the various body parts including the legs, some microsculptural details, and the total size. These characters have been

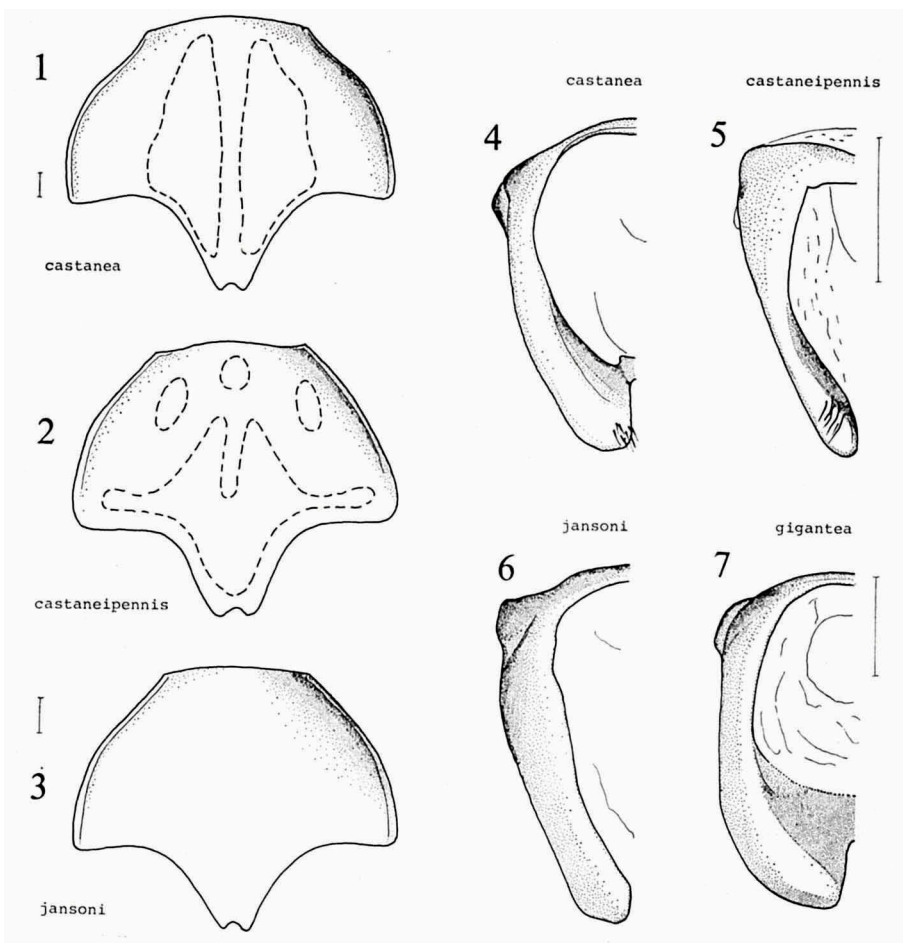
¹⁾ A review of this genus is in preparation.

²⁾ I know of lomapterines showing sexual dimorphism in this character.

employed in the dichotomous key, and in the species accounts further below.

Distribution. — Known only from New Guinea sensu stricto.

Bionomics. — Unknown; judged from their strongly penicillate maxillae, flower-visiting.

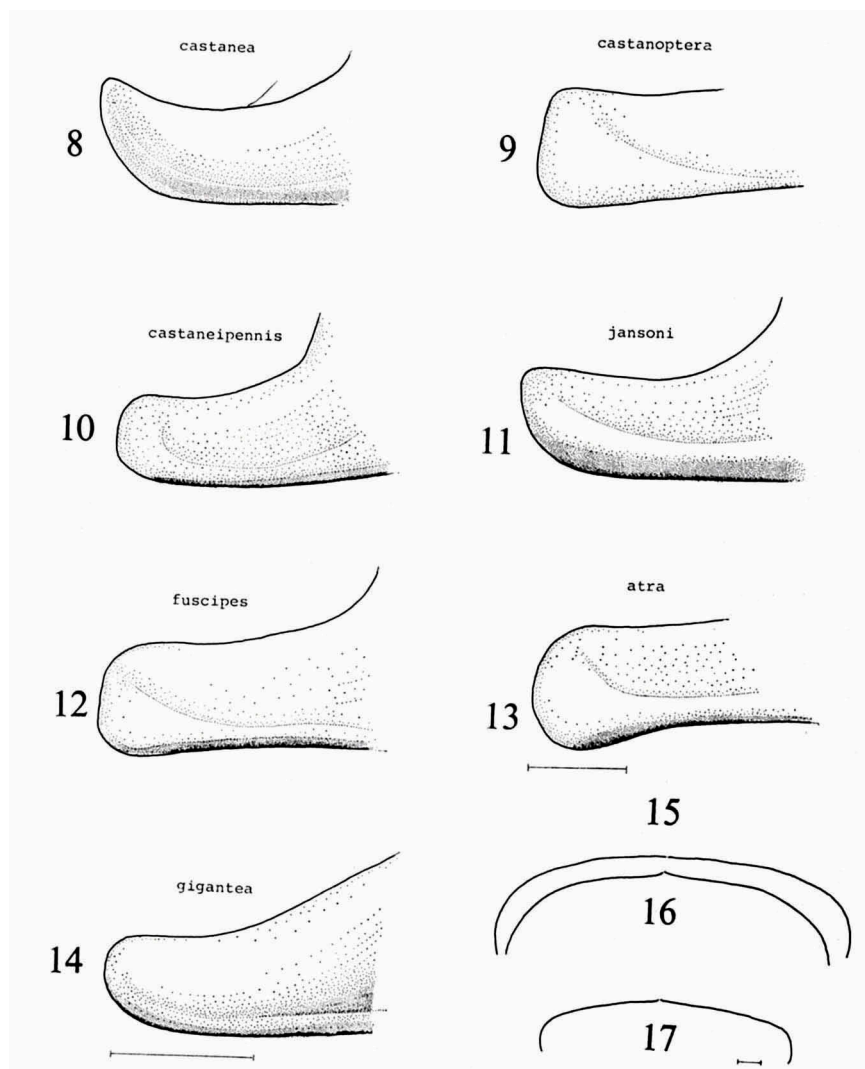


Figs. 1-7. *Ischiopsopha* (*Homoeopsopha*). Contours of pronotum (1-3) and left paramere (4-7). 1, 4, *castanea*, lectotype; 2, 5, *castaneipennis*, ♂ Ogeram nang; 3, 6, *jansoni*, holotype; 7, *gigantea*, ♂ Mt. Goliath. — Scale-lines = 1 mm; 2, 3, same scale; 4, 7, same scale; 5, 6, same scale.

KEY TO SPECIES

1. Abdominal sternites laterally, on ventro-dorsal transition, with longitudinal ridge nominate subgenus *Ischiopsopha*, not treated
- Ventro-dorsal transition of abdominal sternites gradual. Predominant

- colours black and brown subgenus *Homoeopsopha*, 2
2. Pronotum with characteristic blackish pattern (midline not blackish, fig. 1); juxtasutural zone of elytra also blackish. Mesometasternal process (fig. 8) with tapering-recurved tip. Parameres, fig. 4 . . . *castanea*



Figs. 8-17. *Ischiopsopha* (*Homoeopsopha*). Left side view of mesometasternal process (8-14) and approximate cross section of elytra (15-17). 8, *castanea*, lectotype; 9, *castanoptera*, holotype; 10, *castaneipennis*, ♂ Ogeramnang; 11, 17, *jansoni*, holotype; 12, *fuscipes*, holotype; 13, *atra*, holotype; 14-16, *gigantea*, ♂ Mt. Goliath; 15, anterior, 16, 17, posterior half of elytra. — Scale-lines = 1 mm; 11, 14, same scale; 15-17, same scale; all others, same scale.

- Pronotum uniform, or with different blackish pattern 3
- 3. Elytra medium- or light-brown. Parameral apex at most feebly dilated 4
- Elytra black, dark-brown, or rufous 6
- 4. Elytra with steep, well-defined lateral declivity (fig. 17). Length less than 2.5 cm 5
- Disco-lateral transition of elytra gradual (more like figs. 15, 16). Length over 2.5 cm. Tip of mesometasternal process broad (fig. 9). (Males unknown) *castanoptera*
- 5. Mesometasternal process (fig. 10) with blunt tip. Parameres narrow, fig. 5. Clypeus black or with black & brown pattern; brown pronotum with vague blackish pattern (fig. 2) *castaneipennis*
- Mesometasternal process (fig. 11) with tapering-recurved tip. Parameres very broad, fig. 6. Clypeus light-brown; pronotum uniform grey-brown *jansoni*
- 6. Mesometasternal process with broad, blunt tip (figs. 12, 13). Length less than 3 cm. (Males unknown) 7
- Mesometasternal process with shortly rounded tip (fig. 14). Length well over 3 cm. Parameres, fig. 7 *gigantea*, 4 varieties, 8
- 7. Legs and tips of clypeus orange-brown, rest black. Mesometasternal process, fig. 12 *fuscipes*
- Entirely black. Mesometasternal process, fig. 13 *atra*
- 8. Entirely black *gigantea* var. *gigantea*
- Tibiae, tarsi, femora, reddish-brown, rest black *g.* var. A
- Tibiae, tarsi, femora, lateral part of hind coxae, reddish-brown, rest black *g.* var. B
- Tibiae, tarsi, femora, lateral part of hind coxae, elytral disc, reddish-brown, rest black *g.* var. C

ANNOTATED CHECKLIST

Homoeopsopha Schürhoff, 1934: 55 (as genus), type-sp. *Ischiopsopha castaneipennis* Moser (original designation). — Australian Region: confined to New Guinea, 7 species.

Described species

Ischiopsopha atra (Schürhoff, 1934: 55, *Homoeopsopha*), holotype in Frey museum. ♂ unknown. — New Guinea (no further details).

I. castanea Moser, 1912: 563, lectotype in Berlin. — NE New Guinea (type-loc. Sattelberg).

I. castaneipennis Moser, 1913: 602, holotype in Berlin. — NE New Guinea (type-loc. Huon Gulf).

I. castanoptera Moser, 1926: 202, holotype in Berlin. ♂ unknown. — SW New Guinea (type-loc. not detailed).

I. fuscipennis (Schürhoff, 1934: 55, *Homoeopsopha*), holotype in Frey mus. ♂ unknown. — NE New Guinea (type-loc. Schrader Mt.).

I. gigantea Schürhoff, 1934: 55, holotype in Frey mus. — E New Guinea (type-loc. Wareo), Central W New Guinea.

I. jansoni Krikken (present paper), holotype in L. ♀ unknown. — SE New Guinea (type-loc. Angabunga River).

SPECIES ACCOUNTS

***Ischiopsopha (Homoeopsopha) castanea* Moser**

(figs. 1, 4, 8; plate 1 fig. 1)

Identification. — Length 31–35 mm. Vertex, paramedian zone of pronotum, proximal section of elytral juxtasutural zone, metasternal disc, black; rest usually brown. Clypeus and frons finely, crowdedly punctate. Pronotum with double punctation ($\times 25$); primary punctures sparse on disc, dense laterally. Elytral disc very feebly convex, disco-lateral transition gradual; disc with minute secondary punctation ($\times 75$), distomarginal surface striolate. Mesometasternal process (fig. 8) with recurved-tapering tip; pectus predominantly striolate. Fore tibia 3-dentate. Tarsi plump. Pilosity reddish-brown; mainly on pectus. Parameres, fig. 4.

The combination of the pronotal colour pattern, the size, the elytral shape, and the shape of the mesometasternal process, should distinguish *castanea* from the other species.

The late G. Ruter (Paris) submitted a male from Irian Jaya that is closely related to *castanea*, but differs in the mesometasternal process (apex blunt, not recurved); this male may represent a different species or subspecies. The Berlin museum sent a female which has the mesometasternal process dorsoventrally complanate, straight, and bent down at an angle of ca. 45° to the body axis (monstrosity?).

The ventro-dorsal transition of the abdominal sternites of *castanea* is not ridged, and therefore this species is here moved to *Homoeopsopha*.

Material examined. — Because it is not unambiguously clear from the original description whether Moser had only one specimen before him, or more, a lectotype is here designated: ♂ from “D. Neu Guinea/Sattelberg” (Berlin, ex Moser); a ♀ with the same label (also Berlin, ex Moser) is apparently to be considered paralectotype; both have type-labels in Moser’s handwriting. Further material from Ogeramnang, Bulung Mts., iii.1913 (♀, ex VL), Sattelberg (♀, ex VL).

***Ischiopsopha (Homoeopsopha) castanoptera* Moser**

(fig. 9; plate 1 fig. 2)

Identification. — Length 27-30 mm. Sides of frontovertex, most of pectus and abdomen, black; rest usually brown. Clypeus and frons densely, moderately punctate. Pronotum with double punctation ($\times 37$); primary punctures sparse on disc, dense laterally, marginal area more or less striolate. Elytral disc very feebly convex, disco-lateral transition rather gradual; elytral derm except basal area, with braided transverse striolation; secondary punctation vague ($\times 50$). Mesometasternal process (fig. 9) with broad, truncate tip; pectus predominantly striolate. Fore tibia (♀) 3-dentate. Tarsi plump. Pilosity pale-brown; mainly on pectus. Male sex unknown.

The combination of the shape of the mesometasternal process, the elytral shape, and the size, distinguish this species from its nearest relatives.

Material examined. — Holotype ♀ from "Z. Nieuw Guinea/Versteeg 1912.13/14. 12./12" (Berlin, ex Moser). Further material from Mt. Goliath, 1911, leg. Meek (4 ♀).

***Ischiopsopha (Homoeopsopha) castaneipennis* Moser**

(figs. 2, 5, 10)

Identification. — Length 23.5-26 mm. Head, pronotal pattern, humeri, pectus, abdomen, legs, black; rest usually brown. Clypeus and frons crowdedly punctate, punctures isodiametric, very distinct. Pronotum with double punctation ($\times 37$); primary punctures abundant on disc, dense laterally. Elytral disc almost flat, disco-lateral transition subabrupt, lateral declivity steep; disc very vaguely serially punctate, lateral declivity very strongly striolate, apical umbone and declivity scarcely striolate. Mesometasternal process (fig. 10) with broad, blunt tip; pectus predominantly punctate. Fore tibia 3-dentate. Tarsi slender. Pilosity fine, pale-yellow; mainly on pectus, very abundant on metasternal wings. Parameres, fig. 5.

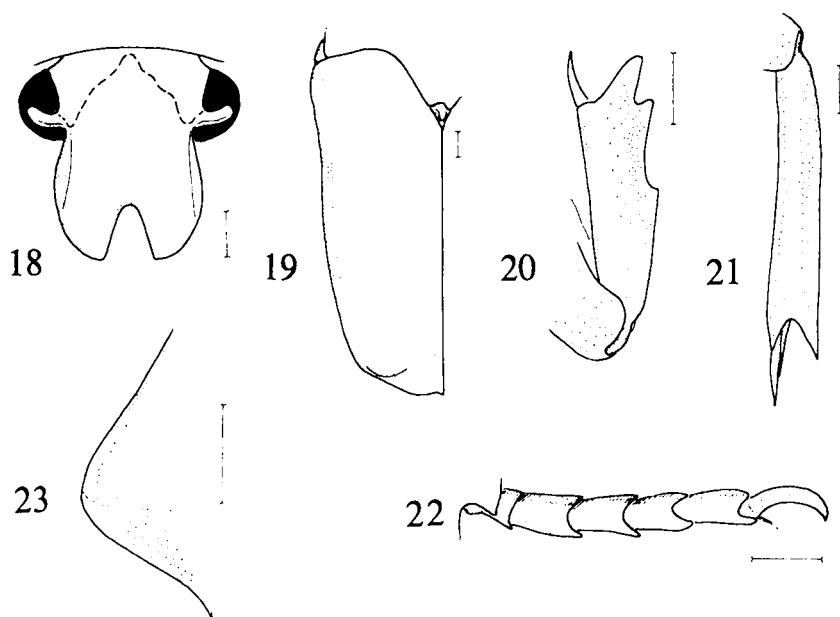
The combination of the shape of the mesometasternal process, the elytral shape, and the size distinguish *castaneipennis* from its nearest relatives. The base of the internal outline of the parameres is straight, contrary to what is known of the other species.

Material examined. — Holotype ♂ from "D. Neu-Guinea/Huon Golf" (Berlin, ex Moser). Further material from Ogeramngang, Bulung Mts., ii.1913, 1800 m (1 ♂, 1 ♀, Berlin, ex Moser).

***Ischiopsopha (Homoeopsopha) jansoni* sp. nov.**

(figs. 3, 6, 11, 17, 18-23; plate 1 fig. 3)

Holotype (male). — Approximate length 23.5, width 11, height 7 mm.



Figs. 18-23. *Ischiopsopha* (*Homoeopsopha*) *jansoni*, holotype. Contours of: 18, head; 19, left elytron; 20, right fore tibia; 21, left hind tibia; 22, left hind tarsus; 23, pygidium, right side view. Scale-lines = 1 mm.

Medium-brown; frons, vertex, propectus (partly), mesosternum, mesepimeron (partly), metasternum, coxae (largely), sides of sternites (partly), pygidial base, black; pilosity (mainly on pectus and abdomen) pale-yellow. Habitus, plate 1 fig. 3.

Cephalic contours, fig. 18. Clypeal disc virtually flat; lateral ridges rounded off; almost entire clypeus and frons densely, finely punctate. Maximum width of head capsule (including eyes) 4.3, of clypeus 3.1 mm.

Pronotal contours, fig. 3; general surface of pronotum evenly, feebly convex; lateral borders marginate; all pronotal margins clear brown compared to more or less infuscated disc; derm with abundant double punctation ($\times 18$); primary punctures fine, isodiametric on disc, laterally changing to more or less contiguous arcuate-striolate; density of punctures on pronotal centre $19 \pm 2/\text{sq. mm}$, their diameters ca. 0.05 mm. Median length of pronotum 7.7, maximum width 9.5 mm. Scutellum just visible behind notched pronotal lobe.

Elytral contours, fig. 19; distal section of juxtasutural zone raised, limited by striola; humeral and apical umbones distinct; apicosutural angle sharp; lateral declivity of elytron very steep (fig. 17); lateral and distal

declivities finely braidedly striolate; disc abundantly vaguely punctate; secondary punctation present but still indistinct at $\times 50$. Sutural length of elytra 10.6, maximum (humeral) width combined 10.5, maximum (longitudinal) length 14.0 mm.

Antennal club slightly longer than segments 2-7 combined. Sides of pectus largely finely, braidedly striolate with abundant fine, long setae. Mesometasternal process (fig. 11) with recurved, shortly rounded tip. Posterior impression of metasternal wings well defined by anterior ridge. Middle of metasternum and abdominal sternites abundantly finely punctate; lateral surface of abdominal sternites 1-4 from hind coxae with stridulatory aciculation; sternites 2-5 medially impressed. Pygidium very wide, with braided concentric striolation throughout; apex in dorsal view evenly rounded, in lateral view (fig. 23) shortly rounded; anal border marginate.

Fore tibia (fig. 20) with 3 external denticles; terminal spur slender, acuminate, reaching to base of tarsal segment 3. Middle and hind tibia (fig. 21) with bidentate apices, without non-apical protrusions; internal side with fringe of long, stiff setae. Femora slender, striolate-punctate; anterior-superior surface of fore femur densely setose. Hind coxa punctate (medially) to striolate (laterally), abundantly setose; posterolateral angle ca. 90° . Tarsi all long and slender, with large sickle-shaped claws (fig. 22).

Parameral contours, fig. 6.

Material examined. — Holotype and paratype, both males, from Papua New Guinea: Owgarra, Angabunga River ¹⁾, 1905, A. S. Meek, ex VL-J. No significant variation.

Identification. — Its closest relative is *castaneipennis*, from which *jansoni* is distinguished externally by colour pattern, shape of mesometasternal projection, and sculptural details. The parameres are also different (compare figs. 5 and 6).

Ischiopsopha (Homoeopsopha) fuscipes (Schürhoff) (fig. 12)

Identification. — Length 27-29 mm. Largely black, femora, tibiae, tarsi, tips of clypeus, orange-brown. Clypeus and frons abundantly finely punctate. Pronotum with double punctation ($\times 50$); primary punctures sparse on disc, abundant laterally. Elytral disc almost flat, disco-lateral transition gradual; secondary punctation vague ($\times 50$); distomarginal surface striolate, except in apicosutural corner. Mesometasternal process slightly deflexed, with blunt apex (fig. 12); pectus predominantly striolate. Fore tibia (♀)

¹⁾ cf. Meek, 1913: 139.

3-dentate. Tarsi plump. Pilosity pale-yellow, fine; mainly on pectus. Male sex unknown. Very similar to *atra*, q.v.

The coloration, the size, and the shape of the mesometasternal process should distinguish *fuscipes* from the other known species, but further study based on more material is necessary.

Material examined. — Lectotype ♀, here designated, from "D.N. Guinea/Schraderberg" (Frey mus.), and another ♀ (paralectotype?) with similar label (Berlin).

***Ischiopsopha (Homoeopsopha) atra* (Schürhoff) (fig. 13)**

Identification. — Very similar to *fuscipes*. Length 27 mm. Entirely black. Mesometasternal process with broadly rounded apex (fig. 13). Male sex unknown.

Material examined. — Holotype ♀ from "Nouv. Guinée" (Frey mus.).

***Ischiopsopha (Homoeopsopha) gigantea* Schürhoff**
(figs. 7, 14, 15, 16; plate I fig. 4)

Identification. — Length 34-38.5 mm. Entirely black (type), or some parts rufous: elytral disc (var. C); only legs, including lateral part of hind coxae (var. B); or only femora, tibiae and tarsi (var. A); clypeal tips may also be rufous. Clypeus and frons very densely, distinctly punctate. Pronotum with double punctation ($\times 37$); primary punctures small on disc, sparse; larger and very dense laterally. Elytral disc feebly convex, gradually declivous laterally; secondary punctation vague ($\times 75$), primary punctation sparse, indistinct; distomarginal surface sparsely, finely striolate. Mesometasternal process with shortly rounded apex (fig. 14); pectus predominantly striolate. Fore tibia 3-dentate. Tarsi very plump. Pilosity brownish; mainly on pectus. Parameres, fig. 7.

The combination of the very large size, the shape of the mesometasternal process, and the strongly curved, distally dilated shape of the parameres renders this species easily distinguishable.

In the same paper in which *Homoeopsopha* was proposed, Schürhoff diagnosed *gigantea*, combining the species with *Ischiopsopha*. Considering the gradual ventro-dorsal transition of the abdominal sternites, *gigantea* is here placed in *Homoeopsopha*.

Material examined. — Holotype ♀ from "Wareo D.N.G./Schürhoff" (Frey mus.). Further material from Upper Aroa River, 1906, leg. Meek (1 ♀), var. A; Mt Goliath, 1911, leg. Meek (3 ♂), var. B; Top Camp¹), 25.i, 27.i, 9.ii.1939, leg. Toxopeus (3 ♂), var. C.

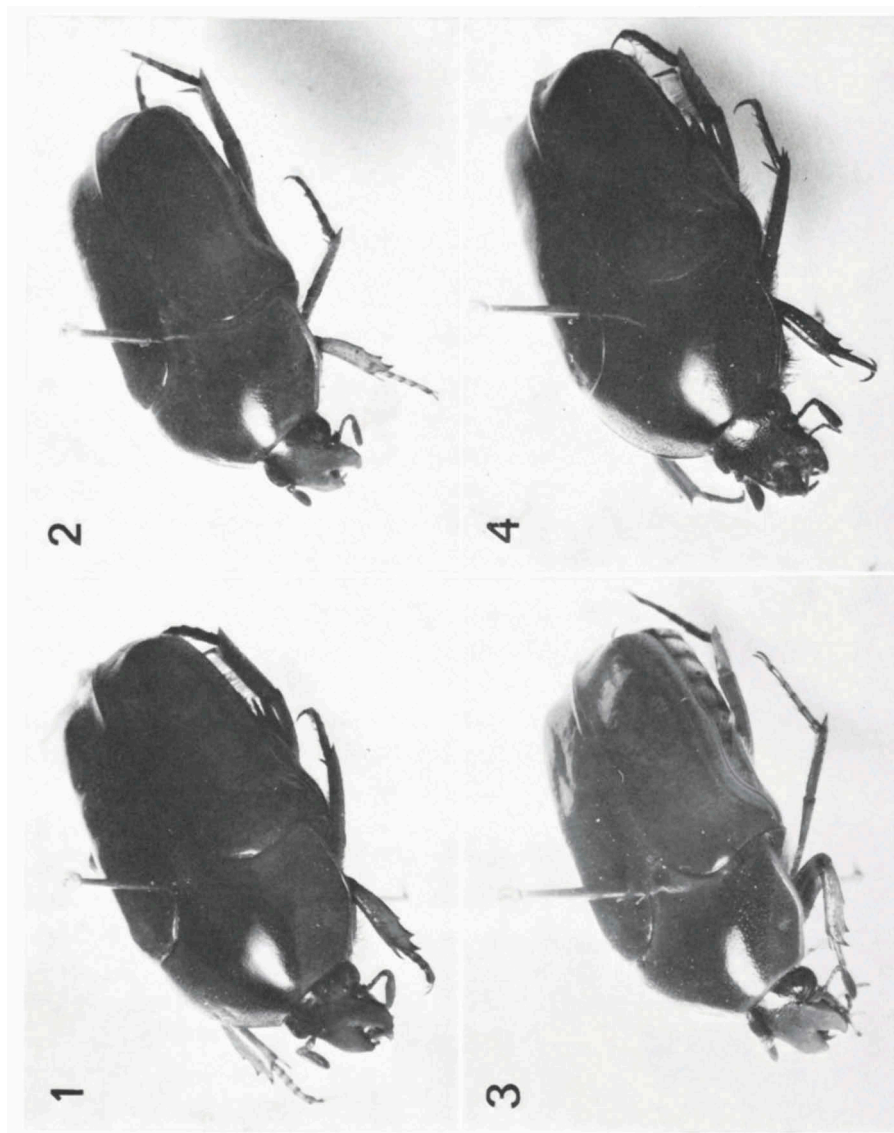
¹) cf. Toxopeus, 1940.

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REFERENCES

- MEEK, A. S., 1913. A naturalist in cannibal land: xviii + 231 pp., many pls., 1 map. London & Leipsic.
- MOSER, J., 1912. Beitrag zur Kenntnis der Cetoniden (Col.). [XI]. — Dtsche ent. Ztschr., 1912: 560-574.
- , 1913. Beitrag zur Kenntnis der Cetoniden (Col.). [XIII]. — Dtsche ent. Ztschr., 1913: 601-616.
- , 1926. Neue Melolonthiden und Cetoniden aus dem Süden von Holländisch Neu-Guinea. — Nova Guinea, 15: 196-204.
- SCHÜRHOFF, P. H., 1934. Beiträge zur Kenntnis der Cetoniden (Col.) VI. — Ent. Nachr.blatt, 8: 53-60.
- TOXOPEUS, L. J., 1940. Nederlandsch-Indisch Amerikaanse Expeditie naar Nederlandsch Nieuw-Guinea... Lijst van verzamelstations. — Treubia, 17: 271-279, 1 map.
- VALCK LUCASSEN, F. T., 1961. Monographie du genre *Lomaptera* Gory & Percheron (Coleoptera, Cetonidae): iv + 299 pp., 739 + 28 figs., 1 map. Amsterdam.



Ischiopsopha (*Homoeopsopha*). Oblique views of: 1, *castanea*, ♀ Ogeramang; 2, *castanoptera*, ♀ Mt. Goliath; 3, *jansoni*, holotype; 4, *gigantea* var. C, ♂ Top Camp.