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Review of the [*Cyphogastra* DEYR.]-supergenus (Coleoptera: Buprestidae) VII. The *Albertisi*-circle

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Introduction

The seventh (see HOLYŃSKI 2016, 2020a,b,c, 2021 for the first six) part of the Review is devoted to what seemed to be, and has been treated in the **Systematic review** as, a single species-group; preliminary phylogenetical analysis seems to question its monophyly but, pending the results of comprehensive evaluation planned for the final, summarizing and concluding part of the **Review**, I remain with my original concept. The status, interrelations, distribution of taxa within the *Albertisi*-circle, as well as their external affinities, proved – with few exceptions – exceedingly complicated and unclear, mainly, as usual, due to the scarcity of precisely labelled material, poorly informative old descriptions combined with mostly difficult to define, barely diagnostic and often individually variable characters; so, the rank of particular taxa and subgroups treated below as – respectively – species and superspecies must be considered as, in most cases, reflecting only the lack of arguments for reliable evaluation!

Conventions

Like in my other publications (unless “corrected” by editors...), I follow the very useful conventions of applying (of course, except wordly citations, where the original form must be retained) SMALL CAPS to *all* [irrespective of context and full vs. abbreviated version: inconsistent use deprives the display of any sense!] personal FAMILY- (*not* given-) names, *italicizing* species- and genus-group names (as well as citations and words in languages different from that of the main text), and writing the suprageneric taxon-names in **Bold** [the latter is not a generally accepted custom, but is often important, assume of such names (*e.g.* of the subtribes **Buprestina** LEACH, **Melobasina** BÍLY or **Coraebina** BED.) are (or may easily become) “homonymous” (but valid!) with [sub-]generic ones (*Buprestina* OBB., *Melobasina* KERR., *Coraebina* KERR.)]

Labels of type-specimens are quoted as exactly as possible, including *italics* and *handwriting* (both represented in my text by *italics*), CAPITAL LETTERS, SMALLCAPS, framing, colour of text and approximate colour of the label. Individual labels are cited in quotation marks “”, a label glued on another label (frequent *e.g.* in KBIN) in $\begin{array}{|c|} \hline \text{---} \\ \hline \end{array}$, a label glued on another label on which still another has been glued in $\begin{array}{|c|} \hline \text{---} \\ \hline \begin{array}{|c|} \hline \text{---} \\ \hline \end{array} \\ \hline \end{array}$ (so, some may look like “abc $\begin{array}{|c|} \hline \text{---} \\ \hline \end{array}$ def $\begin{array}{|c|} \hline \text{---} \\ \hline \end{array}$ ghi $\begin{array}{|c|} \hline \text{---} \\ \hline \end{array}$ ”). Determination (white, in the form like “*Cyphogastra esignata* HOL., det. R. HOLYŃSKI” with year of determination written vertically on the left side) and type-designation [red for primary types, *e.g.* “*Cyphogastra pratti* HOLYŃSKI, HOLOTYPE”, green for paratypes, *e.g.* “*Cyphogastra malinowskii* HOLYŃSKI, PARATYPE”] labels added by me are not cited.

New species will be described in detail, other descriptions restricted to traits potentially helpful in identification.

Except in citations and synonymies, quoted as in the respective original publications, I apply the term “*morpha*” [“*m.*”] for discrete variants (where intermediates are absent or very rare) and “*forma*” [“*f.*”] for sections of continuous spectrum; „variety” – “*varietas*” [“*v.*” or “*var.*”] is used as a neutral word of no specific connotation].

Length of body measured from anterior margins of eyes to elytral apices; length of elytra from anterior margin of scutellum; width of pronotum where it is the widest, width of elytra just behind subhumeral protuberances; width of head with eyes, in dorsal aspect; width of vertex between internal margins of eyes.

As usual, my phylogenetic reconstruction has been performed with MICSEQ – see HOLYŃSKI (2001) for the general outline of the algorithm with presentation and justification of basic assumptions, and HOLYŃSKI (2016) for the present state of its development and discussion of some aspects of the procedure.

Explanation of terms (used generally in my publications, but not necessarily all of them in any particular paper)

Convergent/divergent: Unless specially stated otherwise, always from base to apex

Epistomal ridge: Arcuate or biarcuate keel running from one anterolateral angle of epistome to another behind its emarginated anterior margin at the supraepistomal border

Supraepistomal carina: transverse ridge above the frontoepistomal border

Anterior cavity of front: deeper anterior part of frontal depression, more or less distinctly separated from the rest by oblique elevations

Collar: apical, constricted part of pronotum before truncation

Anterolateral angle of pronotum: angular bend between subparallel basal and abruptly oblique apical portion of sides

Anterior foveolae of pronotum: anterolateral and anteromedian

Anterolateral foveola of pronotum: small, often indistinct fovea near apical angle

Anteromedian foveola of pronotum: small, often indistinct fovea placed middiscally at apical margin

Fossae: laterobasal depressions of pronotum

Prehumeral relief: elevated fragment of pronotal surface at basal angles, surrounded anteromedially by fossae

Subhumeral protrusion/denticle: moderately salient/prominent angularly protruding epipleural margin at humeri

Caudate elytra: of concave lateroapical margins and dorsal profile

Perihumeral dfp areas: usually not depressed stripes of dfp along lateral half of elytral base, sometimes extending around humeri to basalmost part of lateral margins

Elytral dfp sulci: 1-3 pairs of longitudinal depressed dfp furrows extending over entire elytral length or only part of it

Subhumeral dfp hollow/sulcus: dfp depression placed at lateral margin of elytra behind humeri

Perisutural elytral dfp sulci: innermost pair between 1. (sutural) and 2. costae

Middiscal elytral dfp sulci: middle pair between 2. and 3. costae

Perimarginal elytral dfp sulci: outermost pair between 4. costa and lateral margin of elytra

Abdominal plaque: elevated surface of 1. sternite, posteriorly delimited by more or less vertical step separating it from the rest of abdominal surface

Middiscal: lying at *ca.* mid-distance between median line and side margins

Phenon (pu): unit of the “cost of transformation” between character states, *i.e.* of phenetic distance between analysed taxa: **1 pu** = distance between two neighbour traits in the transformation chain if the weight has been settled as 1

Support quotient [SQ= x/y] (in phenons): rough estimator of “robustness” of particular pairing, where **x** is the “corrected distance” (at the relevant stage of analysis, *i.e.* when the pairing is being performed) between the paired taxa, and **y** – the shortest distance between any of them and any other remaining “in game”.

Abbreviations:

L	=	length
W	=	width
BW	=	basal width
AW	=	apical width
H	=	width of head with eyes
V	=	width of vertex between eyes
ø	=	sex unknown
HT	=	holotype
LT	=	lectotype
ST	=	syntype
PT	=	paratype
BP***	=	(<i>e.g.</i> BPeip): specimen-identifying signature in my collection
≈	=	approximately equal
[○],[○]	=	round type-label with coloured frame in BMNH
[abc]	=	in square brackets (without quotation marks) data not specified on labels

Collection acronyms:

BMNH	=	Natural History Museum, London, ENGLAND
BPBM	=	Bernice P. Bishop Museum, Honolulu, USA

- CLB = Charles L. BELLAMY, Sacramento, USA
 DF = David FRANK, Praha, CZECHIA
 EONMP = Entomologické Oddelení Národního Musea, Praha, CZECHIA
 KBIN = Koninklijk Belgisch Instituut voor Natuurwetenschappen, Brussels, BELGIUM
 MCGD = Museo Civico di Storia Naturale „Giacomo Doria”, Genova, ITALY
 MNHN = Muséum National d’Histoire Naturelle, Paris, FRANCE
 RBH = Roman B. HOLYŃSKI, Milanówek, POLAND
 TT = TT – Takeshi TERABAYASHI, Shiotsu, JAPAN
 USNM = Smithsonian Institution: National Museum of Natural History, Washington, USA

Systematic review

BUPRESTIDAE LEACH
BUPRESTINAE LEACH
BUPRESTINI LEACH
CHRYSOCHROINA CAST.
Cyphogastra DEYR.
Cyphogastra DEYR. s. str.
Cyphogastra DEYROLLE 1864: 36-37

[type-species: *Buprestis foveicollis* BOISDUVAL 1835 (= *Buprestis ventricosa* OLIVIER 1790)]

Abbreviated key to the identification of circles of the sg. *Cyphogastra* DEYR. s.str.

- 1 (8) No subhumeral and perimarginal dfp sulci on elytra; or, if perisutural present, then elytral disk (at least suturobasal part) black but ventral side and epipleura metallic, and/or fossae irregular with dfp bottoms entirely reduced or almost so
- 2 (7) Fossae irregular, with bottom spaces not or but indistinctly dfp, or – if extensively dfp – extreme tips of elytra blackish
- 3 (4) Anteromedian angle of laterobasal relief definitely obtuse or obliterated, or irregular and indefinite; pronotal fossae irregular or c-shaped, with at most very small dfp areas; or, if extensively dfp and/or anteromedian angle of relief right, then anterior foveae well developed and at least one of them obliquely elongated, joining fossa or but narrowly separated from it. If body black then either tarsi yellow, or pronotal sides convergent, anterolateral angles not protruding, or elytra finely sculptured, or fossae and ventral side purplish *Tinianica*-, *Uxorismeae*-, *Bruyni*-, *Armata*-,*Flavimana*-, *Tuberculata*-, *Satrapa*-, *Collarti*-, *Gestroi*- and *Javanica*-circles
- 4 (3) Fossae extensively dfp on bottoms, either right-angledly (in form of upturned L-square) bent, not extending to anterior foveolae, leaving anteromedian angles of laterobasal reliefs approximately right; or very large, ovate, with laterobasal reliefs reduced to triangular widening of lateral ridge. Anterior foveae lacking or inconspicuous, not joined to fossae, or body [bluish-]black, tarsi dark, pronotum parallelsided with prominent anterolateral angles, and elytra coarsely punctured
- 5 (6) If black then with purplish-violaceous lustre or at least purplish-cupreous bottoms of fossae, epipleura and/or preapical spots of elytra. Fossae more or less contrastingly metallic, regular, Γ -shaped, broadly ovate, or occupying practically entire lateral thirds of pronotum *Albertisi*-circle
- 6 (5) Entirely black, at most with [rarely greenish- (never violaceous- or purplish-)] blue lustre. Fossae concolorous, narrowly c-shaped or irregular *Punctatissima*-circle
- 7 (2) Fossae broadly right-angled (Γ -shaped), extensively dfp, and anterior foveolae also well developed. Elytral apices cupreous or – rarely – concolorous (not tipped black) *Gloriosa*-circle

- 8 (1) Subhumeral and/or perimarginal sulci present; or, if only perisutural is developed then pronotal fossae in form of Γ or very large, occupying $\frac{2}{3}$ or more of the lateral third of pronotum, with bottoms extensively dfp; if perisutural sulcus present and elytral disk black then ventral side and epipleura also black
 *Canaliculata*-, *Farinosa*-, *Modesta*-, *Obloquens*-, *Ventricosa*- and *Pistor*-circles

Albertisi-circle

Remarks: A complex of several superspecies whose “core” representatives look so different as to suggest differentiation into separate circles (and so were classified in keys of previous parts of the **Review**), but the extremes come so close to one another that it is almost impossible to draw the borderlines. The circle is characterized by combination of extensively dfp bottoms of usually regular pronotal fossae, lack of dfp depressions (except sometimes narrow subhumeral stripe) on elytra, and bluish-black extreme elytral tips – size, sculpure, colouration are extremely variable. The geographical distribution area extends from Moluccas in the West, through “mainland” New Guinea to D’Entrecasteaux archipelago and Woodlark Is. in the East.

Key to the identification of superspecies of the *Albertisi*-circle

- 1 (8) Elytra distinctly caudate
- 2 (3) Fossae rather regularly Γ -shaped. Anterolateral angles of pronotum not protruding. Body length <35 mm. *Albertisi*-spsp.
- 3 (2) Fossae broadly ovate, or occupying practically entire lateral thirds of pronotum, up to anterior margin; if not then anterolateral pronotal angles markedly protruding and/or length of body above 35 mm.
- 4 (5) Pronotum blackish with metallic lustre; elytra bright metallic and/or fossae contrastingly cupreous. Anterolateral pronotal angles not or but indistinctly protruding. Elytra strongly caudate *Friendorum*-spsp.
- 5 (4) Pronotum bright metallic or fossae concolorous and/or anterolateral angles of pronotum conspicuously protruding, and/or elytra not distinctly caudate
- 6 (7) Fossae occupying practically entire lateral thirds of pronotum *Bicolor*-spsp.
- 7 (6) Fossae broadly ovate but rather widely separated from anterior pronotal margin (anterior foveolae, if present, not or but narrowly connected to fossae)
 *Mniszechi*-spsp.
- 8 (1) Elytra not or but imperceptibly caudate *Lansbergei*-spsp.

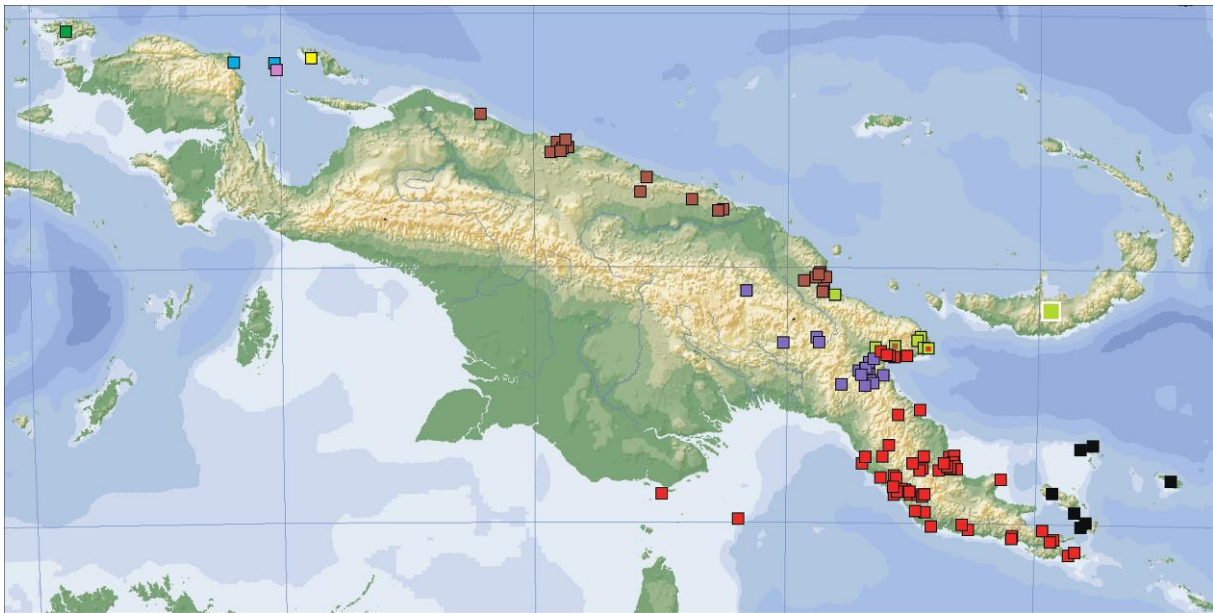
Albertisi-superspecies

Remarks: The “diagnostic” character of this group are regularly (except in some aberrant specimens) Γ -shaped (neither ovate nor extremely broad) fossae. The taxonomic status of the included taxa is – due, as usual, to the scarcity or total lack of reliably and exactly labelled material from areas of transgression or, perhaps, overlap – difficult, so all are treated here as “full” [allo-]species. The representatives of the superspecies are distributed from Waigeo I., through northern and southeastern New Guinea, to D’Entrecasteaux Arch. and Woodlark Is. [[Map 1](#)].

Key to the identification of species of the *Albertisi*-superspecies

- 1(14) Pronotum metallic, elytra with at most inconspicuous lateroapical cupreous patch

- 2 (9) Subhumeral dfp spot discernible at least as a narrow golden very finely punctulate area. Dfp bottom of fossae narrow. Dorsal side green
- 3 (4) Elytra non-caudate, apices broadly arcuate; elytral puncturation very dense, irregularly confluent *C. (s.str.) coriacea* KERR.
- 4 (3) Elytra distinctly caudate, apices narrowly rounded or obliquely truncated; sculpture regular, punctures clearly separated
- 5 (8) Tarsi dark
- 6 (7) Subhumeral dfp spot wider; elytra without golden hue towards apices *C. (s.str.) pisciformis* DEYR.
- 7 (6) Subhumeral dfp spot discernible only as a narrow golden very finely punctulate area; elytra more or less distinctly golden-[in bluish specimens greenish-]hued apicalwards *C. (s.str.) geelvinkiana* GST.
- 8 (5) Tarsi testaceous *C. (s.str.) flavitarsis* GST.
- 9 (2) No trace of subhumeral dfp sulcus. Fossae extensively dfp at bottom. Dorsal side frequently more or less golden, cupreous or bronzed
- 10(11) Ventral side roughly concolorous with dorsum (usually green to cupreous) *C. (s.str.) nitida* KERR.
- 11(10) Ventral side purplish, violaceous, bluish or bronzed, contrasting with dorsum
- 12(13) Epipleura roughly concolorous with elytral disk; ventral side greenish-blue to warm-bronzed *C. (s.str.) aereiventris* KERR.
- 13(12) Epipleura (at least partly) contrastingly purplish-red; ventral side purplish-violaceous *C. (s.str.) violaceiventris* KERR.
- 14 (1) Pronotum black, elytra usually conspicuously multicolorous
- 15(16) Anterolateral angles of pronotum well marked *C. (s.str.) albertisi* GST.
- 16(15) Anterolateral pronotal angles more or less obliterated .. *C. (s.str.) malinowskii* sp.n.



Map 1

Geographical distribution of the *Albertisi*-superspecies

- – *C. pisciformis* DEYR.; ■ – *C. geelvinkiana* GST.; ■ – *C. coriacea* KERR.; ■ – *C. flavitarsis* GST.;
 ■ – *C. aereiventris* KERR.; ■ – *C. nitida* KERR.; ■ – *C. violaceiventris* KERR.; ■ – *C. albertisi* GST.; ■ – *C. malinowskii* sp.n.
 White border – general area (exact locality unknown)
 Small square of different colour within greater one – exceptional sympatric occurrence of neighbour taxon

Cyphogastra (s.str.) coriacea KERR.

Cyphogastra coriacea KERREMANS 1910: 181-182

Material examined:

Holotype: „[N. Guinea, Mafor. V. Beccari 1875]” „*coriacea* Kerrem., Type” [MUSEUM PARIS, COLL. CH.KERREMANS, 1923]” [♂ (MNHN)]

Additional material: None

Characters [Fig. 1]: Male [1] 24×7.5. Green, only sides of pronotum, elytra towards apices and ventral side more golden; basal two antennomeres green, joints 3.-11. piceous-brown; tarsi blackish-brown with moderately strong metallic lustre. Sulcus of prosternal process with dense and rather long semierect white pubescence; that along midline of metasternum and –especially – abdomen shorter and much sparser; on ventral dfp areas very short dense and recumbent; otherwise body practically glabrous. Epistome deeply semicircularly emarginated, epistomal ridge distinct, arcuately subparallel to anterior margin; frontoepistomal carina behind deep transverse depression {-shaped. Front definitely wider than long, subparallelsided; frontal depression deep, subtriangular, reaching slightly but distinctly behind upper margins of eyes, very finely and sparsely punctured; semicircular anterior cavity rather deep, its puncturation much coarser and denser; median groove coarse, deep, impunctate; lateral ridges practically lacking; periocular sulci deep but barely reaching beyond upper margins of eyes; V:H≈0.55. Pronotal sides subparallel; anterolateral angles rather broadly rounded but well marked; basal margin almost straight, basal angles very slightly acute, collar poorly defined, apical margin bisinuate with markedly protruding broadly subtruncated median lobe, anterior angles right. Fossae rather narrow, almost completely subdivided into anterolateral and mediobasal portions by oblique protrusion of rhomboial laterobasal relief; anterior foveolae not individualized; pronotal disk very finely and sparsely, sides rather sparsely but coarsely punctured. Elytra not caudate: subparallelsided to midlength, then arcuately-cuneately tapering to rather broadly rounded, rather coarsely and densely denticulate apices, some denticles present also in apical part of lateral margins; no trace of subhumeral protrusion; sculpture consists of very dense vermiculations formed by confluent, individually barely recognizable punctures; subhumeral dfp sulcus inconspicuous, very narrow. Proepisterna smooth with some variable (from entirely dfp to almost entirely glabrous and coarsely foveolate) punctures; sides of metasternum and 1.-4. abdominal segments with some inconspicuous dfp spaces; abdominal plaque very low, almost obliterated; marginal and middiscal dfp stripes moderately well marked, widely separated; apex of anal sternite deeply subtriangularly emarginated between broadly rounded lateral lobes; *aedoeagus* somewhat wavyly subparallelsided, testaceous with dark brown apical part of penis. F

Geographical distribution [Map 1]: Known only from the holotype, collected by Beccari on Mafor [=Numfoor] I. in the Geelvink Bay (between Biak I. and northeastern angle of Vogelkop Peninsula.

Remarks: Sympatry with *C. geelvinkiana* GST. raises doubts as to the taxonomic status, so I had initially supposed *C. coriacea* KERR. to be but some (theratological?) abnormality of the former, but marked differences in shape (non-caudate) and sculpture of elytra as well as apparently wider and more parallelsided *aedoeagus* suggest rather effects of character displacement preventing hybridization between closely related, secondarily sympatric species. More abundant informative material is necessary to reliable establish or reject the validity of this taxon.

***Cyphogastra (s.str.) pisciformis* DEYR.**

Cyphogastra pisciformis DEYROLLE 1864: 42

Cyphogastra apicalis KERREMANS 1895:203

?*Cyphogastra dissimilis* KERREMANS 1895: 208

Material examined:

?**Paratype:** “Waigiou” coll. Janson” “*pisciformis*[sic!] Dey, Waigiou” “*foveicollis* var.”
“PARATYPE” “*v. pisciformis* THERY det.” [1 ♀ (KBIN)]

I'm not aware of the holotype having ever been designated!

?**Holotype:** “Syntype” ♂ “N. Guinée, Duivenbode” “*apicalis* Kerr. Type” “Kerremans 1903·59”
[1 ♀ (BMNH)]

Almost certainly the holotype: described apparently from single specimen, the other “syntype” (from Sulo) does not belong to the type-series!

“**Syntype**”: “Syntype” ♂ “Sulo, Stauding.” “*apicalis* Kerr. Type” “Kerremans 1903·59” [1 ♀ (BMNH)]

Not type: described from Nouvelle-Guinée!

“**Syntype**”: “Syntype” ♂ “Waigiou, Stauding.” “*dissimilis* Kerr. Type” “Kerremans 1903·59” [1 ♀ (BMNH)]

Not type: described from Sulo!

Additional material: 15 ♀, 1 ♂

Characters [Fig. 2]: Females [5] 24.5×7.5 – 28×9 mm. Body entirely green with some golden tones. Sulcus of prosternal process with rather dense, not very long, erect white pilosity; pubescence of dfp areas very dense, recumbent, covered with rusty pulverulence, body otherwise practically glabrous. Pronotal sides subparallel; anterolateral angles rounded, collar well accentuated on sides but short; basal margin markedly subangularly bisinuate, basal angles definitely, anterior but slightly acute; median lobe of apical margin not very prominent; fossae rather narrow, often subdivided into anterolateral and basal portions by oblique protrusion of prehumeral relief; anteromedian fovea short, anterolateral narrowly prolonged to join fossa; bottom of median sulcus finely and very densely, disk otherwise very finely and sparsely, lateral parts rather coarsely but not densely punctured. Elytra markedly caudate; no subhumeral protrusions; sculpture basally coarse, gradually finer (but still not very fine) towards apices; perilateral sulcus relatively broad and long, otherwise elytral surface regularly convex. Proepisterna entirely dfp or crisscrossed with loose network of smooth elevations; sides of sternum extensively dfp; marginal and middiscal abdominal stripes well developed, distinctly separated; abdominal plaque rather low, roundedly obtuse-angled in profile; apex of anal sternite of female broadly roundedly subtruncated with shallow indication of median incision. Male unknown.

Geographical distribution [Map 1]: Seems (if taxonomic distinction of *C. geelvinkiana* GESTRO is real) endemic to Waigiou I. at the northwestern tip of the Vogelkop Peninsula. . The status of the KBIN “paratype” is problematic: the holotype has apparently never been designated; “Sulo” is evident mislabelling.

Remarks: Poorly known taxon, usually (*e.g.* KERREMANS 1910, THÉRY 1926, OBENBERGER 1926, BELLAMY 2008) considered a synonym or variety of *C. foveicollis* (BDV.) which, however, belongs to the *Ventricosa*-circle (whose evolutionarily basal representatives have been notoriously confused with those of *C. [albertisi]* superspecies with metallic pronotum and may, indeed – in case of poor development of elytral dfp sulci – be deceptively similar to them.



Fig. 1

Cyphogastra coriacea KERR.
♂ HT [MNHN], N. Guinea: Mafor I.



Fig. 2

Cyphogastra pisciformis DEYR.
♀ [BPejl] Waigiou

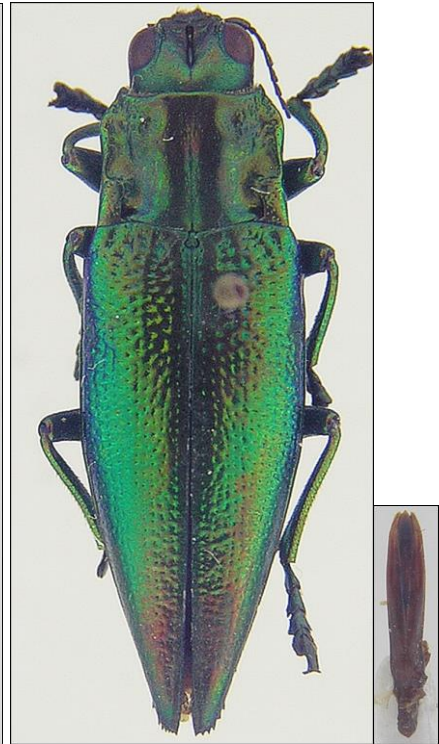


Fig. 3

Cyphogastra geelvinkiana GST.
♂ [BPgjn], N. Guinea: Dorei



Fig. 4

Cyphogastra flavitarsis GST.
♀ [BPlzf], N.G.: Korido

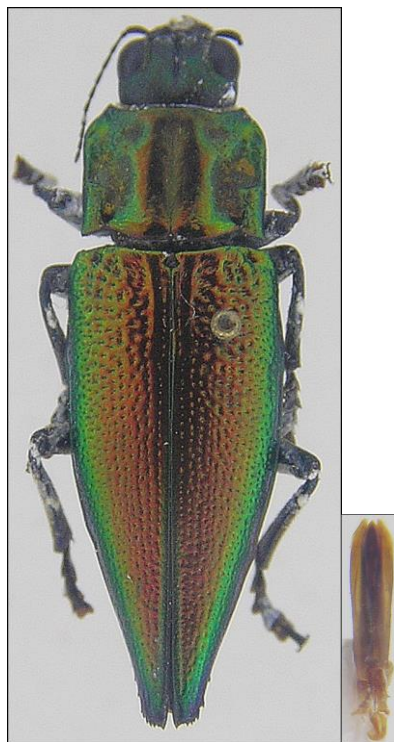


Fig. 5

Cyphogastra aereiventris KERR.
♂ [EONMP], N. Guinea: Mt. Rawlinson

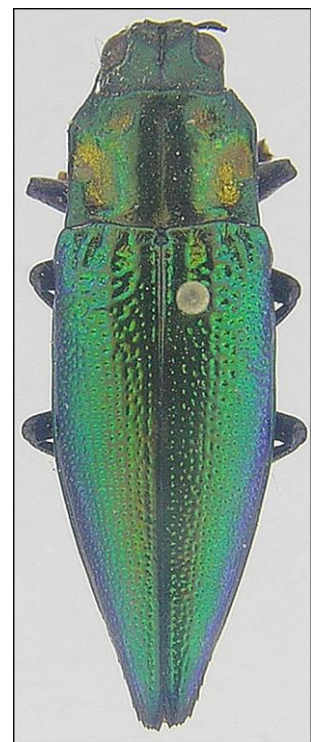


Fig. 6

Cyphogastra aereiventris KERR.
♀ [BPejt], N.G.: 45 km. W Madang



Fig. 7
Cyphogastra nitida KERR.
 ♂ [BPejy], N.Guinea: Huon Pen. Wareo

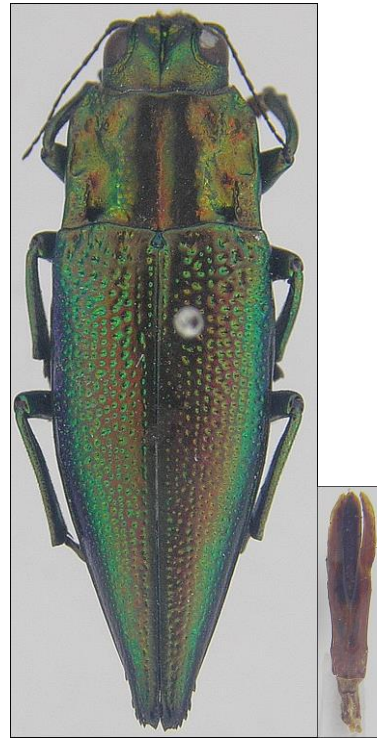


Fig. 8
Cyphogastra nitida KERR.
 ♂ [EONMP], N.Guinea



Fig. 9
Cyphogastra violaceiventris KERR.
 ♂ [BPly], N.Guinea: Bulolo



Fig. 10
Cyphogastra albertisi GST.
 ♂ [BPlye], N.Guinea: Markham Riv.

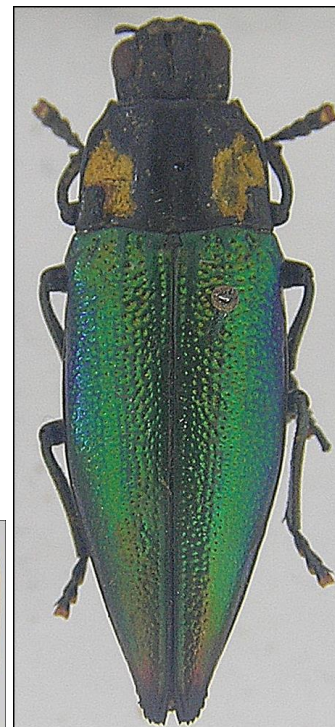


Fig. 11
Cyphogastra malinowskii HOL.
 ♀ HT [BPjuo], Normanby I.: Sa-ala

***Cyphogastra (s.str.) geelvinkiana* GST.**

Cyphogastra geelvinkiana GESTRO 1877: 353-354

Cyphogastra aurifossa OBENBERGER 1922: 67

Material examined:

Lectotype [of *C. geelvinkiana* GST.]: „[N. Guinea, Mafor, V. Beccari 1875]” „**TYPUS**” „*geelvinkiana Gestro*” „**SYNTYPUS, *Cyphogastra geelvinkiana Gestro, 1877***” “Museo Civico di Genova” [♂ MCGD]

LT designated hereby!

Paralectotypes [of *C. geelvinkiana* GST.]: „[N. Guinea, Mafor, V. Beccari 1875]” „**SYNTYPUS, *Cyphogastra geelvinkiana Gestro, 1877***” ”Museo Civico di Genova” [1♀ MCGD]; „[N. Guinea, Mafor, Beccari, V 1875]” “*Geelvinkiana Gestro Type*” [3♂ (BMNH)]

Lectotype [of *C. aurifossa* OBB.]: „[N. Guinea, Mafor, Beccari, V 1875]” “Oscar Loebel” “**Vetter**” “Coll. Nickerl” “**Mus. Nat. Pragae, Inv. 20024**” “*Cyphogastra aurifossa Obenberger*, sensu J. Obenberger” [♂ (EONMP)]

LT designated hereby!

Paralectotypes [[of *C. aurifossa* OBB.]: „[N. Guinea, Mafor, Beccari, V 1875]” „**TYPUS**” „*C. aurifossa m. Type*, Det D^f Obenberger” “**Mus. Nat. Pragae, Inv. 20023**” [1♀ (EONMP)]; „[N. Guinea, Mafor, Beccari, V 1875]” „**TYPUS**” “*Pipitz 1882*” “Coll. Nickerl” “*Cyphogastra aurifossa Obenberger*, sensu J. Obenberger” “**Mus. Nat. Pragae, Inv. 20025**” [1♀ (EONMP)]; „[N. Guinea, Mafor, Beccari, V 1875]” „**TYPUS**” “*Ancey 1884*” “Coll. Nickerl” “*Cyphogastra aurifossa Obenberger*, sensu J. Obenberger” “**Mus. Nat. Pragae, Inv. 20026**” [1♀ (EONMP)]; „Mafor” „**TYPUS**” „*C. aurifossa m. Type*, Det D^f Obenberger” [1♀ CLB]; “Coll. R.I.Sc.N.B., Nouvelle Guinée” “[N. Guinea, Mafor, V 1875, Beccari]” “R.I.Sc.Nat.Belg. I.G. 16519” “*geelvinkiana Gestro*, cf. Ann.Mus.Civ.Sci.Nat. 9: 353” “-” “*Cyphogastra geelvinkiana Gestro co-type*, A. Descarpentries det.” | “| Cotype |” | “| Paratype |” [1♀ (KBIN)]

EONMP type-labels here marked as yellow are in fact orange!

?**Paralectotype** [of *C. aurifossa* OBB.]: “Malay” „**TYPUS**” “*Cyphogastra aurifossa m. Type*, Det D^f Obenberger” [1♀ (EONMP)]

“Malay” seems to be the result of misreading of “Mafor”; original OBENBERGER’s determination label apparently confirms the belonging of the specimen to the type-series

Additional material: 10 ♂, 41 ♀, 1 ♂

Characters [Fig. 3]: Males [10] 20.5×6.5 – 26×8; females [47] 21.5×6.5 – 38×12.5 mm. Head, pronotum and ventral side golden to bluish-green with usually contrastingly golden bottoms of pronotal fossae; elytra green to blue, becoming more golden towards apices. Sulcus of prosternal process with moderately long, dense in males, less so in females, erect whitish pilosity, becoming sparse along midline of metasternum and practically vanishing on remaining ventral surface – only dfp areas covered with very dense, short, recumbent white pubescence; dorsal surface practically glabrous. Pronotal sides subparallel or slightly convergent; anterolateral angles roundedly obtuse, collar more or less distinct laterally but short; fossae relatively narrow but not divided, joining inconspicuous sulciform anterior foveolae; laterobasal reliefs small, elongately tetragonal; discal punctulation very fine and sparse, punctures of lateral parts coarser but not dense. Elytra distinctly caudate; no subhumeral protrusions; subhumeral dfp stripe very narrow, often barely discernible; sculpture basally rather coarse, gradually finer towards apices. Proepisterna with irregularly spaced dfp depressions on slightly elevated smooth background; puncturation of sulcus of prosternal process fine and very dense, irregular; sides of sternum extensively dfp; marginal and middiscal abdominal stripes well developed, distinctly separated; abdominal plaque low, usually broadly obliterated, finely and sparsely punctulate; apex of anal sternite in female rounded with or without indication of median incision, in male broadly semicircularly emarginaed; aedoeagus narrowly fusiform, pale brownish with paler apices of parameres and darker apex of penis.

Geographical distribution [Map 1]: described from Mafor I. (Geelvink Bay) from where almost all (the only exception being a single individual labelled “Dorei”) examined specimens originate.

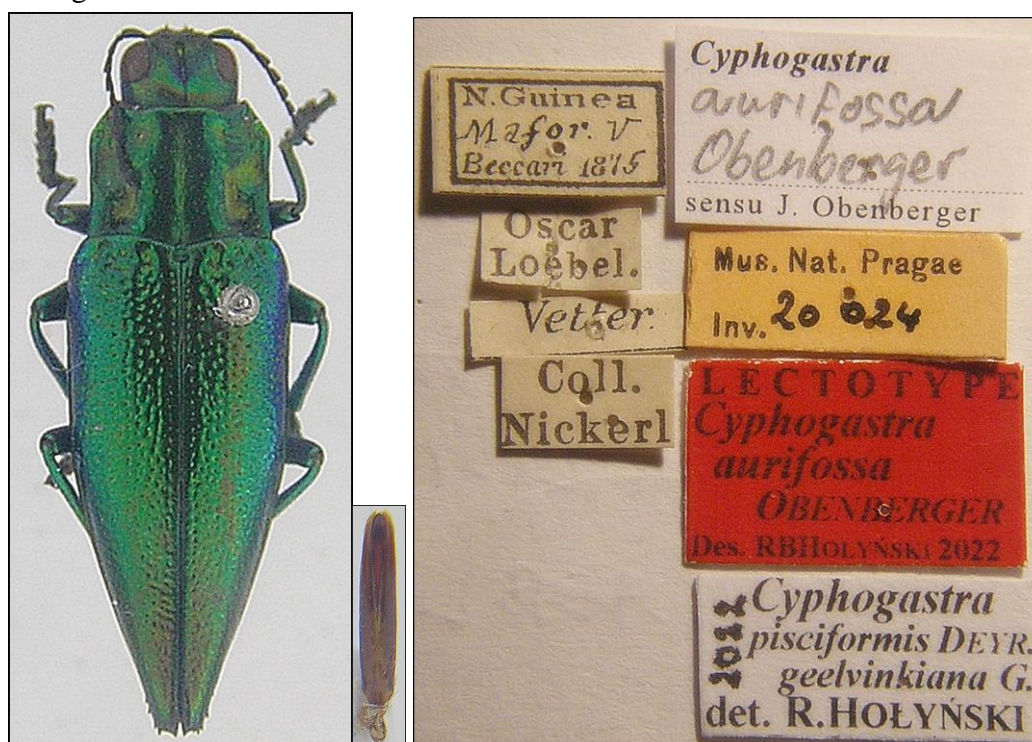


Fig. 12

Lectotype (hereby designated) of *Cyphogastra aurifossa* OBB.

Remarks: The morphological differences from *C. pisciformis* DEYR. are very slight and not fully diagnostic, so the status of this taxon remains somewhat uncertain: perhaps the discovery of male of the Waigean form and/or collection of material from intermediate areas (northwestern part of the Vogelkop Peninsula) could clarify the question. No intermediates between *C. geelvinkiana* KERR. and adjacent *C. aereiventris* KERR. are known to me, but dorsally green specimens of geographically remote *C. nitida* KERR. look often practically identical [see **Remarks** under that taxon]. The examination of the type series of *C. aurifossa* OBB. [cf. **Fig. 12**] has confirmed the synonymy.

Cyphogastra (s.str.) *flavitarsis* GST.

Cyphogastra geelvinkiana var. *flavitarsis* GESTRO 1877: 354

Material examined:

Lectotype: “N. Guinea, Korido, V. 1875., Beccari” “Museo Civico di Genova” [1♀ (MCGD)]

Labelled as lectotype in MCGD in 2000, but hitherto the designation has not been published – hereby I am complementing the procedure.

Paralectotype: “N. Guinea, Korido, V. 1875., Beccari” “Museo Civico di Genova” [1♀ (MCGD)]

Additional material: 1 ♀

Characters [Fig. 4]: Female [1] 28×9) mm. Dorsally dark green with golden pronotal fossae (no appreciable golden hue towards elytral apex); ventral side somewhat paler green; two basal antennomeres brown with strong bluish-green lustre, more distal joints missing; tarsi testaceous, only claw joint brownish-black. Pubescence only in ventral dfp depressions (dense, recumbent) and in prosternal sulcus (sparse, erect) distinct, otherwise body glabrous. Pronotal sides subparallel; anterolateral angles well marked but not protruding,

collar well developed laterally; fossae moderately broad, undivided, joining sulciform anterolateral foveola; anteromedian small, rounded; laterobasal reliefs regularly elongately tetragonal, their anteromedian angles right; pronotal disk very finely and very sparsely punctulated, puncturation of median furrow somewhat coarser and much denser, of lateral parts moderately coarse and dense. Elytra markedly caudate; no subhumeral protrusions; sculpture basally rather coarse, gradually finer towards apices; subhumeral dfp sulcus inappreciable. Proepisterna entirely dfp; sides of sternum with some dfp spots; marginal and middiscal abdominal stripes narrow but well developed; abdominal plaque totally obliterated; apex of anal sternite broadly rounded. Male unknown.

Geographical distribution [Map 1]: Known only from Korido on Misori [=Supiori] I. (in fact northwestern part of Biak I. in Geelvink Bay).

Remarks: Yellow tarsi being the only known apparently reliable diagnostic character (some minor differences, like sculpture of proepisterna, have been hitherto checked only on single specimen from my collection) the taxonomic status of *C. flavitarsis* *GST.* remains disputable.

***Cyphogastra (s.str.) aereiventris* KERR.**

Cyphogastra aereiventris KERREMANS 1895: 205-206

Cyphogastra infranitens KERREMANS 1910: 186-187

Material examined:

?**Holotype:** „Syntype” ♂ „Bornéo, Stauding.” „*aereiventris* Kerr. Type” “Kerremans 1903-59” [1 ♀ (BMNH)]

Labelled in BMNH as syntype, but described apparently from single specimen from “Borneo”, the other “syntype” bearing the label “Sulo”!

“**Syntype**”: “Syntype” ♂ “Sulo, Stauding.” “*aereiventris* Kerr. Type” “Kerremans 1903-59” [1 ♀ (BMNH)]

Not type: described from “Borneo”!

Additional material: 3 ♂, 65 ♀, 9 ♂

Characters [Figs. 5, 6]: Males [3] 24×7 – 25×7.5, females [59] 22×6.5 – 32.5×10.5 mm. Dorsal side from green to dull golden-bronzed; elevated parts of ventral surface from violaceous through blue and green to bronzed, dfp areas golden-cupreous (contrasting) to warm bronzed (concolorous); epipleura concolorous or golden-cupreous [for single exceptionally coloured specimen see **Remarks**]. Sulcus of prosternal process overgrown with sparse (♀) or very dense (♂) erect whitish pilosity, becoming gradually shorter and sparser along midline of metasternum; pubescence of dfp areas very dense, short, recumbent, often covered with rusty pulverulence. Sides of pronotum subparallel to slightly convergent, anterolateral angles not prominent, fossae broadly Γ -shaped, anterior foveolae usually well developed, often connected to fossae. Elytra caudate, no subhumeal protrusion or dfp furrow, punctures coarse up to apices but becoming much finer apically. Proepisterna entirely dfp or (less frequently) with loose network of glabrous elevations; dfp areas on metasternum, metacoxae and abdomen extensive; perimarginal and middiscal abdominal dfp stripes broad, in males barely separated to make almost entire lateral parts dfp; abdominal plaque low, often nearly obliterated; apex of anal sternite rounded or subtruncate with or without shallow indication of medial incision in females, deeply angularly emarginated at middle in males; *aedoeagus* rather wide, subparallelsided, testaceous with dark brown penis.

Geographical distribution [Map 1]: Widely distributed between Geelvink and Astrolabe Bays.

Remarks: Ventral colouration varies widely from predominatingly violaceous or blue (usual in the western part of the area) to almost uniformly warm bronzed (typical of the eastern part), suggesting some subspecific differentiation – but the proportions change very smoothly and apparently neither variant becomes anywhere exclusive. A single specimen from Stephansort (perhaps significantly: just in the area of possible parapatry with and *C. nitida* KERR.) looks contrastingly different from other *C. aereiventris* KERR. but deceptively similar (viewed from above virtually identical) to the types of *C. chalcea* OBB. [see **Remarks** under *C. nitida* KERR.] – the only appreciable differences being bronzed ventral side and contrastingly carmine-red (as in *C. violaceiventris* KERR.) epipleura. The distribution of this taxon – widely intercalated between (clearly different from *C. aereiventris* KERR. but almost indistinguishable from each other) *C. geelvinkiana* GST. and *C. nitida* KERR. – is rather astonishing [see **Remarks** to the latter for more detailed discussion].

***Cyphogastra (s.str.) nitida* KERR.**

Cyphogastra nitida KERREMANS 1895: 208-209

Cyphogastra fossifrons KERREMANS 1895: 206

Cyphogastra cupricollis KERREMANS 1895: 207-208

Cyphogastra chalcea OBENBERGER 1922: 67-68

Cyphogastra simplex THÉRY 1923: 244-246

Cyphogastra inapicalis THÉRY 1926: 71

Cyphogastra simplicissima OBENBERGER 1926: 120

Material examined:

Holotype [of *C. fossifrons* KERR.]: “Type”[⊙] “N. Guinée, Meyer D.” “*fossifrons* Kerr. Type” “Kerremans 1903-59 [1♀ (BMNH)]

Holotype [of *C. cupricollis* KERR.]: „Type”[⊙] „Bornéo, Stauding.” „*cupricollis* Kerr. Type” “Kerremans 1903-59” [1♀ (BMNH)]

Lectotype [of *C. chalcea* OBB.]: „Finschhafen, N.Guin.” „TYPUS” „*C. chalcea* m. Type, Det D^f Obenberger” „Mus. Nat. Pragae, Inv. 20 008” [1♀ (EONMP)
LT designated hereby!

Paralectotype [of *C. chalcea* OBB.]: „Dtsch. N. Guinea” „TYPUS” „*C. chalcea* m. Type, Det D^f Obenberger” „Mus. Nat. Pragae, Inv. 20 009” [1♀ (EONMP)]

Additional material: 19 ♂, 401 ♀, 1 ♂

Characters [Figs. 7, 8]: Males [19] 20.5×6.5 – 28×8.5, females [403] 22.5×7 – 32.5×10.5 mm. Head, pronotum, elytra and ventral side in various combinations green, bronzed or cupreous. Pilosity of prosternal sulcus semierect, white, in male very dense and extended to midmetasternal furrow; pubescence of dfp areas very short, recumbent; otherwise body glabrous. Pronotal sides subparallel, anterolateral angles not protruding (sometimes distinctly rounded), collar only laterally more or less distinct; fossae very broadly Γ-shaped, usually connected to one or both anterior foveolae. Elytra distinctly caudate; no subhumeral protrusion or any dfp areas; puncturation rather fine, dense, almost regular, progressively finer backwards. Proepisterna entirely dfp or with irregular network of smooth elevations, sides of metasternum, metacoxae and abdomen with more or less extensive dfp spaces, perimarginal and middiscal dfp stripes well developed but narrow; metasternum medially furrowed; abdominal plaque rather high, its posterior slope vertical or even somewhat “overhanging” in profile; apex of anal sternite rounded in female, rather shallowly emarginated in male. Parameres ferruginous, penis piceous brown.

Geographical distribution [Map 1]: Endemic to the slopes of Finisterre and Saruwaged Ranges between the Astrolabe Bay and Huon Gulf.

Remarks: Despite the “page precedence” of *C. fossifrons* KERR. and *C. cupricollis* KERR. I, in my capacity as “first reviser” (Art. 24.2 of the Code), am hereby selecting – much more

consistently interpreted in literature and much more frequently applied in collections – *C. nitida* KERR. as the valid name of this taxon. Enigmatic is its relation to *C. geelvinkiana* GST.: morphologically they are almost identical (the characters distinguishing them are so slight and not reliably diagnostic that in case of sympatric or parapatric distribution I would not hesitate to consider them synonyms!), but widely separated geographically by the “intercalated”, clearly different, *C. aereiventris* KERR. The true taxonomic/phylogenetic relations remain unresolved (male genitalia could perhaps help to clarify, unfortunately in all males currently accessible to me *aedoeagi* are missing or damaged), but most plausible interpretation seems to be the pattern known as “polytopic subspecies”: taxonomically not or barely distinct taxon occupying two or more disjunct areas. Such situation has usually (cf. e.g. MAYR 1963) been explained on grounds of the frontoactive (HOLYŃSKI 2009) [=centripetal: “we should expect to find the primitive types of a group persisting in the area of its origin and the specialised forms in districts remote therefrom, the modifications being brought about by the varying conditions of existence incident to wandering” (POCOCK’s “progression rule” – NELSON & PLATNICK 1984)] speciation hypothesis. Acceptation of this idea would mean that the ancestral form is *C. aereiventris* KERR., whose peripheral populations spreading to the west evolved, influenced by the environmental conditions distinct from those in the center, into *C. geelvinkiana* GST., and similarly the easternmost ones underwent – **practically identical!** – modifications transforming them into *C. nitida* KERR. I find this version hardly believable: **even if** the factors of natural selection at both ends of so wide area are the same, identity of morphological modifications would be highly improbable, and it is difficult to imagine why just the environmental agents on a lowland islet in Geelvink Bay should be so similar to those in the mountainous area 1400 km. away? Fortunately, there are at least two other possibilities:

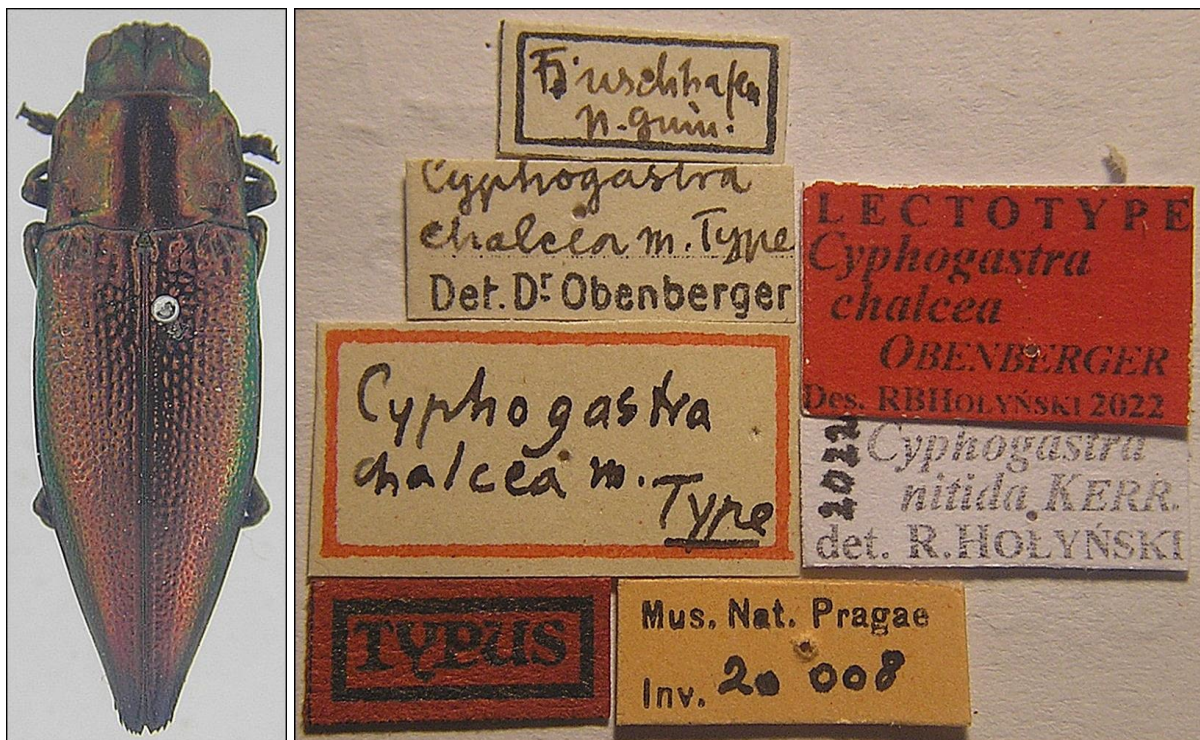


Fig. 13

Lectotype (hereby designated) of *Cyphogastra chalcea* OBB.

1) the invasion of competitively dominant taxon (in this case *C. aereiventris* KERR. – perhaps a descendant of *C. violaceiventris* KERR.?) in the center of widely but narrowly spread homogeneous (*geelvinkiana*≈*nitida*) populations, resulting in subdivision of the latter into two widely disjunct parts, and 2). – in my opinion the most likely – centroactive [=centrifugal] evolution concept predicting – opposite to the frontoactive model – that just “*the peripheral populations ... would be the most plesiomorphic*” (BRIGGS 1999; see also BRIGGS 2000 and HOLYŃSKI 2009 for discussion), *i.e.* the central populations evolved while those inhabiting peripheries remained unchanged (the “*driving force of this dynamic system is apparently the predominance of successful speciation involving relatively large population with higher genetic diversity*” – BRIGGS 1999). The syntypes of *C. chalcea* OBB., at the first glance, look very distinctive [Fig. 13], but this is only the result of unusual, dark cupreous-bronzed colouration paired with rather large size: lack of any other discernible differences, sympatric (Finschhafen) occurrence, as well as occasional appearance of deceptively similar forms in *e.g.* *C. aereiventris* KERR. (see **Remarks** under that taxon!) do not allow to consider it as anything more than a rare infrasubspecific variety of *C. nitida* KERR. To avoid possible confusion (*e.g.* due to the existence of near-identical form of *C. aereiventris* KERR. (see above!), I am hereby designating the more exactly (“Finschhafen” vs. “Dtsch. N.Guinea”) labelled syntype as the lectotype.

***Cyphogastra (s.str.) violaceiventris* KERR.**

Cyphogastra violaceiventris KERREMANS 1895: 203-204

Material examined

Syntypes: “Syntype” ♂ “Bornéo, Stauding.” “*violaceiventris* Kerr. Type” “Kerremans 1903-59” [1♀ (BMNH); „Syntype” ♂ “N. Guinée, Stauding.” “*violaceiventris* Kerr. Type” “Kerremans 1903-59” [2♀ (BMNH)]

Additional material: 44 ♂, 179 ♀, 1 ♂

Characters [Fig. 9]: Males [43] 19×6 – 25.5×8; females [171] 22.5×6.5 – 36×12 mm. Dorsal side varies from green to bronzed-cupreous (head and pronotum often differs in colour from elytra) with golden-cupreous pronotal fossae, purplish to carmine-red (exceptionally golden) epipleura and more or less conspicuous golden to cupreous-red lateroapical patch; ventrally purplish-violaceous, very rarely green; exceptionally all body black with only traces of cupreous or purplish-red colouration on, respectively, fossae and epipleura. Pubescence more or less distinct and dense, erect in prosternal sulcus and very short, dense, recumbent on dfp areas, otherwise not apparent. Frontoepistomal ridge high, markedly angular; frontal depression deep, elongately triangular, reaching behind upper margins of eyes, almost impunctate except in poorly individualized anterior cavity; vertex very finely and sparsely punctulate; V:H≈0.52. Pronotal sides subparallel or slightly convergent; anterolateral angles moderately accentuated. Fossae broad, anterior foveolae usually distinct. Elytra definitely caudate. Puncturation moderately fine; no dfp sulci. Proepisterna entirely, sides of meso- and metasternum extensively dfp, perimarginal and middiscal dfp stripes broad but rather widely separated. Abdominal plaque low, obtuse-angled in profile, often almost obliterated; apex of anal sternite rounded, often with shallow indication of median incision in ♀, broadly triangularly emarginated in ♂. *Aedoeagus* testaceous (sometimes penis apically darker, piceous-brown), rather broadly elongately subbellyptical in outline.

Geographical distribution [Map 1]: Mountainous areas of east-central New Guinea between Morobe Pr. (most specimens have been collected in the Watut Riv. valley, especially in the vicinities of Bulolo) and Western Highlands Pr.

Remarks: I have presently no access to any syntype, so cannot designate lectotype, but it should be selected from those labelled as “N. Guinée”: in the original description no locality has been mentioned, but later KERREMANS (1910) gives New Guinea as the distribution area. *C. violaceiventris* KERR. looks somewhat intermediate between *C. aereiventris* KERR. (entirely metallic dorsal side) and *C. albertisi* GST. (usually conspicuous lateroapical patch on elytra, purplish-red epipleura).

***Cyphogastra (s.str.) albertisi* GST.**

Cyphogastra Albertisii GESTRO 1877: 352
Cyphogastra cyanipes KERREMANS 1895: 199-200
Cyphogastra amabilis KERREMANS 1896: 355-356
Cyphogastra nigricollis KERREMANS 1896: 356-357
Cyphogastra pyritosa KERREMANS 1917: 296
Cyphogastra papuana OBERBERGER 1911: 255-256
? *Cyphogastra violaceorubra* THÉRY 1923: 230-231
Cyphogastra suffusa WATERHOUSE 1914: 492

Material examined:

Syntype [of *C. albertisi* GST.]: “**Syntype**”[⊙] “N. Guinea, Isola Yule, VI 1875, L.M.D’Albertis” “*albertisi Gestro Type*” “Kerremans 1903-59” [1♂ (BMNH)]

“Syntypes” [of *C. albertisi* GST.]: “**Syntype**”[⊙] “Darnley Is., D’Albertis ‘77” “*albertisi Gestro Type*” “Kerremans 1903-59” [1♂ (BMNH)]; „Darnley Is., D’Albertis 77” „**TYPUS**” „**Albertisii Gestro**” [1♂ (MCGD)]

Not types: described from “Ins Yule seu Roro”!

Holotype [of *C. cyanipes* KERR.]: “**Type**”[⊙] “N. Guinée, Stauding.” “*cyanipes Kerr. Type*” “Kerremans 1903-59” [♀ (BMNH)]

Holotype [of *C. amabilis* KERR.]: „N.GUINEA S.E., M^{le} Astrolabe, LORIA, II. 93” “*amabilis Kerr., Type*” „**TYPUS**” „*amabilis Kerrem.*” “**HOLOTYPUS, Cyphogastra amabilis Kerremans, 1896**” “Museo Civico di Genova” [♀ (MCGD)]

Holotype [of *C. nigricollis* KERR.]: „N.GUINEA MER., PORT MORESBY, Giugno 1889, L.LORIA” “*nigricollis Kerr., Type*” „**TYPUS**” „*nigricollis Kerrem.*” “**HOLOTYPUS, Cyphogastra nigricollis Kerremans, 1896**” “*timoriensis albertisi, Théry Ann. Soc. Ent. Belg. 1926, p. 72*” “Museo Civico di Genova” [♀ (MCGD)]

Holotype [of *C. pyritosa* KERR.]: “Redscar Bay, Br. New Guinea, (Lix, 94)” “*Cyphogastra pyritosa Kerr.*” “*Type*” “Museum Paris, ex Coll. R. Oberthui” “**TYPE**” [♀ (MNHN)]

Holotype [of *C. papuana* OBB.]: “Finschhafen, Neu-Guinea, P.RinglerHalle” “*Cyphogastra papuana m. Type*, Det. D^e Obenberger” “**TYPUS**” “Mus. Nat. Pragae, Inv. 20 020” [♀ (EONMP)]

Holotype [of *C. suffusa* WATH.]: “**Type**”[⊙] “S.E. New Guinea, 89-70” “*Cyphogastra suffusa Type Waterh.*” [♀ (BMNH)]

Additional material: 51 ♂, 266 ♀, 49 ♂

Characters [Fig. 10]: Males [52] 18.5×6 – 27.5×8.5, females [269] 19.5×6 – 34×11. Head and pronotum black (often with rather strong purplish-cupreous hue); elytra from cupreous through green to (rarely) dark blue with more (usually) or less conspicuous golden to cupreous lateroapical patch, carmine or purplish epipleura and and black tips; ventral side blackish with brassy-green, golden or bronzed tinge; rarely (*var. papuana* OBB. – [Fig. 14]) almost entirely black with indefinite purplish lateral patch on elytra. Dfp areas covered with short, dense, recumbent pubescence and ochraceous pulverulence; median sulcus of prosternal process and metasternum with (very dense in males, sparse in females) white erect pilosity; elevated surfaces of body practically glabrous. Pronotal sides subparallel or slightly convergent; anterolateral angles not protruding; fossae more or less broad, axe-shaped; anterior foveolae usually inconspicuous. Elytra definitely caudate; no subhumeral protrusion or dfp sulci; puncturation finer towards apices but rather coarse throughout. Proepisterna

entirely dfp or (less frequently) with more or less extensive smooth elevations; abdominal plaque low, in profile more or less broadly rounded, sparsely covered with elongate punctures; marginal and middiscal dfp stripes well developed, in males often almost contiguous, in females widely separated; apex of anal sternite rounded [♀] or broadly subtriangularly emarginated [♂]; *Aedoeagus* slightly widened in apical half, parameres ferrugineous, penis dark brown.

Geographical distribution [Map 1]: Widely spread around the southeastern New Guinea from southern shore of Huon Peninsula to the southeastern tip of the island and “back” northwestwards to at least Yule I. and Angabunga Riv.; seems to avoid mountains except along river valleys; found also from Darnley and Cornwallis (=Dauan) Islands in the Torres Strait.



Fig. 14

Holotype of *Cyphogastra papuana* OBB.

Remarks: Despite pronounced variability easily recognizable species: only at the northwesternmost end of the distribution area some intermediates between *C. albertisi* GESTRO and *C. violaceiventris* KERR. or *C. nitida* KERR. occur, whereas some specimens with unusually broad pronotal dfp fossae look similar to some *C. bicolor* WATH. and black variety (m. *papuana* OBB.) may be confused with similar varieties of other species (*C. violaceiventris* KERR., *C. praeclara* KERR., &c.). *C. violaceorubra* THY., described from “Haidana Collingwood Bay” is not known to me and its description does not allow exact taxonomic interpretation; it seems to match best the characters of the present species: I have never seen *C. albertisi* GST. with purplish-violaceous elytra, but generally its elytral colouration is highly variable and e.g. purplish-cupreous is by no means rare; other synonyms seem well established, but the types were examined by me long ago and, although their reexamination would anyway be highly desirable, presently they are not available to me for study, so I am able only to compare my notes with original descriptions.

Cyphogastra (s.str.) malinowskii sp.n.

Material examined:

Holotype: “Esa-ala, Normanby Is., Milne Bay Dist., Papua, March 1960, Coll. Sir Alan H. Mann”
“*Cyphogastra albertisi* Gestro, C.M.F. von Hayek det. 1965” [♀ (RBH: BPjuo)]

Paratypes: “NEW GUINEA: SE, Milne Bay Dist., 20 IV 1970” “*Ex Sidelia*”
“J.L.Gressitt, Collector, BISHOP MUSEUM” [1 ♀ (BPBM)]; “Normanby Is., Milne Bay,
Papua New Guinea, December 1975, J.I.Menzies” [1 ♀ (RBH: BPjun)]; “NEW GUINEA:
PAPUA, Normanby I., Wakaiuna, Sewa Bay, Oct. 25-30-1956” “W.W.Brandt, Collector” (1 ♀
(BPBM), 1 ♀ (RBH: BPlzh)]; “NEW GUINEA: PAPUA, Normanby I., Wakaiuna, Sewa Bay,
Nov. 1-10-1956” “W.W.Brandt, Collector” (1 ♀ (BPBM)]; “NEW GUINEA: PAPUA,
Normanby I., Wakaiuna, Sewa Bay, Nov. 11-20-1956” “W.W.Brandt, Collector” (1 ♀
(BPBM)]; “NEW GUINEA: PAPUA, Normanby I., Wakaiuna, Sewa Bay, XI-11-1956”
“W.W.Brandt, Collector” (1 ♀ (BPBM)]; “NEW GUINEA: PAPUA, Normanby I., Wakaiuna,
Sewa Bay, Dec. 1-10-1956” “W.W.Brandt, Collector” (1 ♀ (BPBM)]; “NEW GUINEA:
PAPUA, Normanby I., Wakaiuna, Sewa Bay, Dec. 11-20-1956” “W.W.Brandt, Collector” (1 ♀
(BPBM),]; “NEW GUINEA: PAPUA, Normanby I., Wakaiuna, Sewa Bay, Dec. 21-31-1956”
“W.W.Brandt, Collector” (1 ♀ (BPBM),]; “NEW GUINEA: Good-enough Is Milne Bay Pr., nr
Bolu Bolu 100 m.+/-, 29. III. 1976, B. Beehler” (1 ♀ (RBH: BPlzh)]; “Bolo Bolo,
Goodenough Is., P.N.G, Dec. 2004” (1 ♀ (TT)] “*N.GUINEA*, Losvia Is., 15-XI-1973”
“T.Moore det., *Cyphogastra violaceiventris*” (1 ♀ (RBH: BPlyh)]; “*Ex On tree trunk*, Mixed
garden, Kiriwina, Trobriand, T. Male 27.x.85” (1 ♀ (RBH: BPjul)]; “*Kaibola Village*
Trobriands, Milne Bay Distr., Papua, 7: 11: 1965, *Northern Kiriwina*, Coll. K. Hill”
“*Cyphogastra timoriensis* var. *albertisi* Gest ?, B. Levey det. 1968” (1 ♀ (RBH: BPjum)];
“1575” “Koll.D^r.A.Frh.v.Hoschek, Woodlark, Meyer-Darcis” “*c.typo exp., Cyph. Gestroi*
Kerr., Det. Hoscheck 1926” (1 ♀ (KBIN)]

Additional material: 1 ♂, 7 ♀, 1 ♂

Holotype [Fig. 11]: Female 28.5×9 mm. Head and pronotum black; elytra green with purplish anterior part of epipleura, small cupreous lateroapical spot and black tips; body below dull golden-green. Sulcus of prosternal process with dense, sulcus and coarse punctures of metasternum with sparse, short erect pilosity; dfp areas densely covered with short recumbent pubescence and orange pulverulence; elevated parts of body glabrous.

Epistome subtrapezoidally emarginate, no distinct epistomal ridge; frontoepistomal border marked by very deep transverse groove and biarcuate carina. Front wider than long, sides subparallel; frontal depression deep, narrowly triangular, extending slightly beyond upper margins of eyes, almost impunctate; anterior cavity poorly delimited, finely and sparsely punctulated; lateral ridges broadly obliterated, almost smooth; pericocular grooves very deep and broad but not extending to hind margins; V:H≈0.53.

Pronotal sides distinctly, somewhat arcuately convergent, anterolateral angles very broadly rounded; truncation concave, no distinct collar; base shallowly subangulately bisinuate with acute basal angles; anterior margin shallowly trisinuate with somewhat protruding median lobe; median furrow and middiscal elevations very finely and sparsely, pronotal sides moderately punctured; fossa broad, Γ-shaped with acutely prolonged anterolateral angle; prehumeral relief elongately quadrangular; anterior foveolae practically lacking. Scutellum small, trapezoidal, medially sulcate, smooth.

Elytra 2.2× longer than wide, distinctly caudate; sides obliquely truncated at humeri, without subhumeral protrusion, subparallel in basal $\frac{2}{5}$, slightly widened to midlength and sinuately convergent to narrowly jointly rounded apices; lateroapical margin minutely sharply denticulate; puncturation not very dense, almost regular, moderately coarse basally but becoming markedly finer apicalwards; no dfp sulci.

Proepisterna entirely, metasternum (including bottoms of coarse punctures on slopes) and metacoxae very extensively dfp, perimarginal and middiscal dfp stripes of abdomen broad but widely separated; abdominal plaque very low, broadly rounded in profile, finely and very sparsely elongately punctured; apex of female anal sternite roundedly subtruncaed with shallow median incision.

Variability: Male [1] 28.5×8.5, females [24] 24.5×7 – 34×11 mm. Pronotum sometimes with strong purplish shine, contrasting carmine colour of epipleura often restricted to posthumeral lobe, ventral surface with more or (usually) less distinct brassy or (rarely) golden-bronzed lustre. Proepisterna in some specimens with inconspicuous, barely elevated smooth spaces. Occasionally pronotum subparallelsided and/or anterolateral angles moderately pronounced.

Geographical distribution [Map 1]: Endemic to D’Entrecasteaux, Trobriand and ?Woodlark Islands.

Remarks: Almost certainly a subspecies of *C. albertisi* GST. – the distinguishing characters neither pronounced nor truly diagnostic (specimens of misleading morphology occur within the distribution area of both taxa) – but more abundant material is needed to reliably assess the extent of overlap and, consequently, taxonomic rank. Named after Bronisław Kasper MALINOWSKI, a Polish-British ethnologist famous especially for his studies on Trobriand Is.

C. [friendorum]-superspecies

Remarks: Small group of four species, all recently described by me (HOLYŃSKI 2019): reviously unknown or considered to belong to *C. albertisi* GST. or other taxa. Representatives of this superspecies are characterized by black pronotum with broad ovate or D-shaped fossae, more or less regularly triangular prehumeral reliefs, distinctly – often very strongly – caudate elytra, &c. They inhabit various areas in highlands of southeastern New Guinea.

Key to the identification of species of the *C. [friendorum]-superspecies*

- 1 (4) Elytra dark bronzed or black with more or less distinct metallic lustre; epipleura concolorous.
- 2 (3) Elytra dark bronzed. Anterolateral angles of pronotum slightly protruding; only relatively narrow c-shaped parts of fossae dfp *C. (s.str.) incongruens* HOL.
- 3 (2) Elytra dark black with metallic lustre. Anterolateral pronotal angles not protruding; bottoms of fossae entirely dfp *C. (s.str.) friendorum* HOL.
- 4 (1) Elytra bright metallic, often multicoloured; epipleura bright carmine
- 5 (6) Internal (medial) margins of dfp bottoms of pronotal fossae straight; anteromedian dfp foveola included in fossa. Purplish or blackish posterolateral colouration of elytra not extending beyond apical third (replaced there by [golden-]cupreous
..... *C. (s.str.) oculata* HOL.
- 6 (5) Medial margins of fossae arcuate; anteromedian foveolae not distinctly dfp, separate. Purplish or blackish colouration of elytral sides extends almost to humeri
..... *C. (s.str.) radwanskae* HOL.



Map 2

Geographical distribution of the *C. [friendorum]*-superspecies

● – *C. oculata* HOE.; ● – *C. radwanskae* HOE.; ● – *C. friendorum* HOE.; ● – *C. incongruens* HOE.



Fig. 15

C. incongruens sp.n.
HT Efogi [RBH: BPezr]



Fig. 16

C. friendorum sp.n.
♀ HT Mt.Kaindi [RBH: BPezs]



Fig. 17

C. oculata sp.n.
♂ HT Okapa [BPBM]
(aedeagus: PT [BPj-v])

Cyphogastra (s.str.) incongruens **HOL.**
Cyphogastra incongruens HOLYŃSKI 2019: 34-35

Material examined:

Holotype: „Efogi, Central Province, PNG, 12-IV-82, D.BLACK” [ø (RBH: BPezr)]

Additional material: none

Characers [Fig. 15]: (Unsexed) 27.5×8.5 mm. Head and pronotum black (dfp bottoms of pronotal fossae bright cupreous), elytra bronzed (darker laterally, somewhat paler mediad to become indistinctly greenish near contrastingly purplish-cupreous suture); sternum and abdomen black with strong bluish-green lustre. Pronotum widest at slightly protruding anterolateral angles; sides behind them straight; fossae deep, ovate; anterior foveolae hardly discernible; laterobasal relief elongately subtriangular. Elytral sides slightly but distinctly caudate; no subhumeral protrusions; surface regularly convex; puncturation rather coarse at base, gradually finer (but everywhere distinct) apicalwards; no dfp depressions. Proepisterna dfp (but neither distinctively coloured nor appreciably pubescent/pulverulent) with numerous smooth elevations; prosternal process with rather wide (*ca.* equal in width to smooth lateral rims) densely punctured medial sulcus; pubescence along sternal midline sparse but rather long, erect); metasternum narrowly depressed along midline, finely and sparsely punctulate at middle, much more coarsely on sloping sides and metacoxae; metepisterna dfp; abdominal plaque high, right-angled in profile; abdomen with small dfp depressions on sides of 2.-4. sternites and moderately developed middiscal dfp stripes. Apical part of anal sternite missing.

Geographical distribution [Map 2]: Known only from type locality: Efogi (9°10'N-147°38'E), *ca.* 60 km. NE Pt. Moresby, on southwestern slopes of Owen Stanley Range.

Remarks: Bronzed elytral colouration, dfp depressions not distinctly pubescent with no trace of pulverulence, less extensive pronotal fossae, rather coarse puncturation of less conspicuously caudate elytra, numerous smooth elevations on proepisterna, distinct dfp depressions but no smooth “mirrors” on sides of sternites, and some minor details distinguish *C. incongruens sp.n.* from its apparently closest relative, *C. friendorum sp.n.*

Cyphogastra (s.str.) friendorum **HOL.**
Cyphogastra friendorum HOLYŃSKI 2019: 33-34

Material examined:

Holotype: “PAPUA NEW GUINEA, Morobe Distr.(E), Mt Kaindi, 1820m 28.II.1977” [♀ (RBH: BPezs)]

Paratypes: “NEW GUINEA: NE, Mt. Missim, 1400 m., 7 XII 1966” G.A.Samuels Collector” [1♀ (BPBM)]; “NEW GUINEA: NE, Wau, Morobe Distr., Mt. Missim, 1200 m., 4 XII 1974” Reni Sakomdaro coll’r., Wau Ecology Inst. (Bishop)” “K-1376” [1♀ (BPBM)]; “P.N.GUINEA, Morobe Prov, Wau 4.90” [1♀ (RBH: BPfui)]; “Wau, PNG” [1♀ (TNS)]; “ASEKI, PNG” [1♀ (RBH: BPezv)]; “Aseki, PNG” [1♀ (TNS)]; “ASEKI, PNG, 2/93” [1♀ (RBH: BPlói)]; “ASEKI, PNG, 2/93” “Coll. de Sainval” [1♀ (RBH: BPlój)]; “ASEKI, PNG, 3/94” [1♀ (TNS)]; “ASEKI, PNG, 3/94” “Coll. de Sainval” [1♀ (RBH: BPlók)]; “Aseki, M. Prov., P.N.G., Aug. 1994” “furendoramunanyōtamamushi [printed in katakana] *Cyphogastra friendorum* HO ssp.n., s.str.?” “Collection of, Takeshi TERABAYASHI, Japan [+ red personal stamp]” [1♀ (RBH: BPjui)]; “*Cyphogastra* sp., PAPUA NEW GUINEA, Morobe P., Aseki, Oiwa, 01.08.1996” “Coll. de Sainval” [1♀ (RBH: BPlól)]; “PNG: MOROBE PROV.: Aseki Subdistr.: Samaia Vill., 16 IV 1998” [1♀ (TT)]; “TiTiKaBa, Aseki, MP, PNG, 09/92” [1♀ (TNS)]; “Titikaba, Aseki MP, PNG 09/92” [1♀ (BPezw)]; “Coll. de Sainval” [4♀ (TNS)]; “New Guinea, Yekwnwi [*sic!* – ?Yeiwēni, 28 km. ESE Aseki?]. Aseki, MP-PNG, II 1992” „COLL. WILLY KRONBLAD, SWEDEN” „COLL. WILLY KRONBLAD, SWEDEN” [1♀ (WK)]; “Papua” [1♀ (MNHN)]

Additional material: 7 ♀

Characters [Fig. 16]: Females [25] 23.5×7.5 – 33.5×11 mm. Head and pronotum usually pure black, elytra with more or less strong greenish to purplish lustre, sutural interstria often contrasting purplish-cupreous, ventral side [bluish-]black. Dfp depressions covered with dense short recumbent pubescence and ochraceous pulverulence, pilosity of prosternal process rather long, otherwise ventral side with sparse inconspicuous setulae, dorsal surface glabrous. Frontal depression deep, elongately triangular, reaching far beyond upper margins of eyes; anterior cavity coarsely and densely punctured, otherwise front with but few widely spaced punctures. Vertex moderately wide (V:H≈0.55). Pronotum subparallelsided; anterolateral angles well marked; collar not accentuated or very short; fossae deep, ovate with subacutely angular basal and broadly arcuate apical margin, extending to *ca.* apical third, leaving bifoveolate, coarsely punctured space between discal elevations and lateroapical truncations; laterobasal relief triangular. Elytra markedly caudate; no subhumeral protrusions; surface almost regularly convex, with but some irregular foveae at very base; puncturation rather coarse at base, gradually finer to almost indistinct apically, longitudinal rows barely discernible here and there; no dfp depressions. Proepisterna entirely dfp; abdominal plaque rather high, right-angled in profile; abdomen rather coarsely and densely punctured, no distinct dfp depressions, middiscal stripes very narrow, marginal practically non-existent. Anal sternite in females apically rounded without medial incision, male unknown.

Geographical distribution [Map 2]: All but one specimens examined by me have been (or – that labelled only as “*Papua*” – might have been) collected within the relatively short (*ca.* 70 km. from Aseki in the west and Mt. Missim on the east) section of mountainous area of central Morobe Prov. of New Guinea; the only exception (Okapa, >100 km. further NW, the type locality of *C. oculata* *HOL.*) may be a result of mislabelling or accidental introduction.

Remarks: Blackish colouration with or without iridescent lustre but (except narrow sutural cupreous stripe in some specimens) no bright metallic tones, in combination with extensive broadly ovate pronotal fossae and triangular to subrhomboidal (of definitely obtuse anteromedian angles) prehumeral reliefs, make *C. friendorum* *sp.n.* unmistakable.

Cyphogastra (s.str.) oculata* *HOL.

Cyphogastra oculata *HOLYNSKI* 2019: 35-36

?*Cyphogastra meeki* *THÉRY* 1923: 240-241

Material examined:

Holotype: “NEW.GUINEA: NE., 18 km SE of Okapa, 1300 m, 2. VI. 1967” “*B. Gray Collector*” [♂ (BPBM)]

Paratypes: “NEW.GUINEA: NE., 18 km SE of Okapa, 1300 m, 2. VI. 1967” “*B. Gray Collector*” [1 ♂ (RBH: BPj-v)]; “NEW.GUINEA: NE., 18 km SE of Okapa, 1300 m, 2. VI. 1967” “*G.A. Samuelson Collector, BISHOP MUSEUM*” [1 ♀ (BPBM)]

Additional material: 3 ♂, 4 ♀

Characters [Fig. 17]: Males [5] 24.5×7.5 – 27.5×8, females [5] 27.5×8.5 – 33×10.5 mm. Head and pronotum black (dfp bottoms of pronotal fossae bright golden-green), elytra green with cupreous-red lateroapical band extending all-over cuneate part of sides, and brightly carmine-red anterior half of epipleura (extreme tips of elytra black); ventral side black with slight bluish (on sternum) to brassy (abdomen) lustre. Frontal depression deep, somewhat roundedly subtriangular, almost impunctate; vertex moderately wide (V:H≈0.5), puncturation medially very sparse, behind upper margins of markedly protruding eyes much denser. Pronotal sides slightly convergent, anterolateral angles moderately accentuated, no distinct collar; fossae deep, D-shaped, broadly touching basal margin and extending beyond

apical fourth of pronotal length, including at least anteromedian fovea; prehumeral relief triangular, finely and very sparsely punctulate. Elytra very strongly caudate, no subhumeral protrusions, surface regularly convex; puncturation coarse at base, gradually finer to very fine at apex, longitudinal rows poorly developed; no dfp depressions. Proepisterna dfp, covered with pale ochraceous pulverulence between numerous smooth elevations; median sulcus of prosternal process very wide (in male twice wider than smooth lateral rims), densely irregularly sculptured under very dense, long, semierect whitish pilosity; midline of metasternum broadly depressed, with similar sculpture and pubescence; metacoxae with deep transverse dfp depression, coarsely but sparsely punctured otherwise; abdominal plaque high, right-angled in profile; abdomen otherwise rather coarsely and not sparsely punctured between strikingly extensive (covering *ca.* half of the surface) dfp areas (continuous, wide lateral band and middiscal dfp stripe) in males and strikingly narrow in female. Apical emargination of anal sternite broadly triangular (♂) or none (♀). Caudal surface of male meso- and metafemora with prominent “brushes” of dense erect whitish pubescence.

Variability: Male paratype somewhat larger (26.5×8 mm.), elytra with slight bronzed hue, ventral dfp areas still more extensive; female (28.5×9 mm.) also with bronzed tones on green elytra, dfp areas on abdomen somewhat less extensive, apex of anal sternite almost regularly rounded with but slight indication of minute shallow incision at tip, femoral brushes less prominent; otherwise all virtually identical.

Geographical distribution [Map 2]: Known only from the vicinities of Okapa (Eastern Highlands Pr., PNG).

Remarks: Within the *C. [friendorum]*-superspecies *C. oculata* HOL. is distinctive by green elytra with relatively small but conspicuous lateroapical cupreous spot, bright carmine-red anterior half of epipleura, very large (broadly touching pronotal base, extending to beyond anterior fourth and including anteromedial – and, if developed, also anterolateral – foveola) D-shaped pronotal fossa, and very extensive ventral dfp areas (especially broad medial sulcus of prosternal process) in males. *C. meeki* THY. is unknown to me in nature; its original description (THÉRY 1923) fits almost perfectly *C. oculata* HOL., but later THÉRY (1926) considers it a variety of *C. fossifrons* KERR. – whose other synonym, according to him, was *C. miloudi* THY. (itself undoubtedly identical taxonomically to *C. bicolor* WATH.) – and states that “*l’apex élytral est rouge au lieu d’être bleu*”, what does not fit either of these species, suggesting rather some representative of the *Gloriosa*-circle (for which, instead, neither bluish-black ventral side, nor near-extremely broad pronotal fossae and strongly caudate elytra are characteristic)... As, at that, the type- (and only known) locality of *C. meeki* THY. is Owarra in Owen Stanley Mts., some 300 km. SSE from the narrowly restricted area near Okapa where all the known specimens of *C. oculata* HOL. have been collected, the synonymy between them – despite nearly perfect agreement of description – remains uncertain pending the examination of the type.

***Cyphogastra (s.str.) radwanskae* HOL.**

Cyphogastra radwanskae HOLYŃSKI 2019: 37-38

Material examined:

Holotype: „P.N.Guinea, Morobe Prov, Bulolo II 1987” [♂ (RBH: BPfum)]

Paratype: „on vines, Lower Watut, M. Dist.” “3/III/73, B. Gray” [1 ♂ (RBH: BPezu)]

Additional material: 3 ♀

Characters [Fig. 18]: Males [2] 22×7 – 26.5×8.5, females [3] 22×7 – 29×9 mm. Head and pronotum black with bright cupreous dfp bottoms of pronotal fossae and

inconspicuously green densely punctulate midline strip; elytral disk green or cupreous, separated from dark purplish or black lateroapical band (reaching almost to humeri or anyway beyond the level of metacoxae) by oblique cupreous-red stripe; suture violaceous, also rudiment of 2. elytral costa bronzed-black or violaceous; extreme apices golden or purplish, apical denticles black; epipleura red (basally) to black (in apical half); ventral side black with slight dark-green lustre. Frontal depression deep, triangular, front (including anterior cavity) with but few widely spaced punctures. Vertex moderately wide ($V:H \approx 0.5$), very sparsely punctulate at middle. Pronotum parallelsided; anterolateral angles not protruding but well marked; no distinct collar; fossae deep, somewhat obliquely pear-shaped, basal end rather broadly rounded, apex obliquely subtruncated with narrowly cuneate, sparser but coarser punctured extensions towards anterior foveae; laterobasal relief triangular, finely and rather sparsely punctulate. Elytra very strongly caudate (dorsal profile deeply concave on apical half); no subhumeral protrusions; apices narrowly truncated and sharply denticulate; elytral surface regularly convex except indication of 2. costa at base; puncturation very coarse at middle of base, gradually finer to barely discernible lateroapically; longitudinal rows almost regular on disk; no dfp depressions. Proepisternal dfp restricted to numerous small foveolae on smooth elevated surface; median sulcus of prosternal process subequal in width to impunctate lateral rims, densely irregularly sculptured under rather long, erect grayish pilosity; sides of metasternal disk with but few fine punctures, lateral parts and metacoxae covered with irregular mixture of dfp foveae between smooth elevations; metepisterna entirely dfp; abdominal plaque high, right- or even slightly acute-angled in profile; lateral band and middiscal dfp stripe on abdomen continuous, moderately wide; surface between them rather coarsely but very sparsely punctured; apical emargination of male anal sternite broadly and deeply arcuate, flanking lobes regularly rounded; metafemoral brushes well developed, mesofemoral inconspicuous.

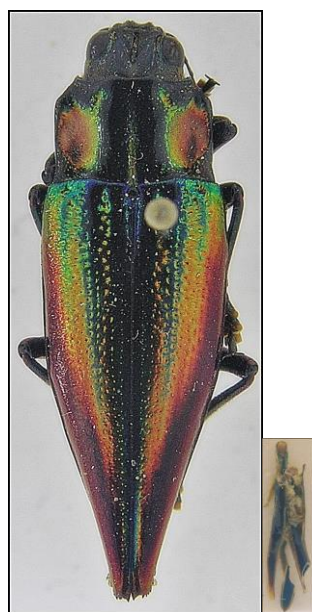


Fig. 18

C. radwanskae sp.n.
♂ HT Bulolo [RBH: BPfum]

Geographical distribution [Map 2]: Seems endemic to the vicinities of Bulolo (Morobe Pr., PNG).

Remarks: One of the most colourful representatives of the genus, similar in colour pattern to the extreme variants of *C. albertisi* GESTRO but clearly differing in shape of pronotal fossae, much more strongly caudate elytra, and many other details.

C. [bicolor]-superspecies

Remarks: An entirely New Guinean group characterized by combination of bright metallic pronotum with extremely extensive fossae and markedly caudate elytra. Taxonomic status of, and relations between, the included species mostly not convincingly clarified.

Key to the identification of species of the *C. [bicolor]-superspecies*

- 1 (8) Tarsi dark.
- 2 (7) Anterior margins of fossae transversely truncated, anteromedian foveolae included in fossae.
- 3 (6) Dorsal side almost uniformly green.
- 4 (5) Elytral suture blue *C. (s.str.) clara* KERR.
- 5 (4) Elytral suture (except near apex) concolorous *C. (s.str.) cognita* HOL.
- 6 (3) Dorsal side bicolorous: pronotum green to blue, elytra golden, bronzed or cupreous; exceptionally (preservation effect?) entire dorsal side black *C. (s.str.) bicolor* WATH.
- 7 (2) Fossae anterolaterally extending practically to anterior angles, but anteromedially obliquely truncated to leave triangular coarsely punctured area including small anteromedian foveola widely separated from fossa ... *C. (s.str.) acuminicauda* HOL.
- 8 (1) Tarsi yellow *C. (s.str.) caudata* LSB.



Map 3

Geographical distribution of the *C. [bicolor]-superspecies*

● – *C. clara* KERR. (loc. typ.) ● – *C. cognita* HOL.; ● – *C. bicolor* WATH.; ● – *C. acuminicauda* HOL.; ● – *C. caudata* LSB.
[larger, white-framed symbols – general areas; exact locality unknown]

Cyphogastra (s.str.) clara KERR.
Cyphogastra clara KERREMANS 1896: 356

Material examined:

Holotype: “N.GUINEA S.E., Paumomu riv., LORIA, IX-XII 92” “*clara* Kerr., Type” [KERR. handwr.] “**TYPUS**” “*clara* Kerrem.” “HOLOTYPUS, *Cyphogastra clara* Kerremans, 1896” “=*Bruyni* var., Théry *Ann.Soc.Ent.Belg.* 1926, p.71” “Museo Civico di Genova” [♂ (MCGD)]

Additional material: None

Characters: Neither the holotype, examined in MCGD long ago, is now available to me for study, nor have I ever seen any other specimen reliably identifiable as *C. clara* KERR., so I can only quote here the original description (KERREMANS 1896):

6. *Cyph. clara*, nov. sp. — *Allongé, acuminé au sommet, d'un beau vert doré en dessus avec la suture et l'apex bleus; dessous vert émeraude.*

Tête creusée en avant et sillonnée en arrière, la dépression frontale grossièrement et inégalement ponctuée avec çà et là des rides longitudinales irrégulières; carène séparant le front de l'épistome peu prononcée. Pronotum presque carré avec les angles antérieurs tronqués; la marge antérieure bisinuée; les côtés presque droits; la base à peine bisinuée; fossettes latérales grandes, envahissant la moitié des côtés de la base au sommet; sillon médian net, à fond doré. Élytres un peu plus larges que le pronotum à la base, droits sur les côtés jusqu'un peu au delà de la moitié postérieure, ensuite brusquement atténués et acuminés au sommet avec l'apex relevé et armé de part et d'autre, de six à sept dents; ils présentent une ponctuation assez régulièrement disposée en séries longitudinales et s'atténuant graduellement de la base au sommet. Dessous moins doré que le dessus, d'un vert émeraude clair ainsi que les pattes. — Long. 23; larg. 6,5 mm.

Nouv. Guinée S. E.: Riv. Paumomu.

La coloration du dessus se rapproche de celle de *Cyph. violaceiventris* Kerr., mais cette dernière espèce est plus robuste et moins acuminée au sommet; la forme des fossettes prothoraciques est également différente.

Geographical distribution [Map 3]: Described from Paumomu [=Angabunga] Riv. (ca. 100 km NW Pt. Moresby).

Remarks: An enigmatic species (cf. HOLYŃSKI 2020 for details). The original description does not provide any character to distinguish it from *C. cognita* HOL., and I would

not hesitate to synonymize them were it not for the biogeographical disjunction: *ca.* 180 km. linear distance may not look by itself problematic, but the distribution on the south vs. north side of the central mountain range in New Guinea is almost always associated with taxonomic differentiation – I am aware of no species having significantly crossed the barrier, and of but two having gone round it on the northwestern [*C. ventricosa* (OL.)] or southeastern [*C. albertisi* GST.] end. On the other hand, my notes on the holotype suggest the differences from *C. bicolor* WATH. being “slight, possibly sexual?” (at that time no other male was known to me), but KERREMANS’ description of colouration [“*beau vert doré en dessus*” which “*se rapproche de celle de C. violaceiventris Kerr.*”] does not seem compatible with always (also in males!) bicolorous (elytra from golden-cupreous to cupreous-red) species named by WATERHOUSE; no other appreciable difference can be deduced from the text, but I have never seen any intermediate and colour peculiarities are frequently the most reliable taxonomic characters in New Guinean *Cyphogastra* DEYR. Thus, none of the three conceivable interpretations can be justifiably rejected: *C. clara* KERR. may be either the senior synonym of *C. cognita* HOL., or a monogenic colour variety (morph, *i.e.* in terms of nomenclature also the – senior – synonym) of *C. bicolor* WATH., or a distinct [?sub-]species as tentatively (pending re-examination of the holotype and/or discovery of intermediates) accepted here.

***Cyphogastra (s.str.) cognita* HOL.**

Cyphogastra cognita HOLYŃSKI 2019: 29-30

Material examined:

Holotype: “P.N.GUINEA, Morobe Prov., Asiki 5. 90” [♀ (RBH: BPFue)]

Paratype: “Bulolo, M.P., P.N.G., Jan 1990” “No. 27” [red handwriting] [♀ (TT)]

Additional material: 2♀

Characters [Fig. 22]: Females [4] 30×9.5 – 31×10 mm. Head bluish-black, pronotum bluish-green, elytra green with blue lateral margin and bluish-black tips, sternum and femora green, abdomen golden-green, tibiae mostly violaceous, tarsi and antennae black. Dfp areas covered with fine and dense yellowish pubescence and ochreous pulverulence; pubescence dense, short, semierect on median sulcus of prosternal process, elsewhere on ventral surface recumbent and sparse, dorsal side glabrous. Frontal depression elongately triangular, poorly delimited in upper half, more clearly so on sides of deep, coarsely and densely irregularly punctured anterior cavity. Sides of pronotum slightly arcuate, anterolateral angles subparallel to broadly rounded, no collar. Pronotal fossae very large, almost totally occupying both lateral thirds of pronotum, sharply delimited except narrow anterior border, fully incorporating both anteromedian and anterolateral foveae; prehumeral reliefs triangular. Elytra strongly caudate; apices jointly transversely truncated, with *ca.* 5 irregularly arranged denticles on each and 2-3 indistinct ones at the end of lateral margins; puncturation very coarse anteriorly, progressively finer towards apices; no trace of costae or dfp depressions. Proepisterna uniformly dfp; median sulcus of prosternal process deep, somewhat narrower than rims, finely, very densely and irregularly punctulate; meso- and metasternum sulcate along midline, sides almost entirely dfp. Abdominal plaque prominent, as high as length of 2. sternite behind it, covered with moderately fine and sparse, strongly elongate punctures; lateral dfp stripes not developed, middiscal very broad on basal sternites, narrow and well delimited on 4.-5. segments; otherwise abdomen covered with moderately coarse and rather sparse puncturation without well delimited “mirrors”; apex of anal sternite narrowly rounded without median incision (female), male not known.

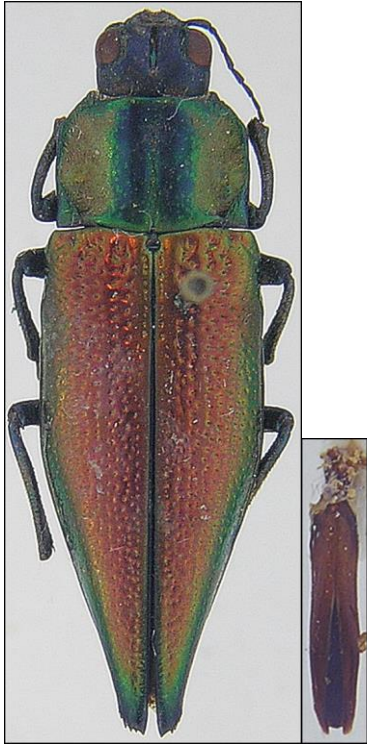


Fig. 19
Cyphogastra bicolor WATH.
 ♂ [NMNH], PNG: Sugeri



Fig. 20
Cyphogastra bicolor WATH. var.
 ♂ [BPBM], PNG: Tekadu



Fig. 21
Cyphogastra bicolor WATH.
 ♀ [BPeKg], PNG: Ilo



Fig. 22
Cyphogastra cognita HOL.
 ♀ HT [BPfue], PNG: Aseki



Fig. 23
Cyphogastra acuminicauda HOL.
 ♀ HT [CSCA], PNG: W-Sepik: Tifalmin
 [from HOLYŃSKI 2019]

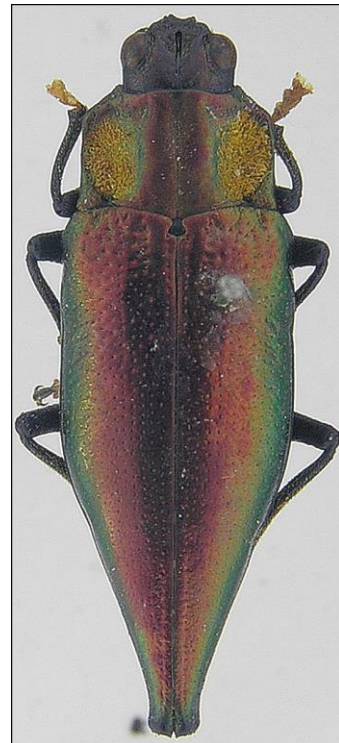


Fig. 24
Cyphogastra caudata LSB.
 ♀ HT [MNHN], N.Guinea: Arfak

Geographical distribution [Map 3]: Hitherto known only from two localities in [sub-]mountainous areas of the Morobe Pr. on New Guinea.

Remarks: Distinctive within the *C. [bicolor]-superspecies* by its almost entirely green dorsal colouration; resembles also *C. westcotti sp.n.* of the *C. [mniszewski]-spsp.* (so much so that I had it initially included among paratypes of the latter) which, however, differs in details of colouration (concolorous green head, brightly cupreous median parts of ventral side), lustre of dorsal side, pronotal shape, extent of lateral fossae, strikingly minute scutellum, relatively short and inconspicuous pubescence of median prosternal sulcus, &c.

Cyphogastra (s.str.) bicolor WATH.

Cyphogastra bicolor WATERHOUSE 1914: 491

Cyphogastra miloudi THÉRY 1923: 233-234

Cyphogastra amoena MEYER-DARCIS i.l.

Material examined:

Holotype [of *C. bicolor* WATH.]: „Type” ♂ „S.E. New Guinea, 89-70” „*Cyphogastra bicolor* Type Waterh.” [ø (BMNH)]

“Cotype” [of *C. miloudi* THY.]: “Cotype” ♂ „Nouv^{lle} Guinée Anglais” „*Cyphogastra miloudi* Théry, Théry det. c. typ.” „Ex coll. A. Théry, B.M. 1923-364” [1ø (BMNH)]

Not type, only comp. to type [THÉRY 1922 writes “Yule Is., *Nouv. Guin., une ex. ♀ de ma coll.*”

?Syntype i.l. [of *C. amoena* M-D.]: “Mt. Alexandre to Mt. Nisbet, Brit. N.G., 1.96, Anthony” “Coll.-Meyer-Darcis, Patria N.Guinea, Mus. Tring” [“Mus. Tring” – overprint] “*Cyphogastra amoena* Meyer-Darcis i.l., *Typus!*” [♀ (RBH: BPeKf)]

Additional material: 2 ♂, 41 ♀, 2 ø

Characters [Figs. 19-21]: Males [2] 21.5×6.5 – 24×7.5, females [42] 25×8 – 32×10. Head and pronotum dark green to blue; elytra from golden-cupreous to cupreous-green with blackish-blue tips; ventral side green. Dfp areas covered with short, dense, recumbent pubescence and ochraceous or rusty pulverulence; median sulcus of prosternal process and metasternum with white erect pilosity; elevated surfaces of body practically glabrous. Pronotal sides subparallel or slightly convergent; anterolateral angles not protruding; fossae broad, occupying almost entire lateral thirds of pronotum, including anterior foveolae. Elytra caudate; no subhumeral protrusion or dfp sulci; puncturation finer towards apices but rather coarse throughout. Proepisterna entirely dfp; abdominal plaque moderately high, in profile more or less broadly roundedly obtuse-angled, sparsely covered with elongate punctures; marginal and middiscal dfp stripes well developed; apex of anal sternite rounded [♀] or broadly subtriangularly emarginated [♂]; *Aedoeagus* ferruginous, shallowly sinuately narrowed at middle, slightly widened in apical half; apex of penis *ca.* right-angularly pointed.

Geographical distribution [Map 3]: Seems to inhabit southwestern slopes of Central Range in Gulf, Central and Milne Bay Provinces (marginally – Aseki area – invading Morobe Pr.).

Remarks: Bicolorous dorsal side, in combination with extremely broad pronotal fossae and lack of elytral dfp markings, make the species unmistakable.

Cyphogastra (s.str.) acuminicauda HOL.

Cyphogastra acuminicauda HOŁYŃSKI 1923: 233-234

Material examined:

Holotype: “NEW GUINEA, TIFALMIN, APRIL 1969” [♀ (CLB→CSCA)]

Additional material: none

Characters [Fig. 23] [abbreviated original description (HOŁYŃSKI 2019): the only known specimen is currently not accessible to me for reexamination]: Female [1] 36×11.5

mm. Head brownish-black; pronotum dull greenish-bronzed with cupreous dfp foveae; elytra a bit lighter greenish-bronzed passing apicalwards into oily-green with short black lateroapical band; ventral side green with golden dfp depressions; tarsi piceous-black. Frontal depression deep, triangular, reaching far beyond upper margins of eyes; pericocular sulci deep, dfp at bottom, flanked inside with narrow zone of coarse, elongated, rather sparse punctures; median furrow deep, accompanied on each side by shallow, triangular, coarsely and densely punctured depression; otherwise front with but few widely spaced punctures; vertex moderately wide (V:H \approx 0.52), medially almost smooth, rather densely punctured behind upper margins of markedly protruding eyes. Pronotum widest at base; sides slightly convergent to broadly rounded anterolateral angles; fossa broadly extending to near apical angles, obliquely truncated anteriorly, leaving coarsely punctured transversely triangular space surrounding small elongated anteromedian dfp fovea and also coarsely punctured triangular laterobasal relief; surface otherwise finely, very sparsely punctulate. Scutellum small, trapezoidal, longitudinally depressed, smooth. Elytra 2.3 \times longer than wide; subhumeral protrusions prominent; sides subparallel to basal third, arcuately converging to $\frac{3}{5}$, and sinuately so to very narrow, obliquely truncate apices; dorsal profile shallowly convex in basal $\frac{3}{4}$ and rather deeply concave apically; epipleura wide anteriorly, abruptly narrowed (no epipleural denticle) at metacoxae, almost parallelsided to hind margin of 2. sternite, and again abruptly constricted. Elytral surface almost regularly convex, with but narrow perisutural (on basal fifth and apical half) and indistinct perimarginal (at posterior constriction of epipleura) shallow sulci; puncturation rather coarse at base, gradually finer to almost indistinct apically, arranged in near-regular longitudinal rows; no dfp depressions. Proepisterna dfp with elongated, coarsely but shallowly and sparsely punctured relief at middle; prosternal process finely and very sparsely punctured at sides, more densely but not much coarser in narrow medial sulcus; metasternum narrowly depressed along midline, finely and sparsely punctulate at middle, dfp laterally, rather densely and coarsely punctured in between; metepisterna dfp; medial half of metacoxae coarsely and rather densely punctured, lateral half dfp; abdominal plaque high, its apical slope almost equal in height to the length of 2. sternite behind; abdominal punctulation rather fine and very sparse at middle, denser at sides, with pair of transverse dfp patches common to basal two and similar pair at anterior margin of third segment; 3.-5. sternites with very irregular elongated dfp spots at sides and much more regular (although here and there broken) narrow middiscal dfp stripes. Anal sternite with shallow, rather indistinct apical incision ($\text{\textcircled{f}}$); male unknown.

Geographical distribution [Map 3]: Holotype has been collected in Tifalmin (West Sepik Province of PNG).

Remarks: *C. acuminicauda* sp.n. is apparently a member (allospecies) of the *C. [bicolor]*-superspecies, morphologically and geographically intermediate between *C. caudata* LSB. and *C. cognita* HOL.

***Cyphogastra (s.str.) caudata* LSB.**

Cyphogastra caudata LANSBERGE 1880: 134

Material examined:

Holotype: "Nov. Guin. S., Arfak" "*Caudata* Lansb." "Type" "TYPE" "Museum Paris, ex Coll., R. Oberthur" [$\text{\textcircled{f}}$ (MNHN)]

Additional material: None

Characters [Fig. 24]: Female [1] 30 \times 9.5 mm. Pronotum dark bronzed with here and there slight greenish shine, fossae golden; elytra bronzed-cupreous transgressing into bright

green on sides, apical $\frac{2}{5}$ of perimarginal interstria dark blue, extreme tips black; ventral side piceous-black; tarsi yellow. Pubescence in dfp areas short, dense and recumbent, otherwise inconspicuous or absent; dfp depressions with orange pulverulence. No distinct epistomal ridge, biarcuate supraepistomal carina low; frontal depression rather shallow, narrowly triangular, without clearly defined anterior cavity, coarsely but sparsely punctured; median furrow deep, not very strong, progressively widened downwards; puncturation of vertex itself rather fine and moderately dense; oculo-frontal grooves deep; V:H \approx 0.54. Pronotum parallelsided, anterolateral angle well marked, straight anterior truncation strongly oblique, no collar; median sulcus moderately broad, distinctly striate; disk practically impunctate; dfp fossae very long and broad, occupying almost entire lateral thirds of pronotum, including anterior foveolae and leaving only small irregularly triangular space between them and also triangular laterobasal reliefs elevated and coarsely punctured. Elytral sides subparallel in basal tenth behind slightly marked subhumeral protrusion, then distinctly divergent to *ca.* midlength, regularly arcuate to apical fourth and very strongly sinuate to narrowly spathulate and transversely truncate apices; apical margin finely denticulate, but lateral smooth to very apices; no elytral dfp sulci, elytral puncturation very fine, becoming somewhat coarser only towards base. Proepisterna, lateral parts of metasternum and metacoxae almost entirely dfp; disk of metasternum narrowly grooved along middle; abdominal plaque highly elevated, right-angled in profile, neither very sparsely nor very finely covered with elongate punctures; marginal abdominal dfp stripe narrow, middiscal moderately broad, regular; apex of anal sternite roundedly subtruncate (♀), male unknown.

Geographical distribution [Map 3]: Arfak Mts. on the Vogelkop Peninsula.

Remarks: Unmistakable with its bronzed-cupreous dorsal colouration, yellow tarsi, broad elytral fossae and spathulate elytral tips.

C. [mniszehi]-superspecies

Remarks: Somewhat heterogeneous, mainly Moluccan (New Guineai *C. westcotti* HOL. and *C. takeshii* sp.n. may not belong here, being perhaps rather aberrant members of *C. [bicolor]-spsp.*) group of uncertain validity and placement, characterized mainly by broad rounded pronotal fossae, bluish-black tips of elytra and lack of elytral dfp depressions. Almost all the included taxa being known from but one to three, not always exactly labelled specimens, their status and taxonomic relations between them remain not reliably resolved.

Key to the identification of species of the *C. [mniszehi]-superspecies*

- 1 (4) Body green to bronzed-green, elytra strongly caudate, no trace of lateropreapical cupreous marking on elytra.
- 2 (3) Laterobasal relief of pronotum triangular *C. (s.str.) westcotti* HOL.
- 3 (2) Laterobasal relief tetragonal *C. (s.str.) takeshii* sp.n.
- 4 (1) If dorsal side green or bronzed-green then either elytra indistinctly caudate or lateropreapical markings conspicuous
- 5 (8) Anterolateral angles of pronotum not protruding outwards
- 6 (7) Dorsal side green *C. (s.str.) mniszehi* DEYR.
- 7 (6) Dorsal side dark bronzed-brown *C. (s.str.) pratti* sp.n.
- 8 (5) Pronotal sides conspicuously sinuate behind distinctly protruding anterolateral angles
- 9(10) Laterobasal relief of pronotum triangular. Dorsal side cupreous, green or blue
..... *C. (s.str.) gigantea* OBB.
- 10 (9) Laterobasal relief tetragonal. Body purplish-black *C. (s.str.) herculeana* OBB.



Map 4

Geographical distribution of the *C. [mniszewichi]-* and *[lansbergei]-*superspecies

- – *C. westcotti* HOL.; ● – *C. takeshii* sp.n.; ● – *C. mniszewichi* DEYR.; ● – *C. pratti* sp.n.; ● – *C. herculeana* OBB.
 ● – *C. gigantea* OBB.; ● – *C. lansbergei* THS.
 [larger, white-framed symbols – general areas: exact locality unknown]

***Cyphogastra (s.str.) westcotti* HOL.**

Cyphogastra (s.str.) westcotti HOLYŃSKI 2009: 28-29

Material examined:

Holotype: “PAPUA NEW GUINEA, MOROBE: Tekadu, 7°38’S 146°34’E, 27-28. III. 2000, TSears&binatung brigade” “COLLECTION OF R.L.Westcott” [♀ (RLW→UCBM)]

Paratype: “PAPUA NEW GUINEA, MOROBE Prov.: Tekadu, 7°38’S 146°34’E, IV. 2000, TSears & binatungbrigade” [1♀ (RBH: BPlöh)]

Additional material: None

Characters [Fig. 25]: Female [2] 29.5×9.5 – 31×10 mm. Dorsal side almost uniformly bronzed green with oily shine [but see Remarks], elytral tips black (no reddish apical patch); below green on sides, cupreous-bronzed along middle; antennae and tarsi piceous-black. Dfp areas covered with fine and dense whitish pubescence and ochreous pulverulence; pubescence of legs and median sulcus of prosternal process short, semierect; otherwise body glabrous. Frontal depression elongately triangular, poorly delimited in upper half, sharply so on sides of deep anterior, coarsely and densely irregularly punctured cavity. Sides of pronotum distinctly convergent to somewhat produced anterolateral angles, collar poorly delimited, its lateral margins strongly convergent; lateral dfp fossae very large, D-shaped (median border straight), almost totally occupying both lateral thirds of pronotum, sharply delimited except rather irregular anterior border, where it joins prominent anterior foveolae. Scutellum very small, somewhat pear-shaped (very strongly constricted anteriorly). Elytra strongly caudate, sides subparallel to midlength, apices jointly transversely truncated; punctuation very fine apically, coarser towards base; no trace of costae or dfp depressions. Proepisterna dfp with some irregular smooth elevations; median sulcus of prosternal process deep, finely, very densely and irregularly punctulate; sides of meso- and metasternum almost entirely dfp, median parts finely sulcate along midline, almost impunctate, separated from dfp sides by narrow zone of coarse, moderately dense punctuation. Posterior margin of metacoxae distinctly bisinuate. Abdominal plaque prominent, profile of metasternum and 1. sternite straight; lateral and middiscal dfp stripes broad and almost continuous; apex of anal sternite narrowly rounded and rather minutely incised (♀); male unknown.



Fig. 25

Cyphogastra westcotti *HOL.*
♀ HT [UCBM], NG: Morobe Pr.: Tekadu.



Fig. 26

Cyphogastra mniszewi *DEYR.*
♀ LT [MNHN], locality?



Fig. 27

Cyphogastra pratti *sp.n.*
♀ HT [BPeki], Ceram: Mansela

Geographical distribution [Map 4]: Known only from the type-locality at base of the southeastern peninsula of New Guinea, at SW slopes of the main mountain range.

Remarks: In dorsal colouration the holotype [unfortunately subsequently artifactually (in thawing for re-preparation) changed to more bronzed] was virtually identical to some specimens of *C. mniszewi* *DEYR.*, e.g. to the holotype of *C. kleberi* *THY.*; they are also very similar in most other respects, but *C. westcotti* *HOL.* differs in smaller size, cupreous median line of ventral side (concolorous green in all compared *C. mniszewi* *DEYR.*), very well developed anteromedian dfp foveola on pronotum (sometimes deep but small and not distinctly dfp in the latter species), strikingly minute scutellum, strongly caudate elytra, &c. Having only two specimens in disposition I am of course unable to fully exclude the possibility that some or all the differences are but peculiarities of these particular individuals, but as a complex, supported by the widely distant locality, they make conspecificity highly unlikely. On the other hand, it remains unclear whether the lack of data from the intermediate areas reflects the real disjunction or is but the effect of insufficient collecting, what makes it impossible to assess the possible specific distinctness.

Cyphogastra (s.str.) takeshii *sp.n.*

Material examined:

Holotype: "Mapia, Maret. 2003" [♀ (TT)]

Additional material: None

Holotype: [Presently I have no access to the holotype and have never seen any other species attributable to *C. takeshii* *sp.n.*: the text below is a copy of the unpublished description based on the specimen kindly sent me for study several years ago by Takeshi TERABAYASHI. I had then compared it with *C. westcotti* *HOL.*, so consequently it is treated as belonging here, but it remains an enigmatic nominal taxon of unclear

validity and affinities, apparently sporting a mixture of characters typical of the *C* [mniszehi]-spsp. with those (not protruding anterolateral angle of pronotum, tetragonal prehumeral relief) alien to it.]

“Female 29.5×10 mm. Dorsal and ventral side uniformly pale bronzed-green, dfp areas golden-cupreous (pronotum) or concolorous (ventral side); anterior half of lateral margin of elytra pure green; antennae piceous-black, tarsi black with aeneous shine. Dfp areas covered with dense whitish pubescence and ochreous pulverulence; pubescence of legs and median sulcus of prosternal process short, semierect; otherwise glabrous.

Supraepistomal carina low, rather shallowly arcuately produced at middle; frontal depression poorly marked except triangular, coarsely and densely irregularly punctured, anterior cavity; front otherwise with fine and very sparse punctures. 1. antennal joint club-shaped, ca. 3× longer than thick; 2. nearly globular, as long as wide, five times shorter and much thinner than 1.; 3. elongately subtriangular, almost as wide (at apex) but 3× longer than 2.; 4. definitely triangular, as long as 3. and as wide as 1.; 5.-10. equal in width to 4. but progressively shorter (10. hardly longer than wide); 11. slightly narrower but longer than 10., elongately (ca. 2× longer than wide) longitudinally semielliptical.

Sides of pronotum subparallel to not prominent anterolateral angles, collar parallelsided, sharply defined. Puncturation at bottom of median sulcus moderately coarse and dense, on sides of disk finer but very sparse, on prehumeral reliefs and at sides of anterior margin coarse and dense. Fossa very large, ovate, extending from very narrow, linear (throughout: also in anterior part between anterolateral and anterior angles) marginal carina to midlength between it and median line and from basal to apical tenth of pronotal length (i.e. to collar), fully incorporating anterolateral and joining obliquely elongate anteromedian dfp foveae; prehumeral reliefs elongately (not quite reaching basal third of pronotal length) rhomboidal, their anteromedian angles somewhat acute.

Elytra rather strongly caudate, sides distinctly divergent to midlength. Puncturation moderately coarse on basal fourth, very fine apically; surface distinctly microsculptured; no trace of costae or dfp depressions.

Proepisterna and sloping sides of prosternum regularly dfp; prosternal process with deep, rather coarsely confluent punctured median sulcus, impunctate laterally; sides of meso- and metasternum almost entirely dfp, median parts grooved along midline, almost impunctate, separated from dfp sides by narrow zone of coarse, moderately dense puncturation. Abdominal plaque prominent (almost as high as length of 2. sternite behind it, profile of metasternum and 1. sternite slightly but appreciably concave), very sparsely and rather finely punctured; otherwise puncturation of abdomen moderately coarse and rather sparse, without well delimited “mirrors”; lateral and middiscal dfp stripes narrow but continuous; apex of anal sternite very narrowly and rather shallowly incised.”

Geographical distribution [Map 4]: “I managed to find two localities named Mapia on maps of the Papuan area: a village in West New Guinea at 4⁰⁰S-135⁵¹E, and a group of islets to the NE of Vogelkop Peninsula, around 0⁵⁰N-134²⁰E; according to the map kindly sent me by Takeshi TERABAYASHI (from whose collection the holotype comes) the former is concerned in this case.”

Remarks: “*C. takeshii* sp.n. differs but very little from *C. westcotti* HOŁ.: besides tetragonal prehumeral relief (possibly aberrant: characteristic rather of *C. [albertisi]-spsp.*), pronotal fossa somewhat reduced anteromedially (not fully incorporating anteromedian fovea) but not anterolaterally [in *C. westcotti* HOŁ. it is not (both foveae are fully incorporated) or just anterolaterally reduced (anterolateral fovea indistinct or totally absent)], and more extensive puncturation of median sulcus, I was unable to find any other

constant difference – more extensive material from the western part of New Guinea is needed to fully confirm the status of this form.”

***Cyphogastra (s.str.) mniszehi* DEYR.**

Cyphogastra mniszehi DEYROLLE 1864: 16

Cyphogastra lateimpressa KERREMANS 1903: 87

Cyphogastra kleberi THÉRY 1923: 232-233

Cyphogastra toxopeusi OBENBERGER 1932: 365-366

Material examined:

Lectotype [of *C. mniszehi* DEYR., hereby designated]: “Mniszehi Deyr” **“SYNTYPE”** [♀ (MNHN)]

Paralectotypes [of *C. mniszehi* DEYR.]: **“SYNTYPE”** [2♀ (MNHN)]

Holotype [of *C. lateimpressa* KERR.]: **“Type”** ♂ “Amboine, Heyne” “*lateimpressa* Kerr. Type” “Kerremans 1903-59” [♂ (BMNH)]

Holotype [of *C. kleberi* THY.]: “Arfak Mts., 5100 ft, Pratt, D.N. Guinea” “*Cyphogastra Kleberi* Thery, Type unique” **“MUSEUM PARIS, 1935, Coll. A THÉRY”** [♀ (MNHN)]

Lectotype [of *C. toxopeusi* OBB., hereby designated]: „L.J.TOXOPEUS, Buru, Station, Apr.-Sept.’21” **“TYPUS”** „*Cyphogastra Toxopeusi* m. Type, Det D^f Obenberger” „Mus. Nat. Pragae, Inv. 20 016” [♀ (EONMP)]

Paralectotypes [of *C. toxopeusi* OBB.]: „L.J.TOXOPEUS, Buru, Station 1, 10.II-16.III’21” **“TYPUS”** „*Cyphogastra Toxopeusi* m. Type, Det D^f Obenberger” „Mus. Nat. Pragae, Inv. 20 018” [1♀ (EONMP)]; „L.J.TOXOPEUS, Buru, Station 1, 10.II-16.III’21” „COTYPE, *Cyphogastra toxopeusi* Obenb. 1931” [1♂ (KBIN)]; „L.J.TOXOPEUS, Buru, Station 1, 10.II-16.III’21” „*Cyphogastra toxopeusi* m. Type, Det D^f Obenberger” [1♂ (KBIN)]; „L.J.TOXOPEUS, Buru, Station 1, Sept.-Oct.’21” **“TYPUS”** „*Cyphogastra Toxopeusi* m. Type, Det D^f Obenberger” „Mus. Nat. Pragae, Inv. 20 017” [1♀ (EONMP)]

Additional material: 7 ♀, 2 ♂

Characters [Fig. 26]: Females [14] 27×8.5 – 38.5×12.5 mm. Entirely green to bronzed-green except for more or less conspicuous small cupreous lateroapical spot just before black elytral tips; antennae and tarsi dark. Pubescence whitish, short, dense and recumbent on dfp areas, somewhat erect in sulcus of prosternal process, practically none on elevated parts of body. Frontal depression deep, rather narrow, extending far beyond upper margins of eyes. Side margins of pronotum straight or very shallowly (somewhat irregularly) sinuate, subparallel to well marked but not distinctly protruding anterolateral angles; fossae large, irregularly ovate; prehumeral reliefs elongately triangular; anteromedian foveola usually distinct but small and not dfp, anterolateral barely or not developed. Elytra slightly caudate; no trace of subhumeral protrusion; puncturation rather coarse on basal part, gradually finer towards apices. Proepisterna dfp with some indefinite low elevated areas; sides of meso- and metasternum dfp; abdominal plaque high, in profile right-angled; marginal and middiscal dfp bands moderately wide. Apex of anal sternite rounded (♀), male unknown.

Geographical distribution [Map 4]: Inhabits central Moluccas: Buru, Amboine, Ceram; occurrence in New Guinea (Arfak: HT of *C. kleberi* THY.) needs confirmation, “Solomon Is.” is certainly a mislabelling.

Remarks: I do not see any appreciable difference between type-series of *C. mniszehi* DEYR. [Fig. 28] and those of *C. lateimpressa* KERR. or *C. toxopeusi* OBB. [Fig. 29]; the only known specimen of *C. kleberi* THY. [Fig. 30] approaches (but does not exceed) the limits of the species variability with its practically non-caudate elytra and barely discernible traces of cupreous preapical spot.



Fig. 28

Cyphogastra mniszzechi DEYR.
Lectotype (hereby designated)

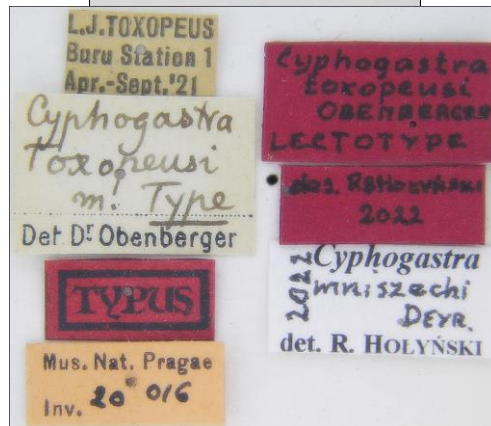


Fig. 29

Cyphogastra toxopeusi OBB.
Lectotype (hereby designated)

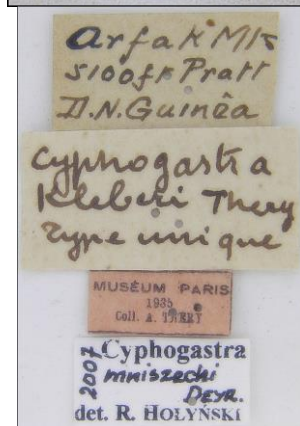


Fig. 30

Cyphogastra kleberi THY.
Holotype

Cyphogastra (s.str.) pratti sp.n.

Material examined:

Holotype: "Ceram, Mansela, 2500 ft., Pratt 1919" [♀ (RBH: BPeki)]

Additional material: None

Holotype [Fig. 27]: Female 30×10 mm. Dorsal side uniformly dark bronzed-brown except small inconspicuous cupreous preapical spot on elytral side; antennae and tarsi black. Sulcus of prosternal process with short, moderately dense erect whitish pilosity; that of metasternal midline somewhat longer but sparser; dfp areas with short, very dense, recumbent pubescence; elevated parts of body glabrous.

Epistome arcuately emarginated, elevated along midline, no distinct epistomal ridge; frontoepistomal border marked by very deep transverse groove and biarcuate carina. Front much wider than long, sides subparallel; frontal depression deep, extending far beyond upper

margins of eyes, almost impunctate; anterior cavity poorly delimited, finely and not densely punctulated; lateral ridges broadly obliterated, almost smooth; periocular grooves very deep and broad, abruptly curtailed at the uppermost point of eye-margins; V:H≈0.53.

Pronotal sides parallel, anterolateral angles well marked but not distinctly protruding; truncation concave, no distinct collar; base arcuately bisinuate, basal angles acute; anterior margin rather deeply sinuate on both sides of also markedly sinuate median lobe; median furrow and elongately triangular prehumeral reliefs finely and not densely, middiscal elevations very finely and sparsely, anterolateral areas coarsely irregularly punctured; fossa broad, ovate with acutely prolonged anterolateral angle; anteromedian foveola deep, anterolateral lacking. Scutellum small, trapezoidal, medially sulcate, smooth.

Elytra 2.3× longer than wide, indistinctly caudate, obliquely truncated at humeri, no subhumeral protrusion; sides subparallel in basal half and cuneately convergent to narrowly jointly rounded apices; lateroapical margin minutely denticulate; puncturation moderately coarse basally but becoming markedly finer apicalwards; no dfp sulci.

Proepisterna dfp except narrow elevated stripe along midline; sides of metasternum and metacoxae very extensively dfp, perimarginal and middiscal dfp stripes of abdomen widely separated; abdominal plaque high, slightly obtuse-angled in profile, finely and sparsely elongately punctured; apex of anal sternite regularly rounded.

Geographical distribution [Map 4]: Known only from the holotype, collected on Ceram I.

Remarks: Despite slenderer body and – especially – dark bronzed-brown dorsal side making *C. pratti* sp.n. unmistakable within the *Albertisi*-circle, its specific distinction cannot be considered as certain: apparent sympatry with *C. mnischechi* DEYR. seems to exclude subspecific status, but that of individual variety (*morpha*) cannot be excluded. More abundant, exactly labelled material is needed to reliably determine its taxonomic rank.

***Cyphogastra* (s.str.) *gigantica* OBB.**

Cyphogastra gigantica OBENBERGER 1916: 31

Cyphogastra gigas HOSCHECK i.l.

Material examined:

Holotype: „Koll. Dr A. Frh. v. Hoschek, Key-Ins.” “1642” “TYPUS” „*gigas*, Det. Hoschek. 194”
[♀ (KBIN)]

See **Remarks!**

Additional material: 2 ♂

Characters [Figs. 31-33]: Males [2] 31×10, female [1] 41.5×13.5 mm. Colouration extremely variable: female holotype entirely green, one of males entirely blue, second male dorsally bronzed-cupreous but ventrally green; all with extensively black elytral tips and large lateroapical cupreous (in blue ex. passing basalwards into green) patch. Dfp areas covered with fine and dense whitish pubescence and ochreous pulverulence; pubescence of median sulcus of prosternal process erect, short and rather sparse in female, longer and very dense in males; along midline of metasternum and abdomen similar but progressively vanishing backwards; otherwise body glabrous. Frontal depression triangular, anterior cavity deep, irregularly punctured. Sides of pronotum subparallel behind distinctly produced anterolateral angles; dfp fossae very large, obliquely ovate, accompanied with elongately triangular prehumeral relief in female, somewhat smaller and made more c-shaped by irregular extension of anteromedial angle of the relief in males; anteromedian foveolae small but deep, anterolaterals not developed. Scutellum trapezoidal, medially sulcate. Elytra caudate, no trace



Fig. 31

Cyphogastra gigantea OBB.
♂ [BPm-p], Key I.



Fig. 32

Cyphogastra gigantea OBB.
♂ [BPm-q], Key I.



Fig. 33

Cyphogastra gigantea OBB.
♀ HT [KBIN], Key Is.



Fig. 34

Cyphogastra herculeana OBB.
♀ HT [EONMP], Key Is.

of subhumeral protrusions; sides subparallel (♂) or slightly divergent (♀) to midlength; apices jointly rounded and finely denticulate; puncturation moderately coarse at base, gradually finer backwards; no trace of costae or dfp depressions. Proepisterna dfp with or without some irregular smooth elevations; sides of meso- and metasternum almost entirely dfp, median parts almost impunctate, sulcate along midline, separated from dfp sides by narrow zone of coarse, moderately dense puncturation; hind margin of metacoxae broadly emarginate; abdominal plaque prominent, in profile right- to distinctly acute-angled; lateral dfp stripes very narrow, clearly separated from broad or (♂) very broad middiscals; apex of anal sternite rounded with minute median incision (♀) or subangulately emarginated (♂); *aedoeagus* cylindrical at base, broader and flatter subparallelsided in apical $\frac{2}{3}$, parameres ferruginous, penis piceous-brown.

Geographical distribution [Map 4]: Apparently endemic to Key Is., perhaps even restricted to Key Kecil (the only known exact locality is Tual).

Remarks: Large size, lustrous dorsal surface, bright metallic colouration with extensive lateroapical cupreous patch on elytra, protruding anterolateral pronotal angles, &c. make *C. gigantea* OBB. unmistakable. Holotype has been labelled by HOSCHEK as *C. gigas*, but its characters perfectly match the OBENBERGER's description, whose end-remark that "*Ein schönes Exemplar dieser schönen Art befindet sich in der Sammlung des Herrn Baron Hoschek v. Mühlheim*" leaves no doubt as to their identity.

***Cyphogastra (s.str.) herculeana* OBB.**

Cyphogastra herculeana OBENBERGER 1917: 254-255

Material examined:

Holotype: „Key Insel” “*Cyphogastra herculeana m.n.sp. Typus*, Det. Obenberger” [♀ (EONMP)]

Additional material: None

Characters [Fig. 34]: Female [1] 39.5×13 mm. Dorsally black with strong purplish reflexions; ventral side more decidedly purplish. Ventral dfp areas covered with fine and dense recumbent pubescence and rufous pulverulence; pubescence of median sulcus of prosternal process erect, short, gradually vanishing along midline of metasternum; otherwise body glabrous. Frontal depression sparsely punctured, reaching distinctly beyond upper margins of eyes, anterior cavity poorly delimited, very densely irregularly punctured on both sides of very deep and strong, itself impunctate median furrow. Sides of pronotum subparallel between markedly produced outwards basal and anterolateral angles; fossae deep, almost Γ-shaped, not distinctly dfp but sparsely, shallowly, very irregularly punctured; prehumeral relief tetragonal; anteromedian foveolae very irregular but distinct, anterolateral not developed. Scutellum trapezoidal, medially sulcate. Elytra moderately caudate, no subhumeral protrusions; sides subparallel in anterior third, arcuately-sinuately tapering to jointly rounded apices; apical denticles (5 on each side) very long and sharp; elytral surface lustrous, very fine (somewhat coarser only around humeri) puncturation almost totally vanishes apically; no trace of costae or dfp depressions. Proepisterna, sides of narrowly sulcate metasernum, moderately broad marginal and middiscal stripes on abdomen dfp, puncturation of median parts sparse, rather coarse; hind margin of metacoxae broadly emarginate; abdominal plaque prominent, in profile nearly right-angled; apex of anal sternite roundedly subtruncated (♀); males unknown.

Geographical distribution [Map 4]: Key Is.



Fig. 35

Holotype of *Cyphogastra gigantea* OBB.

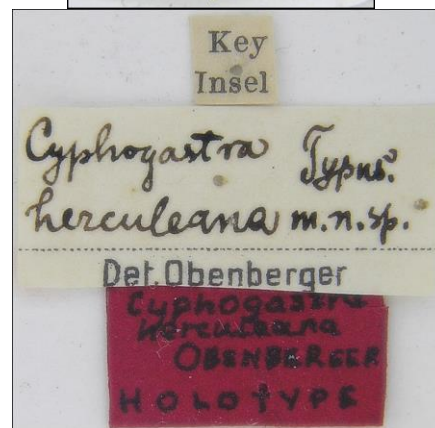


Fig. 36

Holotype of *Cyphogastra herculeana* OBB.

Remarks: Taxonomical validity of *C. herculeana* OBB. remains uncertain: differences from *C. gigantea* OBB. [Figs. 35-36] (blackish colouration, very fine sculpture, or even tetragonal prehumeral reliefs of the only known specimen) are not quite convincing. Sympatric occurrence of two so closely related species seems highly unlikely but in this case may be only apparent: Key Islands are a small but well structured archipelago offering wide possibility for geographical disjunction. As usual, more abundant, exactly labelled material is needed to solve the question

C. [lansbergei]-superspecies

Remarks: A distinctive monotypic group occupying the southwestern peripheries of the *Albertisi*-circle. Unmistakable by its dull-metallic or piceous-black dorsal colouration combined with regularly ovate pronotal fossae and non-caudate elytra.

***Cyphogastra (s.str.) lansbergei* THS.**

Cyphogastra lansbergei THOMSON 1878: 22

Cyphogastra alorensis KERREMANS 1903: 87

Material examined:

“Cotype” [of *C. lansbergei* THS.]: “Cotype” ♂ “Cotype” “Flores” “Ex Musaeo James Thomson”
“*Lansbergei* Thoms.” “Ex Coll. A. Théry, B.M. 1925-316” [ø (BMNH)]

Not type: described from Timor, apparently based on single specimen

Holotype [of *C. alorensis* KERR.]: “Type” ♂ “Alor, Staud.” “*alorensis* Kerr. Type” “Kerremans 1903-59” [ø (BMNH)]

Additional material: 6 ♂, 6 ♀, 2ø



Fig. 37

Cyphogastra lansbergei THS.

♀ [BPM-o], Lesser Sunda Is.: Adonara



Fig. 38

Cyphogastra lansbergei v. *alorensis* KERR.

♂ [MNHN], Alor I.

Characters [Fig. 37, 38]: Males [6] 24×7-28×8.5, females [6] 29×9.5 – 33×10.5, unsexed [1] 36×?? mm. Dorsal colouration black with strong greenish to purplish-brown lustre on elytra [*f. typ.*] or piceous-black without any metallic shine [*m. alorensis* KERR.], ventral bluish-black, dfp areas bright green; elytral tips black, preapical spot small, inconspicuous, purplish in *f. typ.*, almost indiscernible bluish in *m. alorensis* KERR. Pubescence whitish, short, semierect in sulcus of prosernal process, very dense recumbent on dfp areas, practically none on elevated parts of body. Frontal depression rather broad and shallow, barely extending beyond upper margins of eyes, rather coarsely but sparsely punctured except in subtrapezoidal anterior cavity where puncturation is very dense and irregular. Side margins of pronotum straightly or somewhat arcuately subparallel, anterolateral angles rather well marked but not protruding; fossae large, almost regularly ovate; prehumeral reliefs elongately triangular; anterior foveolae totally obliterated. Elytra non caudate: side margins almost perfectly regularly arcuate from humeri to jointly roundedly subtruncated finely denticulate apices; no trace of subhumeral protrusion; puncturation rather fine, somewhat coarser on basal part but very distinct even at apices. Proepisterna and sides of

suggesting rapid, probably rather recent adaptive radiation. What based on intuitive phenetic evaluation seems (and has been treated in the **Systematic review** above as) a single natural taxon, the *Albertisi*-circle, the phylogenetical analysis suggest to be a polyphyletic assemblage of at least three separate clades (**BB**, **GG**, **DD**) what, however (especially in view of the above-mentioned short inter-taxon distances and resulting weak support for many branchings) needs confirmation by comprehensive (including not yet discussed taxa) reconstruction planned for the final, summarizing part of the **Review**.

TT can be characterized as brightly coloured (probably green) beetle with concolorous epipleura, blackish tips and barely discernible cupreous midlateral patch of elytra; dark tarsi; subparallelsided pronotum with distinct anterior foveolae, not protruding anterolateral angles, tetragonal prehumeral reliefs, and extensively dfp concolorous axe-shaped fossae; markedly caudate, moderately punctured elytra without subhumeal protrusion or dfp depressions; proepisterna entirely dfp, abdominal plaque rather low, marginal and middiscal dfp stripes on abdomen well developed; it might have lived somewhere in western part of New Guinea, and further evolved into two major “superclades”: **SS** (black pronotum and ventral side, lateroapical rather than midlateral patch on elytra) and **KK** (no elytral patch, high abdominal plaque), the former being the ancestor of here irrelevant (including only non-targeted taxa) **P** and rather well differentiated **RR** (no distinct anterior foveolae on pronotum, concolorous fossae, only moderately caudate elytra), itself ancestral to here also irrelevant **QQ** and predominantly “in-group” albeit paraphyletic **BB** (conspicuous elytral lateroapical patch). One of the descendants of **BB**, **Y** (pronotal fossae c-shaped), gave rise to highly distinctive (very large size, purplish-black colouration, markedly projecting anterolateral pronotal angles, only slightly dfp fossae, very fine elytral sculpture) but possibly misplaced *C. herculeana* **OB**. from Moluccas and indistinctive (differentiated only by higher abdominal plaque) **V**, the ancestor of irrelevant (and, by the way, very poorly supported and almost certainly unnatural) **U** and better characterized (subtriangular prehumeral reliefs and broadly ovate fossae, strongly caudate elytra) ancestor of evidently monophyletic New Guinean group herein preliminarily referred to as *C. [friendorum]*-superspecies (**T**), not differing in any of the discussed characters from *C. friendorum* **HOL.**, itself paraphyletic “mother”-taxon of *C. incongruens* **HOL.** (elytra moderately caudate, proepisterna partly smooth). Another descendant of **T** is **S** (contrastingly carmine-red epipleura, distinct anteromedian pronotal foveolae), again apparently identical to *C. oculata* **HOL.**, paraphyletic ancestor of *C. radwanskae* **HOL.** (lateroapical elytral patch very extensive, anterolateral foveolae distinct, discernible subhumeral protrusion, proepisterna partly dfp). **Z** (conspicuous lateroapical elytral patch, distinct anteromedian pronotal foveola, entirely dfp proepisterna), the sister-taxon of apparently misplaced – evidently related rather to the *pisciformis*-group (see below) than to *C. [friendorum]*-spsp.) – **Y**, is ancestral to very distinctive (triangular prehumeral relief, broadly ovate fossae, non-caudate elytra) *C. lansbergei* **THS.** on Lesser Sundas and **D** (elytral disk green, epipleura contrastingly cupreous-red, anteromedian foveola distinct), further split into “continental” SE-New Guinean *C. albertisi* **GST.** (proepisterna partly smooth) and insular *C. malinowskii* **HOL.** (anterolateral pronotal angles poorly marked).

As for **KK**, it gave rise **JJ** (no anterolateral pronotal foveola, partly dfp proepisterna) and New Guinean **GG** (yellow tarsi, anterolateral foveolae prominent, fossae axe-shaped [evidently an artifact resulting from misplacement – see below! – of *C. flavitarsis* **GST.**], contrastingly coloured fossae, entirely dfp proepisterna), the ancestor of *C. flavitarsis* **GST.** (moderately caudate discernible subhumeral protrusion of elytra, low abdominal plaque – in fact almost certainly a member of the remotely related **K** clade!) and **CC** (elytra cupreous,

triangular prehumeral reliefs, fossae occupying almost entire lateral thirds of pronotum) ancestral to the *C. [bicolor]*-superspecies, as the basalmost taxon of which appears *C. caudata* *LSB.* (blackish ventral side, very fine elytral sculpture), a sister-taxon of **X** (dark tarsi) which, in turn, is ancestral to distinctive (pronotal anterolateral angles poorly developed, fossae broadly ovate, prominent subhumeral protrusion of elytra, partly dfp proepisterna) *C. acuminicauda* *HOL.* and much less differentiated (prominent anteromedian pronotal foveola, concolorous fossa) **H**. “Daughters” of the latter are *C. bicolor* *WATH.* (moderately caudate elytra) and **A**≈*C. clara* *KERR.* (elytra green), identical or paraphyletically ancestral to *C. cognita* *HOL.* (anterolateral pronotal angles nearly obliterated).

Turning to the **JJ** clade, one of its “daughters” is irrelevant **II**, the other **HH** (prehumeral reliefs barely marked, fossae c-shaped), itself the “mother”-taxon of again irrelevant complex of the *Uxorismeae*- and *Bruyni*-circles on the one hand and **EE** (no appreciable anteromedian foveola on pronotum, fossae but slightly dfp) which gave rise to still non-targeted *C. tinianica* *KUR.* and **DD** (pronotal reliefs tetragonal, elytra moderately caudate). Of the two descendant clades of **DD** one (**AA**: lateroapical elytral patch conspicuous, anteromedian pronotal foveola distinct, proepisterna entirely dfp) contains mainly here irrelevant taxa, the other (**Q**≈**O**: fossa axe-shaped, abdominal plaque low) almost exclusively targeted ones – each with single (basalmost) exception which, however, may be more apparent than real: *C. gigantea* *OBB.* (lateroapical elytral patch very extensive, anterolateral pronotal angles projecting outwards, prehumeral relief triangular, fossae broadly ovate and extensively dfp), like *C. herculeana* *OBB.* (see above), fits indeed at least as well the *Javanica*- as the *Mniszechi*-circle; on the contrary the *C. sulana*-group (fossae indefinitely c-shaped) does not seem alien to the relatives of *C. pisciformis* *DEYR.*, so may prove truly identical to **Q**≈**O** and, as such, paraphyletic ancestor of western New Guinean *C. coriacea* *KERR.* (non-caudate elytra, coarse sculpture) and **N** (distinct anteromedian foveolae, extensively dfp fossae). Descendants of the latter are on the one hand predominantly Moluccan **I**≈**B**≈*C. mniszechi* *DEYR.* (trigonal prehumeral relief, broadly ovate fossa, high abdominal plaque), the paraphyletic ancestor of New Guinean *C. westcotti* *HOL.* (proepisterna entirely dfp) and also Moluccan (possibly sympatric with *C. mniszechi* *DEYR.*) *C. pratti* *sp.n.* (brownish-bronzed colouration, no appreciable anteromedian foveola), on the other New Guinean **K**≈**G**≈*C. nitida* *Kerr.* (fossae contrastingly coloured) paraphyletic in relation to **J** (ventral side cupreous – “mother” of *C. aereiventris* *KERR.* and *C. violaceiventris* *KERR.*) and **C**≈*C. geelvinkiana* *GST.* (concolorous fossae, subhumeral dfp stripe – paraphyletic ancestor of *C. pisciformis* *DEYR.*).

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Appendix

Character definitions

Upper line – codes of traits [“character-states”]; [***bold italics***] – terminals of a transformation chain

Lower line – weights (costs of transformation) [$0 \leftrightarrow 1 \leftrightarrow 2 = 1$]: additively equidistant (distance between 0 and 1 the same (=1) as between 1 and 2, that between 0 and 2 = 1+1 = 2; ***abc=1***): equidistant [$a \leftrightarrow b = b \leftrightarrow c = c \leftrightarrow a = 1$]; (***abc***) $\leftrightarrow x = 2$: alternatively equidistant [$a \leftrightarrow x = b \leftrightarrow x = c \leftrightarrow x = 2$]

Proportions & colour

1. Colouration - pronotum: [***0***] cupreous through green to blue; [***1***] black
 $0 \leftrightarrow 1 = 3$
2. Colouration - elytra: [g] green or blue; [c] cupreous or bronzed; [p] purplish; [b] black
 $g \leftrightarrow c \leftrightarrow p = 1$; (gcp) $\leftrightarrow b = 2$
3. Elytra (epipleura): [***0***] concolorous; [***1***] contrasting cupreous
 $0 \leftrightarrow 1 = 2$
4. Elytra (lateral streak): [***0***] none; [1] distinct; [***2***] very broad, contrastingly polychrome
 $0 \leftrightarrow 1 \leftrightarrow 2 = 2$
5. Elytra (lateral streak): [***0***] none; [1] midlateral; [***2***] lateroapical
 $0 \leftrightarrow 1 \leftrightarrow 2 = 1$
6. Elytral extreme tips: [***0***] cupreous; [1] concolorous; [***2***] bluish-black
 $0 \leftrightarrow 1 \leftrightarrow 2 = 1$
7. Colouration - ventral: [g] green or blue; [c] cupreous or bronzed; [p] purplish or violaceous; [b] black
 $g \leftrightarrow c \leftrightarrow p = 2$; (gcp) $\leftrightarrow b = 3$
8. Tarsi: [***0***] dark; [***1***] yellow
 $0 \leftrightarrow 1 = 3$

Pronotum

9. Side margins: [***0***] subparallel; [***1***] markedly convergent
 $0 \leftrightarrow 1 = 2$
10. Anteromedian foveola: [***0***] none or inappreciable; [1] distinct; [***2***] prominent, joining fossae
 $0 \leftrightarrow 1 \leftrightarrow 2 = 1$
11. Anterolateral foveola: [***0***] none or inappreciable; [1] distinct; [***2***] prominent, joining fossae
 $0 \leftrightarrow 1 \leftrightarrow 2 = 1$
12. Anterolateral angles: [***0***] barely marked; [1] well developed; [***2***] projecting outwards
 $0 \leftrightarrow 1 \leftrightarrow 2 = 1$
13. Prehumeral reliefs: [***0***] barely marked; [1] tetragonal; [***2***] [sub-]trigonal
 $0 \leftrightarrow 1 \leftrightarrow 2 = 2$
14. Lateral fossae: [n] broad, indefinite, non-dfp; [f] deep furrow; [c] c-shaped; [a] axe-shaped; [o] ovate; [e] entire
 $f \leftrightarrow c \leftrightarrow a \leftrightarrow o \leftrightarrow e = 1$; (fcas) $\leftrightarrow n = 2$;
15. Lateral fossae: [***0***] not dfp; [1] slightly dfp; [***2***] extensively dfp
 $0 \leftrightarrow 1 \leftrightarrow 2 = 1$
16. Lateral fossae: [***0***] concolorous [***1***] contrastingly coloured
 $0 \leftrightarrow 1 = 1$

Elytra

17. Subhumeral protrusion: [***0***] none; [1] discernible; [***2***] prominent
 $0 \leftrightarrow 1 \leftrightarrow 2 = 1$
18. Apical half: [***0***] not caudate; [1] moderately caudate; [***2***] strongly caudate
 $0 \leftrightarrow 1 = 2$; $1 \leftrightarrow 2 = 1$
19. Sculpture: [***0***] very fine; [1] moderate; [***2***] relatively coarse
 $0 \leftrightarrow 1 \leftrightarrow 2 = 1$
20. Dfp perihumeral: [***0***] none; [1] discernible; [***2***] prominent
 $0 \leftrightarrow 1 \leftrightarrow 2 = 1$
21. Dfp subhumeral: [***0***] none; [1] discernible; [***2***] prominent
 $0 \leftrightarrow 1 \leftrightarrow 2 = 1$
22. Dfp sulci – perisutural: [***0***] none; [1] discernible; [***2***] prominent
 $0 \leftrightarrow 1 \leftrightarrow 2 = 1$
23. Dfp sulci – perimarginal: [***0***] none; [1] discernible; [***2***] prominent
 $0 \leftrightarrow 1 \leftrightarrow 2 = 2$

Ventral side

24. Proepisterna: [***0***] entirely dfp; [1] partly dfp; [***2***] entirely lustrous & relieved
 $0 \leftrightarrow 1 \leftrightarrow 2 = 1$
25. Abdominal plaque: [***0***] none; [1] low, posterior angle roundedly obtuse; [***2***] prominent, posterior angle right or acute
 $0 \leftrightarrow 1 \leftrightarrow 2 = 1$
26. Middiscal dfp stripes on abdomen: [***0***] none/inconspicuous; [***1***] distinct at least on anal sternite (often confluent with lateral)
 $0 \leftrightarrow 1 = 2$
27. Lateral dfp depressions on abdomen: [***0***] none or inconspicuous; [1] extensive; [***2***] almost entire sides
 $0 \leftrightarrow 1 \leftrightarrow 2 = 1$

Character matrix

red italics – apomorphies;

blue columns – distance from immediate ancestor and support quotient [S/Q]

	12345	67890	12345	67890	12345	67
	3222	332	22	2	2	2
0. GUAMIA	0c022	2c110	010c0	00100	00020	10
1. Armata-c.	0c000	1c010	000n0	01200	00011	11= 0
2. C.tinianica	0g000	2g100	020c1	02210	00012	11= 6
3. 5-JJ	0g000	1g011	010f2	01210	00012	10= 6
4. Tuberculata-c.	1b000	1b000	221f0	00100	00002	11= 5
5. 6-M	0g012	1g001	011c1	00000	00002	11= 3
6. C.augustini	0g012	2g001	021c1	00210	00012	11= 3
7. C.carbonaria	1b012	2b000	011c1	00110	00002	11= 1
8. 5-D	0g012	2g000	011c1	00110	00002	11= 1
9. C.incolans	0c011	2c000	011c0	00100	00001	11= 1
10. Javanica-gr.	0c011	2c000	011c0	00200	00002	11= 1
11. 5-L	0g000	2g000	011c1	00110	00011	11= 1
12. 6-D	1b011	2b001	011a2	00110	00011	11= 4
13. Gestroi-c.	1g022	2p001	211c0	00210	00011	11= 5
14. 6-A	1g022	2b001	111c0	00210	00001	11= 0
15. 5-GG	1b021	2b001	111c0	00210	00002	11= 4
16. Collarti-c.	1g000	2b002	010o2	11110	00002	11=10
17. 6-X	1b000	2b001	111o2	00210	01202	11=10
18. C.cyaniceps	0g000	2g001	011a2	11210	00212	10= 3
19. 6-FF	0g000	2g001	111a2	00120	22202	11= 9
20. 6-DD	1b000	2g001	101a2	10012	22200	11= 7
21. 6-EE	1b000	1b002	211a2	10100	22211	11= 5
22. C.melaneza	1b000	1b000	011a2	10010	20212	11= 2
23. C.obloquens	1g000	1b101	011a2	00000	20012	11= 7
24. 6-T	1g000	1b001	201o2	10020	01210	11= 7
25. C.coriacea	0g000	2g000	011a1	00020	10011	11= 4
26. C.pisciformis	0g000	2g001	011a2	00110	20011	11= 1
27. C.geelvinkiana	0g000	2g001	011a2	00110	10011	11= 0
28. C.flavitaris	0g000	2g101	211a2	10110	10001	11= 3
29. C.aereiventris	0g000	2c001	011a2	10110	00001	11= 1
30. C.nitida	0g000	2g001	011a2	10110	00011	11= 0
31. C.violaceiventris	0g000	2p001	011a2	10110	00011	11= 2
32. C.albertisi	1g112	2g001	011a2	10110	00011	11= 1
33. C.malinowskii	1g112	2g001	001a2	10110	00001	11= 1
34. C.incongruens	1b012	2b000	012o2	10110	00012	11= 2
35. C.friendorum	1b012	2b000	012o2	10210	00002	11= 0
36. C.oculata	1b112	2b001	012o2	10210	00002	11= 0
37. C.radwanskae	1b122	2b001	112o2	11210	00012	11= 5
38. C.clara	0g000	2g002	212e2	00210	00002	11= 0
39. C.cognita	0g000	2g002	202e2	00210	00002	11= 1
40. C.bicolor	0c000	2g002	212e2	00110	00002	11= 1
41. C.acuminicauda	0c000	2g001	202o2	12210	00012	11= 5
42. C.caudata	0c000	2b101	212e2	10200	00002	11= 3
43. C.westcotti	0g000	2g001	012o2	00110	00002	11= 1
44. C.mniszechi	0g000	2g001	012o2	00110	00012	11= 0
45. C.pratti	0c000	2g000	012o2	00110	00012	11= 2
46. C.gigantica	0g022	2g001	022o2	00110	00002	11= 8
47. C.herculeana	1b012	2p000	021c1	10100	00001	11= 6
48. C.lansbergei	1b012	2g000	012o2	10010	00001	12= 6
A	0g000	2g002	212e2	00210	00002	11= 1 [1/ 2]
B	0g000	2g001	012o2	00110	00012	11= 0 [1/ 2]
C	0g000	2g001	011a2	00110	10011	11= 2 [1/ 2]
D	1g112	2g001	011a2	10110	00001	11= 5 [2/ 8]
E	0c011	2c000	011c0	00100	00002	11= 7 [2/ 7]
F	1b012	2b000	012o2	10210	00002	11= 0 [2/ 5]
G	0g000	2g001	011a2	10110	00011	11= 0 [2/ 3]
H	0c000	2g002	212e2	00210	00002	11= 2 [3/ 5]
I	0g000	2g001	012o2	00110	00012	11= 4 [3/ 5]
J	0g000	2c001	011a2	10110	00011	11= 2 [3/ 3]
K	0g000	2g001	011a2	10110	00011	11= 1 [3/ 4]
L	1g022	2b001	111c0	00210	00001	11= 0 [4/ 5]
M	0g012	2g001	011c1	00110	00002	11= 1 [4/ 5]
N	0g000	2g001	011a2	00110	00011	11= 2 [4/ 4]
O	0g000	2g000	011a1	00110	00011	11= 0 [4/ 5]
P	1g022	2b001	111c0	00210	00001	11= 5 [5/ 9]

Q	0g000	2g000	011a1	00110	00011	11= 2	[5/ 6]
R	0g012	2g001	011c1	00100	00002	11= 0	[5/ 7]
S	1b112	2b001	012o2	10210	00002	11= 3	[5/ 5]
T	1b012	2b000	012o2	10210	00002	11= 3	[5/ 7]
U	1b012	2b000	011c2	00110	00002	11= 1	[6/ 6]
V	1b012	2b000	011c2	10110	00002	11= 1	[6/ 7]
W	0g012	2g001	011c1	00100	00002	11= 1	[7/ 7]
X	0c000	2g001	212e2	10210	00002	11= 3	[8/10]
Y	1b012	2b000	011c2	10110	00001	11= 1	[8/10]
Z	1b012	2g000	011a2	10110	00001	11= 2	[8/ 9]
AA	0g012	2g001	011c1	00110	00002	11= 6	[8/ 9]
BB	1b012	2b000	011a2	10110	00001	11= 2	[9/11]
CC	0c000	2g101	212e2	10210	00002	11= 5	[9/11]
DD	0g000	2g000	011c1	00110	00012	11= 3	[9/ 9]
EE	0g000	2g000	010c1	00210	00012	11= 2	[9/10]
FF	1b000	1b001	211a2	10010	22212	11= 0	[10/12]
GG	0g000	2g101	211a2	10210	00002	11= 8	[10/12]
HH	0g000	2g001	010c2	00210	00012	11= 2	[10/11]
II	0g000	2g001	011a2	00210	00212	11= 4	[11/11]
JJ	0g000	2g001	011a2	00210	00012	11= 2	[11/13]
KK	0g000	2g001	111a2	00210	00002	11= 2	[12/13]
LL	1b000	1b001	201a2	10010	22210	11= 3	[11/12]
MM	1b000	1b001	211a2	10010	22212	11= 4	[11/11]
NN	1b000	1b001	211a2	00010	21212	11= 4	[12/13]
OO	1b000	1b001	211a2	00000	20012	11= 4	[9/12]
PP	1b000	1b000	211a2	00100	00002	11= 3	[7/10]
QQ	1b000	2b000	211a2	10110	00002	11= 5	[10/12]
RR	1b002	2b000	011a2	10110	00001	11= 6	[12/13]
SS	1g002	2b001	111a2	00210	00001	11= 6	[9/14]
TT	0g001	2g001	111a2	00210	00001	11=16	[9/10]
UU	0c000	1c010	000n0	01200	00011	11	
VV	0c011	2c110	010c0	00200	00011	11	
	22	1	a	1	00	0	
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