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Review of the [*Cyphogastra* DEYR.]-supergenus (Coleoptera: Buprestidae) V. The *Farinosa*- and *Canaliculata*-circles

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Introduction

The present, fifth (see HOLYŃSKI 2016, 2020b,c,d for the first four) part of the Review deals with two mainly New Guinean circles, including species characterized by black head and pronotum and dfp-furrowed elytra. Both groups are taxonomically and biogeographically difficult and nomenclaturally confused, suffering from the dominating “upside down” attitude of publishers and funding agencies: dogmatic, nearly exclusive promotion of sophisticated, “model”-based, “hypothetico-deductive” divagations overloaded with multi-layered statistical procedures, with snobistic disdain for taxonomic-faunistic explorations needed to provide sufficiently abundant, comprehensive and reliable basic data – in agricultural terms: support for harvest with simultaneous discouragement of sowing! The result is easy to predict and indeed universally observable: as regards studies similar to the present one, it is expressed in scarce, taxonomically and geographically biased material consisting mainly of old, poorly and/or irreliably labelled specimens (many taxa being known from only – or hardly more than – the type-series), making the evaluation of even the very validity of various forms, to say nothing of the ranges of distribution or phylogenetic relationships, poorly supported and often erroneous, with once committed mistakes “fixed” in the literature for decades or even centuries [*cf. e.g.* the cases of *C. clara* KERR. (HOLYŃSKI 2020a) or *C. farinosa* (F.) (HOLYŃSKI 2021a)]. Of course my conclusions presented below are also affected with all these deficiencies, but... “*if you close the door to all mistakes, the truth will remain outside*” (Rabindranath TAGORE).

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, as some of such names (e.g. of the subtribes **Buprestina LEACH**, **Melobasina BÍLÝ** or **Coraeбина BED.**) are (or may easily become) “homonymous” (but valid!) with generic or subgeneric ones (*Buprestina OBB.*, *Melobasina KERR.*, *Coraeбина 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 quoted in quotation marks “”, a label glued on another label (frequent e.g. in KBIN) in \dashv \vdash , a label glued on another label on which still another has been glued in \dashv \vdash (so, some may look like “abc \dashv def \dashv ghi \vdash \vdash ”). Determination- and type-designation labels added by me are not cited: the former are white, in the form like “*Cyphogastra atroviridis* HOL., det. R. HOLYŃSKI” with year of determination written vertically on the left side; the latter red [for primary types], e.g. “*Cyphogastra plana* HOLYŃSKI, HOLOTYPE” or green [for paratypes], e.g. “*Cyphogastra jadwyszczaki* HOLYŃSKI, PARATYPE”.

New species will be described in detail, descriptions of others restricted to the characters 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 foveae of pronotum: anterolateral and anteromedian

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

Anteromedian fovea of pronotum: small, often indistinct fovea placed midlaterally 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/prominently angularly protruding epipleural margin at humeri

Caudate elytra: of concave lateroapical margins and dorsal profile

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

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

Midiscal 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

Midlateral: 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*** = (e.g. BPfnt): specimen-identifying signature
 ≈ = approximately equal
 [O],[O] = 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
 DEI = Deutsche Entomologische Institut, Eberswalde, GERMANY
 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
 NNHM = Nationaal Natuurhistorisch Museum, Leiden, HOLLAND
 RBH = Roman B. HOLYŃSKI, Milanówek, POLAND
 USNM = Smithsonian Institution: National Museum of Natural History, Washington, USA
 ZMK = Zoologisches Museum, Kiel, GERMANY

Systematic review

BUPRESTIDAE LEACH B U P R E S T I N A E L E A C H B U P R E S T I N I L E A C H

C H R Y S O C H R O I N A C A S T .

Cyphogastra DEYR.

Cyphogastra DEYR. s. str.

Cyphogastra DEYROLLE 1864: 36-37

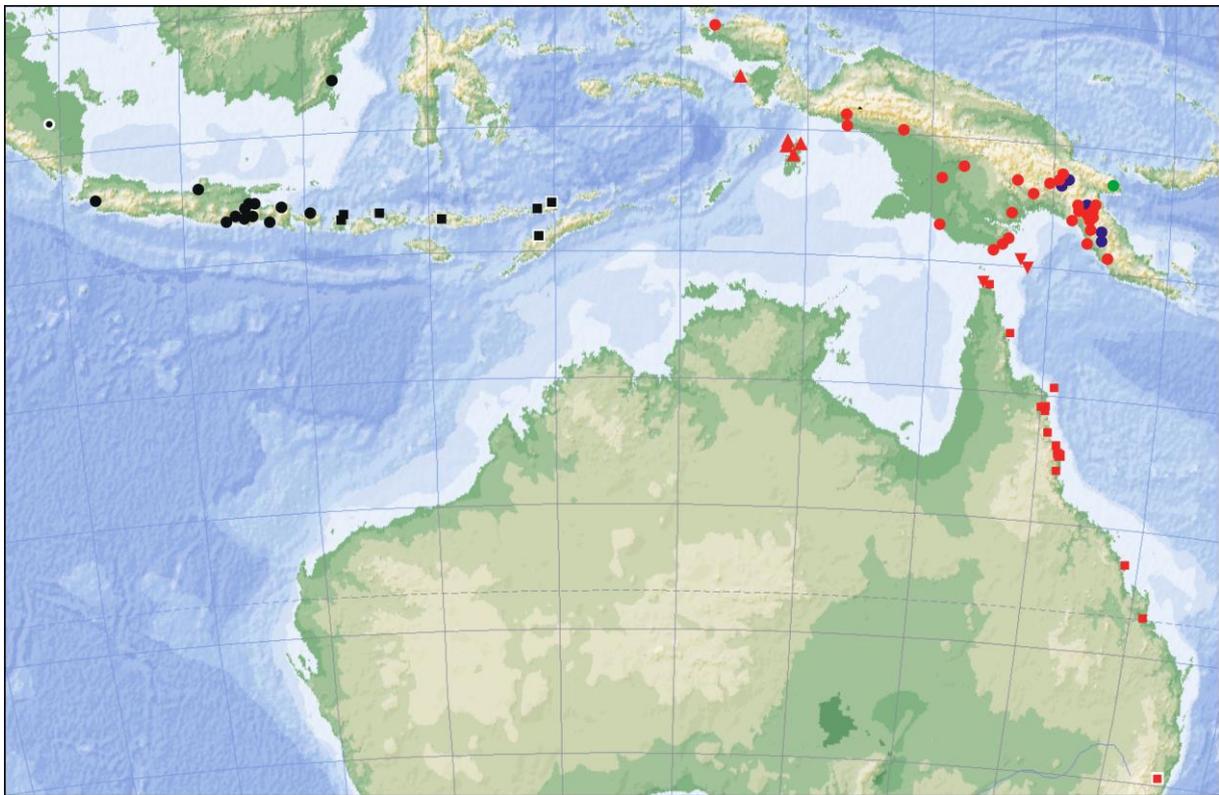
[type-species: *Buprestis foveicollis* BOISDUVAL 1835]

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

- 1 (2) No dfp sulci on apical half of elytra; or, if one (perisutural) is 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
Tinianica-, *Uxorismeeae*-, *Bruyni*-, *Armata*-, *Flavimana*-, *Tuberculata*-, *Satrapa*-,
 *Collarti*-, *Gestroi*-, *Javanica*-, *Albertisi*-, *Caudata*- and *Gloriosa*-circles
- 2 (1) Apical half of elytra with longitudinal dfp sulci; if only perisutural is developed then pronotal fossae in form of upturned L-square or very large, occupying $\frac{2}{3}$ or more of the lateral third of pronotum, with bottoms extensively dfp; if elytral disk black then ventral side and epipleura also black
- 4 (3) If head and pronotum black then elytra and/or ventral side partly or entirely metallic, or either perisutural sulcus lacking or abdominal plaque barely noticeable
- 5 (6) Head and pronotum black, elytra and ventral side partly or entirely contrasting metallic; if uniformly black then perisutural and perimarginal sulci developed only in apical half ***Farinosa*-circle**
- 6 (5) Body uniformly black, with or without some brassy lustre. Perisutural and/or perimarginal dfp sulcus more or less markedly developed but always discernible all along ***Canaliculata*-circle**
- 3 (4) Either entirely metallic or, if uniformly blackish, either perisutural sulci absent or abdominal plaque rudimental . *Ventricosa*-, *Pistor*-, *Modesta*- and *Kampeni*- circles

Farinosa-circle

Remarks: A group of species whose relationships are not perfectly clear: especially *C. aterrима* KERR. may, as a result of further studies, turn out to belong to the *Ventricosa*- and *C. petrillarum* sp.n. to the *Canaliculata*-circle; on the other hand, the attribution of *C. semipurpurea* (C.G.) and its close relatives to the *Javanica*- rather than to *Farinosa*-circle remains also rather poorly supported. As the nature [affinity vs. convergence] of the striking similarities to the *Ventricosa*-circle remains also debatable, there is still much to clarify as regards the systematics of the group... The nucleus of the circle makes polytypic *C. farinosa* (F.) [see **Remarks** under that species!] widely distributed on New Guinea and northernmost Australia; New Guinean are also *C. aterrима* KERR. and *C. petrillarum* sp.n.: only *C. impressa* KERR. (evidently a link, through *C. semipurpurea* (C.G.) group, to the Moluccan – Lesser Sundan *Javanica*-circle) inhabits southeastern parts of the Malay Arch.



Map 1

Geographical distribution of the *Farinosa*-circle

■ – *C. impressa* KERR. s.str.; ● – *C. i. borneensis* KERR.; ● – *C. aterrима* KERR.; ● – *C. petrillarum* sp.n.
 ■ – *C. farinosa* (F.) s.str.; ▼ – *C. f. macfarlani* WATH.; ● – *C. f. papuigena* OBB.; ▲ – *C. f. venerea* (THS.)

Key to the identification of species of the *Farinosa*-circle

- 1 (6) Elytral disk black
- 2 (3) Both perisutural and perimarginal elytral dfp prominent in apical half
 *C. (s.str.) aterrима* KERR.
- 3 (2) Perisutural dfp sulcus prominent, perimarginal not or barely discernible
- 4 (5) Elytra entirely black; pronotal fossae purplish. Anteromedian foveola sulciform, connected to fossa. Denticles of elytral apex very fine, numerous (>6)
 *C. (s.str.) petrillarum* sp.n.

- 5 (4) Epipleura and/or sides of elytra more or less distinctly tinted metallic; bottoms of fossae concolorous or dull green (rarely golden). Anteromedian foveola in distinct or rounded, not connected to fossa. Apical denticles of elytra much coarser, less numerous (usually 3 or 4) *C. (s.str.) impressa* **KERR.**
- 6 (1) Elytral disk distinctly metallic: usually green, sometimes blue or cupreous *C. (s.str.) farinosa* (**F.**)

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

Cyphogastra aterrima **KERREMANS** 1911: 297

Cyphogastra monticola **HOLYŃSKI** i.l.

Material examined: 13 ♀, 1 ♂

Characters [Fig. 2]: Females [13] 23.5×7 – 30×10 mm. Black with slight (more evident ventrally) bluish shine; dfp depressions golden-green to cupreous. Body – except dfp areas, pro/metasternal median sulcus and legs – practically glabrous. Pronotal sides subparallel or slightly convergent; anterolateral angles well marked but not protruding; collar poorly indicated; fossa very broad, usually connected to at least one of anterior foveolae, but often separated into sulciformly elongated mediobasal and smaller somewhat shorter but broader lateral parts; anterior foveae well developed. Elytral sides subparallel in basal half, then sinuately tapering to caudate apices; no subhumeral protrusion. Puncturation coarse and irregularly confluent at base, gradually diminishing towards apex but distinct throughout. Perisutural and perimarginal sulci prominently developed, middiscal lacking. Proepisterna usually (but not always) entirely dfp; prosternal process rather widely, deeply sulcate and very densely irregularly sculptured along midline; abdominal plaque prominent, sparsely covered with fine elongate punctures; abdomen otherwise sparsely, rather coarsely punctured; marginal and midlateral dfp stripes broad but more or less distinctly separated; apex of anal sternite rather broadly roundedly subtruncated, often with small very shallow sinuation at tip.

Geographical distribution [Map 1]: Mountainous areas of SE-New Guinea, from Eastern Highlands to Central Prov.

Remarks: Seems closely related to *C. farinosa papuigena* **OBB.**, largely replacing it in highlands. Unmistakable by combination of black colouration with strong development of both perisutural and perimarginal elytral sulci.

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

Material examined:

Holotype: “D.Neu-Guinea, Tobou” “*Kua flussgeb., 1400 m., IV 1913*” [♀ (RBH: BPegv)]

Additional material: None

Holotype [Fig. 1]: Female [1] 25.5×8 mm. Dorsal side black with slight bronzy shine, elevated parts of ventral surface dark blue; pronotal fossae purplish, ventral dfp depressions golden- to cupreous-bronzed. Body glabrous, only legs, median sulcus of pro- and metasternum, and dfp areas with short, white pubescence.

Epistome broadly trapezoidally emarginate, no distinct epistomal ridge; frontoepistomal border marked by very deep transverse groove and prominent smooth biarcuate carina. Front much wider than long, sides slightly divergent; frontal depression deep, rather narrowly paraboloidal, reaching distinctly behind upper margins of eyes, shallowly and very sparsely punctured; semicircular anterior cavity shallow, puncturation coarse but not very dense; lateral ridges low, very broad, almost smooth; periocular sulci very deep; V:H≈0.50.



Fig. 1

Cyphogastra petrillarum sp.n.
♀ HT [BPegv], NG: Huon Pen.: Tobou



Fig. 2

Cyphogastra aterrима KERR.
♀ [BPftq], PNG: E-Highl. Pr.: Lufa



Fig. 3

Cyphogastra impressa KERR. s.str.
♂ [BPeh-], E-Java



Fig. 4

Cyphogastra i. borneensis KERR.
♀ [MNHN], Borneo

Pronotal sides subsinuately parallel, anterolateral angles not protruding; collar distinct; basal margin shallowly angularly sinuate to both sides of narrowly truncated prescutellar lobe; anterior margin bisinuate, median lobe rather prominent, subtruncated; middiscal elevations very finely and sparsely punctulate, sculpture of elevated parts of pronotal sides definitely coarser and denser but very irregular; fossa very large, connected to sulciform anteromedian fovea. Scutellum minute, trapezoidal, deeply sulcate along midlength, smooth.

Elytra 2.3× longer than wide. Sides obliquely truncated at humeri, slightly convex just behind truncation, subparallel to midlength, and sinuately convergent to caudate apices; lateral margin with 6-7 sharp and rather large, subtruncated tips with 4-5 very small, each sutural angle with single prominent denticle. Puncturation coarse and irregularly confluent at base, progressively finer backwards to become very fine near apices; perisutural sulcus narrow, poorly developed, not reaching anterad beyond midlength; otherwise elytral surface regularly convex.

Proepisterna with multiple small dfp spaces between irregular smooth elevations; sulcus of prosternal process densely irregularly sculptured at bottom, covered with moderately dense semierect pilosity; median parts of metasternum nearly smooth; sides of meso- and metasternum almost entirely dfp. Abdominal plaque rather high, roundedly obtuse-angled in profile, sulcately depressed at middle of apex, very finely and sparsely punctulate; perimarginal and midlateral dfp stripes well developed but clearly separated; apex of anal sternite rather broadly rounded.

Geographical distribution [Map 1]: Known only from the holotype, collected in mountainous interior of Huon Peninsula: 6°24'S-147°25'E.

Remarks: combination of black dorsal side, fully concolorous epipleura, contrastingly purplish pronotal fossae, bright golden-bronzed ventral dfp, sulciform anteromedian pronotal foveolae, single (perisutural) dfp sulci, minutely denticulated apices of elytra, depressed apex of abdominal plaque, &c., makes *C. petrillarum* sp.n. clearly distinguishable, although single specimen known does not allow to evaluate the range of its variability. The species is dedicated, in appreciation of their nature-protecting and ornithological activity and our long-[almost half-century]-standing friendship and cooperation, to the family of Hungarian naturalists: Petrillané Bartha Enikő, Petrilla Attila, and the younger generation: Janka, Gara, Kende and Réka.

Cyphogastra (s.str.) impressa KERR.

Characters: Dorsal side piceous-black with elytral sulci (sometimes also pronotal dfp depressions and bottoms of some punctures) golden or cupreous, also anterior part of elytral sides more (in Javanese) or less (in Lesser Sundan exs.) extensively dfp and cupreous; ventrally dull brassy-green. Dfp areas covered with ochraceous to rufous pulverulence which, however, easily becomes erased and so is only on fresh specimens clearly observable; pubescence in median sulcus of prosternal process and metasternum moderately long, erect; elevated surfaces of body practically glabrous. Pronotal sides subparallel, sometimes shallowly sinuate; anterolateral angles somewhat swollen but not protruding (rarely broadly rounded); fossae rather deep, c-shaped, with more or less extensive dfp areas; anterior foveolae usually deep and rather large; disk finely and sparsely, irregularly punctured, sculpture on sides and near anterior angles dense and coarse. Elytra caudate; no subhumeral protrusion; puncturation finer towards apices but rather coarse throughout. Proepisterna partly or entirely dfp; prosternal process deeply sulcate and rather finely but densely, confluent

punctured along midline, sparsely so on lateral rims; abdominal plaque rather low but well marked, near-right angled in profile, finely and very sparsely punctured; puncturation of the rest of non-dfp areas of abdomen denser and coarser; marginal and midlateral dfp stripes well developed but narrow and well differentiated in females, broad and confluent to cover almost entire abdomen (except relatively narrow glabrous median space) in males; apex of anal sternite regularly rounded or indistinctly, narrowly and shallowly sinuated [♀] or broadly but shallowly emarginated [♂].

Geographical distribution [Map 1]: Greater and Lesser Sundas; almost all known localities in relatively dry section between Central Java and Alor: only one place in W-Java, one (somewhat questionably identified) in SE-Borneo (plus some specimens labelled generally “Borneo”), one (likely erroneous) “Sumatra”, and two evident mislabellings (“New Guinea” and “Yule I.” make the known exceptions.

Remarks: This is the common species referred to in literature and labelled in collections under the name of *C. farinosa* (F.) and hitherto so determined also by me [true *C. farinosa* (F.) – see below – is a New Guinean/northeast Australian species (HOŁYŃSKI 2021a)].

Key to the identification of subspecies of *C. impressa* KERR.

- 1 (2) Elytral sulci narrower and duller. Proepisterna with some irregular smooth elevations emerging from shallowly depressed dfp bottoms *C. impressa* KERR. s.str.
- 2 (1) Elytral sulci broader and brighter cupreous. Proepisterna uniformly dfp *C. i. borneensis* KERR.

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

Cyphogastra impressa KERREMANS 1898: 118

Cyphogastra farinosa KERREMANS 1910: 250-253 [nec FABRICIUS 1775: 219 (*Buprestis*)]

Material examined:

?**Holotype:** “Ombai” [ø (BMNH)]

Additional material: 11 ♂, 32 ♀, 3 ø

Characters [Fig. 3]: Males [11] 22.5×7 – 30×9.5, females [19] 25×7.5 – 30.5×10.5 mm. Dorsal side rather mat, elytral punctures often golden-cupreous, posthumeral dfp usually conspicuous, elytral sulci narrower and duller, also anterior part of elytral sides rather extensively dfp and cupreous; ventrally more or less dull brassy-green. Elytral puncturation coarser but not confluent. Abdominal plaque low, in profile right- or slightly obtuse-angled.

Geographical distribution [Map 1]: Lesser Sundas between Flores and Alor; “Yule Island” is evident mislabelling.

Remarks: Ombai (=Ombay) is a locality on NE-Pantar I. [ca. 8°16’S-124°16’E], but in earlier times the name had been used also for Alor I. The specimen of “var. *impressa*” from “Ombai” in BMNH bears no type-label, so its identity as the holotype, albeit highly probable, is not perfectly sure!

***Cyphogastra* (s.str.) *impressa* KERR. *borneensis* KERR.**

=*Cyphogastra farinosa* var. *borneensis* KERREMANS 1910: 251

Material examined: 5 ♂, 62 ♀, 8 ø

Characters [Fig. 4]: Males [5] 20×6 – 25×7.5, females [62] 23×7 – 33×10.5 mm. Dorsal surface slightly more lustrous, bottoms of punctures almost always concolorous, posthumeral dfp streak barely appreciable, elytral sulci broad and brightly cupreous; ventral side predominantly plumbeous-green. Elytral puncturation somewhat finer, with tendency to form irregular transverse wrinkles. Abdominal plaque very low, in profile markedly obtuse-angled.

Geographical distribution [Map 1]: Malay Archipelago west of Wallace Line: Borneo, Java and Bali; occurrence on Sumatra uncertain, label “Neuguinea” evidently erroneous.

Remarks: Poorly differentiated subspecies of rather doubtful validity, the differences very slight, only “statistically” (on the average) discernible.

Cyphogastra (s.str.) farinosa (F.)

Characters: Head and pronotum black, elytra usually green, sometimes golden-cupreous or blue; dfp depressions cupreous or (rarely) golden-green. Body glabrous, only legs and dfp areas with short, white pubescence. Pronotum subparallelsided; anterolateral angles usually well developed; collar rather distinct; fossa broad; anterior foveae well developed, often connected to fossa; middiscal elevations finely and very sparsely punctulate, elevated parts of pronotal sides coarsely and rather densely, irregularly punctured. Elytral sides subparallel in basal half, then cuneately tapering to more or less distinctly caudate apices; no subhumeral protrusion; puncturation rather coarse on basal fourth, gradually diminishing towards apex. Perisutural and/or perimarginal sulci well developed in apical half, middiscal lacking. Prosternal process rather widely, deeply sulcate along midline, sulcus densely irregularly sculptured, with erect pubescence, lateral rims almost impunctate; abdominal plaque moderately prominent, covered with very fine and sparse rasp-like punctures; abdomen otherwise sparsely, rather coarsely punctured; marginal and midlateral dfp stripes well developed, separated; apex of anal sternite subtriangularly emarginated [♂] or narrowly rounded [♀]; *aedoeagus* elongated, subparallelsided, brownish-yellow; tip of penis acute.

Geographical distribution [Map 1]: Aru Is., southern New Guinea, NE-Australia.

Remarks: Both individually and geographically variable species differing from other representatives of the *Farinosa*-circle in metallic (from cupreous through – usually – green to blue) colour of elytra. This is the common species usually referred to as *C. venerea* (THS.).

Key to the identification of subspecies of *C. farinosa* (F.)

- 1 (4) Perimarginal elytral dfp sulcus absent or much less strongly developed than perisutural.
- 2 (3) Elytra bluish-green or blue. Anteromedian angle of laterobasal relief right or obtuse, not entering into broad fossa *C. f. venerea* (THS.)
- 3 (2) Elytra dull green to bluish. Anteromedian angle of laterobasal pronotal relief somewhat acute, enters into dfp bottom of rather narrow fossa, partly subdividing it into posteromedian and anterolateral parts *C. farinosa* (F.) *s.str.*
- 4 (1) Perimarginal elytral dfp sulcus as well or better developed as perisutural
- 5 (6) Both elytral sulci prominent *C. f. papuigena* OBB.
- 6 (5) Perisutural sulcus absent or barely marked *C. f. macfarlani* WATH.

Cyphogastra (s.str.) farinosa (F.) s.str.

Buprestis farinosa FABRICIUS 1775: 219

Cyphogastra venerea cooki HOLYŃSKI i.l.

Material examined:

Syntypes [only photographs seen]: “*Buprestis farinosa*, *Fab. Entom. p. 219. n. 16*” [1 ♂ (BMNH)]; “50., *farinosa*” “*farinosa*”, “Type i. Coll. Banks” [1 ♀ (ZMK)]

Additional material: 18 ♂, 56 ♀, 7 ♂

Characters [Fig. 10]: Males [18] 22.5×7 – 29×9, females [56] 24×7.5 – 35×11.5 mm. Elytra dull blackish-[rarely golden- or bluish-]green. Pronotal fossae relatively narrow, anteromedian angle of laterobasal reliefs somewhat prolonged, partly wedging between posteromedian and anterolateral branches of fossa. Perimarginal elytral sulcus usually absent or inconspicuous, rarely well developed. Proepisterna extensively but usually not entirely dfp. Abdominal plaque moderately prominent; marginal and midlateral dfp stripes well developed, widely separated.

Geographical distribution [Map 1]: NE-Queensland (York Pen.); single ex. labelled as from New South Wales may perhaps indeed come from the northeasternmost peripheries of that state; specimens allegedly from West Australia (Kalgan Riv.) are almost certainly mislabelled.

Remarks: Differs from all other subspecies by more or less acute anteromedian angle of posterolateral pronotal relief wedging into relatively narrow fossa; specimens lacking perimarginal elytral dfp sulcus resemble *C. f. venerea* (THS.), while specimens with this structure better developed might be practically indistinguishable from *C. f. papuigena* OBB.



Fig. 5

Cyphogastra f. venerea (THS.)
♀ [BPehn], Aru: Ureuning



Fig. 6

Cyphogastra f. papuigena OBB.
♂ [BPluu], NG: Morobe Pr.: Tekadu



Fig. 7

Cyphogastra f. papuigena OBB.
♀ LT [MNHN], PNG: Yule I.



Fig. 8

Cyphogastra f. macfarlani WATH.
♀ [BPlut], Murray Is.



Fig. 9

Cyphogastra f. macfarlani WATH.
♂ ST *C. nigrolineata* THY. [MNHN]
N. Guinea

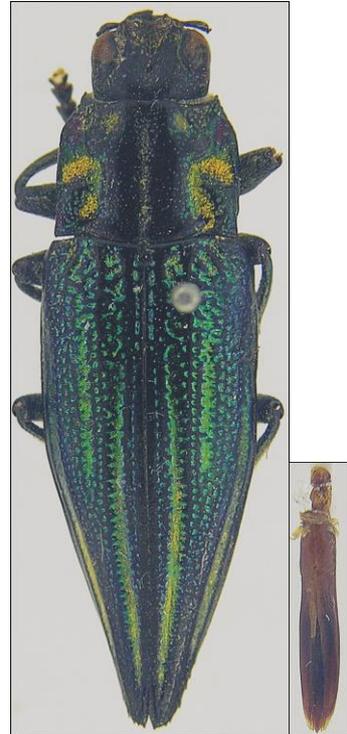


Fig. 10

Cyphogastra farinosa (F.) s.str.
♂ PT [USNM], Qld.: Cairns: Clump Point

***Cyphogastra (s.str.) farinosa (F.) macfarlani* WATH.**

Cyphogastra Macfarlani WATERHOUSE 1885: 382

Cyphogastra sodalis WATERHOUSE 1885: 382

Cyphogastra nigrolineata THÉRY 1908: 79-80

Material examined:

[?Holo-]type [of *C. macfarlani* WATH.]: “” “Murray I., 78-41” “*Cyphogastra macfarlanei* (Type) Waterh.” [1 ♂ (BMNH)]

[?Holo-]type [of *C. sodalis* WATH.]: “” “Cornwallis I., 78-40” “*Cyphogastra sodalis* (Type) Waterh.” [1 ♂ (BMNH)]

Syntypes [of *C. nigrolineata* THY.]: “N.^{lle} Guinée, Théry” “*nigrolineata* Thery Type” “” [1 ♂ (MNHN)]; “Coll.I.R.Sc.N.B., Nouvelle Guinée |N. Guinée|, |*nigrolineata* Thery Type|, |PaTYPE|” cf. Ann. Soc. Ent. Belg. 1908, 52: 79,80, |Paratype|” “*farinosa* v. *sodalis*=*nigrolineata* Théry (Paratype) THERY det.” [1 ♂ (KBIN)]

“Cotype” [of *C. nigrolineata* THY.]: “” “*nigrolineata* THERY Type” “*Cyphogastra nigrolineata* Thery c. typ Théry det.” “Ex Coll. A Théry, B.M.1923-364” [1 ♂ (BMNH)]

Additional material: 7 ♀, 4 ♂

Characters [Fig. 8,9]: Males [2] 27×8 – 28×8, females [6] 27.5×8.5 – 33×10.5 mm. Elytra green to blue with black costae (sometimes – so e.g. in MNHN syntype – black colour strongly extended to leave from metallic “background” only hardly discernible traces). Pronotal sides slightly convergent; anterolateral angles poorly marked; fossae narrow or but moderately broad, partly subdivided by anteromedian extension of posterolateral relief; anterior foveolae indistinct. Perimarginal elytral sulcus prominent, perisutural weakly or not indicated. Proepisterna uneven, partly dfp. Abdominal plaque rather high, nearly right-angled in profile; marginal and midlateral dfp stripes clearly separated.

Geographical distribution [Map 1]: Collected on Cornwallis, Darnley, Murray and Thursday I., but probably occurs (or at least occurred...) also on some other islets of Torres Strait.

Remarks: Subspecies of doubtful validity: perhaps only an intermediate, variable, population characterized [if really: only few specimens known!] by well developed perimarginal but lacking or rudimental perisutural elytral dfp sulcus. The name *C. nigrolineata* THY., often attributed to the “continental” New Guinean race (*C. f. papuigena* OBB.), is in fact a synonym of *C. f. macfarlani* WATH. I refrain from designation of lectotype, because the only syntype actually before me – that from MNHN – does not seem best appropriate, apparently representing an extremely dark and slender variety. The status of the “cotype” is doubtful: this term was sometimes used as a synonym of syntype, but often means no more than “compared with type”.

***Cyphogastra (s.str.) farinosa (F.) papuigena* OBB.**

Cyphogastra papuigena OBERBERGER 1922: 68

Material examined:

Lectotype [here designated]: “Isl. Yule” “” “*Cyphogastra papuigena* m. Type!, Det. D^f Oberberger” [1 ♀ (MNHN)]

Paralectotype: „N.Guinea” „” „*C. papuigena* m. Type, Det. D^f Oberberger” „Mus. Nat. Pragae, Inv. 20 022” [1 ♀ (EONMP)]

Additional material: 15 ♂, 250 ♀, 9 ♂

Characters [Fig. 6,7]: Males [15] 22×7 – 26×8, females [250] 21.5×6.5 – 34×11 mm. Elytral colour variable from cupreous through golden and (most frequently) green to blue. Pronotal fossae very broad, joining well developed anterior foveolae; anteromedian angle of laterobasal reliefs often acute-angled, but not significantly wedging into fossa. Both elytral sulci prominent. Proepisterna uneven, distinction between depressed dfp and elevated smooth areas usually unclear. Abdominal plaque prominent but usually obtuse-angled in profile; marginal and midlateral dfp stripes clearly separated.

Geographical distribution [Map 1]: Inhabits lowlands of southern New Guinea (occurrence on the northern side of the main watershed – in Bulolo – needs confirmation).

Remarks: Characterized by presence of both perisutural and perimarginal sulci on elytra. This subspecies used to be identified (also by me) as *C. nigrolineata* THY., but as well the careful reading of the original description as examination of syntypes leave little doubt that the latter name refers to *C. f. macfarlani* WATH. (see below!). Both (housed in EONMP and in MNHN) syntypes of *C. papuigena* OBB. examined by me agree well with the original description; as lectotype I am hereby designating the MNHN specimen [Fig.8] because on the one hand this is the one I have just on loan with me, and on the other it is concretely labelled as “Isl. Yule”, while the other has only a general label “N. Guinea”.

Cyphogastra (s.str.) farinosa (F.) venerea (THS.)
Chrysodema venerea THOMSON 1857: 431-432

Material examined:

Additional material: 9 ♂, 85 ♀, 46 ♂

Characters [Fig. 5]: Males [8] 23×6.5 – 32.5×10, females [51] 23×7 – 34×11 mm. Elytra dark green to – usually – bluish. Pronotal fossae broad, joining at least one of anterior foveolae, sometimes fully incorporating them; anteromedian angle of laterobasal reliefs right- or somewhat obtuse-angled, not wedging into fossa. Perimarginal elytral sulcus absent, perisutural well developed. Proepisterna extensively dfp with also rather extensive, poorly delimited, irregular smooth areas. Abdominal plaque moderately prominent; marginal and midlateral dfp stripes well developed, clearly separated.

Geographical distribution [Map 1]: Almost all reliably labelled specimens seen by me originated from Aru Is., the only exceptions being two ex. from Fakfak (westernmost New Guinea: Onin promontory of Bomberai Peninsula)

Remarks: Differs from all other subspecies in combination of strong perisutural with lacking perimarginal elytral sulcus.

Canaliculata-circle

Remarks: A group of closely related species characterized by black body and usually (except *C. kerremansi* THY.) trisulcate (adorned with – besides perisutural and perimarginal – also third, middiscal dfp sulcus) elytra. Mostly insular, strictly allopatric representatives of the circle do not show conspicuously diagnostic differences (no selective prepression for “character displacement” typical in sympatry). The relatively weak interspecific differentiation, accompanied with scarcity of available material (3 out of 6 recognized species are known only from one or at most – *C. websteri* sp.n. – two specimens) make my taxonomic conclusions more or less contestable: further studies may perhaps reveal that some forms I consider separate species are in fact subspecies or even synonyms of others – but “one must cut one’s coat according to one’s cloth”... As far as hitherto known, representatives of the *Canaliculata*-circle inhabit scattered areas of New Guinea, as well as New Hannover, New Ireland, Woodlark and Louisiade Is.



Map 2

Geographical distribution of the *Canaliculata*-group

- – *C. kerremansi* THY.; ● – *C. franki* sp.n.; ● – *C. conjungens* sp.n.; ● – *C. sekerkai* sp.n.;
● – *C. canaliculata* THY.; ● – *C. inconscita* HOL.; ● – *C. websteri* sp.n.; ● – *C. hoschecki* sp.n.; ● – *C. biroi* sp.n.

Key to the identification of species of the *Canaliculata*-circle

[several species are known only from one sex, so some characters may not be fully reliable!]

- 1 (2) Middiscal sulci lacking, perimarginal widest and almost entire *C. (s.str.) kerremansi* THY.
- 2 (1) If middiscals lacking, perimarginals also rudimental
- 3 (8) Pronotal sides definitely convergent
- 4 (5) Anterolateral pronotal angle well developed; perimarginal elytral sulcus discernible only in apical part; elytral apex multidenticulate with sutural denticle sharp but not contrastingly long *C. (s.str.) franki* HOL.
- 5 (4) Anterolateral angle obliterated; perimarginal sulcus almost entire; elytral apex bidentate or suturoapical denticle spiniform, strikingly longer than others
- 6 (7) Elytral apices multidenticulate, suturoapical denticle spiniform, contrastingly longer than others; ventral pubescence short *C. (s.str.) conjungens* HOL.
- 7 (6) Elytral apices essentially bidenticulate; suturoapical denticle not much longer than others; ventral pubescence strikingly long *C. (s.str.) sekerkai* HOL.
- 8 (3) Pronotum subparallelsided
- 9(12) Either pronotal fossae very broad, entire, or middiscal and perimarginal sulci at most barely discernible
- 10(11) Pronotal fossa broad, entire; both anterior foveae well developed, usually broadly connected to fossa. Middiscal sulcus distinct, reaching far beyond midlength *C. (s.str.) canaliculata* THY.
- 11(10) Pronotal fossa narrow, separated by oblique irregularly elevated “bridge” into elongated peridiscal and small rounded lateral part; anterior foveae poorly developed, not or very indistinctly connected to fossa. Middiscal sulcus absent or inconspicuous, not reaching beyond midlength *C. (s.str.) inconscita* HOL.
- 12 (9) Fossae at least partly divided into larger mediobasal and smaller lateral foveae; middiscal (at least basally) and perimarginal (at least apically) sulci well developed
- 13(14) Body large: length >24 mm. Elytra not caudate *C. (s.str.) websteri* sp.n.
- 14(13) Body length < 23 mm. Elytra caudate
- 15(16) Anterior pronotal foveae barely discernible, not connected to fossa. Elytral “costae” flatter, matter, coarsely punctured *C. (s.str.) hoschecki* sp.n.
- 16(15) Anteromedian fovea sulciform, connected to fossa. Elytral “costae” lustrous, markedly convex, finely and sparsely punctulate *C. (s.str.) biroi* sp.n.

***Cyphogastra (s.str.) kerremansi* THY.**

Cyphogastra arcuaticollis KERREMANS 1911: 296 [nec KERREMANS 1910: 202-203]

Cyphogastra Kerremansi THÉRY 1926: 71

Cyphogastra Kerremansi OBENBERGER 1926: 118

Cyphogastra Kerremansi ssp. *Freyi* THÉRY 1943: 628-629

Material examined:

?**Syntype:** “Woodlark Meek 95” “Type” “[–]” “type” “Museum Leiden, Ex coll. G. van Roon” [♂ (NNHM)]

Additional material: 9 ♂, 12 ♀

Characters [Fig. 11]: Males [6] 23×7 – 28×9, females [9] 26.5×8.5 – 31×10 mm. Dorsal side [bronzed-]black with (not always evident) plumbeous or brassy shine; bottoms of punctures, dfp depressions and ventral side somewhat more brightly metallic. Body glabrous, only legs and dfp areas with short, white pubescence. Pronotal sides distinctly convergent; anterolateral angles poorly or not at all developed; fossa separated into sulciformly elongated

mediobasal and smaller irregular lateral part; anterior foveae well developed, narrowly sulciform, anteromedian usually connected to fossa; elevated parts of pronotal sides coarsely and rather densely, irregularly punctured. Scutellum minute, narrowly trapezoidal, medially depressed, smooth. Elytral sides subparallel [♀] or slightly convergent [♂] in basal half, then cuneately tapering to more or less distinctly caudate apices; no subhumeral protrusion; puncturation coarse basally, gradually diminishing towards apex. Perisutural and – especially – middiscal sulci poorly developed (often barely appreciable), perimarginal deeply depressed and dfp from humeri to near apices. Punctures of proepisterna shallow, sparse, but very large, dfp at bottoms; prosternal process widely sulcate along midline, sulcus very densely punctulate, with erect pubescence; abdominal plaque moderately prominent, covered with very fine and sparse rasp-like punctures; abdomen otherwise sparsely, rather coarsely punctured; marginal and midlateral dfp stripes well developed, widely separated; apex of anal sternite subtriangularly emarginated [♂] or narrowly rounded [♀]; *aedoeagus* relatively short and wide, very flat, brownish-yellow; penis sharply acute.

Geographical distribution [Map 2]: Woodlark Is.

Remarks: The status of the specimen marked in NNHM as “type” is doubtful. It stood under the collection label of *C. arcuaticollis* KERR.; KERREMANS described two species under this name: one (1910: 202-203) is a junior synonym of *C. abdominalis* WATH., the other (1911: 296) has been later renamed by THÉRY (1926) and independently by OBENBERGER (1926) as *C. kerremansi* – the NNHM specimen belongs evidently to the latter – but KERREMANS (1911) gives the length of body as 29-30 mm., what might seem to exclude the possibility for so much smaller (24×7.5 mm.) beetle to belong to the type-series! However, he also quotes the width as 7-8 mm., what would mean unrealistically slender specimens, so maybe the “29-30” is a (rather frequently occurring) mistake by 5 mm., the true lengths being 24-25 mm. (what, at that, is much more typical for this species!). I have not seen the type of *C. k. freyi* THY. and do not find in the description any character exceeding the range of variability of typical *C. kerremansi* THY.: indeed, even one of the few specimens (from Woodlark Is.) now before me has totally obliterated anterolateral pronotal angles and relatively conspicuous elytral sulci considered by THÉRY (1943) diagnostic of his subspecies; moreover, the type-locality (“Île Sud-Est”) is rather enigmatic (this name is applied on the one hand to an islet of Chagos group at middle of the Indian Ocean, on the other to Rangatira I. in the Chatham Archipelago east of New Zealand – none of them likely to be inhabited by any *Cyphogastra* DEYR.); however, search through taxonomic literature relevant to New Guinea and surrounding islands has revealed that the name Sudest Island is sometimes used for Tagula, the largest of the Louisiade Islands [see e.g. the map (fig. 1) in O’SHEA & al. (2018)]. Anyway, *C. k. freyi* THY. does not seem to be a valid taxon.

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

Material examined:

Holotype: “INDONESIA, SE Moluccas, ARU ISL., S coast of WOKAM I., 10-15 km NEE of Wakua vill., 0-50 m. alt., 21-30 I 2015, St Jakl leg.” [♀ (DF)]

Additional material: None

Holotype [Fig. 12]: Female [1] 24.5×7.5 mm. Dorsal side black with bronzy shine, dfp depressions contrastingly bright cupreous; ventral surface piceous-black. Pilosity of prosternal sulcus short and dense, erect; pubescence of dfp areas with very short, recumbent white; extensive areas of abdomen with longer, semierect, grayish pubescence; otherwise body glabrous.



Fig. 11
Cyphogastra kerremansi THY.
 ♂ [BPegz] Woodlark I.



Fig. 12
Cyphogastra franki HOL.
 ♀ HT [DF], Aru Is.: Wokam I.



Fig. 13
Cyphogastra conjungens HOL.
 ♂ HT [DF], Solomon Is.: Guadalcanal I.



Fig. 14
Cyphogastra sekerkai sp.n.
 ♂ [EONMP], PNG: Madang Pr.: Halopa



Fig. 15
Cyphogastra canaliculata THY.
 ♂ [BPegu], NG: Huon Pen.: Bolan Mts.



Fig. 16
Cyphogastra inconscita HOL.
 ♀ HT [BPBM], Rossel I.

Epistome broadly arcuately emarginate; epistomal ridge fine, parallel to anterior margin, placed in upper part; frontoepistomal border marked by very deep transverse groove and prominent smooth biarcuate carina. Front much wider than long, sides subparallel; frontal depression deep, rather narrowly paraboloidal, reaching distinctly behind upper margins of eyes, shallowly and very sparsely punctured; semicircular anterior cavity shallow, finely but rather densely punctured; lateral ridges roundedly elevated, smooth; periorcular sulci very deep; V:H≈0.5.

Pronotal sides sinuately convergent from base to well marked but not protruding anterolateral angles; collar distinct; base shallowly angularly sinuate to both sides of prescutellar lobe; anterior margin distinctly trisinuate; middiscal elevations very finely and sparsely, almost imperceptibly punctulate, sculpture of elevated parts of pronotal sides rather coarse, very dense, irregular; fossa divided into sulciform mediobasal and smaller irregularly rounded lateral fovea; anterior foveolae conspicuous, irregularly sulciform, connected to respective parts of fossae. Scutellum minute, trapezoidal, smooth.

Elytra 2.3× longer than wide. Sides obliquely truncated at humeri, slightly divergent to just before midlength, and arcuately, then somewhat sinuately tapering to distinctly caudate apices; lateroapical margin with 2 sharp and rather large, roundedly subtruncated tips with 3-4 very small denticles, sutural barely larger than others. Puncturation coarse and irregularly confluent at base, progressively finer backwards; sulci narrow, dfp, marked by brightly cupreous colouration; perisutural entire, shallower middiscal reaching to *ca.* midlength, perimarginal distinct only in apical third.

Basal part of proepisterna dfp, anterior portions with multiple small dfp spaces between irregular smooth elevations; sulcus of prosternal process densely irregularly sculptured at bottom, covered with moderately dense semierect pilosity; median parts of metasternum deeply sulcated, nearly smooth; sides of meso- and metasternum extensively dfp. Abdominal plaque rather high, roundedly obtuse-angled in profile, covered with moderately fine and sparse, somewhat elongate punctures; perimarginal and midlateral dfp stripes narrow; apex of anal sternite rather broadly rounded.

Geographical distribution [Map 2]: Known only from single type-specimen collected on Wokan I. (Aru Is.).

Remarks: At first sight looks near-identical to *C. conjungens* *sp.n.* which, however, differs in having entire perimarginal elytral sulcus, golden-green sternum and sides of abdomen, strongly obliquely bevelled elytral tip ending with long spiniform denticle, &c. The name given in honour of David FRANK, to whose collection the holotype belongs.

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

Material examined:

Holotype: "SOLOMON Isls., Guadalcanal, BARANA vill. env., 190m, 09°29.8'S 159°59.5'E, J. Horák leg." "coll. David Frank, Prague CZ" "*Cyphogastra (Cyphogastra) canaliculata* THÉRY 1908, David Frank det. VII. 2020" [♂ (DF)]

Additional material: none

Holotype [Fig. 13]: Male [1] 26×8 mm. Dorsal side bronzed-black with bright golden-cupreous dfp depressions, elytral sulci and bottoms of most punctures; sternum and abdominal sides dull greenish-golden, middle of abdomen black. Body glabrous, except for midline of sternum (adorned with erect setae) and dfp depressions (covered with very short and dense recumbent white pubescence).

Epistome shallowly arcuately emarginate, no distinct epistomal ridge; frontoepistomal border marked by very deep transverse groove and prominent smooth biarcuate carina. Front much wider than long, subparallelsided; frontal depression deep, paraboloidal, extending distinctly beyond upper margins of eyes, sparsely punctulate; anterior cavity poorly delimited, its punctulation denser; lateral ridges low, very broad, almost smooth; periocular sulci very deep; V:H \approx 0.50.

Pronotal sides strongly convergent, anterolateral angles barely accentuated; collar distinct but short; base shallowly angularly sinuate to both sides of somewhat angular prescutellar lobe; anterior margin bisinuate, median lobe rather prominent, subtruncated; middiscal elevations finely and sparsely punctured, pronotal sides coarsely and densely, very irregularly so; fossa rather narrowly axe-shaped, longitudinal “handle” and transverse “blade” almost fully separated by obliquely wedge-shaped anteromedian angle of prehumeral relief; anterior foveolae well developed, dfp, but not connected to fossa. Scutellum trapezoidal, smooth.



Fig. 17

Cyphogastra conjungens HOŁ.
♂ HT: abdominal plaque (ventral)



Fig. 18

Cyphogastra conjungens HOŁ.
♂ HT: abdominal plaque (lateral)

Elytra 2.4 \times longer than wide. Sides obliquely truncated at humeri, subparallel in basal $\frac{2}{5}$, somewhat arcuately convergent to apical sixth, apices distinctly caudate; tips strongly acute, each prolonged into prominent spine; lateroapical margin with few sharp small denticles. Puncturation very coarse and irregular in humeral area, progressively finer backwards; perisutural sulcus entire, narrow but deep, contrastingly cupreous; middiscal poorly developed, not reaching beyond midlength; perilateral similarly developed to perisutural.

Anterior parts of proepisterna with multiple small dfp spaces between irregular smooth elevations, posterior half entirely dfp; sulcus of prosternal process twice broader than smooth lateral rims, densely irregularly sculptured at bottom, covered with dense erect pilosity and rusty pulverulence; median parts of metasternum of similar structure, but sulcus markedly narrowed backwards and lateral rims finely and sparsely punctulate; sides of meso- and metasternum almost entirely dfp. Abdominal plaque high, right-angled in profile, shallowly depressed along midlength in basal half, neither very finely nor very sparsely punctured; apical margin shallowly emarginated between pair of prominent tubercles with third, medially placed, lower tubercle slightly before [Figs 17, 18]; perimarginal and midlateral dfp stripes well developed but clearly separated except apical half of deeply but narrowly semicircularly emarginated anal sternite.

Geographical distribution [Map 2]: Solomon Is.: Guadalcanal I.; known only from the holotype.

Remarks: Deceptively similar to *C. franki sp.n.*: the differences – more elongated body, brighter metallic ventral side, acutely acuminate elytral tips, well developed perimarginal sulci – could be considered individual or (like probably the peculiar structure of abdominal plaque) sexual characters, but in combination with largely disparate geographical distribution they nevertheless make specific distinctness hardly questionable.

Cyphogastra (s.str.) sekerkai HOŁ.

Material examined:

Holotype: “PAPUA NEW GUINEA, Madang prov., HAPURPI village, Halopa Mission, iii-v, 2000, S. Kawie leg.” “ex coll. V. Kubáň, National Museum Prague Czech Republic” [♂ (EONMP)]

Additional material: none

Holotype [Fig. 14]: Male [1] 23.5×7 mm. Dorsal side bronzed-black with golden-cupreous dfp depressions, elytral sulci and bottoms of most punctures; ventral side black. Body glabrous, except for midline of sternum (adorned with soft, long, white erect pilosity) and dfp depressions (covered with also relatively very long, dense recumbent white pubescence).

Epistome deeply arcuately emarginate, epistomal ridge poorly marked, transverse; frontoepistomal border marked by very deep transverse groove and prominent smooth biarcuate carina. Front much wider than long, subparallelsided; frontal depression deep, paraboloidal, extending distinctly beyond upper margins of eyes; anterior cavity not individualized (seemingly occupying practically entire depression), punctulation denser and coarser anteriorly; lateral ridges low, very broad, sparsely but rather coarsely punctured; anterior part of pericocular sulci deep but short, abruptly ending at middle of eye and prolonged further only as narrow stria; V:H≈0.50.

Pronotal sides strongly convergent, anterolateral angles totally obliterated; collar indistinct, short; base shallowly angularly sinuate to both sides of arcuate prescutellar lobe; anterior margin bisinuate, median lobe rather prominent, subtruncated; midline dfp, middiscal elevations finely and sparsely, pronotal sides coarsely and densely, very irregularly punctured; fossa divided into two parts: deeply sulciform mediobasal and roundedly foveolate perimarginal, the latter joined to anterolateral foveola to form deep curved longitudinal sulcus; anteromedian foveola also well developed but small, slightly elongated, not connected to fossa; all partly dfp at bottoms. Scutellum trapezoidal, convex, smooth.

Elytra slightly caudate, 2.4× longer than wide. Sides obliquely truncated at humeri, somewhat irregularly, inconspicuously divergent in basal $\frac{2}{5}$, and cuneately-subsinuately tapering to apices; tips essentially bidentate (with two smaller denticles between lateral and sutural one on right elytron); lateroapical margin totally smooth. Puncturation very coarse and irregular in humeral area, progressively finer backwards; perisutural sulcus entire, narrow but deep; middiscal well developed, not reaching to apical third; perilateral similarly developed to perisutural but not extended below humeral protuberance; very narrow but perfectly distinct deep dfp stria runs also tightly along lateral margin; all these sulci more or less dfp and golden-coloured at bottoms.

Sculpture of proepisterna consists of mixture of smooth elevated and depressed dfp spaces; sulcus of prosternal process twice broader than smooth lateral rims, densely but rather finely sculptured at bottom; median parts of metasternum of similar structure; sides of metasternum laterally, metepisterna almost entirely, metacoxae partly dfp. Abdominal plaque

high, roundedly right-angled in profile, finely and very sparsely punctured; perimarginal and midlateral dfp stripes well developed but clearly separated with rows of elevated, almost impunctate spaces; anal sternite deeply semicircularly emarginated.

Geographical distribution [Map 2]: Known only from the holotype, collected at the SE end of the Adalbert Range, some 20 km. NNW of Madang, mid-northern New Guinea.

Remarks: Most similar to *C. conjungens sp.n.*, but deeply sulciform anterolateral pronotal foveola making simple prolongation of anterolateral angle of fossa, long midlateral sulcus on apically bidentulate elytra, strikingly long ventral pubescence, normally developed abdominal plaque, somewhat different shape of aedoeagus, and – last not least – widely distant type-localities make them clearly distinct. The name is given in honour of Dr. Lukáš Sekerka of the EONMP, who had kindly sent me for study a very interesting material, containing among others the holotype of this species.

Cyphogastra (s.str.) canaliculata THY.

Cyphogastra canaliculata THÉRY 1908: 79
= *Cyphogastra Biroi* MEYER-DARCIS i.l.

Material examined:

Cotype: “ “N.Guinea, Hauser” “*canaliculata* Théry Type” “*Cyphogastra canaliculata* Théry Type, Théry det.” ”Ex Coll. A.Théry, 1923-364” [1 ♂ (BMNH)]

Type[-s]: [? ♂ (DEI) – see **Remarks**]

Additional material: 3 ♂, 60 ♀, 1 ♂

Characters [Fig. 15]: Males [3] 24×7.5 – 25×7.5, females [60] 26.5×8 – 35×11.5. Body black, dorsal side often with bronzy, ventral usually with bluish-violaceous hue; pronotal and ventral dfp depressions purplish or cupreous, elytral sulci golden. Dfp areas very densely finely pubescent and (especially pronotal – except median sulcus – and ventral) covered with rusty pulverulence, body otherwise glabrous. Pronotal sides subparallel; anterolateral angles well marked but not protruding, collar usually not developed; fossae broad, undivided, usually joining at least one of anterior foveae; laterobasal reliefs narrowly tetragonal; anteromedian foveae deep, anterolateral not discernible; discal punctulation fine and very sparse, puncturation of lateral parts distinctly coarser and denser. Elytra markedly caudate; no subhumeral protrusions; sculpture of elevated parts (“costae”) even basally not very coarse, gradually transgressing to very fine at apices; sulci usually (but not always) dfp at bottom. Proepisterna uneven, with wide dfp spots making “meshes” in network of elevated rims; puncturation of sulcus of prosternal process irregular, moderately coarse and dense; sides of sternum and abdomen partly dfp, midlateral stripes narrow but well developed; abdominal plaque high, finely and sparsely punctulate; apex of anal sternite of male deeply subtriangularly emarginated between rounded lateral lobes, that of female narrowly rounded; *aedoeagus* relatively short, subparallelsided, apex of penis right-angledly pointed.

Geographical distribution [Map 2]: NE-New Guinea: all but one of known concrete localities lie on the Huon Peninsula, the only exception is near Kui at SW shore of Huon Gulf.

Remarks: Until recently seemed a very distinctive species, might have been confused only with *C. inconscita HOL.* which, however, differs in development of pronotal fossae, elytral sulci, &c. – see **Remarks** on that taxon for details. However, *C. franki sp.n.*, *C. conjungens sp.n.* and *C. sekerkai sp.n.* described herein are superficially still more similar, although also immediately distinguishable by their narrow, deep, essentially concolorous, not or but scantily dfp pronotal fossae.

Cyphogastra (s.str.) inconscita HOL.

Cyphogastra inconscita HOLYŃSKI 2016: 62-64

Material examined:

Holotype: “PNG: NEW GUINEA: Milne Bay Prov., Rossel I., IV. 1979” “Native Collector, BISHOP” [♀ (BPBM)]

Paratypes: “PNG: NEW GUINEA: Milne Bay Prov., Rossel I., IV. 1979” “Native Collector, BISHOP” [6 ♀ (BPBM)]; “Pap. New Guinea, Luisiade, Rossel, XII 1981” [Museo Civ. Genova, ex coll. B. Bari, (acquist. 1994)] [1 ♀ (MCGD)]; “Pap. New Guinea, Luisiade, Misima, Milne Bay, II 1982” [Museo Civ. Genova, ex coll. B. Bari, (acquist. 1994)] [1 ♀ (MCGD); 2 ♀ (RBH: Bpkhc, khd)]; “Pap. New Guinea, Luisiade, Misima, Milne Bay, XII 1982” [Museo Civ. Genova, ex coll. B. Bari, (acquist. 1994)] [2 ♀ (MCGD)]; “Rossel I., IV. 1979” [1 ♀ (RBH: Bpkhe)]

Additional material: 1 ♀

Characters [Fig. 16]: Females [15] 28.5×9 – 33×11 mm. Dorsal side deep black, bottoms of median line and laterobasal fossae of pronotum and elytral sulci inconspicuously golden-green; ventral surface black with dull plumbeous lustre. Pubescence in median furrow of prosternal process rather long, semierect, that on abdominal dfp stripes short and recumbent, otherwise body practically glabrous. Pronotal sides somewhat wavyly convergent from acute basal to protruding anterolateral angles and abruptly obliquely truncated to poorly marked collar; median depression deep, at bottom very narrowly dfp; fossae in form of deep, elongately pear-shaped sulci running midlaterally from basal to apical pronotal margin, including as well what in most *Cyphogastra*-species is median portion of fossa as anteromedian fovea; lateral portion of fossa represented only by small fovea widely separated from midlateral sulcus. Disk with but very few fine punctures, sides between midlateral sulci and lateral margins very coarsely irregularly sculptured. Elytral sides subparallel to *ca.* midlength, and sinuately tapering to distinctly caudate and sharply denticulate (3-5 denticles on each) apices. Traces of 1. and 2. costa distinct in basal third; deep sulcus starting between them reaches practically to elytral apex; poorly developed lateral one traceable from behind humeral protuberance to apical fourth; slight indication of third, mid-discal sulcus between them more or less discernible along middle of basal half of elytra. Puncturation very coarse around humeri, becoming progressively much finer (but everywhere distinct) backwards, predominantly irregular (only in anterolateral part arranged into 2-3 rows). Proepisterna, sides of metasternum, and metacoxae uneven, with foveolate, inconspicuously dfp depressions not clearly delimited by irregularly reticulate smooth elevations; prosternal process and metasternum rather broadly, deeply sulcate and densely irregularly punctured along midline, lateral rims with but few fine punctures. Abdominal plaque rather high, finely and sparsely punctulate on disk; midlateral dfp stripes on abdomen narrow but well defined; apex of anal sternite regularly rounded [♀]. Male unknown.

Geographical distribution [Map 2]: Known from Misima and Rossel Islands.

Remarks: Evidently a member of the *C. [canaliculata THY.]*-superspecies, whose other representatives differ in having well developed, practically entire (reaching to near apex) lateral elytral furrow, which in *C. kerremansi THY.* is, at that, very broad (in basal half extending laterally to the very elytral margin) and regularly dfp; while in *C. canaliculata THY.* ventral colouration is more (♀) or less (♂) conspicuously violaceous-blue, lateral pronotal fossae are very broad and extensively regularly dfp, extending – also laterally – far anterad (almost or quite to the “collar”), including both medio- and latero-apical foveae; mid-discal elytral stria well developed and reaching definitely beyond midlength.

Cyphogastra (s.str.) websteri sp.n.
Cyphogastra Websteri HOSCHECK i.l.

Material examined:

Holotype: "D. Neu-Guinea: Neu Mecklemburg" "Cyphogastra Websteri m.n.sp., Det.Hoscheck 1937" "TYPUS" "websteri, Det. Hoschek 194" [♂ (KBIN)]

Paratype: "Neu Hannover, II.III.97. (Webster)" "Cyphogastra Websteri m.n.sp., Det.Hoscheck 1937", "Typus" "mss. name" [1 ♀ (USNM)]

Additional material: None

Holotype [Fig. 19]: Male 25×8 mm. Piceous-black with plumbeous-green elytral dfp sulci. Median sulcus of pro- and metasternum with rather long semierect pilosity, dfp areas very densely covered with short recumbent pubescence and ochraceous pulverulence, otherwise body glabrous; no distinct metafemoral brush.

Epistome deeply arcuately emarginate, with inconspicuous epistomal ridge parallel to anterior margin; deep and broad, transverse, rather finely and densely punctured groove extends between this ridge and prominent biarcuate supraepistomal carina. Front much wider than long, sides slightly divergent; frontal depression deep, rather narrowly paraboloidal, reaching distinctly behind upper margins of eyes, shallowly and rather sparsely punctured; semicircular anterior cavity rather shallow; lateral ridges irregular, broadly rounded off, almost smooth; periocular sulci very deep; V:H≈0.50.

Pronotum transverse, sides subparallel to not protruding but well marked anterolateral angles; collar distinct but only just at angles; base at sides shallowly angularly sinuate, prescutellar lobe barely marked; anterior margin shallowly sinuate on both sides of rather prominent, somewhat sinuately truncated median lobe. Median depression moderately deep, dfp at bottom; fossae deep, dfp, axe-shaped, almost toally divided by distinct elevated "bridge" into posteromedian and anterolateral parts; anteromedian foveola distinct, dfp; anterolateral narrowly sulciform, connected to both fossa and collar. Disk finely and rather sparsely punctulate, punctures on prehumeral relief and anterolateral areas much coarser. Scutellum convex, triangular, smooth.

Elytra 2.2× longer than wide. Sides obliquely truncated at humeri, slightly convex just behind truncation, subparallel to midlength, and cuneately convergent to non-caudate apices; lateroapical margin with 6-7 sharp denticles. Puncturation progressively finer apicalwards, but rather coarse throughout; sulci deep and wide, dfp, pulverulent; perisutural conspicuous all along, middiscal only on basal, perilateral only on apical half.

Proepisterna entirely dfp; sulcus of prosternal process wide, dfp, covered with dense semierect pilosity; median parts of metasternum finely and very sparsely punctulate; sides of meso- and metasternum almost entirely dfp. Abdominal plaque rather high, near-right angled in profile, sparsely covered with fine, markedly elongate punctures; perimarginal and midlateral dfp stripes confluent, leaving only midline and few spots on sides glabrous; apex of anal sternite rather deeply, triangularly emarginated.

Variability: Female paratype is larger (30×10 mm.), of finer sculpture, brighter greenish colouration of elytral sulci and more conspicuous greenish lustre of ventral side, more roundedly convergent lateroapical elytral margins, somewhat less confluent abdominal dfp and narrowly truncated apex of anal sternite.

Geographical distribution [Map 2]: Bismarck Archipelago: New Ireland and New Hannover Is.

Remarks: The combination of non-caudate elytra and characteristic pattern of elytral dfp sulci makes *C. websteri sp.n.* easily recognizable.



Fig. 19

Cyphogastra websteri sp.n.
♂ HT [KBIN], New Ireland

Fig. 20

Cyphogastra hoschecki sp.n.
♀ HT [BPegw], NG: Cyclops Mts.

Fig. 21

Cyphogastra biroi sp.n.
♂ [BPBM], NG: Oriomo Riv.

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

Material examined:

Holotype: “W-NEW GUINEA, CYCLOPS MTS., Sabron, Camp 2, 2000 ft., VI 1936” [♀ (RBH: BPegw)]

Additional material: None

Holotype [Fig. 20]: Female 23.5×7.5 mm. Dorsally black with cupreous-brassy dfp depressions, ventrally violaceous-blue. Median sulcus of prosternal process with moderately long but dense erect pilosity, dfp areas very densely covered with short recumbent pubescence and dull orange pulverulence, otherwise body glabrous.

Epistome deeply arcuately emarginate, no distinct epistomal ridge; supraepistomal carina sharp, shallowly arcuate. Front wider than long, sides distinctly divergent; frontal depression deep, triangular, not reaching behind upper margins of eyes, shallowly and sparsely punctured; anterior cavity in form of pair of elongately ovate, coarsely punctured depressions to both sides of deep median groove; lateral ridges smooth, broadly rounded off; periocular sulci very deep.

Pronotum somewhat wider than long, sides very slightly convergent; anterolateral angles broadly obtuse; collar distinct; base broadly bisinuate; anterior margin distinctly sinuate on both sides of somewhat sinuately truncated median lobe. Median depression moderately deep, at bottom very finely and rather densely punctulated, median stria totally obliterated; disk almost impunctate, puncturation of lateral parts coarse and dense; fossae irregular, somewhat asymmetrical (dfp bottom of the left broadly divided by elevated coarsely punctured “bridge” into small anterolateral and much larger posteromedian parts, in the right the dividing elevations is indistinct); anterior foveolae practically lacking. Scutellum convex, longitudinally sulcate, smooth.

Elytra subparallelsided to midlength and sinuately convergent to relatively broadly truncated and sharply denticulate apices. Puncturation rather coarse except shortly before apices; perisutural dfp sulcus very distinct all along, middiscal well developed at base and gradually vanishing to *ca.* midlength, perilateral broad in apical but much narrower in basal half.

Proepisternal dfp reduced to some isolated spots within network of smooth irregular elevations; lateral slopes of metasternum and metacoxae, as well as perimarginal and midlateral stripes of abdomen dfp; median sulcus of prosternal process wide, rather coarsely and very densely irregularly punctured; metasternum medially grooved; median parts finely and very sparsely punctulate. Abdominal plaque rather prominent, unmodified, sparsely covered with not very fine, somewhat elongate punctures; apex of anal sternite regularly rounded.

Geographical distribution [Map 2]: Known only from the type locality: mid-northern New Guinea: Cyclops Mts. [I have been unable to locate Sabron] – the northwesternmost outpost of the *Canaliculata*-circle.

Remarks: At the first glance looks like a miniature version of *C. websteri sp.n.*, but poorly accentuated anterolateral angles and but barely indicated anterior foveolae of pronotum, markedly caudate elytra, much less extensive ventral dfp areas (on proepisterna only isolated spots, on abdomen marginal and midlateral bands relatively narrow and widely separated), together with wide geographical separation leave no serious doubt as to their taxonomic distinction. Named after Baron Arthur von HOSCHECK, the true discoverer of *C. websteri sp.n.*

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

Material examined:

Holotype: “NEW GUINEA: NE Oriomo R., 6 m., 23 II 1964” “H.W.Clissold Collector, BISHOP”
[♂ (BPBM)]

Additional material: 1 ♂ [identification uncertain]

Holotype [Fig. 21]: Male 22.5×7 mm. Dorsally black with dull greenish dfp depressions, ventrally coal black. Median sulcus of prosternal process and metasternum with very dense brush of erect pilosity, femoral (especially mesofemoral) brushes prominent, dfp areas very densely covered with short recumbent pubescence, otherwise body virtually glabrous.

Epistome deeply arcuately emarginate, epistomal ridge sharply elevated; transverse supraepistomal carina markedly paraboloidally produced at middle. Front wider than long, subparallelsided; frontal depression deep, triangular, reaching slightly behind upper margins of eyes, impunctate; anterior cavity in form of pair of elongately ovate, coarsely punctured depressions to both sides of deep median groove; lateral ridges smooth, broadly rounded off; periocular sulci very deep.

Pronotum somewhat wider than long, sides very slightly convergent; anterolateral angles broadly obtuse; no distinct collar; base shallowly bisinuate; anterior margin distinctly sinuate on both sides of somewhat sinuately truncated median lobe. Disk (including median depression) very finely and very sparsely punctulated; puncturation of lateral parts coarse but not very dense; fossae axe-shaped; anterior foveolae very prominent, sulciform, connected to fossae. Scutellum trapezoidal, convex, longitudinally sulcate, smooth.

Elytra subparallelsided to midlength and sinuately convergent to relatively broadly truncated and sharply denticulate apices. Puncturation rather coarse anteriorly, definitely finer

towards apices, rather sparse throughout; perisutural dfp sulcus very distinct all along, middiscal well developed at base, perilateral broad apically, both abruptly cut off at midlength.

Proepisternal dfp reduced to few irregular depressions on background of smooth, somewhat uneven surface; some areas on lateral slopes of metasternum and metacoxae, as well as perimarginal and midlateral stripes of abdomen dfp; median sulcus of prosternal process moderately wide, finely and densely irregularly granulate; median groove of metasternum rather shallow; elevated surface to both sides finely and very sparsely punctulate; lateral slopes covered with foveolate, at bottom dfp, punctures. Abdominal plaque rather prominent, sparsely covered with not very fine, somewhat elongate punctures; marginal and midlateral dfp stripes confluent apically; apex of anal sternite broadly and rather deeply subtriangularly emarginated.

Variability: The only other specimen (from Varirata, ca. 20 km. ENE Pt. Poresby), examined by me in 1988 in the Forest Res. Station in Bulolo (PNG), was identical in size to the holotype, but unfortunately my notes do not contain any other details.

Geographical distribution [Map 2]: Seems to solely represent the circle in the southeastern New Guinea.

Remarks: Similar to *C. hoschecki* sp.n., but much more lustrous and finer sculptured, ventral side black; anterior foveolae on pronotum prominent, sulciform, joining fossae; midlateral elytral dfp sulci abruptly cut off at midlength. Some of these differences may prove only sexual or even individual, but correlation with disparate geographical distribution makes this rather improbable. Named after Hungarian zoologist, BIRÓ Lajos, one of the earliest explorators of New Guinean fauna.

Phylogenetical reconstruction

In order to clarify the phylogenetic placement of *C. incolans* HOL. (HOLYŃSKI 2021b), the newly discovered representative of an already earlier reviewed group, some complications (re-analysis of the *Satrapa*-circle and several other possibly relevant clusters) must have been introduced to the present analysis [Fig. 22], largely increasing the number of included non-target taxa (as a kind of proximal out-groups). The interrelations **among them** having been (more reliably) resolved in the respective earlier parts of the **Review**, and anyway not immediately relevant to the evolution of the here targeted *Farinosa*- and *Canaliculata*-circles, the detailed presentation will be restricted to the latter, starting from **their** last common ancestor [FF(≈DD≈Y)], with only few necessary general remarks on the remaining part of the cladogram.

As was already suggested by the earlier analysis [Pt. IV – HOLYŃSKI 2020d], the *Satrapa*-, *Javanica*- and *Gestroi*-circles are closely intertwined, but the details of their relationships look in the present reconstruction different. So, *Javanica*-circle as originally conceived has been recovered in Pt. IV as paraphyletic in relation to the holophyletic *Satrapa*-circle – now both appear polyphyletic, with “*Javanica*-group s.str.” embedded in the “core” *Satrapa*-circle as the sister-taxon of *C. incolans* HOL., their common ancestor [C] being in turn the “sister” or, in fact, the “daughter”) of the ancestor [D≈H] of the *C. satrapa* (SCHH.) *sensu lato*. The rest of the *Javanica*-circle emerges on the present cladogram as two widely separated clusters, one of them paraphyletic (in accordance with the previous reconstruction) in relation to the *Gestroi*-circle, the other forming – together with the “*Sulana*-group” (*C. sulana* HOL. + *C. minahassae* HOL.), detached from the *Satrapa*-circle and perhaps indeed

[A] (indistinct anterolateral foveola, black unicolorous elytra with discernible perihumeral dfp) and New Guinean, apparently unchanged [J], itself the ancestor of *C. f. venerea* (THS.) (deep anteromedian foveolae joining fossae) on Aru Is., and [B] (green, coarsely punctured elytra with lateroapical streak and distinct perimarginal dfp sulcus), whose Australian populations remained apparently unchanged as *C. farinosa* (F.) s.str., whereas those on mainland New Guinea evolved into *C. f. papuigena* OBB. (prominent perimarginal sulcus, entirely dfp proepisterna). Meanwhile [A] differentiated into *C. impressa* KERR. s.str. (entirely dfp proepisterna) on the eastern, and but imperceptibly modified *C. i. borneensis* KERR. on the western side of the Wallace Line.

The other targeted clade, descending from [DD] – i.e., in fact, also from [FF] (according to the reconstruction [DD]≈[FF]) – is still southern New Guinean [CC] (elytra unicolorous including suture and tips, anterolateral foveola distinct, perisutural dfp sulcus on elytra distinct), the immediate ancestor of the “highlander” *C. aterrima* KERR. (sternum green, fossa very broad, elytra strongly caudate, perisutural and perimarginal sulci deep, proepisterna entirely dfp, abdominal plaque prominently elevated) and already northern New Guinean (probably inhabiting what is now Morobe Prov., where both its proximal recent descendants live) [BB] (both anterior pronotal foveolae prominent, joining contrastingly coloured fossae). One of the “daughters” of [BB], almost unchanged (finer elytral sculpture having been the only discernible difference) *C. petrillarum* sp.n. has invaded Huon Peninsula; the other, [AA], developed replete system of dfp sulci – perisutural and perimarginal entire (extending over all the elytral length), middiscal reaching beyond midlength – to become the earliest ancestor of the *Canaliculata*-circle. The “basalmost” representative of the circle appears to be its “nominotypical” species, *C. canaliculata* THY., remaining in the area around the Huon Gulf, while its “sister”, [W] (anterior foveolae distinct, dfp bottom areas of not contrastingly coloured fossae small), has apparently expanded over much of the northern New Guinea to give rise to a swarm (superspecies?) of (allo-)species widely spread between Aru and Solomon Islands. One of its descendants, probably native to southeasternmost New Guinea, [V] (body slenderer, pronotal sides convergent, anterolateral angles barely marked), has invaded Woodlark Is. to evolve there into *C. kerremansi* THY. (fossae extensively dfp, no distinct middiscal sulci); whose “sister” [U] (abdominal plaque prominent), in turn, colonized Solomon Is. as *C. conjungens* sp.n. (sternum green, trituberculate abdominal plaque) while its northwestern populations evolved into [T] (prominent anterolateral foveola, well marked anterolateral angle) to establish widely disjunct “colony” on Aru Is. (*C. franki* sp.n. – perimarginal sulci abbreviated, abdominal plaque low) and, as slightly changed (c-shaped fossa) [S] diverge into western (Madang prov.) *C. sekerkai* sp.n. (barely marked anterolateral angles, deeply furrowed fossae) and eastern [Q] (stouter body) invading Louisiades to become *C. inconscita* HOL. (prominent anteromedian but inappreciable anterolateral foveolae, entirely lustrous proepisterna) and Bismarck Archipelago as *C. websteri* sp.n. (anterolateral foveola poorly developed, elytra not caudate, abdominal plaque low, sides of abdomen almost entirely dfp). At last, the descendants of [P] (markedly caudate sister taxon of [V]) established the northwesternmost outpost of the clade (*C. hoschecki* sp.n. – both anterior foveolae inappreciable – on Cyclops Mts.) and colonized southern part of New Guinea as *C. biroii* sp.n. (anterior foveolae prominent, very fine sculpture, entirely non-dfp proepisterna, extensively dfp sides of abdomen).

Wide disjunctions between apparently closely related species known from only one- two type-specimens suggest that there is still very much to discover concerning the taxonomy and distribution of the representatives of the *Canaliculata*-circle. So, e.g., the type-localities

of *C. franki* sp.n. (Aru Is.) and *C. sekerkai* sp.n. (vicinity of Madang) allow to expect the existence, somewhere along the Sepik and Fly valleys, of a species roughly recognizable as [T]; similarly, upper Mamberano (Sobger) valley (between *C. hoschecki* sp.n. and *C. biroi* sp.n.) seems promising area to look for something like [P].

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Literature:

- FABRICIUS J.C. 1775. Systema Entomologiae, sistens Insectorum classes, ordines, genera, species, adiectis synonymis, locis, descriptionibus, observationibus. **Flensburgi et Lipsiae: Officina Libraria Kortii [1774]:** 1-832
- HOLYŃSKI R.B. 2016. Review of the [*Cyphogastra* DEYR.]-supergen (Coleoptera: Buprestidae) I. Mysteries of early evolution: *Pleiona* DEYR. and sg. *Guamia* THY. *Procrustomachia* **1**, 5: 72-95
- HOLYŃSKI R.B. 2020a. *Cyphogastra clara* KERR. – who are you? (a taxonomic thriller). *Procrustomachia* **5**, 2: 23-28
- HOLYŃSKI R.B. 2020b. Review of the [*Cyphogastra* DEYR.]-supergen (Coleoptera: Buprestidae) II. The *Tinianica*-, *Armata*-, *Uxorismeae*-, *Bruyni*- and *Flavimana*-circles. *Procrustomachia* **5**, 3: 29-59
- HOLYŃSKI R.B. 2020c. Review of the [*Cyphogastra* DEYR.]-supergen (Coleoptera: Buprestidae) III. The *Tuberculata*-, *Satrapa*- and *Collarti*-circles. *Procrustomachia* **5**, 6: 67-100
- HOLYŃSKI R.B. 2020d. Review of the [*Cyphogastra* DEYR.]-supergen (Coleoptera: Buprestidae) IV. The *Gestroi*- and *Javanica*-circles. *Procrustomachia* **5**, 6: 101-130
- HOLYŃSKI R.B. 2021a. *Cyphogastra farinosa* (F.): black Malay, bicolorous Australian, or coleopterous version of chimaera? *Procrustomachia* **6**, 2: 7-12
- HOLYŃSKI R.B. 2021b. Review of the [*Cyphogastra* DEYR.]-supergen (Col.: Buprestidae) – suppl. New Guinean species of *Satrapa*-circle and type-locality of *C. cribrata* DEYR. *Procrustomachia* **6**, 3: 15-18
- KERREMANS C. 1898. Buprestides nouveaux de l’Australie et des régions voisines. *Ann. Soc. Ent. Belg.* **42**, 3: 113-182
- KERREMANS C. 1910. Monographie des Buprestides. **Bruxelles: Janssens** **4**, 6-9: 161-288
- KERREMANS C. 1911. Remarques synonymiques sur quelques espèces du genre *Cyphogastra* (Col. Bupr.). *ASEB* **55**, 10: 294-297
- KERREMANS C. 1911. Monographie des Buprestides. **Bruxelles: Janssens** **5**, 9-20: 257-640
- OBENBERGER J. 1922. Beiträge zur Kenntnis der Buprestiden (Col.). *Arch. Natg. (A)* **88**, 12: 64-168
- OBENBERGER J. 1926. Buprestidae I. *Col. Cat.* **84**: 1-212
- O’SHEA M., A. ALLISON, H. KAISER. 2018. The taxonomic history of the enigmatic Papuan snake genus *Toxicocalamus* (Elapidae: Hydrophiinae), with the description of a new species from the Managalas Plateau of Oro Province, Papua New Guinea, and a revised dichotomous key. *Amphibia-Reptilia* **39**: 403-433
- THÉRY A. 1908. Etude sur les Buprestides. Première partie. *Ann. Soc. Ent. Belg.* **52**, 2: 68-81
- THÉRY A. 1926. Recherches synonymiques sur les Buprestides et descriptions d’espèces nouvelles. *Ann. Bull. Soc. Ent. Belg.* **66**, 1-2: 33-74
- THOMSON J. 1857. Wallace. Voyage dans l’Asie orientale. *Arch. Ent.* **1**: 425-460
- WATERHOUSE C.O. 1885. New Coleoptera recently added to the British Museum. *Ann. Mag.Nat. Hist. (5)* **15**: 377-382

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 to 2, that between 0 and 2 = 1+1 = 2); (*abc*)=1: equidistant [distance $a \leftrightarrow b = b \leftrightarrow c = c \leftrightarrow a = 1$]; $a \leftrightarrow (x/y) = 2$: alternatively equidistant [$a \leftrightarrow x = a \leftrightarrow y = 2$; $x \leftrightarrow y = (x \leftrightarrow a) + (a \leftrightarrow y) = 2 + 2 = 4$]

Proportions & colour

1. Body proportions (L:W): [*0*] <3.0; [*1*] ≈3.0-3.2; [*2*] >3.2
 $0 \leftrightarrow 1 \leftrightarrow 2 = 1$
2. Pronotum: [g] contrasting green or blue; [c] contrasting cupreous; [p] contrasting purplish; [b] black
 $g \leftrightarrow c \leftrightarrow p = 1$; $g \leftrightarrow b \leftrightarrow p = 2$
3. Elytra (disk): [e] concolorous; [a] blue; [g] green; [b] black
 $(a/g) \leftrightarrow e = 3$; $a \leftrightarrow g = 1$; $e \leftrightarrow b = 1$
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 sutural interstria: [*0*] concolorous; [*1*] bluish-black
 $0 \leftrightarrow 1 = 1$
7. Elytral extreme tips: [*0*] bluish-black; [*1*] concolorous
 $0 \leftrightarrow 1 = 2$
8. Sternum: [e] concolorous with pronotum; [g] green; [c] cupreous; [p] purplish; [b] black
 $(g/c/p/b) \leftrightarrow e = 1$; $g \leftrightarrow c \leftrightarrow p \leftrightarrow b = 1$
9. Tarsi: [*0*] dark; [*1*] yellow
 $0 \leftrightarrow 1 = 3$

Pronotum

10. Side margins: [*0*] subparallel; [*1*] distinctly convergent
 $0 \leftrightarrow 1 = 2$
11. Anteromedian foveola: [*0*] none or inappreciable; [*1*] distinct; [*2*] prominent, joining fossae
 $0 \leftrightarrow 1 \leftrightarrow 2 = 1$
12. Anterolateral foveola: [*0*] none or inappreciable; [*1*] distinct; [*2*] prominent, joining fossae
 $0 \leftrightarrow 1 \leftrightarrow 2 = 1$
13. Anterolateral angles: [*0*] barely marked; [*1*] well developed; [*2*] projecting outwards
 $0 \leftrightarrow 1 \leftrightarrow 2 = 1$
14. Lateral fossae: [*n*] broad, indefinite, non-dfp; [f] deep furrow; [c] c-shaped; [a] axe-shaped; [s] broad, inner margin straight
 $n \leftrightarrow (f/c/a/s) = 2$; $f \leftrightarrow c \leftrightarrow a \leftrightarrow s = 1$
15. Lateral fossae: [*0*] not dfp; [*1*] slightly dfp; [*2*] extensively dfp
 $0 \leftrightarrow 1 \leftrightarrow 2 = 2$
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
 $0 \leftrightarrow 1 = 2$; $1 \leftrightarrow 2 = 1$
21. Dfp sulci – perisutural: [*0*] none; [*1*] discernible; [*2*] prominent; [*3*] entire
 $0 \leftrightarrow 1 \leftrightarrow 2 = 2$; $(1/2) \leftrightarrow 3 = 2$
22. Dfp sulci – middiscal: [*0*] none; [*1*] basal
 $0 \leftrightarrow 1 = 2$
23. Dfp sulci – perimarginal: [*0*] none; [*1*] discernible; [*2*] prominent; [*3*] entire
 $0 \leftrightarrow 1 \leftrightarrow 2 = 2$; $(1/2) \leftrightarrow 3 = 2$

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
 $0 \leftrightarrow 1 = 2$; $1 \leftrightarrow 2 = 1$
26. Midlateral 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; pink – uncertain apomorphies;

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

	1		2			
	12345	67890	12345	67890	12345	67
	<i>232</i>	<i>2132</i>	<i>22</i>	<i>2 2</i>	<i>222 2</i>	<i>2</i>
1. CHALCOMROCZKOWSKIA	0ge00	00e11	000s2	00010	00220	01= 0
2. IRIDOTAENIA	1be00	01e01	020f2	10000	00000	12= 9
3. GUAMIA	1ce20	00e11	001c0	00100	00020	10=11
4. C. tinianica	1ge00	01e10	002c1	02210	00012	11= 6
5. C. uxorismeae	1ge00	00c11	101f0	01200	00022	00=12
6. Bruyni-circle	1ge00	00e01	210f2	01221	00012	10= 5
7. Armata-circle	1ce00	01e01	000n0	01200	00011	11=11
8. Tuberculata-circle	1be00	01e00	022f0	00110	00002	11= 5
9. C. nigripennis	1gb00	00e00	001c0	00000	00002	11= 2
10. C. aeripennis	0gb00	10c00	001c1	00000	00012	11= 4
11. C. celebensis	0ge12	00e00	101c1	00000	00002	11= 1
12. C. incolans	1ce11	10e00	001c0	00100	00001	11= 0
13. C. carbonaria	1be12	00e00	001c1	00110	00002	11= 3
14. C. sulana	1ge00	10e00	111a2	00110	00011	11= 1
15. C. minahassae	1ge00	10e00	101c2	00110	00000	11= 4
16. C. obiensis	1ge11	10e00	001c1	00110	00001	10= 1
17. C. satrapa	1ge11	10e00	111c1	00110	00001	11= 2
18. C. augustini	1ge12	00e00	102c1	00210	00011	11= 3
19. Gestroi-circle	1pg22	00b00	121c0	00210	00011	11= 2
20. Javanica-group	1ce11	00e00	001c0	00200	00002	11= 3
21. C. rollei	1be22	00g10	022c0	00210	00001	12= 6
22. C. wetteriana	1pg22	00b10	101c0	00210	00001	11= 4
23. C. rothschildi	1pg21	10p00	101c0	00210	00011	11= 2
24. C. transmarina	1be11	10g00	121c1	10210	00002	12= 7
25. C. romanensis	1ba11	10e00	101a1	00210	00001	11= 6
26. C. plana	1be11	10c00	101a2	00210	10011	11= 2
27. C. semipurpurea	1be21	10e00	001a2	00210	10011	10= 3
28. C. lateralis	2be11	10p00	101a2	10120	00011	10= 5
29. C. i. impressa	1be11	01g00	101a2	00111	20001	11= 1
30. C. i. borneensis	0be11	01g00	101a2	00111	20011	11= 1
31. C. aterrima	1be00	01g00	111s2	00210	20202	11=11
32. C. petriillarum	1be00	01e00	221a2	10100	10011	11= 1
33. C. f. venerea	1ba11	10g00	211a2	00110	20011	11= 1
34. C. f. farinosa	1bg12	10g00	111a2	00120	20111	11= 0
35. C. f. papuigena	1bg12	10g00	111a2	00120	20201	11= 3
36. C. f. macfarlani	1ba12	10g00	000a1	00110	10211	11= 9
37. C. kerremansi	2be00	01e01	110a2	00110	30311	11= 5
38. C. franki	2be00	01e01	121a1	00110	31111	11= 3
39. C. conjungens	2be00	01g01	110a1	00110	31312	11= 3
40. C. sekerkai	2be00	01e01	120f1	00110	31312	11= 2
41. C. canaliculata	1be00	01e00	221s2	10110	31312	11= 2
42. C. inconscita	1be00	01e01	201c1	00110	31322	11= 4
43. C. websteri	1be00	01e01	111c1	00010	31311	12= 5
44. C. hoschecki	1be00	01e00	001a1	00210	31311	11= 2
45. C. biroi	1be00	01e00	221a1	00200	31321	12= 5
46. Collarti-circle	0bg00	10c00	201s2	11110	00002	11= 9
A	1be11	01g00	101a2	00111	20011	11= 9 [2/10]
B	1bg12	10g00	111a2	00120	20111	11= 5 [3/ 6]
C	1ce11	10e00	001c0	00100	00001	11= 4 [3/ 5]
D	1ge11	10e00	001c1	00110	00001	11= 0 [3/ 5]
E	1be11	10e00	101a2	00210	10011	10= 1 [5/ 6]
F	1pg22	00b00	101c0	00210	00011	11= 2 [5/ 6]
G	1pg21	00e00	101c0	00210	00011	11= 5 [5/11]
H	1ge11	10e00	001c1	00110	00001	11= 2 [5/ 6]
I	1ge12	00e00	001c1	00110	00001	11= 1 [5/ 6]
J	1ba11	10g00	111a2	00110	20011	11= 0 [6/ 9]
K	1gb00	00e00	001c1	00000	00002	11= 1 [6/ 8]
L	1ge00	10e00	101a2	00110	00011	11= 2 [6/11]
M	1ge12	00e00	101c1	00110	00001	11= 4 [6/ 8]
N	1ge12	00e00	101c1	00000	00002	11= 4 [6/ 7]
O	1ge00	00e00	001c1	00000	00002	11= 5 [7/12]
P	1be00	01e00	111a1	00210	31311	11= 1 [7/ 9]
Q	1be00	01e01	121c1	00110	31312	11= 1 [7/ 8]
R	1be11	10e00	101a2	00210	00011	10= 1 [8/ 9]
S	2be00	01e01	121c1	00110	31312	11= 1 [8/ 8]

T	2be00	01e01	121a1	00110	31312	11= 2	[8/ 8]
U	2be00	01e01	110a1	00110	31312	11= 1	[8/ 9]
V	2be00	01e01	110a1	00110	31311	11= 4	[8/ 9]
W	1be00	01e00	111a1	00110	31311	11= 5	[7/10]
X	1be11	10e00	101a2	00210	00011	11= 4	[10/10]
Y	1be00	10e00	101a2	00110	00011	11= 0	[8/11]
Z	1ba11	10g00	111a2	00110	20011	11= 3	[11/13]
AA	1be00	01e00	221a2	10110	31311	11= 9	[11/13]
BB	1be00	01e00	221a2	10110	10011	11= 3	[4/ 6]
CC	1be00	01e00	111a2	00110	10011	11= 6	[9/11]
DD	1be00	10e00	101a2	00110	00011	11= 0	[11/12]
EE	1ba11	10g00	101a2	00110	10011	11= 9	[10/10]
FF	1be00	10e00	101a2	00110	00011	11= 2	[7/12]
GG	1be21	00g00	121c0	00210	00001	12= 5	[12/15]
HH	1be00	10e00	101a2	01110	00012	11= 3	[12/14]
II	1ge00	01e00	002c1	00200	00012	11= 0	[12/13]
JJ	1ge00	00e01	101f2	01210	00012	10= 6	[13/14]
KK	1ge00	01e00	002c1	00200	00012	11= 5	[13/13]
LL	1be00	01e00	002c0	00210	00012	11= 4	[12/14]
MM	1be00	00e00	101c2	01210	00012	11= 4	[14/15]
NN	1be21	00e00	101c0	00210	00011	11= 6	[14/14]
OO	1be00	00e00	101c0	00210	00012	11= 1	[12/12]
PP	1be00	00e00	101c0	01210	00012	11=10	[10/12]
QQ	1be00	00e01	001c0	00100	00020	11= 1	[7/10]
RR	1be00	00e01	000c2	00000	00020	11= 0	[2/ 4]
SS	1be00	00e01	000c2	00000	00020	11	
Og		1	f	1	2	0	
			s				

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