Studies on Prionoceridae (Coleoptera: Cleroidea). II. 
A revision of the genus Prionocerus Perty, 1831

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Abstract

The genus *Prionocerus* Perty, 1831 is revised. Eight species are recognised: *P. coeruleipennis* Perty, 1831 (= *P. coeruleipennis* var. *diversicollis* Pic, 1920, n. syn.); *P. bicolor* Redtenbacher, 1868 (= *P. pertii* Castelnau, 1836, n. syn.); *P. opacipennis* (Pic, 1920) (transferred from *Idgia* Castelnau, 1836); *P. viridiflavus* Geiser, 2007 and four new species: *P. paiensis* n. sp. (Thailand); *P. malaysiacus* n. sp. (Malaysia); *P. championi* n. sp. (Indonesia) and *P. wittemeri* n. sp. (Indonesia). All previous synonymies of taxa under *P. coeruleipennis* and *P. bicolor* could be confirmed through study of the relevant types. *Prionocerus pertii* Castelnau, 1836 was found to be conspecific with *P. bicolor* Redtenbacher, 1868, but this senior synonymy was submitted to the ICZN proposing it as *nomen oblitum*. *Prionocerus thibetanus* Obenberger, 1918 is newly synonymised with *Idgia viridescens* Gorham, 1895. *Prionocerus huegeli* Redtenbacher, 1868 and *P. hirtus* Walker, 1871 are confirmed to belong to *Idgia*, the latter has to be treated as a *nomen dubium*. The infrageneric phylogeny of *Prionocerus*, its relationships to other Prionoceridae, as well as its life history, ecology and biogeography are discussed.

Key words: Taxonomy, Cleroidea, Prionoceridae, *Prionocerus*, *Idgia*, taxonomy, new species, new synonymy, Oriental region

Introduction

This is the first part of a revision of the very poorly known Old-world family Prionoceridae, a group closely related to Melyridae in wider sense, and sometimes considered as a subfamily. Prionoceridae contains three extant genera: *Idgia* Castelnau, 1836 with about 135 described species, *Prionocerus* Perty, 1831 currently containing 4 species (including the very dubious *P. pertii* Castelnau, 1836, not mentioned in Geiser 2007) and *Lobonyx* Jacquelin du Val, 1857 currently containing 11 species, according to the recent (partial) revision by Constantin (2009). A fourth generic name, *Prionocerites*, was recently established for a fossil larva of uncertain generic placement by Lawrence & al., 2008. Of these genera, only *Lobonyx* is well defined, while the delimitation and phylogeny of the two other ones is somewhat questionable. The last (partial) taxonomic revision of *Idgia* and *Prionocerus* was published by Champion (1919), but, although its quality was very good for this time, it is now outdated due to the describing activity of Maurice Pic (e.g. Pic 1920a; 1920b). After Pic, taxonomy of Prionoceridae was almost completely neglected, apart from two important papers about morphology and family-level phylogeny (Majer 1987; 1994).

The species assigned to *Prionocerus* are distributed throughout the Oriental region, including some Palearctic border areas, with one species also occurring in Africa and two species extending to Wallacea and New Guinea. Two of the most common and widespread species of the family are members of *Prionocerus: P. coeruleipennis* and *P. bicolor*. They are comparatively well known among entomologists, often collected, but nevertheless only rarely mentioned in literature. Apart from them, there is one recently described species from Indonesia, *P. viridiflavus*, and a number of undescribed species with relatively small distribution ranges and a low number of specimens ever collected.

The aim of this study is to revise the taxonomic status of all taxa in *Prionocerus*, including synonyms and "varieties", describe the new species and provide more information on morphology, variability, phylogeny and distribution of the species, as well as on the delimitation of *Prionocerus* as a genus.

Material and methods

Over 3000 specimens were studied using a binocular microscope with a maximum magnification of 100 x. Male and female genitalia of many specimens were extracted and dry mounted on a card below the specimen. Some more male and female genitalia were treated in hot, highly concentrated KOH solution for one hour or more, then embedded in Polyphenyle-Lactophenole. A very large material of identified and unidentified
species of other Prionoceridae genera was used for comparison.

Measurements were taken using a 0.1 mm scale in the microscope eyepiece, their abbreviations are the following:

**HL** = Head length (from anterior margin of labrum to pronotum).

**PL** = Pronotal length (from central part of anterior margin to central part of base).

**EL** = Elytral length (from base of elytron to central part of apex).

**TBL** = Total body length (= **HL + PL + EL**).

**L-h** = Length without head (= **PL + EL**).

Terminology of aedeagal structures follows Champion (1919), however, the lateral processes of the tegmen are not termed "lateral lobes", but "parameres", in accordance with Majer (1994).

The line drawings were made using a camera lucida, and always in a schematic way. In the figures of the median lobe, the endophallus, which can be extruded in some specimens depending on preparation, was always omitted, as were the internal endophallic sclerites. Habitus photos were taken using extended focal imaging, through a binocular microscope.

The specimens are deposited in the following collections:

- **BIMH**: Bishop Museum, Honolulu, Hawaii, USA.
- **CAB**: Private collection Axel Bellmann, Bremen, Germany.
- **CMB**: Collection Milada Bocakova, Olomouc, Czech Republic (later NMPC).
- **CMG**: Private collection Michael Geiser, Basel, Switzerland.
- **CRS**: Private collection Rudolf Schuh, Wiener Neustadt, Austria.
- **DEIM**: Deutsches Entomologisches Institut, Müncheberg, Germany.
- **KMNH**: Kurashiki Museum of Natural History, Okayama, Japan.
- **MCGD**: Museo Civico di Storia Naturale "Giacomo Doria", Genova, Italy.
- **MHN**: Muséum d’histoire naturelle, Genève, Switzerland.
- **MNB**: Museum für Naturkunde der Humboldt-Universität, Berlin, Germany.
- **MTMB**: Magyar Természettudományi Muzeum, Budapest.
- **MNHP**: Musée nationale d’histoire naturelle, Paris, France.
- **NMHB**: Naturhistorisches Museum, Basel, Switzerland.
- **NHML**: Natural History Museum, London, UK.
- **NHMW**: Naturhistorisches Museum, Wien, Austria.
- **NKME**: Naturkundemuseum, Erfurt, Germany.
- **NMBE**: Naturhistorisches Museum, Bern, Switzerland.
- **NMPC**: Národní Muzeum, Praha, Czech Republic.
- **NRMS**: Naturhistoriska Riksmuseet, Stockholm, Sweden.
- **SMNS**: Staatliches Museum für Naturkunde, Stuttgart, Germany.
- **SMTD**: Staatliches Museum für Tierkunde, Dresden, Germany.
- **ZSMU**: Zoologische Staatssammlung, München, Germany.

**Systematic part**

**Genus Prionocerus** Perty, 1831

*Prionocerus* Perty, 1831: 33.

Type species: *P. coeruleipennis* Perty, 1831 (by monotypy).
FIGURES 1–7. Median lobe of aedeagus of *P. coeruleipennis* (1), *P. bicolor* (2), *P. paiensis* n. sp. (3), *P. malaysiacus* n. sp. (4), *P. championi* n. sp. (5), *P. opacipennis* (6) and *P. wittmeri* n. sp. (7) in lateral view.

FIGURES 8–14. Apex of median lobe of aedeagus of *P. coeruleipennis* (8), *P. bicolor* (9), *P. paiensis* n. sp. (10), *P. malaysiacus* n. sp. (11), *P. championi* n. sp. (12), *P. opacipennis* (13) and *P. wittmeri* n. sp. (14) in dorsal view.
FIGURES 15–21. Lateral lobe of aedeagus of *P. coeruleipennis* (15), *P. bicolor* (16), *P. paiensis* **n. sp.** (17), *P. malaysiacus* **n. sp.** (18), *P. championi* **n. sp.** (19), *P. opacipennis* (20) and *P. wittmeri* **n. sp.** (21) in lateral view.

**Differential diagnosis:** This genus is morphologically extremely close to *Idgia* and the only usable character to distinguish it from this genus are the flattened, more or less strongly serrate antennae with strongly emarginate last joint, although this is also subject to some interspecific or intersex variation within *Prionocerus* itself, as well as within *Idgia* (see discussion, under "phylogeny").

From *Lobonyx* and some species currently placed in *Idgia* (which will be transferred to another genus in the future) it is easily distinguished by larger eyes, narrower and more elongate head and the absence of a clearly demarcated frontoclypeal suture, as well as the antennal shape.

**Redescription:** Prionoceridae of medium size, 8–14 mm in total length. Bright coloured with metallic or bright orange yellow elytra, never with black apical macula like in many *Idgia* species. All but one species (*P. viridiflavus*) with reddish pronotum, rarely with discal spot(s).

Head elongate, always dark coloured, behind eyes with some very long laterally projecting black bristles. Eyes very large, strongly emarginate at the sides near the antennal insertion; larger in males than in females. Frons between eyes narrow in males, broader in females; distinctly depressed and slightly rugose in front of the eyes; laterally delimited by two conspicuous sharp ridges above the antennal insertions. Clypeus slightly
convex, separated from frons by a broad, deep furrow, but without any trace of a suture. Terminal segment of maxillary palpi always almost securiform and as long as or longer than the first segment. The second segment about half as long as the first. Labial palpi with very small first segment, about three times longer than second segment and subsecuform terminal segment of about the same length as the second, but much larger. Mandibles rather large, but most parts covered by the labrum; their apical end with a large tooth directed inwards; the basal half their inner edge finely, somewhat irregularly crenulate. Penicillus of mandibles always present, contrary to *Lobonyx* (see Majer 1987: figs. 242 and 275). Mandibular tendons very large and strongly sclerotised (see Majer 1994: fig. 71).

Antennae always with the first three segments simple, segments 4 to 10 more or less strongly flattened and widened, the last segment distinctly emarginate, approximately "banana-shaped".

Pronotum weakly sclerotised, relatively simple, never strongly convex; without any sharp angles; always approximately as long as wide (length : width ratio ranging from 1 : 0.9 to 1 : 1.2); with two more or less ill-defined oblique impressions in its basal half, one at each side of the disc, sometimes confluent in the middle.

Elytra always more than twice as long as wide together and of more or less subparallel shape (slightly narrowed after the middle in *P. viridiflavus*); with short inconspicuous, recumbent ground pubescence intermixed with few longer erect hairs and densely covered with fine punctures, which are often confluent and make up a somewhat rugose texture. Two or three indistinct rows of coarser granules on the elytral disc can be found in some species or some individuals, but they are often completely reduced or invisible within the rugose punctures. Scutellum subtriangular or subrhomboidal, but with all sides more or less rounded and without any clear angles.

Femora and tibiae always simple, without noticeable sexual dimorphism. Middle and hind tarsi (in females also front tarsi) with segments 1–2 subequal; 3–4 also of subequal size, smaller than 1 and 2. Segment 5 longest, almost as long as 3 and 4 together or longer. Claws simple, their base thickened. Male front tarsi thickened, slightly reddish brown, segments 1–3 with a conspicuous, strongly sclerotised black comb along their inner edge. Fourth segment very small and without comb. Male middle and hind tarsi always simple.

Abdomen metallic, weakly sclerotised and without conspicuous characters, except for the last two sternites: In females, they are simple, flat, not emarginate, the last one of somewhat semicircular or slightly parabolic shape. In males, the second last sternite is shallowly emarginate at its apical edge, while the last one is very distinctly emarginate and of species specific shape.

Aedeagus of the same type as in *Idgia*, compared to *Lobonyx* with much more robust paramera and phallobase bent downwards (almost straight in *Lobonyx*). Endophallic sclerites consisting of a pair of strong sclerites in the basal half and a long row of small denticles leading from these sclerites until the ostium. This is very different from *Lobonyx*, where the sclerites are restricted to the apical half.

Sexual dimorphism usually affects the size of the eyes, width of the frons, size (and to a smaller extent also shape) of antennae and sometimes (very slightly) shape of the elytra. Females are usually slightly larger in size, although there is a very large overlap. The male protarsal structure with its conspicuous, strongly sclerotised combs is an important character of Prionoceridae (Champion 1919; Majer 1994). Other special features, like thickened femora, enlarged tibial spurs or strongly curved tibiae which occur in males of some species of *Idgia* are not known in *Prionocerus*.

*Prionocerus coeruleipennis* Perty, 1831

*Prionocerus coeruleipennis* Perty, 1831: 33.
*Prionocerus forticornis* Schaufuss, 1887: 126. Synonymised by Bourgeois, 1890: 175.
*Prionocerus brevicornis* Schaufuss, 1887: 126. Synonymised by Bourgeois, 1890: 175.
*Prionocerus coeruleipennis* var. *diversicollis*: Pic, 1920b: 12. **n. syn.**
FIGURES 22–29. Last two abdominal sternites (and outline of last tergite) of males of *P. coeruleipennis* (22), *P. bicolor* (23), *P. paiensis n. sp.* (24), *P. viridiflavus* (25), *P. malaysiacus n. sp.* (26), *P. championi n. sp.* (27), *P. opacipennis* (28) and *P. wittmeri n. sp.* (29) in ventral view.

FIGURE 30. Last two abdominal sternites of female of *P. wittmeri n. sp.* in ventral view.
FIGURES 31–34. Dorsal habitus of *P. coeruleipennis* ♂ from Vietnam (31), ♀ from Vietnam (32), *P. bicolor* ♂ from Vietnam (33), ♀ from Laos (34).
FIGURES 35–38. Dorsal habitus of *P. paiensis* n. sp. ♂ holotype (35), ♀ paratype (36), *P. malaysiacus* n. sp. ♂ holotype (37), ♀ paratype (38).
FIGURES 39–42. Dorsal habitus of *P. viridiflavus* ♂ holotype (39), *P. championi* n. sp. ♂ holotype (40), *P. opacipennis* ♂ from Thailand (41), *P. wittmeri* n. sp. ♂ paratype (42).
Type material examined: *P. coeruleipennis*: Holotype ♀ "I., Java., Epiphyta collaris Haan, caeruleipennis Perty"; ZSMU, in good condition.


*P. forticornis*: Syntype ♀ "Prionocerus forticornis m. Philippin[es]", the back side of the label says "Prionocerus coeruleipennis Philipp ♀"; MNHB, in good condition.

*P. brevicornis*: Syntype ♀ "Prionocerus brevicornis m. S.Celebes"; MNHB, in good condition.

*P. coeruleipennis var. diversicollis*: Holotype ♀ "Manau Riang, Palembang" [Indonesia: Sumatra]; MNHP. The holotype is in bad condition, having been damaged by dermestid larvae, lacking its entire abdomen and parts of the legs.

Other material examined: PAKISTAN (?): "Murree, coll. Staudinger" 1 ♂ (SMTD).

INDIA: "India, 58 60" 2 ♀ (NHML); "Indes, Boys" 1 ♂ (MHNG). SIKKIM: "Sikkim, Harmand 1886" 1 ♀ (NHNP).

ANDAMAN ISLANDS: "Andaman Islands, Roepstorff, Fry Coll., 1905.100" 2 ♀ (NHML).

JAPAN (?): "Nippon Moyen, Env. de Tokio et Alpes de Nikko, J. Harmand 1901" 1 ♀ (NHML); "Japonia, Shikoku" 1 ♀ (MTMB).


MYANMAR: "Burma" 1 ♂ (NHMB); "Burma, coll. Staudinger" 1 ♀ (SMTD); "Burmah, Bowring, 63 47* 3 ♀ (NHML); "Burmah, H. E. Andrews Bequest, B. M. 1922–221" 1 ♂ (NHML); "Birmah, Fry Coll., 1905.100" 1 ♀ (NHML); "Burma (Süd-Ost), 5. XI. 1989, leg. Sab. Steinke" 1 ♀ (SMNS); "Shweego-Myo, Fea, Ottobre 1885" 1 ♂ (NHMB); "Birmania, Shweego-Myo, Fea, Ottobre 1885" 1 ♂ (MCGD); "Rangoon, Birmania, Fea, 1887" 1 ♀ (MCGD); "Rangoon, 96–198" 1 ♂ (NHML); "Rangoon, Archbold Coll., B. M. 1926–391." 1 ♀ (NHMH); "Palon (Pegu), L. Fea, VIII. IX, 87" 1 ♂ (MCGD); "Maymyo, V. 10, H. L. Andrews" 1 ♂ 2 ♀ (NHML); "Maymyo, VI. 10, H. L. Andrews" 2 ♂ 2 ♀ (NHML); "Maymyo, VI. 14, H. L. Andrews" 2 ♂ (NHML); Mon State, Kyaikto, 1.–5. VI. 2003. M. Klícha leg. 1 ♀ (CMG); Mon State, Kyaikto-Pahtawk, 3.–6. VI. 2003, M. Klícha leg. 1 ♂ (CMG); "Shan States, Manders, Sharp Coll., 1905–313" 2 ♂ 1 ♀ (NHML); E Shan State, Kengtung (Kyaingtong), 14.–15. VI. 1997, J. Rejsek leg. 1 ♀ (SMNS); S. Shan States, Pekkong, 900 m, 11. X. 1934, Malaise leg. 1 ♂ (NRMS); S. Shan States, Road 40 km E of Taunggyi, 25. IX. – 13. X. 1934, Malaise leg. 1 ♀ (NRMS); "Tenasserim, 44 24" 2 ♀ (NHML); "Tenasserim, coll. Helfer" 14 ♂ 10 ♀ (MNPR); Tenasserim, Mekane, 90 km E of Moulmein, 200 m. 2.–8. XI. 1934, Malaise leg. 1 ♀ (NRMS).

LAOS: "Annam-Laos, India, coll. W. Wittmer" 1 ♂ 4 ♀ (NHMB); "Annam-Laos, India" 1 ♂ 3 ♀ (NHMB); "Annam Laos" 16 ♂ 17 ♀ (MTMB); "Laos, Tonkin, coll. Staudinger" 2 ♀ (SMTD); "Giravanne, 3.–24. XI. 1919, R. V. de Salvaza" 1 ♀ (NHMH); "Keng Chap, près de Buenoco ? [illegible], Laos" 1 ♀ (NHMH); "Song Van, Ht. Mekong" 1 ♀ (NHMB); Phongsaly prov., Phongsaly env., 21°41–2° N, 102°06–8° E, ~1500 m, 28. V.–20. VI. 2003, M. Brancucci leg. 1 ♂ 3 ♀ (NHMB); Phongsaly prov., Phongsaly env., 21°41–2° N,
Phonsavan town
1924–329

R. Miéville 1920

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Expedition, M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubiáň. 1 ♂ 3 ♀ (NHMB); Houa Phan prov., Ban Saluei → Phou Pane Mt., 1340–1870 m, 20°12–13.5' N / 103°59.5–104°01' E, 10.–9. VI. 2009, C. Holzschuh & local coll. leg., NHMB Basel, NMPC Prague, Laos 2009 Expedition, M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubiáň. 4 ♀ (NHMB); Houa Phan prov., Ban Saluei → Phou Pane Mt., 1340–1870 m, 20°12–13.5' N / 103°59.5–104°01' E, 2.–9. VI. 2009, M. Brancucci leg., NHMB Basel, NMPC Prague, Laos 2009 Expedition, M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubiáň. 1 ♂ 3 ♀ (NHMB); Houa Phan prov., Ban Saluei → Phou Pane Mt., 1300–1900 m, 20°11–13° N / 103°59–104°01'E, flying around in village (daytime), 10.–17. VI. 2009, Michael Geiser leg., NHMB Basel, NMPC Prague, Laos 2009 Expedition, M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubiáň. 2 ♂ 1 ♀ (NHMB); Houa Phan prov., Ban Pahang, 1370 m, 20°43.35' N / 104°29.22'E, flying around in village, 7. VI. 2009, M. Geiser leg., NHMB Basel, NMPC Prague, Laos 2009 Expedition, M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubiáň. 2 ♂ 1 ♀ (NHMB); Houa Phan prov., Muang Et env., Ban Muang Van, 360 m, 20°49' N / 104°03'E, flying around in village (daytime), 3.–6. VI. 2009, M. Geiser leg., NHMB Basel, NMPC Prague, Laos 2009 Expedition, M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubiáň. 1 ♂ 5 ♀ (NHMB); Xieng Khouang prov., Phonsavan town → Phou Phadeng Mt., 1100–1200 m, 19°26’ N / 103°13’E, flying around in town (daytime), 9. V. 2009, M. Geiser leg., NHMB Basel, NMPC Prague, Laos 2009 Expedition, M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubiáň. 2 ♂ 1 ♀ (NHMB); Xieng Khouang prov., Phonsavan town → Phou Phadeng Mt., 1100–1200 m, 19°26’ N / 103°13’E, flying around in town (daytime), 18.–24. VI. 2009, M. Geiser leg., NHMB Basel, NMPC Prague, Laos 2009 Expedition, M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubiáň. 2 ♂ 1 ♀ (NHMB); Xieng Khouang prov., Ban Thaviang, 400 m, 19°02’ N / 103°23’E, flying around in village (daytime), 21.–22. VI. 2009, M. Geiser & D. Hauck leg., NHMB Basel, NMPC Prague, Laos 2009 Expedition, M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubiáň. 2 ♂ 1 ♀ (NHMB); "Rég. de Xieng-Khouang, Tranhnhinh, 1200 A 1200 M., R. Miéville 1920" 1 ♂ (MNHP); Xieng Khouang prov., Ban Na Lam → Phou Sane Mt., 1300–1500 m, 19°37–8’ N / 103°20’E, village, visiting flowers of Sambucus sp., 27.–30. V. 2009, M. Geiser leg., NHMB Basel, NMPC Prague, Laos 2009 Expedition, M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubiáň. 4 ♀ (NHMB), 1 ♂ 1 ♀ (CMG); Xieng Khouang prov., Muang Khoun, 1070 m, 19°19.91’ N / 103°21.99’E, flying around in town (daytime), 22. VI. 2009, M. Geiser & D. Hauck leg., NHMB Basel, NMPC Prague, Laos 2009 Expedition, M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubiáň. 2 ♂ 2 ♀ (NHMB); "Tonpheng, 20. IV. 1966, Native Collector" 1 ♂ (BIMH); "Song-Chay, 1908, Indo Chine, coll. Dussault" 1 ♂ (NHML); "Cambodge, E. Le Moul 1916" 1 ♂ (MNHP); "Cambodge, A. Pavie 1886" 2 ♀ (MNHP); "Cambodge, A. Pavie 1893" 1 ♂ 9 ♂ (MNHP); "Cambodge, Harmand 1875" 1 ♂ 3 ♀ (MNHP); "Cambodge, E. Le Moul 1916" 1 ♂ (MNHP); "Cambodge" 1 ♂ 1 ♀ (MNHP).
"P. Hanoi, 56, lgt. Dr Syrůček" 1 ♂ (NMPC); "Hanoi" 1 ♂ (MNHP); "Hanoi, 3201" 1 ♂ (NHML); "Lang-Son et Cao Bang, Girard 1894" 1 ♂ 8 ♂ (MNHP); „Ban-danh Lang-son, E. Aturan, 1898“ 3 ♂ (MHNG); "Lang Son (Tonkin)" 2 ♂ (MNHP); 52 km SW of Lang Son, 21°35’ N 106°30’ E, 370 m, 27. IV.–6. V. 1996, Pacholátko & Dembický leg. 14 4 ♂ 4 ♀ (NHMB); "Hoo-Binh, Tonkin" 1 ♂ (MNHP); "Tonkin, Hoabinh. Aug. 1918, R. V. de Salvaza" 1 ♂ (MNHP); Ha son binh prov., Hoa binh, 4.–7. VI. 1986, J. Rybníček leg., Freiwilliger Museumsverein Basel 1987. 1 ♂ (NHMB); Hoa Binh, coll. W. Wittmer 5 ♂ 1 ♂ (NHMB); Ha Son Binh prov., Than Loc, singling, No. 112, 27. X. 1986, Mészáros, Oláh & Vásárhelyi leg. 1 ♂ (MTMB); "Central Tonkin, Chiem-Hoa, Aug. Sept., H. Fruhstorfer" 1 ♂ (NHMB). "Central Tonkin, Chiem-Hoa, Aug. Sept., H. Fruhstorfer" 5 ♂ 2 ♂ (MNHP); "Tonkin Centr., Région de Chim-Hoa et de Tuyen-Quan, A. Weiss 1901, Été" 3 ♂ (MNHP); "Tonkin, Prov. de Tuyen-Quan, haute rivière claire. A. Weiss 1901, Été" 1 ♂ (MNHP); "Tonkin Centr., Env. de Tuyen-Quan, A. Weiss 1901, Print Été" 3 ♂ 4 ♀ (MNHP); "Tonkin Centr., Env. de Tuyen-Quan, A. Weiss 1901, mars-avril" 1 ♂ 4 ♀ (MNHP); "Tonkin Centr., Env. de Tuyen-Quan, A. Weiss 1901, avril-juin" 5 ♂ 15 ♀ (MNHP); "Tonkin Centr., Env. de Tuyen-Quan, A. Weiss 1901, juillet" 1 ♂ (MNHP); "Tonkin Centr., Env. de Tuyen-Quan, A. Weiss 1901, juil.-sept." 1 ♂ 3 ♂ (MNHP); "Tonkin Centr., Env. de Tuyen-Quan, A. Weiss 1901, oct.-déc." 1 ♂ (MNHP); "Tonkin, Ha-Giang, Capn Bonifacy 1903" 1 ♂ 3 ♂ (MNHP); "Tonkin, Vallées de la haute riv. claire, entre Hagiang et Vinh-Tuy, principalement a Bac-Quang, J. de Retz 1908" 7 ♂ (MNHP); "Hagiang-Pa-kha, 1901–06. Indo Chine, coll. Dussault" 3 ♂ 7 ♀ (NHMB); "Pa-kha, 1914. Indo Chine, coll. Dussault" 1 ♂ 1 ♂ (NHMB); "M" du Ht Song Chai, Rabier 258–95 3 ♂ 3 ♀ (MNHP); Son La prov., Moc Chau, singling, No. 93, 26. X. 1986, Mészáros, Oláh & Vásárhelyi leg. 1 ♂ (MTMB); Vinh Phu Prov., Tam Dao, 29.–31. V. 1997, Y. Arita et al. leg., Exot. Insect Coll., Nos. 22155–22157. 2 ♂ 1 ♀ (KMNH); Vinh Phu Prov., Tam Dao, 29. V.–3. VI. 1997, Native leg., Exot. Insect Coll., No. 19907. 1 ♂ (KMNH); N Vietnam, 75 km NW Hanoi, Tam Dao, 16.–23. V. 1991, J. Strnad leg. 2 ♂ (NHMW); Vinh phu prov., Tam Dao, 27. V.–2. VI. 1986, J. Rybníček leg., Freiwilliger Museumsverein Basel 1987. 5 ♂ 2 ♂ (NHMB); Vinh Phu prov., Tam-Dao, 20. V. 1989, J. Rybníček leg. 2 ♂ (NHMB); Vinh Phu prov., Tam Dao, 12.–24. V. 1989, Jan Strnad leg. 1 ♂ (NHMB); Vinh Phu prov., Tam Dao, 20.–28. VII. 1990, Jan Strnad leg. 1 ♂ (NHMB); Vinh Phu prov., Tam Dao, 6.–9. V. 1990, L. Dembický leg. 1 ♂ (NHMB); Vinh Phu prov., Tam Dao, V. 1990, J. Picka leg. 1 ♂ (NHMB); 70 km NW of Hanoi, Tam Dao, 21°27’ N 105°39’ E, 900–1200 m, 1.–8. VI. 1996, Dembický & Pacholátko leg. 1 ♂ 1 ♂ (NHMB); 70 km NW of Hanoi, Tam Dao, 21°27’ N 105°39’ E, 900–1200 m, 1.–8. VI. 1996, Pacholátko & Dembický leg. 2 ♂ (NHMB); Yen Bai → Tam Dao, 17. V. 1990, Vit Kubán leg. 1 ♂ (NHMB); Yen Bai, Hoang Lien Son distr. 16.–17. V. 1990, J. Horák leg. 1 ♂ 1 ♂ (NHMB); Hoang lien son prov., Yen Bai, V. 1990, J. Picka leg. 1 ♂ (NHMB); "Yen-Bay, 1907. Indo Chine, coll. Dussault" 1 ♂ (NHMB); Yen Bai, Hoang Lien Son distr. 16.–17. V. 1990, J. Horák leg. 1 ♂ 1 ♂ (NHMB); Hoang lien son prov., Yen Bai, V. 1990, J. Picka leg. 1 ♂ (NHMB); "Tonkin Centr., Env. de Yen-Bai, A. Weiss 1901" 3 ♂ (MNHP); "Tonkin, Lao-Kay, Dr Chevalier 1902" 1 ♂ (MNHP); "Tonkin, env. immédiats. de Lao-Kay, Capn" Sauvez 1908" 1 ♂ 1 ♂ (MNHP); "Chapa, prov. de Laokay. Ht-Tonkin" 1 ♂ (MNHP); "Tonkin, Chapa, mai 1916. R. Vitalis de SalvaZa" 1 ♂ (MNHP); "Chapa" 1 ♂ (MNHP); Hoang lien son prov., Sa Pa, VI. 1990, Duang Tat Tu leg. 1 ♂ (NHMB); "Sa Pa, Lao Cai prov., 250 km SW Hanoi, Sapă vill., env. Hoang Lien Son Nat. Res., 1250 m NN, 31. V.–3. VI. 1998, A. Napoliov leg. 1 ♂ (NKME); "Frontière Chine-Tonkin, Région de Lao-Kay et Ho-Kheou, Ch. Dupont 1900" 1 ♂ 15 ♀ (MNHP); "Bao-Lac (Tonkin)" 1 ♂ (MNHP), 2 ♀ (NMPC); "Bao-Lac (Tonkin), coll. W. Wittmer" 1 ♂ 1 ♂ (NHMB); Bac Kan Prov., Ba Be National Park, 300 m, 30. IV. 2006, M. Wakabayashi leg. 1 ♂ (KMH); Bac Kan Prov., Ba Be National Park, 650–700 m, 12. IV. 2006, M. Wakabayashi leg. 1 ♂ (KMH); Trung Trang prov., Cat Ba, 200 m, 20°48’ N / 107°00’ E, at light, No. 171, 16. V. 1987, Matskási, Oláh & TopáR leg. 2 ♀ (MTMB); Quang ning prov., Ha long, 29. V.–1. VI. 1985, J. Picka leg. 1 ♂ (NHMB); "Hanoi, 3201" 1 ♂ (NHML); "Tonkin, env. immédiats. de Lao-Kay, Capn" Sauvez 1908" 1 ♂ 1 ♂ (MNHP); "Chapa, prov. de Laokay. Ht-Tonkin" 1 ♂ (MNHP); "Tonkin, Chapa, mai 1916. R. Vitalis de SalvaZa" 1 ♂ (MNHP); "Chapa" 1 ♂ (MNHP); 100 km S from Hanoi, Cuc-Phuong nat. park, 2.–12. V.
1991, E. Jendek leg. 3 ♂ 2 ♀ (NHMB); Cuc-Phuong, 2.–11. V. 1991, Jan Strnad leg. 1 ♂ 2 ♀ (NHMB); "Annam" 1 ♂ (NMP); "Annam, Thua-Luu, 0–800 m, 8. 8. 1938, Björkergren" 3 ♀ (NRMS); "Annam, B'kre (80 km NNW fr. Djiring), 1000 m, 7.–38, Björkergren" 1 ♀ (NRMS); "Annam, Quang-Tri, M. Maunier 1922" 1 ♂ (MNHP); "Quantri, Annam, coll. Staudinger" 1 ♀ 2 ♂ (SMTD); "Annam, Phuc-Son, Nov. Dez., H. Frustorfer" 1 ♂ (MNH); "Cochinch., Morica" 1 ♀ (MNH); "Cochinchine, Amiral Vignes 1898" 18 ♂ 24 ♀ (MNH); "Cochinchine, Harmand 1872" 2 ♀ 2 ♂ (MNHP); "Cochinchine, P. de Borre, Coll. D. Ach. 1. 90" 1 ♂ 5 ♀ (MHNG); "Cochinchine, Tay Ninh, Fouquet, 1904" 5 ♂ 3 ♀ (MNHP); "Cochinchine, Bienhoa, 12. 1902, Cap. Fouquet" 3 ♂ 2 ♀ (MNHP); "Cochinchine, Env. de Saigon, Simard 1902" 1 ♂ (MNHP); "Saigon, H. Swale, 1913–17" 1 ♀ (NHML); "Saigon" 1 ♂ 3 ♀ (CMG), 1 ♂ (NHMW); "Saigon, P. de Borre" 1 ♂ (MNHP); "Cochinchine, Cap Saint-Jacques, Cap" Modest 1909" 1 ♂ (MNHP); "Cap St. Jacques, Coll. A. Bonhoure 1909" 1 ♂ (MNHP); "Cap St. Jacques (Cap'). Modest), Coll. A. Bonhoure 1909, Novembre" 1 ♂ (MNHP); "Cochinchine, Env de Baria, Cap" Modest 1907" 1 ♂ (MNHP); S-Vietnam, Nam Cat Tien Nat.Park, 1.–15. V. 1994, Pacholatko & Dembicky leg. 2 ♂ 1 ♀ (NHMW).


MALAYSIA: "Malacca" 1 ♂ (MNHB); "Malacka, Franklin Müller" 1 ♂ 1 ♀ (DEIM); "Malakka, Coll. Franklin" 2 ♀ (DEIM); "Malay, Castell, Fry Coll., 1905.100” 2 ♀ (NHML); "Fed. Malay States, 1909, C. J. Brooks, B. M. 1931–570” 2 ♀ 3 ♂ (NHML); "Malacca, Pasco Coll., 93–60” 1 ♂ (NHML); "Borneo North, Whitehead, Fry Coll., 1905.100” 1 ♀ (NHML). PENANG: "P. Penang, 600–800 m, II. 89, Loria et Fiva” 1 ♂ (MCGD); "P. Pinang, Batu Ferrin.ghi", 28. VII. 1975, Kling leg. 1 ♂ 2 ♀ (NHML); "Penang, Bowring 63 47°” 5 ♀ 5 ♂ (NHML); "Penang, 96–85” 1 ♂ (NHML); "Penang, H. N. Ridley, 1903–229” 1 ♀ (NHML); Bukit Bakar Kapor, 24. XI. 1961, H. T. Pagden leg., Pres. by Com. Inst. Ent., B. M. 1962–1, 1 ♂ (NHML). PERAK: "Malakka, Perak" 4 ♀ (MNHB); "Malacca, Perak, Jachan V.” 1 ♀ (MNHB); "Perak, Sharp Coll. 1905–313” 1 ♂ 3 ♀ (NHML); "Taiping, Malay States, W. B. Orme, 1911–131” 1 ♀ (NHML); Taiping, 1972, Liew leg. 1 ♀ (NHNG); Maxwell’s Hill, 6. 1. 1974, Pfann leg. 1 ♀ (NHML); E Taiping, 500–800 m, V.–VI. 1978, H. Knorr leg. 2 ♀ (SMNS); "Indien, Rwela Rangsr, Perak” 1 ♀ (MNHB); "Tapah, Perak, G. B. Cerruti 1900” 1 ♀ (NHNG). PAHANG: "Pahang, Bingham, 1903–183” 1 ♀ (NHML); Fraser’s Hill, 3500 ft. 7. VI. 1941, H. M. Pendlebury, F.M.S. Museums, Ex F.M.S. Museum, B. M. 1955–354 1 ♀ (NHML). NGERI SEMBLAN: "Negri Sembilan F. M. S., Port Dickson, IX. 1941, Ex F.M.S. Museum, B. M. 1955–354” 1 ♂ (NHML).

SABAH: "Borneo, Trusan, Aug. 1900" 1 ♀ (MNHP); "Sandakan, C. V. Creagh., 96–197" 1 ♀ (NHML); "Sandakan, Brit. N. Borneo, W. B. Pryer, 1914–484" 1 ♂ 1 ♀ (NHML). BANGGI (Sabah): "Banguey" 1 ♂ (MNHP); "Banguey b. Borneo" 1 ♀ (ZSMU); "Banguay b. Borneo, coll. Staudinger" 16 ♂ 10 ♀ (SMTD); "Bangkei, H. Kühn, 1885, coll. Staudinger" 1 ♀ (SMTD).

SINGAPORE: "Sing., Wallace" 1 ♀ (MNHP); "Singapour" 3 ♀ (MNHB); "C. J. Saunders, B. M. 1933–227" 1 ♀ 1 ♀ (NHML); "H. N. Ridley, 1900–82" 1 ♀ (NHML); "H. N. Ridley, 1900–116" 1 ♀ (NHML); "H. N. Ridley, 1901–77" 1 ♀ (NHML); "H. N. Ridley, 1904–47" 1 ♀ (NHML); "H. N. Ridley, 1904–160" 1 ♀ (NHML); "H. N. Ridley, 1910–194" 5 ♀ 2 ♂ (NHML); "H. N. Ridley, 1910–284" 1 ♀ (NHML); "G. Lewis, 1915–38" 1 ♀ (NHML); "Singapore, 1962, B. C. Chubman" 1 ♂ (NHML); "Botanic Gdns. Singapore, 94–132." 1 ♀ (NHML).

BRUNEI: "Brunei, Borneo" 1 ♂ (MNHP), 1 ♂ (MTMB).

INDONESIA: "Sunda Ins., Excell. v. Sundt G." 1 ♀ (MNHB). SUMATRA: "Sumatra" 1 ♀ (MNHG); "Sumatra, coll. Hayek" 1 ♀ (ZSMU); "Sumatra, coll. Staudinger" 2 ♀ (SMTD); "Sumatra, Coll. Kraatz" 1 ♀ 4 ♂ (DEIM); "Sumatra, Dr. Will" 2 ♀ (MNHP); "Sumatra, Dr. Will, coll. Hauser" 1 ♀ (MNHB); "Sumatra, Dehy" 1 ♀ (MNHP); Aceh, 16 km S Kutacane, 350 m, 18. VIII. 1992 1 ♂ (NHMB); "Pajakumbo" 1 ♀ (MNHP); Bukit Tinggi, 23. II. 1954, A. H. G. Alston. B. M. 1954–414 1 ♂ (NHML); Bukittinggi env., 14.–16. II. 1991, Bocák & Bocáková leg. 1 ♀ (NHMB); "Deli, S. Wiene, F. R. Mason, Ex Coll. F. Mason, Brit. Mus. 1922–173" 1 ♀ (NHML); "Deli ‘01" 1 ♀ (DEIM); "N.O. Sumatra, Deli, L. Martin S." 1 ♂ 6 ♀ (MNHB); "E Coast Sumatra, Doerian Moelan, Brindjei, Ll. R. Coughtrie, 1915–184" 1 ♀ (NHML); "Medan S O.K. L. Fulmek, Tabakopslagplaats" 1 ♀ (NHMW); N-Sumatra, D. Toba, Samosir, Tuk-Tuk, 3. II. 1990, Schillhammer leg. 1 ♀ (NHMW); N-Sumatra, Gunung Sibayak/Brastagi, N Toba See, 1500–2000 m, 20. II. 1990, Schödl leg. 1 ♀ (NHMW); "N.O. Sumatra, Tebing-tinggi, Dr. Schultheiss, Coll. Schultheiss" 3 ♀ 4 ♂ (DEIM); "Palembang, Sumatra 1900, Jos. Schmitz, Coll. Kraatz" 1 ♀ (DEIM); "Sumatra, Beskera" 1 ♀ (MNHB); "Balighe, X. 90–III. 91, E. Modigliani, coll. W. Wittmer" 1 ♀ (NHMB); "Medan S.O.K., L. Fulmek, coll. W. Wittmer" 1 ♀ (NHMB); "Indragiri, Sumatra, V. Meckel 99" 1 ♂ 1 ♀ (NHMB); Utara, Berastagi, 1300 m, 20. X. 1991, W. Barries leg. 1 ♀ (NHMB); "Lampung, Buxton, Fry Coll., 1905.100° 3 ♀ (NHML). RIAU: Penyengat Island, 7–11. VII. 1991, B. Baláza leg. 1 ♀ (MTMB). NIAS: "Is. Nias, 1897–98, U. Raap" 3 ♀ (MCGD); "Ile Nias" 1 ♀ (MNHP); "Nias, Coll. Kraatz" 4 ♀ (DEIM), BATU: "Isle Batu, 1896–97, H. Raap" 1 ♀ (MCGD). MENTAWAI: S-Siberut, w Murasiberut, Totebure, 16. II. 1991, Schillhammer leg. 1 ♀ (NHMW); Siberut, Madobak, 18. II. 1991, Schödl leg. 1 ♂ 1 ♀ (NHMW); Siberut, Madobak, W Murasiberut, 19. II. 1991, Schödl leg. 1 ♂ 1 ♀ (NHMW); Sipora, 20. X. 1924, H. H. Karny 1 ♀ (NHML); "Sipora, Sereina, V.-VI. 94, Modigliani" 3 ♀ (MCGD), E NGGANO: "Engano, Kifa-juc., Modigliani, V. 1891" 1 ♀ (MCGD); "Engano, Bua-Bua, Modigliani, V. VI. 1891" 1 ♀ (MCGD). KALIMANTAN: "S.O. Borneo, Grabowsky S. V." 1 ♀ (MNHB); "Borneo, Lohaban, R. Oberthür 1898" 2 ♀ (MNHP); "Pontianak, Bruegel, 2. 1907." 1 ♀ (ZSMU); "Ponteaknak, Borneo, VII. 07" 12 ♀ 6 ♂ (BIMH), 1 ♂ 1 ♀ (CMG); "Borneo, Pontianak, F. Muir, VII. 07" 3 ♀ 1 ♀ (BIMH); "Borneo, Pontianak, F. Muir, Collection of W. M. Giffard" 1 ♀ (BIMH); "Borneo, Pontianak, Dr. Will" 2 ♀ (MNHB); "W. Borneo, Telok Ayer, F. Muir" 1 ♀ (BIMH); "W. Borneo, Telok Ayer, F. Muir, VII. 07" 1 ♀ (BIMH); "Martapura, S. E. Borneo, Doherty, 1891, Sharp Coll.,
1905–313.” 1 ♀ (NHML); “Sanga Sanga, Moorjawa, E. Borneo, H. D. Jensen. 1906-45.” 2 ♀ (NHML); "Sumpit, Borneo, S= Rupert” 1 ♂ 1 ♀ (MNHB); “Marathea Island, O. Borneo, Mjöberg” 1 ♀ (NRMS). JAVA: "India or., coll. E. Friv., Jawa” 1 ♂ 2 ♀ (MTMB); “Java” 1 ♀ 1 ♀ (DEIM), 4 ♀ (MNHB), 2 ♀ (NHMB), 1 ♀ (MNHG); “Java, Dr. Will” 1 ♂ 1 ♀ (MNHG); “Java, ancienne coll.” 1 ♀ (MNGH); “Java, P. de Borre” 2 ♂ 3 ♀ (MNHG); “Java, coll. Staudinger” 1 ♀ (SMTD); “Java, Nyman” 1 ♂ (NRMS); “Java, Mellb.” 1 ♂ (NRMS); “Java, J. D. Pasteur 268–94” 1 ♂ 1 ♂ (MNHP); “Java, Bowring 63 47♀” 1 ♂ (NHML); “Java, Horsfeld, 60–15, 1 ♂ (NHML); “Java, Coll. Kraatz” 1 ♂ 10 ♀ (DEIM); “Fruhstorfer, Java, Coll. Kraatz” 1 ♂ (DEIM); “Pfeiffer” 1 ♀ (NHMW); “Warsberg, 868” 2 ♀ (NHMW); “Java: Pelabuan Ratu” 1 ♀ (DEIM); “Linga, Röttger, Hist.-Coll. (Coleoptera), Nr. 32614” 1 ♀ (MNHB); “Java, Linga, Hist.-Coll. (Coleoptera), Nr. 32614” 1 ♂ 2 ♀ (MNHB); “Preanger, Java, Ankauf Muche” 1 ♀ (SMTD); “Coll. F. C. Drescher, Java, Preanger, No. I. I. Bandoeng, Ill. 1936, 900 m, coll. W. Wittmer” 1 ♀ (NHMB); “Coll. F. C. Drescher, Java, Preanger, No. I. I. Bandoeng, 8. V. 1936, 750 m, coll. W. Wittmer” 1 ♀ (NHMB); “V. Java, Bandoeng, 700 m, 2/ XII. 1943, Kurt Landberg” 1 ♀ (NRMS); “C. O. Nandjoeng-Djaja, G. Simpal, 600 Mr., Preanger, Java, II. 1934, leg. C. P. J. de Haas, coll. W. Wittmer” 1 ♀ (NHMB); “Buitenzorg, +/-1000 m, Febr. 90. I. Z. Kannegieter” 1 ♀ (MNHP); “Java, Buitenz., Kember” 2 ♀ (NRMS); “Buitenzorg, 25. XII. 1921, Korryn” 1 ♀ (DEIM); “B’zorg, Ill. 32” 1 ♀ (NHMB); “Java occident., Pengelangan 4000, 1893, F. Hruusfstorfer” 1 ♀ (MNHP); “Boeoe Lawang, Res. Pasoeoaean (Holz)” 1 ♀ (MNPC); “Gaharan, Res. Besoeni, E. Java, coll. W. Wittmer” 1 ♀ (NHMB); “Silosanen, E. Java, coll. W. Wittmer” 1 ♀ (NHMB); “Soekaboemi, Java, leg. Dr. F. Weber” 1 ♀ (NHMB); Batjung, Mt. Gedeh, 1100 m, IX.-X. 1919, R. Ratter cond. 1 ♀ (NHMB). SUMBAWA: “Insel Sumbawa, coll. W. Staudinger” 2 ♀ (SMTD); Tambora, 600 m, 9. XI. 1941, Rolf Blomberg leg. 2 ♀ (NRMS); “B. Aroe Hassa, Sambawa, 2–5000”, Doherty IX. Brit. Mus. 1923–320 2 ♀ (NHML); Batudulang, 30 km S of Sumb. Besar, 1000 m, 10. II. 1994, Bolm leg. 1 ♀ (SMNS). KOMODO: “Flores I., Komodo I., J. K. de Jong, VII. 1937, coll. W. Wittmer” 1 ♀ (NHMB). FLORES: “Sunda En. Renschen, End–Flores, 15. VI. 1927” 1 ♀ (MNHB). SUMBA: Lindiwatju, 29. IX. 1949, Dr. Bühler & Dr. Sutter leg. 1 ♀ (NHMB). ADONARA: “Andonare, Laboenarang, 2–4000‘, Doherty XI., Brit Mus. 1923–320” 1 ♀ (NHML). ROTE: Rote, IX. 1935, C. Bühler & Meyer leg. 2 ♀ (NHMB). TIMOR (west): Soe, XII. 1951, Handschin leg. 1 ♀ 1 ♀ (NHMB); “Gunung Leo, Ned. Timor, 2-4000‘, Doherty XII. Brit. Mus. 1923–320” 2 ♀ (NHML). SULAWESI: “I. Celebes” 1 ♀ (NHMP); “Celebes, 55 22” 1 ♀ (NHML); “Celebes, 57 101” 1 ♀ (NHML); “Célébes, 2037–77, de la Savinière” 1 ♀ (NHML); “S. Celebes, 3. 5. 1941” 1 ♀ (NHMB); “Drs. Sarasin, S. Celebes, Makassar” 1 ♀ (NHMB); “Drs. Sarasin, C. Celebes, Palu-Tal” 1 ♀ (NHMB); “Drs. Sarasin, N. Celebes, Tondano” 1 ♀ (NHMB); “Drs. Sarasin, S.O. Celebes, Ussu” 1 ♀ (NHMB); “Drs. Sarasin, Luwu-Djaladja” 1 ♀ (NHMB); “Tondano, Celebes, coll. Staudinger” 7 ♀ 7 ♀ (SMTD); Kandari, Ill. 1874, O. Beccari leg. 2 ♀ (MCGD); Kandari, VII. 1874, O. Beccari leg. 1 ♀ 1 ♀ (MCGD); “Nord-Celebes, Toli-Toili, Nov.-Dez. 1895, H. Fruhsstorfer” 1 ♀ (MNHP); Sulawesi Utara, Dumoga-Bone N. P., “Fog 9, Mixed crops”, I. Ill. 1985, R. Ent. Soc. London, Project Wallace 3 ♀ 3 ♀ (NHML); Sulawesi Utara, Dumoga-Bone N. P., Lowland forest 200–300 m, on plants, I. 1985, R. Ent. Soc. London, Project Wallace 1 ♀ (NHML); Sulawesi Utara, Dumoga-Bone N. P., Base camp area, ca. 190 m, XII. 1985, R. Ent. Soc. London, Project Wallace 1 ♀ (NHML); Sulawesi Utara, Dumoga-Bone N. P., Base camp area, ca. 190 m, at light, X. 1985, R. Ent. Soc. London, Project Wallace 1 ♀ (NHML); Sulawesi Utara, Dumoga-Bone N. P., Base camp area, ca. 190 m, at light, XI. 1985, R. Ent. Soc. London, Project Wallace 1 ♀ (NHML); Sulawesi Utara, Dumoga-Bone N. P., Base camp area, ca. 190 m, at light, XII. 1985, R. Ent. Soc. London, Project Wallace 1 ♀ (NHML); Sulawesi Utara, Dumoga-Bone N. P., Lowland forest, Flight intercept trap, VII. 1985, R. Ent. Soc. London, Project Wallace 1 ♀ (NHML); Tokala Atas, 20. II. 1980, M. J. D. Brendell leg., B.M. 1980–280. 1 ♀ (NHML). BURU: “Buru, X. 1875, O. Beccari” 2 ♀ (MCGD). AMBON: “Amboina, Malay, IV–08, Coll. F. Muir” 1 ♀ (BIMH); “Amboina, F. Muir, V–08” 1 ♀ (BIMH); “Amboina, F. Muir” 2 ♀ 2 ♀ (BIMH); “Amboya, Bowring, 63 47♀” 2 ♀ (NHML); “Amboina, 1873, O. Beccari” 1 ♀ (MCGD); “Amboina, XII.


PAPUA NEW GUINEA: "Stephansort, Astrolabe Bai, Biró 1899" 1 ♀ (MTMB).

PALAU: "Palau-Inseln, Semper" 2 ♀ (MNHB).


CAMEROON (?): "S.O. Kamerun, Lololodof, L. Conradt 95, Coll. Kraatz" 1 ♀ (DEIM).


TANZANIA: "D.O. Afrika, Vosseler G." 2 ♀ (MNHB); Afr. or. all. 1907, coll. W. Wittmer" 2 ♀ (NHMB);
"Dt. O.-Afrika, coll. W. Wittmer" 1 ♀ (NHMB); "D. O. Africa, Dr. Holtz, Sachsenwald, 13. 9. 03" 2 ♀ (MNHB);
"Deutsch-Ostafrika, Coll. Kraatz" 1 ♀ (DEIM); "D. O. Afrika, coll. Staudinger" 2 ♀ (SMTD);
"Kondoa, Bloyet 1885" 1 ♀ (MNHP); "D. O. Afr., Unt. Umuwa X. 15, leg. Methner" 1 ♀ (MNHB);
"Morogoro, "D.O.A., XII. 06, leg. Holz" 4 ♀ (MNHB); "D. O. Africa, Morogoro, II. 14, leg. Methner" 1 ♀ (MNHB);
"D.O.-Afrika, Uluguru-Berge, XI.-XII. 98, Gözte S." 1 ♀ 1 ♀ (MNHB); "Unguru, D. O. Afrika, P. Ringler, Halle, coll. Staudinger" 1 ♀ (SMTD);
"Usambara, Nguelo" 1 ♀ 1 ♀ (NHMB); "Usambara, Neu Bethel, V–VI–1903" 1 ♀ (MNHB); "Usambara Neu Bethel, 21. I. 1905" 1 ♀ (MNHB); "Usambara, Neu Bethel, 7. 3. 1905" 1 ♀ (MNHB); "Kwai, West-Us., D. O. A., Dez. 14, leg. Methner" 1 ♀ (MNHB); "D. Ost-Afrika, Usambara, Kwai, P. Weise S." 1 ♀ 5 ♀ (MNHB); "Usamb., Kwai, P. Weise S." 2 ♀ (MNHB);
"D. O. Africa, Usambara, P. Weise S." 1 ♀ (MNHB); "Usambara, Musi Miss., 200 m, 15. 12. 91, Conradt S." 1 ♀ (MNHB);
"kwamkussu, W. Usambara, 1640 m, II. 12" 1 ♀ (MNHB); "Usambara, Darama, Conradt S." 4 ♀ (MNHB);
"O. Usambara, F. Fischer leg." 1 ♀ (MNHB); "W. Usambara, J. Buchwald S." 2 ♀ (MNHB);
"D.O.-Afrika, W. Usambara, A. Borgert S." 1 ♀ (MNHB); "Usambara, Neu Bethel, Jul. Moser" 2 ♀ (NHMW);
Usambara Mts. ushoto, 6.–11. V. 1999, A. Kudrum jr. leg. 1 ♀ (CMG); Usambara Mts., Irente near ushoto, 1450 m, 22. II. 2008, Bellmann leg. 1 ♀ (CMG); Usambara Mts., Irente near ushoto, 1450 m, 22. II. 2008, Bellmann leg. 1 ♀ (CAB);
"Usambara, Coll. Kraatz" 1 ♀ 2 ♀ (DEIM); "Usambara, D.O.A., Coll. v. Bennigsen" 1 ♀ (DEIM);
"Usambara, Nguelo, Coll. Kraatz" 1 ♀ (DEIM); "Afr. Or., Usambara, Fry Coll., 1905.100" 1 ♀ 2 ♀ (NHML);
"Zanzibar, Usambara, Fry Coll., 1905–100" 1 ♀ (NHML); "Usambara, E. Africa, 1893 94, 95 239" 1 ♀ 1 ♀ (NHML);
"Usambara, E. Africa, 4. 4. 94. 95 239" 1 ♀ (NHML); "Usambara, Tanga, Reimer S." 1 ♀ (ZSMU); "Amani par, Tonga, Afr. or., 1907, coll. W. Wittmer" 2 ♀ (NHMB);
"D. O. Afrika, Amani, X.-XII. 03, Vosseler S.G." 1 ♀ 2 ♀ (MNHB); "D. O. Afrika, Amani, 1.-4. II. 06, Vosseler S.G." 1 ♀ 2 ♀ (MNHB); "D. O. Afrika, Amani, 1.–20. II. 06, Vosseler S.G." 1 ♀ (MNHB); "D. O. Afr. Mombo, 8. 04, Vosseler G." 1 ♀ (MNHB); "Daressalam" 2 ♀ (MNHB); "Daressalam, D.O.Africa" 1 ♀ (ZSMU); "Daressal., D. O. Afr., coll. Staudinger" 1 ♀ (SMTD); "Daressalam, D. O. Africa, Dr. Krauss, coll. Staudinger" 1 ♀ (SMTD);
"D. O. Afrika, Daressalam, Pangani u, Hinterld., Regner S. G." 2 ♀ (MNHB); "Tanga" 1 ♀ (MNHB); "Tanga, XII. 02" 1 ♀ (MNHB); "D. O. Afrika, Tanga, Vosseler S. G." 1 ♀ (MNHB);
"D. Ost-Afrika, Tanga, Umgebung, III. IV. 93, P. Neumann S." 1 ♀ (MNHB); "D. Ost-Afrika, Korogwe, Mitte V. 93, O. Neumann S." 1 ♀ 1 ♀ (MNHB); "D. O. Afrika, Mikesse Safari, Tendaguru" 1 ♀ (MNHB); "S. O. Victoria, Nyansa-See, G. A. Fischer" 1 ♀ (MNHB); "Mittleres Rufiji, Schuster" 1 ♀ (MNHB); "Mkomasi-Steppe, V. 03" 1 ♀ (MNHB); "Papyrus-Sumpf, süd.-ö. Kilimanjaro, 20.–21. I. 06, D.O. Afr. coll. Dr. Chr. Schröder" 1 ♀ (MNHB); "Tanzania or., Kibiti, 9. 12. 1993, Igt. Snizek" 1 ♀ (NHMB); "Pande. Tanga. 2. 8. 1952, Frl. Menz" 1 ♀ (NHMB); "Lushoto, J. Plava leg. 1 ♀ (NHMB); Utete–(Rufiji r.), 28. XII. 1976, J. Moravec leg. 1 ♀ (NHMB); "Bondei, Coll. v. Bennigsen" 1 ♀ (DEIM); "Mpapua, Coll. v. Bennigsen" 1 ♀ (BIMH).

UNCLEAR OR IMPRECISE LOCALITIES: "Indes orient., A. Naville, 601.94” 1 ♂ (MNHP); [illegible], Ach. Geilenkeuser, 1893” 1 ♂ (MHNG); "Parr. p.” 1 ♂ (NHMW); "Acc. No. 2412, Govt. Lab. Coll., Collected by W. Schultzze, Coll. W. Schultzze” 1 ♂ (SMTD); "Indo-China” 2 ♂ 2 ♂ (MTMB); "India or.” 1 ♂ (MTMB); "Borneo, Xanthus” 1 ♂ (MTMB); "Nord-Borneo, Pagel S.” 2 ♂ (MNHB); "Borneo, Dr. Will” 1 ♂ (MNHB); "W. Borneo, Dr. Will” 1 ♂ (MNHB); "A. d. Sammlung Dr. Chr. Schröder's, Tareh ... (illegible), 1100 m” 1 ♂ (MNHB); "A. d. Sammlung Dr. Chr. Schröder's, Tareh ... (illegible), 1600 m” 1 ♂ 1 ♂ (MNHB); "A. d. Sammlung Dr. Chr. Schröder's, Tareh ... (illegible), 2000 m” 1 ♂ 1 ♂ (MNHB); "Haut Tonkin et Bas-Yunnan, entre Han-Hao, Muong Hun (près Lao-Kay) et Ban-Kam-Coun, Lieut. Lesoutrot 1905” 1 ♂ 1 ♂ (MNHP); "Cochinchine et Sumatra, Beauvais 1902” 1 ♂ (MNHP); "Afrique au sud de l'Equateur ?” 1 ♂ (MNHP); "482 41” 1 ♂ (MNHP); "2044 41” 1 ♂ (MNHP); "847 85” 2 ♂ (MNHP); "6965 85” 1 ♂ (MNHP); "613 91” 1 ♂ (MNHP); "614 91” 1 ♂ (MNHP); "India Or.” 1 ♂ (MNPC); "Ind. Or., Heffter” 3 ♂ 1 ♂ (MNPC); "Neuguinea, coll. L. Salvador” 1 ♂ (MNPC); "E. Ind., 43 43” 2 ♂ (NHML); "E. Indies., ex Standen., G. C. Champion, B. M. 1964–540” 1 ♂ (NHML); "G. Lewis, 1915–38” 1 ♂ (NHML); "Balch, 62 30” 1 ♂ (NHML); "Borneo, Bowring, 63-47*” 1 ♂ (NHML); "Sharp Coll. 1905–313.” 1 ♂ (NHML); "Borneo, ... [illegible], German Mission, Fry Coll., 1905.100” 1 ♂ (NHML); "Borneo, Fry Coll., 1905.100” 1 ♂ (NHML); "N. Borneo, Exp. 1912, Mohari, 2662” 1 ♂ (DEIM); "Borneo, Pascoe Coll., 93–60.” 1 ♂ (NHML); "Massai, 87.32” 1 ♂ (NHML); "Thurdy” 1 ♂ (NHML); "Thurdy, Andrewes Bequest, B. M. 1922–221” 1 ♂ 3 ♂ 3 ♂ (NHML); "Thurdy, H. Swale, 1913–117” 1 ♂ (NHML); "Shuegyin, H. E. Andrewes Bequest, B. M. 1922–221” 1 ♂ (NHML); "Ost-Afrika, Fruhstorfer” 2 ♂ 1 ♂ (MTMB); "Africa” 1 ♂ (MTMB); "Ostafrika, Coll. Kraatz” 1 ♂ (DEIM); "Ost-Afrika, Fruhstorfer, Coll. Kraatz” 2 ♂ (DEIM); "Tansea lama, 17–2–20” 2 ♂ (DEIM).

WRONGLY LABELED: "Austral.” 1 ♂ (MNHB); "Tanger, Autran” 1 ♂ (MNHP); "Caferria” 1 ♂ (MNHP); "madag.” 1 ♂ (MNHP); "Mexico, Temescaltepec, H. E. Hinton, R. L. Usinger collectors, Hinton coll., B. M. 1939–583 1 ♂ (NHML); "Uruguay, 18.36” 1 ♂ (NHML).

NO LOCALITY: 1 ♂ (NHML); 2 ♂ (NHMW); [illegible]” 2 ♂ (MNHP); "149” 1 ♂ (MNHP); "Patria?, coll. Staudinger” 1 ♂ (SMTD).

Measurements (n = 482): TBL 9.3–12.8 mm, L-h 7.7–10.9 mm
HL 1.5–1.9 mm, PL 1.4–2.0 mm, EL 6.3–8.5 mm
Measurements ♀ (n = 1065): TBL 9.7–13.2 mm, L-h 8.3–11.1 mm  
HL 1.4–2.1 mm, PL 1.5–2.0 mm, EL 6.8–9.1 mm

Differential diagnosis: Easily distinguished from <i>P. bicolor</i> and <i>P. viridiflavus</i> by elytral coloration, from <i>P. paiensis</i> by entirely black femora and dark antennae, from <i>P. wittmeri</i> by stouter, broader habitus, from <i>P. opacipennis</i>, <i>P. championi</i> and <i>P. opacipennis</i> usually by more shining, bright blue coloration (but not always), and by the less rugose and slightly less dense elytral puncture. The shape of the male aedeagus (paramera and apex of median lobe) clearly distinguishes <i>P. coeruleipennis</i> from all other species.

Redescription: Habitus as in figs. 31 (♂) and 32 (♀). Body metallic blue, sometimes greenish blue or metallic dark green. Pronotum bright reddish orange. Antennae almost black, with the terminal segment (sometimes also part of segments 9–10) brownish orange, the three basal segments often partly reddish. Coloration of maxillary palpi to a variable extent reddish, sometimes almost entirely reddish orange, sometimes more infuscate to almost entirely black. Clypeus trapezoidal, about half as long as wide at the base and slightly convex, with some very fine punctures. Labrum about as long as wide, rather flat and more coarsely punctate than the head, with some long blackish hairs.

Male antennae reaching the first quarter of the elytra in length, until slightly after the humeral callus. First three segments subfiliform, segments 4–5 widened and flattened, 6–10 of subtriangular shape, very strongly widened. Last segment not conspicuously widened, but large and strongly emarginate. First segment long, second very short, only about half as long, third long, almost like the first, the next three of about the same length, then slightly decreasing in length, but increasing in width, the last segment longest, almost 1.5 times as long as the first. Female antennae slightly shorter and smaller, only scarcely reaching the humeral callus; subapical segments a bit shorter and stouter, but otherwise everything of similar shape than in males.

Pronotum about as long as wide or slightly wider, maximal length : maximal width 1 : 1–1 : 1.1; subhexagonal (widest in the middle), base almost straight, all angles bluntly rounded; with two oblique impressions in the basal half, at both sides of the disc, finely bordered, the bordering becoming very vague in the middle of the apical and front margins, often completely reduced in the middle of the front margin; shining, without any microsculpture; regularly, but very sparsely covered with some inconspicuous, suberect black hairs and with some long black setae along the apical half of the outer margin.

Elytra about 2.4–2.5 times as long as wide in males, about 2.1–2.3 times in females, widest slightly behind the middle; humeral area convex, flattened towards the apex; finely, densely and regularly punctate over their whole surface, punctures slightly shallower towards the apex; regularly covered with fine, brownish, short recumbent hairs, and bearing some few, long, erect, pale hairs, partly arranged into rows; usually with two or three indistinct, hardly visible granular rows. Margins distinctly crenulate, strongly in humeral area, getting slightly weaker towards the apex, the crenules all bearing blackish setae. Scutellum about twice as wide as long, all angles bluntly rounded; punctures fissure-like, very fine (much finer than on the elytra), covered with fine regular pubescence like the elytra, but without long erect hairs.

Femora metallic, shining, with fine punctures and rather long, greyish pubescence. Tibiae not metallic, densely covered with brownish setae. Tarsi also not metallic, with blackish or brownish setae.

Abdomen with rather long, but not very dense, greyish, recumbent pubescence and some longer black, suberect setae; with rather sparse, shallow punctures and somewhat rugose texture.

Male: Last abdominal sternite small, much narrower than the other segments, subtriangular in shape, sides strongly converging towards the rounded apex (fig. 22). Basal margin rather shallowly emarginate. Apical margin deeply incised, forming an approximately oval opening hole for the aedeagus, together with the slightly emarginate last tergite.

Aedeagus (figs. 1, 8, 15): Process of phallobase pointing backwards. Paramera flat, almost straight, slightly arcuate, their tip with a small dorsal tooth and some very small teeth or granulae along the ventral
edge; apical part with long, brownish hairs. Seen in dorsal view, they are broad, straight and almost parallel, with only a narrow gap between them. Median lobe with base curved ventrally, central part almost straight and slightly narrowed towards the tip. Apex (in lateral view) dorsally with a strong tooth-like angle, then flat until tip; ventrally more or less continuously narrowed, rounded before the tip, not as strongly flattened as in *P. bicolor*. Median lobe in dorsal view with elongate, oval ostium; its tip subtriangular.

**Sexual dimorphism**: Females have broader elytra and are usually slightly larger than males. The sexual dimorphism in the width of the frons between the eyes is not as well pronounced as in other *Prionocerus*, but still visible. The female antennae are usually slightly shorter and smaller, antennal joints 5–10 are slightly more dilated in males than they are in females.

**Variability**: The scutellum is usually metallic blue with a large orange yellow patch on the disc, this patch can be well pronounced, indistinct or even completely missing in some individuals. The elytral coloration is usually metallic blue, but can be green in some specimens. One specimen ("var. *diversicollis*") has the pronotal disc infuscate, brownish (see Notes).

**Distribution** (fig. 43): This species is very widely distributed in large parts of the Oriental region, including South China, Wallacea and New Guinea, as well as in East Africa (see discussion).

**Notes**: The synonymy of *P. fuscipennis* Lewis with *P. coeruleipennis* Perty, already proposed by Champion, 1919, could be confirmed. The holotype is a large, teneral female with a somewhat brownish, coppery elytral colour, probably due to its immaturity or due to inappropriate storage after collection. There are other individuals of this kind from Borneo and Singapore at NHML, from Indonesia (Nias) at MCGD, and from Vietnam and Peninsular Malaysia at MNHB. None of these shows any significant differences from typical *P. coeruleipennis*.

The variety *diversicollis*, described by Pic (1920) was based on a strongly damaged female from Sumatra, which could be examined. From the characters still visible, it seems to be an aberrative specimen of *P. coeruleipennis* with greenish elytra and slightly infuscate pronotal disc. There is another specimen under "var. *diversicollis*" in the Pic collection, a male from Malaysia definitely belonging to *P. malaysiacus*. As it was not labelled as type, not mentioned in the original publication and collected at the same time as the publication came out, it cannot be regarded as a syntype of the variety *diversicollis*.

Although the differences between male and female antennae are not always as clear as stated by Bourgeois, his synonymy proposals of the species described by Schaufuss are certainly correct. A male syntype of *P. forticornis* could be examined and showed no clear differences at all to typical males of *P. coeruleipennis*. The female syntype of *P. brevicornis* shows slightly smaller (shorter and a bit less broadly serrate) antennae as usual in *P. coeruleipennis*, but these differences can surely not be regarded as specific. Of both Schaufuss species, there was only one type found in the collection of MNHB, but as Schaufuss was known to exchange a lot of type material with other collectors, it is unknown how large the original type series was. Both type specimens have therefore to be regarded as syntypes, but a lectotype designation is not urgently needed at the moment.

*Prionocerus bicolor* Redtenbacher, 1868

*Prionocerus pertii* Castelnau, 1836: 27, submitted to ICZN (see Nomenclatural notes below).


**Type material examined**: *P. bicolor*: Holotype ♀ "Novara 1857–59 Reise"; "Prionocerus bicolor Redtb. Type ! (Novara.)"; "Q"; NHMW, in good condition.

*P. bicolor* var. *notaticollis*: 2 syntypes ♀ "Sumatra (Rouyer)"; MNHP, in good condition.

*P. pertii*: The type specimen (or type series) of this species is not present at the NHML, and during a visit to MNHP, it could not be found either. As the Castelnau collection was distributed over many collectors and
museums, the location of this type is entirely unknown at the moment. Unfortunately, it is not impossible that it has been destroyed or lost over the time.


BHUTAN: "G. C. Dudgeon, 95–203" 1 ♂ (NHML).

CHINA: YUNNAN: "China, Yunnan" 3 ♀ (MTMB); Xishuangbanna, Jinghong city, Ufer d. Mekong, 22°00.42’ N / 100°04.14’ E, 10. XII. 2007, A. Weigel leg. 1 ♂ (NKME); Xishuangbanna, 29 km NW Jinghong, Da Nuo You (NNNR), 22°12.41’ N / 100°38.29’ E, 790 m, H KF, 24. V. 2008, A. Weigel leg. 1 ♀ (NKME); Xishuangbanna, 26 km W Jinghong, vic. Meng Song (NNNR), 22°04.65’ N / 100°33.98’ E, 1400–1600 m, at flowers of Castanopsis trees, 30. V. 2008, A. Weigel leg. 2 ♀ (NKME); Xishuangbanna, 26 km W Jinghong, vi. Meng Song (NNNR), 22°04.65’ N / 100°33.98’ E, 1400–1800 m, at flowers of Castanopsis trees, 30. V. 2008, A. Weigel leg. 1 ♀ (NKME); Xishuangbanna, 32 km W Jinghong, vic. Man Nuan Hui vill., 21°59.77’ N / 100°29.49’ E, 1150 m, KF, bloss. trees, 2. VI. 2008, A. Weigel leg. 1 ♀ (NKME); W-Yunnan, Baoshan, 16. VI. 1993, C. Holzschuh leg. 2 ♂ (NHMB), GUANGXI ZHUANG: "Wuchong (Kwangsi) 16. V:: 54, H. C. Tao" 1 ♂ (MNHB); "Andé, Wuchow, Prov. Kwangsi" 1 ♂ 1 ♀ (NHMW).

TAIWAN: "Pílam (Formosa), H. Sauter, VIII. 1912" 1 ♂ 2 ♀ (DEIM); Kaohsiung Hsien, Paoshan, 4. VI. 1999, W. L. Chen leg. 1 ♂ (KMNH).

MYANMAR: "Burmah, H. Swale, 1913–117" 1 ♂ 1 ♀ (NHML); "Burmah, Bowring 63 47°*" 1 ♂ 1 ♀ (NHML); "Carin Cheba, 900–1100 m, L. Fea, X.: 88" 1 ♀ (MCGD); "Bhamo, Birmania, Fea, VIII. 1885" 1 ♂ (MCGD); "Birmania, Shweego-Myo, Fea, Ottobre 1885" 1 ♂ (MCGD); "Shweego-Myo, Fea, Ottobre 1885" 1 ♂ (MNHB); Upper Burma, Nam Tamai Valley, Alt. 3000 ft., Lat. N. 27° 42’, Long. E. 97° 54’, 25. VIII. 1938, R. Kaulback leg., B. M. 1938–741. 2 ♀ (NHML); Upper Burma, Nam Tamai Valley, Alt. 3000 ft., Lat. N. 27° 42’, Long. E. 97° 54’, 27. VIII. 1938, R. Kaulback leg., B. M. 1938–741. 2 ♀ (NHML); "Rangoon, H.
E. Andrews Bequest, B. M. 1922–221" 1♂ 2♀ (NHML); "Rangoon, 1902.294" 2♀ (NHML);
"Tharrawaddy, H. E. Andrews Bequest, B. M. 1922–221" 2♀ (NHML); "Tharrawaddy, Burma, 1902.194" 2♀ (NHML);
"Tharrawaddy, Burma, 1902.294." 1♀ (NHML); "Maymyo, V. 10, H. L. Andrews, 1919.26" 1♂ (NHML);
"Maymyo, VI. 10, H. L. Andrews, 1919.26" 1♂ 1♀ (NHML); Mon State, Kyaiiko, 1.–5. VI. 2003.
M. Klícha leg. 1♂ (CMG); Kolaw, S. Shan States, 4000 ft., IV. 1916, F. M. Mackwood leg., B. M. 1916–205.
1♀ (NHML); Shan State, Inle Lake, east Shore, 20°36.48′N 96°56.53′E, 12. V. 1999, Schuh & Schillhammer leg. 1♂ (CRS);
SW Shan State, Kalaw, 70 km W Taunggyi, 10.–11. VI. 1997, J. Rejsek leg. 7♂ 3♀ (SMNS);
"Tenasserim, coll. Helfer" 6♂ 13♀ (MNPR), 2♀ (NHMB); "Helfer, Tenasserim" 1♂ 1♀ (NMPC);
"Tenasserim, Tavoy, Fry Coll. 1905.100" 1♀ (NHML); "Tenasserim, Meetan, Fea, Apr. 1887" 1♂ (MCGD).

LAOS: "Annam, Laos" 1♀ (MTMB); "Laos, Tonkin" 1♀ (NHMB); "Tonkin, Laos, coll. Staudinger" 3♀
(SMTD); "Siam, Sen Kam, 28.–29. IV. 1920. R. V. de Salva\"za" 1♂ (MNHP); "Siam, Vieng Vai, 23.–24. IV. 1920.
R. V. de Salva\"za" 1♂ (MNHP); "Mekong River, Tanoun, 28. V. 1920. R. V. de Salva\"za" 1♀ (MNHP);
Phongsaly Prov., Ban Sano Mai, 21°21′N / 102°06′E, ~1150 m, 19.–26. V. 2004, P. Pacholátko leg. 1♂ 2♀ (NHMB);
Phongsaly Prov., Boun Neua (4 km E), 21°38′N / 101°57′E, ~1100 m, 26. V. 2004, Vit Kubán leg. 1♂ (NHMB);
Phongsaly Prov., Ban Nam Li (5 km NW), 21°15′N / 102°14′E, ~900 m, 4. V. 2004, M. Brancucci leg. 1♂ (NHMB);
Phongsaly Prov., Phonsaly env., 21°41′–42′N / 102°06−08′E, ~1500 m, 28. V.–30. VI. 2003, P. Pacholátko leg. 23♂ 18♀ (NHMB);
Phongsaly Prov., Phongsaly env., 21°41′–42′N / 102°06−08′E, ~1500 m, 28. V.–20. VI. 2003, M. Brancucci leg. 9♂ 14♀ (NHMB);
Phongsaly Prov., Phongsaly env., 21°41′–42′N / 102°06−08′E, ~1500 m, 28. V.–20. VI. 2003, Vit Kubán leg. 15♂ 15♀ (NHMB);
Phongsaly Prov., Phongsaly env., 21°41′N / 102°06−08′E, ~1500 m, 6.–17. V. 2004, M. Brancucci leg. 1♂ (NHMB);
Phongsaly Prov., Phongsaly env., 21°41′N / 102°06−08′E, ~1500 m, 6.–17. V. 2004, Vit Kubán leg. 2♂ (NHMB);
Phongsaly Prov., Phongsaly env., Phu Fa, h: 1450–1600 m, Bergregenwald, 26. VII. 2006, M. Geiser leg. 1♂ 1♀ (CMG);
Phongsaly Prov., Phongsaly env., Ausserhalb der Ortschaft, Kulturlandschaft, Auf Blüte (Sambucus), 28. VII. 2006, M. Geiser leg. 1♂ (CMG);
Phongsaly Prov., Phongsaly env., Ausserhalb der Ortschaft, Kulturlandschaft, Auf Blüte (Sambucus), 28. VII. 2006, M. Geiser leg. 1♂ (CMG);
Phongsaly Prov., Phongsaly env., Ausserhalb der Ortschaft, Kulturlandschaft, An Strauch, 27. VII. 2006, M. Geiser leg. 1♂ 1♀ (CMG);
Louang Namtha Prov., Namtha → Muang Sing, 21°09′N / 101°19′E, 900–1200 m, 5.–31. V. 1997, Vit Kubán leg. 6♂ 2♀ (NHMB);
Luang Namtha Dist., Lak Kham Mai, road between Luang Namtha–Muang Sing, 5.–9. V. 2007, M. Pejcha leg. 1♀ (CMG);
Luang Nam Tha Prov., ca. 20 km SE Muang Sing, 950 m, 12./13. VI. 1996, Schillhammer leg. 1♀ (NHMW);
Luang Nam Tha Prov., ca. 25 km SE Muang Sing, 900 m, 14./15./20.–22. VI. 1996, Schillhammer leg. 1♀ (NHMW);
Luang Namtha Dist., Luang Namtha env., 2.–9. V. 2007, M. Pejcha leg. 4♂ 5♀ (CMG); Louangphrabang prov.,
Thong Khan, 19°35′N / 101°58′E, ~750 m, 11.–21. V. 2002, Vit Kubán leg. 1♂ (NHMB); Louangphrabang prov.,
Ban Song Cha, 1200 m, 20°33′N / 102°14′E, 24. IV.–16. V. 1999, Vit Kubán leg. 1♂ (NHMB); Louang Phrabang Prov.,
Nam Sat stream, 150 m upstr. Hoi Sat Village, 340 m, 48Q 0220680, UTM 2260258, Malaise trap, loc 17, 18. IV.–2. V. 2005, N. Jönsson, T. Malm & B. Viklund leg. 1♂ (NRMS); SAYABOURY
Prov., Sayaboury, 17. V. 1965, Native Collector leg. 1♀ (BIMH); SAYABOURY Prov., Sayaboury, 25. III. 1965,
Native Collector leg. 1♀ (BIMH); N-Vientiane Prov., Vang Vieng, 300 m, 18°55′23″N / 102°26′55″E, 10.–15. V. & 1.–6. VII. 2001, Jiří Kolibáč leg. 2♂ 2♀ (NHMB); Vientiane prov., Lao Pao env., 55 km NE Vientiane, 200 m, 1.–4. V. 2004, J. Bezděk leg. 1♂ (NMPC); "Vientiane, 31 / 5 1915, R. Vitalis de Salva\"za" 1♀ (MNHP);
"Vientiane, 1.–5. IV. 1915, J. L. Gressett Collector" 2♀ (BIIMH); "Umg. Vientiane, III.-VI. 1963" 2♂ 13♀ (ZSMU) 1♀ (CMG); Vientiane prov., Phou Khao Khouay N. P., 18°27′N / 102°49′E, 2005,
Vientiane Prov., Ban Van Eue, 31. V. 1966 Native Collector leg. 1♀ (BIMH); Houa Phan Prov., Sam Neua (Xam Nua), Stadtrand, Rodungsfläche, Käscherfang, 10. VIII. 2004, M. Geiser leg. 1♂ 2♀ (CMG); Houa Phan Prov., Vieng Xai, am Fenster eines Gebäudes, 11. VIII. 2004, M. Geiser leg. 3♂ 1♀ (CMG); Hua Phan prov., ~20°12′N / 104°01′E, Phu Phan Mt. 1500–1900 m, 17. V.–3. VI. 2007, M. Brancucci leg. 1♂ 2♀ (NHMB); Hua Phan prov., 20°12−13.5′N / 103°59.5′–
Collector leg. 3 ♂ (BIMH); Khammouane Prov., Phon Tiou, 28. V. 1965, Native Collector leg. 3 ♂ (BIMH); Khammouane Prov., Phon Tiou, 28. VI. 1965, Native Collector leg. 1 ♂ (BIMH); Khammouane Prov., Phon Tiou, 6. VII. 1965, Native Collector leg. 4 ♂ (BIMH); Khammouane Prov., Phon Tiou, 4. VIII. 1965, Native Collector leg. 1 ♂ (BIMH) 2 ♀ (CMG); Savannakhet Prov., Savannakhet, 20. VII. 1965, Native Collector leg. 1 ♀ (BIMH); Sekong Prov., Bolavens Pl., N-slope, ca. 10 km N Mg. Tha Theng, 500–700 m, 29/30. V. 1996, Schillhammer leg. 8 ♀ 2 ♀ (NHW); Champassak Prov., Bolavens Plateau, M. Paksong–B. Nam Thang, 800–1100 m, 26/27. V. 1996, Schillhammer leg. 1 ♀ (NHMW); Attopeu Prov., Houei Kong, 16. V. 1965, Native Collector leg. 1 ♂ (BIMH); Attopeu Prov., Houei Kong, 31. V. 1965, Native Collector leg. 1 ♂ (BIMH).

VIETNAM: "Tonkin Centr., N.-E. de Tuyen-Quan, Qium-Quam-Thuong, A. Weiss 1901, avril-juin" 1 ♂ 2 ♀ (MNHP); "Tonkin Centr., Région de Tuyen-Quan et de Phu-An-Binh, A. Weiss 1901, avril-juin" 1 ♂ (MNHP); "Tonkin Central, Région de Tuyen-Quan et de Dong-Chau, A. Weiss 1901, avril-juin" 1 ♂ (MNHP); "Tonkin N., Rég. d'Ha-Giang (H' rivière claire), Siébens-Olivier 1916" 1 ♂ (MNHP); "M de l' Ht Song Chai, Rabier 258–95" 3 ♀ (MNHP); "Song-Chay, 1908, Indo Chine, coll. Dussault" 1 ♂ (NHMB); "Tonkin, Hoabinh, Aug. 1918, R. V. de Salvaza" 2 ♀ (MNHP); Hoa Binh, coll. W. Wittmer" 3 ♀ (NHMB); "Tonkin, Env. de Hoa-Binh, L. Jaishi 1901" 1 ♂ (MNHP); 52 km SW of Lang Son, 21°35'N 106°30'E, 370 m, 27. IV.–6. V. 1996, Pacholátko & Dembický leg. 4 ♀ (NHMW); Shonlon Pr., Shonlon, 10. V. 1991, Murzin leg. 2 ♀ (NHMB); "Tonkin, Laokay, 10 / 8 1913, R. Vitalis de Salavaza" 1 ♀ (MNHP); "Annam" 1 ♂ (NHMB); "Annam, Mus. Pragense" 1 ♀ (NHMB).


INDONESIA: "Sunda-Inseln, v. Studt" 2 ♀ (MNHP). SUMATRA: "Sumatra" 1 ♀ (NHML); "Sumatra, coll. W. Wittmer" 1 ♀ (NHMB); "Sumatra 622.9" 1 ♀ (MNGH); "Sumatra, Coll. Kraatz" 1 ♀ (DEIM); "Sumatra, Dehy" 1 ♀ (MNHP); "Sumatra, Deli, Siboolangit, Jachan V." 1 ♀ (MNHP); "Sumatra, Dolok Baroe" 1 ♀ (MTMB); "Indragiri, Sumatra, v. Meckel" 1 ♀ (NHML); "Balighe, X. 90–III. 91, E. Modigliani, coll. W. Wittmer" 1 ♀ (NHMB); "Sumatra, Balighe (Modigliani)" 1 ♀ (MNHP), "Balighe, X. 90–III. 91, E. Modigliani" 2 ♀ (MCGD); "Sumatra, Balighe, X. 90–III. 91, E. Modigliani, coll. Kraatz" 1 ♀ (DEIM); "Pajakumbo" 1 ♀ 1 ♀ (NHMH); "Si Pirok" 2 ♀ (MNHP); "Palembang" 3 ♀ (MNHP); "Harau valley, VII. 1991" 1 ♀ (NHMH); "Harau Valley 1991, nat. coll." 1 ♀ (NHMH); "Fort de Kock, VIII. 94, E. Modigliani" 1 ♀ (MCGD); "Fort de Kock (Sumatra), 920M, 2921, leg. E. Jacobson" 1 ♀ (MNHP); "Fort de Kock (Sumatra) 920M, October 1921, leg. E. Jacobson" 1 ♀ (MNHP); "Fort de Kock (Sumatra) 920 M, December 1921, leg. E. Jacobson" 1 ♀ (MNHP); "Fort de Kock (Sumatra) 920 m, Jan. 1921, E. Jacobson leg., B. M. 1927–48." 1 ♀ (NHML); "Fort de Kock (Sumatra), 920M, Feb. 1921, leg. E. Jacobson" 1 ♀ (DEIM); "Fort de Kock, 920 m / 192 ft., E. Jacobson leg., B. M. 1928–247" 1 ♀ 1 ♀ (NHML); "Fort de Kock (Sumatra), 920M, Januari 1922, leg. E. Jacobson" 1 ♀ (MNHP); W-Sumatra, Bukittinggi, am Licht, 7. 11. 1991, Schönfeld leg. 1 ♀ (NHMW); "Bukittinggi, 10 km S of Bukittinggi, 1600 m, G. M. Merapi, 10.–11. I. 2005, Bolm leg. 1 ♀ (CMB); "Bedagei int., Sumatra's O.K., +/-600', 2. Sem.
89, I. Z. Kannegieter 1 ♀ (MNHP); "Sumatra, Lampung, Fry Coll. 1905.100" 1 ♀ 1 ♀ (NHML); "Sumatra, Lampung, Buxton, Fry Coll. 1905.100" 1 ♀ (NHML); "Dr. B. Hagen, Tanjung, Morawa, Serdang (N.O. Sumatra), coll. W. Wittmer" 1 ♀ (NHMB); "Surgei Bulu, Sett. 1878, O. Beccari" 1 ♀ (MCGD); "Dol. Tarabugna, Modigliani, 1890" 1 ♀ (MCGD); "Pea Ragia, X. 1890, E. Modigliani" 1 ♀ (MCGD); "Sumatra, Pea Ragia, X. 1890, E. Modigliani, Coll. Kraatz" 1 ♀ (DEIM); "F. C. Drescher, Zuid-Sumatra, 500 m, degiesting G. Tanggarmones, IV. 1934, coll. W. Wittmer" 1 ♀ (NHBM); "F. C. Drescher, Zuid-Sumatra, 500 m, degiesting G. Tanggarmones, IX. 1934, coll. W. Wittmer" 1 ♀ (NHMB); "Lampung Prov., Bukit Barisan Selatan N. P., 5 km SW Liwa, 5°4' S / 104°4' E, 600 m, 21. III. 2003, L. Dembický leg. 1 ♀ (NHMB); Brastagi, Fenster, 21. VIII. 1924, coll. W. Wittmer 1 ♀ (NHMB); Brastagi-Sibayak, 22.–25. V. 1991, Jiří Moravec leg. 1 ♀ (NHMB); Brastagi, 76 km S from Medan, 30. III.–1. IV. 1996, S. Becvar leg. 1 ♀ (NHMB); "Corporaal, Brastagi, 10. 5. 1918, Sumatra (Corporaal)" 1 ♀ (NHMB); "Brastagi, Sumatra: Mjöberg" 1 ♀ (MNHP); Utara, Brastagi, Gn Sibayak, 1600–2200, 26. I.–1. II. 2005, Bolm leg. 1 ♀ (CMB); "Medan, Sumatra, coll. Hayek" 2 ♀ 1 ♀ (ZSMU); "Medan S.O.K. L. Fulmek, Tabakopslagplaats" 1 ♀ (NHMW); W. Sumatra, Talang, II. 1991, native collector" 1 ♀ (NHMB); "N-C. Aenec, Kutacane, Ketambe, 400 m, 7.–19. X. 1991, Barries leg. 1 ♀ (NHMB); W. Sumatra, Anai V. Nat. Res., 10 km W Padangpanjang, 250 m, 17. XI. 1989, Löbl, Agosti & Burchhardt leg. 1 ♀ (MHNG); W-Sumatra, Padang env., 2000–500 m, IV. 1995, S. Jakl leg. 1 ♀ (NHMB); "Padang, 1890, E. Modigliiani" 1 ♀ (MCGD); Liman Manis b. Padang, Schoede S. G. 8, I. 08" 1 ♀ (NHMB); N-Sumatra, Bukit Lawang, 27. II. 1990, Schillhammer leg. 1 ♀ (NHMW); N-Sumatra, D. Toba, Fluß s Prapat, 17. II. 1990, Schillhammer leg. 1 ♀ (NHMW); Kerinci prov., Seblat N. P.: 24 km NE Tapan, Muara Sako → E env., 2°05' S / 101° 15' E, 400–550 m, 4.–18. III. 2003, Dembický leg. 1 ♀ (NHMB); Kerinci, Pelompek, 13.–15. V. 1991, Jiří Moravec leg. 1 ♀ (NHMB); Sungei Penok, Korinchi Valley, 2600 ft., III. 1914. 1 ♀ (NHML); Mt. Kerintji, Aro Estate. Au Kayo. 1.–5. III. 1954, A. H. G. Alston leg., B. M. 1954–141. 2 ♀ 1 ♀ (NHML); Ophir mts., Gunung Talamau, 17 km E Simpangemapel, 750 m, 21.–25. V. 2001, Bolm leg. 1 ♀ (SMNS); "E-East Sumatra, Doerian Moelan, Brindjei, Lt. R. Coughtrie, 1915–184" 1 ♀ (NHML); "N-O. Sumatra, Tebingtinggi, Dr. Schultheiss, Coll. Schultheiss" 4 ♀ 4 ♀ (DEIM). NIAS: "Sumatra, Nias, Fry Coll. 1905.100" 1 ♀ (NHML); "Nias Island, Sharp Coll. 1905–313." 1 ♀ (NHML); "Sumatra, Nias, German Mission, Fry Coll., 1905.100" 1 ♀ (NHML); "Nias, Coll. Kraatz" 1 ♀ (DEIM); "Is. Nias, 1897–98, U. Raap" 2 ♀ (MCGD). KALIMANTAN: "S.O. Borneo, Grabowsky S. V." 1 ♀ (MNHB); "S. O. Borneo, Grabowsky S. V., Mindai, 6. 82" 1 ♀ (MNHB); "Pengaron, S. Borneo, Brit. Mus. 1923–320." 2 ♀ (NHML); "Pengaron, S. E. Borneo, 1904–150." 1 ♀ (NHML); W-Kalimantan, Nanga Ela env., 700 m, Nanga Nyeruh, 4.–10. VII. 1993, Schneider leg. 1 ♀ (NHMW); "Ponteank, Borneo, VII. 07" 4 ♀ 4 ♀ (BIMH); "Borneo, Mahakam" 1 ♀ 1 ♀ (MNHB); "Bandjermasin, L. W. Schaufuss G." 3 ♀ 3 ♀ (MNHB); "Long Navang, Borneo, Mjöberg" 11 ♀ (NRMS), 1 ♀ (CMG). JAVA: "Java 1 ♀ (DEIM), 1 ♀ (MTMB), 2 ♀ (NHMB), 1 ♀ (NHML); "Java 1921" 1 ♀ (NHMB); "Java, 40 4 1 2850" 1 ♀ (NHML); "Java, coll. W. Wittmer" 1 ♀ (NHMB); "India or., coll. E. Friv., Java" 1 ♀ (MTMB); "Horsfield, 60–15" 1 ♀ 1 ♀ (NHML); "Java, Bowring, 63 47**" 3 ♀ (NHML); "Java, coll. Staudingier" 3 ♀ (SMTD); "Java, Coll. Kraatz" 4 ♀ 11 ♀ (DEIM); "Java, Aurivillius" 1 ♀ (NRMS); "Frustorfer, Java, Coll. Kraatz" 3 ♀ (DEIM); "Java, Oberthür, 100–96" 1 ♀ (MNHP); "Java, J. D. Pasteur 268–94" 3 ♀ 4 ♀ (MNHP); "Ullr." 1 ♀ (NHMW); "Warsberg, 868" 1 ♀ (NHMW); "Pfeiffer" 1 ♀ (NHMW); Pfeiffer, 852" 1 ♀ (NHMW); "Pfeiffer, 853" 1 ♀ (NHMW); "Pfeiffer, 854" 1 ♀ (NHMW); "Java, Doleschall" 1 ♀ (MTMB); "Schmidt-Göbel, 1884" 1 ♀ 1 ♀ (NHMW); "Leyden, d. H., Java" 1 ♀ (ZSMU); "Ploem, Java, 1870" 1 ♀ 1 ♀ (NHMW); "Java, XII. 1879, 36." 1 ♀ 2 ♀ (NHMW); "Java merid., 1500. H. Frustorfer 1891" 1 ♀ (MCGD); "Java, Wijnkooks b. Kemner" 1 ♀ (NRMS); Pagilaran Estate, 1940, K. Landberg leg. 1 ♀ (NRMS); "Buitenzorg, F. Muir" 1 ♀ (BIMH); "Buitenzorg, +/–1000' Aug. 95. I. Z. Kannegieter" 1 ♀ (MNHP); "Buitenzorg, Axel Preyer S. G." 1 ♀ (MNHP); "Buitenzorg, G. B. Ferrari 1875" 5 ♀ 6 ♀ (MCGD); "G. Papandajan, Garoet Preanger, Jan. 91. 4–6000' I. Z. Kannegieter" 1 ♀ (MNHP); "Preanger, Java" 1 ♀ 1 ♀ (SMTD); "Java merid., 1892. H. Frustorfer" 1 ♀ (MNHP); "Sipayon, R. Oberthür 97–97" 1 ♀ (MNHP); "Java (Meuwen Bay), détr de la Sonde, Raffray & Maindron, 1878" 1 ♀ (MNHP); "Batavia, P. Serre 1904" 1 ♀ 2 ♀ (MNHP); "V. Java, Bandoeng, 700 m, 2/ XII. 1943, Kurt Landberg" 1 ♀ (NRMS); "Idjen Plateau, V.-VI. 1920, H. Lucht, Blair
d.t." 2 ♀ (DEIM); "Megamenbong, Java, Xátus" 1 ♂ 1 ♀ (MTMB); "Moegamencondong, leg. Xantus" 1 ♂ 3 ♀ (MTMB); "Sinagar, Java, Xátus" 2 ♂ (MTMB); "Sinagar, leg. Xantus" 1 ♂ 1 ♀ (MTMB); "Palaboen, Java, Xátus" 3 ♀ (MTMB); "Sindanglaja, Java, Xátus" 9 ♂ 5 ♀ (MTMB); "Sindanglaja, leg. Xantus" 1 ♀ (MTMB); "Java, Xantus, Sindanglaja" 2 ♂ (MTMB); "Java occident., Mons Gede, 8000’, Aug. 1892, H. Fruhstorfer" 1 ♀ (MNHB); "Batoe, 1923" 1 ♀ (MNHB); "Malang, XI. 21 "1 ♀ (MNHB); "Sinigar, Giava, Beccari, IV. 1876" 3 ♀ 2 ♂ (MCGD); "Giava, Ticobdas, Ott. 1879, O. Beccari" 2 ♀ (MCGD); "Java occident., Sukabumi 2000, H. Fruhstorfer 1893" 1 ♀ (MCGD); "Depok, VIII. 31" 1 ♀ (NHMB); "Tankoeban, Praho, Lembong, 1100 m, 25. 7. 36, coll. W. Wittmer" 3 ♀ (NHMB); "Silosanen, E. Java, coll. W. Wittmer" 1 ♂ (NHMB); "Batoerraden, G. Slamet, Java, F. C. Drescher, II. 1936, 800 m, coll. W. Wittmer" 2 ♀ (NHMB); "C. O. Nandjoeng-Djaja, G. Simpal, 600 Mr., Preanger, Java, II. 1934, leg. C. P. J. de Haas, coll. W. Wittmer" 2 ♀ (NHMB); "Garahan, Bes Besoeki, E. Java" 1 ♂ (NHMB); "Boeole Lawang, Res. Pasoeorean (Holz)" 1 ♀ (NHMB); "Soekabooemi, Java, 3. 8. 32" 1 ♂ (NHMB); "Bogor" 1 ♂ 1 ♀ (MNHP). SUMBAWA: "Insel Sumbawa, coll. Staudinger" 1 ♀ (SMTD); "B. Aroe Hassa, Sambawa, 2–5000", Doherty IX. X., Brit. Mus. 1923–320 1 ♂ 1 ♀ (NHML); Tambora, 600 m, 9. XI. 1941, Rolf Blomberg leg. 3 ♀ (NRMS). FLORES: C-Flores, Moni, Wolowaru, 11. XI. 1949, Dr. Bühler & Dr. Sutter leg. 1 ♂ (NHMB). SUMBA: "Insel Sumba" 1 ♀ (NHMB); W. Sumba, Kodi, 30. VII. 1949, Dr. Bühler & Dr. Sutter leg. 1 ♂ (NHMB); W. Sumba, Pogobina, 17. IX. 1949, Dr. Bühler & Dr. Sutter leg. 1 ♂ (NHMB); C. Sumba, Lokojengo, 23. IX. 1949, Dr. Bühler & Dr. Sutter leg. 1 ♂ (NHMB); O. Sumba, Baing, 1. VII. 1949, Dr. Bühler & Dr. Sutter leg. 1 ♂ (NHMB). ALOR: "Maroe, W. Allor, 2000", Doherty, X., Brit. Mus. 1923–320." 1 ♀ (NHML). TIMOR (west): "Koepang, Timor, 90–80." 1 ♀ (NHML); "Siva, West-Timor, Sunda Exp. Rensch, I. VII. 1927" 1 ♀ (MNHB). DAMAR: "Dammer Insel" 2 ♀ (MNHB); "Insel Dammer, coll. Staudinger" 1 ♀ (SMTD). SULAWESI: "Celebes" 1 ♀ (NHML); „Celebes, P. de Borre” 1 ♀ (MNHG); "Célébès, De la Savinière 1877" 1 ♀ (MNHP); "S. Celebes, 250 m, 3. 1941, coll. W. Wittmer" 1 ♂ (NHMB); "Celebes, Kandari, III. 74, O. Beccari" 1 ♀ (MCGD); "Tondano, Celebes, Dr. Staudinger" 10 ♀ 4 ♀ (SMTD); "Tondano, Celebes" 4 ♀ (NHMB); "Drs. Sarasin, N. Celebes, Tomohon, M. 49." 3 ♀ 5 ♀ (NHMB); Minahassa, Tomohon, 31. V. 1954, A. H. G. Alston leg., B. M. 1954-414. 1 ♀ (NHML); Minahassa, Tomohon, 10. VII. 1954, A. H. G. Alston leg., B. M. 1954-414. 1 ♀ (NHML); Sulawesi Utara, Gunung Ambang F. R., nr. Kotamobagu, flood debris by stream, 11. I. 1985, R. Ent. Soc. London, Project Wallace, B. M. 1985–10. 1 ♀ (NHML); Sulawesi Utara, Dumoga-Bone N. P., Base camp area, ca. 190 m, at light, X. 1985, R. Ent. Soc. London, Project Wallace, B. M. 1985–10. 1 ♀ (NHML); Sulawesi Utara, Dumoga-Bone N. P., Fog 11, 230 m, BMNH Plot A, 10. III. 1985, R. Ent. Soc. London, Project Wallace, B. M. 1985–10. 1 ♀ (NHML); S-Sulawesi, 8 km W Mamasa, 950 m, 2°56’13’’ S / 119°20’32’’ E, 18.–21. VII. 1999, Bolm leg. 1 ♀ (SMNS); N.E. of Makassar, Ranetpao–340 km, V. 1966, R. Straatman leg., 3 ♀ (BIMH), 1 ♀ 1 ♀ (CMG); "Süd-Celebes, Bonthain, C. Ribbe 1883" 1 ♀ (MNHB); "Bonthain, Z. W. Celebes, J. P. A. Kalis, 9. 1938, coll. W. Wittmer" 1 ♂ 1 ♀ (NHMB); "Bonthain, Z. W. Celebes, J. P. A. Kalis, 10. 1938, coll. W. Wittmer" 1 ♀ (MNHB). TUKANGBESI: "Toekan Besi-Ins., Kalidupa" 1 ♀ (MNHB). TANIMBAR: "Jandema, Tenimer, Doherty, VI. VII., Brit. Mus. 1923–320" 1 ♀ (NHML); BURU: "Ins. Buru" 1 ♀ (MNHB). AMBON: "Waii, P. Ambon, 5. VII. 1959, leg. A. M. R. Wegner" 1 ♀ (NHMB). CERAM: Umg. Manusela, 700–900 m, 16.–18. II. 1989, Schödl leg. 6 ♀ (NHMW). HALMAHERA: "Dodinga, Halmahera, Doherty, VIII., Brit. Mus. 1923–320©1 ♀ (NHML). KAI: "Key-Ins." 4 ♀ (MNHB); "Ins. Key" 1 ♀ (MNHB); "Isole Key, 1873, O. Beccari" 1 ♀ (MCGD); "Key Inseln, coll. Plasun, coll. W. Wittmer" 1 ♂ (NHMB); "Ins. Key, Planten" 1 ♂ (MNHP); "Ins. Key, Bandai" 1 ♀ (MNHB); "Ille de Tonal, Groupe de Key" 1 ♂ (MNHP), IRIAN JAYA: "Nuova Guinea, Andai, Ag. 72, L. M. D’Albertis" 2 ♀ (MCGD); "N. Guinea, Hatam, Beccari 1875" 2 ♀ (MCGD); "N. Guinea, Hatam, Beccari, VII. 1875" 1 ♀ (MCGD); Testega, 1100–1300 m, 30. III.–2. IV. 1993, A. Riedel leg. 1 ♀ 1 ♀ (SMNS); Iba, 1300 m, 7.–8. IV. 1993, A. Riedel leg. 1 ♀ (SMNS); Westpapua, Manokwai Prov., vic. Mokwam, Siyoubrig, 1400–1800 m NN, 01°06.26’’ S / 133°54.41’’ E, 24.–28. II. 2007, A. Skale leg. 1 ♀ (NKME).

UNCLEAR OR IMPRECISE LOCALITIES: "India or." 1 ♂ (MTMB); "E. Ind." 1 ♂ (NHML); "12. 1, 225, Blair d.t." 1 ♀ (DEIM); "7710–85" 1 ♂ (MNHP); "Khouth, 1923, Indo Chine, coll. Dussaut" 1 ♂ 1 ♀ (NHMB); Budeuyory? [illegible] 1 ♂ 1 ♀ (MNHP); "Borneo, Pascoe Coll., 93–60." 1 ♂ (NHML); "Borneo, ... [illegible], German Mission, Fry Coll., 1905.100" 1 ♀ (NHML); "SAR, Bowring 63 47**" 2 ♀ (NHML); "Borneo, SAR" 2 ♀ (NHML); "Borneo, Wallace, Fry Coll., 1905.100" 2 ♀ (NHML); "Borneo" 1 ♀ (NHML); "Borneo, coll. Staudinger" 1 ♀ (SMTD); "Nord-Borneo, coll. Staudinger" 2 ♀ (SMTD); "Borneo, Chaper 1891" 8 ♀ (MNHP); "246–78" 1 ♂ 3 ♀ (MNHP); "Hattam, Vraz" 1 ♀ (NMPC).

NO LOCALITY: 2 ♂ (NHMW); „coll. Melly“ 1 ♀ (MHNG); "Hist. Coll. (Coleoptera), Nr. ?????" 4 ♀ (MNHB).

Measurements ♀ (n = 595): TBL 8.3–12.2 mm, L-h 7.1–10.4 mm
♂: 1.2–2.1 mm, PL 1.5–2.1 mm, EL 5.6–8.3 mm

Measurements ♀ (n = 850): TBL 9.8–13.3 mm, L-h 8.2–11.4 mm
♂: 1.5–2.3 mm, PL 1.5–2.1 mm, EL 6.7–9.4 mm

Differential diagnosis: This species is very similar to P. coeruleipennis, but easily recognized by the constant differences in coloration: P. bicolor always has orange yellow or brownish elytra, while in P. coeruleipennis, the elytra are always metallic blue or green. Other important differences are the shape of the median lobe in the male aedeagus, as well as the phallobase, which is more strongly bent downwards in P. bicolor, but never as strong as in P. wittmeri. The other species of Prionocerus clearly differ from P. bicolor by coloration, shape of aedeagus and the last abdominal sternite in males.

Redescription: Habitus as in figs. 33 (♂) and 34 (♀). Body metallic blue, sometimes slightly greenish. Pronotum usually bright reddish orange, elytra usually orange yellow (see under "Variability"). Antennae almost black, with at least the largest part of the terminal segment brownish orange or dark brown, this coloration can extend to large parts of segments 9–10. The maxillary palpi are usually almost completely black, but can be partly reddish to a very variable extent. Tarsi black or bluish black, claws orange brown, sometimes infuscate.

Head without any obvious differences to P. coeruleipennis. Antennae of very similar shape to P. coeruleipennis (including sexual dimorphism), but the last segment is a bit longer, about 1.5 times as long as the first or slightly longer.

Pronotum similar in shape to P. coeruleipennis, maximal length : maximal width 1 : 0.9–1 : 1.1; with two shallow, rather indistinct oblique impressions in the basal half, at both sides of the disc, finely bordered, but bordering interrupted along the front margin; shining, without any microsculpture; regularly, but sparsely covered with some inconspicuous subrecte black or subrecumbent yellow hairs and with a few longer black setae along the outer margin.

Elytral shape very similar to P. coeruleipennis, usually a little bit more elongate, and slightly more parallel in males; humeral area convex, slightly flattened towards the apex; finely and regularly punctate over their whole surface, but punctures getting shallower towards the apex; regularly covered with fine, short recumbent hairs of the same colour as the elytra, and bearing some few, blackish, long, erect hairs, partly arranged into rows; granular rows hardly visible or completely absent in most specimens. Margins crenulate, more strongly in humeral area, getting slightly weaker towards the apex, the crenules all bearing blackish setae. Scutellum as in P. coeruleipennis.

Femora metallic, shining, with fine punctures and sparse, greyish pubescence. Tibiae also metallic, densely covered with brownish setae. Tarsi not metallic, with blackish or brownish setae and some greyish
hairs.

Abdomen with rather short, not very dense, greyish, recumbent pubescence and some longer black, suberect setae; with rather dense, fine punctures and somewhat rugose texture in some parts.

Male: Last abdominal sternite of similar shape as in *P. coeruleipennis*, slightly larger and broader; basal margin of the same shape (fig. 23). Apical margin not quite as deeply incised, the opening of more transverse shape, the last tergite almost not emarginate.

Aedeagus (figs. 2, 9, 16): Process of phallobase slightly more tilted downwards than in *P. coeruleipennis*. Paramera rather flat, but with basal part thicker than in *P. coeruleipennis*; arcuate; their tip often (but not always) with a very small tooth, always with long brownish hairs along the ventral edge, as well as a row of short, minute, black teeth before the apex. Seen in dorsal view, they are straight and almost parallel as in *P. coeruleipennis*, only a bit more narrowed towards the apex, making the gap between them slightly broader. Median lobe straight after the basal part, very weakly narrowed until after the endophallus insertion, then dorsally with a small tooth and ventrally abruptly narrowed, tip produced into a very flat disc. In dorsal view with oval, elongate ostium; its tip subtriangular and similar to *P. coeruleipennis*.

**Sexual dimorphism:** The elytra are more parallel and generally slightly narrower in males, broader and with more rounded sides in females. Female are usually slightly larger in total body size. The eyes are larger in males and the frons is narrower between the eyes. The antennal joints 5–10 are more dilated in males than they are in

**Variability:** As already noted, the coloration of the last antennal segments and the maxillary palpi is subject to strong individual variation.

The colour of the scutellum is metallic blue in most individuals, but very rarely orange yellow as the elytra (1 ♂ from Mae Hong Son, Ban Huai Po at NHMB and 1 ♀ from Myanmar, Tharrawaddy at NHML). This variation has already been noticed by Gorham (1895) and Champion (1919) but has not been named.

A dark form was described by Pic under the name of "var. notaticollis". In this form, the elytra are infuscate reddish brown in variable gradations, sometimes almost dark brown. The pronotum is often infuscate at the disc, sometimes forming a diffuse black discal macula. This colour form seems to occur only in Peninsular Malaysia and Sumatra, where it coexists with the typical form. As the shape of the aedeagus and all other examined characters are absolutely identical to the typical form, it cannot be regarded as a subspecies or even as a different species. *P. bicolor* var. *notaticollis* Pic, 1910 is here treated as a synonym of *P. bicolor*, as it was already suggested by Champion.

Another "aberrative" specimen was found at NHML, collected in Myanmar ("Tenasserim, Tavoy"). It has two large, oblong, comma-shaped black patches on the pronotum, one at each of the normally coloured middle line. The patches are not reaching the pronotal margins. This specimen is a male, but it is damaged and had lost its abdomen, so its aedeagus could not be examined.

**Distribution** (fig. 44): This species is very widely distributed in a large part of the Oriental region, including the border regions to the Palearctic (Himalaya, South China, Taiwan) and New Guinea (see discussion).

**Nomenclatural note:** According to the original description, there is little doubt that *P. pertii* Castelnau, 1836 is identical to *P. bicolor* Redtenbacher, 1868, even though the type of *P. pertii* was not examined. This, however, makes *P. bicolor* a junior synonym of *P. pertii*, a species which was never cited by anyone and omitted from all catalogues after its description in 1836. Every time since 1868, *P. bicolor* was used as valid name for this common and widespread species. Article 23.9.1.2. of the ICZN (1999) does not allow the automatic consideration of *P. pertii* a nomen oblitum, so an application will be sent to the International Commission of Zoological Nomenclature, in order to maintain the usage of *P. bicolor* as a valid species.

**Prionocerus paiensis** n. sp.

**Holotype** ♂: "NW Thailand, Mae Hong Son, Ban Huai Po, 1600 m, 8.–17. V, 1992, S. Bily leg."; NHMB.

Type locality: Ban Huai Po, Mae Hong Son, Thailand.

Measurements ♂ (n = 2): TBL 11.8–12.5 mm, L-h 9.7–10.3 mm
HL 2.1–2.2 mm, PL 1.8–1.9 mm, EL 7.9–8.4 mm
Measurements ♀ (n = 6): TBL 12.2–13.6 mm, L-h 10.1–11.5 mm
HL 2.0–2.4 mm, PL 1.8–2.0 mm, EL 8.3–9.6 mm

Differential diagnosis: Easily distinguished from all other species of the genus by the coloration of the femora and antennae and the shape of the paramera.

Description: Habitus as in figs. 45 (♂) and 46 (♀). Body metallic dark blue. Pronotum, pro- and mesothorax, trochanters, basal part of all femora, antennae, maxillary and labial palpi and central part of scutellum yellowish orange. The yellowish coloration extends to about 2/3 of the fore femora, half of the middle femora, but only the extreme base of the hind femora. The trochanters are usually darkened along their outer (posterior) edge. Blue metallic lustre of the tibiae and outer part of the femora somewhat indistinct, often almost black, tarsi somewhat brownish. Elytra shining metallic dark blue.

Head behind the eyes about half as wide as the middle part of the pronotum. Vertex shining, very sparsely and very finely punctate and with a few long, erect black hairs. Frons between eyes shining, sparsely punctate, at its narrowest part about half as broad as the length of the first antennal joint in males, slightly narrower than the length of the whole joint in females; in front of the eyes distinctly depressed and slightly rugose. Clypeus trapezoidal, almost half as long as wide at the base and very slightly convex, with a few fine punctures and some longer hairs. Labrum about as long as wide, rather flat and more coarsely punctate than the head, with a few long blackish hairs.

Male antennae reaching the first quarter of the elytra in length, until slightly after the humeral callus. First three segments subfiliform (basal one very slightly incrassate), segments 4 slightly widened, 5 widened and flattened, 6–10 of subtriangular shape, very strongly widened and with a sharp outer angle. Last segment robust, not conspicuously widened, but clearly emarginate. First segment long, second very short, less than one third as long, third again long, almost like the first, the following a bit shorter, slightly decreasing in length, but increasing in width, the last segment shorter than 1 and 3. Female antennae slightly shorter, only scarcely reaching the humeral callus; median and subapical segments a bit less strongly widened and their outer angle not as sharp.

Pronotum slightly wider than long, widest in apical half, before middle, maximal length : maximal width 1 : 1.05–1 : 1.2; shining, with few sparse punctures in the basal half. Hind angles somewhat oblique and slightly rounded, but still forming an angle of approximately 100 degrees; front angles rounded; basal and lateral margins distinctly bordered, bordering broad at hind angles, becoming finer, more indistinct and then completely disappearing towards the fore margin, basal half distinctly, obliquely impressed at both sides between disc and hind angles, disc and part before the hind angles slightly convex. Pubescence of pronotum yellow, sparse, decumbent, denser and clearly visible along the base and near the apical angles, sparser near the anterior margin and almost completely lacking on the disc. Lateral margins with some long, black, hairlike setae, almost lacking (fallen off?) in some individuals.

Elytra of about the same shape as in *P. coeruleipennis* but slightly more elongate (2.5–2.6 times as long as wide in males, 2.3–2.4 times in females), widest in apical third; humeral area convex, apical half less flattened than in other species; finely, densely and regularly punctate over their whole surface, the punctures getting slightly shallower and denser towards the apex; regularly covered with fine, short recumbent, pale pubescence, sparsely intermixed with long, erect hairs which are partly arranged into rows; with three more or less distinct, parallel rows of granules starting in the basal third and continuing until shortly before the apex. Margins finely crenulate, the crenules all bearing blackish setae. Scutellum like in *P. coeruleipennis*. 

REVISION OF THE GENUS *PRIONOCERUS*
Femora and tibiae not metallic (or only slightly), covered with black setae, intermixed with recumbent greyish hairs. Tarsi also not metallic, with blackish setae.

Abdomen with fine, silky, recumbent, greyish, rather dense pubescence and some longer black or brownish, suberect setae; with small, fissure-like punctures and somewhat rugose texture.

Male: Last abdominal sternite of similar shape as in *P. coeruleipennis* and *P. bicolor*, somewhat intermediate in width; basal margin of similar shape (fig. 24). Apical margin not quite as deeply incised as in *P. coeruleipennis*, the emargination more similar to *P. bicolor*, but less rounded, the opening of subtriangular, slightly transverse shape, the last tergite almost not emarginate.

Aedeagus (figs. 3, 10, 17): Process of phallobase pointing straight backwards. Paramera less flattened than in the two preceding species and strongly sclerotised, almost straight, not arcuate, with slightly thickened apex. Seen in dorsal view, they are very broad, straight, and only very slightly diverging towards the apex. At the tip with a small dorsal tooth and some minute teeth or granulae, as well as some long, brownish hairs, along the ventral edge. Median lobe like in *P. coeruleipennis*, but a bit less curved base and subapical more arcuate.

**Sexual dimorphism:** Females have broader, less parallel elytra and are usually slightly larger than males. The eyes are larger and more protruding in males than in females and therefore the frons between the eyes is also slightly narrower in males. The antennae are much more filigrane and their joints 5–10 are much less dilated in females than they are in males.

**Variability:** The limited material seems quite uniformous in coloration and other characters.

**Distribution** (fig. 45): So far known only from some localities in north-west Thailand (province Mae Hong Son). Its occurrence in the adjacent parts of Myanmar is possible.

**Derivatio nominis:** Named after the village Pai in Mae Hong Son province, North-West Thailand, where one half of the type series has been collected.

**Prionocerus viridiflavus** Geiser, 2007

**Prionocerus viridiflavus** Geiser, 2007: 168.

**Type material examined:** Holotype ♂ and 2 paratypes ♂ and ♀, NHMB, see Geiser, 2007 for details.

This species was described in a recent paper, so there is no need to repeat all details of the description here. A photograph of the habitus is given in fig. 39 (♂), a drawing of the last male abdominal sternite in fig. 25.

**Differential diagnosis:** Very easily recognizable by uniformously green pronotum and large yellow humeral patches on the elytra, as well as by the distinctive shape of the elytra (narrowed in the middle, slightly dilated subapically). The last abdominal sternite in males is smallest of all *Prionocerus*, the aedeagus somewhat similar to *P. coeruleipennis*.

**Distribution** (fig. 45): So far known only from three localities on the island of Sumatra, Indonesia. It seems to be endemic to this island.

**Prionocerus malaysiacus** n. sp.

**Holotype** ♂: Malaysia–W; Pahang, Cameron Highlands, ~1500 m, Tanah Rata (35 km SEE Ipoh), 4°28’ N 101°23’ E, 19.–31. III. 2003, M. Říha & M. Němec leg.; NHMB.

**Paratypes** (1 ♂, 5 ♀): 1 ♂: ‘Malay Penin, Pahang, F. M. S., Fraser’s Hill, 4200’; Jan. 19th 1920, H. M. Pendlebury, F. M. S. Museums” (MNHP); 2 ♀: Malaysia, W. Pahang, Cameron Highlands, Tanah, Rata, 1500–1600 m, 2.–26. III. 2004, P. Pacholátko leg. (NHMB); 1 ♀: Pahang, F. M. S., Fraser Hill, 3500-4500’.

The male from "Fraser's Hill" at MNHP was identified as *P. coeruleipennis* var. *diversicollis* by M. Pic (see above under *P. coeruleipennis*).

**Other material examined:** MALAYSIA: PAHANG: Cameron Highlands, Tanah Rata, 1500–1700 m, 1.–13. II. 2003, P. Pacholátko leg. 1 ♀ (NHMB).

**Type locality:** Tanah Rata, Pahang, Malaysia.

**Measurements**

**♂** (n = 2): TBL 10.0–10.2 mm, L-h 8.3–8.7 mm
HL 1.5–1.7 mm, PL 1.5–1.7 mm, EL 6.8–7.0 mm

**♀** (n = 6): TBL 10.7–12.0 mm, L-h 9.0–10.3 mm
HL 1.5–1.8 mm, PL 1.6–1.9 mm, EL 7.4–8.4 mm

**Differential diagnosis:** Distinguished from all other species of the genus by its aedeagus, especially the median lobe, as well as by the last abdominal sternite in males. Similar in coloration to *P. opacipennis* and *P. championi*, but smaller and with broader pronotum and smaller antennae as *P. opacipennis* and with narrower, more filigrane antennae than *P. championi*. The dark greenish, metallic coloration can rarely also occur in *P. coeruleipennis*, but this species, like *P. bicolor*, has the antennae more strongly serrate with the segments 7–10 much wider.

**Description:** Habitus as in figs. 37 (♂) and 38 (♀). Body black with slight greenish or bluish metallic lustre. Pronotum bright reddish orange, in some specimens with a bluish black spot in the middle of the disc. Elytra and scutellum metallic dark green. Antennae black, with segments 10–11, a part of segment 9, and sometimes the outer edge of segment 8 brownish orange, the three basal segments with slight blue metallic lustre and often some slightly reddish parts. Maxillary and labial palpi almost entirely black, only the outer edge may be slightly reddish. Tarsi black, claws orange brown.

Head behind the eyes wider than half of the pronotum. Vertex shining, sparsely and finely punctate and with some black hairs. Frons between eyes slightly rugulose, narrower than the length of the first antennal joint in males, almost as broad as the first two joints in females; in front of the eyes depressed and slightly rugose. Clypeus trapezoidal, wider than long and slightly convex, slightly shagreened. Labrum about as long as wide or slightly wider, rather flat and more coarsely punctate than the head, with some long blackish hairs.

Male antennae short, reaching only the shoulders of the elytra in length. First three segments subfiliform, segments 4–5 only very slightly widened and flattened, 6–10 of subtriangular shape, widened. Last segment not conspicuously widened, but large and strongly emarginate. First segment long, second very short, only about one third as long, third to fifth again long, like the first or slightly longer, sixth to tenth decreasing in length, but increasing in width, the last segment longest, about 1.5 times as long as the first. Female antennae of about the same length, only scarcely reaching the humeral callus; apical segment slightly shorter, otherwise everything of similar shape than in males.

Pronotum slightly longer than wide, maximal length : maximal width 1 : 0.92–1 : 0.98, subhexagonal, widest part in front half, before the middle, all angles rounded, basal angles of about 90°; with two shallow, sometimes very vague, oblique impressions in the basal half, at both sides of the disc, slightly convex near hind angles and in the middle of the disc; finely bordered, the bordering becoming very vague in the middle of the front margin; shining, sparsely covered with shallow punctures and black (or sometimes golden yellow) short, suberect hairs; lateral margins with some slightly longer black hair-like setae.

Elytra about 2.7–2.9 times as long as wide in males, about 2.6 times in females, of almost parallel shape, very slightly wider in apical half; humeral area convex, slightly flattened towards the apex; finely and very densely, rugosely punctate over their whole surface; regularly covered with very fine, short, recumbent, golden brownish hairs, and bearing few, blackish, erect hairs, which, contrary to *P. coeruleipennis* and *P. bicolor*, are hardly visible if not seen in profile; without distinct granular rows. Margins distinctly crenulate, the crenules all bearing blackish setae. Scutellum as in *P. coeruleipennis*.

Femora metallic, shining, with fine punctures and rather long, greyish pubescence intermixed with short,
blackish setae. Tibiae slightly metallic, densely covered with brownish setae. Tarsi not metallic, with blackish or brownish setae, intermixed with greyish hairs.

Abdomen with rather long, but not very dense, greyish, recumbent pubescence and some longer black, suberect setae; the fissure-like punctures confluent, forming a somewhat rugose texture.

Male: Last abdominal sternite of similar shape as in *P. bicolor*, slightly narrower, slightly larger, but less transverse than in *P. coeruleipennis* (fig. 26); emargination of basal margin narrower, only in the middle of the sternite. Emargination of apical margin similar to *P. bicolor*, the opening of transverse shape, the last tergite not emarginate.

Aedeagus (figs. 4, 11, 18): Process of phallobase pointing backwards. Paramera flat and arcuate, much more strongly curved than in the preceding species. Seen in dorsal view, they are broad, almost straight, but slightly diverging from near the base, causing a increasing gap between them, which then becomes smaller through the slightly converging apices. Median lobe straight from near the base until apex, not bent upwards and without a dorsal tooth. Its tip (after ostium) strongly flattened and slightly pointing downwards. Median lobe in dorsal view with very elongate, apically broadened ostium, its sides slightly thickened before the apex, then drawn into a subtriangular, slightly rounded tip with a weak middle furrow.

**Sexual dimorphism**: Females are slightly larger than males, with slightly broader and less parallel-shaped elytra, as well as slightly smaller and more widely separated eyes. Antennal dimorphism is weak in this species.

**Variability**: The single female which is not designated as paratype here, differs from all other specimens by the dull black coloration of the elytra. Otherwise, no differences could be found. More material, including males, would be useful to find out if this colour variation has any taxonomic significance.

**Distribution** (fig. 45): So far known only from the Cameron Highlands in peninsular Malaysia.

**Derivatio nominis**: Named after Malaysia, its country of origin.

*Prionocerus championi* n. sp.

**Holotype ♂**: "W Sumatra, Padang env., 200–500 m, S. Jakl lgt., IV. 1995"; NHMB.

**Paratypes** (1 ♂): 1 ♂; same data as the holotype (NHMB).

**Type locality**: Padang, Sumatra, Indonesia.

**Measurements** (♂, n = 2): TBL 9.9–10.7 mm, L-h 8.4–9.0 mm  
HL 1.5–1.7 mm, PL 1.7–1.8 mm, EL 6.7–7.2 mm

**Differential diagnosis**: Very similar in coloration to *P. malaysiacus* and *P. opacipennis*, distinguished mainly by the shape of the aedeagus and the last abdominal sternite in males, but also easily recognizable by antennal shape. Elytra and pronotum slightly more slender than in *P. coeruleipennis*. Body size smaller than in *P. wittmeri*. Easily distinguished from *P. bicolor*, *P. paiensis* and *P. viridiflavus* by coloration.

**Description**: Habitus as in fig. 40 (♂). Body metallic dark blue, partly with greenish lustre. Pronotum bright reddish orange. Elytra metallic dark green, in a small area at the base and around the shoulder, as well as the scutellum metallic blue. Antennae black, with the last segment reddish brown and the first three segments lighter reddish and a bluish black stripe on the dorsal surface. Maxillary and labial palpi mostly reddish brown, parts of each segment infuscate to almost black. Outer edge of labrum yellowish brown. Legs dark bluish black, claws reddish brown.

Head behind the eyes about half as wide than the middle part of the pronotum. Vertex not very shining, sparsely and very finely punctate. Frons between eyes sparsely punctate, at its narrowest part about half as broad as the length of the first antennal joint (males); in front of the eyes depressed and slightly rugose. Clypeus almost rectangular, broader than long, slightly shagreened. Labrum about as long as wide, rather flat and more coarsely punctate then the head, with wrinkly microsculpture and some longer blackish setae.

Male antennae reaching the first quarter of the elytra in length, until slightly after the humeral callus. First three segments subfiliform (basal one slightly incrassate), segments 4 and 5 slightly widened and flattened, 6–
10 of subtriangular shape, gradually more strongly widened and flattened. Last segment robust, not conspicuously widened, but clearly emarginate. First segment long, second very short, less than one third as long, third to fifth again long, although not quite as the first, sixth to tenth slightly decreasing in length, but increasing in width, the last segment longest, about one third longer than the first.

Pronotum slightly longer than broad, widest around the middle, maximal length : maximal width 1 : 0.95; subhexagonal, all angles rounded, hind angles approximately 100°; all pronotal margins distinctly bordered, broadly and conspicuously around hind angles, narrowly at the front margin; basal half shallowly, obliquely impressed at both sides of the disc, part around hind angles slightly convex; shining and without any microsculpture; basal half with some yellowish, suberect pubescence, while the sparse hairs on the fore half are more blackish; the outer margin bearing few longer, black, hair-like setae.

Elytra almost exactly fitting the description of *P. opacipennis* above, apical half slightly less flattened, punctures slightly deeper and a bit less dense and rugose in the basal area. Scutellum like in *P. coeruleipennis*.

Femora slightly metallic, with fine punctures and short blackish hairs and setae. Tibiae also slightly metallic, covered with blackish setae. Tarsi not metallic, with blackish or brownish setae.

Abdomen with rather long, sparse, greyish, recumbent pubescence and some longer black, suberect setae; with rather sparse, shallow punctures and somewhat rugose texture.

Male: Last abdominal sternite larger, especially longer, than in all the preceding species, basal half of almost cylindrical shape, apical half nearly semicircular (fig. 27). Basal margin rather deeply emarginate, in the middle with almost triangular incision (although the angle is still rounded). The apical margin deeply incised, deeper than in *P. coeruleipennis*, the opening large and of subtriangular shape with rounded angles. The last tergite very shallowly, inconspicuously emarginate.

Aedeagus (figs. 5, 12, 19): Process of phallobase straight; the whole phallobase strongly curved and bent downwards to an angle of about 90° (in relation to the apex of the parameres). Parameres (lateral view) after the base very thick (more than double as broad as in *P. coeruleipennis*), then with a very conspicuous semicircular emargination, bearing some long, brownish hairs along its edge; after the emargination again thickened, drawn into an almost spoon-shaped tip, with some minute teeth around the inner edge of the apex. Seen in dorsal view, the parameres are narrow, largely gaping, slightly curved and never parallel as in *P. coeruleipennis* and relatives. Median lobe rather robust, with its basal part strongly curved (about 90°), then not straight but slightly sinuate, apical part not abruptly flattened and without dorsal hook. In dorsal view with very elongate, subparallel ostium, whose hind end is not clearly delimited; after the ostium narrowed and with a long, parallel-sided tip with a very fine central furrow.

**Sexual dimorphism**: Unknown, there were no females available.

**Variability**: Unknown, the available material is too limited.

**Distribution** (fig. 45): So far known only from the type locality in West Sumatra, Indonesia. Probably endemic to this island.

**Derivatio nominis**: Named in honour of the famous British entomologist George Charles Champion (1851–1927), author of the most important and most useful work on Prionoceridae ever published (Champion 1919).

*Prionocerus opacipennis* (Pic, 1920) n. comb.


**Type material examined**: Holotype ♂: "Mentawei, Sipora"; "Pr. caeruleipennis var. (désiré)"; "type"; "TYPE"; "opacipennis Pic"; MNHP, in good condition.

Measurements ♂ (n = 4): TBL 11.2–13.3 mm, L-h 9.4–11.3 mm
HL 1.8–2.0 mm, PL 1.9–2.2 mm, EL 7.5–9.1 mm
Measurements ♀ (n = 1, as one specimen lacks its head): TBL 12.6 mm, L-h 10.7 mm
HL 1.9 mm, PL 2.1 mm, EL 8.6 mm

Differential diagnosis: Habitus as in fig. 41 (♂). Distinguished from all other Prionocerus by the pronotal shape (more slender and elongate), larger and more massive antennae, and in males by the shape of the aedeagus and the last abdominal sternite.

Redescription: Body metallic bluish green, head and scutellum slightly darker blue. Pronotum bright reddish orange. Elytra dark blue or dark green. Central part of antennae dark brown, basal three segments partly lighter reddish brown, the apical part of antennae to a variable extent light yellowish brown (at least the last segment and parts of segments 9–10). Maxillary and labial palpi, maxillae and outer edge of labrum and clypeus light reddish to yellowish brown. Legs dark metallic blue, tarsi almost black, claws reddish brown.

Head about as wide or very slightly wider than half of the pronotum, similar in shape to P. coeruleipennis. Vertex shining, very sparsely and very finely punctate and with some erect black setae. Frons between eyes shining, sparsely punctate, narrower than half the length of the first antennal joint in males, almost as broad in females; in front of the eyes distinctly depressed and slightly rugose. Clypeus almost trapezoidal, wider than long and slightly convex, with a few coarse punctures bearing black setae. Labrum about as long as wide, flat and more coarsely punctate than the head (except clypeus), with some moderately long blackish hairs.

Male antennae surpassing the first third of the elytra in length, longer than in any of the related species. First three segments subfiliform, segments 4–5 slightly widened and flattened, 6–10 of subtriangular shape, very strongly flattened and widened. Last segment robust, not conspicuously widened, large and strongly emarginate. First segment long, second very short, only about third as long, third segment again long, almost like the first, the following segments gradually decreasing in length and increasing in width, the last segment longest, slightly longer than the first. Female antennae very much shorter, hardly reaching the shoulders of the elytra; all segments much smaller than in males, but of similar shape; second segment about half as long as the first; third longest; last one slightly shorter than the first.

Pronotum slightly longer than wide, maximal length : maximal width 1: 0.92–1: 0.98, subhexagonal, widest part in front half, before the middle, all angles rounded, basal angles of about 90°; with two shallow, sometimes very vague, oblique impressions in the basal half, at both sides of the disc, slightly convex near hind angles and in the middle of the disc; finely bordered, the bordering becoming very vague in the middle of the front margin; shining, sparsely covered with shallow punctures and black (or sometimes golden yellow) short, suberect hairs; lateral margins with some slightly longer black hair-like setae.

Elytra about 2.7 times as long as wide in males, about 2.6 times in females, of subparallel shape, widest in apical half; humeral area convex, apical half less flattened than in other species; finely and very densely punctate over the whole surface, rugose in all parts except basal area, punctures getting shallower towards the apex; pubescence sparse, pale and hardly visible, with very small, short, recumbent hairs; with few longer black, erect hairs, that are usually only visible in profile; no granular rows visible within the dense puncture. Margins finely, regularly crenulate, the crenules all bearing blackish setae intermixed with smaller brownish hairs. Scutellum narrower than in P. coeruleipennis, about as wide as long, with very fine punctures and sparse brownish pubescence.

Femora ant tibiae slightly metallic, covered with fine punctures, greyish, recumbent pubescence and black or brownish setae. Tarsi not metallic, with blackish setae and some greyish, recumbent hairs.

Abdomen with rather long, but usually not very dense, greyish, recumbent pubescence and some longer black, suberect setae; with rather sparse, shallow punctures and somewhat rugose texture on some parts.

Male: Last abdominal sternite very large and massive, similar in shape to P. championi, but broader (fig. 28). Basal margin arcuate. Apical margin very deeply incised in the middle, the under edge of the incision of semicircular shape, the opening very large and of subtriangular shape. Last tergite not emarginate.

Aedeagus (figs. 6, 13, 20): Process of phallobase pointing backwards, but standing in an angle of more than 60° to the parameral apex, as the phallobase is strongly curved. Paramera not straight, slightly arcuate,
narrowed to about the middle, then apical area slightly thickened, but not as much as in *P. championi*; apical part with a row of minute, black teeth along its ventral edge, but no dorsal tooth visible; ventral edge of subapical part (not the extreme tip) with several long, brownish hairs. Seen in dorsal view, the paramera are largely gaping and slightly curved, similar to *P. championi*, but a bit broader. Median lobe rather robust, with its basal part strongly curved, then not straight but clearly sinuate in middle and apical part, apex more gradually flattened, without dorsal hook, the extreme tip flat and pointing ventrally. In dorsal view with elongate, subparallel ostium; after the ostium only slightly and more gradually narrowed with bluntly rounded and a fine central furrow.

**Sexual dimorphism:** The single undamaged female assigned to this species has about the same body size and shape as the males, but much shorter and less massive antennae. It shows the usual dimorphism in size of the eyes and the frons between them.

**Variability:** The colour of the elytra can vary from dark blue (holotype) over dark green with blue humeral area (specimens from Sumatra) to uniformly dark green metallic (Thailand). The specimen from Thailand has the last antennal segment of slightly different size, with slightly shorter, less produced apex.

**Distribution** (fig. 45): Known from the Mentawei Islands and Sumatra in Indonesia, as well as from Central Thailand. It is probable that the large geographic gap between this localities may be closed by further collecting efforts.

*Prionocerus wittmeri* n. sp.

**Holotype ♂:** "K. O. Blawan, Idjen-Plateau, Java, 900–1500 Mr., 21.–24. 5. 1936, leg H. Lucht; Naturhist. Museum Basel, coll. W. Wittmer"; NHMB.


**Type locality:** Ijen-Plateau, Java, Indonesia.

**Measurements ♂ (n = 5):** TBL 11.2–13.0 mm, L-h 9.1–10.7 mm

HL 1.9–2.3 mm, PL 1.8–2.1 mm, EL 7.2–8.6 mm

**Measurements ♀ (n = 10):** TBL 11.4–13.1 mm, L-h 9.4–10.9 mm

HL 1.9–2.3 mm, PL 1.7–2.1 mm, EL 7.6–8.9 mm

**Differential diagnosis:** Distinguished from all other species of the genus by the shape of the aedeagus and the last abdominal sternite of the male. *P. coeruleipennis*, which also occurs on Java, has a similar coloration, but always shorter elytra which are broader in shape. Moreover, its antennae are more strongly dilated and serrate and their last segment is always stouter in shape.

**Description:** Habitus as in fig. 42 (♂). Body metallic green or blue. Pronotum, maxillary and labial palpi, basal and apical parts of the antennae reddish orange. Median part of the antennae (joints 4–8) slightly infuscate, brownish. Coloration of tarsi varying from black to reddish brown or reddish orange as the pronotum (especially in fore tarsi).

Head behind the eyes about half as wide as middle part of pronotum. Vertex shining but with slightly wrinkly sculpture, with some long, erect black hairs. Clypeus subrectangular, wider than long, rather flat, with some punctures and erect, brownish setae in the basal half. Labrum about as long as wide or slightly wider, rather flat and with some coarse punctures bearing erect, brownish setae.

Male antennae reaching the first quarter of the elytra in length, until slightly after the humeral callus. First three segments subfiliform, 4–10 flattened and gradually more widened. Last segment robust, large and strongly emarginate. First segment long, subcylindrical; second very short, less than one third of its length.
third segment very long and narrow, longer than the first; 4–8 subequal in length, slightly shorter than the first, 8–10 decreasing in length, but increasing in width; last segment longest, very slightly longer than the third. Female antennae of similar length and shape as in male, very slightly shorter and preapical segments a little bit less flattened and widened.

Pronotum about as long as broad, angles all rounded, widest in apical half, shortly before the middle, then almost evenly narrowed towards the base; distinctly bordered at the base and the basal part of the side margin, rest of the side and apical margin indistinctly bordered or not bordered; basal half shallowly, obliquely impressed between base and disc; pubescence of pronotum very sparse, yellow, decumbent. Its apical and lateral margin with some long, black, hairlike setae.

Elytra about 2.6–2.9 times as long as wide together in males, about 2.6–3.0 times in females, subparallel, widest in apical third; very densely punctate, the punctures at the base rather deep and clearly separate, rugose, confluent and shallower in the remaining area; covered with not very dense, inconspicuous pubescence consisting of very fine, rather short recumbent brownish hairs, intermixed with very long erect greyish hairs (sometimes only visible in profile); often with two or three inconspicuous, hardly visible rows of coarser granulae, but these can also be completely reduced. Margins regularly, finely and shallowly crenulate and with longer blackish setae. Scutellum about as long as wide, narrower than in *P. coeruleipennis*, all angles rounded, hind edge almost semicircular in shape; hind sometimes (but not always!) with deeply impressed middle furrow; regularly covered with very fine punctures (much finer than on the elytra) and some greyish recumbent pubescence.

Femora and tibiae metallic, rather densely punctured and slightly shagreened, with rather long, recumbent, brownish pubescence. Tibiae slightly metallic with brownish hairs and black setae. Tarsi not metallic, with blackish setae and some greyish, recumbent hairs.

Abdomen shining, with sparse, recumbent, greyish pubescence and some longer black, suberect setae; with very fine shallow punctures.

**Male**: Last abdominal sternite very large and massive, only slightly narrower and not shorter than the preceding sternite, of approximately semicircular shape with a very large arcuate emargination at its apical margin, but only very slightly emarginate basal margin (fig. 29). The apical opening is approximately triangular, as the last tergite is not emarginate, and bordered with some long, brownish hairs.

Aedeagus (figs. 7, 14, 21): entire aedeagus unusually large within the genus. Process of phallobase slightly sinuate; the whole phallobase curved and bent downwards, standing in an angle of about 80° to the parameral apex. Paramera massive and distinctly arcuate, with a slightly broadened apex, which bears a dense row of black thorns along its edge, but no dorsal tooth. Middle (preapical) part of paramera with some long brownish hairs. Seen in dorsal view, the paramera are largely gaping and slightly curved, similar to *P. championi*, with slightly converging apices. Median lobe robust, with its basal part strongly curved, bent downwards to an angle of about 90°, then straight and continuously narrowed until the apex in dorsal view with concave inner part, so the ostium is not very clearly delimited, but very large and with approximately parallel sides.

**Sexual dimorphism**: Females have the elytra slightly wider than in males, more distinctly widened in apical half, less parallel. Frons between eyes only about half as wide as between antennal insertions in males, distinctly wider in females. The last abdominal sternite shows a very remarkable sexual dimorphism (fig. 30): It has about the same size as in females of other *Prionocerus* species, in contrast to the extremely enlarged sternite in males, it is of approximately semicircular shape (stouter than in other *Prionocerus* females) and has a very deep, conspicuous incision at its basal margin, about half as long as the sternite, followed by a raised transverse ridge after its end. The whole sternite is unusually densely covered with long brownish hairs and setae.

**Variability**: The coloration of the elytra can vary from metallic light green to metallic deep blue. The antennal coloration can be lighter (middle part only very slightly infuscate) or darker (joints 9–10 also darkened) in some individuals. In one male specimen examined, the last antennal segment is shorter than usual, not quite reaching the third segment in length.
**Distribution** (fig. 45): Recorded from some localities in the highlands of eastern Java, Indonesia. Apparently endemic to this island, possibly even to Ijen and Baluran highlands.

**Derivatio nominis:** Named in honour of the great Swiss entomologist Dr. h. c. Walter Wittmer (1915–1998), world specialist in Malachiidae and Cantharidae, who once had most of the type series of this species in his collection. Wittmer had accumulated a very large and interesting material of Prionoceridae during his lifetime, although he worked with them only marginally.

**Key to species of Prionocerus**

1. Pronotum metallic green. Elytra green with yellow humeral macula. Sumatra.......................... *P. viridiflavus*
   - Pronotum orange red, rarely with darker discal spot(s). Elytra unicolorous .................................................. 2
2. Elytra orange yellow or infuscate brownish. Aedeagus as in figs. 2, 9, 16. Widely distributed ............... *P. bicolor*
   - Elytra of metallic green or blue coloration, rarely black ................................................................................. 3
3. Base of femora and antennae entirely yellow. Aedeagus as in figs. 3, 10, 17. NW-Thailand ............ *P. paiensis* n. sp.
   - Femora entirely dark coloured. Major parts of antennae black ................................................................. 4
4. Pronotum longer than wide. Elytra very densely, rugosely punctate ......................................................... 5
   - Pronotum shape usually broader. Elytral texture finer, not rugose ............................................................... 6
5. Male antennae very long and massive, surpassing the first third of the elytra. TBL usually larger, 11.2–13.3 mm. Aedeagus as in figs. 6, 13, 20. Indonesia to Central Thailand............................... *P. opacipennis*
   - Male antennae much shorter, reaching only the humeral callus of elytra. TBL usually smaller, 10.0–12.0 mm. Aedeagus as in figs. 4, 11, 18. Malaysia ....................................................... *P. malaysiacus* n. sp.
6. Lateral lobes of aedeagus flat (fig. 15). Last abdominal segment of male small (fig. 22). Sculpture of the elytra confluent, forming a rugose texture ........................................................................... *P. coeruleipennis*
   - Lateral lobes of aedeagus more robust. Last abdominal segment of male very large (figs. 27, 29). Punctures of the elytra confluent, forming a rugose texture ................................................................. 7
7. Antennae broader, more strongly serrate. Aedeagus as in figs. 5, 12, 19. Sumatra ...................... *P. championi* n. sp.
   - Antennae narrower, less strongly serrate. Aedeagus as in figs. 7, 14, 21. Java ......................... *P. wittmeri* n. sp.

**Unidentified specimens**

The following females could not be assigned to any of the species:


This specimen differs from known *P. opacipennis* females by broader antennae and slightly more shining green elytra. It also seems to have broader antennae and more parallel elytra then any known *P. coeruleipennis* female and another pronotal and antennal shape than females of *P. opacipennis*. The female of *P. championi* is still unknown.


Although it was collected at the same locality as one male of *P. opacipennis*, this specimen doesn’t match at all the females of this species known from Sumatra. It has very small, short, but still strongly serrate antennae, dark green metallic elytra and a very slightly infuscate spot at each side of the pronotal disc.

**Other species described as Prionocerus**

*Idgia huegeli* (Redtenbacher, 1868)

*Prionocerus hügeli* Redtenbacher, 1868: 110.
This species was described as *Prionocerus* and later transferred to *Idgia* (Pic 1926), but probably without examination of the type. The holotype is deposited at NHMW (labelled "Hügel" and "hügeli Rdt, China") and could be examined. Apart from this, only a single specimen without locality at NHML seems to be known. It is a very unusual prionocerid of large size, shining, entirely metallic blue coloration, only very slightly serrate antennae, very elongate, rostriform head, and a deep, U-shaped incision on its subapical sternite. At least by its habitus and size it is most similar to *Idgia oculata* Redtenbacher, 1868, *I. viridivittata* Champion, 1919 and *I. maculatithorax* Pic, 1919. In any case it cannot be placed in *Prionocerus*.

*Idgia thibetana* (Obenberger, 1918)

*Prionocerus thibetanus* Obenberger, 1918: 60.

This species was originally described as *Prionocerus* and later placed in *Idgia* by Pic (1926), without comment. The female holotype ("Poo. West Hym. coll. Splichal", deposited at NMPC) was examined and it evidently does not belong to *Prionocerus*. It was compared to several specimens of *I. viridescens* Gorham, 1895, of which the male holotype could be examined at Pic’s collection at MNHP. No morphological differences between female *I. viridescens* and the type of *thibetana* could be found. Also, the type locality of *I. thibetana* falls fully within the range of *I. viridescens*. Therefore, it is here regarded as a junior synonym: *Idgia viridescens* Gorham, 1895 [= *Prionocerus metallescens* Fairmaire, 1896 (synonymised by Champion (1919)); [= *Prionocerus thibetanus* Obenberger, 1918 n. syn.].

*Idgia hirta* (Walker, 1871) *nomen dubium*


The original description of this species is very poor and the type material seems to be lost (as already noted by Champion (1919)). It was tentatively placed in *Idgia*, as a possible senior synonym of *I. arabica* Champion, 1919, although it is not from the Arabian peninsula but from the opposite African coast (Tajura is in today's Djibouti). According to its original description and its type locality, it is highly unlikely to belong to *Prionocerus* and rather seems to be identical to one of the African species related to *I. dimidiata* (Gerstaecker, 1871). As long as the type (if it still exists) is not rediscovered, it must be treated as "*nomen dubium*".
FIGURES 43–44. Known distribution of *P. coeruleipennis* (43) and *P. bicolor* (44) in the Oriental region. Dubious localities are marked with "?". Some localities from New Guinea (for both species), as well as from Palau, Micronesia and Africa (for *P. coeruleipennis*) are not shown on this map.
FIGURE 45. Known distributions of *P. opacipennis* (filled circles), *P. paiensis* n. sp. (filled square), *P. malaysiacus* n. sp. (open squares), *P. viridiflavus* (triangles), *P. championi* n. sp. (asterisk) and *P. wittmeri* n. sp. (rhombs).

Discussion

Phylogeny

In Prionoceridae, like in many other "malacoderm" families of Elateroidea and Cleroidea, it is somewhat difficult to find external characters which are not variable within one species, and often enormously difficult to find apomorphies to delimit genera. The shape of the male genitalia constitutes a very good character system to distinguish individual species, but it is hard to draw any conclusions about interspecific relationship from it.

At the moment, there are not enough clear morphological characters between *Prionocerus* species to construct a useful character matrix for a cladistic analysis, so all postulated interspecific relationships are purely hypothetical:

*Prionocerus coeruleipennis* and *P. bicolor* are probably very closely related, as they share the same shape of the parameres in the aedeagus, as well as the same shape of pronotum, elytra, last sternite in males, and a similar median lobe.

*Prionocerus paiensis* seems to be related to these species because of the very similar median lobe, as well as the elytral shape, but it shows clearly different parameres and a slightly different pronotal shape.

*Prionocerus viridiflavus* differs from the preceding three species by the elytral shape, but it shares the basic shape of the median lobe (with a subapical, dorsal "hook"). All these four species also have a very similar antennal shape and may constitute a monophyletic group within *Prionocerus*.

*Prionocerus opacipennis* is unique within the genus by its very large, massive antennae, but its strongly
emarginate parameres and the shape of the median lobe relate it to *P. championi*, which, however, has more *P. coeruleipennis*-like antennae.

*Prionocerus opacipennis* and *P. wittmeri* both seem to be quite isolated by the shape of their male genitalia, and also have more “filigrane” antennae. *P. wittmeri* is especially isolated by the shape of its last abdominal sternite in females, an unique feature within the whole family. As there is not enough evidence at the moment to place *P. wittmeri* into its own clade within Prionoceridae, it is here hypothesised to belong to *Prionocerus* as well.

The monophyly of the genus *Prionocerus* itself is not yet clear, as well as its delimitation from the closely related genus *Idgia*, which is very probably paraphyletic. The only characters used to distinguish *Prionocerus* from *Idgia* are the serrate antennae with large emarginate last segment. This is also the only criterion used to include the new species described in this revision in *Prionocerus*. The antennal shape is subject to large variation between *Prionocerus* species and even between the sexes of one species. This variation is even much larger between species placed in *Idgia*. While most *Idgia* species have simple, subfiliform antennae, *I. viridipennis* Pic, 1906 from South India also has very broad, flat antennae, but with the last six segments of oval shape. Some species from the Arabian and Sinai peninsula (*Idgia laticornis* Champion, 1919, *I. arabica* Champion, 1919 and *I. particularicornis* Pic, 1939) have thickened, broad antennae which, however, have almost cylindrical joints, not triangular as in *Prionocerus*. Males of *Idgia belli* Gorham, 1895 from South India have slightly serrate antennae, but this is less pronounced as in *Prionocerus*. Despite the similarity in antennal shape, this species is obviously not closely related to *Prionocerus*. *Idgia triserrata* Champion, 1919 is another problematic species: It has the basal part of the antennae simple, like in most *Idgia*, but the segments 8–10 are slightly enlarged and subtriangular, like in *Prionocerus*, which it also strongly resembles in habitus (broad elytra like in *P. coeruleipennis*). At the moment, there are only two females known, so the aedeagus could not be examined and its relationship with *Prionocerus* species remains unclear.

All these examples show that antennal shape is a very plastic character within Prionoceridae, as it is already known to be within genera of other families, e.g. Cantharidae and Malachiidae. So far, no other possible autapomorphies for either *Prionocerus* or *Idgia* were found. At the present state of knowledge, the separation of *Prionocerus* and *Idgia* is therefore unclear, and a more comprehensive phylogenetic study (possibly also including molecular data) is needed to decide if they have to be synonymised. It is already clear that "*Idgia" will have to be further subdivided into species groups, subgenera or different genera.

Zoogeography

It is interesting to note that this genus contains two species with very wide distributional range opposed to several species which seem to be local endemics.

The two "common” species, *P. coeruleipennis* and *P. bicolor*, are both distributed over large parts of the Oriental region, plus parts of the Australasian region (New Guinea, and Micronesia in *P. coeruleipennis*). The former species is even known from large parts of eastern Africa (Tanzania, Kenya and Uganda).

The distributional limits of both species are subject to some unclarity: Miwa & Chujô (1938) recorded *P. coeruleipennis* from Japan (Kyushu). Its occurrence on Taiwan could not be proved by any specimen seen, but it might be possible, as it is widely distributed in Southern China and has also been recorded from the province of Fujian on the opposite coast. The Japanese record, however, is probably erroneous, even though they were three old specimens labelled with Japanese localities among the examined material (but on the islands of Honshu and Shikoku). According to Y. Okushima (pers. comm.), this species has never been recorded from Japan since Miwa & Chujô (1938) and there are no recently collected specimens known, despite very intensive research on the Japanese insect fauna. It is very improbable, that such as species has escaped the attention of all Japanese collectors if it was so widely distributed in Japan. The old records may be based on introduced specimens, or, more probably, on wrongly labelled specimens.
Miwa & Chujô (1938) also recorded *P. bicolor* from Taiwan, which could be confirmed by a recently collected specimen at KMNH, but on the Chinese mainland, there are only very scarce records from Yunnan and Guangxi. A wider distribution in the southern part of this country can be expected.

It is surprising that both *P. bicolor* and *P. coeruleipennis* seem to be absent from very large parts of the Indian Subcontinent. *P. bicolor* is definitely occurring in large parts of the Himalayan region (Nepal, Sikkim, Bhutan, NE-India), where it can be even very common at some places. Also, some specimens have been found in lowland areas of Uttar Pradesh (Allahabad, NHML) and Bangladesh (Sylhet, NHML). There are however, no records from Western, Central and Southern India, apart from two specimens at NHML labelled "Munaar" (Kerala), which may be erroneous. *P. coeruleipennis* seems to be absent even from the whole Himalaya, except Sikkim (specimen at MNHP). The single specimen at SMTD from "Murree" (Pakistan) is definitely wrongly labelled, and the very old specimens labelled "India" at various museums probably come from an "India" in a much wider sense, including Southeast Asia.

According to Champion (1919), *P. coeruleipennis* "has doubtless been introduced into E. Africa". This is possible, as there are no constant morphological differences between the Asian and the African specimens, but no clear evidence for this hypothesis could be found. If it has been introduced, it was probably by sea trade from the Asian colonies through seaports like Zanzibar more than 120 years ago, as it was already widely distributed in Tanzania and Kenya at the end of the 19th century. There is only one specimen, without collecting date, known from Uganda. The single specimen from "S.O.Kamerun, Lolodorf" (DEIM) is very probably wrongly labelled, as this locality is not very close to a major seaport, so an introduction is rather improbable.

The old specimens from "Tanger, Autran" (MHNG), "Austral." (MNHB), "Mexico, Temescaltepec" (NHML) and "Uruguay" (NHML) are definitely wrongly labelled.

**Ecology and life history of Prionocerus**

Current knowledge about ecology and life history of Prionoceridae is limited to very few literature citations (e. g. Williams, 1928; Gardner, 1929; Crowson, 1964), label data of some, mostly recently collected, specimens and the "collecting experiences" of a few entomologists.

Adults of *P. bicolor* and *P. coeruleipennis* are day-active insects, good flyers and can occur in very large abundances (own observations and pers. comm. M. Brancucci). They occur in various kinds of semi-natural as well as in strongly disturbed habitats of the wet tropics, but seem to be absent from arid areas. They are frequent flower-visitors and feed on pollen of various blossoming trees and shrubs, for example *Sambucus sp.* (own observations in Northern Laos). It is, however, unknown if this is their only source of nutrition, as they are also frequently found running around on foliage of non-flowering shrubs. Crowson (1964), when dissecting the hind gut of a male *P. bicolor* found a "mass of dense apparently detrital material, no evident pollen grains or insect fragments". Only few specimens of *Prionocerus* have been found attracted to light during the night, which is the usual collecting method for some species of *Idgia* (Bourgeois 1905, 1909). *P. bicolor* and *P. coeruleipennis* are very often coexisting in the same habitat at the same time. The other *Prionocerus* species are probably similar in their way of life, but may be restricted to more pristine forest habitats, which would explain their relative rarity. An exception may be *P. wittmeri n. sp.*, whose known localities are situated in rather arid savannah areas in East Java, but there are no precise habitat informations available.

Preimaginal stages of Prionoceridae are very poorly known. The few larvae ever collected have been recorded living on foliage, inside houses and under bark of trees, feeding on life insects, their pupae, eggs, as well as on insect carcasses (Williams 1928; Gardner 1929; Crowson 1964; Nasser & Abdurahiman 2001). Crowson (1964) dissected a larva of *Idgia sp.* and found "numerous fragments of insect cuticle and setae, including parts of compound eye" in its gut (Crowson, 1964). They may be rather generalist predators, or sometimes scavengers. Given the extremely large abundance of *Prionocerus* adults in some places (e. g. *P.*
bicolor in Laos and Nepal), it is surprising that their larvae have so rarely been noticed, as they may play a very important role as insect predators (or scavengers) in the local species communities.

Acknowledgements

I wish to thank the following for their support: Michel Brancucci (NHMB) and Prof. Bruno Baur (University of Basel, Institute of Conservation Biology) for their supervision and constant support for this study; Armin Coray (NHMB) for his great help with the drawings; Christoph Germann (Thun, Switzerland) for his help with the photographs; the following people for the possibility to work at their institutions: Max Barclay (NHML), Thierry Deuve (MNHP), Bernhard Merz and Giulio Cuccodoro (MNHG), Charles Huber (NMBE); and the following people for the loan of material from their institutions: Shepherd Myers (BIMH), Lothar Zerche (DEIM), Yûichi Okushima (KMNH), Roberto Poggi (MCGD), Johannes Frisch (MNHB), Otto Merkl (MTMB), Harald Schillhammer and Isidor Plonski (NHMW), Andreas Kopetz (NKME), Jiří Hájek and Vit Kubáň (NMPC), Bert Viklund (NRMS), Wolfgang Schawaller (SMNS), Olaf Jäger (SMTD) and Michael Balke (ZSMU). This research received support from the SYNTHESYS Project (http://www.synthesys.info/, GB-TAF-4726) which is financed by European Community Research Infrastructure Action under the FP6 "Structuring the European Research Area" Programme, and enabled the stay at the London museum.

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