

# Studies on *Stiliderus* Motschulsky and *Stilicoderus* Sharp: biogeographical notes and descriptions of new species (Coleoptera: Staphylinidae: Paederinae)

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## Abstract

The following 22 new species are described and named: *Stilicoderus aerosoides* n. sp., *S. baliemensis* n. sp., *S. batantaensis* n. sp., *S. cephalicus* n. sp., *S. continentalis* n. sp., *S. kolaensis* n. sp., *S. lastianus* n. sp., *S. laticeps* n. sp., *S. lobatus* n. sp., *S. maritimoides* n. sp., *S. meraukeanus* n. sp., *S. obesus* n. sp., *S. papuanus* n. sp., *S. riedelanus* n. sp., *S. riedeli* n. sp., *S. sarahae* n. sp., *S. sepikensis* n. sp., *Stiliderus agostii* n. sp., *S. brendellianus* n. sp., *S. germanus* n. sp., *S. rugulosicollis* n. sp. and *S. tengah* n. sp. Another three species (*Stilicoderus* sp. X, *Stiliderus* sp. Y and *Stiliderus* sp. Z) are described to enable differentiation from other members of the aerosus group, but not named for want of males. *Stilicoderus pendleburyi* Cameron 1950 n. syn. is placed in synonymy with *Stilicoderus fenestratus* Fauvel 1895. New country records are given for eleven other species. A summary of the distribution of species groups, particularly in biogeographical sub-regions known for high rates of endemism, is presented.

**Key words:** *Stiliderus*, *Stilicoderus*, new species, biogeography.

## Zusammenfassung

Die folgenden 22 neuen Arten werden beschrieben: *Stilicoderus aerosoides* n. sp., *S. baliemensis* n. sp., *S. batantaensis* n. sp., *S. cephalicus* n. sp., *S. continentalis* n. sp., *S. kolaensis* n. sp., *S. lastianus* n. sp., *S. laticeps* n. sp., *S. lobatus* n. sp., *S. maritimoides* n. sp., *S. meraukeanus* n. sp., *S. obesus* n. sp., *S. papuanus* n. sp., *S. riedelanus* n. sp., *S. riedeli* n. sp., *S. sarahae* n. sp., *S. sepikensis* n. sp., *Stiliderus agostii* n. sp., *S. brendellianus* n. sp., *S. germanus* n. sp., *S. rugulosicollis* n. sp. und *S. tengah* n. sp. Weitere drei Arten (*Stilicoderus* sp. X, *Stiliderus* sp. Y und *Stiliderus* sp. Z) werden beschrieben, um die Trennung von anderen Mitgliedern der aerosus-Gruppe zu ermöglichen, aber sie werden aufgrund der noch unbekannten Männchen nicht benannt. *Stilicoderus pendleburyi* Cameron 1950 n. syn. ist ein neues Synonym von *Stilicoderus fenestratus* Fauvel 1895. Neue Verbreitungangaben werden für weitere elf Arten gemacht. Die Verbreitung von Artengruppen wird erläutert, speziell in solchen zoogeographischen Regionen, die für ihren Endemismus bekannt sind.

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## 1 Introduction

The taxonomy of the species of the two Oriental genera *Stiliderus* Motschulsky 1858 and *Stilicoderus* Sharp 1889 was extensively reviewed by the author in a series of nine papers published between 1985 and 1996 (ROUGEMONT 1985a, b, 1986a–e, 1995, 1996), in which 69 of the taxa known to date were described as new. In 2002 SHIBATA described another new species of *Stilicoderus* from Taiwan; in 2012 ASSING transferred a species described as *Rugilus* to *Stilicoderus* and in 2013a, 2013b, 2014 described a further 21 and synonymised two species. Together with the species described and synonymised in this paper, the total number of valid taxa of these two genera is now 157.

In an earlier paper (ROUGEMONT 1996: 713) I explained why I continue to regard these two genera as distinct taxa, after following BLACKWELDER's synonymy in the two parts of the revision (ROUGEMONT 1986a, b), and ASSING (2012, 2013a, b) has taken the same view. The true generic status of such aberrant groups as the Australian aberrans group and the Papuan funebris group, and of those groups of species of "*Stiliderus*" lacking a cephalic infraorbital ridge, remains to be resolved: it may be that bi-lobed 4<sup>th</sup> tarsomeres have evolved more than once in this lineage, and that the latter species groups may eventually have to be assigned to *Stilicoderus*.

Substantial additional material of these insects from the Asian continent and the Sunda Islands (Sumatra, Java,

Borneo, Bali and Lombok) in various collections (SMNS, MHNG, NHMW, and from my own prospections in China and SE Asia) examined after 1986 contained few new species, but extended the known ranges of many others; this appeared gratifying in that it suggested that the enumeration of the fauna of these regions was already fairly complete by the time the last of the earlier papers had been published, but in recent papers ASSING (2013a, 2013b, 2014) has described more species, particularly from China. Other areas, particularly Sulawesi (Celebes) and the Papuan region (including the Moluccas whence not species had been recorded before ASSING 2014 described four new species) continue to reveal more new than known species.

**Aedoeagus:** The aedoeagus of members of these two genera consists of a median lobe, a usually but not invariably symmetrical median structure called “paramere” in the two parts of the revision (ROUGEMONT 1986a, b) and “ventral blade” in subsequent papers including the present one, which is attached by its base to the ventral face of the median lobe in front of the basal foramen, and in *Stilicoderus* species a pair of usually symmetrical lateral structures termed the “parameroid lobes”; these are totally exposed in some species, or have their bases more or less extensively concealed by the dorsal plate of the median lobe in others. In addition the aedoeagus has a number of large single and paired sclerotised internal structures that may be extruded during copulation (cf. *Stilicoderus discalis* Fauvel 1895, ROUGEMONT 1986a: figs. 18b, c). These and other internal structures were not, or only partially illustrated in some cases in earlier papers, although they would undoubtedly provide valuable specific diagnostic characters, because the external structures of the aedoeagus have so far proven sufficient for the purpose of identification.

#### Acronyms

CRO	Collection GUILLAUME DE ROUGEMONT (currently housed in the OUMNH)
CVA	Collection VOLKER ASSING, Hannover, Germany
MHNG	Muséum d'Histoire Naturelle, Geneva, Switzerland
NHMW	Naturhistorisches Museum, Vienna, Austria
NHRS	Naturhistoriska Riksmuseet, Stockholm, Sweden
OUMNH	University Museum of Natural History, Oxford, England
SMNS	Staatliches Museum für Naturkunde, Stuttgart, Germany
ZMAN	Zoologisch Museum, Amsterdam, The Netherlands

#### Acknowledgements

My thanks are due to the following friends and colleagues: GIULIO CUCCODORO (MHNG), WOLFGANG SCHAWALLER (SMNS), HARALD SCHILLHAMMER (NHMW) and BERT VIKLUND and JOHANNES BERGSTEN (both NHRS) for the opportunity of studying material in their care. I am especially grateful to SARAH DE ROUGEMONT (London) who organised and paid for our trips to China in 2003, Vietnam in 2005, India in 2006 and Thailand in 2010, during which species studied in this paper were col-

lected. I also thank KATHERINE CHILD (OUMNH) for arranging my photographs into plates, and VOLKER ASSING (Hannover) for his meticulous work in reviewing and correcting the first draft of my manuscript, and HANS-PETER TSCHORSNIG (SMNS) for help in bibliographical research.

Specimens from the Danum Valley in the OUMNH were collected with permission from the Danum Valley Management Committee and the Economic Planning Unit of the Prime Minister's Department under Permit No. EPU Ruj. EPE 40/200/19 ST issued to Dr. ELEANOR SLADE and project number 224 under the Royal Society SEARRP.

## 2 Methods

As in my previous papers on this group, measurements other than those given in mm (total body length) were made with an eye-piece micrometer at  $\times 80$  magnification on a VMZ 1 $\times$ 4 $\times$  binocular microscope with eye-piece micrometer, so the units are equal to 12.5  $\mu$ . The length of the head does not include the labrum; the breadth of head, unless otherwise stated, is measured at the widest point, just behind the posterior margins of the eyes and does not include the eyes; the length of elytron is the maximum length, not the length of suture.

The photographs of whole insects and of the aedoeagi were made in the laboratory of the OUMNH, using a Leica DFC 490 digital camera linked to a Leica M165C microscope and Helicon Focus version 5.3.11 software.

## 3 Systematic list and descriptions of new taxa

### 3.1 *Stilicoderus* Sharp

#### hieroglyphicus group

ASSING (2014) has remarked that the hieroglyphicus and aerosus groups are probably not distinct phyletic groups. However they are, so far as is known, distinguishable, and since “species groups” are not taxa, I continue to use them in this paper for the sake of convenience.

Most members of the endemic Papuan hieroglyphicus group are very similar and can only be determined by examination of the aedoeagus, which provides clear and reliable characters in all cases. The colour of the legs can be of some help in separating species, being entirely testaceous or rufo-testaceous in some species or with fuscous femora in others. The shape of the male 8<sup>th</sup> abdominal sternite is scarcely differentiated from one species to another, the posterior margin being broadly and very shallowly emarginate. In addition to the eleven new species of this group described below, I have seen about a dozen others from the same collections which I leave unrecorded and undescribed for want of males.

#### *Stilicoderus laticeps* n. sp.

**Holotype** (♂): Irian Jaya, Sorong Prov., Batanta Island, Waylebet, 800 m, sifted, 29.X.1996, leg. A. RIEDEL (NHMW).

**Paratypes:** 17 ♂♂/♀♀, same data as holotype (12 exx. NHMW, 5 exx. CRO).

#### Description

Body length ca. 4.5 mm. Proportions of holotype: length of head: 65; breadth of head: 73; diameter of eye: 28; length of antenna: 135; length of pronotum: 61; breadth of pronotum: 56; length of elytron: 73; breadth of elytra: 71; metatibia: 67; metatarsus: 40.

Colour and sculpture as in *S. hieroglyphicus*, the femora testaceous like the tibia.

Male: abdominal sternites as in *S. hieroglyphicus*, the apical margin of abdominal sternite VIII very shallowly and broadly excised. Aedoeagus see Fig. 1.

#### Differential diagnosis

This new species can only be separated with certainty from *S. hieroglyphicus* and many congeners by the conformation of the aedoeagus. It is readily identified by the shape of the lateral lobes and the long, slender asymmetrical apex of the ventral blade (Fig. 1). Externally it can only be distinguished from *S. hieroglyphicus* by its narrower pronotum and elytra, which make the head appear considerably broader. In this it is similar to *S. cephalicus* n. sp. described below.

#### *Stilicoderus riedeli* n. sp.

**Holotype** (♂): Irian Jaya, Sorong Prov., Batanta Island, 10 m, sifted, 30.X.1996, leg. A. RIEDEL (NHMW).

**Paratypes:** 18 exx., same data as holotype; 5 exx., same locality and collector as holotype, but 150 m, 2.XI.1996; 2 exx., Irian Jaya, Sorong Prov., Salawatti Island, Solol, 200–300 m, 6.–7.XI.1996, sifted, leg. A. RIEDEL (20 exx. NHMW, 5 exx. CRO).

#### Description

Body length ca. 4.1 mm. Proportions of holotype: length of head: 51; breadth of head: 65; diameter of eye: 24; length of antenna: 105; length of pronotum: 59; breadth of pronotum: 51; length of elytron: 67; breadth of elytra: 65; metatibia: 58; metatarsus: 35.

In colour, facies, sculpture etc. similar to *S. hieroglyphicus* and its allies, the legs entirely testaceous, but smaller than any species of this group described so far.

Male: abdominal sternites as in *S. hieroglyphicus*. Aedoeagus see Fig. 2.

#### Differential diagnosis

*S. riedeli* is distinguished from all other members of the hieroglyphicus group by its small size and by the conformation of the ventral blade and spatulate parameroid lobes of the aedoeagus. It inhabits the same island as the similar species *S. laticeps*, described above, but was taken at lower altitudes.

#### *Stilicoderus cephalicus* n. sp.

**Holotype** (♂): Irian Jaya, Sorong Prov., Waigeo Island, Kabui Bay, Wawaiay, 50 m, 14.XI.1996, leg. A. RIEDEL (NHMW).

#### Description

Body length 4.5 mm. Proportions of holotype: length of head: 65; breadth of head: 75; diameter of eye: 28; length of antenna: 130; length of pronotum: 65; breadth of pronotum: 58; length and breadth of elytra: 71; metatibia: 73; metatarsus: 38.

In all essentials except the elytral sculpture this species is similar to *S. hieroglyphicus* and its allies, but in the relative proportions of head, pronotum and elytra it most closely resembles *S. laticeps*, described above.

Male: abdominal sternites as in *S. hieroglyphicus*. Aedoeagus see Fig. 3, with very convoluted parameroid lobes.

#### Differential diagnosis

The elytral sculpture differs from that of species hitherto described in the hieroglyphicus group: the small setiferous granules that form the ground sculpture of elytra in these species is obsolescent in *S. cephalicus*, the granules flattened and leaving the surface much more shiny than in related species. The aedoeagus, as in other species, is characteristic.

#### *Stilicoderus obesus* n. sp.

**Holotype** (♂): Irian Jaya, Jayawijaya Prov., Samboka, upper Kolff River, ca. 200 m, 10.–14.X.1996, sifted, leg. A. RIEDEL (NHMW).

#### Description

Body length 6 mm. Proportions of holotype: length of head: 85; breadth of head: 92; diameter of eye: 33; length of antenna: 187; length of pronotum: 84; breadth of pronotum: 79; length of elytron: 90; breadth of elytra: 95; metatibia: 84; metatarsus: 51.

Colour as in *S. hieroglyphicus*: pitchy black, elytra pitchy brown, antennae, palpi and legs dark reddish brown.

Male: apical margin of sternite VIII more deeply and less broadly excised than in related species. Aedoeagus see Fig. 4, very large, over 1 mm long, the ventral blade constricted into a very slender apex concealed between the apices of the broad parameroid lobes.

#### Differential diagnosis

This new species belongs unequivocally in the hieroglyphicus group, yet is larger than any species of the group described hitherto, and is also distinctive by virtue of its elytral sculpture.

*S. obesus* n. sp. differs from *S. hieroglyphicus* Fauvel and other members of the group in several respects: greater size, head less transverse and narrower in propor-

tion to pronotum and elytra, the minute, scarcely visible, lateral denticles of the labrum, and the elytral sculpture: the minute granules of the ground sculpture in this species have coalesced to form mostly longitudinal or diagonal vermiculate rugae; at low ( $\times 30$ – $\times 40$ ) magnification these rugae have the appearance of matted recumbent pubescence; the large foveate punctures of the elytra are obsolescent, obscured by the vermiculate/granulose puncturation. Two other, undescribed, species in NHMW respectively from Sorong Province and Fakfak Province are of comparable large size but differ in their more usual type of elytral sculpture.

*Stilicoderus kolaensis* n. sp.

**Holotype** (♂): Indonesia, Maluc., Aru Isls, Kola Isl., Wafan, 27.VIII.1991, AGOSTI F91969, "2" (MHNG).

**Paratypes**: 1 ♂, 2 ♀♀, same data as holotype (2 exx. MHNG, 1 ex. CRO).

**Description**

Body length 3.8–4.1 mm. Proportions of holotype: length of head: 58; breadth of head: 63; diameter of eye: 24; length of antenna: 105; length of pronotum: 60; breadth of pronotum: 52; length of elytron: 68; breadth of elytra: 65; metatibia: 59; metatarsus: 40.

Pitchy black, elytra somewhat paler, dark brown, legs entirely testaceous, palpi and antennae testaceous to rufo-testaceous.

Male: sternite VIII not emarginate, the posterior margin merely slightly concave. Aedoeagus see Fig. 5, the apex of the median lobe and apices of lateral lobes explanate in lateral view, strongly compressed in ventral view.

**Differential diagnosis**

One of the smallest members of the group, in size comparable to *S. riedeli* n. sp. and *S. laticeps* n. sp. described above. This new species differs from *S. hieroglyphicus* by its smaller size and transverse head with distinct apico-lateral angles. From *S. laticeps* n. sp. it differs by its even smaller size and less transverse head. It is externally indistinguishable from *S. riedeli*. From these and all other species it is clearly distinguished by the aedoeagus (Fig. 5).

**Remark**

*S. kolaensis* is the first member of the genus recorded from the Aru islands, where it is probably endemic.

*Stilicoderus sepikensis* n. sp.

**Holotype** (♂): Papua New Guinea, West Sepik, Vanimo, Denake Range, km 12, 28.–29.X.1992, leg. A. RIEDEL (SMNS).

**Paratypes**: 5 ♂, 2 ♀♀, same data as holotype (5 exx. SMNS, 2 exx. CRO).

**Description**

Body length 3.7–4 mm. Proportions of holotype: length of head: 54; breadth of head: 58; diameter of eye: 24; length of antenna: 105; length of pronotum: 54; breadth of pronotum: 50; length of elytron: 65; breadth of elytra: 60; metatibia: 55; metatarsus: 35.

Pitchy black, palpi, antennae and legs rufo-testaceous, the femora infuscate.

Male: posterior margin of sternite VIII broadly and shallowly concave. Aedoeagus see Fig. 6.

**Differential diagnosis**

This is another very small species, distinguished from the two species above and from *S. riedeli* n. sp. by the less transverse head with more rounded, less pronounced apico-lateral angles and by the dark femora, and from all other species by the aedoeagus.

*Stilicoderus riedelianus* n. sp.

**Holotype** (♂): Papua New Guinea, West Sepik, Vanimo, Denake Range, km 12, 28.–29.X.1992, leg. A. RIEDEL (SMNS).

**Paratype**: 1 ♂, same data as holotype (CRO).

**Description**

Body length 4 mm. Proportions of holotype: length of head: 55; breadth of head: 63; diameter of eye: 26; length of antenna: 114; length of pronotum: 67; breadth of pronotum: 53; length of elytron: 70; breadth of elytra: 65; metatibia: 60; metatarsus: 36.

Pitchy black, palpi antennae and legs rufo-testaceous, meso- and metafemora infuscate, profemora less so. Head strongly transverse, the temples fairly evenly rounded from the posterior margin of eyes to the base.

Male: sternite VIII as in the preceding species. Aedoeagus see Fig. 7.

**Differential diagnosis**

This small species is externally only distinguishable from *S. riedeli* n. sp. described above by the dark meso- and metafemora.

*Stilicoderus lobatus* n. sp.

**Holotype** (♂): Papua New Guinea, West Sepik, Vanimo, Denake Range, km 12, 28.–29.X.1992, leg. A. RIEDEL (SMNS).

**Paratype**: 1 ♂, same data as holotype (CRO).

**Description**

Body length 4.3–4.5 mm. Proportions of holotype: length of head: 52; breadth of head: 64; diameter of eye: 26; length of antenna: 127; length of pronotum: 60; breadth of pronotum: 53; length of elytron: 72; breadth of elytra: 67; metatibia: 61; metatarsus: 31.



Pitchy black, the elytra slightly paler, brownish, in holotype; labrum dark brown; mouthparts, antennae and legs rufo-testaceous, all femora infusate. Head slightly transverse, appearing more so due to prominent eyes, the temples fairly strongly convergent before apico-lateral angles.

Male: sternite VIII as in preceding species. Aedoeagus see Fig. 8, the apex of ventral blade fairly narrow, curving dorsad and concealed in lateral view by the parameroid lobes, the latter remarkably developed into laterally projecting lobes in ventral view.

#### Differential diagnosis

This new species is readily distinguishable from the syntopic *S. riedelianus* n. sp. and *S. maritimoides* n. sp. and from *S. riedeli* n. sp. and *S. meraukeanus* n. sp. described below by its greater size. In size and proportions it more closely resembles the allopatric species *S. kaiensis* Rougemont 1996, and *S. laticeps* n. sp. but differs in its less transverse head. From all other species it differs in the conformation of the aedoeagus.

#### *Stilicoderus maritimoides* n. sp.

**Holotype** (♂): Papua New Guinea, West Sepik, Vanimo, Denake Range, km 12, 28.–29.X.1992, leg. A. RIEDEL (SMNS).

#### Description

Body length ca. 4.2 mm. Proportions of holotype: length of head: 57; breadth of head: 62; diameter of eye: 22; length of antenna: 105; length of pronotum: 59; breadth of pronotum: 52; length of elytron: 70; breadth of elytra: 65; metatibia: 58; metatarsus: 37.

Pitchy black, labrum dark brown, mouthparts, antennae and legs rufo-testaceous, the femora infusate but reddish-brown near apices.

Male: sternite VIII as in other closely related species. Aedoeagus see Fig. 9.

#### Differential diagnosis

This new species, named in allusion to a slight similarity in the conformation of the aedoeagus, does not otherwise resemble *S. maritimus* (see ROUGEMONT 1986b) closely, being a smaller insect in all its proportions. Of the species of similar small size it differs from *S. kolaensis* n. sp. and *S. riedeli* n. sp. in its dark femora, and from *S. laticeps* n. sp. in the dark femora and narrower head. It is externally virtually indistinguishable from *S. sepikensis* n. sp., *S. riedelianus* n. sp. and *S. peninsularis* Rougemont except, as from all other species, by the conformation of the aedoeagus.

#### *Stilicoderus meraukeanus* n. sp.

**Holotype** (♂): Irian Jaya, Merauke, Senggo, trail to Abau, ca. 100 m, 15.–17.VI.1994, leg. A. RIEDEL (SMNS).

**Paratype**: 1 ♂, same data as holotype (CRO).

**Further material**: 1 ♀, same data as holotype (SMNS).

#### Description

Body length ca. 4 mm. Proportions of holotype: length of head: 60; breadth of head: 65; diameter of eye: 26; length of antenna: 115; length of pronotum: 60; breadth of pronotum: 65; length of elytron: 75; breadth of elytra: 62; metatibia: 61; metatarsus: 35.

Pitchy black, labrum brown, mouthparts, antennae and legs rufo-testaceous, the femora slightly infusate, the profemora less so.

Male: aedoeagus see Fig. 10, the ventral blade slender in both ventral and lateral views, curved dorsad and longer than the parameroid lobes which are not notably explanate laterally.

#### Differential diagnosis

*S. meraukeanus* n. sp. is virtually indistinguishable from other members of the hieroglyphicus group of comparable small size (*S. kolaensis*, *S. riedeli*, *S. riedelianus*, *S. sepikensis* and *S. peninsularis* Rougemont 1985) except in the conformation of the aedoeagus.

#### Remark

The single associated female is doubtfully attributed to the new species because it differs slightly from the males in its slightly greater size and broader head, and in the slightly less dense puncturation and granulation of the elytra.

#### *Stilicoderus batantaensis* n. sp.

**Holotype** (♂): Irian Jaya, Sorong Prov., Batanta Island, Waylebet, 150 m, 2.XI.1996, sifted, leg. A. RIEDEL (SMNS).

**Paratypes**: 4 exx., same data as holotype (3 exx. SMNS, 1 ex. CRO).

#### Description

Body length 4.2 mm. Proportions of holotype: length of head: 59; breadth of head: 66; diameter of eye: 23; length of antenna: 110; length of pronotum: 58; breadth of pronotum: 51; length of elytron: 69; breadth of elytra: 67; metatibia: 60; metatarsus: 38.

Black, labrum reddish brown, mouthparts and antennae rufo-testaceous, legs entirely pale testaceous.

Male: sternites as in *S. kolaensis* n. sp. and many other members of the hieroglyphicus group. Aedoeagus see Figs. 10Xa, b. The male paratype shows a bifurcate, pincer-like process at the tip of the median lobe (visible in Fig. 10X); this is in fact a sclerotised extrusion from the median lobe. In lateral view the aedoeagus is identical to that of the holotype.

## Differential diagnosis

*Stilicoderus batantaensis* n. sp. species is externally almost indistinguishable from *S. kolaensis* n. sp. except for its slightly finer elytral ground puncturation with fewer larger punctures which are more scattered, less clearly aligned in longitudinal rows, but the aedoeagi of the two species are quite different. Both species are probably endemic on their respective islands; Batanta lies off the north western tip of New Guinea, and Kola is about 700 km away in the Aru archipelago.

*aerosus* group

In contrast to the hieroglyphicus group, the appendages of the aedoeagi of members of this group are very similar, rather variable within species according to the position in which the ventral blade and parameroid lobes lie in relation to the median lobe, and do not always provide clear diagnostic characters; also the colour of elytra and legs is variable in some species, whereas the size, proportions and pubescence differ markedly between allopatric series which probably represent distinct species. For these reasons it has proven difficult to decide on the taxonomic status of these forms.

Key to the known species of the *aerosus* group from New Guinea

*Stilicoderus caprarius* Assing 2013 and *S. acutissimus* Assing 2013, which are recorded as belonging to this group, are not included in the key because they were not seen; in any case the figures the author gives of the aedoeagi (which, with their symmetrical median- and parameroid lobes look like those of the hieroglyphicus group) clearly show that they do not belong to any of the species listed below.

- 1 Body entirely pitchy-black; granulation of elytra evident on entire surface..... 2
- Fore-body brown at least in parts; granulation of elytra evident on whole surface or obsolescent at least on disc..... 4
- 2 Head scarcely transverse, sub-orbicular (ROUGEMONT 1986a: fig. 4H). – Pronotum elongate. Aedoeagus see ROUGEMONT 1986a: fig. 4A. .... *solitarius* Last
- Head clearly transverse, with distinct posterior angles..... 3
- 3 Head more strongly transverse (ROUGEMONT 1986a: fig. 5H); pronotum short, slightly transverse; puncturation of head and pronotum coarser, granulation of pronotum and elytra coarser and sparser, the entire fore-body distinctly shiny. Aedoeagus see ROUGEMONT 1986a: fig. 5A, the apices of parameroid lobes slightly recurved ventrad. .... *lasti* (Rougemont)
- Head longer, less transverse; pronotum elongate; puncturation of head much finer and closer, the entire fore-body dull. Aedoeagus see Fig. 11, the parameroid lobes asymmetrical, their apices sinuate, upturned before apical declivous hook. .... *lastianus* n. sp.
- 4 Head, including eyes, broader than elytra; smaller species, ca. 4.8 mm long. – Aedoeagus see Fig. 14..... *papuanus* n. sp.
- Head, including eyes, narrower than, or at most as broad as elytra; larger species, 5.0–6.4 mm long. .... 5

- 5 Elytra shiny, devoid of granules, the puncturation coarse and irregular, the large punctures grouped here and there in twos or threes in longitudinal pit-like depressions, the surface of disc almost glabrous, with sparse pubescence only evident on sides. – Aedoeagus see Fig. 13. .... *aerosoides* n. sp.
- Elytra less shiny, with granules evident at least in anterior and posterior angles, the puncturation less coarse and more regular..... 6
- 6 Elytra entirely covered in small granules; fore-body, and especially elytra clothed in very evident pale recumbent pubescence. – Aedoeagus see ROUGEMONT 1986a: figs. 3A, 3a. .... *aerosus* Last
- Granules obsolescent on disc of elytra, only clearly evident in anterior and posterior areas; pubescence much less evident on elytra..... 7
- 7 Larger species, ca. 6.2 mm long (see proportions in description, below) [male unknown]. .... sp. X
- Smaller species, ca. 5 mm long (see proportions, below). – Aedoeagus see Fig. 12. .... *baliemensis* n. sp.

*Stilicoderus aerosus* Last

*Stilicoderus aerosus* LAST 1984: 114.

*Stiliderus aerosus*: ROUGEMONT 1986a: 154.

13 exx., Indonesia, Papua, Star Mountains, Abmisi-bil 1950–2200 m, 4°38'S 143°7'E, 29.I.–09.II.2005, dist. mtn. rainforest. sifted, leg. T. LACKNER; 5 exx., Indonesia, Papua, Kecamatan Nipsan, Walmak, 1800–2000 m, 4°07'S 139°38'E, 10.–17.II.2005, dist. mtn. rainforest, sifted, leg. T. LACKNER (13 exx. ZMAN, 5 exx. CRO).

## Remark

These new records considerably extend the known range of this species, from Okapa District in Papua New Guinea to the Star Mountains of Irian Jaya.

*Stilicoderus lastianus* n. sp.

Holotype (♂): Irian Jaya, Jayawijaya, Borme, 1000–1300 m, 13.–18.VIII.1992, leg. A. RIEDEL (SMNS).

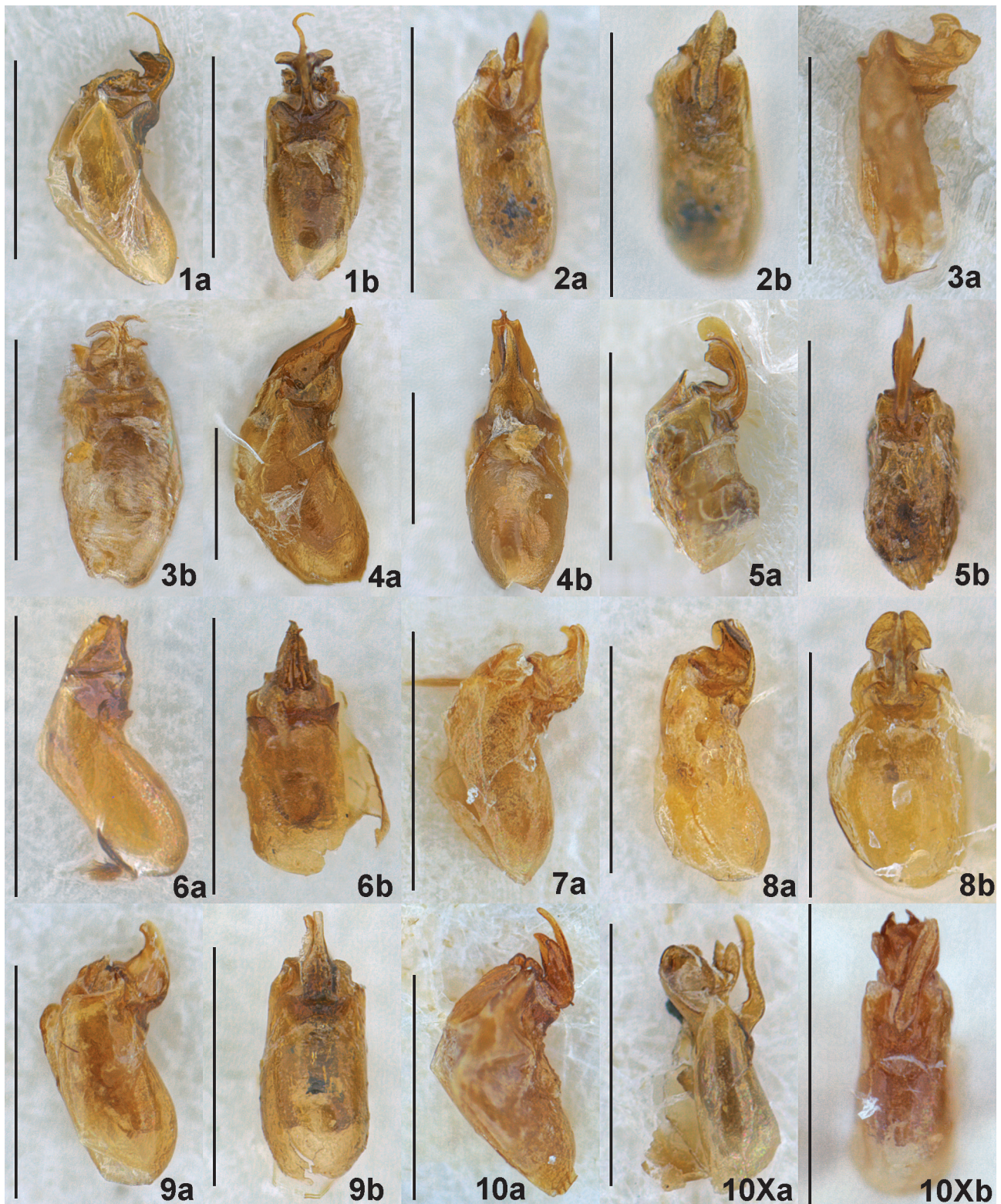
Paratypes: 3 ♀♀, same data as holotype (2 exx. SMNS, 1 ex. CRO).

## Description

Body length 5.2 mm. Proportions of holotype: length of head: 75; breadth of head: 81; diameter of eye: 29; length of antenna: 155; length of pronotum: 75; breadth of pronotum: 70; length of elytron: 92; breadth of elytra: 83; metatibia: 78; metatarsus: 44.

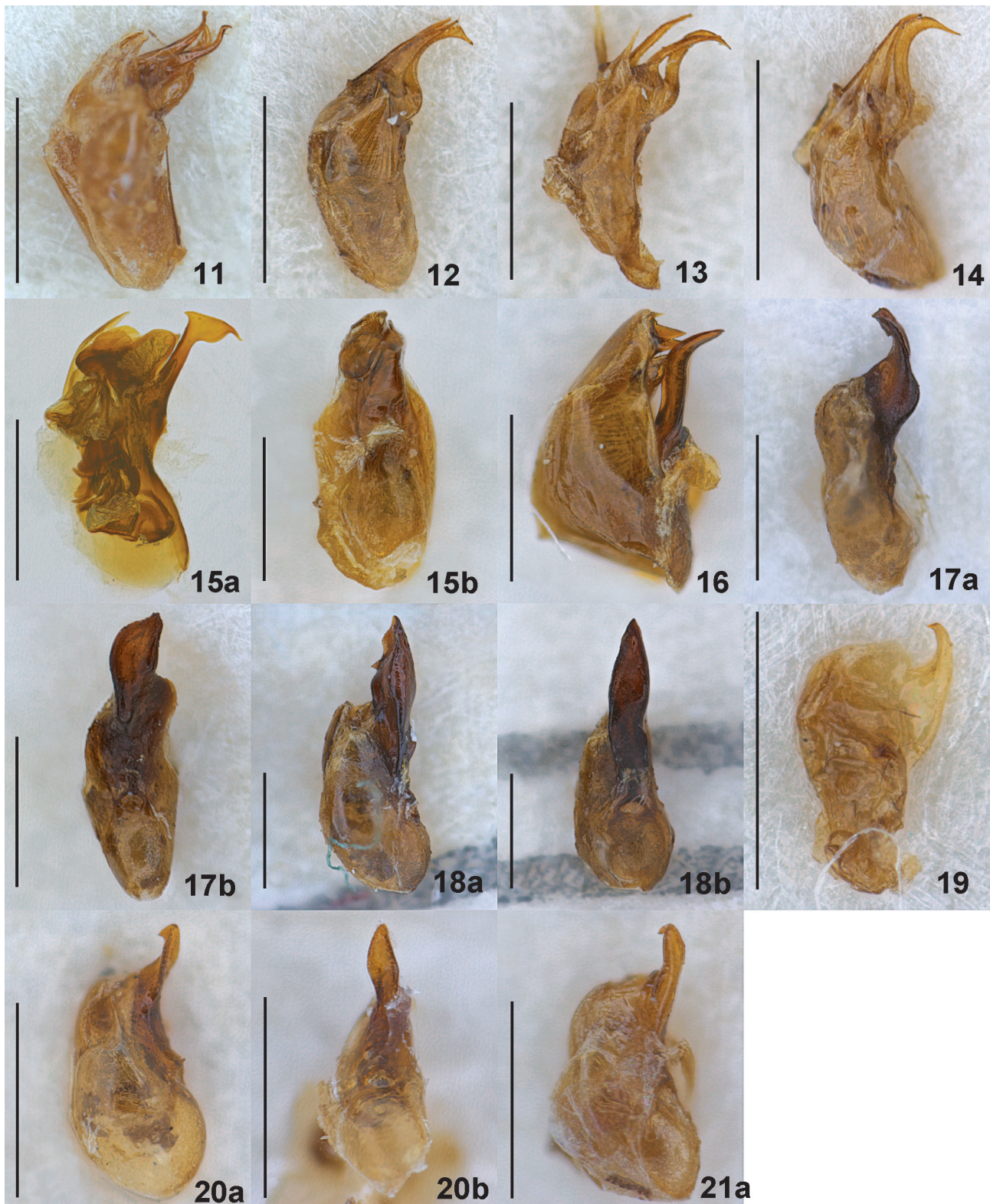
Black, the appendages dark reddish, the femora and especially meso- and metafemora more or less infuscate. Head distinctly transverse, with short, scarcely visible erect pubescence; puncturation of head very dense, the punctures slightly elongate especially posteriorly, on frons about the diameter of eye-facets; labrum tridentate, the outer teeth much broader and longer than the median tooth; pronotum





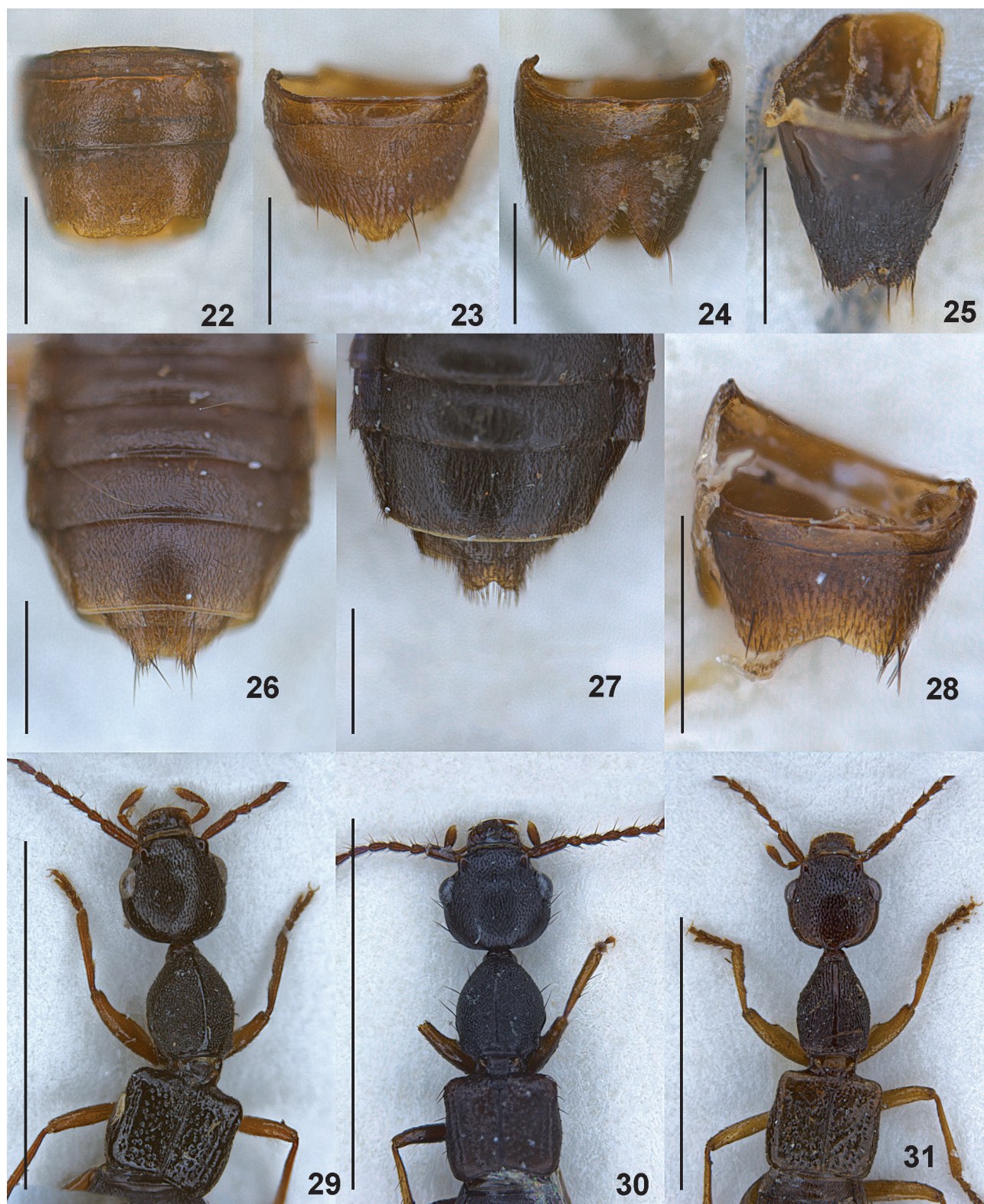
**Figs. 1–10X.** *Stilicoderus* spp., aedeagi in lateral (a) and ventral (b) views. – 1. *S. laticeps* n. sp. 2. *S. riedeli* n. sp. 3. *S. cephalicus* n. sp. 4. *S. obesus* n. sp. 5. *S. kolaensis* n. sp. 6. *S. sepikensis* n. sp. 7. *S. riedelianus* n. sp. 8. *S. lobatus* n. sp. 9. *S. maritimoides* n. sp. 10. *S. meraukeanus* n. sp. 10X. *S. batantaensis* n. sp. – Scales: 0.5 mm.





**Figs. 11–21.** *Stilicoderus* and *Stiliderus* spp., aedeagi in lateral (a) and ventral (b) views. – 11. *Stilicoderus lastianus* n. sp. 12. *Stilicoderus baliemensis* n. sp. 13. *Stilicoderus aerosoides* n. sp. 14. *Stilicoderus papuanus* n. sp. 15. *Stilicoderus continentalis* n. sp. 16. *Stilicoderus sarahae* n. sp. 17. *Stiliderus tengah* n. sp. 18. *Stiliderus germanus* n. sp. 19. *Stiliderus rugulosicollis* n. sp. 20. *Stiliderus brendellianus* n. sp. 21. *Stiliderus agostii* n. sp. – Scales: 0.5 mm.





**Figs. 22–31.** *Stilicoderus* and *Stiliderus* spp., male sternites VI, VII (22), female sternite XIII (23), male sternite VIII (24, 25, 28), female tergite X (26, 27), fore-body (29–31). – 22. *Stilicoderus papuanus* n. sp. 23. *Stilicoderus* sp. X. 24. *Stilicoderus sarahae* n. sp. 25. *Stiliderus germanus* n. sp. 26. *Stiliderus brendellianus* n. sp. 27. *Stiliderus* sp. Z. 28. *Stiliderus agostii* n. sp. 29. *Stiliderus* sp. Z. 30. *Stiliderus agostii* n. sp. 31. *Stiliderus rugulosicollis* n. sp. – Scales: 0.5 mm (22–28), 3 mm (29–31).



apparently glabrous, sculpture of pronotum densely granulose, homogeneous, without trace of a median impunctate line; elytra with sparse, long, semi-recumbent pale pubescence, the large foveate punctures numerous, roughly aligned longitudinally in posterior two thirds smaller and more confused anteriorly, the interstices entirely and densely covered in dense granulose puncturation.

Male: 8<sup>th</sup> sternite with a scarcely discernible small shallow emargination. Aedoeagus see Fig. 11, the tips of parameroid lobes characteristically hook-shaped.

#### Differential diagnosis

In colour this new species most closely resembles *S. solitarius* Last from which it differs by its more transverse head and other proportions, its more densely granulose elytra, and the aedoeagus.

#### *Stilicoderus baliemensis* n. sp.

**H o l o t y p e** (♂): Irian Jaya, Jayawijaya, Wamena, Jiwika, 2300 m, 29.IX.1992, leg. A. RIEDEL (SMNS).

**P a r a t y p e s**: 3 ♀♀, Irian Jaya, Jayawijaya, Duirema, 1900–2100 m, 9.–11.IX.1992, leg. A. RIEDEL (2 exx. SMNS, 1 ex. CRO).

#### Description

Body length ca. 5 mm. Proportions of holotype: length of head: 78; breadth of head: 75; diameter of eye: 27; length of antenna: 148; length of pronotum: 76; breadth of pronotum: 63; length of elytron: 100; breadth of elytra: 85; metatibia: 74; metatarsus: 46.

Head and pronotum black, elytra brown, abdomen fuscous, the apex of 7<sup>th</sup> sternite and 8<sup>th</sup> and 9<sup>th</sup> sternites brown; palpi and antennae dark reddish brown, legs darker brown. Head slightly transverse, the sides retracted but with well marked postero-lateral angles; puncturation of head not particularly close, the punctures elongate, the interstices coalescing in parts into longitudinal rugae; head covered in evident recumbent pale pubescence. Labrum large, tridentate, the outer teeth not much larger than median tooth. Pronotum elongate, the punctures slightly smaller than those of head and round; pronotum with fine pale pubescence comparable to that of head. Elytra elongate, covered in numerous large foveate punctures not aligned serially; disc of elytra devoid of granulation, granules only evident near anterior and posterior borders; elytra clothed in fine pale recumbent pubescence comparable to that of head and pronotum.

Male: 8<sup>th</sup> sternite with scarcely discernible broad shallow emargination. Aedoeagus see Fig. 12.

#### Differential diagnosis

This species is similar to *S. baliemensis* n. sp. in its obsolescent elytral granules, but is a larger species with a different aedoeagus.

#### *Stilicoderus aerosoides* n. sp.

**H o l o t y p e** (♂): Irian Jaya, Jayawijaya, Wamena, Prongoli, 2000–2400 m, 17.–19.IX.1991, leg. A. RIEDEL (SMNS).

**P a r a t y p e s**: 1 ♂, 6 ♀♀, same data as holotype (5 exx. SMNS, 2 exx. CRO).

#### Description

Body length 5.5–6.0 mm. Proportions of holotype: length of head: 85; breadth of head: 88; diameter of eye: 29; length of antenna: 160; length of pronotum: 86; breadth of pronotum: 68; length of elytron: 100; breadth of elytra: 90; metatibia: 83; metatarsus: 50.

Head and pronotum dark brown to fuscous, elytra light brown, abdomen dark brown with tergites 7–9 pale brown, palpi and legs reddish brown, legs pale brown or fuscous. Head slightly transverse, with marked postero-lateral angles, the punctures slightly elongate and with conspicuous pale recumbent pubescence. Pronotum elongate, the puncturation granulose on entire surface, also clothed in pale recumbent pubescence. Elytra elongate, with numerous large foveate punctures in parts more or less aligned in parallel rows, the interstices shiny, entirely devoid of granules, and with sparser and less evident pale pubescence than on rest of fore-body.

Male: aedoeagus see Fig. 13.

#### Differential diagnosis

I have named this species after *S. aerosus* Last in reference to the evident pubescence (although this is shorter than in *aerosus*), and the granulose pronotum, but the new species lacks the sub-aeneous lustre of *S. aerosus*.

#### *Stilicoderus* sp. X.

2 ♀♀, Irian Jaya, Jayawijaya, Wamena, Jiwika, 2300 m, 29.IX.1992, leg. A. RIEDEL; 2 ♀♀, Irian Jaya, Baliem Tal, Jiwika-Wandaku, 1900–2200 m, 5.–6.IX.1990, leg. A. RIEDEL (3 exx. SMNS, 1 ex. CRO).

#### Description

Body length 6.1–6.3 mm. Proportions: length of head: 88; breadth of head: 90; diameter of eye: 31; length of antenna: 164; length of pronotum: 82; breadth of pronotum: 74; length of elytron: 118; breadth of elytra: 104; metatibia: 85; metatarsus: 51.

Head and pronotum black, elytra brown, abdomen brown, palpi, antennae and legs reddish brown, the meso- and metafemora obscured in some individuals. Head slightly transverse, rather depressed, the punctures slightly elongate, closer anteriorly where the interstices tend to form longitudinal rugae. Head covered in pale recumbent pubescence. Labrum tridentate, the outer teeth slightly longer and stouter than lateral teeth. Pronotum elongate.



Covered in dense granulose puncturation and pale recumbent pubescence. Elytra elongate, the large foveate punctures not serially aligned; elytra totally devoid of granules, but with long, pale recumbent pubescence.

Male: unknown.

Female: posterior margin of 8<sup>th</sup> sternite (Fig. 23) broadly produced in the middle.

#### Remark

This is the largest known member of the *aerosus* group and as such should be readily separated from other species using the key above.

### *Stilicoderus papuanus* n. sp.

**Holotype** (♂): Irian Jaya, Anggi, Tetaho, Kosmena, 1400–1750 m, 26.–28.III.1993, leg. A. RIEDEL (SMNS).

**Paratypes**: 23 exx., same data as holotype (18 exx. SMNS, 5 exx. CRO).

#### Description

Body length 4.5 mm. Proportions of holotype: length of head: 70; breadth of head: 68; diameter of eye: 25; length of antenna: 136; length of pronotum: 68; breadth of pronotum: 60; length of elytron: 80; breadth of elytra: 68; metatibia: 70; metatarsus: 42.

Head and pronotum dark brown to fuscous, elytra and abdomen brown, palpi, antennae and legs reddish brown. Head sub-quadrate, the punctures fine and close, becoming elongate anteriorly; head with short, fine pale recumbent pubescence. Pronotum elongate, covered in granulose punctures and fine, pale recumbent pubescence longer than that of head. Elytra elongate, the foveate punctures not aligned serially except more or less in some parts in some individuals. Fine granulose puncturation evident near humeral angles and more broadly near posterior margins.

Male: 8<sup>th</sup> sternite unmodified. Aedoeagus see Fig. 14.

Female: 7<sup>th</sup> sternite broadly produced apically (Fig. 22).

#### Differential diagnosis

In its brown colour *S. papuanus* n. sp. resembles *S. aerosoides* n. sp., *S. aerosus* Last and *S. baliemensis* n. sp. but differs from all three in its proportionately larger head (broader than elytra) and in the extent of granulose areas on the elytra and the aedoeagus.

### japonicus group

#### *Stilicoderus continentalis* n. sp.

Cited as *Stilicoderus continentalis* in ASSING 2013a: 59.

**Holotype** (♂): China, Zhejiang Prov., Lin'an County, W. Tianmu shan N. R., V.1996, flight interception trap, leg. J. COOTER (CRO).

**Paratypes**: 1 ♀, China, Zhejiang Prov., Anji County, Long Wang Shan N. R., 14.V.1996, flight interception trap, leg. J. COOTER (CRO); 3 ♀♀, China, Fujian Prov., Wuyi Shan, ca. 800 m, N27°75'E117°68', ca. 2 km NE Tongmu vill., flight interception trap, 4.–7.VI.2001, leg. J. COOTER & P. HLAVÁČ (CRO).

**Further material**: 1 ex., China, Fujian Prov., Wuyi Shan, 1150 m, N27°70'E117°64', Qiliqiao–Guadun rd, 1.VI.2001, mixed forest litter, leg. J. COOTER & P. HLAVÁČ (CRO); 1 ♂, China, Sichuan Prov., Qingcheng Shan, NW Chengdu, 650–700 m, 30.53.57N 103.32.23E, 3.–4.VI.1997, leg. M. SCHÜLKE, det. G. DE ROUGEMONT as *Stilicoderus formosanus continentalis* (CVA).

#### Description

Body length ca. 6.3 mm. Proportions of holotype: length of head: 91; breadth of head: 88; diameter of eye: 16; length of antenna: 153; length of pronotum: 86; breadth of pronotum: 76; length and breadth of elytra: 100; metatibia: 94; metatarsus: 58.

Fore-body black, shiny, abdomen pitchy-black, labrum, mouthparts, antennae and legs reddish brown.

Male: aedoeagus see Fig. 15; the parameroid lobes are broadly rounded apically, not acute as in *S. formosanus* (cf. aedoeagus of *S. formosanus*, ROUGEMONT 1996: 731, fig. 18); the apical process of the ventral blade is slightly differently shaped, broader and devoid of a small ventral tooth. Abdominal sternite VIII deeply emarginate, as in *S. formosanus*.

#### Differential diagnosis

*S. continentalis* n. sp. is similar in every respect to the *S. formosanus* except in its conspicuous pubescence and in the aedoeagus. The reddish brown pubescence of the head is fairly long (ca. 10) and erect; that of the pronotum and elytra is short (ca. 4) and erect. In *S. formosanus* the pubescence on all parts of the fore-body is very short (ca. 2) and inconspicuous. The apex of the ventral blade of the aedoeagus (Fig. 15) of the new species is characteristic, and like the difference in pubescence, is constant over the vast range encompassed by the distances between Fujian, Zhejiang and western Sichuan.

#### Remark

I had assumed that this new subspecies is the representative form of *S. formosanus* Rougemont 1996 (described from Taiwan) in mainland China, but ASSING (2013a) records *S. formosanus* from Fujian.

### feae-discalis-signatus group

#### *Stilicoderus sarahae* n. sp.

**Holotype** (♂): China, Yunnan, Lijiang, Qiaotou, 14.IV.2003, in moss and litter by stream, leg. G. DE ROUGEMONT (CRO).

**Paratypes**: 4 ♂♂, 4 ♀♀, same data as holotype (CRO).

## Description

Body length 7.0–7.5 mm. Proportions of holotype: length of head: 103; breadth of head: 98; diameter of eye: 28; length of antenna: 165; length of pronotum: 98; breadth of pronotum: 87; length of elytron: 108; breadth of elytra: 114; metatibia: 100; metatarsus: 70.

Body entirely black; labrum dark brown; antennae, tibiae and tarsi brown, femora pitchy black. Median tooth of labrum minute, the inner lateral pair large and blunt, the outer lateral pair small, blunt. Head sub-orbicular, without posterior angles, the puncturation fairly coarse and dense, the interstices everywhere narrower than diameter of punctures except in a couple of places at centre of vertex, the punctures slightly elongate. Pronotum densely covered in discrete large flattened setiferous granules, leaving an entire, broad (10–15) smooth impunctate mid-longitudinal band. Elytra with large, deep simple foveate punctures in parts aligned in longitudinal rows, the interstices with sparse, minute granules on whole surface, becoming denser in impunctate apical area. Abdomen densely, finely, homogeneously punctate as in related species.

Male: sternite VIII see Fig. 24, with a large flat median depression, the surface of this depression dull, densely microsculptate, the posterior margin with a large triangular emargination not abruptly narrowed into a parallel-sided fundus as in *S. birmanus*. Aedoeagus see Fig. 16, quite unlike that of *S. birmanus*, the ventral blade relatively small, in ventral view lanceolate and concave on ventral surface, its apex in lateral view recurved ventrally.

Female: tergite X unmodified.

## Differential diagnosis

This new species closely resembles *S. birmanus* Scheerpeltz 1965, to which it runs in the key to species in ROUGEMONT 1986a: 149, couplet 59 (60), but single females would not be identifiable without comparison material. The most salient difference between the species is the longer antennae of *S. sarahae* of which segments 3–11 are all conspicuously elongate; the head of the new species is slightly more elongate and less convex; the pronotum is likewise slightly more elongate, and the granulose puncturation a little sparser and not tending to coalesce into elongate/vermiculate rugae as in *S. birmanus*; the legs of *S. sarahae*, especially the tibia, are slightly longer. The aedoeagi and male 8<sup>th</sup> sternites, as can be seen in my 1986a article and the present one, are completely different.

## Remark

I have recorded *S. birmanus* from Yunnan (ROUGEMONT 1996) based on a single female I took in Kunming, but the occurrence of *S. birmanus* in China needs confirmation by the presence of males there. In any case the two species are likely to be sympatric, since the type localities are very close together on either side of the Yunnan-Burma border.

*Stilicoderus feae* Fauvel

*Stilicoderus feae* FAUVEL 1895: 224.

*Stiliderus feae*: ROUGEMONT 1986a: 117.

*Stilicoderus feae*: ROUGEMONT 1996: 718.

5 exx., Vietnam, Lao Cai, ca. 40 km SE Sapa, 1800 m, 15.–16.II.2005, leg. G. DE ROUGEMONT (CRO).

## Remark

Widely distributed from Nepal to Yunnan.

*Stilicoderus discalis* Fauvel

*Stilicoderus discalis* FAUVEL 1895: 225.

*Stiliderus discalis*: ROUGEMONT 1986a: 163.

*Stilicoderus discalis*: ROUGEMONT 1996: 715.

1 ♂, China, Guangxi Pr., Nong Gang N.R. Long Rui, 25.V.1998, J. FELLOWES; 1 ♀, China, Guangxi, Xidamingshan, 16.X.1998, J. R. FELLOWES (both CRO).

## Remark

Hitherto recorded from Burma, Thailand and China. A series of 30 exx. from Thailand, Phetchaburi, Kaeng Krachan National Park in MHNG was wrongly recorded as the closely related *S. strigosus* Rougemont in ROUGEMONT 1996: 719; that series, bearing correct determination labels, also belongs to *S. discalis* Fauvel.

*Stilicoderus bacchusi* (Rougemont)

*Stiliderus bacchusi* ROUGEMONT 1986a: 165.

*Stilicoderus bacchusi*: ROUGEMONT 1996: 715.

*Stilicoderus bacchusi*: ASSING 2014: 485.

1 ♂, Malaysia, Sabah, Lahad Datu, Ulu Segama For. Res., Danum Valley Forest Centre, 04°57.9'N 117°48.1'E, 200 m alt., xi.2005, 1° For. FIT, coll. MANN, SLADE & VILLANUEVA (OUMNH-2006-051); 3 exx., E. Java, 20.IX.1995, 50 km S Surabaya, 800 m, Tretes Kekek Bodo WF, leg. SCHILLHAMMER (2 exx. NHMW, 1 ex. CRO).

## Remark

This species, which I had assumed was the endemic representative taxon of the discalis sub-group (which includes *S. discalis* Rougemont and *S. strigosus* Rougemont) in Borneo, is new to Java, and ASSING (2014) has also recorded *S. bacchusi* from West Malaysia.

*Stilicoderus fenestratus* Fauvel

*Stilicoderus fenestratus* FAUVEL 1895: 225.

*Stilicoderus pendleburyi* CAMERON 1950: 12, **n. syn.**

*Stiliderus fenestratus*: ROUGEMONT 1986a: 169.

*Stiliderus pendleburyi*: ROUGEMONT 1986a: 173.

*Stilicoderus fenestratus*: ROUGEMONT 1996: 719.



2 ♀♀, Malaysia, Cameron Highlands, 22.–30.III.1984, leg. G. DE ROUGEMONT; 4 ♂♂, same data, but X.1990; 1 ex., Vietnam, Lao Cai, ca. 40 km SE Sapa, 1800 m, 15.–16.II.2005, leg. G. DE ROUGEMONT (all CRO).

#### Remark

*S. pendleburyi* was described from a single female specimen. The males taken in 1990 from the type locality show that notwithstanding the slight external differences described in ROUGEMONT 1986a, the Malaysian exx. are merely a local form of *S. fenestratus* with immaculate elytra. *S. fenestratus* is therefore recorded for the first time from Malaysia and Vietnam. The ex. from Vietnam is the typical, maculate form.

### variolosus group

#### *Stilicoderus trapezeiceps* (Rougemont)

*Stiliderus trapezeiceps* ROUGEMONT 1986a: 161.

*Stilicoderus trapezeiceps*: ROUGEMONT 1996: 715.

1 ♂, Burma, Shan Prov., Nambsan, 1600 m, litter, 18.II. [19]98, leg. S. KURBATOV (CRO).

#### Remark

Previously known from Thailand and Yunnan; new to Burma.

### 3.2 *Stiliderus* Motschulsky

#### brendelli group

#### *Stiliderus tengah* n. sp.

**Holotype** (♂): Indonesia, C. Sulawesi, Palu Palolo, Lindu N. P., 25.–27.VIII.1990, leg. A. RIEDEL (SMNS).

**Paratype**: 1 ♀, same data as holotype (CRO).

#### Derivatio nominis

The Malay adjective tengah means “central”; it is used here in reference to the type locality in Central Sulawesi, whereas related species are either from North or South Sulawesi.

#### Description

Body length ca. 6 mm. Proportions of holotype: length of head: 85; breadth of head: 83; diameter of eye: 27; length of antenna: 200; length of pronotum: 85; breadth of pronotum: 69; length of elytron: 85; breadth of elytra: 98; metatibia: 92; metatarsus: 51.

Fore-body black; abdomen pitchy brown; antennae reddish brown, antennomeres I–VII decreasingly infuscate distally; femora fuscous, tibia reddish brown, metatibia and tarsi infuscate.

Male: apical margin of abdominal sternite VII broadly and feebly excised; entire apical margin of sternite VIII deeply, arcuately excised, the apico-lateral angles furnished with a brush of dark setae as in *S. kakimerah* Rougemont (see ROUGEMONT 1996: fig. 15) and *S. kakihitam* Rougemont. Aedoeagus see Fig. 17.

Female: apical margin of tergite X with a small, broad triangular median emargination.

#### Differential diagnosis

This, like the following four new species, belongs to the Celebesian endemic brendelli group; in size, facies and punctuation it is almost indistinguishable from *S. kakihitam* Rougemont 1996 described from N Sulawesi. It only differs from *S. kakihitam* in the somewhat more depressed elytra, darker antennae, slightly smaller emargination of female tergite X, and in the shape of the ventral blade of the aedoeagus (see ROUGEMONT 1996: fig. 29). It appears to be the sister species of *S. kakihitam* in central Sulawesi.

#### *Stiliderus germanus* n. sp.

**Holotype** (♂): Indonesia, C. Sulawesi, Palu Palolo, Lindu N. P., 25.–27.VIII.1990, leg. A. RIEDEL (SMNS).

**Paratypes**: 3 ♂♂, 4 ♀♀, same data as holotype (5 exx. SMNS, 2 exx. CRO).

#### Description

Body length 6.0–6.5 mm. Proportions of holotype: length of head: 98; breadth of head: 100; diameter of eye: 30; length of antenna: 198; length of pronotum: 97; breadth of pronotum: 86; length of elytron: 96; breadth of elytra: 113; metatibia: 104; metatarsus: 51.

Black, labrum pitchy with margins rufescent; palpi rufo-testaceous; antennae dark brown, antennomere I infuscate; legs pitchy black, pro- and mesotibia and all tarsi dark reddish brown.

Male: apical margin of abdominal sternite VII broadly and very shallowly concave; sternite VIII see Fig. 25, with a moderate emargination, the surface anterior to the emargination broadly, concavely depressed; apical margin of tergite X with a small median emargination. Aedoeagus see Fig. 18.

Female: abdominal tergite X very deeply emarginate, as in *S. yangbesar*, forming two long, pointed apico-lateral lobes.

#### Differential diagnosis

This species only differs externally from *S. yangbesar* Rougemont 1996 described from north Sulawesi in its slightly lesser size (*S. yangbesar* ca. 7 mm), slightly denser punctuation of the head, and the aedoeagus. It appears to be the sister species of the northern Celebesian species *S. yangbesar* in central Sulawesi.

*Stiliderus rugulosicollis* n. sp.

**Holotype** (♂): Indonesia, S. Sulawesi, Tanah Toraja, Pulu Pulu, 1700 m, 13.–16.VIII.1990, leg. A. RIEDEL (SMNS).

**Paratype**: 1 ♀, same data as holotype (CRO).

## Description

Body length 5.8 mm. Proportions of paratype: length of head: 87; breadth of head: 80; diameter of eye: 25; length of antenna: 195; length of pronotum: 90; breadth of pronotum: 69; length of elytron: 92; breadth of elytra: 100; metatibia: 100; metatarsus: 55.

Black, mandibles, margins of labrum and palpi rufo-testaceous; tibia and tarsi dark reddish brown, the latter more or less infuscate; holotype (teneral) with elytra and abdomen brown, antennae and legs entirely testaceous. Fore-body see Fig. 31.

Male: abdominal sternite VII unmodified; sternite VIII with a broad, very shallow emargination. Aedoeagus see Fig. 19 (the specimens are somewhat teneral; the very weakly sclerotised aedoeagus is collapsed and could not be illustrated in ventral view).

Female: [abdominal segment X missing].

## Differential diagnosis

*S. rugulosicollis* n. sp. runs to *S. conicollis* from Tanah Toraja in my key to the Celebesian species (ROUGEMONT 1996: 726). It differs from *S. conicollis* in its coarser cephalic puncturation, coarser and more regular sculpture of the pronotum, which consists of thick, scarcely interrupted longitudinal rugae leaving the mid-longitudinal band isolated from the first longitudinal rugosity on either side by a deep groove; it differs also in the somewhat smaller and more sparsely punctured elytra, and by an almost total absence of pubescence on the fore-body (short and erect on elytra, forwardly recumbent on pronotum, and particularly conspicuous on head in *S. conicollis*), and in the conformation of the aedoeagus.

*Stiliderus brendellianus* n. sp.

**Holotype** (♂): Indonesia, C. Sulawesi, Palu Palolo, Lindu N. P., 25.–27.VIII.1990, leg. A. RIEDEL (SMNS).

**Paratype**: 1 ♀, same data as holotype (CRO).

## Derivatio nominis

This new species is dedicated to my friend MARTIN BRENDELL, who was the first to find this genus in Sulawesi, and helped me in many ways at the Natural History Museum in London for thirty-three years.

## Description

Body length 4.6 mm. Proportions of holotype: length of head: 70; breadth of head: 71; diameter of eye: 24;

length of antenna: 152; length of pronotum: 73; breadth of pronotum: 60; length of elytron: 73; breadth of elytra: 82; metatibia: 78; metatarsus: 41.

Black, abdomen pitchy brown; labrum and antennae rufo-testaceous; palpi and legs paler, testaceous.

Male: apical margin of sternite VII very shallowly, arcuately excised; emargination of sternite VIII broad and shallow. Aedoeagus see Fig. 20.

Female: tergite X see Fig. 26, broadly emarginate, with a single long seta on each apico-lateral lobe and an apical row of shorter setae.

## Differential diagnosis

This new species runs to *S. brendelli* from eastern Central Sulawesi in my key to the Celebesian species (1996: 725). It differs from *S. brendelli* in its very slightly less transverse head, in the slightly finer and denser cephalic puncturation, in its uniformly testaceous legs (meso- and metafemora more or less strongly infuscate in *S. brendelli*), in the near total absence of visible pubescence on pronotum and elytra (scattered long setae interspersed with numerous finer and shorter hairs in *S. brendelli*), and in the male sex characters: shallower emargination of sternite VIII and the shape of the ventral blade of the aedoeagus, the apex of which is somewhat spatulate in ventral view.

*Stiliderus* sp. Z

1 ♂, 5 ♀♀, Indonesia, C. Sulawesi, Palu Palolo, Lindu N. P., 25.–27.VIII.1990, leg. A. RIEDEL (4 exx. SMNS, 2 exx. CRO); 1 ♀, S. Sulawesi, Pc. Palopo, 620–780 m, 14.IX.1997, leg. A. RIEDEL (NHMW).

## Description

Body length 5.0–5.5 mm. Proportions: length of head: 79; breadth of head: 80; diameter of eye: 26; length of antenna: 170; length of pronotum: 80; breadth of pronotum: 68; length of elytron: 83; breadth of elytra: 94; metatibia: 85; metatarsus: 47.

Black, abdomen pitchy black; labrum dark brown, the margins paler; palpi, antennae and legs testaceous. Fore-body see Fig. 29.

Male: aedoeagus lost; 8<sup>th</sup> abdominal sternite with a broad triangular emargination; abdominal tergite X see Fig. 27, in both sexes with a small margination, the apico-lateral lobes fringed with numerous sub-equal setae, without a single longer seta.

## Remark

This species runs to *S. brendelli* in my 1997 key, by virtue of the combination of its glossy head and elytra devoid of microsculpture, and in the shape of the head, with pronounced apico-lateral angles. It also resembles that spe-



cies and *S. brendellianus* n. sp. in the fine sculpture of the pronotum, but is a larger insect than either. In the shape of the quadrate, not markedly transverse head and uniformly testaceous legs it most closely resembles *S. brendellianus*, from which it differs in proportions and in the conformation of the female abdominal tergite X.

*Stiliderus agostii* n. sp.

**Holotype** (♂): Indonesia, Sulawesi Sel. W. of Mamasa, 1600 m, 9.IV.1991, D. AGOSTI, F91724 (MHNG).

**Paratype**: 1 ♂, same data as holotype (CRO).

**Description**

Body length ca. 5.2 mm. Proportions of holotype: length of head: 71; breadth of head: 74; diameter of eye: 23; length of antennomeres: I: 28; II: 9; III: 15; IV: 13; V: 13; VI: 13; VII: 12; VIII: 10; IX: 10; X: 10; XI: 15; length of pronotum: 70; breadth of pronotum: 61; length of elytron: 70; breadth of elytra: 80; metatibia: 81; metatarsomeres: I: 11; II: 8; III: 5; IV: 8; V: 15.

Head and pronotum black, elytra brown, abdomen fuscous, labrum brown, mouthparts and antennae and legs rufo-testaceous, the femora somewhat infuscate. Forebody see Fig. 30. Head transverse, sub-quadrate, the puncturation close, the interstices on average smaller than diameter of punctures on vertex, the punctures becoming elongate near base, the interstices very densely micro-punctate, the surface therefore dull. Pronotum elongate, widest at posterior two-fifths, densely and finely granulose with a narrow, entire, raised mid-longitudinal line, the granules serially arranged in a chevron pattern extending from mid-longitudinal line towards apico-lateral angles in posterior two-thirds. Elytra transverse, sub-quadrate, depressed, with large punctures more or less serially aligned especially laterally, the interstices very densely microsculptate, the surface dull.

Male: abdominal sternite VIII see Fig. 28, with a broad arcuate emargination. Aedoeagus see Fig. 21, the apex of the ventral blade tapering into a small dorsally recurved hook.

Female: unknown.

**Differential diagnosis**

By virtue of its transverse, sub-quadrate and densely microsculptate head, impunctate mid-longitudinal line of the pronotum and opaque elytra this new species resembles *S. schoedli* Rougemont 1996, to which it runs in my 1996 key to the Celebesian species. The new species differs from *S. schoedli* in its slightly smaller size, narrower head with less prominent apico-lateral angles and much more densely microsculptate and therefore duller surface, in the more broadly and deeply emarginate male sternite VIII, and in the aedoeagus. *Stiliderus agostii* n. sp. differs from

the only other two known microsculptate species of the brendelli group, *S. opacus* Rougemont 1996 and *S. opacipennis* Rougemont 1996, in its subquadrate, not orbicular head, as described in dichotomy 7 of the 1996 key.

*cicatricosus* group

*Stiliderus cardamomensis* Rougemont

*Stiliderus cardamomensis* ROUGEMONT 1996: 732.

1 ♂, India, Orissa, Gajapati, Taptapani, 16.X.2006, leg. G. DE ROUGEMONT (CRO).

**Remark**

This new record shows that this species is not restricted to the mountains of south India as I had supposed but also occurs in this remaining patch of rainforest in the eastern Ghats of Orissa (and ASSING 2013a has recorded it from the western Ghats, Goa!). Another staphylinid taken that day in the same locality, *Mitomorphus nilgiricus* Bordoni, was also previously thought to be endemic to the mountains of south India (see chapter on biogeography, below).

*Stiliderus crassus* (Kraatz)

*Psilotrachelus crassus* KRAATZ 1859: 124.

*Stiliderus crassus*: ROUGEMONT 1986d: 44.

*Stiliderus crassus*: ROUGEMONT 1996: 732.

*Stiliderus crassus*: ROUGEMONT 2001: 49.

*Stiliderus crassus*: ASSING 2014: 493.

1 ♀, Burma, env. Maymyo, 700–800 m, 4.–5.III.96, leg. S. KURBATOV; 1 ♀, Burma, Chin prov., env. Saw, 900–1500 m, 7.–8.X.1996, leg. S. KURBATOV (both MHNG). 1 ♂, Comores, Mayotte, Bouyouni (res. for. Bandramaji) IX.[19]98, leg. J. SUDRE; 9 exx., Thailand, Chiang Dao, 26.X.2010, leg. G. DE ROUGEMONT; 1 ex., Thailand, Doi Ankhang, 24.X.2010, leg. G. DE ROUGEMONT; 3 exx., Thailand, Kho Yao Noi (island), 31.X.2010, leg. G. DE ROUGEMONT (all CRO).

**Remark**

New to Burma and the Comoro Islands. *S. crassus* is the most widely distributed member of the genus, now known from continental Asia (Assam, Burma, Thailand, Malay peninsula, Vietnam, China) and from the islands of Ceylon, Penang (ROUGEMONT leg., 1990) and Lombok. It is erroneously cited from Celebes (ROUGEMONT 1996: 716, and consequently in ASSING 2014: 493); these references should read Ceylon.

This is the first record of a member of the genus outside the oriental region; this is not very surprising however, as a number of other oriental Staphylinidae (e. g. *Astenus leptocerus* (Eppelsheim), *A. maculipennis* (Kraatz), *Cephisella brachycera* (Kraatz), *C. rufa* (Kraatz), *Medon planus*

(Kraatz), *Lithocharis sororcula* (Kraatz), *Phacophallus* spp., *Philonthus* spp.) occur in other islands of the western Indian Ocean (e. g. Mascarene islands, LECOQ 1986). The fact that these are all species that are common and widespread on the Indian subcontinent and Ceylon, rather than endemic representatives of oriental genera or species groups in a different zoogeographic region, suggests that they were introduced by man, probably in vegetable matter imported from south Asia.

*Stiliderus brevipennis* (Bernhauer)

*Psilotrachelus brevipennis* BERNHAUER 1928: 34.  
*Stiliderus brevipennis*: ROUGEMONT 1986d: 40.

1 ♂, Malaysia, Pahang, Cameron HL, Tanah Rata, 1200–1500 m, “3”, 19.II.2005, leg. P. ČECHOVSKÝ (CRO); 1 ♂, W. Malaysia, Johore, Insel Tioman, 4.I.1999, leg. H. SCHMID (CRO); 3 exx., Malaysia-W, Perak, 25 km NE Ipoh, 1200 m, Banjaran Titi Wangsa mnts., Korbu Mt., 1.–15.IV.2000, leg. P. ČECHOVSKÝ (CRO); 1 ex., Malaysia, Sabah, 10.–16.XI.2012, 4.70N 117.52E, 250 m Alt, Coll. C. L. GRAY, SAFE project area, Riparian forest strip in oil palm (OUMNH 2013-056).

Remark

Hitherto known from Borneo, Sumatra and the West Malaysian mainland; new to Tioman island.

*Stiliderus cicatricosus* Motschulsky

*Stiliderus cicatricosus*: ROUGEMONT 1986d: 43.  
*Stiliderus cicatricosus*: ROUGEMONT 1996: 716.  
*Stiliderus cicatricosus*: ASSING 2014: 493.

3 exx., Sumatra, Aceh #25a, Mt. Leuser NP, 300–500 m, Ketambe, 23.–30.XI.1989, LÖBL, AGOSTI, BURCKHARDT (2 exx. MHNG, 1 ex. CRO).

Remark

Previously recorded from localities in Burma, Thailand, Yunnan and peninsular Malaysia (ROUGEMONT 1996: 716; ASSING 2014); this new record shows that it also occurs across the straits of Malacca.

*Stiliderus aviformis* Assing

*Stiliderus aviformis* ASSING 2014: 493.

2 ♂♂, 1 ♀, Thailand, Doi Ankhang, 24.X.2010, leg. G. DE ROUGEMONT (CRO).

Remark

This is the second record for this species which was also described from a locality in NE Thailand.

*Stiliderus* sp. Y

1 ♀, Indonesia, Lombok, Sapit–Sembalun Bumbung, 900–1500 m, 14.–16.II.1994, leg. BOLM (SMNS).

Description

Body length 6 mm. Proportions: length of head: 90; breadth of head: 95; diameter of eye: 26; length of antenna: 175; length of pronotum: 88; breadth of pronotum: 80; length of elytron: 103; breadth of elytra: 117; metatibia: 98; metatarsus: 57.

Black, abdomen and legs pitchy brown, the tibia and tarsi somewhat paler; labrum and antennae brown, first antennomere infusate; palpi dark testaceous. Pubescence of fore-body fairly sparse, short, erect. A squat, robust species with relatively short appendages. Head only slightly transverse, the puncturation moderately fine and close, the interstices on disc about as wide as diameter of punctures. Pronotum broadest at anterior angles which are situated at a little more than one-fourth from centre of anterior margin; the sculpture of pronotum is unique in the genus, consisting of fine transverse parallel rugae disposed in a slight arc and extending right across disc from lateral margins; a trace of an impunctate mid-longitudinal band exists, but only briefly at either extremity; elsewhere the raised mid-longitudinal axis is overlaid by the transverse rugae. Elytra ample, only slightly transverse, the surface between serially arranged large foveate punctures densely covered with setiferous granules.

Remark

This species belongs by definition to the heterogeneous, pan-oriental cicatricosus group. Its closest affiliation is not known. In my 1986d key to the species of *Stiliderus* this species runs to *S. simoni* Rougemont, being the only other *Stiliderus* with the combination of granulose elytra and absence of an entire impunctate mid-longitudinal band on the pronotum, but the two species are quite unlike each other and are not closely related. *S. simoni* is a much smaller insect with the pronotum entirely covered by isolated setiferous granules. Sp. Y is easily recognised by its type of pronotal sculpture alone.

#### 4 Notes on biogeography

The wealth of material of these two genera studied shows a geographical pattern of speciation that is broadly reflected by that of other groups (e. g. Steninae, Leptochirini) but is now seen more clearly and in greater detail than in many other genera of Staphylinidae. Mainland Asia (plus the Sunda Islands, which lie on its continental shelf) has a known fauna of about 70, mostly widely distributed species belonging to seven phyletic species groups (japonicus group, granulifrons group, feae-disca-

lis-signatus group, minor group, variolosus group, magniceps-duplicatus group, cicatricosus group).

Peripheral areas (Japan, Taiwan, Ceylon, South India) have small numbers of species, some of them endemic, belonging to these same species groups, as follows:

– Japan: japonicus group: 1 species; feae-discalis-signatus group: 1 species; magniceps-duplicatus group: 1 species (endemic).

– Taiwan: japonicus group: 2 species (1 endemic); feae-discalis-signatus group: 3 species (2 endemic); minor group: 1 species.

– Sri Lanka: cicatricosus group: 2 species (1 endemic).

– South India: variolosus group: 1 species (endemic); cicatricosus group: 2 species (endemic). South India moreover has an endemic species group (umbratus group) containing 3 taxa.

See also data for *Stilicoderus cardamomensis*, above.

PUTHZ has recently (2011) described new species of Steninae from the western Ghats that have close affinities with south Indian endemics. These new data suggest that this relict fauna may not be confined to highland areas of India south of latitude 12°, but be more widely distributed in the very few isolated patches of old forest that survive in the Deccan, in particular in the eastern and western Ghats (ranges of hills that drop abruptly from the Deccan plateau to the coasts).

The fauna of the Sunda Islands belongs to four of these groups, the feae-discalis-signatus group, variolosus group, magniceps-duplicatus group and cicatricosus group, and includes 20 species, 13 of which are only known from one or more of the islands. Two species are known from the island of Lombok, both different from those known from Bali and Java; one of these (*Stiliderus* sp. Y) is tentatively assigned to the cicatricosus group but is aberrant and only known from Lombok, and may prove, when males are found, to represent a phyletic group of its own.

The remainder of the range occupied by *Stiliderus* and *Stilicoderus* lies in four distinct zoogeographical sub-regions each of which is well known for high levels of endemism: the Philippines, Celebes, the Papuan region (island of New Guinea and outlying islands, including the Moluccas, with two elements in the Cape York peninsula, Australia), and Australia. Each of these regions, except Australia, is proportionately richer in species than mainland Asia and the Sunda Islands. All species in these regions are endemic to the particular region, but the composition of phyletic groups is quite different in each case. For instance all but one of the 16 known Philippine species belong to continental groups. In Sulawesi this pattern is reversed, with only one member of the continental cicatricosus group and 15 species belonging to the Celebesian endemic brendelli group. No continental phyletic groups are represented in the Papuan and Australian sub-regions, where the endemic groups are diverse and may not even

be monophyletic (ROUGEMONT 1996: 714). They are distributed as follows:

– Philippines: praecellens group (endemic): 1 species; feae group: 1 species; cicatricosus group: 14 species (all endemic).

– Sulawesi: brendelli group (endemic): 14 species; cicatricosus group: 1 species (endemic).

– Papuan region and Moluccas: funebris group (endemic): 3 species; hieroglyphicus group (endemic): 25 species (+ ca. 15 others seen); aerosus group (endemic): 9 species (+ 1 other seen).

– Australia: aberrans group (endemic): 10 species. In addition, Australia has 1 endemic species each of the Papuan hieroglyphicus and aerosus groups in the Cape York peninsula).

The fauna of New Guinea and outlying islands appears to be very rich. Moreover this vast area has yet to be explored by staphylinid specialists working in the field.

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\* The date of publication of this article is given as 1928 in SCHEERPELTZ (1934), in PUTHZ (1980) and in two of my previ-

ous papers on *Stiliderus* (1986d, 1995), but as 1929 in several sources of the internet (e.g. [http://www.zobodat.at/D/runD/D/cacheD/literatur\\_liste.php?wc=a.adrnr=3945&ord=order%20by%20s.name](http://www.zobodat.at/D/runD/D/cacheD/literatur_liste.php?wc=a.adrnr=3945&ord=order%20by%20s.name), <http://www.abebooks.com/Verhandlungen-Zoologisch-Botanischen-Gesellschaft-Wien-Band-1928/774262233/bd>, <http://www.europeana.eu/portal/record/08702/E72296A4E6868F3C71ECA2646C268D94BD41AAEA.html>). I have examined the original editions of Volumes 77 and 78 of “Verhandlungen der Zoologisch-Botanischen Gesellschaft in Wien” (bound together) in the Radcliffe Science Library, Oxford University. The title page of volume 78 states “Jahrgang 1928” near the top of the page, and “Wien, 1929” nearer the bottom of the page. The title page of BERNHAUER’s article (page 29 of the volume) gives the information “Eingelaufen am [= Received on] 12.IV.1928”. The indication “Vienna 1929” appeared conclusive, but then on the last page of the article (page 44 of the volume) there are two library stamps, which also appear randomly on pages throughout the volume: 1. [round seal] “BODLEIAN LIBRARY 28 Jul. 1928” indicating the date on which the library acquired the volume, and 2. “RADCLIFFE” (the science books in the Bodleian were transferred to the Radcliffe Library).

Lastly the clinching argument for retaining 1928 as the publication date was provided by HANS-PETER TSCHORSNIG who found another reference, also online ([http://www.landmuseum.at/pdf\\_frei\\_baende/28070.pdf](http://www.landmuseum.at/pdf_frei_baende/28070.pdf)), showing the title page of the first issue of volume 78 which states “Ausgegeben am [= Issued on] 15. Juni 1928” (I failed to see this in the library copy I examined).

BERNHAEUER’s article is unusual in that the author does not give a formal description of any of the 14 new species he described from the Philippines, but only a dichotomous key. This might have been considered a reason for regarding these species as invalid, but in any case they have all been validated by full descriptions in ROUGEMONT 1986d. BERNHAUER’s key is a good one: I had no difficulty in identifying all the Philippine species by using it. Each species was described in only a few short lines, but this proved more useful than the lengthy and detailed descriptions of some authors (the original description of *Stilicoderus malaisei* (Scheerpeltz 1965) extends to 1322 words). So ‘BERNHAEUER, 1928’ they are, and I am sure none of us would want to raise an unnecessary doubt about the authorship of these species.

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Manuscript received: 26.V.2014, accepted: 22.VIII.2014.

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Jahr/Year: 2015

Band/Volume: [NS\\_8\\_A](#)

Autor(en)/Author(s): Rougemont de Guillaume

Artikel/Article: [Studies on Stiliderus Motschulsky and Stilicoderus Sharp: biogeographical notes and descriptions of new species \(Coleoptera: Staphylinidae: Paederinae\) 113-130](#)