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A contribution to knowledge of the genus *Sphaeroderma* Stephens, 1831 from the Oriental region (Chrysomelidae, Alticinae)

by **Lev N. Medvedev**

Abstract. Types of the genus *Sphaeroderma* Stephens, 1831 were studied and partly redescribed by M. Jacoby and V. Motschulsky. 21 new species are described here: *Sphaeroderma bicoloricolle*, *S. oculatum*, *S. aethiops*, *S. mirabile* (Peninsular Malaysia), *S. fulvoapicale*, *S. deplanatum*, *S. erystiformis*, *S. bocaki*, *S. fulvipes*, *S. obscurum* (Sumatra), *S. longicornis* (Engano), *S. balianum*, *S. limbatum*, *S. piceifrons*, *S. indonesianum* (Bali), *S. javanicum* (Java), *S. sulawesianum*, *S. riedeli* (Sulawesi), *S. sabahense*, *S. bisbipunctatum*, and *S. borneense* (Borneo) spp.nov. The following species are transferred to other genera: *Sphaeroderma wallacei* Jacoby, 1896 (classified also within *Chabria* Jacoby, 1887), *S. parvula* Jacoby, 1887 and *S. subimpressa* Jacoby, 1904 to *Paratonfania* L. Medvedev, 1994; *Sphaeroderma bimaculata* Jacoby, 1893 to *Ivalia* Jacoby, 1887. *Sphaeroderma ornatipennis* Jacoby, 1900 is a new synonym of *S. flavoplagiatum* Jacoby, 1896. A key to the Malaysian and Indonesian species of *Sphaeroderma* is given.

Key words. *Chrysomelidae – Alticinae – Sphaeroderma* – Oriental region – new species – new synonymy – new combination – key

Introduction

Knowledge of the genus *Sphaeroderma* Stephens, 1831, represented in the Oriental region by numerous species, is especially inadequate in south-east Asia. Keys have been published for a few regions: China (Gressitt & Kimoto 1963), the Indian subcontinent (Scherer 1969), mainland Southeast Asia (Kimoto 2000), Taiwan (Kimoto & Takizawa 1997) and the Philippines (Medvedev 1996). A checklist has been published for south-east Asia (incl. Peninsular and island Malaysia) (Kimoto 2001), including 33 species for Malaysia and Indonesia, but at least 6 species are included in it are in error.

Such species as *Sphaeroderma laevipennis* Jacoby, 1884, *S. celebensis* Jacoby, 1885, *S. flavicollis* Jacoby, 1885, and *S. wallacei* Jacoby, 1896 were included in the genus *Chabria* Jacoby, 1887 (Chen 1935). I have also studied types of these species and can confirm Chen's opinion, with the exception of *S. wallacei* Jacoby, 1896, which I transfer to the genus *Paratonfania* L. Medvedev, 1993. *S. varipes* Jacoby, 1884 belongs to genus *Bhamoina* Bechyne, 1957 (Scherer 1969). *Sphaeroderma geminata* Jacoby, 1884 was also excluded from this genus and possibly belongs to *Sphaerodermella* Ogloblin, 1930 (Scherer 1969). A few species are transferred to other genera in this publication.

The structure of the aedeagus appears to be a main character in this genus, indicating that investigation of almost all types is necessary. I have had good opportunity to study many of the types described by M. Jacoby and V. Motschulsky; redescriptions are given for some of them. A key to all species in Malaysia and Indonesia is also proposed.

Material

The following abbreviations are used for the places in which the type materials are deposited:

MCSN ..... Museo Civico di Storia Naturale "Giacomo Doria", Genoa
NHMB ..... Naturhistorisches Museum, Basel
SMNS ..... Staatliches Museum für Naturkunde, Stuttgart
ZMMU ..... Zoological Museum of Moscow University, Moscow
LM ..... The L. Medvedev collection, Moscow

Taxonomy

Sphaeroderma fulvum Motschulsky, 1866

Material examined. Type series includes 4 specimens (2 males, 2 females). Lectotype (male) labelled "Ind. or." (corresponds to Burma) is designated (ZMMU). Previous indications for "British India" (MAULIK 1926) and "India" (SCHERER 1969) lack precision. Types of this species were also studied by OGLOBLIN (1930), but only 2 females were available to him.

Redescription. Fulvous with antennal segments 5–11 black.

Body short ovate, 1.3 times as long as wide. Frontal tubercles subquadrate, delimited posteriorly by transverse impression. Antennae reach middle of elytra, proportions of segments: 14–8–5–5–8–8–9–10–10–10–18, preapical segments 1.2–1.3 times as wide as long. Prothorax 1.7 times as wide as long, finely and sparsely punctate. Elytra 1.1 times as long as wide, with dense and rather strong confused punctures, arranged on sides in 1–2 subregular rows. Aedeagus (Fig. 1) flattened dorsoventrally, with subapical tooth on each side.

Length of body: 1.8–2.3 mm.

Sphaeroderma discicolle Jacoby, 1892

Material examined. A type (male) from Carin Cheba is designated as lectotype (MCSN).

Remarks. Aedeagus (Fig. 2) is very short and broad. Specimens from Burma have prothorax dark red with darkened base. This species is very common in Vietnam and feeds on *Bambusa* sp. Most specimens are entirely violaceous above.

Sphaeroderma terminatum Jacoby, 1892

Material examined. Of 4 type specimens only 2 represent the typical form. One of them, a male from Carin Cheba, is designated as lectotype (MCSN).

Remarks. Aedeagus – Fig. 3.One female has dark head and prothorax and was described by Jacoby as a variation of *S. terminatum*. I am not sure that this specimen belongs to *S. terminatum*. One other female has entirely fulvous upperside; it may be *S. terminatum* with a reduced apical spot or *S. birmanica* Jacoby, 1892.

Sphaeroderma balianum sp.nov.

Material examined. Holotype (male): Indonesia, Bali, Danau Buyan, 1300, 19–21.II.1994, leg. Bolm (NHMB).

Description. Metallic greenish-blue, antennae black with 5 basal segments fulvous, underside and legs piceous with more or less fulvous knees and tarsi.

Body elongate ovate, 1.45 times as long as wide, convex. Head impunctate, interantennal space narrow, frontal tubercles small, delimited at the rear by sharp, transverse impression. Antennae reach beyond middle of elytra, proportions of segments: 9–5–4–5–6–6–7–6–6–7–13, apical segments feebly thickened, about 1.5–1.6 times as long as wide. Prothorax twice as wide as long, basal lobe feeble, sides slightly rounded, anterior angles not produced. Surface finely and sparsely punctate. Scutellum small, triangular, impunctate. Elytra 1.2 times as long as wide, surface more strongly punctate than elytra, with 7 regular rows in outer part and confused punctures in sutural area. Segment 3 of hind tarsus 1.5 times as wide as segment 1. Aedeagus (Fig. 4) flattened dorsoventrally, with impression on underside before apex.

Length of body: 2.2 mm.

Distribution. Indonesia (Bali).

Differential diagnosis. Near *S. cyanescens* Weise, 1913 from Java, which, however, has elytral punctures arranged entirely in regular rows and only 3 basal segments of antennae fulvous.

Sphaeroderma sp. (undescribed species)

Material examined. Sumatra, Padang, 1890, leg. Modigliani, 1 female (MCSN).

Diagnosis. Very near to *S. balianum* sp.nov., differs mostly in colour. Vertex metallic coloured, frontal tubercles and clypeus fulvous, labrum black, antennae fulvous with infuscate apical segments, prothorax greenish-blue, elytra violaceous, underside black with fulvous abdomen, legs fulvous. Prothorax with very distinct and rather dense punctures.

Length of body: 1.8 mm.

Remark. This is very possibly a new species but I have insufficient material to decide.

Sphaeroderma fulvoapicale sp.nov.

Material examined. Holotype (female): West Sumatra, G. Merapi S of Bukittinggi, 1050–1800 m, 11. III.1991, leg. Bocák & Bocáková (NHMB). Paratype: West Sumatra, G. Singgalang S of Bukittinggi, 1900 m, 12.III.1991, leg. Bocák & Bocáková (LM).

Description. Head and prothorax black with very feeble metallic lustre, antennae fulvous, elytra metallic blue, with fulvous apices, underside black with fulvous abdomen, femora black with fulvous apices, tibiae and tarsi fulvous.

Body ovate, 1.35 times as long as wide, convex. Frontal tubercles subquadrate, flat, delimited at the rear by transverse impression. Antennae reach anterior third of elytra,

proportions of segments: 8–4–3–3–5–4–4–4–4–4–7, preapical segments a little longer than wide. Prothorax twice as wide as long, side margins straight, anterior angles obtuse, surface with sparse microscopic punctures. Elytra 1.2 times as long as wide, with fine, dense and confused punctures except for 1–2 subregular rows at sides.

Length of body: 1.9–2.0 mm.

Distribution. Indonesia (Sumatra).

Differential diagnosis. This is the only Oriental species to have metallic blue elytra with fulvous apices.

Sphaeroderma deplanatum sp.nov.

Material examined. Holotype (male): Sumatra (Jambi), Gunung Kerinci, 1800–2100 m, 6–7.III.1991, leg. Bocák & Bocáková (NHMB).

Description. Fulvous, head except labrum, prothorax, lateral margin of elytron except apical third (Fig. 33) and base of abdomen black.

Body elongate ovate, 1.45 times as long as wide, feebly convex. Head impunctate, interantennal space narrow, frontal tubercles rather large, feebly convex and poorly delimited from vertex. Antennae almost reach middle of elytra, proportions of segments: 10–6–7–7–9–8–10–10–10–10–10, preapical segments almost unthickened, about 2–2.5 times as long as wide. Prothorax twice as wide as long, feebly narrowed at the front, side margins slightly rounded, basal lobe feeble and broad, anterior angles not acute, surface flattened, very finely and sparsely punctate. Scutellum small, triangular, impunctate. Elytra 1.35 times as long as wide, finely and confusedly punctate, with 2–3 more or less regular rows at the sides. Segment 1 of anterior tarsi distinctly widened, as long as broad, segment 3 about 2.2 times as wide as 1. Aedeagus (Fig. 6) flattened dorsoventrally, with acute apex and impressed line on underside before apex.

Length of body: 3.2 mm.

Distribution. Indonesia (Sumatra).

Differential diagnosis. Near *S. nigromarginatum* Jacoby, 1899 from Sumatra, differs in smaller size, entirely fulvous antennae and legs.

Sphaeroderma longicornis sp.nov.

Material examined. Holotype (male): Engano (a small island near southern Sumatra), Bua-Bua, V–VI.1891, leg. Modigliani (MCSN).

Description. Red with prothorax dark red, antennae black with 4 basal segments red fulvous, sides of elytra dark red to piceous, but this colour not sharply divided from main surface (Fig. 34). Underside fulvous to dark fulvous with darker tibiae.

Body short ovate, 1.2 times as long as wide, strongly convex. Head finely and sparsely punctate, interantennal space very narrow, frontal tubercles very small,

triangular, obliquely placed. Antennae almost reach middle of elytra, proportions of segments: 20–5–6–7–7–7–8–8–8–14, preapical segments feebly thickened, about twice as long as wide, apical segment thin, 3.5 times as long as wide. Prothorax 2.3 times as wide as long, basal margin with well developed central lobe, sides almost straight, anterior angles obtuse, surface with moderately large and somewhat dense punctures. Scutellum very small, triangular, impunctate. Elytra as long as wide, with regular rows of punctures, including short scutellar row, interspaces flat and broad, distinctly punctate, outermost interspace very broad. Segment 3 of hind tarsus twice as wide as segment 1. Apical abdominal sternite without dark central line. Aedeagus (Fig. 7) flattened dorsoventrally.

Length of body: 3.3 mm.

Distribution. Indonesia (Sumatra).

Differential diagnosis. Resembles in colour *S. nigromarginatum* Jacoby, 1899 from Sumatra, but differs from it and practically all *Sphaeroderma* in its very long basal antennal segment, absence of dark central line on apical sternite of male (otherwise very common, in practically all *Sphaeroderm*), and partly in quite regular rows on elytra. Very long basal segment of antennae resembles genus *Schenklingia* Csiki et Heikertinger, 1940, but third tarsal segment is distinctly entire

Sphaeroderma sabahense sp.nov.

Material examined. Holotype (female): Borneo, Sabah, Mt. Kinabalu N.P., Headquarters, 1558 m, 25.IV.1987, beating foliage, leg. D.E.Bright (LM). Paratype: Borneo, Sabah, Crocker Range N.P., NW Kemingau, 900–1200 m, 17.XI.1995, leg. D. Grimm (SMNS).

Description. Red with elytra and legs more pale, vertex piceous to black, elytra with common triangular black spot on base of suture, another black spot placed on apical third of elytra (Fig. 35).

Body short ovate, 1.15 times as long as wide, strongly convex. Head finely punctate in hind part of vertex, interantennal space narrow, frontal tubercles very small and feebly, not distinctly, divided from each other posteriad. Antennae short, reach humeral area, proportions of segments: 7–3–2–2–2–2–3–3–3–3–8; 5 apical segments thickened, as long as wide. Prothorax twice as wide as long, basal lobe not large, side margins almost straight, anterior angles rounded, surface finely and sparsely punctate. Scutellum small, hemispherical, impunctate. Elytra 1.05 times as long as wide, with regular rows of punctures including short scutellar row, interspaces flat, broad and impunctate, outermost interspaces very broad. Segment 3 of hind tarsus 1.5 times as wide as segment 1.

Length of body: 2.1–2.2 mm.

Distribution. Borneo.

Differential diagnosis. Differs well from all spotted species in its feeble frontal tubercles, unusual pattern on elytra and short, entirely fulvous, antennae.

Sphaeroderma erystiformis sp.nov.

Material examined. Holotype (male): Sumatra, Gn. Tujuh, 5 km E Kersik Dua, 1900 m, 3–5 May 2001, leg. Bolm (NHMB).

Description. Red-fulvous, prothorax and especially antennae more pale, elytra with 3 black spots: a common spot on suture behind scutellum and each elytron with a spot before centre (Fig. 36).

Body short ovate, 1.15 times as long as wide, strongly convex. Head impunctate, interantennal space narrow and ridged, frontal tubercles small and triangular, distinctly delimited posteriorly. Antennae short, reach humeral area of elytra, proportions of segments: 12–7–5–5–5–5–6–6–6–7–11, preapical segments scarcely widened, about twice as long as wide. Prothorax 2.3 times as wide as long, with feeble basal lobe, side margins slightly rounded and narrowly explanate, anterior angles arcuate, not produced, surface with fine and moderately dense punctures. Scutellum small, triangular, impunctate. Elytra as long as wide, rather strongly explanate in anterior third (possibly only in male), surface with more large punctures than on prothorax, confused on inner half and arranged in more or less regular rows on outer half, outermost interspace very broad, especially in anterior third. Segment 3 of hind tarsus almost twice as wide as segment 1. Aedeagus (Fig. 8) flattened dorsoventrally, with longitudinal ridge on underside.

Length of body: 3.7 mm.

Distribution. Indonesia (Sumatra).

Differential diagnosis. Differs clearly from all species of the genus in the unusual form of the elytra, resembling genus *Erystus* Jacoby, 1877, as well as in the pattern of the elytra.

Sphaeroderma nigromaculatum Jacoby, 1896

Material examined. A single female from Sumatra (Si-Rambe) is labelled as holotype (MCSN).

Remark. This species is very near to *S. tripunctata* L. Medvedev, 2002 from the Philippines, but has prothorax entirely fulvous, legs black and preapical antennal segments only a little longer than wide.

Sphaeroderma bisbipunctatum sp.nov.

Material examined. Holotype (female): Borneo, Sabah, Tibow, 45 km NE of Sapulut, 600–900 m, 7–15 April 2000, leg. Bolm (NHMB).

Description. Red fulvous, antennal segments 4–10 and basal half of apical segment black, each elytron with 2 black spots: one at base, the other beyond centre (Fig. 37), metasternum, first abdominal sternite and hind femora piceous to black.

Body short ovate, 1.2 times as long as wide, strongly convex. Head finely punctate on vertex, interantennal space narrow, frontal tubercles large, subquadrate, flat, feebly

delimited posteriorly. Antennae reach anterior quarter of elytra, proportions of segments: 12–5–5–5–5–5–7–8–8–8–10, segments 6–11 distinctly widened, about 1.2 times as long as wide. Prothorax twice as wide as long, basal lobe feeble, lateral margins straight, anterior angles rounded, not produced, surface finely and not densely punctate. Small triangular scutellum impunctate. Elytra 0.95 times as long as wide, confusedly punctate, with 1–2 irregular rows on sides. Segment 3 of hind tarsus 1.7 times as wide as segment 1.

Length of body: 3.3 mm.

Distribution. Borneo.

Differential diagnosis. Near *S. nigromaculatum* Jacoby, 1896, differs in its fulvous prothorax and two black spots on each elytron.

Sphaeroderma limbatipenne Jacoby, 1896

Material examined. Both type specimens from Sumatra are females (MCSN). However, there are 3 specimens, including a male, from Mentawei (MCSN), also determined by Jacoby as *S. limbatipenne* and quite identical with type (labrum black, elytra black with fulvous margin).

Remark. The aedeagus of this specimen is very characteristic (Fig. 9).

Sphaeroderma limbatum sp.nov.

Material examined. Holotype (female): Indonesia, Bali, Danau Buyan, 1300 m, 19–21.II.1994, leg. Bolm (NHMB).

Description. Fulvous, antennae black with 4 basal segments fulvous, elytra black with lateral and apical margins rather broadly fulvous and this colour sharply divided from the black part (Fig. 38).

Body elongate ovate, 1.5 times as long as wide, moderately convex. Head impunctate, interantennal space narrow and carinate, frontal tubercles narrow, feebly convex, obliquely placed and delimited at the rear by angulate (about 120°) furrow. Antennae reach humeral area, proportions of segments: 10–5–4–5–5–5–5–6–6–6–10, preapical segments moderately widened, about 1.4–1.5 times as long as wide. Prothorax 1.9 times as wide as long, side margins and anterior angles rounded, surface with fine and moderately dense punctures. Elytra 1.1 times as long as wide, surface with rather large, dense and confused punctures, arranged on sides in 2–3 more or less regular rows. Segment 3 of hind tarsus 1.5 times as wide as segment 1.

Length of body: 2.7 mm.

Distribution. Indonesia (Bali).

Differential diagnosis. This species is very near to *S. limbatipenne* Jacoby, 1896 from Sumatra, which is however larger (2.7–3.2 mm), has a black labrum and metasternum, strongly convex frontal tubercles and fulvous lateral margin not sharply divided from main black surface.

Sphaeroderma flavoplagiatum Jacoby, 1896

S. flavoplagiatum Jacoby, 1896 (described from Sumatra)
S. flavoplagiatum Jacoby, 1896 (described from Burma) (primary homonym)
S. ornatipennis Jacoby, 1900 **syn.nov.**

Material examined. The single male of *S. flavoplagiatum* from Sumatra (Si-Rambe) is labelled as holotype (MCSN).

Remarks. Aedeagus – Fig. 10. *S. ornatipennis* is a new synonym for this species, having the same form of aedeagus and colour of upperside. The latter species was described from Burma as *S. flavoplagiatum*, but later Jacoby found that he had already used this name for a species from Sumatra and changed it to *ornatipennis*.

Sphaeroderma bicoloricolle sp.nov.

Material examined. Holotype (male): West Malaysia, Pahang, 30 km E of IPOH, Cameroon Highlands, Tanah Rata, 1500 m, 14–17.III.1998, leg. P. Čechovský (NHMB). Paratype: same locality, 20.II–3.III.1998, 1 female (LM).

Description. Black, 6 basal antennal segments fulvous, prothorax red with central black stripe, each elytron with round red spot at centre (Fig. 40), underside, knees and tarsi red fulvous.

Short ovate, 1.2 times as long as wide, strongly convex. Head with a few microscopic punctures on vertex, interantennal space narrow, frontal tubercles small and transverse, delimited at the rear by deep arcuate impression. Antennae reach humeral area, proportions of segments: 12–5–4–3–3–3–5–5–5–5–5–10; apical 5 segments moderately thickened, 1.2–1.3 times as long as wide. Prothorax twice as wide as long, basal lobe well developed, side margins slightly rounded, anterior angles not produced, surface with fine, moderately dense punctures. Scutellum small, triangular with rounded apex, impunctate. Elytra as long as wide, with regular rows of punctures including partly confused scutellar row, interspaces rather narrow except outermost, which is very broad, impunctate. Segment 3 of hind tarsus about 1.4 times as wide as segment 1. Aedeagus (Fig. 11) flattened dorsoventrally, underside with feeble impression on each side before apex.

Length of male 2.5 mm, of female 2.3 mm.

Distribution. Malaysia.

Differential diagnosis. Differs well in the specific colour of the upperside. It appears to be the only species of the genus to have a longitudinal black stripe on a light prothorax.

Sphaeroderma bocaki sp.nov.

Material examined. Holotype (male): Sumatra (Jambi), Gunung Kerinci, 1800–2100 m, 6–7.III.1991, leg. Bocák & Bocáková (NHMB). Paratypes: same locality, 2 ex. (NHMB, LM).

Description. Black, 4–5 basal antennal segments, round spot in middle and narrow apical margin of each elytron (Fig. 41), tibiae, tarsi and abdomen fulvous.

Body ovate, 1.3 times as long as wide, strongly convex. Head impunctate, interantennal space narrow, frontal tubercles subtriangular, divided posteriorly, with transverse impression. Antennae reach anterior quarter of elytra, proportions of segments: 10–5–4–4–5–5–7–6–6–7–10, preapical segments about twice as long as wide. Prothorax twice as wide as long, side margins almost straight, anterior angles not produced, surface very finely punctate. Elytra as long as wide, very finely and confusedly punctate, with 4–5 more or less regular rows on sides. Segment 3 of hind tarsus twice as wide as segment 1. Aedeagus (Fig. 12).

Length of body: 2.1–2.6 mm.

Distribution. Indonesia (Sumatra).

Derivatio nominis. The species is named after its collectors.

Differential diagnosis. Near *S. malayanum* Jacoby, 1885, differs in different elytral pattern and form of aedeagus.

Sphaeroderma oculatum sp.nov.

Material examined. Holotype (male): Malaysia, W Pahang, 30 km E of IPOH, Cameroon Highlands, Tanahrata, 1500 m, 7–9.I.1999, leg. P. Čechovský (LM).

Description. Black, clypeus dark fulvous, antennae fulvous, each elytron with round red spot before centre (Fig. 42), underside piceous with abdomen, tibiae and tarsi fulvous.

Body ovate, 1.3 times as long as wide, strongly convex. Head with a few punctures on vertex, frontal tubercles feeble and poorly delimited. Antennae short, reach humeral area, proportions of segments: 8–4–2–2–2–2–3–4–4–4–6, preapical segments about as long as wide. Prothorax twice as wide as long, side margins slightly arcuate, anterior angles rounded, surface finely and sparsely punctate. Elytra 1.05 times as long as wide, more strongly and densely punctate than prothorax, including broad outermost interspaces, with 4–5 rather regular rows on sides. Segment 3 of fore-tarsus twice as wide as segment 1. Aedeagus (Fig. 13) flattened dorsoventrally, with longitudinal obtuse ridge on underside.

Length of body: 2.1 mm.

Distribution. Malaysia

Differential diagnosis. Very near to the preceding species, but differs well in short antennae, position of elytral spot and sculpture of the aedeagus.

Sphaeroderma fuscum Motschulsky, 1866

Material examined. A single female from Motschulsky's collection, described from Java and labelled "*Sphaeroderma fusca* Motsch., I. or. /= India orientalis/, Batavia" I designate as the lectotype (ZMMU).

Redescription. Head, antennae and legs reddish-fulvous, prothorax piceous with anterior and side margins reddish, elytra dark red, almost piceous with apices reddish-fulvous, underside piceous.

Body ovate, 1.3 times as long as wide, moderately convex. Head impunctate, frontal tubercles subquadrangular, delimited at the rear by almost transverse impression. Antennae short, reach humeral area, proportions of segments: 10–3–3–3–3–4–4–4–5–5–7, preapical segments feebly thickened, about 1.1 times as long as wide. Prothorax twice as wide as long, anterior angles not produced, obtuse, surface with rather strong and dense punctures. Elytra 1.1 times as long as wide, punctures strong, dense, confused except for trace of one row near side margin. Segment 3 of hind tarsus about 1.5 times as wide as segment 1.

Length of body: 2.5 mm.

Sphaeroderma affine Jacoby, 1896

Remarks. Type series includes, according to the original description, 3 specimens; 2 of them are in Genoa museum – a male and a female. A male from Pangherang-Pisang is designated as lectotype (MCSN). Aedeagus (Fig. 16) cylindrical, spoon-like, with sharp ridge on underside. In type series elytra piceous black with apices less dark; in one specimen an obscure fulvous spot is visible in the middle of each elytron. However, I have a specimen with entirely black elytra.

This species is of the same colour as a few other Oriental species, partly also from Sumatra, and can be distinguished only by the form of the aedeagus.

Sphaeroderma piceifrons sp.nov.

Material examined. Holotype (male): Indonesia, Bali, Danau Buyan, 1300 m, 19–21.II.1994, leg. Bolm (NHMB).

Description. Black, 4 basal antennal segments and legs fulvous, head and anterior part of prothorax more or less piceous.

Morphologically practically the same as *S. javanicum* sp.nov., including proportions of body and antennae. Aedeagus (Fig. 17) flattened dorsoventrally, with elongate-triangular apex and longitudinal ridge on underside.

Length of body: 2.5 mm.

Distribution. Indonesia (Bali).

Differential diagnosis. Very alike at *S. javanicum* sp.nov., differs in colour of antennae and form of aedeagus.

Sphaeroderma javanicum sp.nov.

Material examined. Holotype (male): Indonesia, NE Java Isl., Baluran N. P., ca. 600 m, 16–19.IV.1996, leg. R. Zajíček (LM).

Description. Piceous to dark piceous, elytra almost black, prothorax more reddish anteriorly, head dark red, antennae fulvous with apical segments dark fulvous, legs fulvous.

Body ovate, 1.4 times as long as wide, convex. Head impunctate, interantennal space narrow, frontal tubercles small, triangular, sharply delimited posteriad. Antennae

reach humeral tubercle, proportions of segments: 7–3–3–3–4–4–4–4–4–4–7, preapical segments about 1.2–1.3 times as wide as long. Prothorax 1.7 times as wide as long, side margins almost straight, anterior angles rounded, surface finely and not densely punctate. Elytra 1.4 times as long as wide, strongly and densely punctate, with 4 more or less regular rows at sides. Segment 3 of hind tarsus 1.35 times as wide as 1. Aedeagus (Fig. 18) narrow, almost cylindrical, spear-like.

Length of body: 2.3 mm.

Distribution. Indonesia (Java).

Differential diagnosis. Near *S. tristis* Jacoby, 1896, but differs well in black upperside, fulvous legs and especially in spear-like aedeagus.

Sphaeroderma fulvipes sp.nov.

Material examined. Holotype (male): Sumatra (W.), G. Singgalang S of Bukittingi, 1300 m, 14–16.II.1991, leg. Bocák & Bocáková (NHMB).

Description. Black, antennae and legs fulvous.

Body ovate, 1.4 times as long as wide, moderately convex. Head impunctate, interantennal space narrow, frontal tubercles small, triangular, delimited at the rear by transverse impression. Antennae reach anterior third of elytra, proportions of segments: 8–5–3–3–5–4–5–5–5–5–8, preapical segments about 1.2 times as long as wide. Prothorax 1.7 times as wide as long, side margins and anterior angles distinctly rounded, surface with distinct and moderately dense punctures. Elytra with dense, confused punctures, arranged on sides in 1–2 subregular rows. Segment 1 of fore- and mid-tarsi not widened. Aedeagus flattened dorsoventrally, with short triangular apex (Fig. 19).

Length of body: 1.8 mm.

Distribution. Indonesia (Sumatra).

Differential diagnosis. Near *S. javanicum* sp.nov., differs in entirely black upperside and form of aedeagus.

Sphaeroderma aethiops sp.nov.

Material examined. Holotype (male): Malaysia, Johor, Endau-Rompin NP, Pulau Jasin (2°31′N, 103°21′E), 50–400 m, 19.III.1998, leg. Dembický & Pacholátko (NHMB). Paratypes: same locality, 1 male (LM); Malaysia, Cameroon Highland, Power Station (km. 29), 21.IV.1990, leg. A. Riedel, 1 male (SMNS).

Description. Black, anterior part of head reddish or piceous, antennae fulvous with darker apical segments, legs and underside fulvous.

Body short ovate, 1.25 times as long as wide, strongly convex. Head impunctate. Interantennal space narrow, frontal tubercles small, triangular, obliquely placed. Antennae almost reach middle of elytra, proportions of segments: 10–5–5–4–5–5–6–7–7–7–11, preapical segments practically unwidened, about 1.5–1.6 times as wide as long. Prothorax twice as wide as long, side margins straight, anterior angles rounded, surface finely and densely punctate. Elytra as long as wide, finely, densely and confusedly punctate with traces of rows on sides. Segment 1 of fore- and

mid-tarsi distinctly widened in male. Segment 3 of hind tarsus twice as wide as segment 1. Aedeagus (Fig. 20) with triangular apical process and longitudinal impression on underside.

Length of body: 2.4–2.6 mm.

Distribution. Malaysia.

Differential diagnosis. Differs from several black species mostly in the form of the aedeagus.

Sphaeroderma obscurum sp.nov.

Material examined. Holotype (male): Sumatra (Jambi), Gunung Tuyuh, Kerinci Nat. Park, 1700–1900 m, 8.III.1991, leg. Bocák & Bocáková (NHMB). Paratype: Sumatra (Jambi), Gunung, Kerinci, 1800–2100 m, 6–7.III.1991, leg. Bocák & Bocáková, 1 male (LM).

Description. Black, 4 basal antennal segments fulvous, abdomen dark fulvous to piceous.

Body short ovate, 1.3 times as long as wide, strongly convex. Head impunctate, interantennal space narrow, frontal tubercles subquadrate, flat, divided at the rear by feeble transverse impression. Antennae reach at least middle of elytra, proportions of segments: 8–4–4–4–5–5–5–6–7–7–10, preapical segments about 2.5 times as long as wide. Prothorax 1.8 times as wide as long, side margins straight, anterior angles broadly rounded, surface very lustrous, with microscopic sparse punctures. Elytra 1.1 times as long as wide, surface with moderately large, confused punctures arranged at sides in 1–2 irregular rows. Segment 1 of fore- and mid-tarsi moderately widened. Segment 3 of hind tarsus about 1.3–1.4 times as wide as segment 1. Aedeagus (Fig. 21) flattened dorsoventrally, with triangular apex.

Length of body: 1.9–2.0 mm.

Distribution. Indonesia (Sumatra).

Differential diagnosis. Near *S. tristis* Jacoby, 1896, differs in black upperside and colour of antennae, having only 4 basal segments fulvous.

Sphaeroderma tristis Jacoby, 1896

Material examined. Type series includes 14 specimens, a male from Mentawei (Si-Oban) is designated as the lectotype (MCSN).

Remarks. Aedeagus – Fig. 22. Colour varies from dark fulvous to piceous, antennae fulvous with 3–5 apical segments black.

Sphaeroderma sulawesianum sp.nov.

Material examined. Holotype (male): Indonesia, Sulawesi bor., 2 km NW Tomohon bottom of Mt. Lokon (1 21′N, 124 49′E), 830–850 m, 29–31.I.2004, leg. A. Scale (LM). Paratype: Central Sulawesi, 38 km SE Pendolo (2 14′S, 120 47′E), 1200 m, 10–11.VII.2001, leg. Bolm (NHMB).

Description. Black, antennae fulvous with feebly darkened apical segments, legs black with fulvous knees and tarsi, abdomen dark fulvous.

Body short ovate, 1.2 times as long as wide, strongly convex. Head impunctate, frontal tubercles small, subtriangular, delimited at the rear by transverse impression, interantennal space narrow. Antennae reach humeral tubercle, with 5 apical segments widened, proportions of segments: 10–5–5–4–4–5–5–5–5–5–8, preapical segments 1.2–1.3 times as long as wide. Prothorax twice as wide as long, side margins and anterior angles rounded, surface very finely and sparsely punctate. Elytra 1.1 times as long as wide, densely punctate, punctures rather strong, confused, with 3–4 irregular rows on sides. Segment 1 of fore- and mid-tarsi feebly widened in male. Segment 3 of hind tarsus 2.3 times as wide as 1. Aedeagus (Fig. 23) with elongate triangular apex and sharp ridge on underside, bifurcate before apex.

Length of body: 2.7–2.8 mm.

Distribution. Indonesia (Sulawesi).

Differential diagnosis. Near *S. tristis* Jacoby, 1896, differs in black upperside and form and structure of aedeagus.

Sphaeroderma mirabile sp.nov.

Material examined. Holotype (male): Malaysia, Benom Mts., 15 km E Kampong Dong, 3 53´N, 102 01´E, 700 m, 1.IV.1998, leg. Dembický & Pacholátko (NHMB).

Description. Reddish-fulvous, 4 basal antennal segments fulvous, following segments missing.

Body short ovate, 1.25 times as long as wide, strongly convex. Vertex finely and sparsely punctate, interantennal space narrow, frontal tubercles subquadrate, large and flat, delimited at the rear by feeble impression. Proportions of four basal antennal segments: 14–6–6–6. Prothorax 2.15 times as wide as long, side margins almost straight, anterior angles rounded, surface finely punctate. Elytra as long as wide, confusedly punctate, punctures dense and rather strong, arranged on sides in two almost regular rows. Segment 1 of fore- and mid-tarsi thickened, segment 3 of hind tarsus 1.5 times as wide as 1. Aedeagus (Fig. 24) with elongate triangular apex and transverse impression on underside before apex, with brush of erect bristles.

Length of body: 3.6 mm.

Distribution. Malaysia.

Differential diagnosis. Differs from all known species of the genus in structure of aedeagus, with brush of bristles on underside.

Sphaeroderma indonesianum sp.nov.

Material examined. Holotype (female): Indonesia, Bali, Danau Buyan, 1300 m, 19–21.II.1994, leg. Bolm (NHMB).

Description. Entirely reddish-fulvous.

Body ovate, 1.4 times as long as wide, strongly convex. Head impunctate, interantennal space narrow, convex, not acute. Frontal tubercles subquadrate, obliquely placed, delimited at rear by impression forming obtuse angle. Antennae reach humeral tubercle, with segments 8–11 distinctly widened, proportions of segments: 13–6–5–6–7–7–6–6–6–6–11, preapical segments 1.2–1.3 times as long as wide. Prothorax twice as wide as long, side margins feebly rounded, anterior angles broadly rounded, surface with fine and moderately dense punctures. Elytra 1.15 times as long as wide, more strongly and densely punctate, punctures confused except for two irregular rows on sides. Segment 3 of hind tarsus twice as wide as segment 1.

Length of body: 4.3 mm.

Distribution. Indonesia (Bali)

Differential diagnosis. Resembles *S. tonkineum* Csiki, 1940 from Vietnam, but body larger and lateral margin of prothorax not expanded.

Sphaeroderma borneense sp.nov.

Material examined. Holotype (male): Borneo, Sabah, Kinabalu N. P., Sayap, 1000 m, 25–29.XI.1996, leg. W. Schawaller (SMNS). Paratypes: same locality, 1 male, 2 females (SMNS, LM); Borneo, Sabah, Kinabalu NP, Headquarters, 1500–1600 m, 11–15.XI.1996, leg. W. Schawaller, 2 females (SMNS); Borneo, Sabah, Crocker Range N. P., NW Keningau, 900–1200 m, 16–20.XI.1996, leg. W. Schawaller, 1 male (LM).

Description. Reddish-fulvous, antennal segments 6–10 and basal half of apical segment black.

Body short ovate, 1.2 times as long as wide, strongly convex. Head impunctate, interantennal space narrow, frontal tubercles large, subtriangular, feebly convex, delimited at the rear by transverse impression. Antennae reach anterior third of elytra, proportions of segments: 15–5–7–6–8–8–8–8–9–9–13, preapical segments widened, about 1.2–1.3 times as long as wide. Prothorax twice as wide as long, side margins almost straight, anterior angles rounded, surface finely and densely punctate. Elytra as long as wide, densely and confusedly punctate, punctures a little larger than on prothorax and arranged on sides in two rows, not very clear. Segment 1 of fore- and mid-tarsi moderately widened in male. Segment 3 of hind tarsus 2.5 times as wide as segment 1. Aedeagus (Fig. 25) with elongate-triangular apex and deep transverse impression on underside before apex, delimited partly by short ridges.

Length of body: 3.8–4.2 mm.

Distribution. Borneo.

Differential diagnosis. In its unusual structure of the aedeagus, this species is near *S. mirabile* sp.nov., but differs in larger size and absence of bristles on underside of aedeagus.

Sphaeroderma rafflesi Jacoby, 1896

Remarks. The original description of this species was based on 3 specimens but I am not sure that all of them belong to the same species. I have studied the single male from

Sumatra (Panherang-Pisang) which is designated as lectotype (MCSN). This specimen has black antennae with 4 basal segments fulvous, entirely fulvous elytra and blackened mid-tibiae and hind legs, aedeagus cylindrical, narrowed to apex and curved in lateral view (Fig. 26). According to Jacoby, other specimens have apical antennal segment fulvous and one of them has a black lateral margin on the elytra.

Sphaeroderma modigliani Jacoby, 1896

Remarks. A male from Sumatra (Si-Rambe) is designated as lectotype; paralectotype is a female (MCSN). Aedeagus is flattened dorsoventrally, with elongate triangular apex (Fig. 28). Antennae reach middle of elytra, preapical segments elongate, about twice as long as wide, elytra with 6–8 more or less distinct rows of punctures. I have this species from Malaysia (Pahang) as well.

Sphaeroderma riedeli sp.nov.

Material examined. Holotype (male): Sulawesi, Kotamobagu Matalibagu, Torosik, Gn. Tongara, 850–900 m, 9.XII.1999, leg. A. Riedel (SMNS). Paratype: same locality and date, 1 female (LM).

Description. Red-fulvous, 6 apical antennal segments black, but apex of 11th segment dark fulvous.

Body ovate, 1.35 times as long as wide, strongly convex. Head impunctate except for one or two large punctures near upper margin of eye, interantennal space narrow, frontal tubercles very small, triangular. Antennae reach base of elytra, proportions of segments: 8–4–3–3–4–5–5–5–5–5–8, preapical segments practically as long as wide. Prothorax twice as wide as long, side margins feebly arcuate, anterior angles rounded, surface finely and not densely punctate. Elytra 1.05 times as long as wide, densely and more strongly punctate compared with prothorax, without any distinct regular rows. Segment 1 of fore- and mid-tarsi of male feebly widened. Segment 3 of hind tarsus 1.4 times as wide as segment 1. Aedeagus narrow, but flattened dorsoventrally, spoon-like with strongly widened base (Fig. 27).

Length of body: 2.6–2.7 mm.

Distribution. Indonesia (Sulawesi).

Derivatio nominis. The species is named after its collector, Dr. A. Riedel.

Differential diagnosis. Differs from all other fulvous species in the unusual form of the aedeagus, especially its strongly widened base.

Sphaeroderma sumatranum Jacoby, 1896

Material examined. Both studied syntypes from Sumatra (MCSN) are females. There are 2 additional specimens from Nias, determined by Jacoby as *S. sumatranum*, but they are also females (MCSN).

Remarks. This fulvous species is small (2.3–2.5 mm), with short antennae reaching only a little beyond humerus and with preapical antennal segments about 1.2 times as long as wide, frontal tubercles delimited at the rear by a straight transverse line.

I have in my collection a male specimen from Nias, which is very alike at *S. sumatranum*, having short antennae with widened apical segments, but it is larger (3.3 mm) and the preapical antennal segments are almost subquadrate; aedeagus (Fig. 29) flattened dorsoventrally, with elongate triangular apex.

Paratonfania wallacei (Jacoby, 1896) comb.nov.

Sphaeroderma wallacei Jacoby, 1896
Chabria wallacei: CHEN (1935)

Material examined. Type series from Sumatra (Si-Rambe) includes 1 male which I designate as the lectotype and 2 females (MCSN).

Remarks. Aedeagus – Fig. 30. CHEN (1935) placed this species in *Chabria* Jacoby, 1887, without any explanation; possibly he had not seen a type. However, this species has a very narrow interantennal space and therefore cannot be included in *Chabria.* It is definitely not *Sphaeroderma*, because the 3rd tarsal segment is bilobed and only a little wider than the 1st segment. Prothorax has traces of transverse basal groove and lateral longitudinal grooves, which are often very feeble and almost indistinct (more distinguishable in a drop of water). All the characters mentioned, especially the last, correspond only to genus *Paratonfania* L. Medvedev, 1994. The aedeagus of this species is very short and broad, deeply concave on underside (Fig. 30). I also have a series of *P. wallacei* from continental Malaysia (Pahang, Johor).

Paratonfania parvula (Jacoby, 1887) comb.nov.

Sphaeroderma parvula Jacoby, 1887

Remark. I have not seen a type of this species, but it has longitudinal grooves on the base of the prothorax and therefore has to be removed from *Sphaeroderma* to *Paratonfania.* Very possibly this species is conspecific with *P. wallacei.*

Paratonfania subimpressa (Jacoby, 1904) comb.nov.

Sphaeroderma subimpressa Jacoby, 1904

Remark. This species, according to the original description, is definitely not *Sphaeroderma.* Its prothorax has an "oblique depression" before the basal lobe and "sides absolutely longitudinally striate", also antennal segments triangularly widened from the third segment on. All these characters are typical for *Paratonfania* and the species appears to be near *P. wallacei* from Sumatra.

Ivalia bimaculata (Jacoby, 1893) comb.nov.

Sphaeroderma bimaculata Jacoby, 1893

Remark. The taxonomical position of this species is quite clear, because the author distinctly indicated in the original description a "metasternum with a horseshoe-shaped plate" – a character known only in the genus *Ivalia* Jacoby, 1887.

A preliminary key to *Sphaeroderma* of Malaysia and Indonesia

1(12) Upperside entirely or partly metallic.

2(7) Upperside entirely metallic.

3(4) Elytra with regular rows of punctures, including short scutellar row. Antennae black with 3 basal segments fulvous. Length 2 mm. Java. .... ***S. cyanescens*** **Weise, 1913**

4(3) Elytral punctures confused in sutural area. Antennae with 5–7 basal segments fulvous.

5(6) Head dark metallic. Antennae black with 5 basal segments fulvous. Prothorax very finely punctate. Underside piceous. Aedeagus – Fig. 4. Length 2.2 mm. Bali. ..... ***S. balianum*** **sp.nov.**

6(5) Head fulvous with metallic vertex and black labrum. Antennae fulvous with infuscate apical segments. Prothorax distinctly punctate. Underside black with fulvous abdomen. Length 1.8 mm. Sumatra. .... ***Sphaeroderma*** **sp. A**

7(2) Only elytra metallic.

8(11) Prothorax fulvous or red-brown.

9(10) Prothorax and scutellum entirely fulvous. Elytra blue. Underside piceous with fulvous abdomen. Sumatra. .... ***S. cyanipenne*** **Jacoby, 1885**

10(9) Prothorax red-brown with ill-defined basal area black, scutellum black. Elytra greenish. Underside dark brown. ..... ***S. leopoldi*** **Maulik, 1935**

11(8) Prothorax black, elytra metallic blue with fulvous apex. Length 1.9–2.0 mm. Sumatra. ..... ***S. fulvoapicale*** **sp.nov.**

12(1) Upperside not metallic.

13(56) Elytra bicolorous.

14(29) Elytra light with dark spots or stripes, sometimes with dark apex.

15(16) Elytra reddish-fulvous with black apex, black sometimes extends upwards at sides to a greater or lesser degree (Figs 31, 32). Prothorax black. Aedeagus – Fig. 5. Length 2.1–2.6 mm. Laos, Malacca, Sumatra. See also item 39. ..... ***S. malayanum*** **Jacoby, 1885**

16(15) Elytra marked otherwise.

17(22) Elytra with black stripe on lateral margin.

18(19) Antennae entirely fulvous. Prothorax black. Antennal segment 1 shorter than following two together. Elytra fulvous with black lateral margin of elytron except apical third (Fig. 33).Upperside feebly convex. Aedeagus – Fig. 6. Length 3.2 mm. Sumatra . ..... ***S. deplanatum*** **sp.nov.**

19(18) Antennae black with fulvous basal segments. Upperside strongly convex. Prothorax reddish-fulvous.

20(21) Antennal segment 1 very long, a little longer than three following segments together. Prothorax dark red. Sides of elytra piceous almost to apex (Fig. 34). 4 basal antennal segments fulvous. Aedeagus – Fig. 7. Length 3.3 mm. Engano. ..... ***S. longicornis*** **sp.nov.**

21(20) Antennal segment 1 not longer than following two segments together. Prothorax fulvous, sometimes with black sides. Sides of elytra black from base to middle. 3 basal segments of antennae fulvous. Length 4–5 mm. Sumatra. ..... ***S. nigromarginatum*** **Jacoby, 1899**

22(17) Elytra with black spots.

23(26) Elytra with common black spot on suture. Antennae and prothorax reddish-fulvous.

24(25) Elytra with large triangular spot on base of suture and another spot in apical third of each elytron black (Fig. 35). Lateral margin of elytron not explanate. Length 2.1–2.2 mm. Borneo. ..... ***S. sabahense*** **sp.nov.**

25(24) Elytra with rounded spot on suture behind scutellum and rounded spot before middle of each elytron black (Fig. 36). Sides of elytra rather strongly explanate in anterior third. Aedeagus – Fig. 8. Length 3.7 mm. Sumatra. ..... ***S. erystiformis*** **sp.nov.**

26(23) Elytra without common black spot on suture. Antennae black with fulvous basal segments and segment 11 tipped with fulvous.

27(28) Each elytron with central black spot. 4 basal antennal segments fulvous. Prothorax and legs black. Length 3.2 mm. Sumatra. .... ***S. nigromaculatum*** **Jacoby, 1896**

28(27) Each elytron with basal and preapical black spots (Fig. 37). 3 basal antennal segments fulvous. Prothorax and legs fulvous. Length 3.3 mm. Borneo. ..... ***S. bisbipunctatum*** **sp.nov.**

29(14) Elytra black with fulvous spots, sides and/or apices.

30(33) Elytra black or piceous with fulvous sides prolonged to apices. Antennae black with fulvous basal segments.

31(32) Labrum black. Frontal tubercles strongly convex. Antennae with 5 basal segments fulvous. Fulvous lateral margin of elytra not sharply divided

from main black surface. Aedeagus – Fig. 9. Length 2.7–3.2 mm. Sumatra, Nias. ..... ***S. limbatipenne*** **Jacoby, 1896**

32(31) Labrum fulvous. Antennae with 4 basal segments fulvous. Frontal tubercles feebly convex. Fulvous lateral margin of elytra sharply divided from main black surface (Fig. 38). Length 2.7 mm. Bali. .... ***S. limbatum*** **sp.nov.**

33(30) Elytra otherwise marked.

34(43) Elytra black with light spots or bands on disk.

35(36) Body large, 3.4–3.9 mm. Aedeagus cylindrical, curved in lateral view (Fig. 10). Black or piceous, antennae with 3 basal segments reddish, prothorax from reddish-fulvous to black, elytra with large, pale flavous spot in middle and with apices sometimes reddish (Fig. 39). Vietnam, Laos, Thailand, Burma, Sumatra, Java. .... ***S. flavoplagiatum*** **Jacoby, 1896**

36(35) Body small. Aedeagus flattened dorsoventrally.

37(38) Prothorax red with central broad black stripe. Elytron with round red spot at centre (Fig. 40). Aedeagus – Fig. 11. Length 2.3–2.5 mm. Malaysia. ..... ***S. bicoloricolle*** **sp.nov.**

38(37) Prothorax black.

39(40) Elytra with transverse red band before centre, not interrupted on suture (Fig. 32). Legs black. Aedeagus – Fig. 5. Length 2.1–2.6 mm Laos, Peninsular Malaysia, Sumatra. See also item 15. .... ***S. malayanum*** **Jacoby, 1885**

40(39) Elytra with rounded spot before centre. At least tibiae and tarsi fulvous.

41(42) Antennae black with 4 basal segments fulvous. Elytron with spot before centre and narrow apical margin reddish (Fig. 41). Aedeagus – Fig. 12. Length 2.1–2.6 mm. Sumatra. ..... ***S. bocaki*** **sp.nov.**

42(41) Antennae fulvous. Elytron with fulvous spot before centre (Fig. 42). Aedeagus – Fig. 13. Length 2.1 mm. Malaysia. ..... ***S. oculatum*** **sp.nov.**

43(34) Elytra dark with pale apex.

44(45) Elytra dark red with fulvous apices, prothorax dark red with piceous basal area, head, antennae and legs reddish-fulvous. Prothorax distinctly punctate, elytra with strong, confused punctures. Length 2.5 mm. Java. ..... ***S. fuscum*** **Motschulsky, 1866**

45(44) Elytra black with fulvous apices.

46(47) Head and prothorax black. Antennae, legs and abdomen fulvous. Prothorax impunctate. Aedeagus – Fig. 14. Length 2.0–2.1 mm. Sumatra. ..... ***S. abdominale*** **Jacoby, 1885**

47(46) Head and prothorax reddish-fulvous.

48(49) Labrum black. Antennae black with 5 basal segments fulvous. Length 2.4 mm. Borneo, Java. ..... ***S. apicipenne*** **Baly, 1877**

49(48) Labrum fulvous. Body larger. Segment 3 of all tarsi very broad. All near species are poorly known.

50(51) Length 4.3 mm. Antennae black with 5 basal segments fulvous. Red area of elytral apices not sharply divided from black. Prothorax finely and densely punctate. Elytra more strongly confusedly punctate, with 4 pairs of geminate rows. Peninsular Malaysia (Benom Mts.), 1 female. ... . ***Sphaeroderma*** **sp. B**

51(50) Length less than 4 mm. Elytra with confused punctures on inner side and more or less regularly punctate on outer side, but without geminate rows.

52(53) Sides of prothorax distinctly widened at centre and rounded. Antennae black with 4 basal segments fulvous. Elytra not densely punctate. Length 3.7 mm. Sumatra. ..... ***S. funebre*** **Jacoby, 1885**

53(52) Sides of prothorax almost straight. Elytra densely punctate.

54(55) Antennae entirely fulvous. Length 3.0–3.3mm. Sumatra. .... ***S. beccarii*** **Jacoby, 1885**

55(54) Antennae black with 5–6 basal segments fulvous. Aedeagus flattened dorsoventrally, with acute apex (Fig. 15). Length 2.5–2.9 mm. Sumatra. Corresponds to *C. beccarii* Jacoby, var. a. ..... ***Sphaeroderma*** **sp. C**

56(13) Elytra unicolorous.

57(64) Prothorax and elytra coloured otherwise than above.

58(59) Head, antennae (except 3 basal fulvous segments), prothorax and legs black, elytra fulvous, underside dark fulvous. Length 3 mm. Sumatra. .... ***S. seminigrum*** **Jacoby, 1899**

59(58) Head and prothorax fulvous or reddish, elytra black.

60(61) Legs fulvous. Antennae black with 6 basal segments fulvous, almost reach middle of elytra. Aedeagus cylindrical, spoon-like, with sharp ridge on underside (Fig. 16). Length 2.1–2.3 mm. Sumatra. .... ***S. affine*** **Jacoby, 1896**

61(60) Legs more or less black. Body larger.

62(63) Femora fulvous, tibiae and tarsi black. Antennae black with 3 basal segments fulvous, reach base of prothorax. Length 4.2 mm. Sumatra. ... . ***S. tibiale*** **Jacoby, 1896**

63(62) Legs piceous with fulvous anterior tibiae. Antennae black with 3 basal segments fulvous extending beyond middle of elytra. Aedeagus flattened dorsoventrally, with impression on underside before apex. Length 3 mm. Burma (Tenasserim), Malaya (indication yet to be confirmed). Numerous indications for Indochina belong to other species. ..... ***S. antennatum* Jacoby, 1885**

64(57) Upperside unicolorous.

65(80) Upperside black, piceous or dark red. Species differ mostly in form of aedeagus.

66(73) Legs fulvous.

67(68) Antennae black, with 4 basal segments fulvous. Black prothorax finely, elytra strongly, punctate. Aedeagus flattened dorsoventrally, with elongate triangular apex and longitudinal ridge along centre of underside (Fig. 17). Length 2.5 mm. Bali. ..... ***S. piceifrons* sp.nov.**

68(67) Antennae fulvous, usually with darker (not black!) apical segments; no sharp difference between light and dark segments.

69(70) Aedeagus almost cylindrical, spear-like (Fig. 18). Elytra black, prothorax piceous, more reddish towards the front, head dark red. Length 2.3 mm. Java. ..... ***S. javanicum* sp.nov.**

70(69) Aedeagus flattened dorsoventrally, with more or less triangular apex, not spear-like.

71(72) Antennae entirely fulvous. Upperside black. Aedeagus with short triangular apex (Fig. 19). Length 1.8 mm. Sumatra. .... ***S. piceifrons* sp.nov.**

72(71) Antennae with slightly darkened apical segments. Upperside black, finely and densely punctate. Aedeagus (Fig. 20) with rather distinct apical process and longitudinal impression on underside. Length 2.4–2.6 mm. Malacca. ..... ***S. aethiops* sp.nov.**

73(66) At least femora black.

74(75) Antennae black with 4 basal segments fulvous. Upperside and legs black. Aedeagus with triangular apex (Fig. 21). Length 1.9–2.0 mm. Sumatra. ..... ***S. obscurum* sp.nov.**

75(74) Antennae fulvous or with slightly darkened apical segments.

76(77) Upperside dark red to piceous, antennae with 3–5 apical segments dark, legs black with lighter knees and tarsi. Antennal segment 9 twice as long as wide. Aedeagus (Fig. 22) with triangular apex. Length 2.6–3.0 mm. Mentawei. ..... ***S. tristis* Jacoby, 1896**

77(76) Upperside black. Antennae fulvous with very feebly darkened apical segments.

78(79) Legs black or piceous with fulvous knees and tarsi. Antennal segment 9 about 1.6 times as long as wide. Aedeagus with elongate triangular apex (Fig. 23). Length 2.7–2.8 mm. Sulawesi. ..... ***S. sulawesianum*** **sp.nov.**

79(78) Legs fulvous with black femora. Elytra with very feeble blue lustre. Length 1.7–1.8 mm. Male unknown. Bali. ..... ***Sphaeroderma*** **sp. D**

80(65) Upperside fulvous or red-fulvous.

81(82) Aedeagus with transverse impression on underside having a row of erect bristles (Fig. 24). Length 3.6 mm. Peninsular Malaysia. .... ***S. mirabile*** **sp.nov.**

82(81) Aedeagus without erect bristles on underside.

83(84) Antennae entirely fulvous, reach humeral tubercle, segments 8–11 distinctly widened, preapical segments 1.2–1.3 times as long as wide. Body entirely reddish-fulvous. Length 4.3 mm. Bali. .... ***S. indonesianum*** **sp.nov.**

84(83) Antennae more or less black.

85(90) Apical antennal segment entirely or partly fulvous.

86(89) Body large, 3.8–5.0 mm.

87(88) Antennae black with segments 1, 2 and 11 fulvous. Frontal tubercles obliquely placed. Elytra with irregular rows. Underside piceous. Length 5.0 mm. Sumatra, Malaysia. ..... ***S. semiregulare*** **Jacoby, 1899**

88(87) Antennae black with 4 or 5 basal segments and apical half of segment 11 fulvous. Underside fulvous. Aedeagus with sharp, deep transverse impression on underside before apex (Fig. 25). Length 3.8–4.2 mm. Borneo. ..... ***S. borneense*** **sp.nov.**

89(86) Body small, 2.5–2.7 mm. Antennae black with 3 or 4 basal segments and segment 11 entirely or in apical half fulvous. Sumatra (paralectotypes of *S. rafflesi* Jacoby differing from lectotype), Borneo. .... ***Sphaeroderma*** **spp.**

90(85) Apical segment of antennae black.

91(92) Aedeagus cylindrical and spear-like (Fig. 26). Middle tibiae and hind legs black. Antennae black with 4 basal segments fulvous. Length 2.6 mm. Sumatra. Indication for Peninsular Malaysia needs confirmation. ..... ***S. rafflesi*** **Jacoby, 1896**

92(91) Aedeagus flattened dorsoventrally. Legs fulvous.

93(94) Antennae black with 5 basal segments fulvous. Aedeagus (Fig. 27) spoon-like, with distinctly widened base. Elytral punctures somewhat confused. Length 2.6–2.7 mm. Sulawesi. ..... ***S. riedeli* sp.nov.**

94(93) Antennae black with 3–4 basal segments fulvous. Aedeagus parallel-sided with triangular apex and unwidened base.

95(96) Antennae reach middle of elytra, preapical segments at least 1.5 times as long as wide. Frontal tubercles broad and flat. Aedeagus – Fig. 28. Length 2.6–2.7 mm. Sumatra. ..... ***S. modiglianii* Jacoby, 1896**

96(95) Antennae reach base of elytra, preapical segments more widened, about 1.2 times as long as wide. Aedeagus (Fig. 29) more narrow than in preceding species. Length 2.2–2.5 mm. Sumatra, Malacca, ?Nias. .... ***S. sumatranum* Jacoby, 1896**

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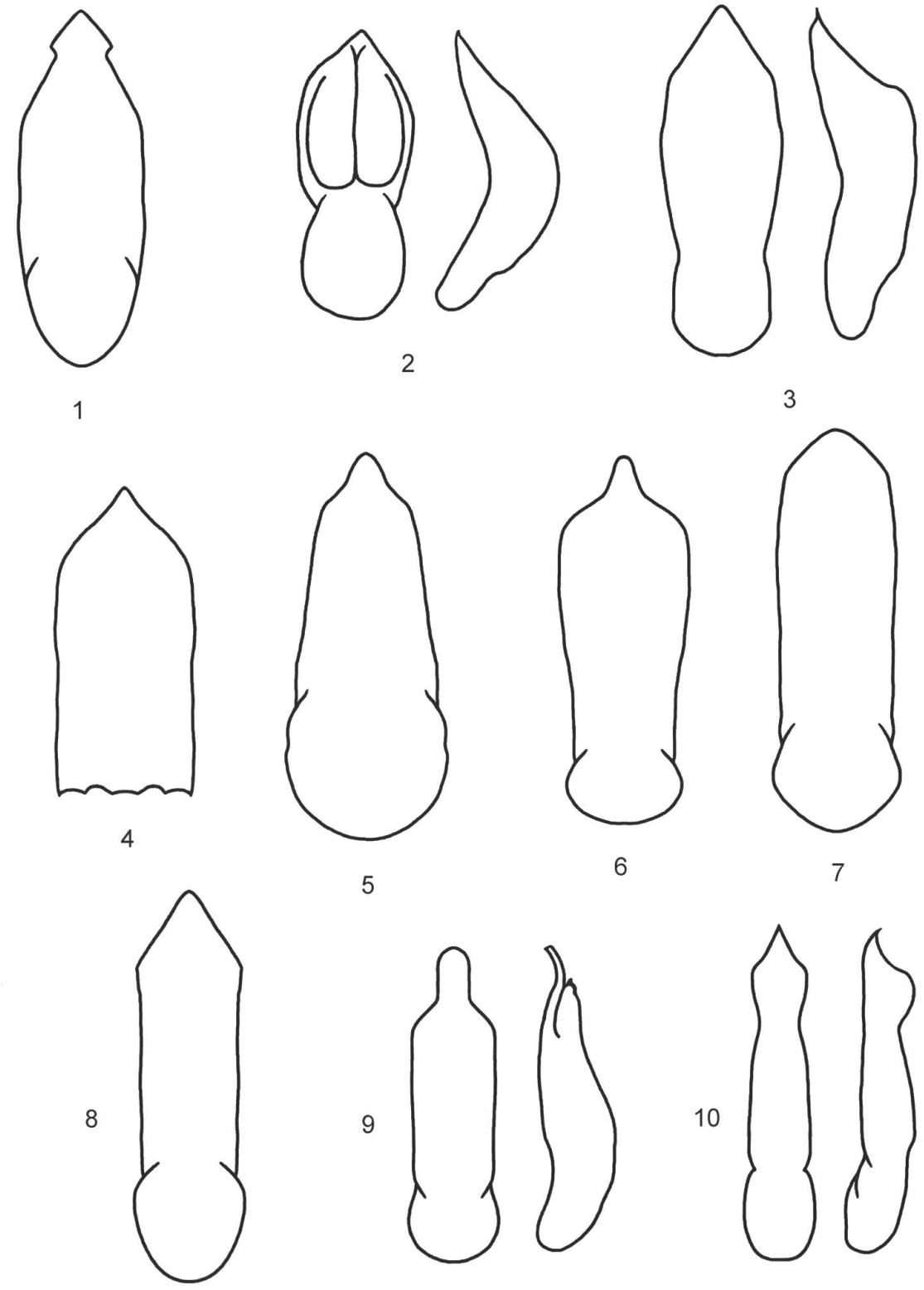
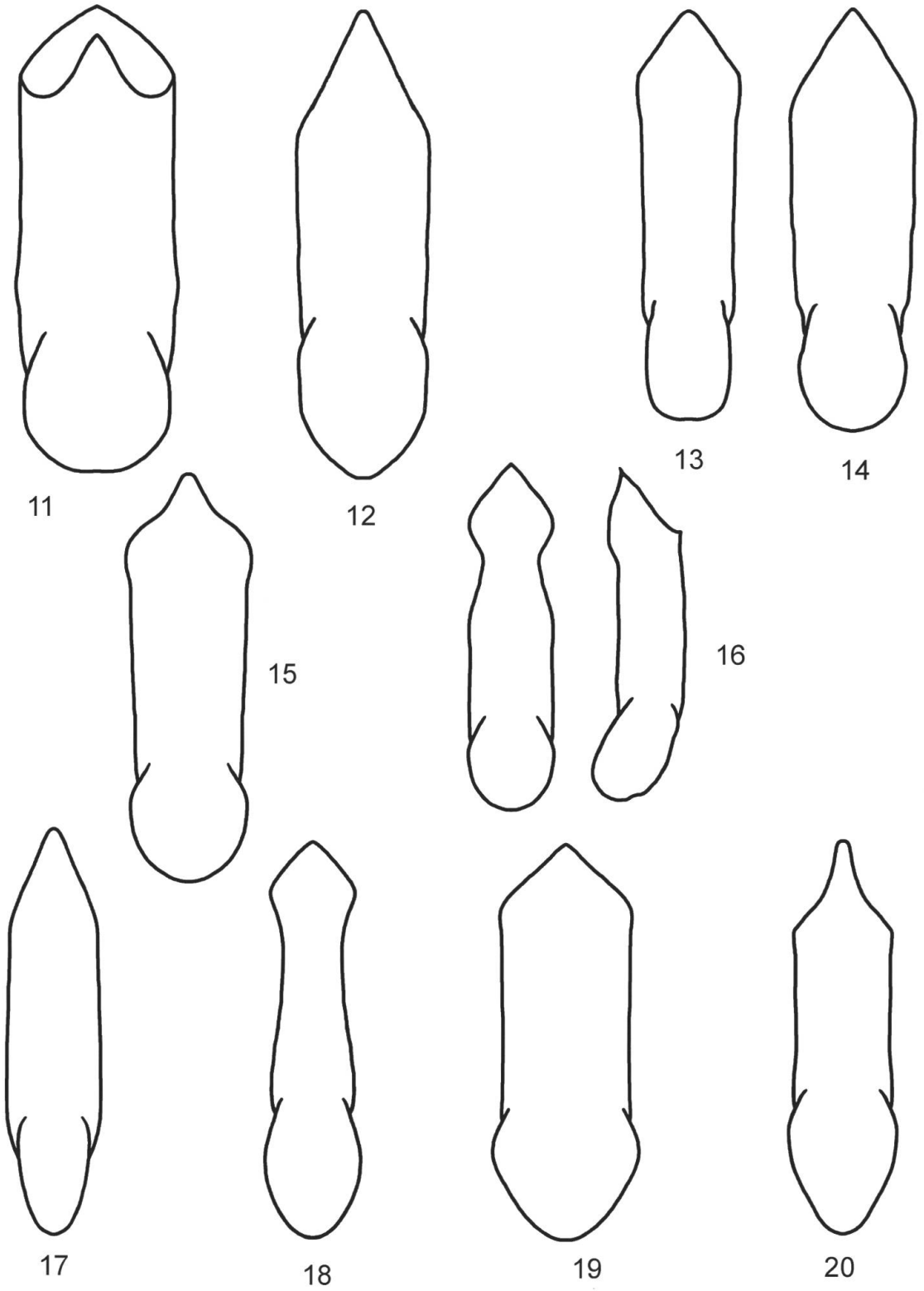
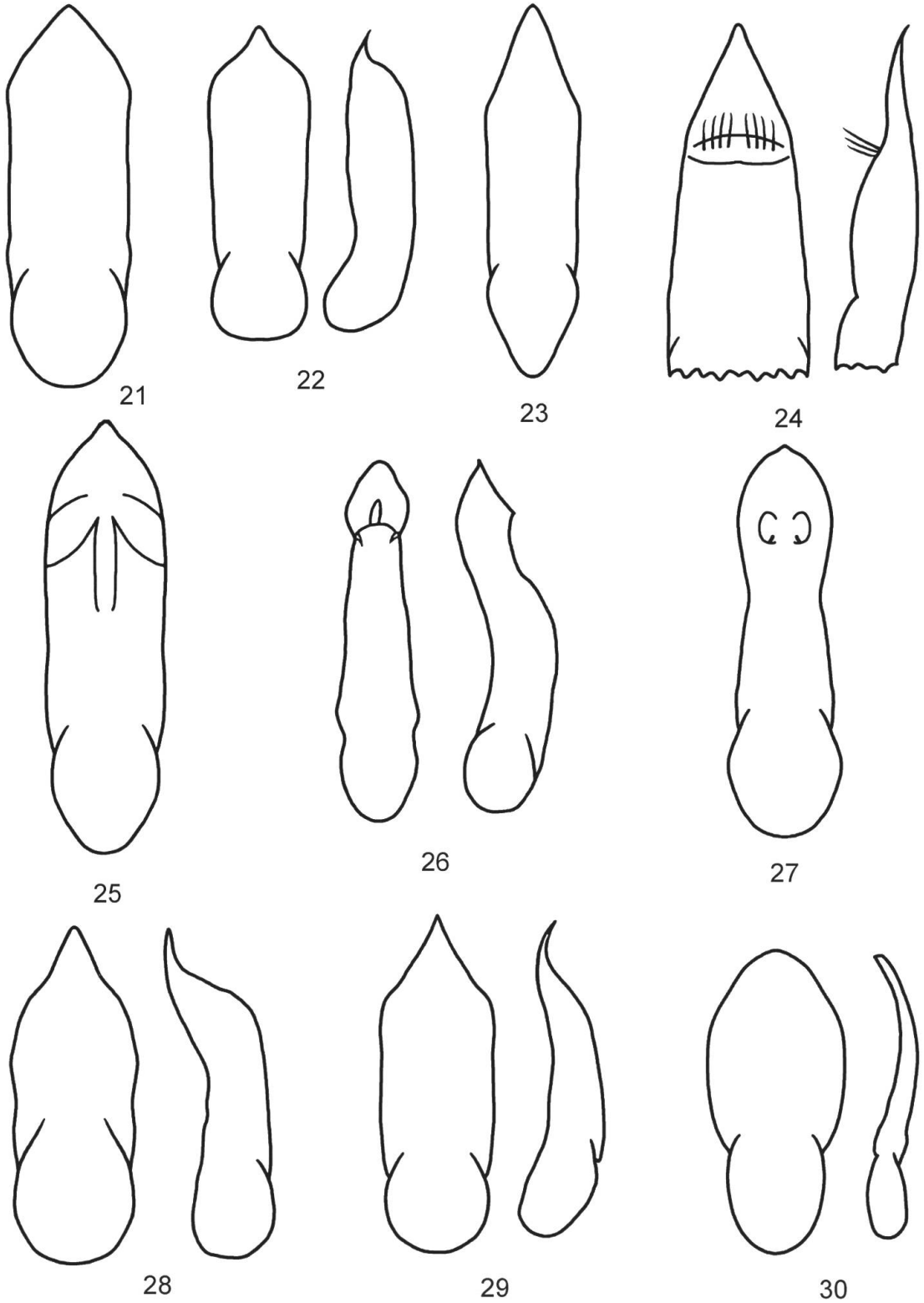


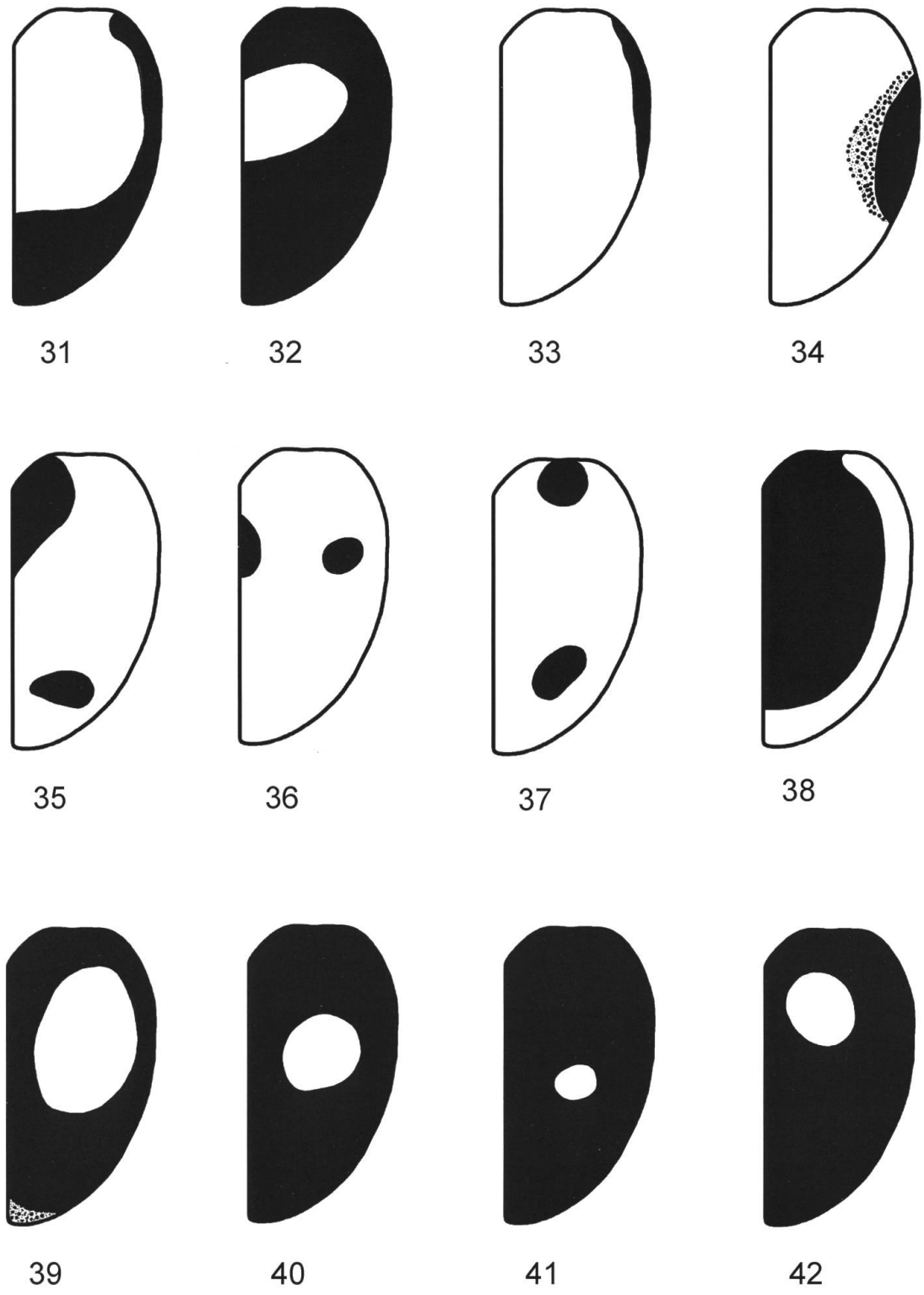
Figs 1–10. Aedeagus (d – dorsal, v – ventral, l – lateral): 1, *S. fulvum* Motschulsky, v; 2, *S. discicolle* Jacoby, v, l; 3, *S. terminatum* Jacoby, v, l; 4, *S. balianum* sp.nov., v; 5, *S. malayanum* Jacoby, v; 6, *S. deplanatum* sp.nov., v; 7, *S. longicornis* sp.nov., v; 8, *S. erystiformis* sp.nov., v.; 9, *S. limbatipenne* Jacoby, v, l; 10, *S. flavoplagiatum* sp.nov., v, l.



Figs 11–20. Aedeagus (d – dorsal, v – ventral, l – lateral): 11, *S. bicoloricolle* sp.nov., v; 12, *S. bocaki* sp.nov., v; 13, *S. oculatum* sp.nov., v; 14, *S. abdominale* Jacoby, v; 15, *S.* sp. C, v; 16, *S. affine* Jacoby, v, l; 17, *S. piceifrons* sp.nov., v; 18, *S. javanicum* sp.nov., v; 19, *S. fulvipes* sp.nov., v; 20, *S. aethiops* sp.nov., v.



Figs 21–30. Aedeagus (d – dorsal, v – ventral, l – lateral): 21, *S. obscurum* sp.nov., v; 22, *S. tristis* Jacoby, v, l; 23, *S. sulawesianum* sp.nov., v; 24, *S. mirabile* sp.nov., v, l; 25, *S. borneense* sp.nov., v; 26, *S. rafflesi* Jacoby, d, l; 27, *S. riedeli* sp.nov., v; 28, *S. modigliani* Jacoby, v, l; 29, *S. sumatranum* Jacoby, v, l; 30, *Paratonfania wallacei* (Jacoby), v, l.



Figs 31–42. Elytral pattern: 31–32, *S. malayanum* Jacoby; 33, *S. deplanatum* sp.nov.; 34, *S. longicornis* sp.nov.; 35, *S. sabahense* sp.nov.; 36, *S. erystiformis* sp.nov.; 37, *S. bisbipunctatum* sp.nov.; 38, *S. limbatum* sp.nov.; 39, *S. flavoplagiatum* sp.nov.; 40, *S. bicoloricolle* sp.nov.; 41, *S. bocaki* sp.nov.; 42, *S. oculatum* sp.nov.