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REVISION OF *NEOLEPTA* JACOBY, 1884 AND RELATED GALERUCINES FROM THE ORIENTAL REGION, INCLUDING DESCRIPTIONS OF TWO NEW GENERA (COLEOPTERA: CHRYSOMELIDAE: GALERUCINAE)

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ABSTRACT. — The Oriental galerucine taxon *Neolepta* Jacoby, 1884 is revised. Only *N. biplagiata* Jacoby, 1884 and *N. quadriplagiata* Jacoby, 1886 are recognised out of the original eleven species described in this genus. *Arcastes sumatrensis* Jacoby, 1884 is transferred to *Neolepta*, which is a senior synonym of *N. biplagiata* Jacoby, 1884. *Paraneolepta*, new genus is described for *Ochralea marginata* Jacoby, 1884 (= *Luperodes marginata* Baly, 1886, new synonym; = *Luperodes cincta* Weise, 1921; replacement name for *Luperodes marginatus* Baly, 1886) which differs to *Neolepta* in some external characters, and in particular by the shape and endophallic armature of the median lobe. *Luperodes limbella* Baly, 1886 and *Ochralea imitans* Jacoby, 1894 are transferred to *Paraneolepta*, new genus. *Neolepta fulvipennis* Jacoby, 1884 has been found to be strongly different from *Neolepta* and *Paraneolepta*, new genus in the genital characters. Due to its significant external and genitalic characters, it is herein transferred to *Orthoneolepta*, new genus, which also includes *Neolepta banggiensis* Mohamedsaid, 1997. Lectotypes are herein designated for *Neolepta biplagiata* Jacoby, 1884; *Neolepta fulvipennis* Jacoby, 1884, *Neolepta quadriplagiata* Jacoby, 1886; *Ochralea marginata* Jacoby, 1884; *Ochralea imitans* Jacoby, 1894. The distribution of the species of these three genera is restricted to South-East Asia. All genera and the species, including illustrations of external and genital characters, photographs of the primary type specimens and distribution maps are provided.

KEY WORDS. — Galerucinae, *Neolepta*, *Paraneolepta*, *Orthoneolepta*, Oriental region, revision, taxonomy, redescription, synonymy, new combination, new genus, lectotype

INTRODUCTION

Galerucinae with slender legs, elongated basi-metatarsus and without significant pronotal depressions are assigned to the "Sectio Monoleptites" sensu Wilcox (1973). As commented by Wilcox himself, the classification and taxonomic status of the whole group was very unsatisfactory and a revision of the Oriental species was started recently (Hazmi & Wagner, 2010a, b, c). Studies on several groups of Monoleptites have revealed that there are several species which need to be transferred to other taxa according to their phylogenetical position.

Neolepta was established by Jacoby (1884) for two new species, *N. biplagiata* and *N. fulvipennis*. In his original description, Jacoby did not designate a genotype and Maulik (1936) did it later with *N. biplagiata* (Jacoby, 1884). He mentioned only few external characters to distinguish *Neolepta* from *Monolepta* Chevrolat, 1836 and *Candezea* Chapuis, 1879: "On account of the long first tarsal joint and closed coxal cavities, the genus proposed here is closely allied to the genus *Monolepta* and still more closely to *Candezea* Chapuis. From Candezea it is further distinguished by the transversely impressed thorax" (Jacoby, 1884: 222). *Neolepta* has only been recorded from the Oriental region, with one exception of the *N. unifasciata* Jacoby, 1886 from New Guinea. The other described species of *Neolepta* are *N. biplagiata* Jacoby, 1884 (Sumatra), *N. multicolorata* Jacoby, 1884 (Sumatra), *N. fulvipennis* Jacoby, 1884 (Sumatra), *N. quadriplagiata* Jacoby, 1886 (Sumatra), *N. nigrotibialis* (Allard, 1889) (Cambodia), *N. ruficollis* Jacoby, 1892 (Burma), *N. spilota* Weise, 1922 (Sumatra), *N. basalis* Bryant, 1954 (Burma), *N. banggiensis* Mohamedsaid, 1997 (Sabah), and *N. bukit* Mohamedsaid, 2001 (Selangor). We

have studied most of the type specimens of *Neolepta* and herein give the first time detailed descriptions of the genital patterns. Only two species out of originally 11 described species are recognised, *N. sumatrensis* (Jacoby, 1884), new combination and *N. quadriplagiata* Jacoby, 1886. All other species need to be transferred to other genera. Some of them in this publication and others will be subject on the ongoing revision of Oriental Galerucinae.

Ochralea marginata Jacoby, 1884 was meanwhile transferred to *Nadrana* by Laboissière (1936). When checking the genital characters, we found that the median lobe of this species possesses a slightly similar character to the median lobe of *Neolepta*, but the latter is with stronger sclerotized ventral spur and a ventral carina. The spermatheca possesses a small nodulus, and consists of two sclerotised bursa sclerites. Very slender antenomeres, a very coarsely punctuated pronotum and large body size are external characteristics different from *Neolepta*. We therefore describe *Paraneolepta*, new genus to place *Ochralea marginata* Jacoby, 1884, which is herein also designated as the genotype. Next to *Ochralea marginata*, *Luperodes limbella* Baly, 1886, and *Ochralea imitans* Jacoby, 1894 with its junior synonym and replacement name *Monolepta aemula* Weise, 1922 are also transferred to this new genus. Distribution of the three species is up to now only recorded from Brunei, Malaysia (Peninsular) and Indonesia (Borneo, Sumatra), southwards to Java.

Neolepta fulvipennis Jacoby, 1884 possess also a characteristic distinct type of genital structures, strongly different from *Neolepta* and *Paraneolepta*, new genus. Most peculiar is the apically deep incised median lobe. In females there is one pair of hooked bursa sclerites, a type that is not found in other groups. External characteristics of this group are the slender, strongly transverse impressed pronotum and the enlarged medial antennomeres. Due to its probably isolated phylogenetical position, it need to be also transferred to a distinct taxon, and we redescribed it here as type species of *Orthoneolepta*, new genus. *Neolepta banggiensis* Mohamedsaid, 1997 are also transferred to this new genus.

MATERIAL AND METHODS

A standard set of figures is given for each species. These include illustrations of the colouration (dorsal view), including the right antenna, where black colouration is indicated by black, yellow colouration by white, red colouration by light grey, and brown by dark grey shading. The antennomeres of each one male and female, dorsal and lateral view of the median lobe including the endophallic structures, ventral view of median lobe without endophallic structure, spermathecae of three females (if available) and bursa-sclerites (if available) usually of one female are figured. For the redescription of the genus, illustrations of the pro-, meso- and metathorax, female and male abdomen and right hind wing in dorsal view are given.

Measurements were made for external characters. Absolute measurements are: total length from the clypeus to apex of the elytron, length of the elytron, maximal width of both elytra (usually in the middle or posterior third of the elytra), and width of the pronotum. Relative measurements are: length to width of the pronotum, maximal width of both elytra to length of the elytron, length of the second to third antennomeres, and length of the third to fourth antennomeres. A number of specimens measured are given in the description under "total length". Further materials examined are listed, and all label data are exactly rewritten.

The subsequent redescriptions are based on labelled specimens from the following collections as listed in Tables 1–3. Acronyms used and responsible curators in brackets: The Natural History Museum, London (BMNH; S. Shute); Institute Royal des Sciences Naturelle de Belgique, Brussels (IRSN; P. Limbourg); Museo Civico Storia di Naturale, Genova (MCGD; R. Poggi); Zoology, Harvard University (MCZH); Museum für Naturkunde der Humboldt Universität, Berlin (MNHU; J. Frisch, J. Willers); Swedish Museum of Natural History Stockholm (NHRS; B. Viklund); Nationaal Natuurhistorisch Museum, Leiden (NNML; F. van Assen); Center for Insect Systematics, UKM, Malaysia (UKM; R. Yusop); Utah Museum of Natural History, Salt Lake City (UMNH) and Collection of Jan Bezděk, Brno (CJB).

For location data, geographical coordinates were given in degrees and minutes. These coordinates were mostly taken from Google Earth. The distribution map has been produced by ArcGis.

TAXONOMY

REDESCRIPTION OF *NEOLEPTA* JACOBY, 1884

Type species. — *Neolepta biplagiata* Jacoby, 1884: 223; designated by Maulik (1936).

Total length. — 4.85–5.75 mm (mean: 5.23 mm)

Head. — Reddish-brown. Impunctate, with significant transverse impression between posterior third of eyes. Eyes large, strongly convex. Labial palpi slender and maxillary palpi enlarged (Fig. 1a), occasionally dark brown to black. Labrum and mandible brown to red. Antennae elongated, extended to the apical third of elytra (Figs. 2, 10); third to terminal antennomere densely covered by bristle-like setae. First and second basal antennomere contrasting reddish-brown, third to terminal antennomere black. First antennomere club-shaped, second antennomere a bit shorter than third antennomere; ratio length of second to third antennomeres 0.75–0.80 (mean: 0.76); ratio length of third to fourth antennomeres 0.40–0.50 (mean: 0.44); the median antennomeres insignificantly widened in *N. sumatrensis* but rather slender in *N. quadriplagiata*.

Thorax. — Pronotum transverse, anterior angle rounded and slightly thickened, posterior margin rounded, sinuate at each side (Figs. 2, 10). Reddish-brown as head, shiny and finely punctuated with a transverse depression beyond the middle

Table 1. Numbers of material examined and collection investigated for *Neolepta.*

Collections	***N. sumatrensis* (Jacoby, 1884)**	***N. quadriplagiata* Jacoby, 1886**
BMNH	33	4
NNML	15	3
NHRS	2	—
MCGD	6	7
MNHU	4	—
CJB	1	2
IRSN	1	1
MCZH	—	1
UMNH	1	—
TOTAL	63	19

Table 2. Numbers of material examined and collection investigated for *Paraneolepta*, new genus.

Collections	***P. marginata* (Jacoby, 1884)**	***P. limbella* (Baly, 1886)**	***P. imitans* (Jacoby, 1894)**
BMNH	6	43	22
UKM	—	7	5
NNML	38	—	4
NHRS	—	1	1
MNHU	—	—	1
CJB	—	6	—
TOTAL	**44**	**57**	**33**

Table 3. Numbers of material examined and collection investigated for *Orthoneolepta*, new genus.

Collections	***O. fulvipennis* (Jacoby, 1884)**	***O. banggiensis* (Mohamedsaid, 1997)**
BMNH	36	39
UKM	—	11
NNML	8	—
MCGD	2	—
MNHU	2	—
NHRS	1	3
CJB	1	—
TOTAL	**50**	**53**

of the base. Pronotal width 1.50–1.75 mm (mean: 1.62 mm), ratio length to width 0.52–0.60 (mean: 0.56). Scutellum triangular, impunctate, reddish-brown. Procoxal cavities nearly closed (Fig. 1b). Meso- and metathorax brown to red. Metasternum broad (Fig. 1c). Elytra finely punctuated, black with transverse yellowish spot on the disc of each elytron, two spots on *N. sumatrensis* (Fig. 2) and four spots on *N. quadriplagiata* (Fig. 10). Elytral length 3.80–4.50 mm (mean: 4.15 mm), maximal width of both elytra together 2.00–3.30 mm (mean: 2.93 mm), ratio of maximal width of both elytra together to length of elytra 0.69–0.76 (mean: 0.72). Alae fully developed (Fig. 1d). Legs long and slender, basi-metatarsus elongated (Fig. 1e–g), entirely reddish-brown, black tibia and tarsus in *N. quadriplagiata.*

Abdomen. — Pale yellow to reddish-brown. Last visible sternite in females rounded at apex (Fig. 1h) and in males with two deep, parallel-sided incisions (Fig. 1i).

Male genitalia. — The median lobe is symmetrical, parallel-sided at base and insignificantly narrowed towards apex. Apically not incised and carinated ventrally (Figs. 4a, b, 12a, b). Tectum long, broad to narrow and became pointed at apex, and reaching the tip of the median lobe (Figs 4a, b, 12a, b.). Endophallus consist of a bundle of long, slender and straight median spiculae. A stronger sclerotized ventral carina with an apical hook close to the apex occurred on the apical third of the median lobe. Median lobe curved in lateral view (Fig. 4b). Sacculus clearly visible (Figs. 4, 12).

***Female genitalia*.** — Spermatheca with small nodulus, and usually strongly curved, slender cornu (Figs. 5, 13). Two pairs of bursa sclerites, weakly sclerotized with strong spines (Figs. 6, 14).

***Distribution*.** — The species of this group are restricted to South-East Asia and they are up to now only recorded from Singapore, Malaysia (Peninsular) and Indonesia (Borneo, Sumatra), southwards to Java (Fig. 7).

***Diagnosis*.** — *Neolepta* are medium size galerucines (4.85–5.75 mm) with strongly elongated basi-metatarsus, reddish-brown head and pronotum, and usually contrasting black antennae. The elytral colouration is often with transverse yellowish spots (Figs. 2, 10). *Neolepta* is most similar to *Arcastes* Baly, 1865 with the type species, *N. biplagiata* Jacoby, 1884 looking very similar to *A. biplagiata* Baly, 1865 at a first glance. The similarities of certain morphological characters between these two groups have been reported in the revision of *Arcastes* (Hazmi & Wagner, 2010a).

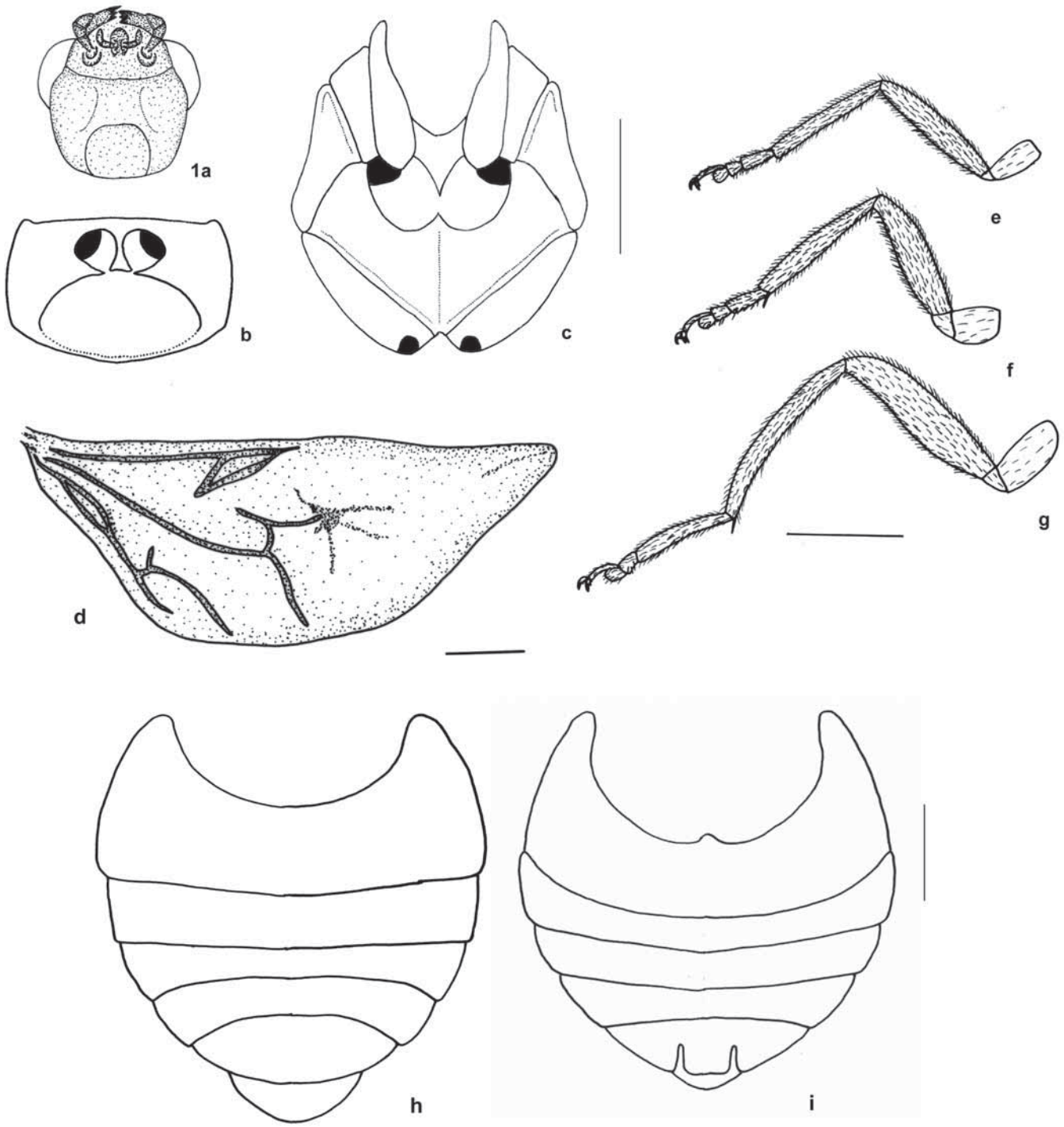


Fig. 1. *Neolepta sumatrensis* (Jacoby, 1884): a, head; b, prothorax; c, meso- and metathorax, ventral view; d, hindwing, right, dorsal view; e, prothoracic leg; f, mesothoracic leg; g, metathoracic leg; h, female abdomen; i, male abdomen. Scale bar = 1 mm.

The pronotum of *Neolepta* is on average less broad (0.52–0.60) than in *Arcastes* (0.48–0.57; Hazmi & Wagner, 2010a) and *Candezea* (0.42–0.59; Wagner & Kurtscheid, 2005), but in the same range as *Monolepta* (e. g., Wagner, 2007) of which these three genera are also listed in the "Monoleptites". The significant widened third to eighth antennomeres are characteristic for all species of *Arcastes*, but in *Neolepta*, the antennae are slender and only *N. sumatrensis* has insignificantly widened median antennomeres.

The second antennomere is slightly shorter than the third in *Neolepta* (ratio length of second to third antennomeres 0.75–0.80), about the same range as in *Monolepta* (0.82–1.10) but very different to *Arcastes* (0.50–0.57) and *Candezea* (0.49–0.63) of which third antennomere is roughly twice as long as the second.

The median lobe are without incisions in these four genera, symmetrically arranged in *Neolepta*, *Monolepta* and *Candezea* but asymmetrically arranged in *Arcastes* with a certain shape of endophallic spiculae. In *Neolepta*, only the median spiculae occurred, while in *Monolepta* and *Candezea* three distinct pairs of spiculae occurred (median, ventral and lateral spiculae). In *Neolepta*, the stronger sclerotized ventral spur with an apical hook occurred, and the median lobe is carinated ventrally as in *Candezea*. The shape of the spermatheca of *Neolepta* resembles that of *Candezea*, with long curved cornu, but in *Neolepta* two pairs of bursa sclerites occurs, while in *Candezea* only one pair exist. There are also two pairs of bursa sclerites in *Monolepta*, but they are lacking in *Arcastes*.

Differences to the herein newly described genera *Orthoneolepta*, new genus and *Paraneolepta*, new genus are described in detail in the diagnoses of those new genera. An easily recognisable external character to *Orthoneolepta*, new genus are the significantly widened fourth to sixth antennomere are, while species of *Paraneolepta*, new genus are much larger and characterised by the long and slender antennomeres. Most important are the very different genital patterns in both sexes that characterise these three groups.

REDESCRIPTIONS OF SPECIES

Neolepta sumatrensis (Jacoby, 1884), new combination
(Figs. 2–9)

Arcastes sumatrensis Jacoby, 1884: 47–48
Neolepta biplagiata Jacoby, 1884: 223; new synonym

Type material. — *Arcastes sumatrensis*: Holotype: Female, "Spj, 4.77 / Arcastes sumatrensis Jac." (NNML; Fig. 8). Type locality: Indonesia, Soepajang 0°27'S/100°54'E. Holotype by original indication "single specimen from Soepajang (Sumatra-Expedition)".
Neolepta biplagiata: Lectotype, Male, "Dr. B. Hagen. Tandjong Morawa, Serdang, N. O. Sumatra / *Neolepta biplagiata* Jac." (NNML; Fig. 9). Type locality: Indonesia, Tandjong Morawa, 0°35'S/101°18'E. Jacoby gave no number on the specimens he studied, but there are 14 specimens with labels from the type locality available. Thus, we herein designate a lectotype to fix the name on single specimen. Paralectotypes: 13 ex., same data as lectotype (7 ex. BMNH, 6 ex. NNML). – Invalid types: 1 ex. from Sumatra, Si-Rambé, 6°11'S/106°48'E, Dec.1990 – Mar.1991, E. Modigliani in MCZ and 2 ex. from Dohrn, Sumatra, Soekaranda, 0°37'S/104°29'E, 71484 in MNHU are labelled as co-type, but are not from the type series.

Further material examined. — ***Indonesia.*** 3 ex., Sumatra, Collect. Duvivier, Arcastes sumatrensis Jacoby (IRSN; NNML; BMNH); 15 ex., Sumatra, Manna, 4°27'S/102°59'E, M. Knappert, coll. Veth (NNML); 2 ex., Sumatra, Palembang, 2°59'S/104°45'E, M. Knappert, coll. Veth (NNML); 1 ex., SVL, Deli, 3°35'N/98°39'E, coll. Veth (NNML); 1 ex., N. Sumatra, Toba Plateau Tiga Dolok, Holzweg Eins, ca. 950 m, 2°55'N/99°03'E, 20 Jun.1972, J. Krikken, no. 20 (NNML); 1 ex., N. E. Sumatra, Deli, Penatangsiantar Balimbingan Est., forest 600 m, 3°35'N/98°39'E, Aug.1953, A. Sollaart (NNML); 2 ex., Sumatra, Fort cte kock, 0°17'S/100°22'E, Oct.1913, Edward Jacobson (BMNH, NNML); 1 ex., Soekaranda, 0°37'S/104°29'E, Jan.1894, Dohrn (BMNH); 1 ex., West Sumatra, Pulau Tello, 0°04'S/98°13'E, Nov.1924, C. B. K. and N. S. (BMNH); 1 ex., Sumatra, Siolak Daras, Korinchi Valley, 3100 ft, 2°08'S/101°29'E, Mar.1914 (BMNH); 1 ex., Sumatra, Sandaran Agong, Korinchi Lake, 2450 ft, 2°08'S/101°29'E, May–Jun.1914 (BMNH); 1 ex., Sumatra, Pagherang Pisang, 0°35'S/101°20'E, Oct.1890, Mar.1891, E. Modigliani (BMNH); 1 ex., Sumatra, Sungei-Bulu, Sep.1878, G. Beccari (MCGD); 2 ex., Sumatra, Ajer-Mantcior, Aug.1878, G. Beccari (MCGD); 3 ex., Sumatra, Pangherang-Pisang, Oct.1890 – Mar.1891, G. Beccari (MCGD); 1 ex., Brastagi, Sumatra, 3°11'N/98°28'E, Mjoberg (NHRS); 1 ex., N. O. Sumatra, Deli, 3°35'N/98°39'E, L. Martin S., 86977 (MNHU); 1 ex., W. Sumatra, Liman Manis b. Padang, 0°25'S/101°34'E, 8 Jan.1909, Schoede S.G (MNHU); 1 ex., West Sumatra, Batu Insel Mentawei Gruppe, 0°25'S/101°34'E, 16 Jan.1909, H. Schoede (MNHU). – ***Malaysia.*** 9 ex., Malay Penin., Selangor, Bukit Kutu, 3300 ft, 3°33'N/101°43'E, 19 Mar.1931, 27 Sep.1932, H. M. Pendlebury (BMNH); 4 ex., Semangko pass Selangor-Pahang, 2700', 3°35'N/103°24'E, Mar.1912, Ex. F. M. S. Museum, B. M. 1955–354 (BMNH); 1 ex., Pahang, F. M. S. Cameron Highland, Gunung Kial, 5000 ft, 4°30'N/101°23'E, 27 Jul.1938 (BMNH); 1 ex., Perak, Gunong Kledang, 4°35'N/101°01'E, 2646, Nov.1916 (BMNH); 3 ex., Perak, 4°48'N/101°09'E, Doherty, Fry coll. 1905.100 (BMNH); 1 ex., West Sumatra, 0°44'S/100°48'E, Jacoby coll. 1909–28a (BMNH); 1 ex., Kampong, 1450 m, 21 Jan.1981 (NHRS); 1 ex., Pahang, Genting Highland, 2 km top, 3°22'N/102°06'E, 2 Aug.1992, C. W. & L. B. O' Brein (UMNH); 1 ex., Borneo, Sabah, W Crocker Range E, West of Apin Apin, 5°34'N/116°05'E, leg. Snizek, Feb.2000 (CJB).

Total length. — 4.85–5.75 mm (mean: 5.23 mm, n = 15)

Head. — Reddish-brown, impunctate, first and second antennomeres contrasting reddish-brown, third to outer antennomere black (Figs. 2, 8, 9). Ratio length of second to third antennomeres 0.75–0.80 (mean: 0.76); median antennomeres insignificantly widened, ratio length of third to fourth antennomeres 0.40–0.50 (mean: 0.44), terminal are more slender (Fig. 3).

Thorax. — Pronotum reddish-brown, pronotal width 1.50–1.75 mm (mean: 1.62), ratio length to width 0.52–0.60 (mean: 0.56 mm). Elytra black with transverse yellowish spot on the disc of each elytron, not quite extending to either margin (Figs. 2, 8, 9). Elytral length 3.80–4.50 mm (mean: 4.15 mm), maximal width of both elytra together 2.00–3.30

mm (mean: 2.93 mm), ratio of maximal width of both elytra together to length of elytra 0.69–0.76 (mean: 0.72). Legs reddish-brown.

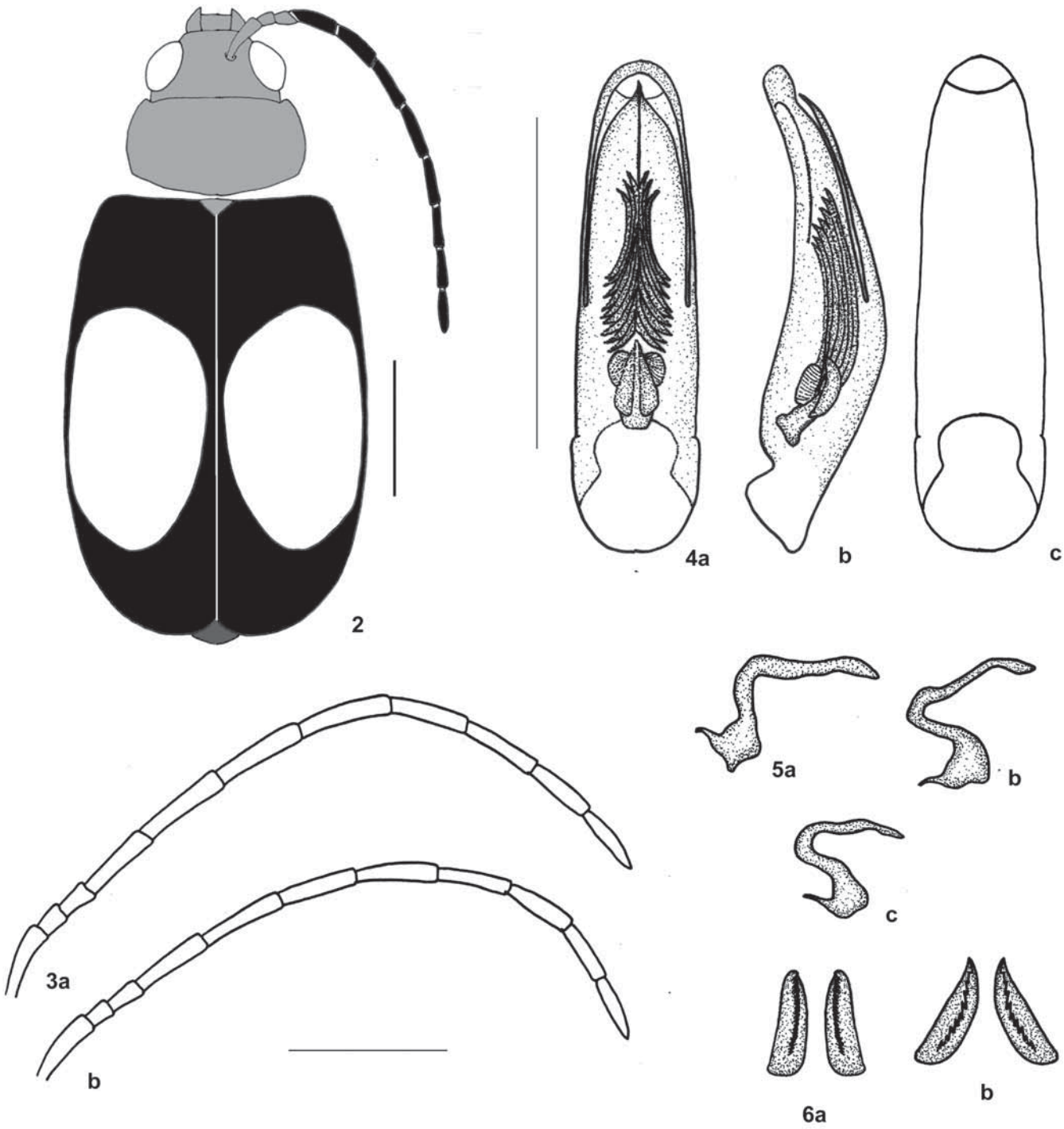
***Abdomen*.** — Pale yellow to reddish-brown.

Male genitalia. — Median lobe parallel-sided, rounded at apex, not incised, apex carinated ventrally in the middle. Tectum broad and became lanceolate at apex. Endophallus with one distinct type of spiculae, median spiculae long, slender and straight (Fig. 4).

***Female genitalia*.** — Like description of the genus (Figs. 5, 6).

***Distribution*.** — *Neolepta sumatrensis* is up to now known from Sumatra and some part of Peninsular Malaysia and Borneo (Fig. 7).

***Diagnosis*.** — *Neolepta sumatrensis* can be differentiated from *N. quadriplagiata* by the dorsal colouration. *Neolepta sumatrensis* are often with one transverse yellowish oval spot on each elytron while *N. quadriplagiata* has two



Figs. 2–6. *Neolepta sumatrensis* (Jacoby, 1884). 2, dorsal colour pattern. 3, antennae: a, male; b, female. 4, Median lobe: a, dorsal; b, lateral; c, ventral. 5, three different spermathecae. 6, two pairs of bursa sclerites. Scale bar = 1 mm.

yellowish oval spots on each elytron. As written by Jacoby (1884) in his original description, *N. sumatrensis* has a more transverse prothorax than other species. It is true that ratio pronotal length to width of *N. sumatrensis* is on average larger (0.52–0.60) than for *N. quadriplagiata* is (0.59–0.61). Characteristic for *N. sumatrensis* are also the widened median antennomeres in both sexes (Fig. 3), while *N. quadriplagiata* are only slender antennomeres (Fig. 11). The median lobe and the tectum of *N. sumatrensis* (Fig. 4) are broader than in *N. quadriplagiata* (Fig. 12).

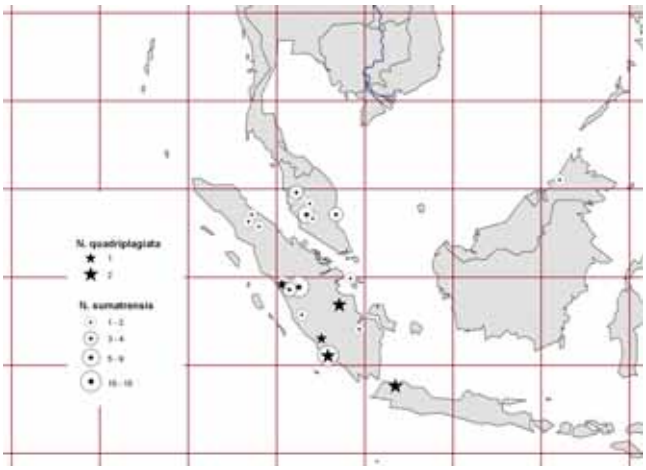


Fig. 7. Distribution of *N. sumatrensis* (Jacoby, 1884) and *N. quadriplagiata* Jacoby, 1886.

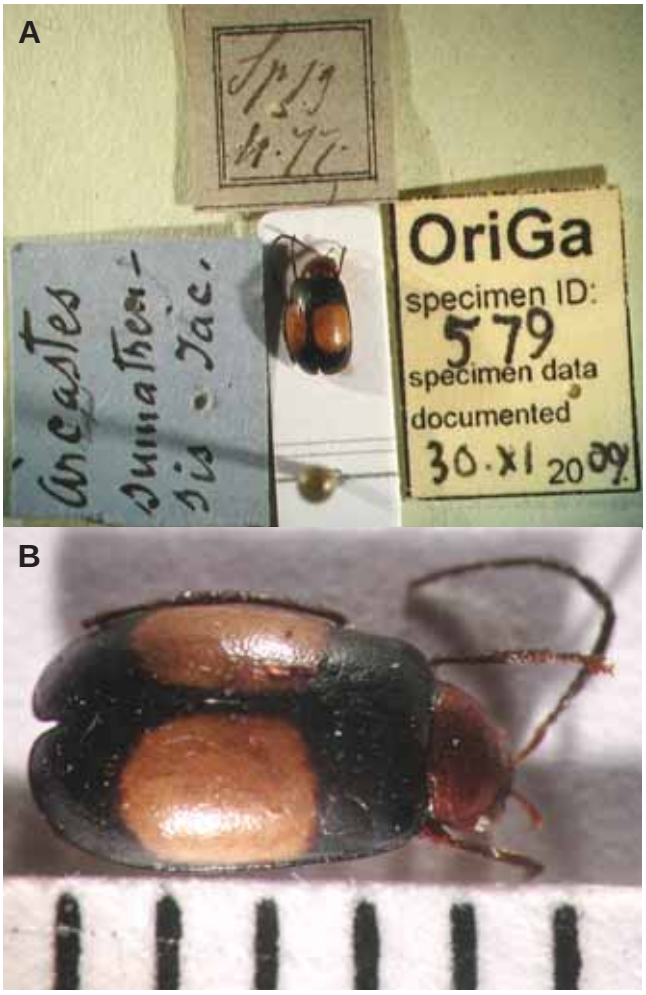


Fig. 8. Holotype of *Arcastes sumatrensis* Jacoby, 1884: a, with labels; b, detail.

Neolepta quadriplagiata Jacoby, 1886
(Figs. 10–15)

Neolepta quadriplagiata Jacoby, 1886: 99–100

Type material. — Lectotype: "Sumatra Mt. Singgalang, Luglio 1878. O. Beccari / *Neolepta 4plagiata* Jac." (MCGD; Fig. 15). Type locality: Indonesia, Singgalang, 0°24'S/100°21'E. Paralectotypes: 3 ex., same data as lectotype (MCGD); 1 ex., additionally with "1st Jacoby coll. / Type 18314" (MCZH). Jacoby gave no number on the specimens he studied, and we herein designate a lectotype to fix the name on single specimen.

Further material examined. — ***Indonesia.*** 2 ex., Sumatra, Ajer Mantcior, Aug.1878, G. Beccari (MCGD); 2 ex., Sumatra, Pangherang-Pisang, Oct.1890 – Mar.1891, E. Modigliani (MCGD); 1 ex., Sumatra, St. Rambe, Dec.1890 – Mar.1891, E. Modigliani (MCGD); 2 ex., Sumatra, Korinchi Peak, 7300 ft, 1°35'S/103°36'E,

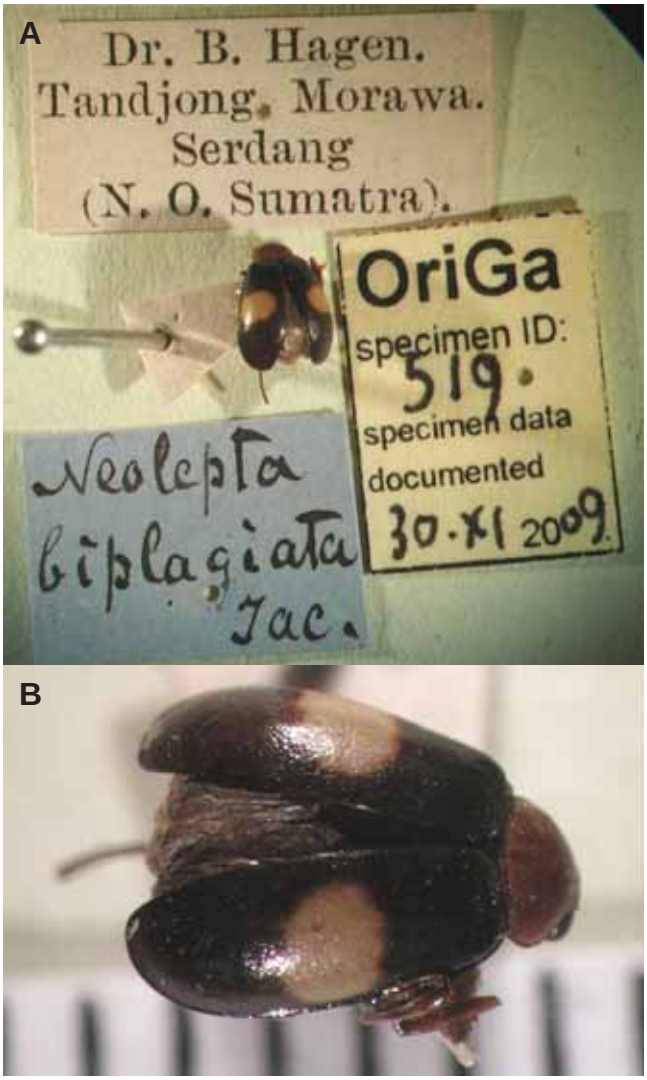
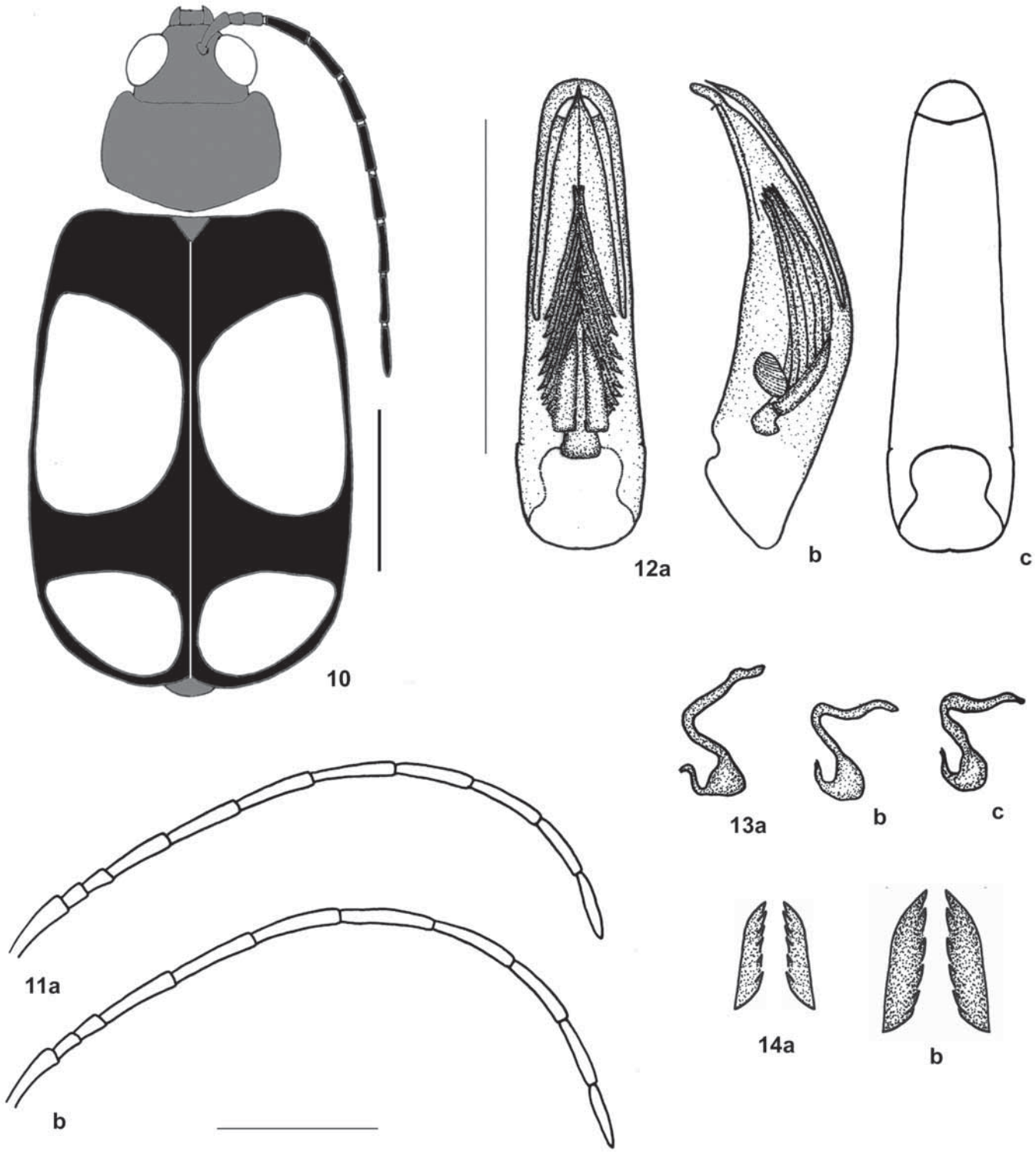


Fig. 9. Lectotype of *Neolepta biplagiata* Jacoby, 1884: a, with labels; b, detail.

May 1914, Ex. F. M. S. Museum, B. M. 1955–354 (BMNH); 7 ex., Sumatra, Si-Rambe, 6°11'S/106°48'E, Dec.90 – Mar.91, E. Modigliani (BMNH; IRSN, MCGD); 2 ex., Sumatra, Manna, 4°27'S/102°59'E, 1902, M. Knappert, coll. Veth (NNML); 1 ex., N. Sumatra, Bivouac Two, Mt. Bandahara, no 24 ca 1430 m, submontane multistratal evergreen forest, 3°44'N/97°43'E, 5–10 Jul.1972, J. Krikken, at light (NNML); 1 ex., Sumatra Barat, Mt. Singgalang, ca 15 km Bukit Tinggi, 2100 m, 0°24'S/100°21'E, 12 Feb.1996, leg. C. Zorn (CJB); 1 ex., W. Sumatra, Bengkulu prov., nr. Curup, Bukit Kaba Mt., 1000–1500 m, 3°29'S/102°36'E, 30 Jan. – 3 Feb.2000, J. Bezdek leg. (CJB).

Total length. — 5.00–5.25 mm (mean: 5.11 mm, n = 8)

Head. — Reddish-brown, impunctate. First and second basal antennomeres contrasting brown-reddish, third to outer antennomeres black (Figs. 10, 15). Ratio length of second



Figs. 10–14. *Neolepta quadriplagiata* Jacoby, 1886. 10, dorsal colour pattern. 11, antennae: a, male; b, female; 12, median lobe: a, dorsal; b, lateral; c, ventral. 13, three different spermathecae. 14, two pairs of bursa sclerites.

to third antennomeres 0.75–0.88 (mean: 0.79); median to terminal antennomeres are slender, ratio length of third to fourth antennomere 0.40–0.44 (mean: 0.41; Fig. 11).

***Thorax*.** — Pronotum reddish-brown. Pronotal width 1.30–1.45 mm (mean: 1.40 mm), ratio length to width 0.59–0.62 (mean: 0.61). Elytra black at base, a broad yellowish spot occupies the anterior half of the disc, extending nearly to either the outer margin, the anterior edge of this spot is obliquely rounded near the suture, another smaller and triangular spot is placed near the apex of each elytron (Figs. 10, 15). Elytral length 4.00–4.25 mm (mean: 4.15 mm), maximal width of both elytra together 2.60–3.00 mm (mean: 2.84 mm), ratio of maximal width of both elytra together to length of elytra 0.63–0.70 (mean: 0.68). Coxa and femur reddish-brown, tibia and tarsus black.

***Abdomen*.** — Pale yellow to reddish brown.

***Male genitalia*.** — Median lobe not incised, apex carinated ventrally in the middle. Tectum narrow, became pointed at apex. Endophallus consists of only median spiculae; long, slender and straight. Stronger sclerotized ventral spur with apical hook occurred at the apical first of the median lobe. Several basal endophallus structure at the bottom, close to sacculus (Fig. 12).

***Female genitalia*.** — Like description of the genus (Figs. 13, 14).

***Diagnosis*.** — Median antennomeres of *N. quadriplagiata* are rather slender while *N. sumatrensis* are insignificantly widened. The median lobe of *N. quadriplagiata* (Fig. 12) is quite similar to *N. sumatrensis*, but the latter has a broadened tectum (Fig. 4). Elytron always with two yellowish spots.

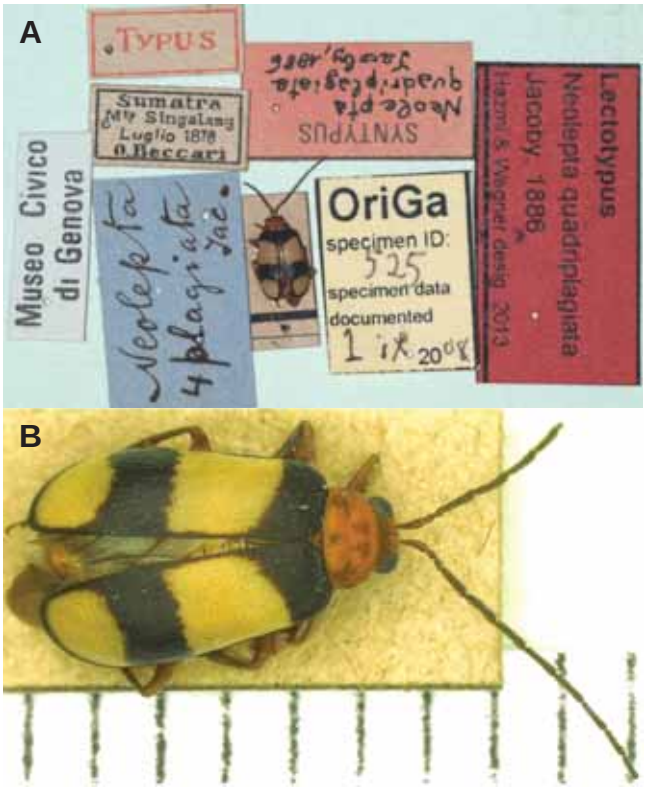


Fig. 15. Lectotype of *N. quadriplagiata* Jacoby, 1886: a, with labels; b, detail.

Paraneolepta, new genus

***Type species*.** — *Ochralea marginata* Jacoby, 1884: 55–56; herein designated.

***Etymology*.** — Combination of para (latin: next to) and *Neolepta*; gender: feminine.

***Total length*.** — 6.65–10.10 mm (mean: 7.43 mm)

***Head*.** — Pale yellow to reddish-brown. Impunctate, with significant transverse impression between posterior third of eyes. Eyes large, convex. Labial palpi and maxillary palpi slender (Fig. 16a). Labrum yellow to brown and black at apex. Mandibulae brownish. Antennae slender, entirely black and only the first basal antennomeres contrasting reddish-brown, extended to the apical third of the elytra (Figs. 17, 25, 31). Third to terminal antennomere with very dense and rough cover of partly bristle-like setae. First antennomere club shaped; second antennomere a bit shorter than third antennomere; ratio length of second to third antennomere 0.75–0.86 (mean: 0.81); ratio length of third to fourth antennomere 0.40–0.50 (mean: 0.45; Figs. 18, 26, 32).

***Thorax*.** — Pronotum transverse, lateral and posterior margin evenly rounded, the anterior angles slightly thickened (Figs. 17, 25, 31), often with transverse depression beyond the middle of the base. Pronotum pale yellow to reddish-brown. Pronotal width 1.65–2.70 mm (mean: 2.14 mm), ratio length to width 0.60–0.63 (mean: 0.62). Scutellum triangular, impunctate, yellow to black. Procoxal cavities nearly closed (Fig. 16b). Meso- and metathorax yellowish to blackish. Mesosternum broad (Fig. 16c). Elytra strongly punctuated, punctuation slightly coarser and denser than that of pronotum, entirely yellow to brown, sutural and lateral margin narrowly black. Elytral length 4.60–8.10 mm (mean: 5.90 mm), maximal width of both elytra together 3.20–5.40 mm (mean: 4.14 mm), ratio of maximal width of both elytra together to length of elytra 0.65–0.74 (mean: 0.71). Alae fully developed (Fig. 16d). Legs long and slender, basi-metatarsus elongated (Fig. 16e–g), yellow to brown, tibiae and tarsi blackish. In particular tibia with dense and fine setae.

***Abdomen*.** — Pale yellow to brown. Last visible sternite in females rounded at apex (Fig. 16h) and in males with two deep, parallel sided incisions (Fig. 16i).

***Male genitalia*.** — The median lobe symmetrical and usually insignificantly narrowed towards apex, not incised apically. Tectum broad at base, vary from long to short and became lanceolate at apex (Fig. 19a). The endophallus consist of a bundle of laterally arranged long, slender and straight median spiculae. At the bottom of median spiculae, with distinct endophallus structure. Sacculus clearly visible (Figs. 19, 27, 33).

Female genitalia. — Spermatheca with slender and elongated nodulus. Middle part long and slightly curved, cornu long, curved, arrow-like widened beyond apex (Figs. 20, 28, 34), with a pair of sclerotized bursa sclerites (Figs. 21, 29, 35).

Distribution. — The genus is restricted to South-East Asia and up to now only recorded from Brunei, Malaysia (Peninsular) and Indonesia (Borneo, Sumatra), southwards to Java (Fig. 22).

Diagnosis. — *Paraneolepta*, new genus are relatively large galerucines with a strongly elongated basi-metatarsus, pale yellow to reddish-brown head and pronotum and usually contrasting black antennae with slender antennomeres. The pronotum is coarsely punctuated and a transverse depression beyond the middle of the base occurred. The dorsal colouration is without spots and bands, entirely yellow to brown, but the elytral suture and the elytral lateral margin are often narrowly black lined (Figs. 17, 25, 31).

Paraneolepta, new genus resembles *Neolepta* and *Orthoneolepta*, new genus. Among these three groups, *Paraneolepta*, new genus is largest in term of the body length (6.65–10.10 mm; *Neolepta* 4.85–5.75 mm; *Orthoneolepta*, new genus 4.50–5.75 mm). The antennomeres of *Paraneolepta*, new genus are slender while in *Neolepta*, the median antennomeres are insignificantly widened, and they are strongly widened in *Orthoneolepta*, new genus. The second antennomere of *Paraneolepta*, new genus is somewhat shorter than third antennomere (ratio length of second to third antennomere: 0.75–0.86; Figs. 18, 26, 32), similar to *Neolepta* (0.75–0.80; Figs. 3, 11) while in *Orthoneolepta*, new genus varied from short to more or less the same length (0.60–1.00; Figs. 39, 46). Third to terminal antennomere densely covered by bristle-like setae and extended to the apical third of elytra in these three groups.

The pronotum of *Paraneolepta*, new genus is transverse and comparatively less broad (0.60–0.63), like in *Orthoneolepta*, new genus (0.59–0.65) compared to *Neolepta* (0.52–0.60). The depression beyond the middle of the base occurrs in these three groups, but the punctuation is coarsest in *Paraneolepta*, new genus.

Besides many similarities among these three groups, they can be clearly distinguished by the genital characters in both sexes. The median lobe of *Paraneolepta*, new genus are without apical incision (Figs. 19, 27, 33) as in *Neolepta*, but the latter is with stronger sclerotized ventral spur and carinated ventrally (Figs. 4, 12). In comparison with *Orthoneolepta*, new genus, the median lobe has a deep incision apically (Figs. 40, 47). The endophallus consist of a bundle of laterally arranged long, slender and straight median spiculae in these three groups. The median lobe of *Paraneolepta*, new genus is bigger and longer than in *Neolepta*, and narrower towards the apex.

The spermatheca is the same shape for *Paraneolepta*, new genus (Figs. 20, 28, 34) and *Orthoneolepta*, new genus (Figs. 41, 48). Spermatheca with small, slender and elongated nodulus and middle part slightly curved. For *Neolepta*, the nodulus is rounded and usually possess a strongly curved cornu (Figs. 5, 13). Bursa sclerites showed a different shape (Figs. 6, 14, 21, 29, 35, 42, 49).

REDESCRIPTIONS OF SPECIES

Paraneolepta marginata (Jacoby, 1884), new combination

(Figs. 16–24)

Ochralea marginata Jacoby, 1884: 55–56
Luperodes marginata Baly, 1886: 30–31; new synonym
Luperodes cincta Weise, 1921: 30; replacement name for *Luperodes marginatus* Baly, 1886; new synonym

Type material. — *Ochralea marginata*: Lectotype, Male, "Soerol., 4.18 / Ochralea marginata Jac." (NNML; Fig. 23). Type locality: Indonesia, Soerol, 0°35'S/101°20'E. Jacoby (1884) stated that there are at least two specimens when he described the species. Thus we designate a lectotype to fix the specimen that available to us.

Luperodes marginata: Holotype, "Suma. / Luperodes marginata / Type / Luperodes marginata Baly, Type" (BMNH; Fig. 24). Type locality: Indonesia, Sumatra. Baly gave no number on the specimens he studied, but there are three specimens available, and only one of them carries a label with "type", which can be treated as holotype by indication. – Paratypes, 2 ex., Sumatra, Baly coll. (BMNH)

Further material examined. — ***Indonesia.*** 16 ex., Sumatra, Museum Leiden, ex. collection, J. J. de Vos tot, Nederveen Cappel (NNML); 15 ex., Sumatra, Palembang, 2°59'S/104°45'E, M. Knappert, coll. Vth. (NNML); 5 ex., Dr. B. Hagen, Tandjong Morawa Serdang (N. O. Sumatra), 0°35'S/101°18'E (NNML); 4 ex., N. E. Sumatra, Deli, Seleleh, Kuala Limpang, Medang Ara State, 3°34'N/98°40'E, Mar.1954, A. Sollaart, Lowland Forest (NNML); 2 ex., Sumatra, S. E. coast, Laut Tador, 90 m, 3°32'N/99°04'E, 2/5 Aug.1950, E. Straatman leg. (NNML); 1 ex., Java, Wallace, 6°23'S/106°48'E, 67.56 (NNML); 1 ex., marginata Jac., Jacoby coll. 1909-28a (BMNH).

Total length. — 7.10–10.10 mm (mean: 8.45mm; n = 10)

Head. — Reddish-brown, impunctate. Antennae pale brown (Fig. 17). Ratio length of second to third antennomere 0.83–0.86 (mean: 0.85); slender, ratio length of third to fourth antennomere 0.43–0.50 (mean: 0.47; Fig. 18).

Thorax. — Pronotum pale brown to reddish-brown, finely punctuated. Pronotal width 2.25–2.70 mm (mean: 2.46 mm), ratio length to width 0.60–0.63 (mean: 0.61). Scutellum black. Elytra entirely yellow to brownish, sutural and lateral margin narrowly black. Elytral length 1.40–1.65 mm (mean: 1.51 mm), maximal width of both elytra together 2.25–2.70 mm (mean: 2.46 mm), ratio of maximal width of both elytra together to length of elytra 0.65–0.70 (mean: 0.67). Legs entirely pale yellow to brownish.

Abdomen. — Pale yellow to brown.

Male genitalia. — Median lobe is broad at middle and slightly narrowed towards apex and not incised apically.

Tectum broadened at apex and with a fine, pointed tip (Fig. 19a). Endophallus consist of a bundle of laterally arranged long, slender and straight median spiculae. At the bottom of the median spiculae, several basal endophallus structures. Sacculus clearly visible (Fig. 19).

***Female genitalia*.** — Spermatheca like description of the genus (Fig. 20), two pairs of bursa sclerites like Fig. 21.

***Distribution*.** — This species was often collected at Sumatra Island, and occurred also in Java (Fig. 22).

***Diagnosis*.** — *Paraneolepta marginata* is on average the largest species of this group (7.10–10.10 mm). The antennae are slender and entirely pale yellow to brown. The body colouration is brownish with narrowly black suture, and the punctuation of the pronotum is coarse. The median lobe

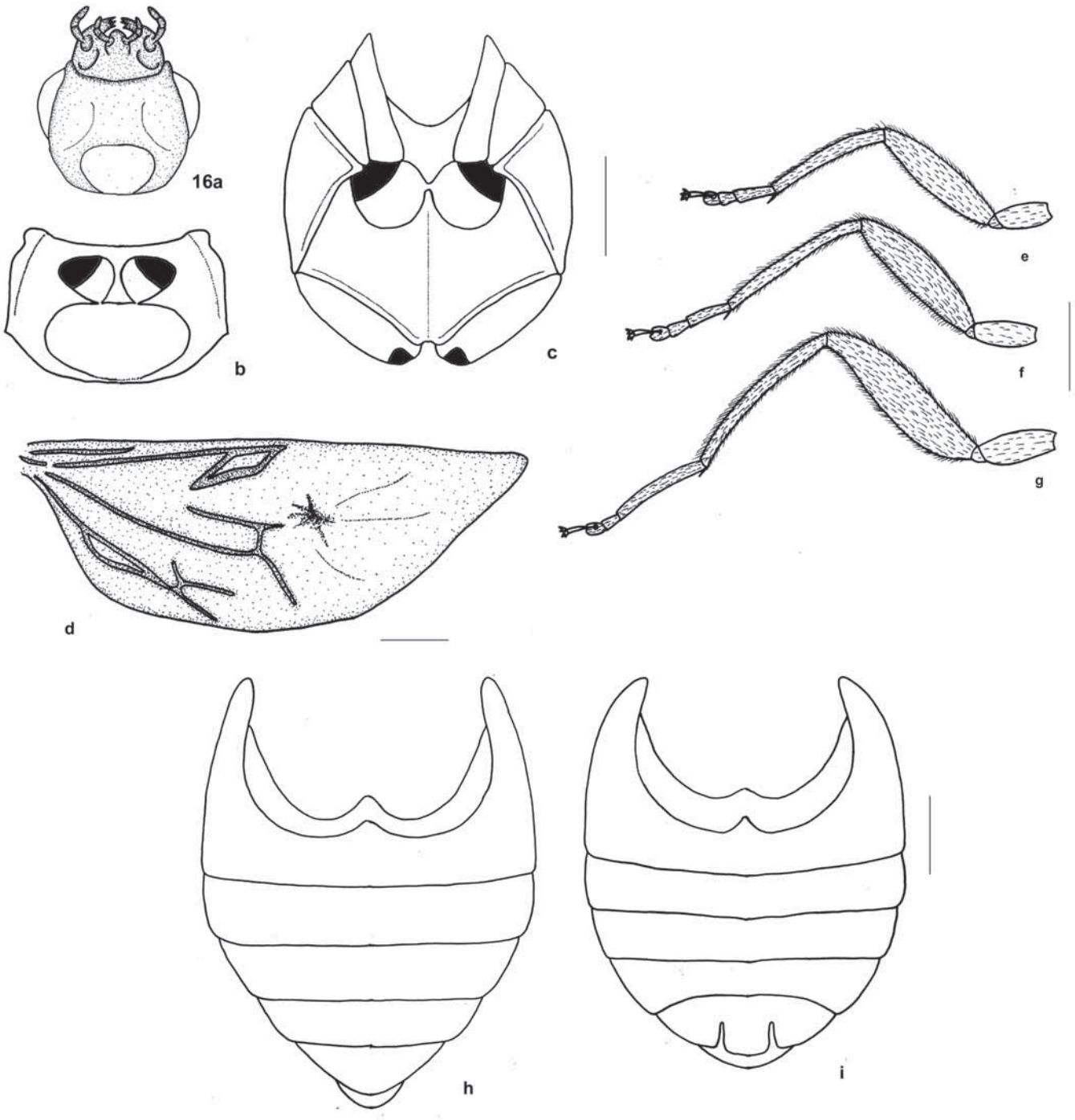
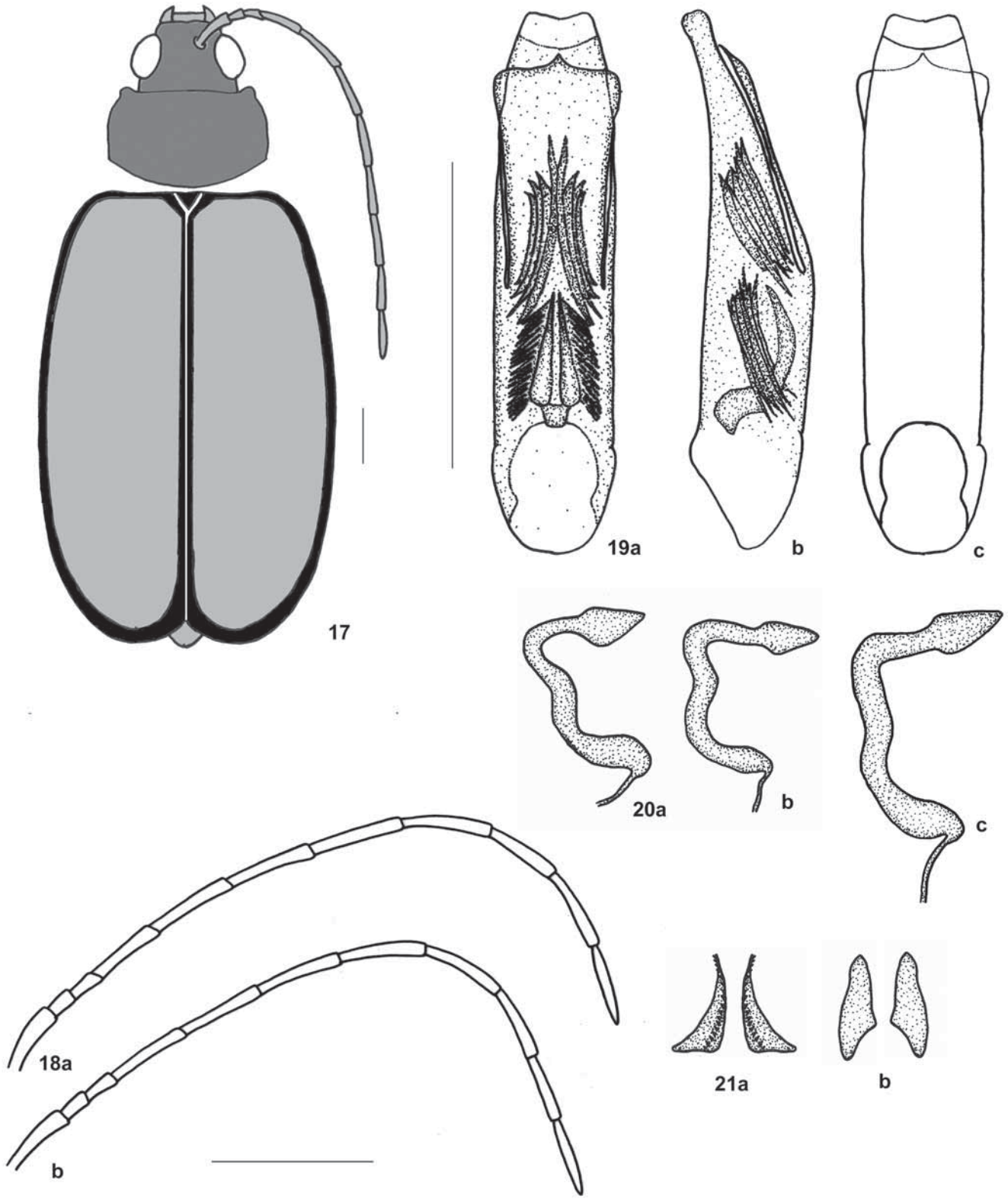


Fig. 16. *Paraneolepta marginata* (Jacoby, 1884): a, head; b, prothorax; c, meso- and metathorax, ventral view; d, hindwing, right, dorsal view; e, prothoracic leg; f, mesothoracic leg; g, metathoracic leg; h, female abdomen; i, male abdomen.



Figs. 17–21. *Paraneolepta marginata* (Jacoby, 1884). 17, dorsal colour pattern. 18, antennae: a, male; b, female. 19, median lobe: a, dorsal; b, lateral; c, ventral. 20, three different spermathecae. 21, two pairs of bursa sclerites.

is larger and broad from base to apex, the tectum is also broadened at the tip. The spermatheca is big and two pairs of bursa sclerites evenly sclerotised.

***Paraneolepta limbella* (Baly, 1886), new combination**
(Figs. 25–30)

Luperodes limbella Baly, 1886: 30

Type material. — Holotype, "Luperodes limbella / Singa. / Type / Luperodes limbella Baly type / Baly coll." (BMNH; Fig. 30). Type locality: Singapore, 2°38'N/103°39'E. Baly gave no number on the specimens he studied, but there are three specimens available, and only one of them carries a label with "type", which can be treated as holotype by indication.

Further material examined. — ***Brunei.*** 5 ex., Temburong District, Ridge NE of Kuala Belalong, 4°37'N/115°8'E, 300 m, Oct.1992, 125 W MV Light Trap, J. H. Martin (BMNH); 1 ex., Labi, Bukit Teraja 60 m, Mxt. Dipt. Forest, 4°25'N/114°27'E, B.M.1983–39, Light trap 3, 25 m above ground, 23 Aug.1979, S. L. Suttor (BMNH). – ***Malaysia.*** 6 ex., Sarawak, Kapit dist., Sebong, Baleh riv., 1°54'N/113°38'E, 9–21 Mar.1994, J. Horak leg. (CJB); 3 ex., Sarawak, Mt. Matang, 1.55°N/110.35°E, 13 Dec. – 14 Jan.1914, G. E. Bryant coll. 1919-147 (BMNH); 7 ex., Quop, W. Sarawak, 1°33'N/101°24'E, G. E. Bryant, Mar.–Apr.1914 (BMNH); 8 ex., N. Borneo, Samawang, Nr. Sandakan, jungle, 5°55'N/117°46'E, 13 Jul.1927, C. B. K & H. M. P., F. M. S. Museum (BMNH); 2 ex., N. Borneo, Bettotan, Nr. Sandakan, 5°47'N/117°52'E, 2 Aug.1927, C. B. K. & H. M. P., F. M. S. Museum (BMNH); 6 ex., W. Sarawak, Lundu, 1°40'N/109°48'E, Jan.1914, G. E. Bryant (BMNH); 2 ex., Sarawak, 2°30'N/113°15'E, 1907–1909, C. J. Brooks, B.M.1936-681, Wallace, Baly coll., (BMNH); 1 ex., Sarawak, Bau, 1°25'N/110°9'E, 18 Jul. – 1 Aug.1909, C. J. Brooks, B.M.1936-681 (BMNH); 1 ex., Fed. Malay State, 1909, C. J. Brooks, B. M.1931-570 (BMNH); 5 ex., Sabah, Lembah Danum, 5°08'N/117°24'E, 3–5 Dec.1916, 8 Nov.1994, 27–31 Aug.1991, Salleh, Zaidi, Mail, Lan (BMNH); 1 ex., N. Sembilan, Gemencheh, 2°35'N/102°24'E, 4–6 Aug.1990, Zabidi (UKM); 4 ex., Sabah, Danum Valley, 5°08'N/117°24'E, 6–15 May 2007, B. H. Izfa leg. (UKM); 1 ex., Sarawak, Lanjak Entimau, 1°11'N/111°51'E, 28–29 Feb.1992, Zaidi (UKM); 1 ex., Sandakan, Borneo, 5°50'N/118°3'E, Baker (NHRS).

Total length. — 6.00–7.50 mm (mean: 6.81 mm; n = 10)

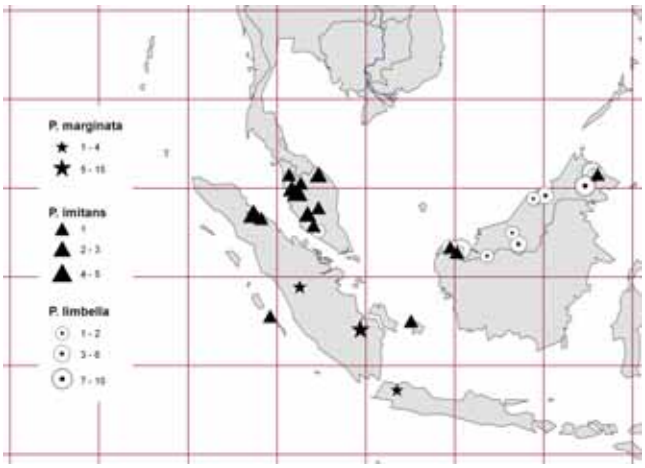


Fig. 22. Distribution of *P. marginata* (Jacoby, 1884), *P. limbella* (Baly, 1886), and *P. imitans* (Jacoby, 1894).

Head. — Pale yellow to brown, impunctate. Antennae entirely black and only the first basal antennomeres usually contrasting pale yellow to brown (Fig. 25). Ratio length of second to third antennomere 0.75–0.83 (mean: 0.79); ratio length of third to fourth antennomere 0.40–0.50 (mean: 0.44; Fig. 26).

Thorax. — Pronotum pale yellow to brown. Pronotal width 1.65–2.35 mm (mean: 1.99 mm), ratio length to width 0.60–0.63 (mean: 0.62). Scutellum usually black, but at least in 30% of the specimens examined, scutellum are yellowish and in that case, the elytra are entirely yellow to brown without further narrowly black sutural as in the other specimens, with sutural and lateral margin narrowly black.

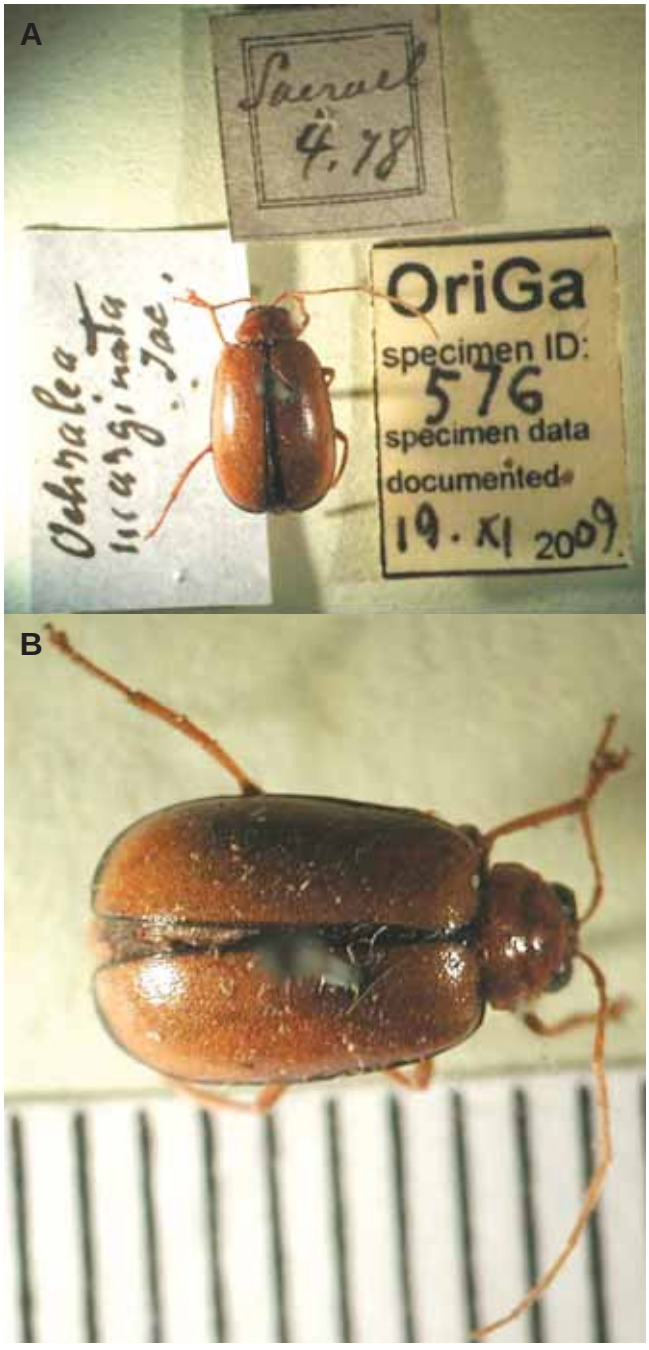


Fig. 23. Lectotype of *Ochralea marginata* Jacoby, 1884: a, with labels; b, detail.

Elytral length 4.60–5.90 mm (mean: 5.25 mm), maximal width of both elytra together 3.20–4.30 mm (mean: 3.79 mm), ratio of maximal width of both elytra together to length of elytra 0.70–0.74 (mean: 0.72). Legs brownish, tibiae and tarsi blackish.

***Abdomen*.** — Yellow to brown.

***Male genitalia*.** — Median lobe symmetrical, parallel sided, insignificantly narrow towards apex, not incised apically. Tectum short, broad at base, and became lanceolate at apex (Fig. 27a). Endophallus consist of a bundle of laterally arranged long, slender and straight median spiculae. At the bottom of median spiculae, several basal endophallus structure. Sacculus clearly visible (Fig. 27).

***Female genitalia*.** — Spermatheca like description of the genus (Fig. 28), one pair of bursa sclerites like Fig. 29.

***Distribution*.** — Recorded from Borneo, Brunei, Peninsular Malaysia (Fig. 22).

***Diagnosis*.** — *Paraneolepta limbella* is the most similar in body outline and general colouration to *P. imitans*. The differences on both species can be obtained by genital structures. The median lobe of *P. limbella* is much narrowed towards the apex (Fig. 27), while for *P. imitans*, the median lobe is much broader at the apex (Fig. 33). The spermatheca of both species are similar, but only one pair of bursa sclerites in *P. limbella* (Fig. 29), while two pairs in *P. imitans* (Fig. 35).

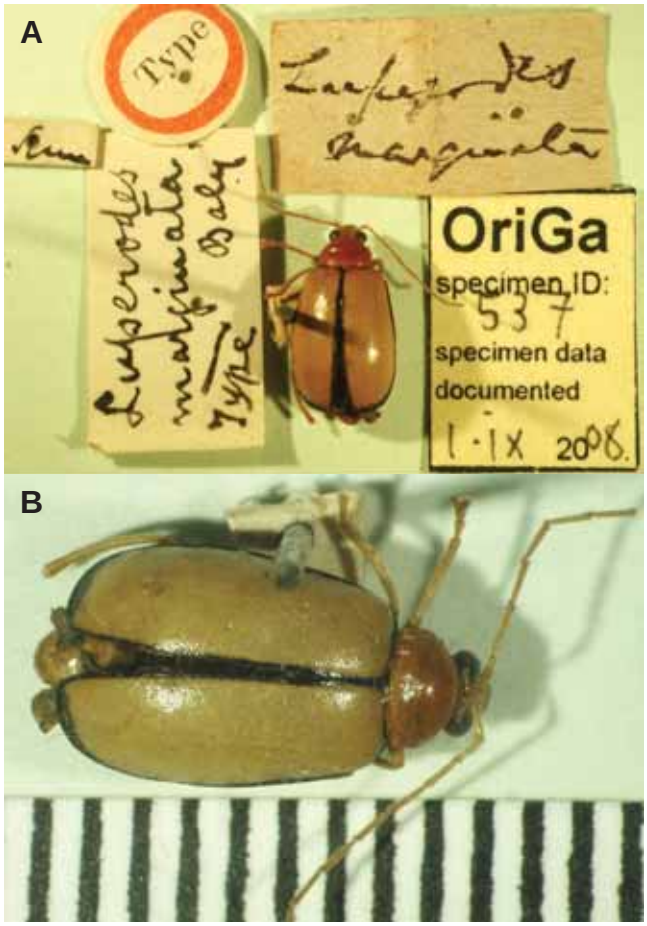


Fig. 24. Holotype of *Luperodes marginata* Baly, 1886: a, with labels; b, detail.

Paraneolepta imitans (Jacoby, 1894), new combination
(Figs. 31–36)

Ochralea imitans Jacoby, 1894: 321
Monolepta aemula Weise, 1922: 107; new synonym

***Remarks*.** — *Monolepta aemula* is a replacement name. Weise (1922) transferred the species to *Monolepta* and named it new to avoid the homonymy with *Monolepta imitans* Jacoby, 1888 from Central America.

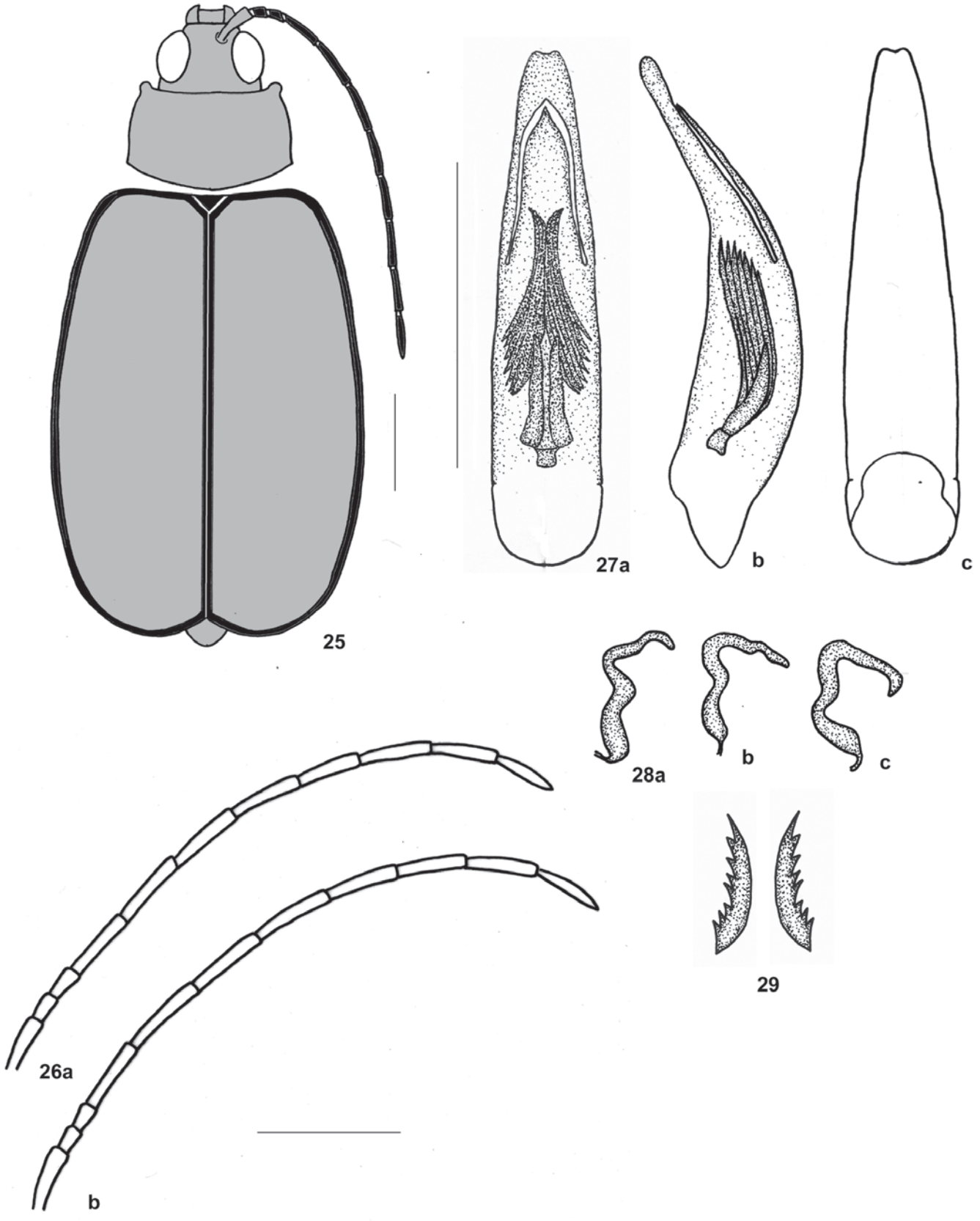
***Type material*.** — Lectotype, female, "Type H. T / Perak / *Ochralea imitans* Jac. / Jacoby coll. 1909-28a," (BMNH; Fig.36). Type locality: Malaysia, Perak, 4°48'N/101°09'E. Jacoby gave no number on the specimens he studied, but there must be more than one concerning the original description, and we herein designate a lectotype to fix the name on single specimen.

***Further material examined*.** — ***Indonesia*.** 1 ex., N. O. Sumatra, Tebing Tinggi, 3°19'N/99°09'E, Dr. Schulteiss, coll. Kraatz (MNHU); 1 ex., Dinding Island, 2°30'N/107°35'E, H. N. Ridley, 1900–111 (BMNH); 1 ex., Sipora Island, West Sumatra, 2°13'S/99°40'E, Oct.1924, C. B. K. and N. S. (BMNH); 4 ex., North East Sumatra Deli, Kuala Simpang, Medang Ara Estate, lowland forest, 3°34'N/98°40'E, Feb.–Mar.1954, A. Sollaart (NNML). – ***Malaysia*.** 6 ex., Malay Penin., Selangor, Bukit Kutu, Foot of hill, 3500 ft., 5500 ft., 3°33'N/101°43'E, Apr.1915, 5–10 Sep.1929, H. M. Pendlebury (BMNH); 6 ex., Malaya, Doherty, Perak, 4°48'N/101°09'E, Fry coll. 1905–100 (BMNH); 1 ex., Malay Penin., Pahang, F. M. S, Batu Balai Jerantut, 3°56'N/102°22'E, 19 Mar.1927 (BMNH); 1 ex., Sarawak, Bau, 1°25'N/110°09'E, 27 Sep. – 15 Oct.1909, C. J. Brooks, B.M.1936–681 (BMNH); 1 ex., Perak, F. M. S. Larut Hills, 3700–4000 ft., 5°N/100°53'E, 11 Feb.1932, H. M. Pendlebury (BMNH); 1 ex., Baly coll. (BMNH); 1 ex., Lundu, West Sarawak, 1°40'N/109°48'E, Jan.1914, G. E. Bryant (BMNH); 2 ex., Malay Penin., Pahang, F. M. S., Fraser Hill, 4200 ft., 5°N'100°53'E, 22 Jul.1936 (BMNH); 1 ex., Sandakan, Borneo, 5°50'N/118°03'E, Baker (NHRS); 1 ex., Perak, Temenggor, 5°19'N/101°22'E, Ekspedisi MNS-Belum, 29–30 Jan.1994, Salleh & Ismail (UKM); 2 ex., Kelantan, Pasir Putih, J. Linang, 5°49'N/102°22'E, 28 May 1994, Ismail & Zabidi (UKM); 1 ex., N. Sembilan, K. Kelawang, 2°56'N/102°05'E, 16 Jun.1987, Salleh & Ismail (UKM); 1 ex., Kedah, Sik, Hutan Lipur Lata Mengkuang, 5°48'N/100°44'E, 15 Jun.1994, Ismail, Ruslan, Yusof (UKM).

***Total length*.** — 6.65–8.00 mm (mean: 7.03 mm; n = 10)

***Head*.** — Reddish-brown, impunctate. Antennae entirely black and only the first basal antennomeres usually contrasting reddish-brown (Fig. 31). Ratio length of second to third antennomere 0.80–0.83 (mean: 0.81); ratio length of third to fourth antennomere 0.42–0.46 (mean: 0.44; Fig. 32).

***Thorax*.** — Pronotum reddish-brown, coarsely punctuated. Pronotal width 1.80–2.25 mm (mean: 1.98 mm), ratio length to width 0.60–0.63 (mean: 0.61). Scutellum black. Elytra entirely yellow to brown, sutural and lateral margin narrowly black. Elytral length 5.00–6.25 mm (mean: 5.51



Figs. 25–29. *Paraneolepta limbella* (Baly, 1886). 25, dorsal colour pattern. 26, antennae: a, male; b, female. 27, median lobe: a, dorsal; b, lateral; c, ventral. 28, three different spermathecae. 29, one pair of bursa sclerites.

mm), maximal width of both elytra together 3.60–4.50 mm (mean: 3.95 mm), ratio of maximal width of both elytra together to length of elytra 0.69–0.74 (mean: 0.72). Legs yellow to brown, black line along dorsal part of femur, tibiae and tarsi blackish.

***Abdomen*.** — Yellow to pale brown.

***Male genitalia*.** — Median lobe insignificantly narrowed towards apex, where it is blunt (Fig. 33a). Tectum parallel-sided, with short, pointed tip, much shorter than the ventral part (Fig. 33b).

***Female genitalia*.** — Spermatheca like description of the genus (Fig. 34), two pairs of bursa sclerites like Fig. 35.

***Distribution*.** — Recorded from Peninsular Malaysia, Borneo and Sumatra (Fig. 22).

***Diagnosis*.** — The body size and colouration of *P. imitans* is most similar to *P. limbella*. The differences on both species can be obtained clearly by median lobe and bursa sclerites. The tectum of median lobe of *P. limbella* is shorter and narrowed towards the pointed tip (Fig. 27) while in *P. imitans* is broader at base, and pointed at the tip of it (Fig. 33). Two pairs of bursa sclerites present in *P. imitans* (Fig. 35) and only one pair of bursa sclerites in *P. limbella* (Fig. 29).

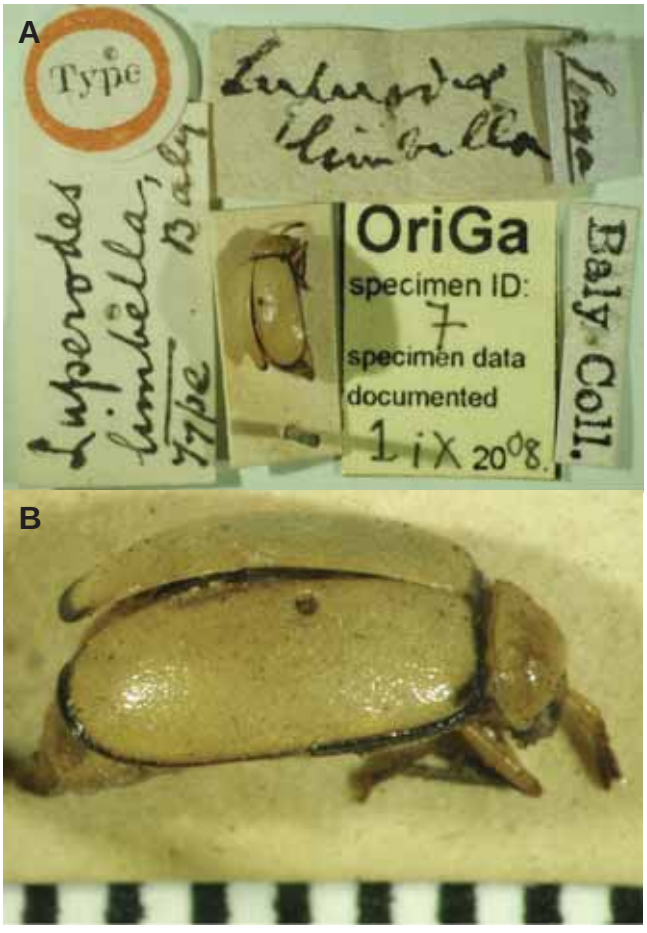


Fig. 30. Photographs of the holotype of *Luperodes limbella* Baly, 1886: a, with labels; b, detail.

Orthoneolepta, new genus

***Type species*.** — *Neolepta fulvipennis* Jacoby, 1884: 222–223; herein designated.

***Etymology*.** — Combination of ortho (latin: straight to) and *Neolepta*; gender: feminine.

***Total length*.** — 4.50–5.75 mm (mean: 5.12 mm)

***Head*.** — Brown to reddish-brown. Impunctate, with significant transverse impression between posterior third of eyes. Eyes small, convex. Labial palpi slender and maxillary palpi enlarged (Fig. 37a), occasionally dark brown. Labrum and mandibulae contrasting dark brown. Antennae elongated, extended to the apical third of the elytra (Figs. 38, 45), the median antennomeres significantly broadened. Antennae entirely black and only the first basal antennomeres usually contrasting reddish-brown. First antennomere club shaped; second and third antennomere varied from a bit shorter to more or less the same length; ratio length of second to third antennomere 0.60–1.00 (mean: 0.79); ratio length of third to fourth antennomere 0.30–0.50 (mean: 0.42; Figs. 39, 46).

***Thorax*.** — Pronotum transverse, broad, with a transverse depression beyond the middle of the base, anterior margin concave and posterior margin broadly rounded (Figs. 39, 46). Pronotum brown to reddish-brown. Pronotal width 1.30–1.80 mm (mean: 1.56 mm), ratio length to width 0.59–0.65 (mean: 0.62). Scutellum triangular, impunctate, reddish-brown to black. Procoxal cavities nearly closed (Fig. 37b). Meso- and metathorax reddish-brown to black. Metasternum broad (Fig. 37c). Elytral strongly punctuated, punctuation partly arranged in longitudinal rows, entirely yellow to reddish-brown and in *N. banggiensis*, sutural and lateral margin narrowly black. Elytral length 3.50–4.80 mm (mean: 4.16 mm), maximal width of both elytra together 2.50–3.40 mm (mean: 2.92 mm), ratio of maximal width of both elytra together to length of elytra 0.67–0.72 (mean: 0.70). Alae fully developed (Fig. 37d). Legs long and slender, basi-metatarsus elongated (Fig. 37e–g), blackish throughout and in *O. fulvipennis*, coxa and trochanter contrasting brown to reddish-brown. In particular tibia with dense and fine setae.

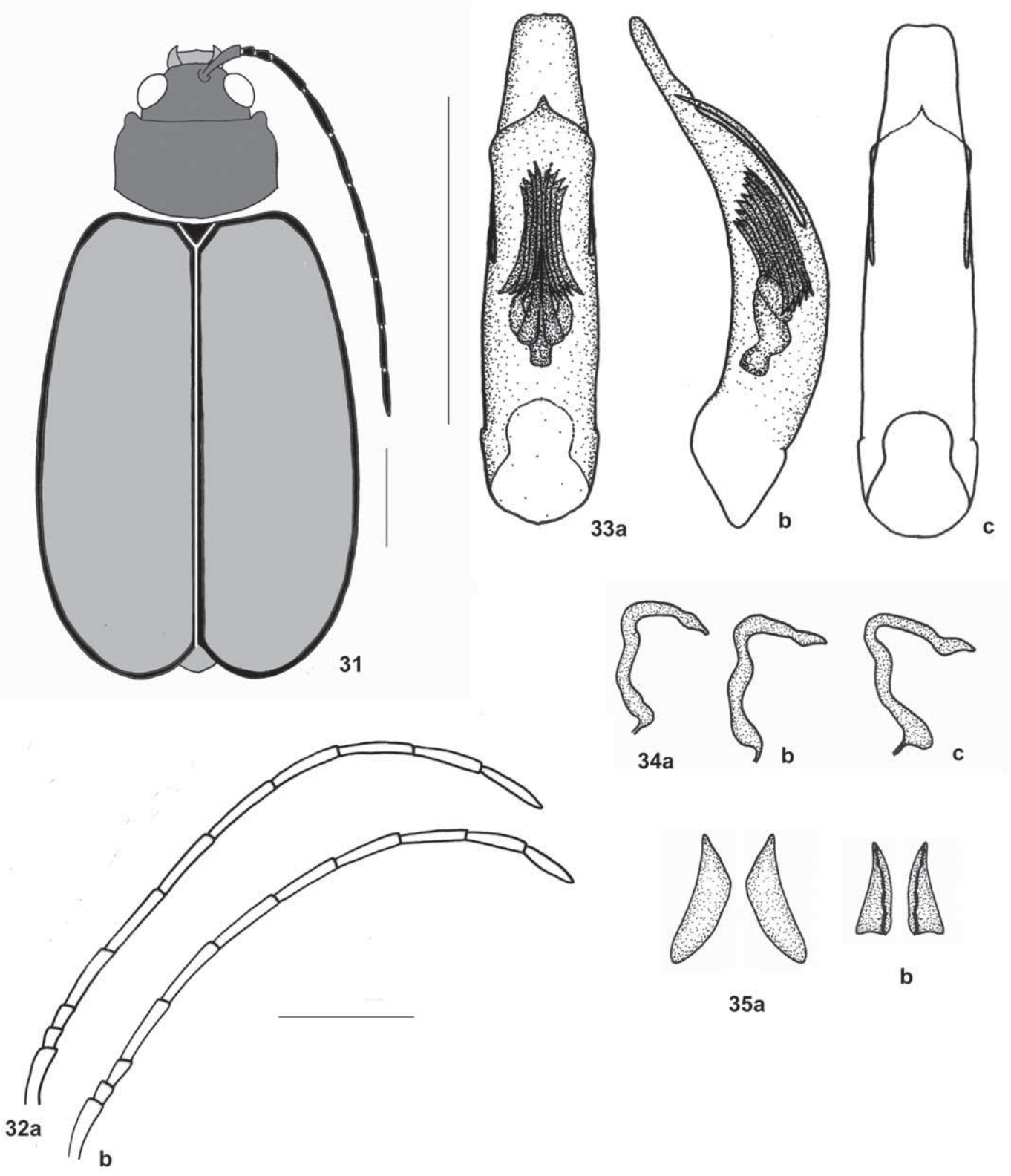
***Abdomen*.** — Pale yellow to red. Last visible sternite in females rounded at apex (Fig. 37h), and in males with two deep, parallel-sided incisions (Fig. 37i).

***Male genitalia*.** — The median lobe is symmetrical, parallel-sided at base and usually narrowed towards apex. Apically incised. Tectum long, broad at base and became pointed at apex. As *Neolepta*, endophallus consist of bundle of laterally arranged long, slender and straight median spiculae. At the bottom of median spiculae, several basal endophallus structure. Sacculus clearly visible (Figs. 40, 47).

***Female genitalia*.** — Spermatheca with small, slender and elongated nodulus. Middle part long and slightly curved, cornu long and curved (Figs. 41, 48). Two pairs of bursa sclerites; one spiny and sclerotized and the other pair hooked shaped, attached together (Figs. 42, 49).

***Distribution*.** — Restricted to the Malaysian Peninsula, Sumatra and Borneo (Fig. 43).

***Diagnosis*.** — *Orthoneolepta*, new genus are medium sized (4.50–5.75 mm), dorsoventrally bulged galerucine with



Figs. 31–35. *Paraneolepta imitans* (Jacoby, 1894). 31, dorsal colour pattern. 32, antennae: a, female; b, male. 33, median lobe: a, dorsal; b, lateral; c, ventral. 34, three different spermathecae. 35, two pairs of bursa sclerites.

strongly elongated basi-metatarsus and transverse depression on pronotum. The punctuation on elytra is coarser than that of pronotum. The dorsal colouration is yellow to reddish-brown, and in certain species, sutural and lateral margin of elytra are narrowly black (Figs. 38, 45). As the genotype of this genus *O. fulvipennis* are transferred from *Neolepta*, most of the character of this genus resembles to *Neolepta*. The pronotum of both groups are with transverse depression, but it is comparatively less broad (0.59–0.65) in *Orthoneolepta*, new genus than in *Neolepta* (0.52–0.60). The second and third antennomere of *Orthoneolepta*, new genus varied from a bit shorter to more or less the same length (ratio length of second to third antennomere: 0.60–1.00; Figs. 39, 46), about similar to *Neolepta*, of which the second antennomere is a bit shorter (0.75–0.80; Figs. 3, 11), but in *Orthoneolepta*, new genus, the fourth to sixth antennomere are significantly widened. The procoxal cavities are nearly closed in both groups (Figs. 1b, 37b).

Besides the similarities, the differences in both group can be obtained on the genital characters. The median lobe are incised apically in *Orthoneolepta*, new genus (Figs. 40, 47) and not incised in *Neolepta* and *Paraneolepta*, new genus (Figs. 4, 12, 19, 27, 33). The spermatheca are the same shape with *Paraneolepta*, new genus, but two pairs of bursa sclerites; one spiny and sclerotized and one other pair of hook-shaped occurred in *Orthoneolepta*, new genus and very characteristic for this group (Figs. 42, 49).

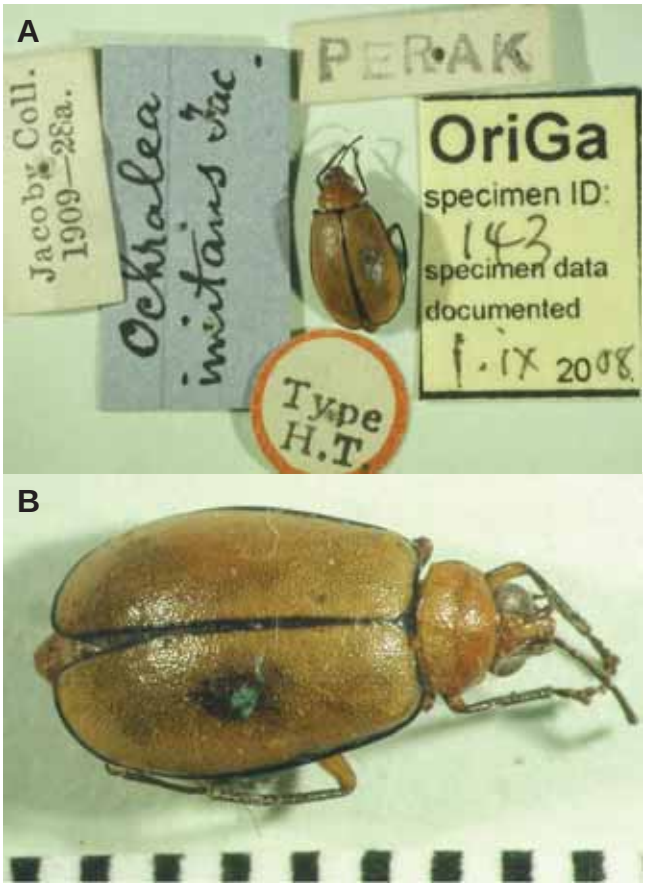


Fig. 36. Lectotype of *Ochralea imitans* Jacoby, 1894: a, with labels; b, detail.

At the first glance, *O. fulvipennis* looks very similar to *Rubrarcastes sanguinea* (Jacoby, 1892; Hazmi & Wagner, 2010b) with the punctuation coarser and reddish-brown dorsal colouration. Both species can be misidentified at a first glance, but the crucial characters that can distinguish both species are the second and third antennomere of *Rubrarcastes* (0.43–0.57) are not of the same length as in *Orthoneolepta*, new genus (0.60–1.00). The median lobes of these two groups are also different—in *Orthoneolepta*, new genus, they are incised apically and spermathecae are also of different shape.

REDESCRIPTIONS OF SPECIES

Orthoneolepta fulvipennis (Jacoby, 1884), new combination

(Figs. 37–44)

Neolepta fulvipennis Jacoby, 1884: 222–223

Type material. — Lectotype, "Neolepta fulvipennis Jac. / Dr. B. Hagen. Tandjong Morawa Serdang (N. O. Sumatra) / Baly coll." (BMNH; Fig. 44). Type locality: Indonesia, Sumatra 0°35'S/101°18'E. Jacoby gave no number of the specimens he studied, but there are several specimens from the type locality available, and thus we herein designate a lectotype to fix the name on single specimen. – Paralectotypes, 5 ex., same data as lectotype (NNML). – Invalid types: 1 ex., "Soekaranda, 0°37'S/104°29'E, Jan.1894, Dohrn, 71490", and 1 ex., "Dohrn, Sumatra, Lianggas, 0°37'S/94°29'E, 71491, Arcastes sanguinea" in MNHU are both labelled as co-type, but are not from the type series.

Further material examined. — ***Indonesia.*** 1 ex., Medan, Sumatra, 3°30'N/98°37'E, J. J. D. V. Museum Leiden ex. Collection J. J. de Vos tot Nederveen Cappel (NNML); 1 ex., N. E. Sumatra, Deli, Kuala Simpang, Semadan Estate, 3°34'N/98°40'E, Nov.1954, A. Sollaart, lowland forest (NNML); 1 ex., Soekaranda, 0°37'S/104°29'E, J. V. Hasselt (NNML); 6 ex., Sumatra, Forides, Baly coll. (BMNH); 3 ex., Soekaranda, 0°37'S/104°29'E, Jan.1894, Dohrn, 380., Arcastes sanguinea Jac. (MNHU). – ***Malaysia.*** 2 ex., Borneo, Sarawak, 1865–1866, coll. G. Doria (MCGD); 6 ex., Mt. Matang, W. Sarawak, 1.55°N/110.35°E, Dec.1913, Jan.1913, Mar.1914, G. Bryant coll. 1919–147 (BMNH); 2 ex., Quop, West Sarawak, 1°33'N/101°24'E, Mar.1914, G. Bryant coll. 1919–147 (BMNH); 2 ex., Borneo, Mahakam (BMNH); 3 ex., Sarawak, 2°30'N/113°15'E, C. J. Brooks, B. M. 1928–193 (BMNH); 3 ex., Fed. Malay States: 3°08'N/101°42'E, 1909, C. J. Brooks, B. M. 1931–570 (BMNH); 1 ex., Sarawak, Matang, 4 1/2 miles, 1°32'N/110°15'E, 6 Jun.1909, J. E. A. Lewis 1910–116 (BMNH); 8 ex., Borneo, Banja, 2°30'N/113°15'E, German mission, Fry coll. 1909.100 (BMNH); 1 ex., Long Navang, Borneo, 2°30'N/113°15'E, Mjoberg (NHRS); 1 ex., Taman Negara NP Kuala Tahan, primaval forests, 4°19'N/102°20'E, 5–9 Mar.2007, V. Hula, Puchart, L. Ruzicka, F. (CJB).

Total length. — 4.75–5.60 mm (mean: 5.20 mm; n = 10)

Head. — Brown to reddish-brown. Impunctate. First basal antennomeres contrasting reddish-brown, second to outer antennomere usually black (Fig. 38). Ratio length of second to third antennomere 0.60–0.75 (mean: 0.73); widened, insignificantly enlarged, ratio length of third to fourth antennomere 0.38–0.50 (mean: 0.45; Fig. 39).

***Thorax*.** — Pronotum brown to reddish-brown. Pronotal width 1.50–1.70 mm (mean: 1.57 mm), ratio length to width 0.59–0.63 (mean: 0.61). Scutellum brown to reddish-brown. Elytral entirely brown to reddish-brown (Fig. 38), coarsely punctuated, punctuation partly arranged in longitudinal rows. Elytral length 3.90–4.60 mm (mean: 4.27 mm), maximal width of both elytra together 2.70–3.30 mm (mean: 2.95 mm), ratio of maximal width of both elytra together to length of elytra 0.67–0.71 (mean: 0.69). Legs blackish, except coxa and trochanter contrasting brown to reddish-brown. In particular tibia with dense and fine setae.

***Abdomen*.** — Brown to red.

***Male genitalia*.** — Median lobe broad, incised apically. Tectum long, broad and became pointed at apex. Median spiculae consist of laterally arranged slender structures. At the bottom of median lobe, several basal endophallus

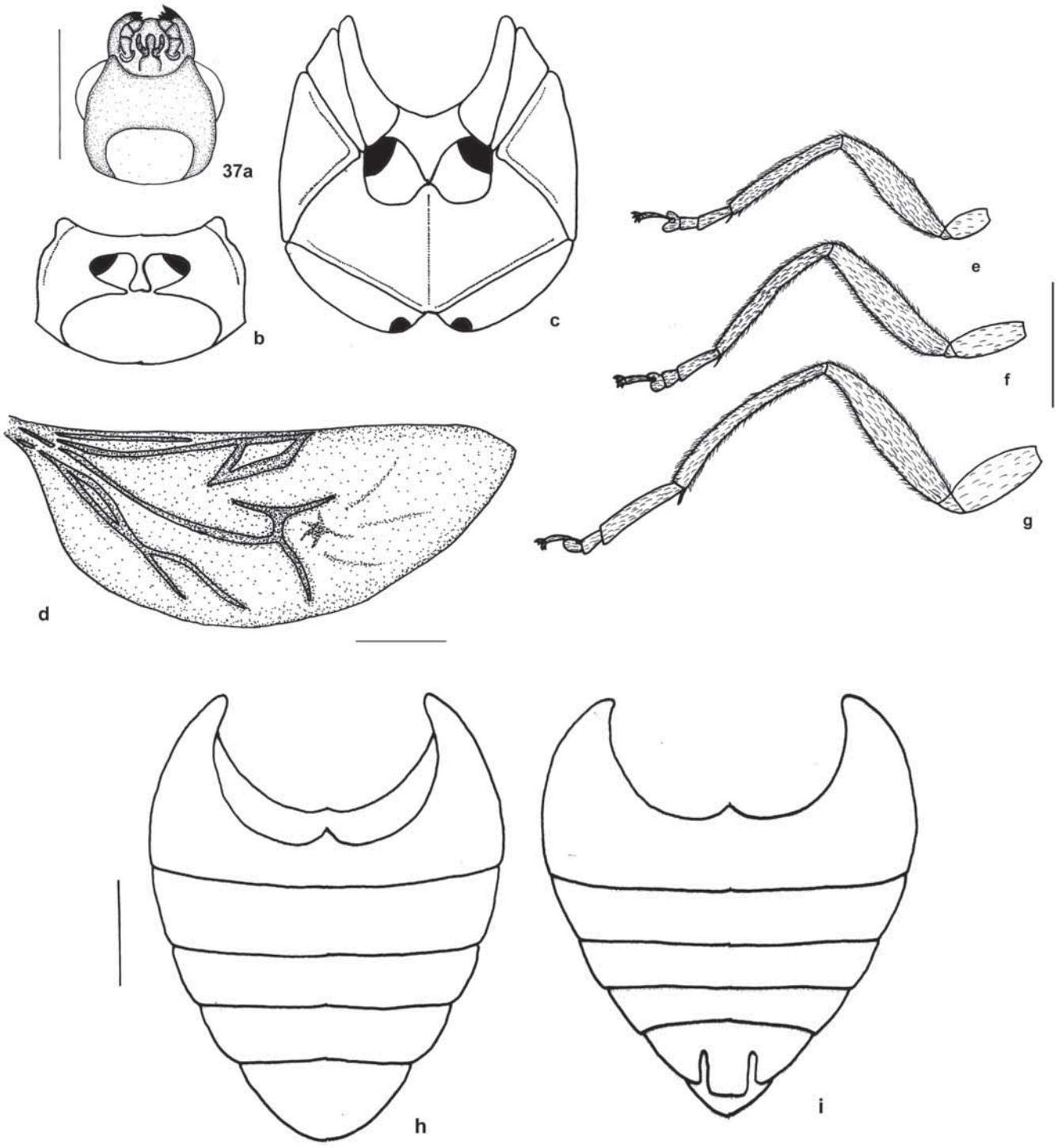
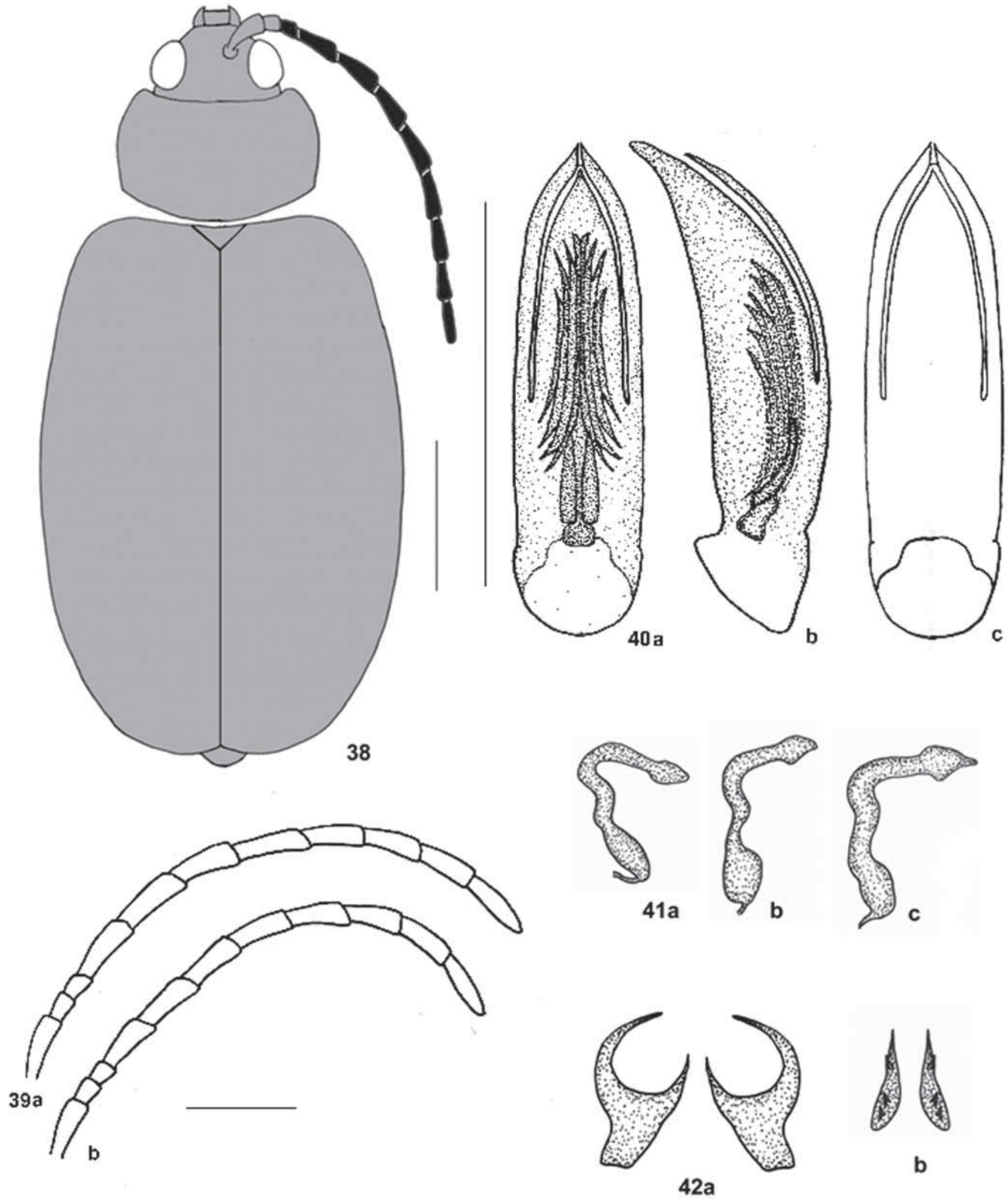


Fig. 37. *Orthoneolepta fulvipennis* (Jacoby, 1884): a, head; b, prothorax; c, meso- and metathorax, ventral view; d, hindwing, right, dorsal view; e, prothoracic; f, mesothoracic; g, metathoracic leg; h, female abdomen; i, male abdomen.

structure of plate like structured present, and sacculus can visibly seen (Fig. 40).

Female genitalia. — Spermatheca with small, slender and elongated nodulus. Middle part long and slightly curved, cornu long and curved (Fig. 41). Two pairs of bursa sclerites; one spiny and sclerotized and one other pair of hook-shaped, bigger in size (Fig. 42).

Distribution. — Distributed throughout Borneo, Sumatra and Peninsular Malaysia (Fig. 43).



Figs. 38–42. *Orthoneolepta fulvipennis* (Jacoby, 1884). 38, dorsal colour pattern. 39, antennae: a, male; b, female. 40, median lobe: a, dorsal; b, lateral; c, ventral. 41, three different spermathecae. 42, two pair of bursa sclerites.

Diagnosis. — *Orthoneolepta fulvipennis* resembles *Rubrarcastes sanguinea* (Jacoby, 1892) from colouration and antennomeres (both possess widened medium antennomeres), but *O. fulvipennis* posses second and third antennomere almost the same length (ratio length of second to third antennomere 0.60–1.00) differed to *R. sanguinea* which third antennomere longer than second antennomere (0.43–0.57). Median lobe and spermatheca are different between these two species. From *O. banggiensis*, *O. fulvipennis* can be differentiated by the dorsal colouration. Elytral entirely brown to reddish-brown in *O. fulvipennis* (Fig. 38) while often the sutural and lateral margin narrowly black on yellow to dark brown elytra of *O. banggiensis* (Fig. 45).

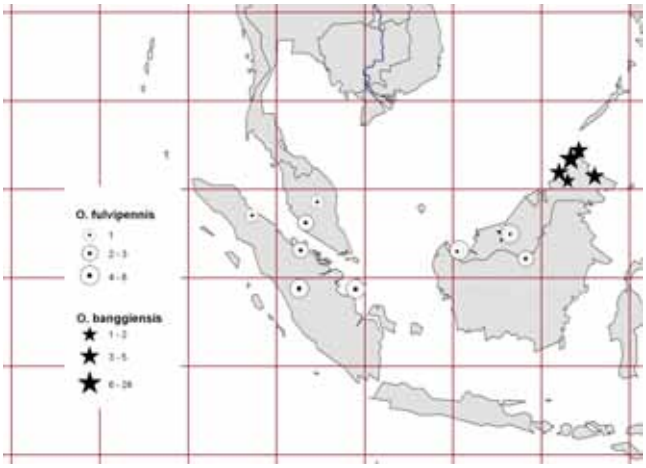


Fig. 43. Distribution of *O. fulvipennis* (Jacoby, 1884) and *O. banggiensis* (Mohamedsaid, 1997).

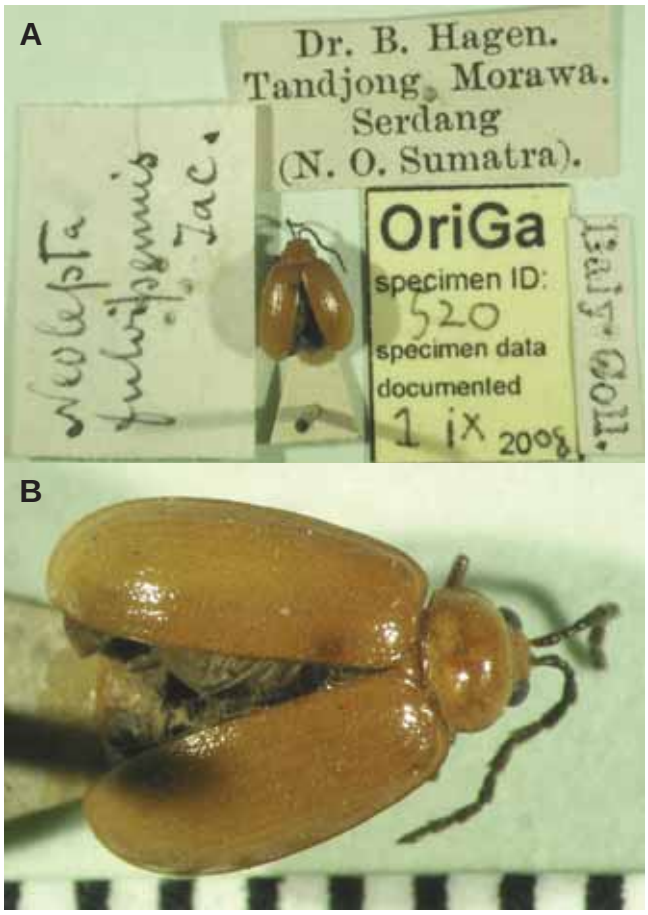


Fig. 44. Photographs of the lectotype of *Neolepta fulvipennis* Jacoby, 1884: a, with labels; b, detail.

Orthoneolepta banggiensis (Mohamedsaid, 1997), new combination

(Figs. 45–50)

Neolepta banggiensis Mohamedsaid, 1997: 198

Type material. — Holotype, "Holotype Neolepta banggiensis n. sp. des Mohamedsaid 1997 / Sabah: Pulau Banggi, 8–12 May 1996, Salleh, Zaidi, Ismail & Sham" (UKM). – 5 Paratypes, same data as holotype (UKM; Fig. 50). Type locality: Malaysia, Sabah, 7°16'N/117°09'E.

Further material examined. — ***Malaysia.*** 2 ex., Sabah, Lembah Danum, 5°08'N/117°24'E, 3–5 Dec.1991, 17–20. Nov.1994, Ismail, Sham & Ruslan (UKM); 3 ex., Sabah, Pulau Gaya, 6°01'N/116°01'E, 26–30 Nov.1991, Zaidi & S. Abin (UKM); 28 ex., N. Borneo, Kudat, 6°49'N/116°43'E, 2–27 Aug.1927, 1–18 Sep.1927, Ex. F. M. S. Museum, B. M. 1955–354 (BMNH); 1 ex., Sabah, 5 m, S. Mt. Trus Madi, 1800 ft, 5°33'N/116°30'E, 18–28 Aug.1977, M. E. Bacchus, B. M. 1978–48 (BMNH); 6 ex., Borneo (BMNH); 3 ex., Sarawak, 2°33'N/113°E, C. J. Brooks, B. M. 1928–193 (BMNH); 1 ex., Lundu, West Sarawak, 1°40'N/109°48'E, Jan.1914, G. E. Bryant (BMNH); 3 ex., Borneo, Sandakan, 5°50'N/118°03'E, Baker (NHRS).

Total length. — 4.50–5.75 mm (mean: 5.03 mm; n = 10)

Head. — Brown to reddish-brown. Impunctate. Antennae entirely black and only the first basal antennomeres usually contrasting brown (Fig. 45). Ratio of length of second to third antennomere 0.75–1.00 (mean: 0.86); ratio of length of third to fourth antennomere 0.30–0.50 (mean: 0.39; Fig. 46).

Thorax. — Pronotum brown to reddish-brown. Pronotal width 1.30–1.80 mm (mean: 1.55), ratio length to width 0.61–0.65 (mean: 0.63). Scutellum black. Elytra entirely yellow to dark brown, sutural and lateral margin narrowly black (Fig. 45). Elytral length 3.50–4.80 mm (mean: 4.05 mm), maximal width of both elytra together 2.50–3.40 mm (mean: 2.88 mm), ratio of maximal width of both elytra together to length of elytra 0.68–0.72 (mean: 0.70). Legs black throughout.

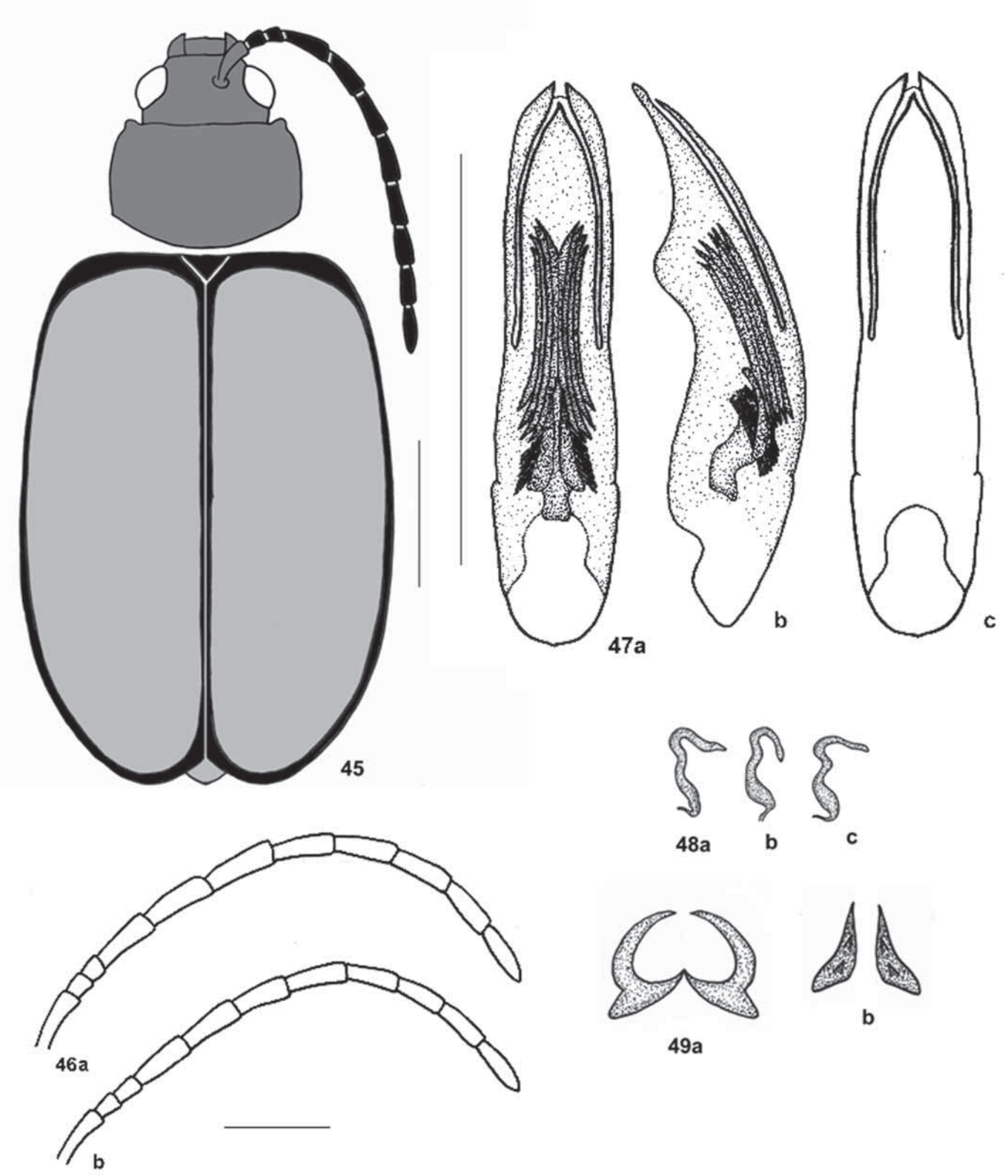
Abdomen. — Pale yellow to brown.

Male genitalia. — Median lobe less broad than in *O. fulvipennis* and narrowed towards the apex. Apically incised. Tectum long and broadened at base and pointed at apex. Endophallus in *O. fulvipennis* consists of laterally arranged slender median spiculae. The basal endophallus structures are present (Fig. 47).

Female genitalia. — Nodulus of spermatheca small, slender and elongated, middle part and cornu long and curved (Fig. 48). Two pairs of bursa sclerites; one spiny and sclerotized and one other pair of hook-shaped, bigger in size (Fig. 49).

***Distribution*.** — Only known from northern Borneo (Fig. 43).

***Diagnosis*.** — *Orthoneolepta banggiensis* can be differentiated from dorsal colouration with *O. fulvipennis*. The elytra of *O. banggiensis* are often with sutural and lateral margin narrowly black, and in *O. banggiensis*, the scutellum is black while brown to reddish-brown in *O. fulvipennis* (Figs. 38, 45). The median lobe is quite similar (Figs. 40, 47) and bursa sclerites of *O. banggiensis* are bit smaller than that of *O. fulvipennis* (Figs. 42, 49). The punctuation of *O. fulvipennis* is coarser.



Figs. 45–49. *Orthoneolepta banggiensis* (Mohamedsaid, 1997). 45, dorsal colour pattern. 46, antennae: a, male; b, female. 47, median lobe: a, dorsal; b, lateral; c, ventral. 48, three different spermathecae. 49, two pair of bursa sclerites.

Fig. 50. Paratype of *Neolepta banggiensis* Mohamedsaid, 1997: a, with labels; b, detail.

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