

# On *Zyras* sensu strictu in the East Palaearctic and Oriental regions III, with a focus on the Southeast of Continental Asia and the Sunda Islands (Coleoptera: Staphylinidae: Aleocharinae: Lomechusini)

With 102 figures, 1 key and 1 table

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Published on 2017–12–08

DOI: 10.21248/contrib.entomol.67.2.213-246

## Abstract

Species of the nominal subgenus of the lomechusine genus *Zyras* STEPHENS, 1835 of the southeastern Oriental region are revised. Eighteen species are (re-)described and/or illustrated, six of them for the first time: *Zyras* (*Zyras*) *latibasalis* spec. nov. (Java, tentatively recorded also from Laos), *Z. (Z.) rutrilobatus* spec. nov. (Laos), *Z. (Z.) parvilobatus* spec. nov. (Laos), *Z. (Z.) hirtiventris* spec. nov. (Laos, Vietnam), *Z. (Z.) hlavaci* spec. nov. (Malaysia: Pahang, Selangor), *Z. (Z.) lunatus* spec. nov. (Malaysia: Selangor). Eight synonymies are proposed: *Zyras bryanti* CAMERON, 1943 = *Z. mortuorum* PACE, 1990, syn. nov., = *Z. paederinus* PACE, 2008, syn. nov.; *Zyras nigerrimus* CAMERON, 1943 = *Z. bartolozzii* PACE, 2003, syn. nov., = *Z. alboterminalis* PACE, 2008, syn. nov.; *Z. granulipennis* CAMERON, 1930 = *Z. pervariolosus* PACE, 2008, syn. nov.; *Z. matangensis* CAMERON, 1943 = *Z. daiaccorum* PACE, 2008, syn. nov.; *Z. montanus* (BERNHAEUER, 1915) = *Z. variolatus* PACE, 2003, syn. nov.; *Z. preangeranus* CAMERON, 1939 = *Z. quadriterminalis* PACE, 2008, syn. nov. One species is excluded from *Zyras*: *Myrmedonota modiglianii* (CAMERON, 1925), comb. nov. Lectotypes are designated for *Zyras elegantulus* CAMERON, 1939, *Z. semirufus* CAMERON, 1939, and *Z. flavus* CAMERON, 1939. Additional records of nine named species are reported. A key to the species recorded from the southeastern Oriental region and an updated catalogue of the species of the Palaearctic and Oriental regions are provided. The subgenus is currently represented in the Palaearctic and Oriental regions by a total of 122 described species. Twenty-two species have been recorded from Sunda Islands. The countries with the greatest diversity are China (46 named species), India (20), Indonesia (19), Malaysia (15), Thailand (14), Nepal (12), Laos (11), and Vietnam (8).

## Nomenclatural acts

*Zyras (Zyras) latibasalis* spec. nov. – urn:lsid:zoobank.org:act:35276B1A-6492-4F55-8836-91058719625C

*Z. (Z.) rutrilobatus* spec. nov. – urn:lsid:zoobank.org:act:67BAD12F-50BC-4983-A8BC-363FA67F01F1

*Z. (Z.) parvilobatus* spec. nov. – urn:lsid:zoobank.org:act:6DBB36A1-C12B-4FA1-B28E-55560D6645C6

*Z. (Z.) hirtiventris* spec. nov. – urn:lsid:zoobank.org:act:73489C67-FB52-4B48-A2E1-BA1F1E55F45D

*Z. (Z.) hlavaci* spec. nov. – urn:lsid:zoobank.org:act:F5734436-CE49-4064-8A52-BC7DF9A0EE67

*Z. (Z.) lunatus* spec. nov. – urn:lsid:zoobank.org:act:ACD6BAAB-FE21-415D-903F-1D2CDEFE0607

## Key words

Coleoptera, Staphylinidae, Aleocharinae, Lomechusini, Oriental region, taxonomy, new species, new synonymies, new combination, lectotype designations, key to species, catalogue, additional records.

## Zusammenfassung

Arten der Untergattung *Zyras* STEPHENS, 1835 der südöstlichen Orientalis werden revidiert. Achtzehn Arten werden beschrieben und/oder abgebildet, davon sechs neu: *Zyras (Zyras) latibasalis* spec. nov. (Java, wahrscheinlich auch Laos), *Z. (Z.) rutrilobatus* spec. nov. (Laos), *Z. (Z.) parvilobatus* spec. nov. (Laos), *Z. (Z.) hirtiventris* spec. nov. (Laos, Vietnam), *Z. (Z.) hlavaci* spec. nov. (Malaysia: Pahang, Selangor), *Z. (Z.) lunatus* spec. nov. (Malaysia: Selangor). Acht Namen werden synonymisiert: *Zyras bryanti* CAMERON, 1943 = *Z. mortuorum* PACE, 1990, syn. nov., = *Z. paederinus* PACE, 2008, syn. nov.; *Zyras nigerrimus* CAMERON, 1943 = *Z. bartolozzii* PACE, 2003, syn. nov., = *Z. alboterminalis* PACE, 2008, syn. nov.; *Z. granulipennis* CAMERON, 1930 = *Z. pervariolosus* PACE, 2008, syn. nov.; *Z. matangensis* CAMERON, 1943 = *Z. daiaccorum* PACE, 2008, syn. nov.; *Z. montanus* (BERNHAEUER, 1915) = *Z. variolatus* PACE, 2003, syn. nov.; *Z. preangeranus* CAMERON, 1939 = *Z. quadriterminalis* PACE, 2008, syn. nov. Eine Art wird aus der Gattung *Zyras* entfernt: *Myrmedonota modiglianii* (CAMERON, 1925), comb. nov. Für *Zyras elegantulus* CAMERON, 1939, *Z. semirufus* CAMERON, 1939 und *Z. flavus* CAMERON, 1939 werden Lektotypen designiert. Weitere Nachweise von neun Arten werden gemeldet. Eine Bestimmungstabelle der Arten der südöstlichen Orientalis und ein aktualisierter Katalog der beschriebenen Arten der Paläarktis und der Orientalis werden erstellt. *Zyras* sensu strictu ist in der Paläarktis und der Orientalis derzeit mit insgesamt 122 beschriebenen Arten vertreten, von denen 22 auf den Sunda-Inseln nachgewiesen wurden. Die Länder mit der höchsten Diversität sind China (46 beschriebene Arten), Indien (20), Indonesia (19), Malaysia (15), Thailand (14), Nepal (12), Laos (11) und Vietnam (8).

## 1 Introduction

According to recent revisions (ASSING 2016a, 2017), the nominal subgenus of *Zyras* STEPHENS, 1833 was represented in the Palaearctic and Oriental regions sensu SCHÜLKE & SMETANA (2015) by 124 named and several unnamed species. However, a significant number of species, particularly species described from the Sunda Islands, had not been revised. In view of the considerable number of previously discovered new species and new synonymies, significant taxonomic changes were to be expected.

The present study focuses on previously unrevised species described from Peninsular Malaysia, Java, Sumatra, Borneo, and the Philippines, as well as additional material from southeastern Continental Asia and the Sunda Islands. A revision of this material yielded six new species, eight new synonymies (one of them only changing synonymic status), and a new combination.

In the course of the present study it was discovered that the illustrations of the aedeagus of *Z. maculicollis* ASSING, 2016 and *Z. notaticornis* PACE, 1998 in ASSING (2016a) are confused: figures 221–222 refer to *Z. notaticornis* and figures 225–226 to *Z. maculicollis*.

## 2 Material and methods

The material treated in this study is deposited in the following collections:

BMNH	The Natural History Museum, London (M. Barclay, R. Booth)
MHNG	Muséum d'Histoire Naturelle, Genève (G. Cuccodoro)
MNHNP	Muséum National d'Histoire Naturelle, Paris (A. Taghavian)
MZMB	Moravské Zemské Muzeum Brno (via M. Schülke)
MZUF	Museo di Zoologia, Università di Firenze (L. Bartolozzi)
NMP	National Museum of Natural History, Praha (J. Hájek)
cAss	author's private collection
cHla	private collection Peter Hlaváč, Prague
cMar	private collection Munetoshi Maruyama, Fukuoka

The morphological studies were conducted using a Stemi SV 11 microscope (Zeiss Germany) and a Jenalab compound microscope (Carl Zeiss Jena). The images were created using a photographing device constructed by Arved Lompe (Nienburg) and CombineZ software, as well as a digital camera (Nikon Coolpix 995).

Body length was measured from the anterior margin of the labrum to the abdominal apex, the length of the forebody from the anterior margin of the labrum to the posterior margin of the elytra, head length from the anterior margin of the clypeus (without ante-clypeus) to the posterior constriction of the head, elytral length at the suture from the apex of the scutellum to the posterior

margin of the elytra, and the length of the aedeagus from the apex of the ventral process to the base of the aedeagal capsule. The “parameral” side (i.e., the side where the sperm duct enters) is referred to as the ventral, the opposite side as the dorsal aspect.

### 3 Results

#### 3.1 General remarks

The present study yielded six species new to science, three from Laos (one of them recorded also from Vietnam), two from Peninsular Malaysia, and one from Java (tentatively recorded also from Laos). Moreover, based on a revision of type material, one species previously assigned to *Zyras sensu strictu* is moved to *Myrmedonota* CAMERON, 1920. Finally, eight new synonymies were discovered, most of them affecting species distributed in the Sunda Islands and in Peninsular Malaysia.

Thus, with practically all the species revised, except for those from Japan and the West Palaearctic (including Middle Asia), the *Zyras sensu strictu* fauna is currently composed of 122 described species. However, in the course of the present and previous revisions, numerous additional unnamed species were seen, which were represented exclusively by females and/or teneral males and which were consequently not described. Also, most of the East Palaearctic and Oriental regions has not been sampled thoroughly. Further, a significant proportion of the revised material has been collected exclusively with light, flight interception, and Malaise traps, methods that

are known to be suitable only for a minority of species. Finally, numerous species are represented only by single or very few specimens. In consequence, it can be concluded that the true diversity of *Zyras sensu strictu* in these regions is significantly greater than currently known and numerous additional species remain to be discovered and described. At present, the regions with the greatest diversity of *Zyras sensu strictu* are China (46 named species), India (20), Indonesia (19), Malaysia (15), Thailand (14), Nepal (12), Laos (11), and Vietnam (8).

In all, 22 species have been recorded from the Sunda Islands. Nine of these species – including *Z. latibasalis*, whose record from Laos is only tentative – are known also from the South Asian mainland. The remainder has been recorded only from Borneo (five species), Sulawesi (four), Java (three), and Bali (one).

Interpretation and identification of *Zyras sensu strictu* species are often difficult, mainly as a result of sometimes remarkable intraspecific variation (particularly so in widespread species) combined with generally little interspecific variation. This partly explains the considerable number of now invalid names. Prior to the present revision (ASSING 2016a, 2017, and this paper), the authors that described most of the *Zyras sensu strictu* species were Cameron (24 names) and Pace (41 names), wrongly assigned species (i.e., species now in other genera or subgenera) not included. Of the names authored by Cameron, 17 are still valid, five are synonyms and two homonyms. Even more remarkable are the figures for Pace names: only 13 (32 %) of them are still valid, 27 are synonyms and one is a junior homonym.

#### 3.2 Key to the species of the subgenus *Zyras* of the Oriental Region (sensu SCHÜLKE & SMETANA 2015), exclusive of India, Sri Lanka, and Myanmar

In all, 45 species are currently known from the southeastern Oriental regions (comprising Thailand, Laos, Vietnam, Peninsular Malaysia, and the Sunda Islands).

A positive identification of females without reference material may not always be possible. The same applies to aberrant (e.g., regarding coloration) or nanistic specimens. Two variable species, *Z. gratellus* and *Z. punctipennis*, key out in more than one couplet.

1. Punctuation of pronotum *and* elytra conspicuously coarse and dense (e.g., Fig. 30). ..... 2
  - Punctuation of pronotum *and* elytra not conspicuously coarse and dense (though sometimes very fine and dense, or only the elytra with coarse and dense punctuation). ..... 3
2. Punctuation of pronotum and elytra strongly and conspicuously coarsely granulate (Fig. 30). Body smaller and more slender, of predominantly brown coloration. Antennae reddish (Fig. 7). Pronotum nearly as long as broad, strongly convex in cross-section, and with sinuate lateral margins in dorsal view (Fig. 30). Median lobe of aedeagus as in Figs 66–67. Borneo. .... ***granulipennis***
  - Punctuation of pronotum and elytra not distinctly granulate. Body larger and more robust, of predominantly black coloration. Antennae bicoloured, dark-brown to blackish-brown with the apical 1–2 antennomeres yellow. Pronotum distinctly transverse, moderately convex in cross-section; lateral margins not sinuate in dorsal view. Median lobe of aedeagus as in ASSING (2017: figures 266–267, 271–272). Borneo, Peninsular Malaysia. .... ***montanus***
3. Forebody with conspicuously dense and fine punctuation. Small species; length of forebody 1.7–2.1 mm. Antennae slender, preapical antennomeres not transverse. .... 4

- Punctuation of forebody not conspicuously dense and fine. Mostly larger species. Preapical antennomeres mostly transverse. .... 5
- 4. Punctuation of forebody finer and denser (ASSING 2017: figure 75). Pronotum dark-brown, of similar coloration as head (ASSING 2017: figure 75). Median lobe of aedeagus as in ASSING (2017: figures 239–241). Sulawesi. .... *densissimus*
- Punctuation of forebody less fine and less dense (Fig. 23). Pronotum pale-reddish, distinctly contrasting with the dark-brown to blackish head. Median lobe of aedeagus as in Figs 59–60. Widespread in the Oriental region. .... *bryanti*
- 5. Antennae short (< 1.5 mm long) and clavate; antennomeres IV–X transverse, X at least approximately twice as broad as long. Body rather small (length of forebody 2.4–2.5 mm) and of predominantly reddish coloration, with the head reddish to reddish-brown and the pronotum pale reddish. Forebody moderately sparsely or very sparsely punctate. .... 6
- Character combination different. Antennae usually longer and more slender, with antennomere IV weakly transverse at most. Species of similarly small size have at least the head darker. .... 7
- 6. Antennomere IV disc-shaped, approximately twice as broad as long (Fig. 17). Elytra with very sparse punctuation; interstices on average more than twice as broad as diameter of punctures (Fig. 22). Pronotum small in relation to head, approximately 1.2 times as broad as head (Fig. 22). Male sexual characters unknown. Borneo. .... *pallipyga*
- Antennomere IV noticeably transverse, but not disc-shaped (Fig. 16). Elytra with moderately dense punctuation; interstices on average twice as broad as diameter of punctures at most (Fig. 20). Pronotum large in relation to head, > 1.35 times as broad as head (Fig. 20). Median lobe of aedeagus as in Figs 53–54. Java. .... *elegantulus*
- 7. Pronotum reddish or pale-reddish, strongly contrasting with the blackish head and elytra. Abdomen distinctly bicoloured, with segments III–V or III–VI reddish and the posterior segments at least partly blackish. .... 8
- Coloration of forebody different. .... 10
- 8. Antennomere XI dark-brown to black (ASSING 2017: figure 20). Legs of uniformly yellowish coloration. Pronotum strongly transverse, 1.15–1.18 times as broad as long. Elytra with coarser and sparser punctuation (ASSING 2017: figure 58). Median lobe of aedeagus as in ASSING (2017: 166–167). Widespread (ASSING 2017: map 8). .... *alternans*
- Apical 1–3 antennomeres yellow, much paler than antennomeres IV–VII. Legs with at least the apices of the meso- and metafemora slightly to distinctly infuscate. Elytra with denser and finer punctuation. Median lobe of aedeagus of different shape. .... 9
- 9. Profemora and the apical halves of the meso- and metafemora blackish. Antennomere X blackish. Pronotum dark-reddish. Elytra with distinct punctuation. Median lobe of aedeagus as in PACE (1986a: figures 120–121). Thailand. .... *thaiorum*
- Apices of femora only slightly and narrowly infuscate; profemora often uniformly yellowish. Antennomere X and often also antennomere IX yellowish. Pronotum pale-reddish. Elytra with very fine punctuation. Median lobe of aedeagus as in ASSING (2016a: figures 274–281). Widespread (ASSING 2017: map 8). .... *geminus*
- 10. Antennomere XI pale-yellow to dark-yellow. .... 11
- Antennomere XI reddish to black. (In cases of doubt regarding this character follow both alternatives.). .... 26
- 11. Small (length of forebody approximately 2.4 mm) and micropterous species with short elytra and reduced hind wings; elytra 0.65–0.75 times as long as pronotum. .... 12
- Macropterous species with longer elytra and long hind wings. Body usually larger. .... 13
- 12. Antennae uniformly dark-yellowish (Fig. 4). Pronotum and elytra with coarse and dense punctuation (Fig. 21). Antennomere XI shorter than the combined length of antennomeres IX and X; antennomere X weakly transverse (Fig. 4). Anterior abdominal tergites dark-brown (Fig. 44). Mesofemora uniformly yellowish. Median lobe of aedeagus as in PACE (2008: figures 98–99). Borneo. .... *kinabaluensis*
- Antennomeres IV–X dark-brown (ASSING 2017: figure 34). Pronotum and elytra with sparser and finer punctuation (ASSING 2017: figure 70). Antennomere XI approximately as long as the combined length of antennomeres IX and X; antennomere X distinctly transverse (ASSING 2017: figure 34). Meso- and metafemora apically infuscate. Median lobe of aedeagus as in ASSING (2017: figures 212–213). Thailand. .... *ambulans*

13. Legs bicoloured, yellowish with at least the metafemora distinctly infusate apically. Pronotum brown to black. .... 14
- Legs uniformly yellowish, apices of meso- and metafemora in one variable large species with reddish pronotum sometimes indistinctly darker. .... 19
14. Meso- and metafemora apically narrowly infusate. Elytra with very dense punctation. Antennae not particularly long and slender; antennomere IV indistinctly oblong at most. .... 15
- Meso- and metafemora apically extensively infusate. Elytra with moderately dense punctation. Antennae long and slender; antennomere IV at least approximately twice as long as broad (species of the *Z. nitens* group). .... 16
15. Body black. Antennomeres IX–XI pale-yellow. Elytra with distinctly finer punctation (ASSING 2017: figure 77). Anterior impressions of tergites III and IV with very fine and scattered non-setiferous punctation (ASSING 2017: figure 115). Median lobe of aedeagus as in ASSING (2017: figures 250–251). Sulawesi. .... ***densihirtus***
- Head and pronotum brown (Fig. 19); elytra bicoloured, reddish with the postero-lateral portions infusate Fig. 19); abdomen partly reddish to reddish-brown (Fig. 34). Elytra with coarse punctation (Fig. 19). Anterior impressions of tergites III and IV with coarse and dense non-setiferous punctation (Fig. 34). Male sexual characters unknown. Java. .... ***punctipennis***
16. Pronotum more strongly transverse, approximately 1.2 times as broad as long (Fig. 31). Pronotum and elytra with sparser and finer punctation (Fig. 31). Median lobe of aedeagus as in Figs 81–82. Laos. .... ***rutrilobatus***
- Pronotum more slender, approximately 1.1 times as long. Pronotum and elytra with denser and coarser punctation. .... 17
17. Species of slightly smaller body size and with weakly infusate apical halves of the meso- and metafemora. Male sternite VIII apically acute and somewhat bifid (ASSING 2017: figure 221). Median lobe of aedeagus as in ASSING (2017: figures 216–217). Peninsular Malaysia. .... ***nitens***
- Slightly larger species with the apical halves of the meso- and metafemora blackish. Male sternite VIII and median lobe of aedeagus of different shapes. (Male sexual characters of *Z. brignolii* are unknown.). .... 18
18. Antennae more slender; antennomeres IX–X distinctly oblong. Antennomere XI pale-yellowish. Male sternite VIII obtusely pointed posteriorly. Ventral process of aedeagus (PACE 2003: figures 87–88) conspicuously broad in ventral view. Peninsular Malaysia; Borneo. .... ***nigerrimus***
- Antennae less slender; antennomeres IX–X weakly transverse (ASSING 2017: figure 15). Antennomere XI dark-yellowish. Male sexual characters unknown. Thailand; China: Yunnan. .... ***brignolii***
19. Pronotum reddish. Large to very large species (species of the *Z. hirtus* group). .... 20
- Pronotum dark-brown to blackish. Species of relatively small to large size. .... 22
20. Head pale-reddish, of similar coloration as pronotum; elytra dark-brown to blackish with the anterior margin reddish (ASSING 2017: figure 61); abdomen distinctly bicoloured, with tergites III–V reddish and VI–VIII extensively blackish (ASSING 2017: figure 114). Median lobe of aedeagus as in ASSING (2017: figures 187–188). Thailand; Peninsular Malaysia. .... ***russiceps***
- Head reddish-brown to black, darker than the pronotum; elytra uniformly reddish, or reddish with the postero-lateral portions more or less distinctly infusate; abdomen not distinctly bicoloured. Larger species. .... 21
21. Largest species of the subgenus in the Oriental region; length of forebody 4.0–4.3 mm. Pronotum slender, less than 1.1 times as broad as long (ASSING 2017: figure 76). Elytra with coarse punctation (ASSING 2017: figure 76). Anterior impressions of tergites III–V with coarse and dense non-setiferous punctation (ASSING 2017: figure 113). Median lobe of aedeagus as in ASSING (2017: figures 245–246). Sulawesi. .... ***titan***
- Large species, but less so than *Z. titan*; length of forebody less than 4.0 mm. Pronotum more transverse, approximately 1.15 times as broad as long. Elytra with fine and dense punctation. Anterior impressions of tergites III–V with fine and sparse non-setiferous punctation. Median lobe of aedeagus as in ASSING (2017: 276–277). Widespread (ASSING 2017: map 10). .... ***preangeranus***
22. Elytra with conspicuously coarse and dense punctation (Fig. 19). Pronotum strongly convex in cross-section and weakly transverse, approximately 1.1 times as broad as long (Fig. 19). Head and pronotum dark-brown to blackish-brown; elytra dark-reddish with infusate postero-lateral portions (Fig. 19). Large species; body length 6.5–8.0 mm; length of forebody 3.0–3.5 mm. Male sexual characters unknown. Java, Borneo. .... ***punctipennis***

- Elytral punctation less coarse and less dense. Character combination different. .... 23
- 23. Abdomen distinctly bicoloured; tergites III–V reddish and tergites VI–VII extensively black (ASSING 2016a: figure 112). Elytra distinctly bicoloured with the anterior portion reddish and the posterior portion sharply black (ASSING 2016a: figure 56). Punctation of elytra coarse (ASSING 2016a: figure 56). Antennomeres IX–X or VIII–X pale-yellowish, sharply contrasting with the black antennomeres IV–VII (Assing 2016a: figure 1). Median lobe of aedeagus as in ASSING (2016a: figures 176–177). Myanmar; Vietnam. .... *malaisei*
- Abdomen not distinctly bicoloured. .... 24
- 24. Small species; length of forebody 2.1–2.4 mm. Antennomere XI elongate, approximately as long as the combined length of VIII–X (ASSING 2017: figures 26, 39). Pubescence inconspicuous, moderately long, suberect, and moderately dense. Median lobe of aedeagus as in ASSING (2017: figures 223–224, 234–235). Widespread. .... *gratellus*
- Larger species; length of forebody > 2.7 mm. Antennomere XI short and of conical shape, approximately as long as the combined length of IX and X at most. (ASSING 2016b: figure 185). Pubescence longer, denser, and sub-erect to erect. Species of the *Z. hirtus* group. .... 25
- 25. Pronotum with coarse and rather dense punctation (ASSING 2017: figure 78). Antennae shorter and with more transverse antennomeres IV–X; antennomeres IV weakly transverse and X more than twice as broad as long (ASSING 2017: figure 38). Abdominal tergites VI and VII with very dense and rather fine non-setiferous punctation anteriorly (ASSING 2017: figure 16). Median lobe of aedeagus as in ASSING (2017: figures 255–256). Sulawesi. .... *nigrihirtus*
- Pronotum with less distinct and less coarse punctation (ASSING 2016b: figure 184). Antennae longer and with less transverse antennomeres IV–X; antennomeres IV approximately as long as broad and X less than twice as broad as long (ASSING 2016b: figure 185). Abdominal tergites VI and VII with distinctly less fine and less dense punctation (ASSING 2016b: figure 186). Pubescence of dorsal surface long, dense, and sub-erect to erect; all sternites with long, dense, and erect pubescence. Median lobe of aedeagus as in ASSING (2016b: figures 461–462). Bali. .... *wunderlei*
- 26. Legs bicoloured; femora brown to black with the bases of the meso- and metafemora yellow. Forebody of uniformly dark-brown to black coloration. Species of the *Z. hirtus* group. .... 27
- Legs of uniformly yellowish coloration. .... 28
- 27. Smaller species; length of forebody 2.8 mm. Antennae shorter, 1.7 mm long; antennomere IV weakly transverse; antennomeres IX–X more than twice as broad as long (ASSING 2015: figure 57). Abdomen partly brownish. Male sexual characters unknown. Vietnam. .... *funestus*
- Larger species; length of forebody 3.6–3.7 mm. Antennae 2.4–2.5 mm long; antennomere IV noticeably oblong; antennomeres IX–X less than twice as broad as long (Figs 11–12). Abdomen black, except for the brown posterior margins of tergites VII and VIII (Fig. 49). Median lobe of the aedeagus as in Figs 96–97. Vietnam, Laos. .... *hirtiventris*
- 28. Pronotum and elytra with very sparse and fine punctation; interstices on elytra on average more than twice as broad as diameter of punctures (Fig. 24). Median lobe of aedeagus as in Figs 56–57. Java. .... *facundus*
- Pronotum and elytra with much denser and usually also coarser punctation. .... 29
- 29. Abdomen bicoloured with segments III–V or III–VI reddish and VI–VIII or VII–VIII extensively infusate. For *Z. quasar* from Vietnam with a posteriorly somewhat infusate tergite V (ASSING 2016b: figure 180) follow this alternative. .... 30
- Abdomen of uniformly reddish or blackish coloration, or reddish with tergite VI (and sometimes also the anterior portion of tergite VII weakly) infusate. .... 34
- 30. Pronotum with fine and sparse punctation; dorsal surface smooth, not impressed, except for the usual postero-medial impression. .... 31
- Pronotum with coarse and rather dense, or coarse and very irregularly distributed punctation; in the latter case pronotum with uneven surface (punctation situated in more or less pronounced impressions). .... 32
- 31. Antennomere XI strongly elongate, at least as long as, usually longer than the combined length of antennomeres VIII–X (ASSING 2016a: figure 43). Median lobe of aedeagus as in Assing (2016a: figures 272–273). Widespread. .... *castaneus*

- Antennomere XI shorter, shorter than the combined length of antennomeres VIII–X (ASSING 2016b: figure 179). Median lobe of aedeagus as in ASSING (2016b: figures 457–458). Vietnam. .... *quasar*
- 32. Pronotum strongly transverse, nearly 1.3 times as broad as long and 1.2 times as broad as head; surface without distinct impressions (except for the usual postero-median impression); punctation dense and rather coarse (ASSING 2017: figure 68). Abdominal tergite VI reddish or brown with reddish margins (ASSING 2017: figure 102). Median lobe of aedeagus with conspicuously short ventral process (ASSING 2017: figures 203–204). Thailand. .... *brevilobatus*
- Pronotum less transverse, 1.15–1.20 times as broad as long; surface smooth or uneven. Abdominal tergites VI reddish and VII–VIII extensively infusate. .... 33
- 33. Pronotum with uneven surface; punctation conspicuously irregularly distributed and situated in more or less pronounced impressions (ASSING 2017: figure 67). Antennae more slender; antennomere XI elongate, approximately as long as the combined length of VIII–X (ASSING 2017: figures 30–31). Median lobe of aedeagus as in ASSING (2017: figures 198–199). Thailand; Laos. .... *novinversus*
- Pronotum with smooth surface; punctation moderately irregularly distributed (ASSING 2016a: figure 172). antennae less slender; antennomere XI shorter, barely as long as the combined length of IX and X (ASSING 2016a: figure 173) Median lobe of aedeagus as in ASSING (2016a: figures 231–232). Widespread. .... *bettotanus*
- 34. Abdomen predominantly reddish, sometimes with tergite VI and the anterior portion of tergite VII more or less distinctly infusate. .... 35
- Abdomen predominantly black. .... 40
- 35. Small species of variable coloration; length of forebody 2.1–2.4 mm. Antennomere XI elongate, at least as long as the combined length of antennomeres VIII–X (ASSING 2017: figures 26, 39). Forebody with fine punctation. Median lobe of aedeagus as ASSING (2017: figures 222–223, 234–235). Widespread. .... *gratellus*
- Larger species; length of forebody > 2.5 mm. Antennomere short and of conical shape, shorter than the combined length of IX and X. Body with long pubescence. Species of the *Z. hirtus* group. .... 36
- 36. Forebody dark-brown to black (Fig. 33). Body of larger average size; length of forebody 3.0–3.5 mm. Abdomen with more extensive and coarser non-setiferous punctation on tergites VI and VII (Fig. 48). Median lobe of aedeagus larger, 0.83–0.90 mm long, and shaped as in Figs 90–91, 93–94. Peninsular Malaysia. .... *hlavaci*
- Forebody reddish to dark-brown. Body of smaller average size, 2.6–3.2 mm. Abdomen with finer and less extensive non-setiferous punctation on tergites VI and VII. Median lobe of aedeagus < 0.80 mm long and of different shape. .... 37
- 37. Slightly larger species; length of forebody 3.0–3.2 mm. Abdominal tergite VI infusate. Median lobe of aedeagus very broad in ventral view (ASSING 2017: figures 229–230). Borneo. .... *parahirtus*
- Smaller species; length of forebody 2.6–3.1 mm. Abdominal tergite VI not distinctly infusate. Median lobe of aedeagus more slender in ventral view. .... 38
- 38. Ventral process of aedeagus distinctly angled subapically in lateral view (Figs 99–100). Peninsular Malaysia. .... *lunatus*
- Ventral process of aedeagus not angled subapically in lateral view. Sunda Islands. .... 39
- 39. Aedeagus with more slender ventral process both in lateral and in ventral view and with more prominent crista apicalis (Figs 73–74). Java. .... *flavorufus*
- Aedeagus with less slender ventral process and with broader, less prominent crista apicalis (Figs 63–64). Borneo. .... *matangensis*
- 40. Antennomere XI elongate, approximately as long as the combined length of antennomeres VIII–X. Pronotum rather small in relation to head, only slightly broader than head. .... 41
- Antennomere XI shorter, approximately as long as the combined length of antennomeres IX–X. Pronotum relatively larger, much broader than head. .... 42
- 41. Antennae more slender (ASSING 2017: figures 28–29). Pronotum with very uneven surface; punctation strongly irregular and situated in more or less pronounced impressions (ASSING 2017: figure 65). Male tergite VIII with four blunt projections posteriorly (ASSING 2017: figure 196). Median lobe of aedeagus as in ASSING (2017: figures 191–194). Widespread (ASSING 2017: map 6). .... *proximus*

- Antennae less slender (ASSING 2017: figure 33). Pronotum without impressions and with less irregularly distributed punctation (ASSING 2017: figure 69). Male tergite VIII only with a median pair of more acute projections posteriorly (ASSING 2017: figure 206). Median lobe of aedeagus as in ASSING (2017: figures 208–211). Thailand. .... *parvicollis*
- 42. Body rather large (length of forebody 3.4–3.7 mm) and of robust shape (ASSING 2015: figure 15). Antennae long (2.7–2.9 mm) and massive (ASSING 2015: figure 16). Elytra bicoloured with the anterior third reddish-yellow and the posterior two-thirds black (ASSING 2015: figure 15). Median lobe of aedeagus as in ASSING (2015: figures 33–34). North Vietnam. .... *fansipanicus*
- Body less robust and mostly smaller. Antennae less massive, slender in species with antennae of similar length. Elytra often bicoloured, but either more extensively reddish-yellow with infusate postero-lateral portions or blackish with only the humeral portions reddish or reddish-yellow. .... 43
- 43. Species of more slender habitus (ASSING 2016a: figure 81). Antennae more slender with antennomere IV oblong and antennomere X less than 1.5 times as broad as long (ASSING 2016a: figure 24). Punctation of pronotum and elytra moderately dense (ASSING 2016a: figure 81). Median lobe of aedeagus as in Figs 78–79 and ASSING (2016a: figures 221–222). China, Hong Kong, Laos. .... *notaticornis*
- Body less slender and with a relatively larger pronotum. Antennae less slender; antennomere X at least 1.5 times as broad as long and antennomere IV usually as long as broad or weakly transverse. Punctation of pronotum and elytra mostly denser. .... 44
- 44. Ventral process of aedeagus very short in relation to basal capsule (Figs 87–88). Pronotum with maximal width near anterior angles, slightly more strongly tapering posteriorly. Laos. .... *parvilobatus*
- Aedeagus with distinctly longer ventral process. Pronotum with lateral margins more evenly convex in dorsal view. .... 45
- 45. Median lobe of aedeagus with apically longer and more acute ventral process and with longer crista apicalis in lateral view (ASSING 2016a: figures 215–216). China: Yunnan; Thailand. .... *caloderoides*
- Median lobe of aedeagus with apically shorter and less acute ventral process and with shorter crista apicalis in lateral view. .... 46
- 46. Ventral process of aedeagus basally broader in ventral view (Figs 70–71). Elytra practically completely black; anterior margin only very narrowly reddish-yellow (Fig. 25). Tergite VIII anteriorly with longitudinal striae (Fig. 39). Java. .... *latibasalis*
- Ventral process of aedeagus more slender in ventral view (Figs 76–77 and ASSING 2016a: figures 193–194). Elytra mostly more extensively reddish-yellow (ASSING 2016a: figure 66). China, Laos, Vietnam. .... *wei*

### 3.3 Descriptions and additional records

*Zyras (Zyras) punctipennis* CAMERON, 1939

(Figs 1, 19, 34)

#### 3.3.1 Sunda Islands

*Zyras (Zyras) punctipennis* CAMERON, 1939b: 18 f.

*Zyras (Zyras) gratellus* CAMERON, 1939

**Material examined: Indonesia:** 1 ♂, Jawa Barat, Cianjur, Kebun Raya, Cibodas, 1400 m, flight interception trap, 29.I.–4.II.2004, leg. Maruyama et al. (cMar).

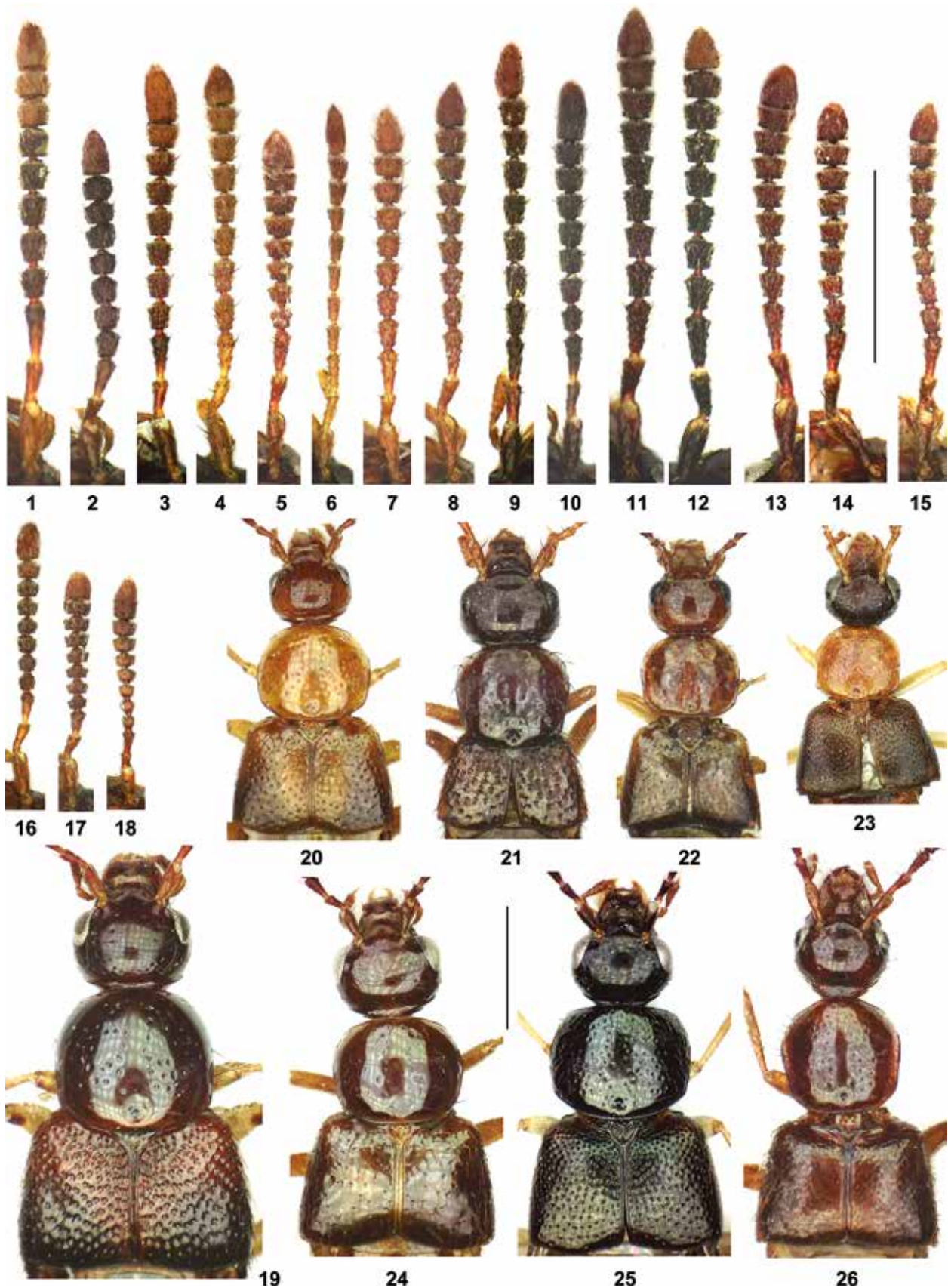
**Type material examined:** Holotype ♀: “F. C. Drescher, G. Tangkoeban Prahoe, 4000–5000 Voet, Preanger, Java, IX.1933 / *Z. punctipennis* Cam. Type / Holotype / M. Cameron. Bequest. B.M. 1955-147 / Holotypus *Zyras punctipennis* Cameron, rev. V. Assing 2017” (BMNH).

**Comment:** The holotype of this remarkably variable species was revised by ASSING (2017). The currently known distribution ranges from Peninsular Malaysia to Java and Sulawesi.

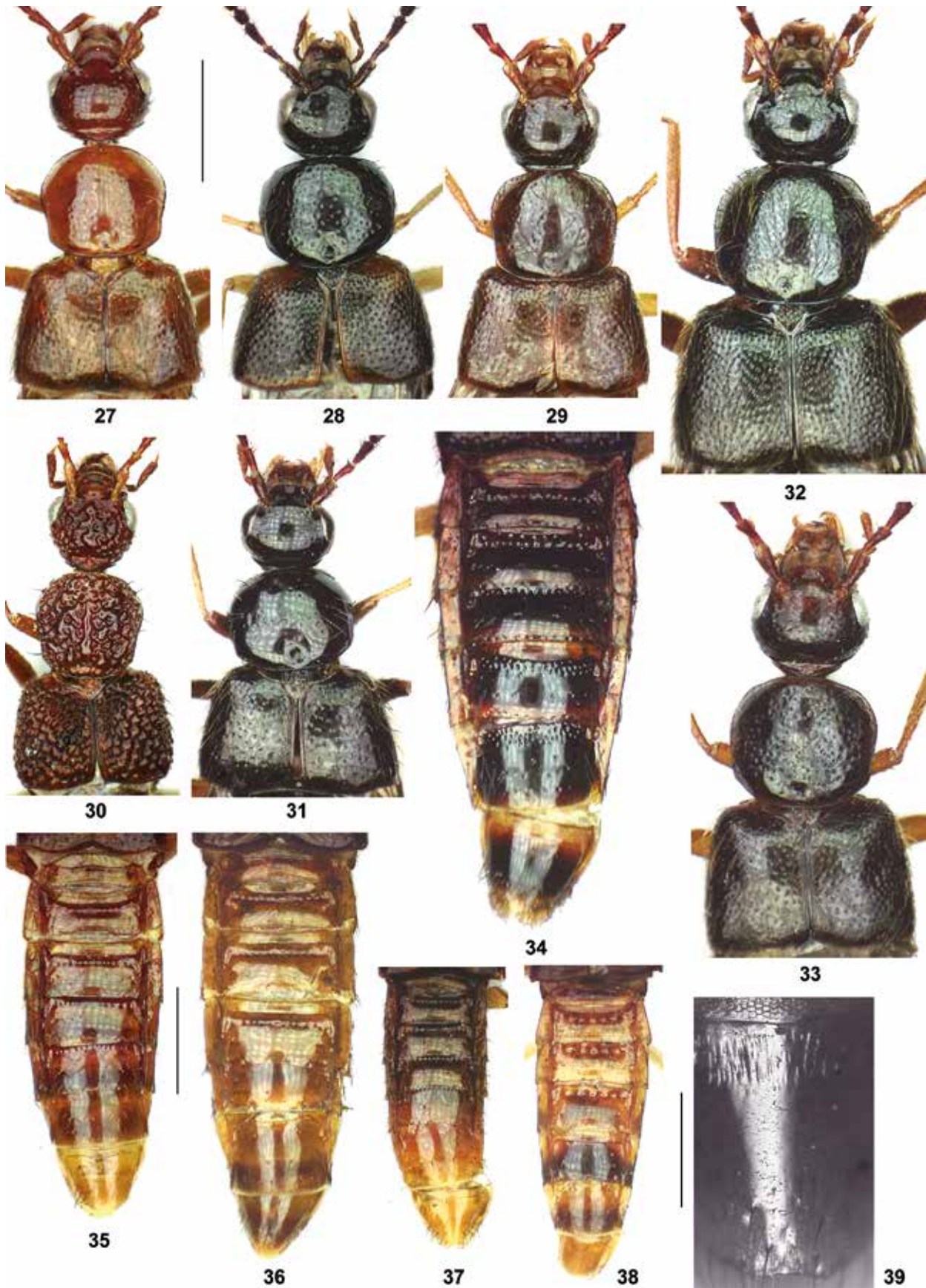
**Comment:** The original description is based on a unique holotype from “G. Tangkoeban Prahoe” (CAMERON 1939b).

**Additional material examined: Indonesia:** 5 ♀♀, Kalimantan Tengah, Busang-Rekut confluence, 0°03'S, 113°59'E, flight interception trap, VIII.2001, leg. Brendell & Mendel (BMNH, cAss).

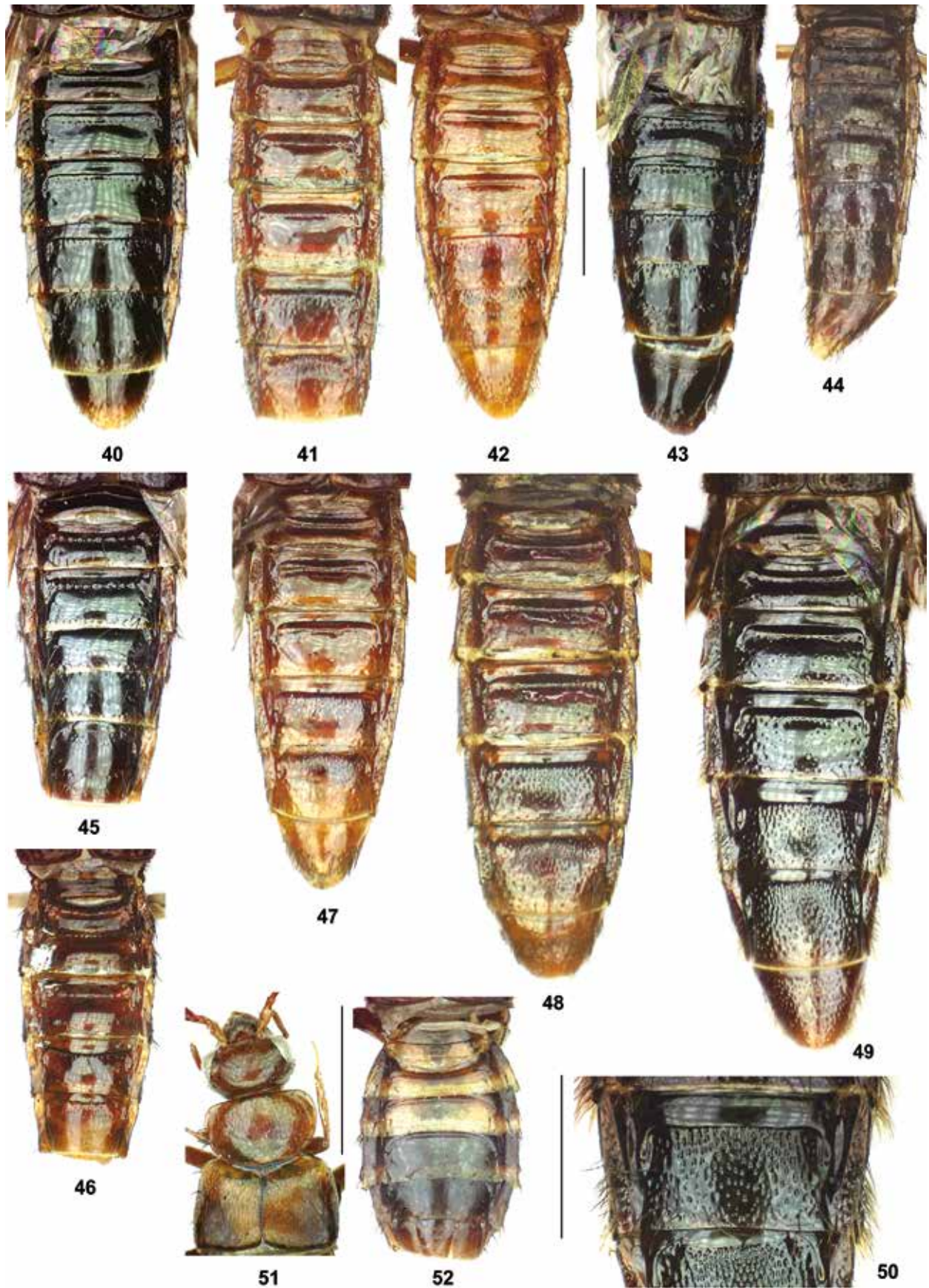




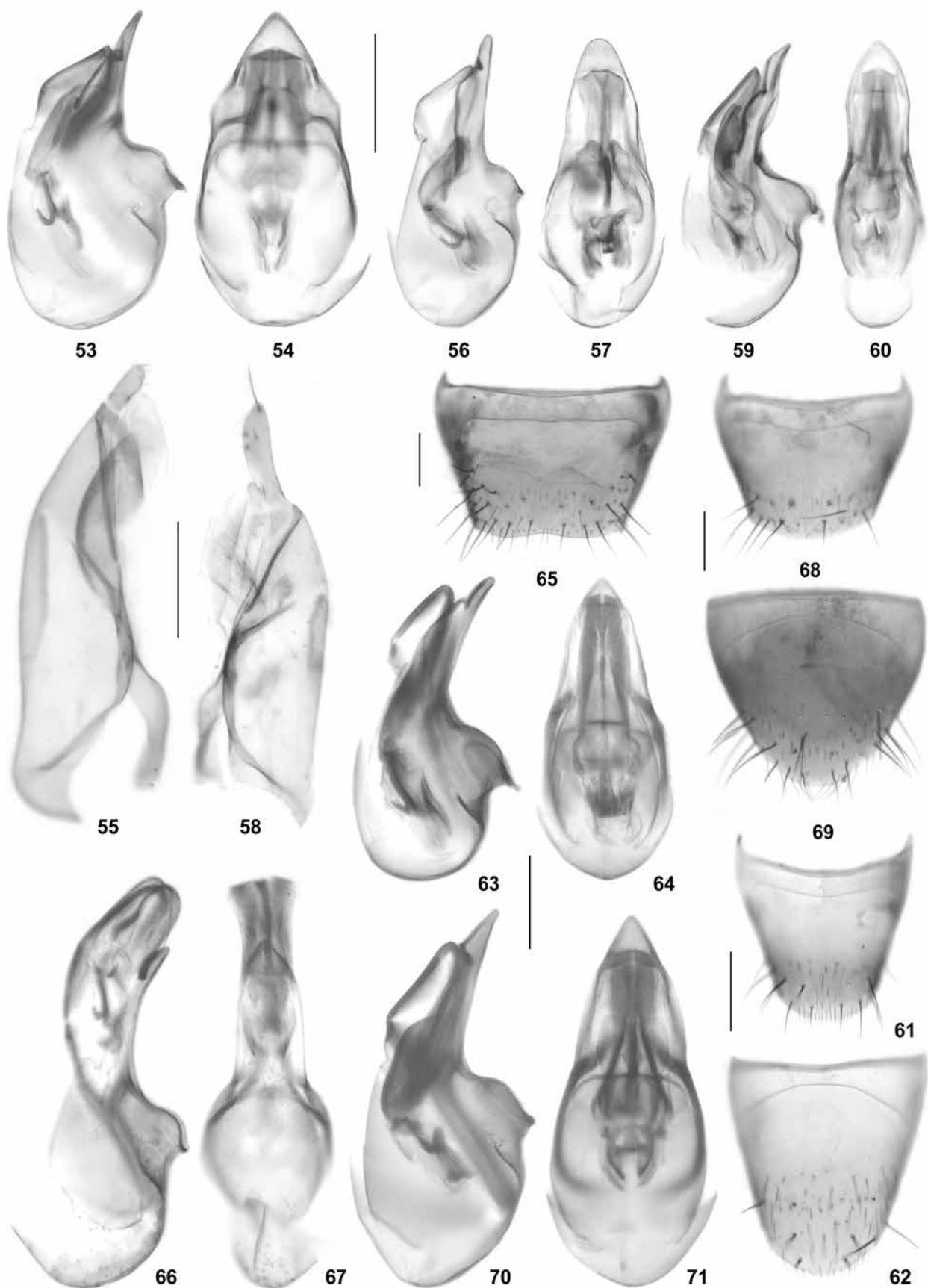
Figs 1–26: Antenna (1–18) and forebody (19–26) of *Zyras* spp. (1–17, 19–26) and *Myrmedonota modiglianii* (18): *punctipennis*, holotype (1, 19); *facundus*, lectotype (2, 24); *latibasalis* (3, 25); *kinabaluensis*, holotype (4, 21); *matangensis*, holotype (5, 26); *bryanti*, holotype (6, 23); *granulipennis*, holotype (7); *flavorufus*, lectotype (8); *rutrilobatus* (9); *parvilobatus* (10); *hirtiventris* (11–12; 11: holotype; 12 female paratype); *hlavaci* (13–14; 13 holotype; 14 paratype from Selangor); *lunatus* (15); *elegantulus*, lectotype (16, 20); *pallipyga*, holotype (17, 22). Scale bars: 1.0 mm.



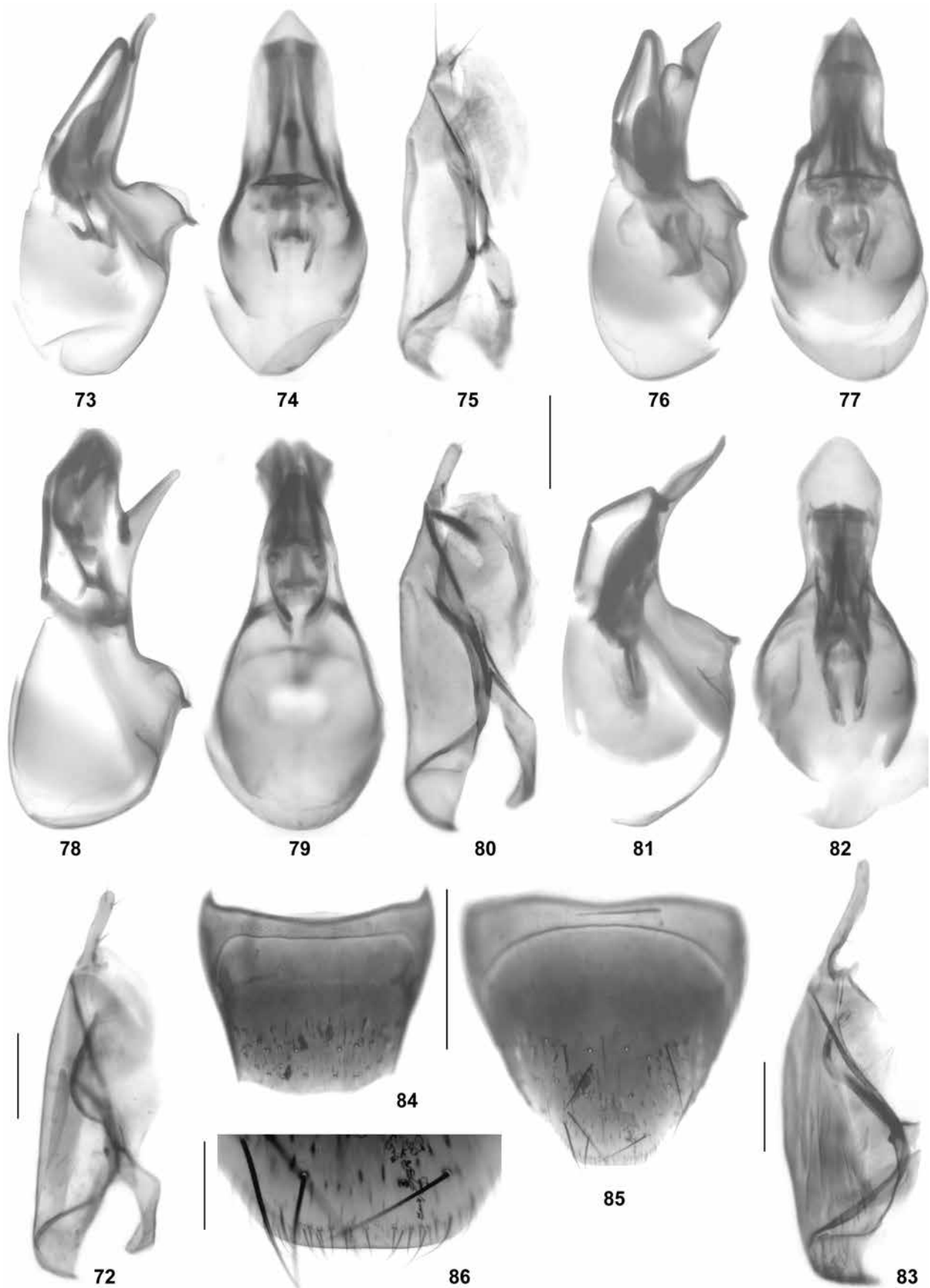
Figs 27–39: Forebody (27–33), abdomen (34–38), and median portion of tergite VIII (39) of *Zyras* spp.: *flavorufus*, lectotype (27); *parvilobatus* (28); *lunatus* (29); *granulipennis*, holotype (30); *rutilobatus* (31); *hirtiventris* (32); *hlavaci*, holotype (33); *punctipennis*, holotype (34); *elegantulus*, lectotype (35); *facundus*, lectotype (36); *pallipyga*, holotype (37); *bryanti*, holotype (38); *latibasis* (39). Scale bars: 27–38: 1.0 mm; 39: 0.2 mm.



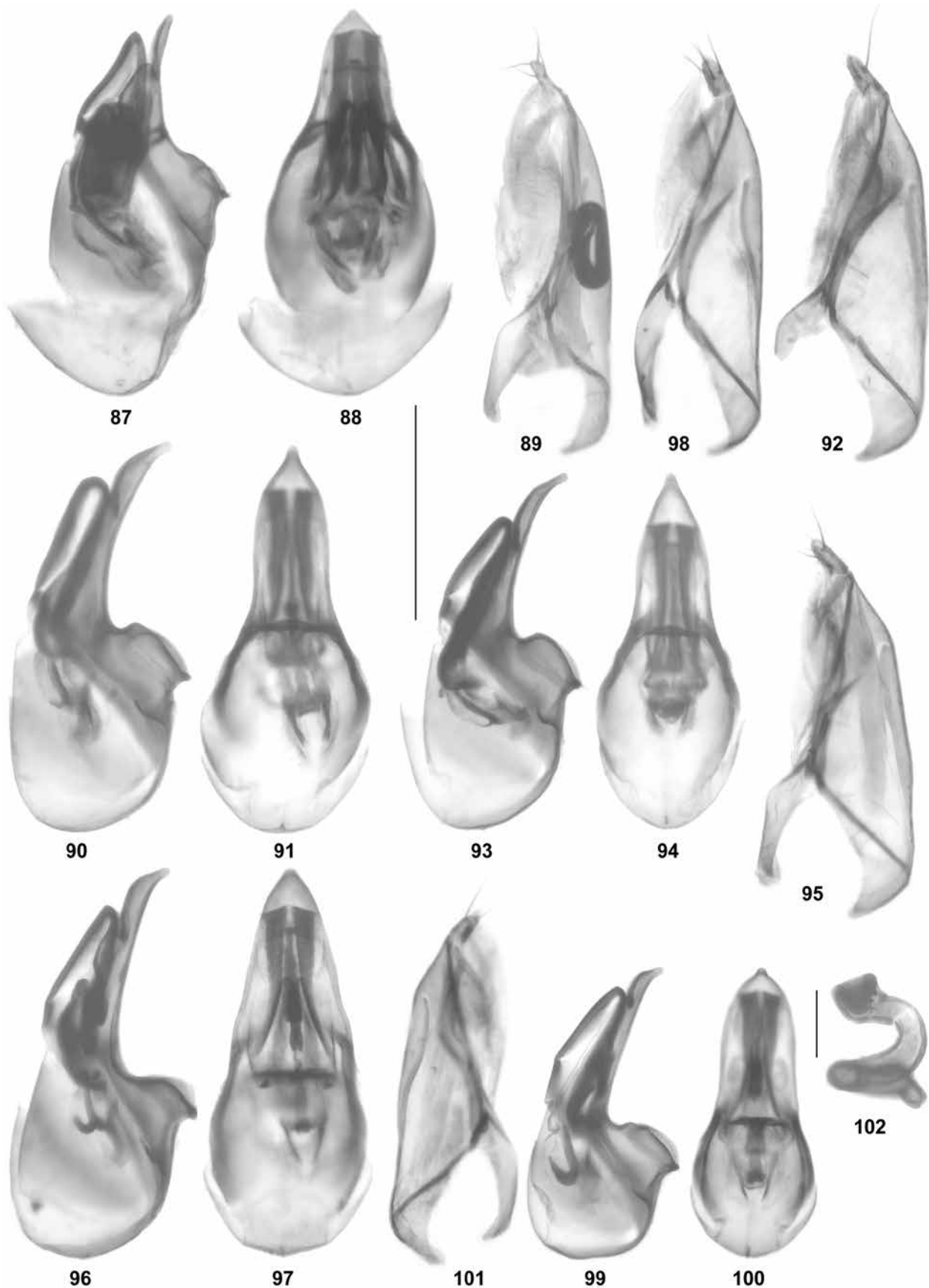
Figs 40–52: Abdomen (40–49, 52), abdominal tergite VI (50), and forebody (51) of *Zyras* spp. (40–50) and *Myrmedonota modiglianii* (51–52): *latibasalis* (40); *matangensis*, holotype (41); *flavorufus*, lectotype (42); *parvilobatus* (43); *kinabaluensis*, holotype (44); *rutrilobatus* (45); *granulipennis*, holotype (46); *lunatus* (47); *hlavaci*, holotype (48); *hirtiventris*, holotype (49–50). Scale bars: 1.0 mm.



Figs 53–71: *Zyras elegantulus*, lectotype (53–55), *Z. facundus*, lectotype (56–58), *Z. bryanti* (59–62), *Z. matangensis*, holotype (63–65), *Z. granulipennis*, holotype (66–69), and *Z. latibasalis* (70–71): median lobe of aedeagus in lateral and in ventral view (53–54, 56–57, 59–60, 63–64, 66–67, 70–71); paramere (55, 58); male tergite VIII (61, 65, 68); male sternite VIII (62, 69). Scale bars: 0.2 mm.



Figs 72–86: *Zyras latibasalis* (72), *Z. flavorufus*, lectotype (73–75), *Z. wei* from Laos (76–77), *Z. notaticornis* from Laos (78–80), and *Z. rutrilobatus* (81–86): paramere (72, 75, 80, 83); median lobe of aedeagus in lateral and in ventral view (73–74, 76–79, 81–82); male tergite VIII (84); male sternite VIII (85); postero-median portion of male sternite VIII (86). Scale bars: 84–85: 0.5 mm; 72–83: 0.2 mm; 86: 0.1 mm.



Figs 87–102: *Zyras parvilobatus* (87–89), *Z. hlavaci* (90–95; 90–92: holotype; 93–95: paratype from Selangor), *Z. hirtiventris*, holotype (96–98), *Z. lunatus* (99–101), and *Myrmedonota modiglianii* (102): median lobe of aedeagus in lateral and in ventral view (87–88, 90–91, 93–94, 96–97, 99–100); paramere (89, 92, 95, 98, 101); spermatheca (102). Scale bars: 87–101: 0.5 mm; 102: 0.1 mm.

**Redescription:** Body length 6.5–8.0 mm; length of forebody 3.0–3.4 mm. Coloration: head and pronotum brown; elytra reddish with the postero-lateral portions somewhat infuscate; abdomen dark-brown anteriorly and blackish-brown to blackish posteriorly, with the anterior and posterior margins of the segments reddish; legs pale-yellow, sometimes with the apices of the meso- and metafemora narrowly infuscate; antennae with antennomeres I–II reddish, III–VII or III–VIII brown to blackish-brown, and IX–XI or VIII–XI yellowish; maxillary palpi reddish with the apical palpomere yellowish-red.

Head (Fig. 19) distinctly transverse, median portion extensively impunctate; punctures in lateral portions sparse and rather coarse. Eyes longer than postocular region in dorsal view. Antenna (Fig. 1) 2.2–2.4 mm long; antennomeres IV–VI approximately as long as broad, VII–X increasingly transverse and of gradually increasing width, X barely 1.5 times as broad as long, and XI rather short, slightly shorter than the combined length of IX and X.

Pronotum (Fig. 19) approximately 1.1 times as broad as long and 1.3 times as broad as head, broadest in anterior half, strongly convex in cross-section; punctation rather coarse, sparse, and irregularly distributed, with impunctate areas on either side of midline; midline broadly impunctate.

Elytra (Fig. 19) 0.75–0.80 times as long as pronotum; punctation very coarse, defined, very dense near scutellum, gradually becoming less dense towards posterior margin. Hind wings fully developed. Metatarsomere I very long and slender, slightly longer than the combined length of II–IV.

Abdomen (Fig. 34) approximately as broad as elytra, with moderately deep anterior impressions on tergites III–V; anterior impressions of tergites III–V each with a transverse row of dense, coarse, and defined non-setiferous punctures; tergite III with one or two lateral punctures on either side and with twelve setiferous punctures at posterior margin; tergite IV–V with a median pair of punctures, with a short lateral transverse series of three setiferous punctures on either side, and with approximately 15 setiferous punctures at posterior margins; tergite VI with a narrow transverse band of coarse non-setiferous punctures anteriorly, with a median pair of punctures, with a lateral transverse series of three setiferous punctures on either side, and with approximately 15 setiferous punctures at posterior margin; tergite VII with a transverse band of non-setiferous punctures anteriorly and with two transverse series of setiferous punctures in posterior portion, posterior margin with palisade fringe; tergite VIII with setiferous punctures bearing long dark setae in posterior third, posterior margin convex.

♂: unknown.

♀: posterior margin of sternite VIII broadly concave.

**Comparative notes:** This species is characterized by relatively large size, its coloration (particularly of the

antennae), conspicuously dense and coarse punctation of the elytra, and by the punctation pattern of the abdomen.

**Distribution:** *Zyras punctipennis* has been recorded only from the type locality in Java and from one locality in Kalimantan Tengah, Borneo.

*Zyras (Zyras) elegantulus* CAMERON, 1939

(Figs 16, 20, 35, 53–55)

*Zyras (Zyras) elegantulus* CAMERON, 1939b: 20.

**Type material examined:** Lectotype ♂, present designation: “F. C. Drescher, G. Tangkoeban Prahoe, 4000–5000 Voet, Preanger, Java, 12–18.I.1933 / Syntype / M. Cameron. Bequest. B.M. 1955-147 / Lectotypus ♂ *Zyras elegantulus* Cameron, desig. V. Assing 2017” (BMNH). Paralectotype ♀: “F. C. Drescher, G. Tangkoeban Prahoe, 4000–5000 Voet, Preanger, Java, VII.1934 / *Z. elegantulus* Cam. Cotype / Syntype / M. Cameron. Bequest. B.M. 1955-147” (BMNH).

**Comment:** The original description is based on an unspecified number of syntypes from “G. Tangkoeban Prahoe” (CAMERON 1939b). Two syntypes, a male and a female, were located in the Cameron collection. The male is designated as the lectotype.

**Redescription:** Body length 5.3–5.7 mm; length of forebody 2.5 mm. Coloration (Figs 16, 20, 35): head pale-brown to reddish-brown; pronotum pale-reddish; elytra yellowish to yellowish-red, with the postero-lateral portions more or less extensively infuscate (very extensively so in the paralectotype); abdomen pale-reddish to dark-reddish, with the posterior halves of tergites V–VII darker; legs pale-yellowish; antennae dark-brown with antennomeres I–II pale-reddish to reddish-brown and X–XI yellowish-brown to brown; maxillary palpi reddish with the apical palpomere yellowish.

Head (Fig. 20) moderately transverse, median portion extensively impunctate; punctures in lateral portions sparse and coarse. Eyes longer than postocular region in dorsal view. Antenna (Fig. 16) approximately 1.5 mm long; antennomeres IV–X transverse, of gradually increasing width and increasingly transverse, X approximately twice as broad as long, and XI approximately as long as the combined length of IX and X.

Pronotum (Fig. 20) large in relation to head, 1.15–1.18 times as broad as long and 1.36–1.43 times as broad as head, broadest near anterior angles, moderately convex in cross-section; punctation rather coarse, sparse, and very irregularly distributed, with extensive impunctate areas on either side of midline; midline broadly impunctate.

Elytra (Fig. 20) 0.75–0.79 times as long as pronotum; punctation variable, moderately coarse to coarse,

moderately sparse to moderately dense, defined, sparser posteriorly than anteriorly. Hind wings present. Metatarsomere I slender, slightly to distinctly shorter than the combined length of II–IV.

Abdomen (Fig. 35) narrower than elytra, with deep anterior impressions on tergites III–V; anterior impressions of tergites III–V each with a transverse row of weakly defined non-setiferous punctures; tergite III with two lateral punctures on either side and with approximately 15 setiferous punctures at posterior margin; tergite IV–V with a median pair of punctures, with 3–5 lateral setiferous punctures on either side, and with approximately 20 setiferous punctures at posterior margins; tergite VI with a narrow transverse row of coarse non-setiferous punctures anteriorly, with a median pair of punctures, with a lateral transverse series of three setiferous punctures on either side, and with approximately 20 setiferous punctures at posterior margin; tergite VII with a narrow transverse band of non-setiferous punctures anteriorly and with two transverse series of setiferous punctures in posterior portion, posterior margin with palisade fringe; tergite VIII with few setiferous punctures bearing long black setae only near posterior margin, posterior margin convex, in the middle truncate or indistinctly concave.

♂: posterior margin of sternite VIII convex; median lobe of aedeagus (Figs 53–54) 0.57 mm long, of compact shape, ventral process short and broad; paramere (Fig. 55) much longer than median lobe, 0.84 mm long, and with very short apical lobe.

♀: posterior margin of sternite VIII concave in the middle.

**Comparative notes:** This species is characterized by a rather large pronotum (in relation to head), its coloration, a pronotum with very irregular punctation, the punctation pattern of the abdomen, and by the morphology of the aedeagus.

**Distribution:** *Zyras elegantulus* has been recorded only from the type locality in Java.

*Zyras (Zyras) facundus* LAST, 1969

(Figs 2, 24, 36, 56–58)

*Zyras (Zyras) facundus* LAST, 1969: 279.

*Zyras (Zyras) semirufus* CAMERON, 1939b: 18; preoccupied.

**Type material examined:** Lectotype ♂, present designation: “F. C. Drescher, G. Tangkoeban Prahoe, 4000–5000 Voet, Preanger, Java, 20.VII.1930 / *Z. semirufa* [sic] Cam. Type / Syntype / M. Cameron. Bequest. B.M. 1955-147 / Lectotypus ♂ *Zyras semirufus* Cameron, desig. V. Assing 2017 / *Zyras facundus* Last, det. V. Assing 2017” (BMNH). Paralectotype ♀: same data as holotype (BMNH).

**Comment:** The original description is based on an unspecified number of syntypes from “G. Tangkoeban Prahoe” (CAMERON 1939b). LAST (1969) replaced *Zyras semirufus* CAMERON, a name preoccupied by *Zyras semirufus* (BERNHAEUER, 1902) in the subgenus *Glossacantha* GEMMINGER & HAROLD, 1968 (HLAVÁČ et al. 2011), with the nomen novum *Z. facundus*. Two syntypes were located in the Cameron collection. A male is designated as the lectotype.

**Redescription:** Body length 6.4–7.6 mm; length of forebody 2.9–3.1 mm. Coloration (Figs 2, 24, 36): forebody dark-brown to blackish-brown; abdomen pale-reddish with the posterior portions of tergites VII and VIII weakly infuscate; legs yellowish; antennae blackish-brown with antennomeres I–III slightly to distinctly paler and XI at least apically slightly paler; maxillary palpi brown to dark-brown with the apical palpomere yellowish.

Head (Fig. 24) distinctly transverse, median portion extensively impunctate; punctures in lateral portions sparse and rather fine to moderately coarse. Eyes longer than postocular region in dorsal view. Antenna (Fig. 2) 2.0 mm long; antennomeres IV approximately as long as broad, V weakly transverse, VI–X of gradually increasing width and increasingly transverse, X approximately 1.5 times as broad as long, and XI approximately as long as the combined length of IX and X.

Pronotum (Fig. 24) 1.25–1.26 times as broad as long and 1.16–1.23 times as broad as head, broadest in anterior half, moderately convex in cross-section; punctation rather fine, sparse, and irregularly distributed, with extensive impunctate areas on either side of midline, on either side of the broadly impunctate midline with a series of punctures.

Elytra (Fig. 24) 0.88–0.91 times as long as pronotum; punctation sparse and rather fine, regularly or slightly irregularly distributed. Hind wings present. Metatarsomere I slender, approximately as long as the combined length of II–IV.

Abdomen (Fig. 36) narrower than elytra, with deep anterior impressions on tergites III–V; anterior impressions of tergites III–V each with a transverse row of weakly defined non-setiferous punctures, with a lateral setiferous puncture on either side and with four (tergites III–IV) or six (tergite V) setiferous punctures bearing long black setae near posterior margin; tergite VI with a transverse row of sparse non-setiferous punctures anteriorly, with a lateral setiferous puncture on either side and with six setiferous punctures bearing long dark setae near posterior margin; tergite VII with or without few scattered non-setiferous punctures anteriorly and with two transverse series of setiferous punctures posteriorly, posterior margin with palisade fringe; tergite VIII with setiferous punctures bearing long black setae in posterior two-fifths, posterior margin convex, in the middle truncate to convex.

♂: posterior margin of sternite VIII strongly convex; median lobe of aedeagus 0.65 mm long and shaped as in



Figs 56–57; paramere (Fig. 58) longer than median lobe, 0.77 mm long, and with rather large and distinctly flattened apical lobe.

♀: posterior margin of sternite VIII weakly concave in the middle.

**Comparative notes:** *Zyras facundus* is characterized by rather massive antennae, a rather strongly transverse pronotum with distinctive punctation, rather sparse and fine punctation of the elytra, the coloration and punctation pattern of the pronotum, and by the morphology of the aedeagus. Regarding the modifications of the apical lobe of the paramere, this species is similar to *Z. ambulans* ASSING, 2017 from Thailand, from which it is distinguished by completely different coloration and much longer elytra alone.

**Distribution:** *Zyras facundus* is currently known only from the type locality in Java.

*Zyras (Zyras) latibasalis* spec. nov.

urn:lsid:zoobank.org:act:35276B1A-6492-4F55-8836-91058719625C

(Figs 3, 25, 39–40, 70–71)

**Type material examined:** Holotype ♂: “INDONESIA: Jawa Barat, Cianjur, Kebun Raya, Cibodas (1400 m alt.), 29.I.–4.II.2004 (FIT), Maruyama M. et al. / Holotypus ♂ *Zyras latibasalis* sp. n., det. V. Assing 2017” (cMar). Paratypes: 9 exs.: same data as holotype (cMar, cAss).

**Additional material:** 1 ♀: “NE-LAOS: Hu Phan prov., Ban Saluei, Pu Phan mts., 20°15'N, 104°02'E, 1500–2000 m, 2.IV.–11.V.2001, leg. D. Hauck” (NMP).

**Etymology:** The specific epithet (with broad base) is an adjective alluding to the basally broad ventral process of the aedeagus in ventral view, the most prominent character distinguishing this species from the similar *Z. wei*.

**Description:** Body length 5.5–7.0 mm; length of forebody 2.5–3.0 mm. Coloration (Figs 3, 25, 39): forebody blackish with the humeral and anterior portions of the elytra sometimes narrowly and diffusely paler; abdomen black with the posterior margins of the tergites more or less distinctly paler reddish; legs pale-yellowish; antennae blackish with antennomeres IX–X often paler brown (X more so than IX) and antennomere XI dark-yellowish to pale-reddish; maxillary palpi pale-brown with the apical palpomere yellowish.

Head (Fig. 25) distinctly transverse; punctation moderately coarse and moderately dense; median dorsal portion extensively impunctate. Eyes large, much longer than postocular region in dorsal view. Antenna (Fig. 3) 1.9–2.2 mm long and moderately massive; antennomeres IV–VI approximately as long as broad, VII–X weakly transverse, X less than 1.5 times as broad as long,

and XI approximately as long as the combined length of IX and X.

Pronotum (Fig. 25) strongly transverse, 1.22–1.24 times as broad as long and 1.29–1.36 times as broad as head, broadest near anterior angles; posterior angles weakly, obtusely marked; lateral margins not sinuate in posterior half in dorsal view; punctation moderately coarse and moderately dense, nearly regularly distributed; midline rather narrowly impunctate.

Elytra (Fig. 25) approximately 0.85 times as long as pronotum; punctation rather dense and coarse, slightly denser near scutellum and near suture than in posterior and lateral portions. Hind wings present. Metatarsomere I approximately as long as the combined length of II–IV.

Abdomen (Fig. 40) slightly narrower than elytra, with moderately deep anterior impressions on tergites III–V; tergites III–V each with a transverse row or band of rather fine and often sparse non-setiferous punctures in anterior impressions, with a lateral setiferous puncture on either side and with four (tergite III) or 6–8 (tergites IV–V) setiferous punctures at posterior margins; tergite VI with a narrow transverse band or a transverse row of rather fine non-setiferous punctures anteriorly, with a lateral setiferous puncture on either side, and with usually eight setiferous punctures at posterior margin (individual punctures may be missing, or additional punctures may be present); tergite VII with a transverse band of fine non-setiferous punctures anteriorly and with two transverse rows of setiferous punctures posteriorly, posterior margin with palisade fringe; tergite VIII with setiferous punctures bearing long dark setae only in posterior fourth, anteriorly with a transverse band of oblong microsculpture (microstriae), posterior margin with shallow concavity in the middle (Fig. 39).

♂: posterior margin of sternite VIII broadly truncate in the middle; median lobe of aedeagus (Figs 70–71) 0.70–0.75 mm long; ventral process broadly triangular in ventral view; parameres approximately 1.0 mm long, with long and slender apical lobe.

♀: posterior margin of sternite VIII shallowly concave in the middle.

**Intraspecific variation:** The female from Laos is similar to the type series in size, habitus, coloration, and punctation, except that the apical antennomeres are blackish.

**Comparative notes:** In external characters (size, habitus, punctation, coloration), in the lateral aspect of the ventral process of the aedeagus, and regarding the long apical lobe of the paramere, *Z. latibasalis* strongly resembles the widespread *Z. wei*. It is distinguished from this species (and from the similar *Z. parvilobatus*) by the dark-yellowish antennomere XI, by the presence of an anterior transverse band of microstriae on tergite VIII, and by the morphology of the aedeagus (*Z. wei*: ventral process much more slender and basally somewhat constricted in ventral view, and smoothly curved in lateral view; crista apicalis more prominent).

**Distribution:** The type locality is situated in Jawa Barat at an altitude of 1400 m. The tentative record from Laos requires confirmation based on males. The type specimens were collected with flight interception traps.

*Zyras (Zyras) castaneus* (MOTSCHULSKY, 1861)

**Material examined:** **Thailand:** 1 ex., Nan distr., Ban Boluang env., 19°08'N, 101°09'E, 650 m, 15-25.V.2002, leg. Pacholátko & Peša (MZMB). **Malaysia:** 1 ♂, 1 ♀, 1 ex. [all identified by Pace as *Z. adulescens*], Sabah, Mount Kinabalu National Park, Poring Hot Springs, 480–510 m, 30.VIII.1988 [B163], leg. Smetana (MHNG).

**Comment:** This widespread species had already been recorded from several localities in Thailand and Borneo (ASSING 2017).

*Zyras (Zyras) preangeranus* CAMERON, 1939

*Zyras (Zyras) quadrterminalis* PACE, 2008: 149 f.; **syn. nov.**

**Type material examined:** Holotype ♂: “BORNEO Sabah Mt. Kinabalu Nat. Pk., Poring Hot Spgs, 485 m 29.VIII.88, A. Smetana [B160] / Holotypus *Zyras quadrterminalis* mihi, det. R. Pace 2000 / *Zyras quadrterminalis* n. sp., det. R. Pace 2000 / MHNG ENTO 00010010 / *Zyras preangeranus* Cameron, det. V. Assing 2017” (MHNG).

**Comment:** The original description of *Z. quadrterminalis* is based on a unique male from “Borneo, Sabah, Mt. Kinabalu, Poring Hot Springs” (PACE 2008). An examination of the holotype revealed that it is conspecific with the widespread *Z. preangeranus*, one of the most common representatives of the subgenus in the Oriental region (ASSING 2017).

*Zyras (Zyras) montanus* (BERNHAEUER, 1915)

*Zyras (Zyras) variolatus* PACE, 2003: 68; **syn. nov.**

**Type material examined:** Holotype ♂: “MALAYSIA: PAHANG, Bukit Fraser (1000 m), Jeriau Waterfalls, 24/XI/1987, S. Taiti e L. Bartolozzi / Holotypus *Zyras variolatus* m., det. R. Pace 1988 / *Zyras variolatus* sp. n., det. R. Pace 1988 / “La Specola”, Firenze, 7751 / *Zyras montanus* (Bernhauer), det. V. Assing 2017” (MZUF).

**Additional material examined:** see type material of *Z. pervariolosus*.

**Comment:** The original description of *Z. variolatus* is based on a unique male from “Malaysia, Pahang, Jerau Water Falls” (PACE 2003). An examination of the holotype revealed that it is conspecific with *Z. montanus*,

a species previously known only from Borneo. The male recently recorded as *Z. variolatus* from Kelantan (ASSING 2017) is evidently a specimen at the lower end of the size range of *Z. montanus* and additionally distinguished from other examined specimens by a dark antennomere X.

*Zyras (Zyras) nigerrimus* CAMERON, 1943

*Zyras (Zyras) nigerrimus* CAMERON, 1943: 142.

*Zyras (Zyras) bartolozzii* PACE, 2003: 68; **syn. n.**

*Zyras (Zyras) alboterminalis* PACE, 2008: 150; **syn. n.**

**Type material examined:** *Z. nigerrimus*: Holotype ♀: “Borneo, Mt. Poi, 5000' / *Z. nigerrimus* Cam. Type / M. Cameron. Bequest. B.M. 1955-147. / Syntype / Holotypus *Zyras nigerrimus* Cameron, rev. V. Assing 2017” (BMNH). Paratype ♀ [without elytra]: “Borneo, Mt. Poi / M. Cameron. Bequest. B.M. 1955-147. / Syntype / Paratypus *Zyras nigerrimus* Cameron, rev. V. Assing 2017”.

*Z. bartolozzii*: Holotype ♂: “MALAYSIA: PAHANG, Genting Sempah (600 m), 21.XI.1987, S. Taiti e L. Bartolozzi / Holotypus *Zyras bartolozzii* m., det. R. Pace 1988 / *Zyras bartolozzii* sp. n., det. R. Pace 1988 / “La Specola”, Firenze, 7750 / *Zyras nigerrimus* Cameron, det. V. Assing 2017” (MZUF).

*Z. alboterminalis*: Holotype ♂: “♂ / SABAH: Kibongol V., 7 km N Tambunan, 700 m, 20.V.1987, Burckhardt - Löbl / Holotypus *Zyras alboterminalis* mihi, det. R. Pace 2000 / *Zyras alboterminalis* n. sp., det. R. Pace 2000 / MHNG ENTO 00010000 / *Zyras nigerrimus* Cameron, det. V. Assing 2017” (MHNG). Paratypes: 1 ♂: “BORNEO SABAH Mt. Kinabalu Nat. Pk., Poring Hot Springs 480 m, 10.V.87 A. Smetana” (MHNG); 1 ♂: “SABAH: Poring Hot Springs, Langanan Falls, 900–950 m, 12.V.1987, Burckhardt - Löbl” (MHNG).

**Additional material examined:** **Malaysia:** 3 ♂♂, Sarawak, 4th Division, Gn. Mulu NP, alluvial forest litter, V-VII.1978, leg. Hammond & Marshall (BMNH, cAss).

**Comment:** The original description of *Z. nigerrimus* is based on material from “Mt. Poi, altitude 5,000 ft.”. In stating “Type in my collection” CAMERON (1943) designated a holotype. Two type specimens, the holotype and a paratype in poor condition, both females, were located in the Cameron collection. A comparison of the types of *Z. nigerrimus* with those of *Z. alboterminalis* and *Z. bartolozzii* revealed that all of them are conspecific. *Zyras alboterminalis* had already been synonymized with *Z. bartolozzii* by ASSING (2017). In consequence, both *Z. alboterminalis* and *Z. bartolozzii* are placed in synonymy with *Z. nigerrimus*.

This species is highly similar to *Z. brignolii* (PACE, 1986), whose male sexual characters are unknown. Based on

external characters, *Z. nigerrimus* is distinguished from *Z. brignolii* only by more slender antennae (preapical antennomeres oblong, as opposed to transverse in *Z. brignolii*) and by larger eyes.

*Zyras (Zyras) kinabaluensis* PACE, 2008

(Figs 4, 21, 44)

*Zyras (Zyras) kinabaluensis* PACE, 2008: 148.

**Type material examined:** Holotype ♂: “♂ / SABAH, Mt. Kinabalu, 1500 m, 21.V.1987, Burckhardt - Löbl / Holotypus *Zyras kinabaluensis* mihi, det. R. Pace 2000 / *Zyras kinabaluensis* n. sp., det. R. Pace 2000 / MHNG ENTO 00010003 / *Zyras kinabaluensis* Pace, det. V. Assing 2017” (MHNG).

**Comment:** The original description is based on a unique male from “Sabah, Mt. Kinabalu” (PACE 2008).

**Redescription:** Moderately small species; body length 5.7 mm; length of forebody 2.4 mm. Coloration (Figs 4, 21, 44): body brown with the anterior portions of the paratergites slightly paler; legs yellow with the apical halves of the metafemora slightly darker; antennae and maxillary palpi yellowish.

Head (Fig. 21) moderately transverse, median portion extensively impunctate; punctures in lateral portions coarse and sparse. Eyes moderately large, slightly longer than postocular region in dorsal view. Antenna (Fig. 4) moderately long and rather slender, 2.2 mm long; antennomeres IV more than 1.5 times as long as broad, V–VIII of gradually decreasing length and decreasingly oblong, VIII weakly oblong, IX approximately as long as broad, X weakly transverse, and XI short, distinctly shorter than the combined length of IX and X.

Pronotum (Fig. 21) slender, 1.07 times as broad as long and 1.11 times as broad as head, broadest near anterior angles, rather strongly convex in cross-section; lateral margins weakly sinuate in posterior third in dorsal view; posterior angles obtusely marked; punctation dense, coarse, and somewhat irregularly distributed; impunctate median band moderately broad.

Elytra (Fig. 21) very short, 0.65 times as long as pronotum; punctation moderately dense, very coarse, slightly less dense posteriorly than anteriorly. Hind wings completely reduced. Legs long and slender; metatarsomere I slender, nearly as long as the combined length of II–IV.

Abdomen (Fig. 44) slightly broader than elytra, with deep anterior impressions on tergites III–V; anterior impressions of tergites III–V each with a transverse row of distinct non-setiferous punctures, with a lateral puncture on either side, and with six (tergites III and IV) or eight (tergite V) setiferous punctures bearing black setae at or near posterior margin; tergite VI with a narrow transverse band of non-setiferous punctures anteriorly

and with two transverse series of setiferous punctures bearing dark setae posteriorly; tergite VII with non-setiferous punctures anteriorly and with two transverse series of setiferous punctures posteriorly, posterior margin with narrow palisade fringe; tergite VIII with setiferous punctation only in posterior third, posterior margin convex.

♂: median lobe of aedeagus 0.75 mm long; ventral process of distinctive shape, rather broad in ventral view (PACE 2008: figures 98–99); paramere 0.85 mm long, apical lobe rather short, flattened and apically broadly convex to obliquely truncate.

♀: unknown.

**Comparative notes:** Based on the slender habitus, the slender antennae, and the morphology of the aedeagus, *Z. kinabaluensis* is closely allied to *Z. nitens*, *Z. nigerrimus*, and related species. It is readily distinguished from all other *Zyras* sensu strictu species recorded from the Sunda Islands by much shorter elytra, completely reduced hind wings, and by the shape of the median lobe of the aedeagus. In addition, it is characterized by the coloration of the legs and the antennae and by the punctation pattern of the abdomen.

**Distribution:** The type locality is situated in Mount Kinabalu (Malaysia: Sabah) at an altitude of 1500 m.

*Zyras (Zyras) pallipyga* PACE, 2008

(Figs 17, 22, 37)

*Zyras (Zyras) pallipyga* PACE, 2008: 150 f.

**Type material examined:** Holotype ♀: “♀ / SABAH: E Mt. Kinabalu, 1150 m, rte Ranau – Kota Kinabalu, 24.V.1987, Burckhardt - Löbl / Holotypus *Zyras pallipyga* mihi, det. R. Pace 2000 / *Zyras pallipyga* n. sp., det. R. Pace 2000 / MHNG ENTO 00010003 / *Zyras pallipyga* Pace, det. V. Assing 2017” (MHNG).

**Comment:** The original description is based on a unique female from “Sabah, E Mt. Kinabalu, ..., Ranau–Kota Kinabalu” (PACE 2008).

**Additional material examined:** Malaysia: 1 ♀, Sabah, 50 km E Kota Kinabalu, Crocker Mountains, Gg. Emas, 16–27.IV.1993, leg. Jenis (cAss).

**Redescription:** Small species; body length 4.6–4.8 mm; length of forebody 2.4 mm. Coloration (Figs 17, 22, 37): head and pronotum reddish; elytra yellowish-red, with or without the postero-lateral portions slightly darker; abdomen with segments III–VI reddish to pale reddish-brown and segments VII–VIII yellowish red; antennae brown to dark-brown with antennomeres I–II pale-reddish and XI dark-reddish; maxillary palpi yellowish-red with the apical palpomere yellow.

Head (Fig. 22) distinctly transverse, median portion extensively impunctate; punctures in lateral portions moderately coarse and sparse. Eyes moderately large, slightly longer than postocular region in dorsal view. Antenna (Fig. 17) short and clavate, 1.20–1.25 mm long; antennomere IV disc-shaped, approximately twice as broad as long; antennomeres V–X disc-shaped, of gradually increasing width and increasingly transverse, X approximately three times as broad as long, and XI broad and short, approximately as long as the combined length of IX and X.

Pronotum (Fig. 22) distinctly transverse, approximately 1.2 times as broad as long and 1.2 times as broad as head, broadest near anterior angles, moderately convex in cross-section; lateral margins straight in posterior two-thirds in dorsal view; posterior angles weakly marked; punctuation sparse, moderately coarse, and irregularly distributed; impunctate median band broad.

Elytra (Fig. 22) approximately 0.9 times as long as pronotum; punctuation very sparse and fine, posteriorly even sparser. Hind wings present. Legs relatively short; metatarsomere I rather short, shorter than the combined length of II–IV.

Abdomen (Fig. 37) narrower than elytra, with deep anterior impressions on tergites III–V; anterior impressions of tergites III–V and anterior portion of tergite VI each with a transverse row of defined and not very coarse non-setiferous punctures, with a lateral setiferous puncture on either side, and with numerous fine setiferous punctures at posterior margins; tergites IV–VI additionally with a median pair of coarser setiferous punctures; tergite VII only with scattered and very fine non-setiferous punctures anteriorly and with two transverse series of setiferous punctures bearing long dark setae posteriorly, posterior margin with palisade fringe; tergite VIII with setiferous punctuation only in posterior fourth, posterior margin convex.

♂: unknown.

♀: posterior margin of sternite VIII distinctly concave in the middle.

**Comparative notes:** This species is characterized by small size, its coloration, conspicuously clavate and short antennae, very sparse punctuation of the pronotum and elytra, and a distinctive punctuation pattern of the abdomen (defined non-setiferous punctures present on tergite VI, but not on tergite VII).

**Distribution:** The currently known distribution is confined to two localities to the east of Mount Kinabalu, Borneo (Malaysia: Sabah). The holotype was collected at an altitude of 1150 m.

*Zyras (Zyras) matangensis* CAMERON, 1943

(Figs 5, 26, 41, 63–65)

*Zyras (Zyras) daiaccorum* PACE, 2008: 152 f.; **syn. nov.**

**Type material examined:** Holotype ♀: “BORNEO Sabah Mt. Kinabalu Nat. Pk., HQ Liwago River, 1490 m 10.VIII.88, A. Smetana [B97] / Holotypus *Zyras daiaccorum* mihi, det. R. Pace 2000 / *Zyras daiaccorum* n. sp., det. R. Pace 2000 / MHNG ENTO 00010004 / *Zyras matangensis* Cameron, det. V. Assing 2017” (MHNG). Paratype ♀: same data as holotype, but “3.IX.1988 ... [B174]” (MHNG).

**Additional material examined: Malaysia:** 1 ♂ [identified as *Z. adulescens* by Pace], Sabah, Crocker Range, 1600 m, 18.V.1987, leg. Burckhardt & Löbl (MHNG).

**Comment:** The original description of *Z. daiaccorum* is based on a female holotype from “Borneo, Sabah, Mt. Kanabalu Nat. Pd., HQ Liwagu River” and three females from the same locality (PACE 2008). An examination of the holotype and a paratype revealed that these specimens are conspecific with the holotype of *Z. matangensis*, which was revised by ASSING (2017). The external and sexual characters of the holotype of *Z. matangensis* are illustrated in Figs 5, 26, 41, 63–65.

*Zyras (Zyras) bryanti* CAMERON, 1943

(Figs 6, 23, 38, 59–62)

*Zyras (Zyras) bryanti* CAMERON, 1943: 141 f.

*Zyras (Zyras) mortuorum* PACE, 1990: 99; **syn. nov.**

*Zyras (Zyras) paederinus* PACE, 2008: 153; **syn. nov.**

**Type material examined:** *Z. bryanti*: Holotype ♂: “Matang, 22.I.14, 2000 ft / G 28 / *Z. bryanti* Cam. Type / Holotype / M. Cameron. Bequest. B.M. 1955-147 / Holotypus *Zyras bryanti* Cameron, rev. V. Assing 2017” (BMNH).

*Z. mortuorum*: Holotype ♂: “PHILIPPINES, SAGADA, 19/12/79, L. Deharveng / En Aval Village, lavage d’humus / Holotypus *Zyras mortuorum* m., det. R. Pace 1985 / *Zyras mortuorum* sp. n., det. R. Pace 1985 / Museum Paris 1998, Coll. J. Orousset / *Zyras bryanti* Cameron, det. V. Assing 2017” (MNHN).

*Z. paederinus*: Holotype ♂: “BORNEO SABAH Mt. Kinabalu N. P., above Poring Hot Springs, 520 m, 9.V.87, A. Smetana / Holotypus *Zyras paederinus* mihi, det. R. Pace 2000 / *Zyras paederinus* n. sp., det. R. Pace 2000 / MHNG ENTO 00010006 / *Zyras bryanti* Cameron, det. V. Assing 2017” (MHNG).

**Comment:** The original description of *Z. bryanti* is based on a unique holotype from “W. Sarawak: Mt. Matang” (CAMERON 1943), that of *Z. mortuorum* on a male holotype and a male paratype from “environs de Sagada”

(PACE 1990), and that of *Z. paederinus* on a unique male from “Sabah, Mt. Kinabalu, above Poring Hot Springs” (PACE 2008). An examination of the holotypes of the three names revealed that they are conspecific. Hence the synonymies proposed above. The holotype of *Z. mortuorum* has the antennae somewhat darker (antennomeres III–X dark-brown, distinctly contrasting with the reddish-yellow antennomere XI), more extensively infuscate tergites VI and VII, and the ventral process of the aedeagus slightly more acute in ventral view, but otherwise no evidence was found suggesting that it should represent a distinct species.

**Additional material examined:** **Thailand:** 1 ♀, Satun Province, Thale Ban National Park, 20 km E Satun, 200–400 m, 1–4.I.1996, leg. Schulz & Vock (cAss). **Malaysia:** 1 ♂, 1 ♀, Kelantan, Gua Musang, 3.VI.2006, leg. Čiampor (cHla, cAss).

**Redescription:** Small species; body length 3.8–4.8 mm; length of forebody 1.7–2.1 mm. Coloration (Figs 6, 23, 38): head brown to blackish-brown; pronotum pale-reddish; elytra yellowish red with the posterolateral portions more or less extensively and more or less distinctly, diffusely infuscate (sometimes leaving only the anterior margin and the scutellar portion paler); abdomen yellowish-red with most to nearly all of tergite VI (except for the anterior and antero-lateral portions) and the posterior two-fifths to four-fifths of tergite VII infuscate; antennae yellowish-red to dark-brown with the basal antennomeres dark-yellowish to reddish and antennomere XI reddish-yellow; maxillary palpi yellowish.

Head (Fig. 23) distinctly transverse, median portion extensively impunctate; punctures in lateral portions rather dense and moderately coarse. Eyes large, approximately twice as long as postocular region in dorsal view. Antenna (Fig. 6) long and very slender, 1.7–2.1 mm long; antennomeres IV–VI approximately twice as long as broad (or nearly so), VII–X distinctly oblong, of gradually decreasing length, and decreasingly oblong, and XI approximately as long as the combined length of IX and X.

Pronotum (Fig. 23) 1.08–1.14 times as broad as long and 1.08–1.17 times as broad as head, broadest near anterior angles, weakly convex in cross-section; punctuation very dense and fine; midline without impunctate band.

Elytra (Fig. 23) nearly 0.83–0.89 times as long as pronotum; punctuation very dense, slightly coarser than that of pronotum. Hind wings present. Metatarsomere I slender, shorter than the combined length of II–IV.

Abdomen (Fig. 38) narrower than elytra, with deep anterior impressions on tergites III–V; anterior impressions of tergites III–V each with a transverse row of few very large, but weakly defined puncture-like impressions, with a lateral puncture on either side, and with four (tergites III and IV) or six (tergite V) fine setiferous punctures at posterior margin; tergite VI without non-setiferous

punctures anteriorly, with a lateral setiferous puncture on either side, and with six setiferous punctures at posterior margin; tergite VII without non-setiferous punctures anteriorly, with two transverse rows each composed of four setiferous punctures posteriorly, posterior margin with palisade fringe; tergite VIII with setiferous punctation only in posterior fourth, posterior margin convex (Fig. 61).

♂: posterior margin of sternite VIII convex (Fig. 62); median lobe of aedeagus (Figs 59–60) nearly 0.5 mm long; ventral process slender, ventrally with or without a median carina; paramere slightly longer than median lobe, apical lobe very long and with conspicuously long subapical seta.

♀: posterior margin of sternite VIII weakly concave in the middle.

**Comparative notes:** Males of *Z. bryanti* are readily distinguished from all other *Zyras* sensu strictu species from the Palaearctic and Oriental regions by the morphology of the aedeagus. In addition, this species is characterized by the coloration, small body size, dense punctuation of the forebody, the punctuation pattern of the abdomen, and the long seta on the apical lobe of the paramere. As can be inferred from the similarly derived punctuation of the forebody and the abdomen, as well as from the similarly slender antennae and habitus, *Z. bryanti* is closely allied to *Z. densissimus* ASSING, 2017 from Sulawesi Utara, from which it differs by different coloration (*Z. densissimus*: whole body of much darker coloration; pronotum blackish), less dense and less fine punctuation of the forebody, and a less convex (cross-section) and posteriorly less strongly tapering pronotum (cross-section).

**Distribution:** *Zyras bryanti* is currently known from one locality in Borneo, one in Thailand, one in Peninsular Malaysia, and one in the Philippines.

*Zyras (Zyras) granulipennis* CAMERON, 1930

(Figs 7, 30, 46, 66–69)

*Zyras granulipennis* CAMERON, 1930: 167 f.

*Zyras pervariolosus* PACE, 2008: 150; **syn. nov.**

**Type material examined:** *Z. granulipennis*: Holotype ♂: “N. Borneo. Bettotan, / Nr. Sandakan. July 24<sup>th</sup> 1927. / *Zyras granulipennis* Cam. Type / Holotype / M. Cameron. Bequest. B.M. 1955-147 / Holotypus *Zyras granulipennis* Cameron, rev. V. Assing 2017” (BMNH).

*Z. pervariolosus*: Holotype ♂: “BORNEO SABAH Mt. Kinabalu Nat. Pk., HQ at Liwagu Rv., 1500 m 30.IV.1987, A. Smetana / Holotypus *Zyras pervariolosus* mihi, det. R. Pace 2000 / *Zyras pervariolosus* n. sp., det. R. Pace 2000 / MHNG ENTO 00010008 / *Zyras granulipennis* Cameron, det. V. Assing 2017” (MHNG). Paratype ♀: “SABAH: E Mt. Kinabalu, 1150 m, rte Ranau–Kota Kinabalu, 24.V.1987, Burckhard - Löbl / Paratypus

*Zyras pervariolosus* mihi, det. R. Pace 2000 / *Zyras pervariolosus* n. sp., det. R. Pace 2000 / MHNG ENTO 00010009 / *Zyras montanus* (Bernhauer), det. V. Assing 2017” (MHNG).

**Comment:** The original description of *Z. granulipennis* is based on a unique holotype from “North Borneo; Bettotan” (CAMERON 1930), that of *Z. pervariolosus* on a male holotype from “Sabah, Mt. Kinabalu Nat. Pk., HQ at Liwagu Rv.” and two female paratypes from “Sabah, E Mt. Kinabalu, ..., rte. Ranau–Kota Kinabalu” (PACE 2008). An examination of the two holotypes revealed that they are conspecific; hence the synonymy proposed above. The examined paratype of *Z. pervariolosus* is conspecific with *Z. montanus* (BERNHAUER, 1915).

**Redescription:** Rather small species; body length 6.2–6.4 mm; length of forebody 2.8–2.9 mm. Coloration (Figs 7, 30, 46): forebody dark-brown to black; abdomen: tergites III–VI dark-brown with the anterior and antero-lateral portions paler, tergites VII–VIII reddish-brown; legs with the profemora, the protibiae, and the mesofemora brown, metafemora distinctly bicoloured with the basal two-fifths pale yellowish and the apical three-fifths dark-brown to blackish, meso- and metatibiae pale yellowish with the base narrowly blackish and the apex slightly darker, and the tarsi yellowish; antennae pale-reddish; maxillary palpi dark reddish with the apical palpomere pale-reddish.

Head (Fig. 30) relatively weakly transverse; punctation conspicuously coarsely granulate, along middle of dorsal surface with narrow and irregular glossy elevation. Eyes moderately large, barely longer than postocular region in dorsal view. Antenna (Fig. 7) approximately 2.0 mm long; antennomeres IV–V oblong, VI approximately as long as broad, VII–X increasingly transverse, X approximately 1.5 times as broad as long, and XI of conical shape, barely as long as the combined length of IX and X.

Pronotum (Fig. 30) very weakly transverse, 1.03 times as broad as long and 1.18–1.23 times as broad as head, broadest near anterior angles, posteriorly distinctly tapering, strongly convex in cross-section; posterior angles marked; lateral margins sinuate in posterior two-thirds in dorsal view; punctation conspicuously coarsely granulate, in the middle and in lateral portions with irregularly elevated glossy elevations; at lateral and anterior margins with very long and rather stout dark and erect setae.

Elytra (Fig. 30) approximately 0.8 times as long as pronotum; punctation extremely coarsely granulate and very dense. Hind wings present. Metatarsomere I slender, approximately as long as the combined length of II–IV.

Abdomen (Fig. 46) nearly as broad as elytra, with deep anterior impressions on tergites III–V; anterior impressions of tergites III–V each with a transverse row of very fine and weakly defined puncture-like impressions, with a lateral puncture on either side, and with a transverse

series of eight setiferous punctures near posterior margin; tergite VI with a transverse row of few fine non-setiferous punctures anteriorly, with a lateral setiferous puncture on either side, and with eight setiferous punctures near posterior margin; tergite VII with sparse non-setiferous punctures in antero-median portion and with two transverse rows each composed of few setiferous punctures posteriorly, posterior margin with palisade fringe; tergite VIII with setiferous punctation bearing long and rather stout black setae in posterior third, posterior margin weakly convex in the middle (Fig. 68).

♂: sternite VIII with strongly convex posterior margin (Fig. 69); median lobe of aedeagus 0.72 mm long and shaped as in Figs 66–67; parameres malformed in the holotype.

♀: unknown.

**Comparative notes:** This highly distinctive species is easily distinguished from all its consubgenera based on the conspicuous punctation of the forebody alone, particularly the strongly granulate punctation of the elytra. It is additionally characterized by the shape of the pronotum, the coloration of the legs, the punctation pattern of the abdomen, and by the shape of the median lobe of the aedeagus. Among the described species recorded from the Oriental region, *Z. granulipennis* is most similar to the sympatric *Z. montanus*, from which it additionally differs by smaller body size, more slender head and pronotum, a distinctly more convex and less transverse pronotum with coarser punctation and more pronounced glossy elevations, by shorter antennae with shorter and more transverse antennomeres IV–X and darker apical antennomeres (*Z. montanus*: antennomeres X–XI pale-yellowish), fewer setiferous punctures on the abdomen, and by the shape of the median lobe of the aedeagus.

**Distribution:** *Zyras granulipennis* has been recorded only from two localities in Sabah (Borneo), Malaysia.

*Zyras (Zyras) flavorufus* CAMERON, 1939

(Figs 8, 27, 42, 73–75)

*Zyras (Zyras) flavorufus* CAMERON, 1939b: 18.

**Type material examined:** Lectotype ♂, present designation: “F. C. Drescher, G. Tangkoeban Prahoe, 4000–5000 Voet, Preanger, Java, IX.1933 / *Z. flavorufus* Cam. / Syntype / M. Cameron. Bequest. B.M. 1955-147 / Lectotypus ♂ *Zyras flavorufus* Cameron, desig. V. Assing 2017” (BMNH).

**Comment:** The original description is based on an unspecified number of syntypes from “G. Tangkoeban Prahoe ... 20.VII.30” (CAMERON 1939b). The date indicated on the label of the sole specimen found in the Cameron collection differs from that indicated in the description, but it can be assumed that it is one of the

specimens that CAMERON (1939b) based his description on and that it has type status (identification label with Cameron's handwriting; collection date six years prior to publication year; characters matching original description). The specimen is designated as the lectotype.

**Redescription:** Body length 6.7 mm; length of forebody 3.1 mm. Coloration (Figs 8, 27, 42): body reddish with the head and the postero-lateral portions slightly darker; legs dark-yellowish; antennae dark-brown with the basal three antennomeres reddish; maxillary palpi reddish with the apical palpomere yellowish-red.

Head (Fig. 27) moderately transverse; punctuation moderately dense and moderately coarse; median dorsal portion extensively impunctate. Eyes moderately large, slightly longer than postocular region in dorsal view. Antenna (Fig. 8) 2.1 mm long and rather slender; antennomeres IV indistinctly oblong, V as long as broad, VI–X increasingly transverse and of gradually increasing width, X less than 1.5 times as broad as long, and XI of conical shape, shorter than the combined length of IX and X.

Pronotum (Fig. 27) 1.11 times as broad as long and 1.21 times as broad as head, broadest in anterior half; posterior angles marked; lateral margins distinctly sinuate in posterior half in dorsal view; punctuation moderately coarse, rather dense, and slightly irregularly distributed.

Elytra (Fig. 27) 0.94 times as long as pronotum; punctuation moderately dense and moderately coarse, nearly regularly distributed; pubescence dense, not particularly long, and sub-depressed. Hind wings present. Metatarsomere I shorter than the combined length of II–IV.

Abdomen (Fig. 42) narrower than elytra, with moderately deep anterior impressions on tergites III–V; tergites III–V each with a transverse row of fine, sparse, and weakly defined puncture-like impressions in anterior impressions, with few lateral setiferous punctures on either side, and minute setiferous punctures at posterior margin, disc with scattered micropunctuation; tergite VI with a broad transverse band of fine non-setiferous punctures in anterior portion, with scattered micropunctuation on disc, with few lateral setiferous punctures bearing long dark setae on either side and with numerous fine setiferous punctures near posterior margin; tergite VII with a broad band of fine non-setiferous punctuation in anterior portion, with non-setiferous micropunctuation and larger punctures on remainder of disc, with some lateral setiferous punctures bearing long dark setae on either side, and with fine setiferous punctures near posterior margin, posterior margin with palisade fringe; tergite VIII with numerous setiferous punctures in posterior half, posterior margin convex.

♂: sternite VIII with strongly convex posterior margin; median lobe of aedeagus 0.83 mm long and shaped as in Figs 73–74; paramere 0.75 mm (Fig. 75) long and with very short apical lobe.

♀: unknown.

**Comparative notes:** Based on the very short apical lobe of the paramere, on the shapes of the ventral process and of the internal structures of the aedeagus, and on the punctuation pattern of the abdomen, *Z. flavorufus* belongs to the *Z. hirtus* group. It is distinguished from most species of this group by the shorter and less dense pubescence of the forebody and of the abdomen. In habitus, coloration, and other external characters, *Z. flavorufus* is highly similar to *Z. matangensis* CAMERON, 1943 and *Z. parahirtus* ASSING, 2017, both from Borneo. It is distinguished from these species by more distinctly sinuate lateral margins of the pronotum, somewhat more slender antennae with less transverse preapical antennomeres, longer elytra with more distinct punctuation, finer and sparser non-setiferous punctuation on tergites VI and VII, and by the shape of the median lobe of the aedeagus.

**Distribution:** This species has been recorded only from the type locality in Java.

### 3.3.2 Southeastern continental Asia

#### *Zyras (Zyras) geminus* (KRAATZ, 1859)

**Material examined: Thailand:** 1 ex., Yala prov., Betong, Gunung Cang Dun vill., III–IV.1993, leg. Horák (MZMB). **Vietnam:** 1 ex., Ninh Binh province, Cuc Phuong National Park, 20°15'N, 105°43'E, 200 m, at light, 3–5.V.2014, leg. Bartolozzi et al. (MZUF); 1 ex., same data, but 5–6.IV.2017, leg. Bartolozzi (cAss).

**Comment:** *Zyras geminus* had already been recorded from Vietnam. For a map illustrating the distribution of this widespread and common species see ASSING (2017).

#### *Zyras (Zyras) wei* PACE, 1993

(Figs 76–77)

**Material examined: Laos:** 1 ♂, 3 ♀♀, Phongsali Province, Phongsali env., 1300–1500 m, 1–15.V.2004 (cMar, cAss). **Vietnam:** 1 ♀, 10 km NW Sa Pa, 22°22'N, 103°45'E, 1850 m, moist stream valley with deciduous trees, litter and roots between rocks sifted, 8.VIII.2013, leg. Wunderle (cWun).

**Comment:** Confirmed records of *Z. wei* were known from the Chinese provinces Guizhou, Zhejiang, Fujian, and Sichuan (ASSING 2016a). The above specimens from Phongsali represent the first record from Laos. The specimen from Vietnam was reported as *Zyras* sp. 2 in ASSING (2015). Since it is a female, this record should be considered tentative, also because the elytra are completely blackish. The aedeagus of the male from Laos is illustrated in Figs 76–77.

*Zyras (Zyras) notaticornis* PACE, 1998

(Figs 78–80)

**Material examined:** Laos: 1 ♂, 1 ♀, Phongsali Province, Phongsali env., 1300–1500 m, 1–15.V.2004 (cMar, cAss).

**Comment:** This species was known from Hong Kong and the Chinese provinces Guangxi and Zhejiang (ASSING 2016a). The above specimens represent the first record from Laos. Unlike the previously examined specimens from China and Hong Kong, those from Laos have the elytra and abdomen practically completely black. The aedeagus of the male from Laos is illustrated in Figs 78–80.

*Zyras (Zyras) rutrilobatus* spec. nov.

urn:lsid:zoobank.org:act:67BAD12F-50BC-4983-A8BC-363FA67F01F1  
(Figs 9, 31, 45, 81–86)

**Type material examined:** Holotype ♂: “N LAOS, 1300–1500 m, Phongsali Prov., Phongsali env., 2004, 1–15 May, Lao collector leg. / Holotypus ♂ *Zyras rutrilobatus* sp. n., det. V. Assing 2017” (cMar).

**Etymology:** The specific epithet (derived from the Latin noun *rutrum*: shovel) is an adjective and alludes to the shovel-shaped ventral process of the aedeagus.

**Description:** Body length 6.0 mm; length of forebody 2.8 mm. Coloration (Figs 9, 31, 45): forebody black; abdomen black with the paratergites and the posterior margins of the posterior tergites paler brown; legs yellowish with the pro- and mesofemora, and the apical halves of the metafemora dark-brown; antennae blackish-brown with antennomeres I–II reddish-brown, X brown, and XI reddish-brown; maxillary palpi pale-brown with the apical palpomere yellowish-red.

Head (Fig. 31) distinctly transverse; punctation moderately coarse and very sparse; median dorsal portion extensively impunctate. Eyes large, much longer than postocular region in dorsal view. Antenna (Fig. 9) 2.3 mm long and slender; antennomeres IV–VII distinctly oblong, VIII weakly oblong, IX approximately as long as broad, X weakly transverse, and XI nearly as long as the combined length of IX and X.

Pronotum (Fig. 31) strongly transverse, 1.21 times as broad as long and 1.30 times as broad as head, broadest in anterior half; posterior angles obtusely marked; lateral margins not sinuate in posterior half in dorsal view; punctation moderately coarse and very irregularly distributed, laterally with extensive impunctate patches; pubescence long, pale, and sub-erect.

Elytra (Fig. 31) nearly 0.9 times as long as pronotum, distinctly dilated posteriorly; punctation rather sparse and moderately coarse, somewhat sparser posteriorly than anteriorly; pubescence similar to that of pronotum. Hind wings present. Metatarsomere I as long as the combined length of II–IV.

Abdomen (Fig. 45) distinctly narrower than elytra, with deep anterior impressions on tergites III–V; tergites III–V each with a transverse row of moderately coarse and rather weakly defined puncture-like impressions in anterior impressions; tergite III with 1–2 lateral setiferous punctures on either side and with numerous setiferous punctures at or near posterior margin; tergites IV–V with a lateral setiferous puncture on either side, with a median pair of setiferous punctures, and with numerous setiferous punctures at posterior margins; tergite VI with a narrow transverse band of sparse non-setiferous punctures anteriorly, with few lateral setiferous punctures on either side, with a median pair of setiferous punctures in posterior portion, and with numerous setiferous punctures at posterior margin; tergite VII with a narrow transverse band of sparse non-setiferous punctures anteriorly and with two transverse rows of setiferous punctures posteriorly, posterior margin with palisade fringe; posterior margin of tergite VIII weakly concave in the middle (Fig. 84).

♂: sternite VIII (Fig. 85) longer than tergite VIII, wedge-shaped, and with truncate posterior margin (Fig. 86); median lobe of aedeagus (Figs 81–82) nearly 0.9 mm long and with ventral process of distinctive shape; paramere (Fig. 83) 0.95 mm long and with very long, somewhat flattened apical lobe.

♀: unknown.

**Comparative notes:** Based on the morphology of the median lobe of the aedeagus, the derived shape of the paramere (very long and flattened apical lobe), the modifications of the male sternite VIII, and external characters (long and slender antennae; body glossy with sparse punctation and long pubescence), *Z. rutrilobatus* is closely related to *Z. glabricollis* SCHEERPELTZ, 1965, *Z. nitens* CAMERON, 1944, *Z. truncatus* ASSING, 2017, and allied species. The geographically closest species of this group is *Z. nitens* (Peninsular Malaysia), from which *Z. rutrilobatus* differs by a much broader, larger, and more robust body, a much more transverse pronotum, darker coloration of the body, the femora, and the antennae, more massive antennae, more finely punctate elytra, a larger median lobe of the aedeagus with a ventral process of completely different shape, and by the longer apical lobe of the paramere. For illustrations of *Z. nitens* see ASSING (2017).

**Distribution and natural history:** The type locality is situated near Phongsali in North Laos at an altitude of 1300–1500 m.

*Zyras (Zyras) parvilobatus* spec. nov.

urn:lsid:zoobank.org:act:6DDB36A1-C12B-4FA1-B28E-55560D6645C6  
(Figs 10, 28, 43, 87–89)

**Type material examined:** Holotype ♂: “N LAOS, 1300–1500 m, Phongsali Prov., Phongsali env., 2004, 1–15 May,



Lao collector leg. / Holotypus ♂ *Zyras parvilobatus* sp. n., det. V. Assing 2017” (cMar). Paratype: 1 ♀: same data as holotype (cAss).

**Etymology:** The specific epithet is an adjective alluding to the relatively small ventral process of the aedeagus.

**Description:** Body length 5.8–6.5 mm; length of forebody 2.7–2.9 mm. Coloration (Figs 10, 28, 43): forebody blackish with the humeral and anterior portions of the elytra reddish-yellow; abdomen black with the posterior margins of the tergites more or less distinctly paler reddish; legs yellowish; antennae blackish with the apical portion of antennomere XI sometimes paler brown; maxillary palpi brown with the apical palpomere yellowish-red.

Head (Fig. 28) distinctly transverse; punctuation moderately coarse and moderately sparse; along middle without punctuation. Eyes large, much longer than postocular region in dorsal view. Antenna (Fig. 10) 1.9–2.1 mm long and moderately massive; antennomeres IV–V weakly oblong to weakly transverse, VI as long as broad or weakly transverse, VII–X weakly transverse, X less than 1.5 times as broad as long, and XI slightly longer than the combined length of IX and X.

Pronotum (Fig. 28) strongly transverse, 1.23–1.30 times as broad as long and 1.34–1.35 times as broad as head, broadest near anterior angles; posterior angles weakly, obtusely marked; lateral margins not sinuate in posterior half in dorsal view; punctuation moderately coarse and moderately dense, regularly distributed; midline with or without narrow and somewhat irregular narrow impunctate band.

Elytra (Fig. 28) 0.82–0.85 times as long as pronotum; punctuation rather dense and coarse, denser near scutellum than in posterior portion. Hind wings present. Metatarsomere I approximately as long as the combined length of II–IV.

Abdomen (Fig. 43) slightly narrower than elytra, with moderately deep anterior impressions on tergites III–V; tergites III–V each with a somewhat irregular transverse row or band of moderately coarse non-setiferous punctures in anterior impressions, with a lateral setiferous puncture on either side and with 4–6 setiferous punctures at posterior margins; tergite VI with a transverse band of rather sparse non-setiferous punctures anteriorly, with a transverse row of sparse setiferous punctures in posterior portion, and with six setiferous punctures at posterior margin; tergite VII with a transverse band of sparse non-setiferous punctures anteriorly and with two transverse rows of setiferous punctures posteriorly, posterior margin with palisade fringe; tergite VIII with setiferous punctures only in posterior fourth, posterior margin with sharply delimited concavity in the middle.

♂: sternite VIII with strongly convex posterior margin; median lobe of aedeagus (Figs 87–88) approximately 0.7 mm long; ventral process short in relation to capsule;

paramere (Fig. 89) 0.8 mm long, apical lobe short and with four long dark setae.

♀: posterior margin of sternite VIII shallowly concave in the middle.

**Comparative notes:** *Zyras parvilobatus* is difficult to distinguish from the extremely similar, syntopic *Z. wei* based on external characters alone. The only reliable diagnostic characters are the distinctive shape of the median lobe of the aedeagus and the much shorter apical lobe of the paramere.

**Distribution and natural history:** The type locality is situated near Phongsali in North Laos at an altitude of 1300–1500 m. *Zyras rutrilobatus* and *Z. wei* were found in the same locality.

*Zyras (Zyras) hirtiventris* spec. nov.

urn:lsid:zoobank.org:act:73489C67-FB52-4B48-A2E1-BA1F1E55F45D

(Figs 11–12, 32, 49–50, 96–98)

**Type material examined:** Holotypus ♂: “N LAOS, 1100–1300 m, Phongsali Prov., Boun Tai (10 km SE), 2004, 16–25 May, Lao collector leg. / Holotypus ♂ *Zyras hirtiventris* sp. n., det. V. Assing 2017” (cMar). Paratypes: 1 ♀: “N-Vietnam – 6 km NW Sa Pa, 22°21'39"N, 103°47'19"E, 1810 m, pasture margin, 7.VIII.2013, V. Assing [8+2]” (cAss); 1 ♂: “C VIETNAM: Gia Lai Province, Kon Chu Rang Nature Reserve, surroundings HQ, about 900 m, 14°28,450'N, 108°32,401'E / leg. L. Bartolozzi, A. Bandinelli, S. Bambi, V. Sbordoni at light 8–12.V.2016 (n° Mag. 3078)” [registered as MZUF 18322; collected during expeditions in Vietnam in the framework of a Memorandum of Understanding between the Vietnam National Museum of Nature and MZUF] (MZUF).

**Etymology:** The specific epithet (with densely pubescent abdomen) is an adjective alluding to the dense setae on the abdominal sternites, as well as to the strong resemblance with *Z. hirsutiventris* (CHAMPION, 1927).

**Description:** Large species; body length 8.5–8.9 mm; length of forebody 3.6–3.7 mm. Coloration (Figs 11–12, 32, 49–50): body black with the posterior margin of the abdominal segment VII and all, or the posterior portion, of segment VIII dark reddish-brown; legs yellowish-brown with the profemora dark-brown and the meso- and metafemora bicoloured, basally yellowish and apically blackish-brown; antennae dark-brown to blackish with the apical antennomere reddish to reddish-brown; maxillary palpi brown with the apical palpomere yellowish.

Head (Fig. 32) distinctly transverse; punctuation moderately coarse and rather dense, median dorsal portion extensively impunctate; pubescence long and sub-erect to erect, brown to black. Eyes moderately large, slightly longer than postocular region in dorsal view. Antenna

(Figs 11–12) 2.4–2.5 mm long; antennomeres IV weakly oblong, V–VI weakly oblong to weakly transverse, VII–IX weakly to distinctly transverse, X approximately 1.5 times as broad as long, and XI short and of distinctly conical shape, much shorter than the combined length of IX and X.

Pronotum (Fig. 32) 1.11–1.13 times as broad as long and 1.33–1.36 times as broad as head, broadest slightly anterior to middle, weakly convex in cross-section; posterior angles obtusely marked; lateral margins straight or very weakly sinuate in posterior half in dorsal view; punctation rather fine and dense, regularly distributed; midline without distinct impunctate band; pubescence long and sub-erect to erect, brown to black; lateral and anterior margins with longer and distinctly erect black setae.

Elytra (Fig. 32) 0.85–0.89 times as long as pronotum; punctation dense and moderately coarse, regularly distributed, and defined; pubescence dense, long, and brown to black. Hind wings fully developed. Metatarsomere I approximately as long as the combined length of II–IV.

Abdomen (Fig. 49) approximately as broad as elytra, with moderately deep anterior impressions on tergites III–V; tergites III–V each with a transverse row of fine to moderately coarse non-setiferous punctures in anterior impressions, with several lateral setiferous punctures on either side, with 6–10 setiferous punctures at posterior margins, and with moderately sparse to moderately dense non-setiferous micropunctation on discs; tergites VI–VII with extensive, dense, and coarse non-setiferous punctures anteriorly, with slightly sparser non-setiferous punctures on remainder of discs, and with some setiferous punctures laterally and at posterior margins (Fig. 50); posterior margin of tergite VII with palisade fringe; tergite VIII with dense and extensive non-setiferous punctation in posterior half and with dense and distinct setiferous punctation in posterior half, posterior margin convex, in the middle with very indistinct concavity; all sternites with long, dense, and sub-erect to erect pubescence in posterior portions (well visible from above).

♂: sternite VIII with convex posterior margin; median lobe of aedeagus approximately 0.9 mm long and shaped as in Figs 96–97; paramere (Fig. 98) 0.95 mm long, apical lobe short and with four long dark setae.

♀: posterior margin of sternite VIII shallowly concave in the middle.

**Comparative notes:** Based on the external and the male sexual characters, *Z. hirtiventris* undoubtedly belongs to the *Z. hirtus* group (see ASSING 2017). In habitus, coloration, and other external and sexual characters, this species strongly resembles *Z. hirsutiventris* from the Himalayan region. It is distinguished from this species by larger body size (*Z. hirsutiventris*: body length 6.5–7.5 mm; length of forebody 2.9–3.3 mm), paler coloration of antennomere XI (black in *Z. hirsutiventris*), less fine and more defined punctation of the elytra, slightly darker coloration of the

legs, denser and more extensive non-setiferous punctation of the posterior abdominal tergites, and a larger median lobe of the aedeagus with a ventral process of slightly different shape (*Z. hirsutiventris*: median lobe approximately 0.8 mm long; ventral process apically longer, more acute, and less distinctly angled in lateral view).

These differences may be clear-cut, though not pronounced, in the material examined thus far, but at present only three specimens of *Z. hirsutiventris* and three of *Z. hirtiventris* are known. The possibility that material with intermediate characters conditions will be found in the future and that the currently known material of *Z. hirsutiventris* and *Z. hirtiventris* only represents extreme forms of the same species cannot be ruled out with certainty. At present, the distributions of both taxa are separated by a distance of more than 1100 km. This, in combination with the morphological differences observed, suggests that *Z. hirsutiventris* and *Z. hirtiventris* represent distinct species.

**Distribution and natural history:** The currently known distribution is confined to two localities in North Laos and North Vietnam. The altitudes range from approximately 1200 to 1810 m. The female paratype was sifted from litter and roots beneath bushes and small trees at the margin of a pasture. It was recorded as *Zyras* (*Zyras*) sp. 1 by ASSING (2015).

*Zyras* (*Zyras*) *hlavaci* spec. nov.

urn:lsid:zoobank.org:act:F5734436-CE49-4064-8A52-BC7DF9A0EE67  
(Figs 13–14, 33, 48, 90–95)

**Type material examined:** Holotype ♂: “MALAYSIA, Pahang state, Cameron Highlands, Tanah Rata, 1400–1650 m, 4.–11.4.2005, Martinů leg. / Holotypus ♂ *Zyras lunatus* sp. n., det. V. Assing 2017” (cAss). Paratypes: 1 ♀: “MALAYSIA West, Pahang, Cameron Highlands, Tanah Rata, 1200–1500 m, 3.ii.–19.ii.2005, Cechovsky Petr leg.” (cHla); 2 ♂♂: “MALAYSIA: Selangor, Ulu Gombak Field Studies Centre (250 m), 2–18.III.2004 (FIT), Maruyama M. et al.” (cMar, cAss).

**Etymology:** This species is dedicated to my friend and colleague Peter Hlaváč (Prague), who provided, or arranged the loan of, substantial material not only for the present study, but also for previous revisions of Palaearctic and Oriental *Zyras* sensu strictu, and to whom I owe the generous gift of the holotype of this species.

**Description:** Body length 6.9–8.5 mm; length of forebody 3.0–3.5 mm. Coloration (Figs 13–14, 33, 48): forebody dark-brown to blackish; abdomen dark-reddish, with or without the antero-median portion of tergite VI diffusely infuscate and the antero-median portion of tergite VII indistinctly darker; legs yellowish to pale yellowish-brown; antennae brown to dark-brown; maxillary palpi reddish-yellow to reddish with the apical palpomere yellowish.

Head (Fig. 33) distinctly transverse; punctuation moderately coarse to coarse and rather dense, median dorsal portion extensively impunctate; pubescence long, sub-erect to erect, and pale to brown. Eyes moderately large, as long as postocular region in dorsal view, or slightly longer. Antenna (Figs 13–14) 2.0–2.3 mm long; antennomeres IV approximately as long as broad or weakly oblong, V–X of gradually increasing width and increasingly transverse, X approximately twice as broad as long, and XI of conical shape and short, shorter than the combined length of IX and X.

Pronotum (Fig. 33) 1.14–1.15 times as broad as long and 1.21–1.25 times as broad as head, broadest in anterior half, moderately convex in cross-section; posterior angles obtusely marked; lateral margins weakly sinuate in posterior half in dorsal view; punctuation coarse, dense, and somewhat irregularly distributed, laterally and near posterior margin with impunctate patches; midline narrowly to broadly impunctate; pubescence long, pale, and sub-erect; lateral and anterior margins with numerous longer, stouter, and distinctly erect dark setae.

Elytra (Fig. 33) 0.85–0.89 times as long as pronotum; punctuation moderately dense and moderately fine to moderately coarse, nearly regularly distributed, and defined; pubescence long, pale, and sub-erect. Hind wings fully developed. Metatarsomere I slightly shorter than the combined length of II–IV.

Abdomen (Fig. 48) nearly as broad as elytra, with moderately deep anterior impressions on tergites III–V; tergites III–V with non-setiferous punctuation only in lateral portions of anterior impressions, with a transverse row of 4–8 setiferous punctures in posterior portions, with usually eight setiferous punctures at posterior margins, and with or without additional non-setiferous punctures on discs; tergite VI with dense and coarse non-setiferous punctuation in anterior half, sparser non-setiferous punctuation in posterior half, with some lateral setiferous punctures, and with some setiferous punctures at posterior margin; tergite VII with dense non-setiferous punctuation anteriorly, with sparser non-setiferous punctuation on remainder of disc, and with two indistinct transverse rows of setiferous punctures posteriorly, posterior margin with palisade fringe; tergite VIII with setiferous punctures bearing a mix of yellowish and long black setae in posterior third and non-setiferous punctures in median third, posterior margin truncate or very weakly concave in the middle; all sternites with long and dense pubescence in posterior halves.

♂: sternite VIII with convex posterior margin; median lobe of aedeagus 0.83–0.90 mm long and shaped as in Figs 90–91, 93–94; ventral process slender and subapically distinctly angled; paramere (Figs 92, 95) approximately 0.9 mm long and with short apical lobe.

♀: posterior margin of sternite VIII weakly concave in the middle.

**Intraspecific variation:** The paratypes from Selangor are distinguished from the holotype by slightly smaller size,

and by a slightly smaller aedeagus with an apically more acute ventral process (both in lateral and in ventral view) (Figs 90–91, 93–94). Since no additional evidence was found suggesting that the material from Pahang and from Selangor should represent distinct species, these differences are attributed to intraspecific variation.

**Comparative notes:** This species, too, belongs to the *Z. hirtus* group. It is distinguished from the similar *Z. lunatus* particularly by larger body size, darker coloration, by the punctuation pattern of the abdomen (especially more extensive and denser non-setiferous punctuation on the posterior tergites, also on tergite VIII), and by the more robust median lobe of the aedeagus with a more pronounced apex (ventral view). It differs from *Z. flexus* ASSING, 2016 (China: Fujian) by somewhat larger body size, uniformly dark antennae (*Z. flexus*: antennomere XI yellowish), the presence of an impunctate median band on the less convex pronotum, less dense punctuation of the elytra, denser and more extensive non-setiferous punctuation on the abdomen, and by a distinctly larger median lobe of the aedeagus (*Z. flexus*: 0.75 mm).

**Distribution and natural history:** The type specimens were collected in three localities in Pahang and Selangor, Peninsular Malaysia, at altitudes between 250 and 1650 m.

*Zyras (Zyras) lunatus* spec. nov.

urn:lsid:zoobank.org:act:ACD6BAAB-FE21-415D-903F-1D2CDEF0607

(Figs 15, 29, 47, 99–101)

**Type material examined:** Holotype ♂: “MALAYSIA: Selangor, Ulu Gombak Field Studies Centre (250 m), 2–18.III.2004 (FIT), Maruyama M. et al. / Holotypus ♂ *Zyras lunatus* sp. n., det. V. Assing 2017” (cMar). Paratypes: 1 ♂ [teneral], 1 ♀: same data as holotype (cMar, cAss).

**Etymology:** The specific epithet is the past participle of the Latin verb *lunare* (to bend) and alludes to the subapically distinctly angled ventral process of the aedeagus.

**Description:** Body length 5.4–6.6 mm; length of forebody 2.6–2.9 mm. Coloration (Figs 15, 29, 47): head dark-brown to blackish; pronotum dark-brown; elytra brown to dark-brown with the suture paler; abdomen reddish with the posterior margins of tergites III–V, the posterior portions of tergites VI–VII, and all of tergite VIII yellowish-red; legs yellowish; antennae brown with antennomeres I–II reddish; maxillary palpi reddish with the apical palpomere yellowish.

Head (Fig. 29) distinctly transverse; punctuation moderately coarse and moderately dense, median dorsal portion extensively impunctate; pubescence long, sub-erect to erect, and brown. Eyes moderately large, slightly longer than the postocular region in dorsal view. Antenna (Fig. 15) 2.0–2.1 mm long; antennomeres IV

approximately as long as broad or weakly oblong, V as long as broad or weakly transverse, VI–X of gradually increasing width and increasingly transverse, X approximately 1.5 times as broad as long, and XI of conical shape and short, shorter than the combined length of IX and X.

Pronotum (Fig. 29) 1.11–1.12 times as broad as long and 1.23–1.25 times as broad as head, broadest in anterior half, weakly convex in cross-section; posterior angles obtusely marked; lateral margins weakly to distinctly sinuate in posterior half in dorsal view; punctuation rather coarse, dense, and somewhat irregularly distributed, laterally and near posterior margin with impunctate patches; midline rather broadly impunctate; pubescence long, pale, and sub-erect; lateral and anterior margins with numerous longer, stouter, and distinctly erect dark setae.

Elytra (Fig. 29) 0.81–0.87 times as long as pronotum; punctuation moderately dense and moderately coarse, regularly distributed, and defined; pubescence dense, long, pale, and sub-erect. Hind wings fully developed. Metatarsomere I shorter than the combined length of II–IV.

Abdomen (Fig. 47) nearly as broad as elytra, with rather shallow anterior impressions on tergites III–V; tergites III–V without non-setiferous punctuation in anterior impressions (individual punctures may be present), with a transverse row of approximately four setiferous punctures in posterior portions, and with usually eight setiferous punctures at posterior margins; tergite VI with a transverse band of fine non-setiferous punctuation anteriorly, with sparse and fine non-setiferous punctures in median third, with some setiferous punctures laterally and with 8–10 setiferous punctures at posterior margin; tergite VII with a transverse band of dense non-setiferous punctures anteriorly, with sparse non-setiferous punctures in median third, and with two transverse rows of setiferous punctures posteriorly (each composed of approximately four punctures), posterior margin with palisade fringe; tergite VIII with setiferous punctures bearing long black setae in posterior third, posterior margin weakly concave in the middle; all sternites with long, dense, and erect yellowish pubescence (rubbed off in the holotype).

♂: sternite VIII with convex posterior margin; median lobe of aedeagus 0.68–0.75 mm long and shaped as in Figs 99–100; ventral process slender and subapically distinctly angled; paramere (Fig. 101) 0.78–0.84 mm long and with short apical lobe.

♀: posterior margin of sternite VIII weakly concave in the middle.

**Comparative notes:** Like the syntopic *Z. hlavaci*, *Z. lunatus* belongs to the *Z. hirtus* group. It is distinguished from *Z. hlavaci* by smaller body size, more slender antennae, finer and less extensive non-setiferous punctuation on the abdomen, and by a smaller aedeagus with a subapically more strongly angled, apically shorter, and in ventral view broader and apically less acute ventral process. It differs from the even smaller *Z. formosanus* ASSING, 2016 (Taiwan) by a darker forebody, darker antennae with shorter antennomeres IV and V, much longer elytra, the punctuation pattern of the abdomen (*Z. formosanus*: tergites III–VI with a transverse row of numerous long black setae posteriorly; tergites VI and VII with very sparse non-setiferous punctuation anteriorly), and by a smaller aedeagus (despite larger body size) with a longer, subapically distinctly angled, and apically much more slender ventral process.

**Distribution and natural history:** The type locality is situated in Selangor, Peninsular Malaysia. The specimens were collected with flight interception traps, together with *Z. hlavaci*. One of the paratypes is slightly general.

### 3.4 Species excluded from the *Zyras* sensu strictu

*Myrmedonota modiglianii* (CAMERON, 1925), comb. nov.  
(Figs 18, 51–52, 102)

*Myrmedonia* (s. str.) *modiglianii* CAMERON, 1925: 47 f.

**Type material examined:** Paratype ♀: “Sumatra, Padang, 1890. E. Modigliani / *Myrmedonia modigliani* [sic] Cam Cotype / Syntype / Museo Civ. Genova / M. Cameron. Bequest., B.M. 1955-147. / Paratypus *Myrmedonia modiglianii* Cameron, rev. V. Assing 2017 / *Myrmedonota modiglianii* (Cameron), det. V. Assing 2017” (BMNH).

**Comment:** The original description is based on a male holotype from “Sumatra, Siboga” and an unspecified number of paratypes from “Padang” (CAMERON 1925). An examination of a female paratype revealed that this species does not belong to *Zyras* sensu strictu. According to Maruyama (e-mail 27. February, 2017), it belongs to *Myrmedonota* CAMERON, 1920. The external and female sexual characters are illustrated in Figs 18, 51–52, 102.

#### 4 Revised and updated catalogue of the species of *Zyras* sensu strictu of the Palaearctic and Oriental regions

A15 = ASSING (2015); A16a = ASSING (2016a); A16b = ASSING (2016b); A17 = ASSING (2017); App = ASSING (present paper); B14 = BERNHAUER (1914); B15 = BERNHAUER (1915); B33a = BERNHAUER (1933a); B33b = BERNHAUER (1933b); B39 = BERNHAUER (1939); C25 = CAMERON (1925); C30 = CAMERON (1930); C39a = CAMERON (1939a); C39b = CAMERON (1939b); C43 = CAMERON (1943); C44 = CAMERON (1944); Ch21 = CHAMPION (1921); Ch27 = CHAMPION (1927); D81 = DVOŘÁK (1981); D84 = DVOŘÁK (1984); D96 = DVOŘÁK (1996); F04 = FAUVEL (1904); HNM11 = HLAVÁČ et al. (2011); K59 = KRAATZ (1859); L69 = LAST (1969); L82 = LAST (1982); M61 = MOTSCHULSKY (1861); P86a = PACE (1986a); P86b = PACE (1986b); P86c = PACE (1986c); P87a = PACE (1987a); P87b = PACE (1987b); P88 = PACE (1988); P90 = PACE (1990); P92 = PACE (1992); P93 = PACE (1993); P98 = PACE (1998); P99 = PACE (1999); P01 = PACE (2001); P03 = PACE (2003); P04 = PACE (2004); P05 = PACE (2005); P06 = PACE (2006); P08 = PACE (2008); P10 = PACE (2010); P11 = PACE (2011); P12a = PACE (2012a); P12b = PACE (2012b); P13 = PACE (2013); P14 = PACE (2014); S65 = SCHEERPELTZ (1965); St08 = SCHUBERT (1908).

References are not given for the species distributed in the West Palaearctic region and Japan. Articles containing useful descriptions and illustrations, as well as new taxonomic acts and/or distribution maps are underlined.

Species	Distribution	References
<i>abacus</i> DVOŘÁK, 1984	Kazakhstan, Kyrgyzstan	D84
<i>alternans</i> (CAMERON, 1925) = <i>optimus</i> CAMERON, 1939	India; Malaysia: Malay Peninsula; Indonesia: Java, Sumatra, Borneo	A16a, <u>A17</u> , C25, C39a, P10
<i>ambulans</i> ASSING, 2017	Thailand	<u>A17</u>
<i>athetoides</i> ASSING, 2016	China: Sichuan	<u>A16a</u>
<i>atronitens</i> ASSING, 2016	China: Tibet	<u>A16a</u>
<i>bangmaicus</i> ASSING, 2016	China: Yunnan	<u>A16a</u>
<i>beijingensis</i> PACE, 1993 = <i>restitutus</i> PACE, 1993	China: Beijing, Gansu, Shaanxi, Zhejiang	<u>A16a</u> , P93
<i>bettotanus</i> CAMERON, 1930 = <i>drescheri</i> CAMERON, 1939 = <i>atrapicalis</i> ASSING, 2016	China: Yunnan; Thailand; Peninsular Malaysia; Indonesia: Java; Borneo (Malaysia, Indonesia, Brunei)	<u>A16a</u> , <u>A17</u> , C30, C39b, P08
<i>bicoloricollis</i> ASSING, 2016	China: Yunnan	<u>A16a</u>
<i>birmanus</i> SCHEERPELTZ, 1965 = <i>pseudobirmanus</i> SCHEERPELTZ, 1965	Myanmar; China: Yunnan	<u>A16a</u> , A17, S65
<i>bisinuatus</i> ASSING, 2016	China: Yunnan	<u>A16a</u>
<i>brevilobatus</i> ASSING, 2017	Thailand	<u>A17</u>
<i>brignolii</i> (PACE, 1986) = <i>thainiger</i> PACE, 2012	Thailand; China: Yunnan	A16a, <u>A17</u> , P86b, P12b
<i>bryanti</i> CAMERON, 1943 = <i>mortuorum</i> PACE, 1990, <b>syn. nov.</b> = <i>paederinus</i> PACE, 2008, <b>syn. nov.</b>	Thailand; Malaysia: Kelantan, Sarawak (Borneo), Sabah (Borneo); Philippines	<u>App</u> , C43, P90, P08
<i>caloderoides</i> ASSING, 2016	China: Yunnan; Thailand	<u>A16a</u> , A16b
<i>castaneus</i> (MOTSCHULSKY, 1861) = <i>adulescens</i> (PACE, 1987) = <i>britannorum</i> PACE, 1992 = <i>fratrumkadoeriorum</i> PACE, 1998 = <i>chumphonensis</i> PACE, 2004 = <i>dibrugarhensis</i> PACE, 2011	Nepal; India; Sri Lanka; Thailand; Laos; China: Yunnan; Hong Kong; Malaysia: Pahang, Sabah (Borneo); Brunei; Indonesia: Java, Borneo	<u>A16a</u> , A16b, <u>A17</u> , App, M61, P87b, P92, P98, P04, P08, P11
<i>championi</i> CAMERON, 1939	North India: Uttar Pradesh	<u>A17</u> , C39a
<i>collaris</i> (PAYKULL, 1789)	southern West Palaearctic	

Species	Distribution	References
<i>condignus</i> LAST, 1969 = <i>distinctus</i> CAMERON, 1939	North India: Uttarakhand; Nepal	A16a, <a href="#">A17</a> , C39a, L69, P06, P13
<i>cylindricornis</i> DVOŘÁK, 1981	Japan; Korea	D81
<i>dabanicus</i> ASSING, 2016	China: Qinghai	<a href="#">A16a</a>
<i>densihirtus</i> ASSING, 2017	Indonesia: Sulawesi Utara	<a href="#">A17</a>
<i>densissimus</i> ASSING, 2017	Indonesia: Sulawesi Utara	<a href="#">A17</a>
<i>discolor</i> ASSING, 2016	China: Fujian	<a href="#">A16a</a>
<i>elegantulus</i> CAMERON, 1939	Indonesia: Java	<a href="#">App</a> , C39b
<i>exspoliatus</i> ASSING, 2016	China: Guangxi	<a href="#">A16a</a>
<i>exasperatus</i> SCHUBERT, 1908	North India: Himachal Pradesh	<a href="#">A17</a> , St08
<i>extensus</i> ASSING, 2016	China: Yunnan	<a href="#">A16a</a>
<i>facundus</i> LAST, 1969 = <i>semirufus</i> CAMERON, 1939	Indonesia: Java	<a href="#">App</a> , C39b, L69
<i>fansipanicus</i> ASSING, 2015	Vietnam	<a href="#">A15</a>
<i>firnicornis</i> ASSING, 2016	China: Fujian	<a href="#">A16a</a>
<i>flavorufus</i> CAMERON, 1939	Indonesia: Java	<a href="#">App</a> , C39b
<i>flexus</i> ASSING, 2016	China: Fujian	<a href="#">A16a</a>
<i>formosanus</i> ASSING, 2016	Taiwan	<a href="#">A16a</a>
<i>fugax</i> (SHARP, 1888)	Japan, Korea	
<i>fulgidus</i> (GRAVENHORST, 1806)	southern West Palaearctic	
<i>funestus</i> (DVOŘÁK, 1996)	Vietnam	<a href="#">A15</a> , D96
<i>gardneri</i> CAMERON, 1939	Nepal; North India	<a href="#">A17</a> , C39a
<i>geminus</i> (KRAATZ, 1859) = <i>indicus</i> CAMERON, 1944 = <i>shiva</i> PACE, 1987 = <i>manjushri</i> PACE, 1992 = <i>hongkongensis</i> PACE, 1999 = <i>benenensis</i> PACE, 2001 = <i>parageminus</i> PACE, 2010 = <i>neoparageminus</i> HLAVÁČ et al., 2011 = <i>subgeminus</i> PACE, 2012 = <i>articollis</i> ASSING, 2016	India; Nepal; Sri Lanka; China: Guangxi, Yunnan; Taiwan; Hong Kong; South Japan; Thailand; Laos; Vietnam; Indonesia	A15, <a href="#">A16a</a> , A16b, <a href="#">A17</a> , <a href="#">App</a> , C44, HNM11, K59, P87b, P92, P99, P01, P05, P06, <a href="#">P10</a> , P12b
<i>gilvipalpis</i> ASSING, 2016	China: Yunnan	<a href="#">A16a</a>
<i>glabricollis</i> SCHEERPELTZ, 1965	Myanmar	<a href="#">A16a</a> , S65
<i>granapicalis</i> ASSING, 2016	China: Sichuan	<a href="#">A16a</a>
<i>granulipennis</i> CAMERON, 1930 = <i>pervariolosus</i> PACE, 2008, <i>syn. nov.</i>	Malaysia: Sabah (Borneo)	<a href="#">App</a> , C30, P08
<i>gratellus</i> CAMERON, 1939	Malaysia; Indonesia: Java, Sulawesi	<a href="#">A17</a> , <a href="#">App</a> , C39b
<i>hastatus</i> FAUVEL, 1904	South India	<a href="#">A17</a> , F04
<i>hauserianus</i> BERNHAUER, 1933	China: Heilongjiang, Xinjiang?; Kazakhstan?	<a href="#">A16a</a> , <a href="#">A17</a> , B33a
<i>haworthi</i> (STEPHENS, 1832) = <i>elegans</i> (HEER, 1839) = <i>nigricollis</i> MOTSCHULSKY, 1845	southern West Palaearctic	
<i>hebes</i> ASSING, 2016	Taiwan	<a href="#">A16a</a>
<i>hirsutiventris</i> (CHAMPION, 1927)	Nepal; North India	<a href="#">A17</a> , Ch27

Species	Distribution	References
<i>hirtiventris</i> <b>spec. nov.</b>	Laos; Vietnam	<a href="#">App</a>
<i>hirtus</i> (KRAATZ, 1859)	Sri Lanka; South India	<a href="#">A16a</a> , <a href="#">A17</a> , K59
<i>hlavaci</i> <b>spec. nov.</b>	Malaysia: Pahang, Selangor	<a href="#">App</a>
<i>illecebrosus</i> LAST, 1982	Mongolia	<a href="#">A16a</a> , <a href="#">A16b</a> , L82
<i>inexcisus</i> ASSING, 2016	China: Gansu, Qinghai; Russia: Far East, East Siberia	<a href="#">A16a</a>
<i>iniquus</i> ASSING, 2016	Pakistan; Afghanistan	<a href="#">A16a</a>
<i>iridescens</i> (SAWADA, 1970)	Japan	
<i>kambaitiensis</i> SCHEERPELTZ, 1965 = <i>ferrugineiventris</i> SCHEERPELTZ, 1965 = <i>semiasperatus</i> SCHEERPELTZ, 1965	Myanmar; China: Yunnan	<a href="#">A16a</a> , S65
<i>kinabaluensis</i> PACE, 2008	Malaysia: Sabah (Borneo)	<a href="#">App</a> , P08
<i>kraatzi</i> SCHUBERT, 1908 = <i>ignicauda</i> (CHAMPION, 1927)	North India; Nepal	<a href="#">A16a</a> , <a href="#">A17</a> , C39a, Ch27, P87a, St08
<i>latibasalis</i> <b>spec. nov.</b>	Indonesia: Java; Laos?	<a href="#">App</a>
<i>latilobatus</i> ASSING, 2017	South India	<a href="#">A17</a>
<i>lativentris</i> ASSING, 2016	China: Yunnan	<a href="#">A16a</a>
<i>longilobatus</i> ASSING, 2017	North India: Meghalaya	<a href="#">A17</a>
<i>lunatus</i> <b>spec. nov.</b>	Malaysia: Selangor	<a href="#">App</a>
<i>luteipes</i> ASSING, 2017	India: Meghalaya	<a href="#">A17</a>
<i>maculicollis</i> ASSING, 2016	China: Hubei, Jiangxi, Sichuan	<a href="#">A16a</a> , <a href="#">A16b</a>
<i>maculipennis</i> GRIDELLI, 1921	Caucasus region; Middle Asia	
<i>malaisei</i> SCHEERPELTZ, 1965	Myanmar; Vietnam	<a href="#">A15</a> , <a href="#">A16a</a> , S65
<i>matangensis</i> CAMERON, 1943 = <i>daiacorum</i> PACE, 2008, <b>syn. nov.</b>	Malaysia: Sarawak, Sabah (Borneo)	<a href="#">A17</a> , <a href="#">App</a> , C43, P03, P08
<i>montanus</i> (BERNHAEUER, 1915) = <i>variolatus</i> PACE, 2003, <b>syn. nov.</b>	Malaysia: Pahang, Kelantan, Sarawak (Borneo), Sabah (Borneo); Indonesia: Kalimantan Tengah (Borneo); Brunei	<a href="#">A17</a> , <a href="#">App</a> , B15, P03, P08, P14
<i>morulus</i> ASSING, 2017	Nepal: Dhaulagiri, Annapurna	<a href="#">A17</a>
<i>morvani</i> PACE, 1986	Nepal	P86c, <a href="#">A17</a>
<i>nigerrimus</i> CAMERON, 1943 = <i>bartolozzii</i> PACE, 2003, <b>syn. nov.</b> = <i>alboterminalis</i> PACE, 2008, <b>syn. nov.</b>	Malaysia: Pahang, Sabah, Sarawak (Borneo); Indonesia: Kalimantan Tengah (Borneo)	<a href="#">A17</a> , <a href="#">App</a> , C43, P08, <a href="#">P03</a> , <a href="#">P08</a>
<i>nigrapicalis</i> ASSING, 2016	Myanmar; China: Yunnan, Sichuan; Taiwan; Hong Kong	<a href="#">A16a</a> , <a href="#">A17</a>
<i>nigricornis</i> ASSING, 2016	China: Hubei, Gansu, Shaanxi, Sichuan, Qinghai	<a href="#">A16a</a>
<i>nigrihirtus</i> ASSING, 2017	Indonesia: Sulawesi Utara	<a href="#">A17</a>
<i>nigroaeneus</i> CAMERON, 1939	North India	<a href="#">A17</a> , C39a
<i>nigronitens</i> ASSING, 2016	China: Yunnan	<a href="#">A16a</a> ,
<i>nilgiriensis</i> CAMERON, 1939	South India	<a href="#">A17</a> , C39a
<i>nitens</i> CAMERON, 1944	Malaysia: Selangor	<a href="#">A17</a> , C44
<i>notaticornis</i> PACE, 1998	China: Guangxi, Zhejiang; Hong Kong; Laos	<a href="#">A16a</a> , <a href="#">App</a> , P98
<i>novinversus</i> ASSING, 2017 = <i>inversus</i> PACE, 2012; <b>preocc.</b>	Thailand; Laos	<a href="#">A17</a> , P12b

Species	Distribution	References
<i>optatus</i> (SHARP, 1888)	Japan	
<i>pallipes</i> PACE, 1992	Nepal	<a href="#">A17</a> , P92
<i>pallipyga</i> PACE, 2008	Malaysia: Sabah (Borneo)	<a href="#">App</a> , P08
<i>parageminus</i> PACE, 1998 = <i>nameriensis</i> PACE, 2011	India: Assam; Sri Lanka	<a href="#">A17</a> , P88, P11
<i>parahirtus</i> ASSING, 2017	Indonesia: Kalimantan Tengah (Borneo)	<a href="#">A17</a>
<i>particornis</i> (SHARP, 1888)	Japan; Korea; Russian Far East	
<i>parvicollis</i> ASSING, 2017	Thailand	<a href="#">A17</a>
<i>parvilobatus</i> <b>spec. nov.</b>	Laos	<a href="#">App</a>
<i>perforatus</i> (CHAMPION, 1921)	Nepal; North India	<a href="#">A16b</a> , <a href="#">A17</a> , Ch21
<i>pictus</i> (SHARP, 1874)	Japan; Korea	
<i>pindarae</i> (CHAMPION, 1921) = <i>ruficauda</i> CAMERON, 1939	Nepal; India: Uttar Pradesh, West Bengal	<a href="#">A16b</a> , <a href="#">A17</a> , C39a, Ch21, P92, P06
<i>porrectus</i> ASSING, 2016	China: Sichuan	<a href="#">A16b</a>
<i>preangeranus</i> CAMERON, 1939 = <i>louwerensi</i> CAMERON, 1939 = <i>chinkiangensis</i> BERNHAUER, 1939 = <i>setosipennis</i> SCHEERPELTZ, 1965 = <i>alboantennatus</i> PACE, 1986 = <i>quadriterminalis</i> PACE, 2008, <b>syn. nov.</b> = <i>sichuanorum</i> PACE, 2012	Myanmar; China: Sichuan, Yunnan, Jiangsu; Thailand; Laos; Vietnam; Malaysia: Selangor, Pahang, Sabah, Sarawak (Borneo); Indonesia: Java, Borneo	<a href="#">A15</a> , <a href="#">A16a</a> , <a href="#">A17</a> , <a href="#">App</a> , B39, P86a, C39b, P08, P12a, P12b, P14, S65
<i>proximus</i> CAMERON, 1939 = <i>drugmandi</i> PACE, 2004	India; China: Guizhou; Thailand; Laos	<a href="#">A17</a> , C39a, P04
<i>pulcher</i> ASSING, 2016	China: Gansu, Sichuan	<a href="#">A16a</a>
<i>punctipennis</i> CAMERON, 1939	Indonesia: Java, Borneo	<a href="#">App</a> , C39b
<i>quasar</i> DVOŘÁK, 1996	Vietnam	<a href="#">A15</a> , <a href="#">A16b</a> , D96
<i>rectus</i> ASSING, 2016	China: Yunnan	<a href="#">A16a</a>
<i>rufapicalis</i> ASSING, 2016	Taiwan	<a href="#">A16a</a>
<i>rufoterminalis</i> ASSING, 2016	China: Hubei, Sichuan	<a href="#">A16a</a>
<i>russiceps</i> ASSING, 2017	Thailand; Malaysia: Selangor	<a href="#">A17</a>
<i>rutrilobatus</i> <b>spec. nov.</b>	Laos	<a href="#">App</a>
<i>schuelkei</i> ASSING, 2016	China: Fujian, Sichuan, Guangxi	<a href="#">A16a</a> , <a href="#">A16b</a>
<i>seminigerrimus</i> BERNHAUER, 1933	China: Sichuan	<a href="#">A16a</a>
<i>setosivestis</i> SCHEERPELTZ, 1965	Myanmar	<a href="#">A16a</a> , S65
<i>shaanxiensis</i> PACE, 1998	China: Gansu, Hubei, Shaanxi, Sichuan, Yunnan?	<a href="#">A16a</a> , <a href="#">A16b</a> , P98
<i>sibiricus</i> BERNHAUER, 1914	Russian Far East; Japan; China: Beijing	<a href="#">A16a</a> , B14
<i>song</i> PACE, 1993	China: Yunnan	<a href="#">A16a</a> , P93
<i>songanus</i> PACE, 1993	China: Beijing	<a href="#">A16a</a> , P93
<i>subobsoletus</i> ASSING, 2016	China: Sichuan	<a href="#">A16a</a>
<i>tenebricosus</i> ASSING, 2016	China: Sichuan, Tibet	<a href="#">A16a</a>
<i>tenuicornis</i> ASSING, 2016	Taiwan	<a href="#">A16a</a>
<i>thaiorum</i> PACE, 1986	Thailand	<a href="#">A16a</a> , P86a
<i>titan</i> ASSING, 2017	Indonesia: Sulawesi Utara	<a href="#">A17</a>



Species	Distribution	References
<i>truncatus</i> ASSING, 2017	Nepal: Dhaulagiri	<u>A17</u>
<i>tumidicornis</i> ASSING, 2016	China: Sichuan, Yunnan	<u>A16a</u> , <u>A17</u>
<i>volans</i> ASSING, 2016	Taiwan	<u>A16a</u>
<i>wunderlei</i> ASSING, 2016	Indonesia: Bali	<u>A16b</u>
<i>wei</i> PACE, 1993 = <i>qingchengensis</i> PACE, 2012	China: Fujian, Guizhou, Sichuan, Zhejiang; Laos; Vietnam	<u>A16a</u> , App
<i>yongshengensis</i> PACE, 2012	China: Yunnan	<u>A16a</u>

## Acknowledgements

My thanks are due to the colleagues listed in the material section for the loan of material from the collections under their care, in particular to Peter Hlaváč (Prague) for the generous gift of the holotype of *Z. hlavaci*. Benedikt Feldmann (Münster) proof-read the manuscript.

## References

- ASSING, V. 2015: On the Lomechusini fauna of Vietnam (Coleoptera: Staphylinidae: Staphylininae). – *Linzer Biologische Beiträge* **47**(2): 1257-1282 – [http://www.zobodat.at/pdf/LBB\\_0047\\_2\\_1257-1282.pdf](http://www.zobodat.at/pdf/LBB_0047_2_1257-1282.pdf).
- ASSING, V. 2016a: A revision of *Zyras* STEPHENS sensu stricto of China, Taiwan, and Hong Kong, with records and (re-)descriptions of some species from other regions (Coleoptera: Staphylinidae: Aleocharinae: Lomechusini). – *Stuttgarter Beiträge zur Naturkunde A, Neue Serie* **9**: 87-175.
- ASSING, V. 2016b: On some Lomechusini of the Palaearctic and Oriental regions (Coleoptera: Staphylinidae: Aleocharinae). – *Contributions to Entomology* **66**(1): 13-111 – DOI: 10.21248/contrib.entomol.66.1.13-111.
- ASSING, V. 2017: On *Zyras* sensu stricto in the East Palaearctic and Oriental regions, with a focus on the faunas of the Himalaya, India, Sri Lanka, Thailand, and Sulawesi (Coleoptera: Staphylinidae: Aleocharinae: Lomechusini). – *Contributions to Entomology* **67**(1): 117-192 – DOI: 10.21248/contrib.entomol.67.1.117-192.
- BERNHAEUER, M. 1914: Neue Staphyliniden der paläarktischen Fauna. – *Coleopterologische Rundschau* **3**(4): 65-68.
- BERNHAEUER, M. 1915: Neue Staphyliniden der indomalaiischen Fauna, insbesondere der Sunda-Insel Borneo (9. Beitrag). – *Verhandlungen der Kaiserlich-Königlichen Zoologisch-Botanischen Gesellschaft in Wien* **65**: 134-158.
- BERNHAEUER, M. 1933a: Neuheiten der chinesischen Staphylinidenfauna. – *Wiener Entomologische Zeitung* **50**: 25-48.
- BERNHAEUER, M. 1933b: Neues aus der Staphylinidenfauna China's. – *Entomologisches Nachrichtenblatt* **7**(2): 39-54.
- BERNHAEUER, M. 1939: Zur Staphylinidenfauna von China u. Japan. – *Entomologisches Nachrichtenblatt* **12**(3-4): 145-158.
- CAMERON, M. 1925: Descriptions of new species of oriental Staphylinidae. – *Annali del Museo Civico di Storia Naturale di Genova* **52**: 34-49.
- CAMERON, M. 1930: Staphylinidae from British North Borneo, with descriptions of new species. – *Journal of the Federated Malay States Museums* **16**: 160-168.
- CAMERON, M. 1939a: Coleoptera: Staphylinidae. Volume IV, Parts I-II. – SEWELL, R. B. S. (ed): *The Fauna of British India, including Ceylon and Burma.*, London: 691 pp.
- CAMERON, M. 1939b: Fauna Javanica. The Staphylinidae collected by Mr. F. C. Drescher. Part III. – *Tijdschrift voor Entomologie* **82**: 1-29.
- CAMERON, M. 1943: New species of Staphylinidae (Col.) from Borneo. – *Entomologist's Monthly Magazine* **79**: 39-42, 139-143, 183.
- CAMERON, M. 1944: Descriptions of new Staphylinidae (Coleoptera). – *Proceedings of the Royal Entomological Society of London (B)* **13**: 11-15, 49-52, 104-108.
- CHAMPION, G. C. 1921: Some Indian Coleoptera (6). – *The Entomologist's Monthly Magazine* **57**: 177-184, 201-206.
- CHAMPION, G. C. 1927: Some Indian Coleoptera (23). – *The Entomologist's Monthly Magazine* **63**: 245-250.
- DVOŘÁK, M. 1981: Zwei neue ostasiatische Arten und nomenklatorische Bemerkungen zur Gattung *Zyras* (Coleoptera, Staphylinidae). – *Acta Entomologica Bohemoslovaca* **78**: 53-60.
- DVOŘÁK, M. 1984: Zur Kenntnis einiger myrmekophiler Staphylinidae (Coleoptera). – *Acta Entomologica Bohemoslovaca* **81**: 190-203.
- DVOŘÁK, M. 1996: Einige neue myrmekophile oder termitophile Arten des Tribus Zyrasini aus Südasien (Coleoptera, Staphylinidae, Aleocharinae). – *Coleoptera Schwanfelder Coleopterologische Mitteilungen* **23**: 1-15.
- FAUVEL, A. 1904: Staphylinides de l'Hindoustan et de la Birmanie. – *Revue d'Entomologie* **23**: 43-70.
- HLAVÁČ, P.; NEWTON, A. F. & MARUYAMA, M. 2011: World catalogue of the species of the tribe Lomechusini (Staphylinidae: Aleocharinae). – *Zootaxa* **3075**: 1-151.

- KRAATZ, G. 1859: Die Staphylinen-Fauna von Ostindien, insbesondere der Insel Ceylan. – Archiv für Naturgeschichte **25**(1): 1-193.
- LAST, H. R. 1969: Changes in the nomenclature of the genus *Zyras* STEPHENS (Col., Staphylinidae). – Entomologist's Monthly Magazine **104** [1968]: 279.
- LAST, H. R. 1982: New species of *Zyras* from Mongolia (Coleoptera: Staphylinidae). – Acta Zoologica Academiae Scientiarum Hungaricae **28**(1-2): 81-82.
- MOTSCHULSKY, V. 1861: Essai d'un catalogue des insectes de l'île Ceylan. 1-ière livraison. – Bulletin de la Société Impériale des Naturalistes de Moscou **34** (Première partie): 95-155.
- PACE, R. 1986a: Aleocharinae della Thailandia e della Birmania riportate da G. de Rougemont (Coleoptera, Staphylinidae). – Bollettino del Museo Civico di Storia Naturale di Verona **11** [1984]: 427-468.
- PACE, R. 1986b: Aleocharinae dell'Asia sudorientale raccolte dal Dr. Osella (Coleoptera, Staphylinidae). – Bollettino del Museo Civico di Storia Naturale di Verona **11** [1984]: 481-491.
- PACE, R. 1986c: Aleocharinae dell'Himalaya raccolte da Guillaume de Rougemont (Coleoptera, Staphylinidae). – Bollettino del Museo Civico di Storia Naturale di Verona **12**: 165-191.
- PACE, R. 1987a: Staphylinidae dell'Himalaya nepalese. Aleocharinae raccolte dal Prof. Dr. J. Martens (Insecta: Coleoptera). – Courier des Forschungsinstitutes Senckenberg **93**: 383-441.
- PACE, R. 1987b: Aleocharinae dell'Asia sudorientale raccolte da G. de Rougemont (Coleoptera, Staphylinidae). – Bollettino del Museo Civico di Storia Naturale di Verona **13** [1986]: 139-237.
- PACE, R. 1988: Aleocharinae dello Sri Lanka raccolte da Marc Tronquet (Coleoptera Staphylinidae). – Bollettino del Museo Civico di Storia Naturale di Verona **14** [1987]: 315-338.
- PACE, R. 1990: Aleocharinae delle Filippine. 82° contributo alla conoscenza delle Aleocharinae. – BERTI, N. (ed.): Miscellanées sur les Staphylins. – Mémoires du Muséum National d'Histoire Naturelle (A, Zoologie) **147**: 57-113.
- PACE, R. 1992: Aleocharinae nepalesi del Museo di Ginevra. Parte VI: Myrmedoniini (Coleoptera, Staphylinidae). – Revue Suisse de Zoologie **99**(1): 125-145.
- PACE, R. 1993: Aleocharinae della China (Coleoptera, Staphylinidae). – Bollettino del Museo Civico di Storia Naturale di Verona **17** [1990]: 69-126.
- PACE, R. 1998: Aleocharinae della Cina: Parte IV (Coleoptera, Staphylinidae). – Revue Suisse de Zoologie **105**(4): 911-982.
- PACE, R. 1999: Aleocharinae di Hong Kong (Coleoptera, Staphylinidae). – Revue Suisse de Zoologie **106**(3): 663-689.
- PACE, R. 2001: Aleocharinae aus Vietnam in der Sammlung des Naturkundemuseums Erfurt (Coleoptera, Staphylinidae). – Veröffentlichungen Naturkundemuseum Erfurt **20**: 193-200.
- PACE, R. 2003: Aleocharinae della Penisola di Malacca (Malaysia) (Coleoptera, Staphylinidae). – Bollettino del Museo Regionale di Scienze Naturali, Torino **20**(1): 33-78.
- PACE, R. 2004: Aleocharinae di Thailandia, Cambogia, Laos e Malaysia (Coleoptera, Staphylinidae). – Belgian Journal of Entomology **6**: 243-302.
- PACE, R. 2005: Nuovo contributo alla conoscenza delle Aleocharinae dell'India (Coleoptera, Staphylinidae). – Nouvelle Revue d'Entomologie (N.S.) **22**(2): 141-153.
- PACE, R. 2006: Aleocharinae del Nepal al Naturkundemuseum di Erfurt (Insecta: Coleoptera: Staphylinidae). 343-408. – In: HARTMANN, M. & WEIPERT, J. (eds): Biodiversität und Naturlausstattung im Himalaya. Volume II – Verein der Freunde und Förderer des Naturkundemuseums Erfurt e.V., Erfurt.
- PACE, R. 2008: Generi e specie della tribù Lomechusini del Borneo (Coleoptera, Staphylinidae). – Revue Suisse de Zoologie **115**(1): 107-156.
- PACE, R. 2010: Aleocharinae della regione Orientale al Museo di Genova (Coleoptera, Staphylinidae). – Annali del Museo Civico di Storia Naturale "G. Doria" **102**: 295-335.
- PACE, R. 2011: Aleocharinae from India gathered by Guillaume de Rougemont (Coleoptera, Staphylinidae). – Lavori della Società Veneziana di Scienze Naturali **36**: 23-40.
- PACE, R. 2012a: Biodiversità delle Aleocharinae della Cina: Lomechusini e Thamiaraeini (Coleoptera, Staphylinidae). – Beiträge zur Entomologie **62**(1): 77-102 – DOI: 10.21248/contrib.entomol.62.1.77-102.
- PACE, R. 2012b: New data, new species, and two new genera of Aleocharinae from the Oriental Region (Insecta: Coleoptera: Staphylinidae). – Vernate **31**: 319-360.
- PACE, R. 2013: Nuovo contributo alla conoscenza delle Aleocharinae del Nepal (Insecta: Coleoptera: Staphylinidae). – Vernate **32**: 347-370.
- PACE, R. 2014: Aleocharinae from Sabah (Borneo) collected by Guillaume de Rougemont (Coleoptera, Staphylinidae). – Linzer Biologische Beiträge **46**(1): 727-794.
- SCHEERPELTZ, O. 1965: Wissenschaftliche Ergebnisse der Schwedischen Expedition 1934 nach Indien und Burma. Coleoptera Staphylinidae (except. Megalopsidiinae et Steninae). – Arkiv för Zoologie **17**(2): 93-371.
- SCHUBERT, K. 1908: Beitrag zur Staphylinidenfauna Ostindiens (West-Himalaya). (Col.) – Deutsche Entomologische Zeitschrift **1908**: 609-625.
- SCHÜLKE, M. & SMETANA, A. 2015: Staphylinidae: 304-1134. – In: LÖBL, I. & LÖBL, D. (eds): Catalogue of Palaearctic Coleoptera. Volume 2. Hydrophiloidea – Staphyloidea., Revised and updated Edition – Brill, Leiden – ISBN 9789004289925.

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Jahr/Year: 2017

Band/Volume: [67](#)

Autor(en)/Author(s): Assing Volker

Artikel/Article: [On \*Zyras sensu strictu\* in the East Palaearctic and Oriental regions III, with a focus on the Southeast of Continental Asia and the Sunda Islands \(Coleoptera: Staphylinidae: Aleocharinae: Lomechusini\) 213-246](#)