

## Tersilochinae of South, Southeast and East Asia, excluding Mongolia and Japan (Hymenoptera: Ichneumonidae)

## Терзилохины Южной, Юго-Восточной и Восточной Азии без Монголии и Японии (Hymenoptera: Ichneumonidae)

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Tersilochines of South, Southeast and East Asia (excluding Mongolia and Japan) have been studied. Eight genera and 60 species are recorded in the region: *Allophrys* (2 species), *Barycnemis* (5 species), *Diaparsis* (29 species), *Phradis* (2 species, including 1 unidentified species), *Probles* (12 species, including 1 unidentified and 6 undescribed species), *Sathropterus* (2 species), *Slonopotamus* **gen. nov.** (2 species) and *Tersilochus* (6 species, including one species of the obscure status). One genus and 26 species are described as new: *Allophrys bruneiensis* **sp. nov.** (Brunei), *A. occipitata* **sp. nov.** (Vietnam, India), *Diaparsis absista* **sp. nov.** (Brunei), *D. bannapeana* **sp. nov.** (Laos), *D. bolikhamsaica* **sp. nov.** (Laos, Thailand), *D. brunnea* **sp. nov.** (Brunei), *D. crenulator* **sp. nov.** (Brunei), *D. dediticia* **sp. nov.** (Vietnam, Brunei), *D. hilaris* **sp. nov.** (Vietnam), *D. karnatakana* **sp. nov.** (India), *D. labiensis* **sp. nov.** (Brunei), *D. mandibulator* **sp. nov.** (Laos), *D. minuta* **sp. nov.** (Vietnam), *D. monstrosa* **sp. nov.** (Brunei), *D. morleyi* **sp. nov.** (Sri Lanka), *D. propodeator* **sp. nov.** (Brunei, Sarawak State of Malaysia, southern Indonesia, Laos), *D. pulchra* **sp. nov.** (South Korea), *D. sarawakiensis* **sp. nov.** (Sarawak and Pahang states of Malaysia), *D. viela* **sp. nov.** (Vietnam, Laos), *D. vietnamica* **sp. nov.** (Vietnam), *D. zispina* **sp. nov.** (Vietnam), *Probles vietnamica* **sp. nov.** (Vietnam, probably East China and south of Far East of Russia), *Sathropterus secundus* **sp. nov.** (Vietnam), *Slonopotamus elephantoides* **sp. nov.** (Laos), *S. indianus* **sp. nov.** (India) and *Tersilochus granulatus* **sp. nov.** (South Korea). Generic assignment of two species are changed: *Barycnemis sanctijohanni* (Rao & Kurian, 1951), **new combination**, and *Probles (Microdiaparsis) caudata* (Morley, 1913), **new combination**. *Barycnemis dissimilis* and *B. tobiasi* from Nepal, *Diaparsis convexa* from Vietnam, *D. niphadoctona* from Laos, and *Sathropterus pumilus* from India and Nepal are newly recorded from the countries. The genus *Diaparsis* comprises almost half of species of the tersilochine fauna of the studied region (29 species, 48%), and is a dominant genus in the Oriental Region. Keys to genera and species of Tersilochinae of South, Southeast and East Asia (excluding Mongolia and Japan) are provided.

Изучены терзилохины Южной, Юго-Восточной и Восточной Азии (без Монголии и Японии). Из этих регионов отмечены 8 родов и 60 видов: *Allophrys* (2 вида), *Barycnemis* (5 видов), *Diaparsis* (29 видов), *Phradis* (2 вида, в том числе 1 неустановленный вид), *Probles* (12 видов, в том числе 1 неустановленный и 6 неописанных видов), *Sathropterus* (2 вида), *Slonopotamus* **gen. nov.** (2 вида) и *Tersilochus* (6 видов, в том числе 1 вид с неясным статусом). Один род и 26 видов описаны как новые: *Allophrys bruneiensis* **sp. nov.** (Бруней), *A. occipitata* **sp. nov.** (Вьетнам, Индия), *Diaparsis absista* **sp. nov.** (Бруней), *D. bannapeana* **sp. nov.** (Лаос), *D. bolikhamsaica* **sp. nov.** (Лаос, Таиланд), *D. brunnea* **sp. nov.** (Бруней), *D. crenulator* **sp. nov.** (Бруней), *D. dediticia* **sp. nov.** (Вьетнам, Бруней), *D. hilaris* **sp. nov.** (Вьетнам), *D. karnatakana* **sp. nov.** (Индия), *D. labiensis* **sp. nov.** (Бруней), *D. mandibulator* **sp. nov.** (Лаос), *D. minuta* **sp. nov.** (Вьетнам), *D. monstrosa* **sp. nov.** (Бруней), *D. morleyi* **sp. nov.** (Шри-Ланка), *D. propodeator* **sp. nov.** (Бруней, штат Саравак Малайзии, юг Индо-

незии, Лаос), *D. pulchra* sp. nov. (Южная Корея), *D. sarawakiensis* sp. nov. (штаты Саравак и Паханг Малайзии), *D. viela* sp. nov. (Вьетнам, Лаос), *D. vietnamica* sp. nov. (Вьетнам), *D. zispina* sp. nov. (Вьетнам), *Probles vietnamica* sp. nov. (Вьетнам; возможно, Восточный Китай и юг Дальнего Востока России), *Sathropterus secundus* sp. nov. (Вьетнам), *Slonopotamus elephantoides* sp. nov. (Лаос), *S. indianus* sp. nov. (Индия) и *Tersilochus granulatus* sp. nov. (Южная Корея). Изменена родовая принадлежность двух видов: *Barycnemis sanctijohanni* (Rao & Kurian, 1951), **new combination** и *Probles (Microdiaparsis) caudata* (Morley, 1913), **new combination**. Впервые указаны *Barycnemis dissimilis* и *B. tobiasi* из Непала, *Diaparsis convexa* из Вьетнама, *D. niphadoctona* из Лаоса и *Sathropterus pumilus* из Индии и Непала. Род *Diaparsis* составляет почти половину видов фауны терзилохин изученной территории (29 видов, 48%) и является доминантным родом в Ориентальной области. Предложены определительные ключи для родов и видов подсем. Tersilochinae Южной, Юго-Восточной и Восточной Азии (без Монголии и Японии).

**Key words:** Asia, identification keys, taxonomy, Ichneumonidae, Tersilochinae, new genus, new species, new combinations

**Ключевые слова:** Азия, определительные таблицы, таксономия, Ichneumonidae, Tersilochinae, новый род, новые виды, новые комбинации

## INTRODUCTION

The fauna of the subfamily Tersilochinae of South, Southeast and East Asia (excluding Mongolia and Japan) is very poorly and unevenly studied; only 24 species including two unidentified species of *Phradis* Foerster, 1869 and *Probles* Foerster, 1869 were known from these regions previously (Yu et al., 2005; Khalaim & Sheng, 2009), and most of them (16 species) were described or recorded from the Palaearctic part of China (Khalaim & Sheng, 2009). This is only a small fraction of the real fauna of this area.

Townes (Townes et al., 1961) in his Catalogue of Indo-Australian Ichneumonidae listed one species of Tersilochinae from Australia and four species from Asia: *Ischnobatis ? concavus* Uchida, 1956 from Japan, *Diaparsis caudata* Morley, 1913 and *D. ? sanctijohanni* Rao & Kurian, 1951 from India, and *Tersilochus ? meridionalis* Morley, 1913 from Myanmar and Sri Lanka. Four of the five species in this list really belong to other genera and the status of *T. meridionalis* is obscure. The genus *Allophrys* Foerster, 1869 with only Neotropical species described was mentioned by Townes (1971) for the Old World tropics. Gupta (1987) in the next Catalogue of Indo-Australian Ich-

neumonidae listed some Australian genera and species described or recorded by Gauld (1984), the same four species from Asia as in the previous catalogue (the Japanese species placed in the genus *Heterocola* Foerster, 1869), and the genus *Allophrys* with reference to Townes (1971). A short time later, Kanhekar (1988) described *Diaparsis nikami* Kanhekar, 1988 from India and provided a key to three known Indian species of this genus (two other Indian species really belong to other genera). After that, *Diaparsis niphadoctona* He, 1995 was described from northern China by He & Li (1995), *D. improvisator* Khalaim, 2005 was described from the southern Russian Far East and South Korea (Khalaim, 2005), and the remaining 17 species (including two unidentified species) of the genera *Barycnemis* Foerster, 1869, *Diaparsis* Foerster, 1869, *Phradis*, *Probles* and *Tersilochus* Holmgren, 1859 were described or recorded from China by Sheng and Khalaim (Sheng et al., 1999; Sheng, 2002; Khalaim, 2004, 2007b, 2008; Khalaim & Sheng, 2009). Recently the genera *Allophrys*, *Diaparsis* and ? *Probles* were recorded from tropical forests in Sabah, Malaysia (Horstmann et al., 2005).

The aim of this paper is to study Tersilochinae of South, Southeast and East Asia

(excluding Mongolia and Japan), estimate taxonomic composition of the subfamily in this region, and provide keys to genera and species. Remarks to previously described taxa also will be provided.

## MATERIAL AND METHODS

Composition of the subfamily Tersilochinae follows Townes (1971). In a recent phylogenetic analysis (Quicke et al., 2009) the subfamily was expanded, and Neorhacodinae and some genera of the “microphrudine” complex of Phrudinae were included in the Tersilochinae. These neorhacodine and “microphrudine” genera are not covered in this revision.

This work is based on the materials of the Natural History Museum, London, United Kingdom (BMNH), Zoological Institute of the Russian Academy of Sciences, St. Petersburg, Russia (ZIN), and Oberösterreichisches Landesmuseum, Linz, Austria (OLML). Some specimens were obtained from the University of California, Riverside, U.S.A. (UCR) and the National Museum of Natural History, Washington D.C., U.S.A. (USNM). Specimens deposited in ZIN were collected by S.A. Belokobylskij (Zoological Institute of RAS, St. Petersburg, Russia) in his expeditions to Vietnam (Oct. – Nov. 1990, Apr. 2002) and South Korea (June – July 2002).

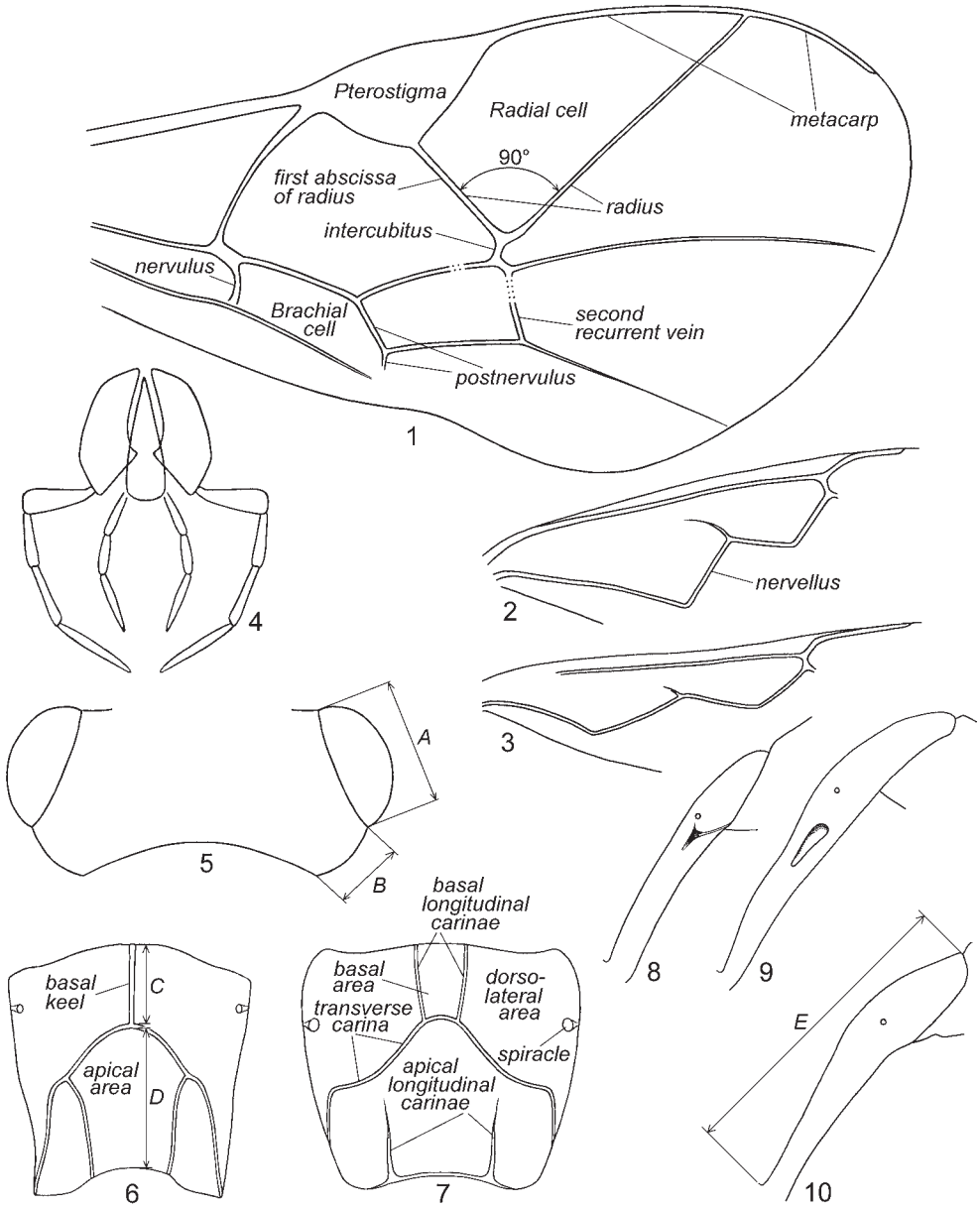
According the Microsoft Encarta World Atlas 2005, South Asia includes the countries of India, Bangladesh, Pakistan, Sri Lanka, Maldives, Nepal and Bhutan; Southeast Asia includes Myanmar (formerly Burma), Thailand, Cambodia, Laos, Vietnam, Malaysia, Singapore, Indonesia, Brunei and the Philippines; and East Asia includes China, Mongolia, the Democratic People’s Republic of Korea (North Korea), the Republic of Korea (South Korea) and Japan (but does not include eastern provinces of Russia). However, specimens from Mongolia and Japan were not included in this study. The tersilochine fauna of Mongolia is generally similar to the fauna of Russian

Southern Siberia, and some results on Mongolian Tersilochinae were published in my previous papers on Palaearctic Tersilochinae (Khalaim, 2002c, 2004, 2005, etc). The fauna of Japan at the genus level is similar to the fauna of the south of the Russian Far East but is highly endemic and contains many undescribed species (Khalaim, pers. obs.); a review of the Japanese Tersilochinae will be provided in a separate publication.

## Morphological terminology

Morphological terminology predominantly follows Townes (1969). Microsculpture terminology follows Eady (1968). Additional terms and comments on characters and measurements are given below.

Temple length (*B*) and eye width (*A*) are measured as in Fig. 5. Flagellomeres of antenna are measured in lateral view, and the width of flagellomere in the middle is used (flagellomeres are often with extreme base narrower and extreme apex broader than general width through flagellomere which is usually rather constant along flagellomere); the basal flagellomere and the apical flagellomere are most variable by shape and length, therefore they are not used for diagnostics. The notaulus is almost always very short, usually absent or weak (not or weakly impressed), but often with one or several carinae over its width at or near the anterolateral margin of mesoscutum, thus in some cases the notaulus is virtually substituted by a carina or rugulose area. The term *foveate groove* is used for the longitudinal furrow on the mesopleuron (*sternaulus* in my previous publications) according to Townes (1971) and Horstmann (2010). The propodeal carinae are largely reduced in tersilochines (Figs 6, 7). The *transverse carina* divides the propodeum into *basal* and *apical parts*. The length of the basal part (*C*) and the apical part (*D*) are measured along the midline as in Fig. 6. Dorsally the propodeum usually has a single median longitudinal carina (*basal keel*, Fig. 6), or a pair of median (*basal longitudinal carinae* enclosing the *basal area*



**Figs 1–10.** Tersilochinae. 1, venation of fore wing; 2, 3, venation of hind wing (2 – *Phradis* sp., 3 – *Allophrys* sp.); 4 – labial and maxillary palpi (*Tersilochus caudatus* (Holmgren, 1860)); 5 – head, dorsal view; 6, 7 – propodeum, dorsoposterior view; 8–10 – first metasomal segment, lateral view.

(Fig. 7). Sometimes the basal keel and basal longitudinal carinae are entirely absent and the propodeum dorsally is longitudinally wrinkled or has an impressed longitudinal groove. *Dorsolateral areas* are situated in front of the transverse carina and lateral to the basal keel or basal area (Fig. 7). The propodeal *spiracle* is situated in the dorsolateral area, joined to the pleural carina by a stalk or adjacent to the pleural carina. The *apical area* of the propodeum is enclosed anteriorly by the transverse carina and laterally by a pair of *apical longitudinal carinae*, which are sometimes absent or incomplete. Veins and cells of the fore and hind wings used in this work are shown in Figs 1 and 2. The length of the first tergite (*E*) is measured dorsally from its connection with the propodeum to the posterior margin, as in Fig. 10. The real length of the first tergite measured ventrally is somewhat greater but it often cannot be measured accurately because the ventro-basal part of the tergite is hidden by the hind coxae. The term *thyridial depression* is used instead of *thyridium* according to Horstmann (2010), because the delineated impressed basolateral area on tergite 2 is not a true thyridium. The apex of the ovipositor sometimes has a shallow to deep, broad *dorsal subapical depression* (Fig. 25), narrow *dorsal subapical notch* (Fig. 56), or with one or two teeth dorsally (Figs 56, 66), and fine teeth ventrally (Figs 33, 51). The long ovipositor sheath is sometimes strongly curved and therefore cannot be measured accurately. In this case the distance between the base of the sheath and apex of the ovipositor (which approximately corresponds to sheath length) was measured.

## RESULTS

In this paper eight genera and 60 species (including two unidentified species of *Phradis* and *Probles* and six undescribed species of the subgenus *Euporizon* Horstmann, 1971 of the genus *Probles*) are recorded from South, Southeast and East Asia (excluding Mongolia and Japan). One genus and 26

species are described as new. Four genera, *Barycnemis*, *Phradis*, *Probles* and *Tersilochus*, are known only or predominantly from the Palaearctic part of China and South Korea. Two genera, *Allophrys* and *Slonopotamus* **gen. nov.**, are tropical, and *Diaparsis* and *Sathropterus* Foerster, 1969 are almost cosmopolitan. The genus *Diaparsis* comprises almost half of species of the Tersilochinae fauna of the studied region (29 species, 48%) and is a dominant genus in the Oriental Region.

## Order HYMENOPTERA

### Family ICHNEUMONIDAE

#### Subfamily TERSILOCHINAE

Moderate-sized cosmopolitan subfamily comprising about 300 described species in 20 genera. Most genera and species occur in the Palaearctic Region, whereas non-Palaearctic faunas are undescribed or only partly described.

Small to moderate-sized ichneumonids with body length usually 3.0–7.0 mm. Tersilochines may most easily be recognised by the characteristic fore wing venation: absence of areolet, large pterostigma, thickened section of radius just distad of intercubitus, intercubitus and abscissa of cubitus between intercubitus and second recurrent vein, and first and second sections of radius angled 90° or less (Fig. 1). Other important characters of the subfamily are 4- and 3-segmented maxillary and labial palpi (Fig. 4), which are usually 5- and 4-segmented in others ichneumonid subfamilies, and clypeus with an apical fringe of parallel hairs.

The majority of tersilochines are koinobiont endoparasitoids of beetle larvae (various Coleoptera, mainly Curculionidae, Chrysomelidae and Nitidulidae). However, two species of *Tersilochus* were reared from Eriocraniidae (Lepidoptera) in leaf mines on *Betula* (Jordan, 1988), one species of *Diaparsis* from *Pontania* spp. (Hymenoptera: Tenthredinidae) in galls on *Salix* (Kopelke, 1994; Al-Saffar & Aldrich, 1997), and ten species of *Gelanes* Horstmann, 1981 in

Europe parasitise larvae of *Xyela* Dalman, 1819 (Hymenoptera: Xyelidae) in staminate pine cones (Khalaim & Blank, 2011).

Key to genera

The genera *Aneuclis* Foerster, 1869 and *Heterocola* are included in the key because they are rather common in Mongolia, Japan and Russia (Siberia and Far East), and probably occur south of these territories.

- 1. First metasomal segment with glymma joining by a furrow to ventral part of postpetiole (Fig. 8). Propodeum usually with basal area or furrow, but sometimes with basal keel . . . 2
  - First metasomal segment without glymma (Fig. 10) or with isolated glymma (Fig. 9). Propodeum usually with basal keel . . . . . 4
- 2. Thyridial depression short, at most as long as wide. Foveate groove present or absent; if present then usually short . . . . . **Tersilochus**
  - Thyridial depression elongate, often much longer than wide. Foveate groove well developed, usually long and extending from anterior margin of mesopleuron almost to base of mid coxa, sometimes very thin and linear (Fig. 17) . . . . . 3
- 3. Hind leg with spurs distinctly curved apically (Figs 17, 19). Foveate groove thin, linear or weakly upcurved anteriorly (Fig. 17). Legs of females often robust with femora thickened and tarsi unusually long (Fig. 19). Mesosoma sometimes strongly elongate. Ovipositor short, sometimes strongly upcurved and very thick (Fig. 20) . . . . . **Barycnemis**
  - Hind leg with spurs straight or weakly curved. Foveate groove thin to broad, usually strongly upcurved anteriorly. Legs slender. Mesosoma not unusually long. Ovipositor thin, short to very long . . . . . **Probles**
- 4. Propodeum coarsely rugulose with basal longitudinal carinae very strong (Fig. 88). Mandible large (Figs 84, 85). Female with scutellum with pair of strong longitudinal carinae extending almost to hind margin of scutellum. Male with clypeus with notable probosciform prominence ventrally (Fig. 84) . . . . . **Slonopotamus gen. nov.**
  - Propodeum not rugulose (except some species of *Diaparsis*, but all with basal keel), with basal keel or basal longitudinal carinae weak to moderately strong. Mandible more or less slender. Scutellum with longitudinal cari-

- nae distinct only at base. Clypeus lenticular, without probosciform prominence . . . . . 5
- 5. Propodeum with basal keel (Figs 24, 35, 53). Foveate groove often broad, deep and coarsely crenulate . . . . . 6
  - Propodeum with basal area (Fig. 16) or rarely with basal groove. Foveate groove, if present, weak or narrow, sometimes with fine transverse wrinkles . . . . . 8
- 6. Fore wing with brachial cell not or very narrowly open at apex, posterior part of postnervulus distinct (Figs 23, 48, 55) (except for *D. sarawakiensis sp. nov.*, but this species possesses a deep and broad foveate groove). Foveate groove often broad, deep and coarsely crenulate. Small to large species with body length 2.6–8.0 mm . . . . . **Diaparsis**
  - Fore wing with brachial cell broadly open at apex, posterior part of postnervulus absent or very short (Fig. 79). Foveate groove, if present, weak or narrow, sometimes with fine transverse wrinkles. Small species with body length usually less than 4.0 mm . . . . . 7
- 7. Second recurrent vein entirely absent (Fig. 79). Ovipositor tip more or less sinuate (Figs 77, 81) . . . . . **Sathropterus**
  - Second recurrent vein present, anteriorly unpigmented. Ovipositor tip not sinuate . . . . . **Aneuclis**
- 8. Maxillary and sometimes labial palpi unusually long, maxillary palp longer than head height. Fore wing with second recurrent vein distinctly antefurcal . . . . . **Heterocola**
  - Maxillary and labial palpi not unusually long, at most half as long as head height. Fore wing with second recurrent vein interstitial, rarely antefurcal or postfurcal . . . . . 9
- 9. Hind wing with nervellus strongly reclivous (Fig. 3). Occipital carina in both Oriental species dorsally entirely absent (Figs 11, 14, 15). Apical area of propodeum long and narrow (Fig. 16). Eyes of male enlarged (Fig. 15) . . . . . **Allophrys**
  - Hind wing with nervellus weakly reclivous (Fig. 2). Occipital carina complete. Apical area of propodeum usually shorter and broader. Eyes of male not enlarged . . . . . **Phradis**

Genus *Allophrys* Foerster, 1869

Predominantly Neotropical genus with two described species, *A. oculata* (Ashmead, 1895) from Grenada in the West Indies

and *A. divaricata* Horstmann, 2010 occurring from southeastern U.S.A. to northern Argentina. Townes (1971) also mentioned nine undescribed species in the Neotropical Region, one widespread species in Africa, and one species in the Philippines. Gauld (1984) reported two undescribed species from Australia. In Southeast Asia, three species of *Allophrys* were collected in the canopy of tropical forests in Sabah, Malaysia (Horstmann et al., 2005). I have seen this genus also in material from southern Japan. *Allophrys* is rather common in the Neotropical Region and South Africa but is probably not abundant in Asia.

*Allophrys divaricata* was reared from an unidentified sap beetle (Nitidulidae) in fallen guava fruits (*Psidium guajava* L., Myrtaceae) in Trinidad and Tobago (Horstmann, 2010).

Two species of *Allophrys* are described in this paper: *A. bruneiensis* sp. nov. which is known only from Brunei, and rather strongly differs from other known species of the genus (see Comparison section under this species), and *A. occipitata* sp. nov. from Indochina (some specimens were found in material from Vietnam and East India). The two Asian species are characterised by the head with the occipital carina dorsally entirely absent (Figs 11, 14, 15).

#### Key to species of *Allophrys*

1. Second recurrent vein present, postfurcal. Mesopleuron distinctly punctate. Flagellum short, all flagellomeres subquadrate to slightly transverse (Fig. 12). Propodeum with basal part 0.46 times as long as apical area. Propodeal spiracle somewhat enlarged, separated from pleural carina by 1.2 diameters of spiracle. Hind femur 3.6 times as long as broad. Female with head strongly rounded behind eyes in dorsal view (Fig. 11) ..... *A. bruneiensis* sp. nov.
- Second recurrent vein entirely absent. Mesopleuron impunctate. Flagellum slender, almost all flagellomeres strongly elongate. Propodeum with basal area very short, about 0.2 times as long as apical area (Fig. 16). Propodeal spiracle small, separated from pleural

carina by 2.0–2.5 diameters of spiracle. Hind femur 4.6 times as long as broad. Head almost linearly narrowed behind eyes in dorsal view in both sexes (Figs 14, 15) ..... *A. occipitata* sp. nov.

#### *Allophrys bruneiensis* sp. nov. (Figs 11–13)

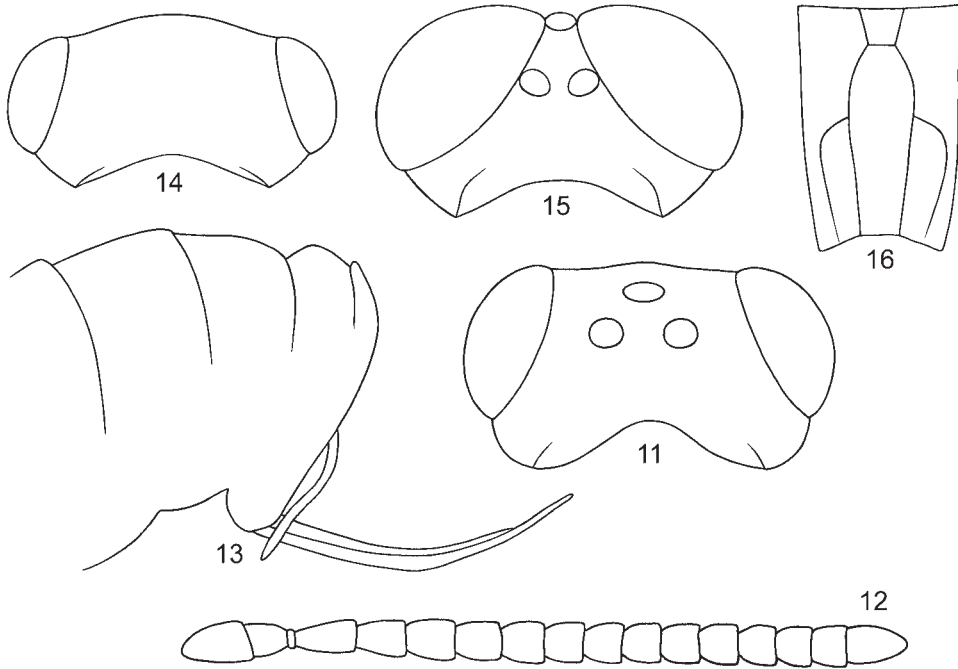
*Holotype*. Female; **Brunei**, 4°34'N, 115°7'E, Kuala Belalong Field Studies Centre, 3500 m, Malaise trap; 18 May 1991; coll. N. Mawdsley, BMNH(E)1991-173 (BMNH).

*Comparison*. Differs from other known species of *Allophrys* by the well developed foveate groove, short flagellomeres (Fig. 12), somewhat enlarged propodeal spiracle (much less enlarged than in *Meggoleus* Townes, 1971), and head strongly rounded behind eyes (Fig. 11). Structurally it resembles the genera *Barycnemis* and *Probles* (in particular by having a well developed foveate groove), and like some species of *Barycnemis* the hind femur and tibia are thickened and the tibial spurs curved apically. But this species differs from these genera in that the first tergite is round in cross-section, and it lacks glymmae.

*Description*. *Female* (holotype). Body length 3.6 mm. Fore wing length 2.15 mm.

Head roundly narrowed behind eyes in dorsal view; temple very short, 0.42 times as long as eye width (Fig. 11). Mandible slender, with upper tooth longer than lower tooth. Clypeus lenticular, distinctly separated from face, smooth, with few punctures on upper part. Malar space 0.6 times as long as basal width of mandible. Flagellum of antenna short, filiform, with 14 segments; basal flagellomeres slightly elongate, subapical flagellomeres distinctly transverse (Fig. 12). Face finely punctate, almost smooth between punctures. Frons finely granulate, dull, very finely punctate. Vertex indistinctly punctate, dull. Temple smooth, indistinctly punctate. Occipital carina dorsally entirely absent (Fig. 11).

Notaulus with a strong crest. Mesoscutum very finely punctate, finely granulate, dull. Foveate groove on anterior 0.8 of



**Figs 11–16.** *Allophrys*. 11–13, *A. bruneiensis* sp. nov. (female, holotype); 14–16, *A. occipitata* sp. nov. (14, 16 – female, holotype; 15 – male, paratype). Head, dorsal view (11, 14, 15); antenna (12); propodeum, dorsoposterior view (16); apex of metasoma with ovipositor (13).

mesopleuron, not reaching base of mid coxa, slightly upcurved anteriorly, deep and rather broad, with strong transverse wrinkles. Mesopleuron distinctly punctate above foveate groove, centrally almost smooth between punctures. Metapleuron mostly finely granulate. Propodeum with basal groove which is 0.46 times as long as apical area. Dorsolateral area impunctate, evenly and finely granulate, dull. Propodeal spiracle somewhat enlarged (much less enlarged than in *Meggoleus*), round, separated from pleural carina by 1.2 diameters of spiracle. Apical area anteriorly pointed. Apical longitudinal carinae rather strong, extending to transverse carina.

Fore wing with second recurrent vein postfurcal. Intercubitus subequal to abscissa of cubitus between intercubitus and second recurrent vein. First abscissa of radius almost as long as width of pterostigma. Metacarp ending somewhat short of apex

of fore wing. Postnervulus intercepted distinctly below its middle. Hind wing with nervellus moderately reclivous.

Legs with thickened femora. Hind femur 3.6 times as long as broad, and 0.91 times as long as hind tibia. Hind basitarsus 0.6 times as long as hind tibia. Hind spurs distinctly curved. Claws rather large, not pectinate.

First tergite 4.1 times as long as posteriorly broad, round in cross-section, entirely smooth, with spiracle situated at apical 0.67 and postpetiole not separated from petiole. Glymma absent. Second tergite almost twice as long as anteriorly broad. Thyridial depression deep, about 2.5 times as long as broad. Ovipositor short, distinctly upcurved, with thin apex (Fig. 13); sheath almost half as long as hind tibia and 0.45 times as long as first tergite.

Head and mesosoma black. Palpi, mandible (except reddish teeth), scape and pedicel of antenna, lower half of clypeus, tegula



and legs yellowish brown. Flagellum basally pale brown, gradually darkening towards apex. Pterostigma dark brown. Metasoma with first tergite dark brown, following tergites yellow-brown to brown.

*Male.* Unknown.

*Distribution.* Brunei.

*Etymology.* This species is named after the type-locality, Brunei.

***Allophrys occipitata* sp. nov.**

(Figs 14–16)

*Holotype.* Female; **Vietnam**, Hoa Binh Prov., Mai Chau Distr., Pa Co, Xa Linh, 20°44'N, 104°55'E, 1120 m; 22–24 Apr. 2002; coll. S.A. Belokobylskij (ZIN).

*Paratypes.* **Vietnam**, Vinh Phu Prov., Tam Dao, 700 m, pines; 14 Nov. 1990; coll. S.A. Belokobylskij; 1 female (ZIN). **India**, Assam Prov., 10 mi N Tinsukia, in jungle; 5 Apr. 1944; coll. D.E. Hardy; 1 male (USNM).

*Comparison.* *Allophrys occipitata* sp. nov. is readily distinguished from other species of *Allophrys* as the fore wing lacks second recurrent vein. It is also characterised by the dorsally absent occipital carina (Figs 14, 15) and the hind wing venation often reduced.

*Description.* Female (holotype). Body length about 3.7 mm. Fore wing length 1.72 mm.

Head strongly and linearly narrowed behind eyes in dorsal view (Fig. 14); temple 0.38 times as long as eye width. Mandible slender, upper tooth longer than lower tooth. Clypeus slightly convex, smooth, with fine punctures on its upper part. Malar space slightly shorter than basal width of mandible. Flagellum of antenna short, 13-segmented, basally slender; flagellomere 2 twice, flagellomere 3 about 1.8, and subapical flagellomeres 1.3–1.4 times as long as broad. Face and frons finely granulate, dull. Vertex and temple polished. Occipital carina dorsally absent (Fig. 14).

Mesosoma almost entirely finely granulate, impunctate. Notaulus with rather strong carina. Mesoscutum finely and evenly granulate, dull. Foveate groove short,

deep, oblique, on anterior half of mesopleuron, separated from anterior margin of mesopleuron. Mesopleuron centrally almost smooth. Propodeum granulate, impunctate. Basal area short, distinctly broadened anteriorly, 0.2 times as long as apical area (Fig. 16). Propodeal spiracle round, distance between spiracle and pleural carina equal to 2.0–2.5 diameters of spiracle. Apical area long and narrow, almost 3.0 times as long as broad (Fig. 16), impressed along midline, with fine transverse striae posteriorly.

Fore wing without second recurrent vein, or sometimes this vein discernible as a short vestige posteriorly. Intercubitus short and very thick. First abscissa of radius curved, 1.2–1.6 times as long as width of pterostigma (1.2 times in holotype). Metacarp not reaching apex of fore wing. Brachial cell narrowly open distally, posterior abscissa of postnervulus developed. Hind wing with nervellus strongly reclivous.

Legs very slender. Hind femur 4.6 times as long as broad, and 0.88 times as long as tibia. Hind spurs almost straight. Claws not pectinate.

First tergite very slender, 7.4 times as long as posteriorly broad, round in cross-section, entirely smooth. Glymma absent. Second tergite 3.2 times as long as anteriorly broad. Thyridial depression distinct, strongly elongate, more than 3.0 times as long as broad. Ovipositor short, weakly up-curved, with shallow dorsal subapical depression; sheath about as long as first tergite and 1.2 times as long as hind tibia.

Head and mesosoma black. Palpi, mandible (teeth black), lower two thirds of clypeus, and scape and pedicel of antenna yellowish. Flagellum yellowish basally, gradually darkening towards apex. Legs brownish yellow, hind coxa brown. Tegula, pterostigma and first tergite brown. Metasoma behind first tergite yellow ventrally to brown dorsally.

*Male.* Eyes large, strongly convergent dorsally in frontal view, almost touching anterior and lateral ocelli (Fig. 15). Flagellum 13-segmented, more slender than in female. Malar space almost half as long as basal

width of mandible. Clypeus dark brown ventrally to black dorsally. First abscissa of radius 1.65 times as long as width of pterostigma. Venation of hind wing reduced, only subcostella, radiella and intercubitella in anterior part of the wing developed.

*Variability.* Venation of hind wing of two paratypes is strongly reduced, only subcostella, radiella and intercubitella in anterior part of the wing present. Mediella, cubitella, submediella and nervellus in hind wing of the holotype are weak.

*Distribution.* Vietnam, East India (Assam).

*Etymology.* Name is related with the occipital carina, which is reduced dorsally.

Genus *Barycnemis* Foerster, 1869

Moderately large genus with about 30 species in the Holarctic Region (Khalaim, 2004; Horstmann, 2010) and two species in Mexico (Khalaim, 2002a). Also I have seen one undescribed species of this genus in material from Costa Rica.

Four species of *Barycnemis* occur in the Palaearctic part of China and Nepal, and one species was described from northeast India.

In Europe, *B. angustipennis* (Holmgren, 1860) was reared from *Byrrhys* sp. (Byrrhidae) (Horstmann, 1981); *B. blediator* (Aubert, 1970) is a common parasitoid of *Bledius spectabilis* Kratz, 1857 (Staphylinidae) in saltmarshes in England (Wyatt & Foster, 1989); in the Nearctic Region, *B. linearis* Ashmead, 1895 was reared from *Pissodes* sp. (Curculionidae) (Viereck, 1912).

Key to species of *Barycnemis*

- 1. Face faintly transversely striate [see Discussion section under this species] ..... *B. sanctijohanni*, new combination
  - Face without striae ..... 2
- 2. First metasomal segment with petiole short, laterally distinctly striate. Glymma large, situated about midlength of first tergite. Legs very thick, hind femur almost twice as long as broad (Fig. 19). Malar space 1.2 times as long as basal width of mandible. Distance between propodeal spiracle and pleural carina

equal to 2.5 diameters of spiracle (Fig. 18). Ovipositor short and very thick (Fig. 20) . . . . .

- ..... *B. tibetica*
- First metasomal segment slender, with petiole laterally mostly or entirely smooth. Glymma small, situated distinctly behind middle of first tergite. Legs slender to moderately thick, hind femur at least 2.8 times as long as broad. Malar space distinctly shorter than basal width of mandible. Propodeal spiracle adjacent to pleural carina. Ovipositor slender ..... 3
- 3. Mesopleuron finely and sparsely punctate. Dorsolateral area of propodeum smooth ..... *B. funiuensis*
- Mesopleuron impunctate. Dorsolateral area of propodeum either smooth or granulate . . . 4
- 4. Head, in lateral view, with antennae inserted at level of centre of head; distance between eye and lateral ocellus small. Hind leg slender, femur 3.2–4.0 times as long as broad. Dorsolateral area of propodeum finely granulate, dull ..... *B. dissimilis*
- Head, in lateral view, with antennae inserted low down, distinctly below level of centre of head; distance between eye and lateral ocellus greater. Hind leg robust, femur 2.8–3.0 times as long as broad. Dorsolateral area of propodeum smooth ..... *B. tobiasi*

*Barycnemis dissimilis* (Gravenhorst, 1829)

*Material.* Nepal, Kathmandu, 1500 m; March 1983; coll. M.G. Allen; 1 female (BMNH).

*Remarks.* The specimen from Nepal is structurally very similar to other material of this species from the Palaearctic Region but is conspicuously larger (body length 5.7 mm, fore wing length about 3.5 mm).

*Distribution.* Europe, Russian South Siberia and Far East, Mongolia, Nepal. **First record from Nepal.**

*Barycnemis funiuensis* Sheng, 2002

*Distribution.* East China (Henan, 1400 m).

*Barycnemis sanctijohanni* (Rao & Kurian, 1951), new combination

*Remarks.* The original description and illustrations were published in two different papers, in the 12th and 13th volumes



**Figs 17–20.** *Barycnemis*, females. 17, *B. tobiasi*; 18–20, *B. tibetica*. Habitus, lateral view (17); propodeal spiracle (18); hind leg, lateral view (19); apex of metasoma with ovipositor (20).

of the *Indian Journal of Entomology* (Rao & Kurian, 1950, 1951). My copy of the original description is on pages 26–28, but other sources (Kanhekar, 1988; Yu et al., 2005) refer to pages 65–78.

**Discussion.** Almost all species of *Diaparsis* have a distinct basal keel on the propodeum, which is very rarely indistinct or substituted by a furrow. According to the original description (Rao & Kurian, 1951), neither

female nor male of this species possess the basal keel, but the male has the propodeum with “obscure median longitudinal carinae”.

The female holotype possesses a very slender hind leg with the basitarsus as long as the tibia (Rao & Kurian, 1950: Fig. 95) and strongly curved tibial spurs (Rao & Kurian, 1950: Fig. 98), propodeum without a basal keel, rugose, and dorsolaterally (“at the sides”) shiny, with the basal part probably twice as long as the apical area (“petiolar area one-third the whole of the propodeum”). Similar legs with unusually long hind tarsus are known only in the genus *Barycnemis*. Other features of this species – the strongly curved hind tibial spurs, the propodeum with very long and dorsally rugulose basal part, weakly transverse head (Rao & Kurian, 1950: Figs 45, 59), and short ovipositor (“less than half the abdomen”) also correspond well to this genus. Unfortunately, two important features of *Barycnemis*, the well developed foveate groove on the mesopleuron and the presence of glymmae on the first metasomal segment, are not mentioned in the description (“mesopleura shallowly punctate in front and behind, smooth and shiny in the middle”, “abdomen petiolate”, “first tergite as long as second, thrice as long as broad at apex, smooth and shiny”). But a relatively short first tergite which is only 3.0 times as long as broad posteriorly, better corresponds to *Barycnemis* than to *Diaparsis* (all 29 species of *Diaparsis* listed in this paper have the first tergite much slenderer, 3.5–5.7 times as long as broad posteriorly), whereas many species of *Barycnemis* possess a short first tergite.

Despite the fact that nothing is known about the presence of a foveate groove or glymma in this species, I consider it best to place it in the genus *Barycnemis*, because other important characters (long hind tarsus, strongly curved hind tibial spurs, possibly long basal part of propodeum) correspond well to this genus. The structure of the propodeum (absence of a basal keel in both sexes and the presence of “obscure me-

dian longitudinal carinae” in male) suggests that this is not a species of *Diaparsis*.

*Barycnemis sanctijohanni* differs from other species of *Barycnemis*, and probably from all known tersilochines, by the faintly transversely striate face and will hopefully be recognisable on this basis. The type specimens were unavailable for study.

*Description* (Rao & Kurian, 1950, 1951).

*Female*. 5.5 mm. Face faintly transversely striate. Flagellum 22-segmented; subapical flagellomeres distinctly elongate. Head roundly narrowed behind eyes, temple two thirds as long as eye width. Mesothorax closely, minutely, finely punctate. Mesopleuron shallowly punctate anteriorly and posteriorly, smooth centrally. Propodeum rugose, dorsolaterally shiny, without basal keel, with “petiolar area one-third the whole of the propodeum”. Second recurrent vein postfurcal, intercubitus short. Nervellus weakly reclivous. Hind tarsus very slender, basitarsus as long as tibia. Hind tibial spurs strongly curved. Legs reddish brown, hind coxa black except for apex. Metasoma strongly compressed. First tergite smooth and shiny, 3.0 times as long as posteriorly broad. Second tergite 1.75 times as long as medially broad. Ovipositor shorter than half of metasoma.

*Male*. 3.0–3.5 mm. Flagellum of antenna with 23 flagellomeres. Mesopleuron rugose anteriorly and finely punctate posteriorly. Propodeum rugulose, dorsolaterally shiny, with obscure median longitudinal carinae. Legs brown, hind coxa black, hind femur uniformly dark brown.

*Distribution*. India (Uttar Pradesh: Āgra).

***Barycnemis tibetica*** Khalaim, 2004  
(Figs 18–20)

*Distribution*. China (Eastern Tibet).

***Barycnemis tobiasi*** Khalaim, 2004  
(Fig. 17)

*Material*. **Nepal**, Kakani, 2070 m; 15 June 1983; coll. A. Allen; 2 females (BMNH).

*Distribution.* Russia (South Siberia and Far East), Nepal. **First record from Nepal.**

Genus *Diaparsis* Foerster, 1869

A large, probably cosmopolitan genus with about 50 described species, most of which are Palaearctic. The European fauna of the genus was revised by Horstmann (1971, 1981) and the Palaearctic fauna was reviewed by Khalaim (2002c, 2005). Twenty nine species occur in South, Southeast and East Asia, excluding Mongolia and Japan, and 19 of them are described in this paper. Only three species, *D. convexa* Khalaim, 2005, *D. rara* Horstmann, 1971 and *D. improvisator*, are also found in the Russian Far East and Siberia, and the European *D. multiplicator* Aubert, 1969 was recorded from China by Sheng (Sheng et al., 1999).

Species of *Diaparsis* are known as parasitoids of various beetles of the families Buprestidae, Cerambycidae, Chrysomelidae, Curculionidae and Scolytidae, but one species, *D. stramineipes* (Brischke, 1880), was reared from *Pontania* spp. (Hymenoptera: Tenthredinidae) in galls on *Salix* in Europe (Kopelke, 1994; Al-Saffar & Aldrich, 1997).

This key works only for females because males of most species are unknown.

#### Key to species of *Diaparsis*

*Diaparsis minquanensis* and *D. multiplicator* are not included in the key (see Remarks section under these species).

1. Tarsal claws distinctly pectinate (Fig. 68). Ovipositor very short and very weakly upcurved (Fig. 69), sheath half as long as first tergite. [Subgenus *Pectinoparsis* Khalaim, 2005] ..... ***D. improvisator***
  - Tarsal claws not pectinate. Ovipositor longer and usually stronger upcurved (except for *D. bamnapeana* sp. nov.). [Subgenus *Diaparsis*] ..... 2
2. Mandible unidentate. Head swollen behind eyes in dorsal view (Fig. 40). Clypeus 1.25 times as broad as long (Fig. 41) ..... ***D. monstrosa* sp. nov.**
  - Mandible bidentate. Head narrowed behind eyes in dorsal view (Figs 29–31, 37, 39). Clypeus much broader ..... 3
3. Propodeum with dorsolateral area entirely irregularly rugulose ..... 4
  - Propodeum with dorsolateral area not rugulose, finely or coarsely punctate, smooth or granulate ..... 6
4. Fore wing with second recurrent vein interstitial, intercubitus long (Fig. 50). Hind coxa yellow. Mesopleuron virtually smooth, with sparse, shallow and fine punctures. Flagellum with 29–33 segments. Ovipositor evenly upcurved, sheath about 2.5 times as long as hind tibia ..... ***D. propodeator* sp. nov.**
  - Fore wing with second recurrent vein postfurcal. Hind coxa black. Mesopleuron densely and coarsely punctate. Flagellum and ovipositor sometimes not as above ..... 5
5. Clypeus ventrally with small tooth. Foveate groove long, extending from anterior margin of mesopleuron to base of mid coxa. Ovipositor strongly upcurved, slightly sinuate apically ..... ***D. niphadoctona***
  - Clypeus ventrally without tooth, with lower edge turned back, so the ventral margin, in frontal view, seems almost straight. Foveate groove broad and oblique, on anterior two thirds of mesopleuron, not reaching base of mid coxa. Ovipositor weakly upcurved, not sinuate apically, with fine teeth ventrally (Fig. 59) ..... ***D. saeva***
6. Fore wing with second recurrent vein interstitial or antefurcal (Figs 46, 48) ..... 7
  - Fore wing with second recurrent vein postfurcal (Fig. 23) ..... 10
7. Legs brown, all coxae black. Mesopleuron finely and sparsely punctate (distance between punctures much greater than diameter of puncture). Basal keel of propodeum weak and short, 0.3 times as long as apical area. Body length 5.7 mm ..... ***D. morleyi* sp. nov.**
  - Legs entirely yellow or brownish yellow. Mesopleuron distinctly and densely punctate (distance between punctures mostly equal to or shorter than diameter of puncture). Basal keel of propodeum well developed, usually longer. Body length 4.0–4.5 mm ..... 8
8. Ovipositor sinuate apically (Fig. 38) ..... ***D. labiensis* sp. nov.**
  - Ovipositor evenly upcurved, not sinuate apically ..... 9
9. Second recurrent vein antefurcal (Fig. 48). Metacarp ending far short of fore wing apex (Fig. 48). Malar space 1.3 times as long as basal width of mandible. Basal keel of propodeum 0.28 times as long as apical area. Second tergite 1.1–1.25 times as long as broad.

- Ovipositor sheath 1.8–1.9 times as long as hind tibia ..... ***D. nikami***
- Second recurrent vein interstitial. Metacarp almost reaching apex of fore wing. Malar space 0.75 times as long as basal width of mandible. Basal keel of propodeum about half as long as apical area. Second tergite 2.2 times as long as broad anteriorly. Ovipositor sheath 2.5 times as long as hind tibia ..... ***D. karnatakana* sp. nov.**
10. Occipital carina dorsally entirely absent (Fig. 30); occiput dorsally granulate. Head weakly narrowed, concave to almost straight behind eyes in dorsal view (Fig. 30). Ovipositor sheath 1.7 times as long as hind tibia. Flagellum slender, with 16–17 segments; all flagellomeres, except the basal and the apical ones, about twice as long as broad. Clypeus entirely yellow. Mesosoma brown. Ovipositor sheath 1.7 times as long as hind tibia ..... ***D. dediticia* sp. nov.**
- Occipital carina dorsally distinct, sometimes weak, obsolescent or narrowly interrupted; occiput dorsally smooth. Head strongly and/or roundly narrowed behind eyes in dorsal view, sometimes almost straight but never concave. Flagellum, clypeus, mesosoma and ovipositor sometimes not as above ..... 11
11. Head, in dorsal view, very strongly and almost linearly narrowed behind eyes, temple short (Figs 29, 31, 60). Mesopleuron impunctate or finely punctate centrally. Flagellum with 16–18 segments, basally slender (subbasal flagellomeres 1.8–3.0 times as long as broad), mostly yellowish or brown. Small species with body length 2.6–3.7 mm ..... 12
- Head behind eyes weakly and/or roundly narrowed (Figs 37, 39, 42, 45, 49, 52), OR mesopleuron distinctly and densely punctate. Flagellum less slender, entirely black or number of segments more than 18. Body length 4.0–7.8 mm ..... 15
12. Hind femur brown. Second tergite about 1.4 times as long as anteriorly broad. Mandible yellow, teeth slightly reddish peripherally ..... ***D. brunnea* sp. nov.**
- Hind femur yellow or brownish yellow. Second tergite 1.8–2.2 times as long as anteriorly broad. Teeth of mandible entirely reddish or blackish ..... 13
13. Foveate groove narrow, subvertical, sharply crenulate (Fig. 32). Mesopleuron virtually smooth, centrally finely punctate. Clypeus finely punctate in its upper part. Apex of ovipositor with weak depression dorsally, rounded tooth before this depression, and three fine teeth ventrally (Fig. 33) ..... ***D. crenulator* sp. nov.**
- Foveate groove broad, weak or deep, with more or less distinct transverse wrinkles. Mesopleuron granulate, finely punctate or impunctate. Clypeus entirely impunctate. Apex of ovipositor without teeth ..... 14
14. All coxae yellow. Foveate groove deep and broad, with strong transverse wrinkles. Ovipositor robust, strongly upcurved at apex (Fig. 62) ..... ***D. sarawakiensis* sp. nov.**
- At least hind coxa distinctly darkened. Foveate groove weak and shallow, with fine transverse wrinkles. Ovipositor slender, weakly and evenly upcurved ..... ***D. minuta* sp. nov.**
15. Mandible strongly twisted. Foveate groove weak and shallow, with fine transverse wrinkles. Head weakly and roundly narrowed behind eyes in dorsal view (Fig. 39). Ovipositor sheath twice as long as hind tibia ..... ***D. mandibulator* sp. nov.**
- Mandible not twisted. Foveate groove usually deep and coarsely crenulate. Head and ovipositor sometimes not as above ..... 16
16. Foveate groove thin and narrow, S-curved, with very fine transverse wrinkles, extending from anterior margin of mesopleuron almost to base of mid coxa. Flagellum slightly clavate, 32-segmented; basal and middle flagellomeres about twice as long as broad, two subapical flagellomeres distinctly transverse (Fig. 43). Distance between propodeal spiracle and pleural carina equal to about one diameter of spiracle. Ovipositor apically without teeth, with very shallow dorsal depression (Fig. 44), its sheath 2.7 times as long as hind tibia ..... ***D. isfiriae***
- Foveate groove not as above, usually strongly oblique, deep and coarsely crenulate, or weak and short. Flagellum filiform or narrowed towards apex. Distance between propodeal spiracle and pleural carina 1.5–3.5 diameters of spiracle. Ovipositor sometimes not as above ..... 17
17. Dorsolateral area of propodeum with sharp and dense punctures (distance between punctures mostly equal to or shorter than one diameter of puncture), smooth between punctures ..... 18
- Dorsolateral area of propodeum impunctate, or with fine and sparse punctures, smooth or granulate ..... 20

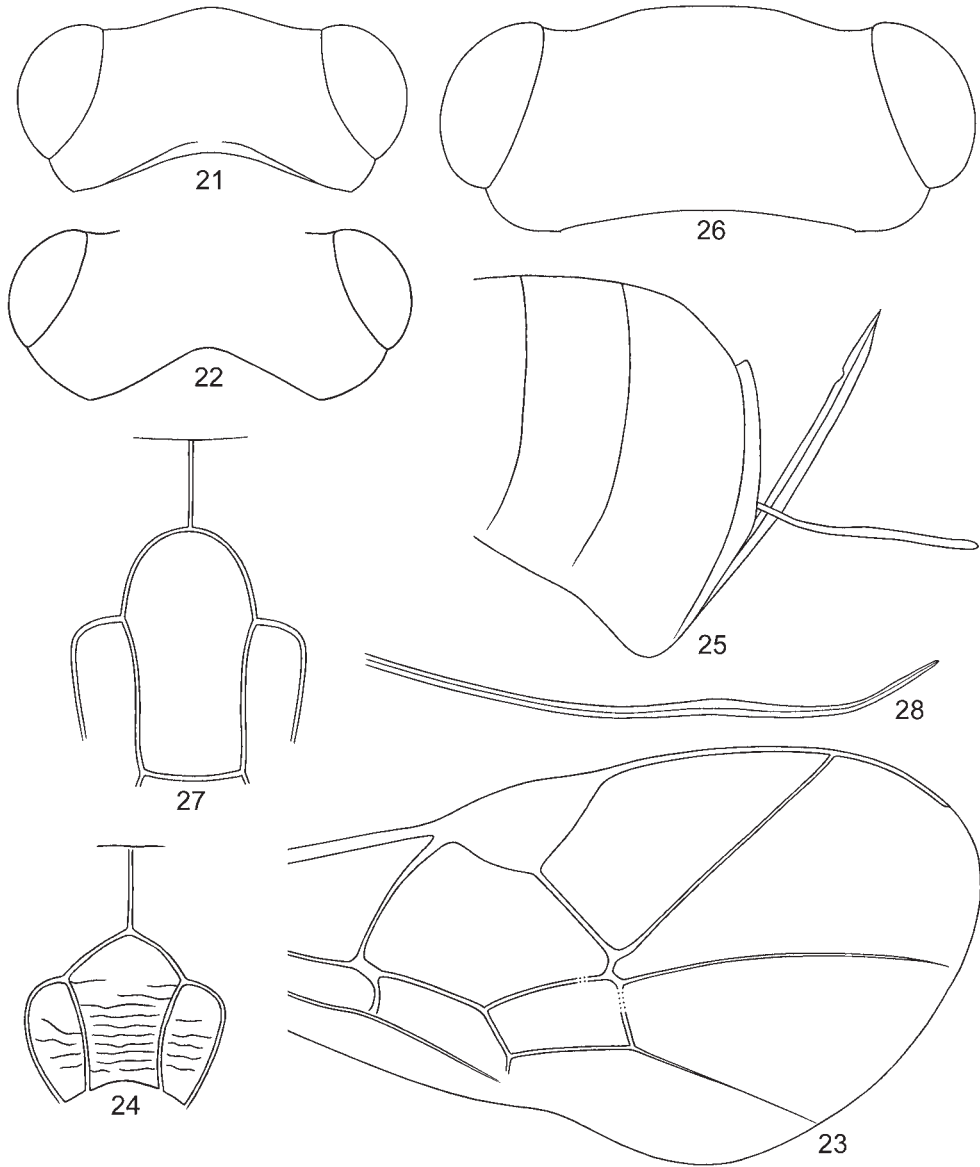
18. Head with temple very short, 0.27 times as long as eye width (Fig. 21). Flagellum with 20–24 segments, basally yellowish . . . . .  
 . . . . . ***D. absista* sp. nov.**
- Head with temple longer, 0.46–0.56 times as long as eye width (Figs 63, 64). Flagellum with 16–19 segments, entirely black . . . . . 19
19. Head strongly rounded behind eyes in dorsal view (Fig. 63). Malar space as long as basal width of mandible. Distance between spiracle and pleural carina equal to 2.0–2.5 diameters of spiracle . . . . . ***D. viela* sp. nov.**
- Head weakly rounded behind eyes in dorsal view (Fig. 64). Malar space 0.7 times as long as basal width of mandible. Distance between spiracle and pleural carina equal to 1.5 diameters of spiracle . . . . . ***D. vietnamica* sp. nov.**
20. Apical area of propodeum rather strongly impressed along midline, anteriorly pointed (Fig. 53). Basal keel very short, about 0.2 times as long as apical area (Fig. 53). Fore wing with intercubitus short and very thick (Fig. 55). Foveate groove shallow, with fine transverse wrinkles . . . . . ***D. pulchra* sp. nov.**
- Apical area of propodeum flat, anteriorly rounded or slightly pointed (Figs 24, 27, 35). Basal keel longer, 0.35–0.6 times as long as apical area (Figs 24, 27, 35). Fore wing with intercubitus longer and thinner (Fig. 23). Foveate groove usually deep, with coarse transverse rugae . . . . . 21
21. Malar space almost half as long as basal width of mandible. Ovipositor unusually thin (Fig. 36), 1.2 times as long as hind tibia. Apical area of propodeum anteriorly broadly rounded; apical longitudinal carinae indistinct in anterior half, not reaching transverse carina (Fig. 35) . . . . . ***D. hilaris* sp. nov.**
- Malar space at least 0.9 times as long as basal width of mandible. Ovipositor more robust and sometimes longer. Apical area of propodeum pointed or rounded anteriorly; apical longitudinal carinae usually complete . . . . . 22
22. Ovipositor almost straight and very short, distinctly shorter than hind tibia (Fig. 25) . . . . . ***D. bannapeana* sp. nov.**
- Ovipositor distinctly upcurved, longer than hind tibia . . . . . 23
23. Mesopleuron, dorsolateral and apical areas of propodeum weakly polished, impunctate or with very shallow and sparse punctures. Notaulus broad, strongly impressed and irregularly rugulose. Head very strongly narrowed behind eyes in dorsal view (Fig. 26).  
 Apical area of propodeum anteriorly broadly rounded (Fig. 27). Ovipositor long, apically slightly sinuate and strongly upcurved (Fig. 28), sheath about 3.0 times as long as hind tibia . . . . . ***D. bolikhamsaica* sp. nov.**
- At least mesopleuron distinctly punctate. Notaulus absent or weak, usually with a single fine wrinkle. Head less narrowed behind eyes in dorsal view. Apical area of propodeum not as above. Ovipositor not sinuate apically, sheath often shorter . . . . . 24
24. Second tergite more than twice as long as anteriorly broad. Hind leg entirely yellow. Ovipositor sheath almost 3.0 times as long as hind tibia . . . . . ***D. convexa***
- Second tergite 1.2–1.8 times as long as anteriorly broad. Hind leg with at least coxa darkened. Ovipositor sheath at most 1.5 times as long as hind tibia . . . . . 25
25. Flagellum with 14–17 segments. Thyridial depression slightly elongate. Foveate groove absent or very weak. Apex of ovipositor with dorsal tooth and small sharp notch at apex of this tooth (Fig. 56), or sometimes this tooth indistinct (Fig. 57) . . . . . ***D. rara***
- Flagellum with 21–23 segments. Thyridial depression 2.0–2.5 times as long as broad. Foveate groove developed. Apex of ovipositor not as above . . . . . 26
26. Foveate groove weak and shallow (Khalaim & Sheng, 2009: Fig. 12). Temple about 0.7 times as long as eye width (Khalaim & Sheng, 2009: Fig. 1). Second tergite 1.4 times as long as anteriorly broad . . . . . ***D. nitidulentis***
- Foveate groove well-developed, broad and rather strongly impressed. Temple shorter, almost half as long as eye width. Second tergite 1.8 times as long as anteriorly broad . . . . . ***D. zispina* sp. nov.**

***Diaparsis (Diaparsis) absista* sp. nov.**  
 (Fig. 21)

*Holotype*. Female; **Brunei**, Bk. Retak, 1600 m; Sept. 1979; coll. I.D. Gauld (BMNH).

*Paratype*. Same data as holotype; 1 female (ZIN).

*Comparison*. Similar to *D. dediticia* sp. nov. in its very short temple (Figs 21, 30). Differs from this species by the distinctly and densely punctate mesosoma, the head convex behind the eyes in dorsal view (Fig. 21) and the occipital carina dorsally complete or narrowly interrupted.



**Figs 21–28.** *Diaparsis*, females. **21**, *D. absista* sp. nov. (holotype); **22–25**, *D. bannapeana* sp. nov. (22, 24, 25 – holotype; 23 – paratype); **26–28**, *D. bolikhamsaica* sp. nov. (holotype). Head, dorsal view (21, 22, 26); fore wing (23); propodeum, dorsoposterior view (24, 27); apex of metasoma with ovipositor (25); apex of ovipositor (28).

*Description. Female* (holotype). Body length 4.6 mm. Fore wing length 3.25 mm.

Head, in dorsal view, weakly rounded behind eyes in holotype (Fig. 21) and almost straight in paratype; temple very short, 0.27 times as long as eye width. Upper tooth of

mandible much longer than lower tooth. Clypeus, in profile, slightly convex, smooth, with fine punctures in upper 0.6. Malar space 0.9 times as long as basal width of mandible. Flagellum of antenna narrowed towards apex, with 20–24 segments (24 seg-



ments in holotype); subbasal flagellomeres 1.4, mid and subapical flagellomeres 1.2–1.3 times as long as broad. Face and frons very densely punctate, finely granulate and dull. Vertex finely punctate, finely granulate, laterally almost smooth. Temple smooth, with sparse distinct punctures. Occipital carina narrowly interrupted mediadorsally.

Notaulus with sharp and rather long carina. Mesoscutum very densely punctate, finely granulate between punctures. Foveate groove on anterior 0.6 of mesopleuron, oblique, very broad, with transverse rugulae reaching anteriorly to prepectal carina. Mesopleuron densely punctate (distance between punctures mostly equal to or shorter than diameter of puncture), smooth between punctures. Metapleuron uneven, with indistinct punctures. Propodeum with all carinae strong. Basal keel 0.47 times as long as apical area. Dorsolateral area very densely punctate (distance between punctures shorter than diameter of puncture), smooth between punctures. Propodeal spiracle round, distance between spiracle and pleural carina 2.5–3.0 diameters of spiracle. Apical area rounded anteriorly, flat, uneven with indistinct punctures in its anterior part, with transverse wrinkles in posterior half. Apical longitudinal carinae reaching transverse carina.

Fore wing with second recurrent vein postfurcal, unpigmented in anterior 0.4. Intercubitus moderately thick, longer than abscissa of cubitus between intercubitus and second recurrent vein. First abscissa of radius 1.3 times as long as width of pterostigma. Metacarp reaching apex of fore wing. Postnervulus intercepted distinctly below middle.

Legs slender. Hind femur 5.15 times as long as broad, and 0.91 times as long as tibia. Hind spurs slightly curved apically. Claws slender, not pectinate.

First tergite slender, 4.7 times as long as posteriorly broad, round in cross-section, entirely smooth, without glymma. Second tergite 1.9 times as long as anteriorly broad. Thyridial depression 2.5–3.0 times as long

as broad. Ovipositor weakly upcurved, with shallow dorsal subapical depression; sheath 1.54 times as long as first tergite (1.35 times in paratype) and 1.8 times as long as hind tibia (1.7 times in paratype).

Head and mesosoma dark reddish brown to black. Palpi, mandible (teeth black), scape and pedicel of antenna, and legs yellow. Flagellum yellow basally to dark brown apically. Clypeus brownish yellow in lower one third, brown in upper two thirds. Tegula brownish. Pterostigma and first tergite brown. Metasoma behind first tergite yellow ventrally, predominantly brown dorsally; tergite 2 with narrow dorsal transverse yellow band posteriorly, following tergites with posterior yellow band broader.

*Male* unknown.

*Distribution*. Brunei.

*Etymology*. From the Latin “*absistus*” (distant, lying away).

***Diaparsis (Diaparsis) bannapeana***  
**sp. nov.**

(Figs 22–25)

*Holotype*. Female; **Laos**, Bolikhamsai [Bolikhamsai] Prov., Ban Nape env., 18°20′N, 105°08′E, 350 m; 7–16 May 2004; coll. Jendek & Šauša (OLML).

*Paratypes*. Same data as holotype; 2 females (OLML), 1 female (ZIN).

*Comparison*. Similar to *D. basalis* Horstmann, 1981 and *D. parabasalis* Khalaim, 2005 in its short robust ovipositor (Fig. 25) and slightly elongate thyridia, but differs from these species by the shape of the foveate groove, the shorter temple, and the longer second tergite.

*Description*. *Female* (holotype). Body length 4.4 mm. Fore wing length 3.0 mm.

Head strongly narrowed behind eyes in dorsal view (Fig. 22); temple almost 0.6 times as long as eye width. Upper tooth of mandible much longer than lower tooth. Clypeus weakly and indistinctly separated from face, in profile, weakly convex, smooth, very finely (sometimes indistinctly) punctate in upper part. Malar space subequal to basal width of mandible. Flagellum

of antenna filiform, with 22–23 segments; subbasal flagelomeres 1.5–1.8, and subapical flagellomeres about 1.3 times as long as broad. Face and frons densely punctate over finely granulate dull surface. Vertex indistinctly punctate, dull. Temple smooth and shining, very finely punctate to impunctate.

Notaulus with few irregular rugulae. Mesoscutum very densely punctate, finely granulate, dull. Foveate groove on anterior two thirds of mesopleuron, oblique, with strong transverse wrinkles, deep and wide anteriorly, weaker posteriorly. Mesopleuron distinctly and rather densely punctate, dull peripherally and smooth between punctures centrally. Metapleuron granulate, usually without distinct punctures, moderately densely pubescent. Propodeum short, carinae well developed. Basal keel about 0.6 times as long as apical area. Dorsolateral area distinctly punctate to impunctate, granulate, dull, usually more or less rugulose posteriorly. Propodeal spiracle round, distance between spiracle and pleural carina equal to 2.5–3.5 diameters of spiracle. Apical area wide anteriorly, uneven, with transverse rugulae posteriorly; dorsal sections of transverse carina meet medially at angle of 90° or more (Fig. 24). Apical longitudinal carinae complete (sometimes weaker anteriorly), reaching transverse carina.

Fore wing (Fig. 23) with second recurrent vein postfurcal, unpigmented in anterior half. First abscissa of radius 1.5 times as long as width of pterostigma. Metacarp ending somewhat short of apex of fore wing. Postnervulus intercepted below middle.

Legs slender. Hind femur 5.1 times as long as broad, and 0.84 times as long as tibia. Hind spurs slightly curved apically. Claws not pectinate.

First tergite slender, 4.8 times as long as posteriorly broad, round in cross-section, entirely smooth, with postpetiole distinctly wider than petiole. Glymma small or vestigial, situated behind middle of first tergite. Second tergite 1.7 times as long as anteriorly broad. Thyridial depression weak, slightly elongate. Ovipositor short, robust, very

weakly upcurved (almost straight in holotype), with dorsal subapical depression (Fig. 25); sheath about 0.7 times as long as first tergite and 0.74 times as long as hind tibia.

Body black. Palpi, mandible (teeth blackish), lower 0.3 of clypeus and legs brownish yellow to yellow-brown (fore and mid coxae moderately, and hind coxa extensively darkened with brown basally). Tegula brownish. Pterostigma brown. Metasoma behind first tergite brownish yellow ventrally to dark brown and blackish dorsally.

*Male* unknown.

*Distribution*. Laos.

*Etymology*. This species is named after the type-locality, Ban Nape.

***Diaparsis (Diaparsis) bolikhamsaica***  
**sp. nov.**

(Figs 26–28)

*Holotype*. Female; **Laos**, Bolikhamsai [Bolikhamsai] Prov., Ban Nape env., 18°20'N, 105°08'E, 350 m; 7–16 May 2004; coll. Jendek & Šauša (OLML).

*Paratypes*. Same data as holotype; 2 females (OLML, ZIN). **Thailand**, Chiang Mai, Pa Huay Tong, Moo & Tambon Bo Luang; 10–20 Sept. 1997; coll. S. Sonthichai (UCR).

*Comparison*. Resembles *D. niphadoc-tona* He, 1995 as both have a long, sinuate or apically strongly upcurved ovipositor (Fig. 28), but is distinct in having a smooth propodeum and the clypeus with the lower margin evenly rounded, without a ventral tooth. It also differs from all other species of the genus through the combination of the strongly rounded temple (Fig. 26), smooth propodeum and apically sinuate ovipositor (Fig. 28).

*Description*. *Female* (holotype). Body length 7.8 mm. Fore wing length 4.25 mm.

Head very strongly and roundly narrowed behind eyes in dorsal view (Fig. 26); temple half as long as eye width. Lower tooth of mandible small and short, upper tooth much longer than lower tooth. Clypeus broad, lenticular, in profile weakly convex, smooth in lower part, dull and finely punctate in upper part. Malar space

somewhat shorter than basal width of mandible. Flagellum of antenna slightly clavate, with 24–25 segments; subbasal flagellomeres 1.2–1.3, subapical flagellomeres 1.1 times as long as broad. Face and frons finely and very densely punctate, almost smooth and dull between punctures. Vertex and temple smooth and shining, finely and sparsely punctate. Occipital carina more or less complete, dorsally vestigial.

Notaulus broad, irregularly rugulose. Mesoscutum with coarse crenulate groove along its lateral margin, extending backwards from notaulus to about 0.6 distance from base of tegula to scutellum. Mesoscutum smooth, indistinctly punctate. Foveate groove on anterior half of mesopleuron, strongly oblique, broad and crenulate. Mesopleuron mostly smooth, partly indistinctly punctate. Metapleuron almost smooth, slightly uneven, rather densely pubescent. Propodeum almost smooth or slightly uneven, dorsolateral area indistinctly punctate, all carinae well developed. Basal keel about 0.4 times as long as apical area. Propodeal spiracle round, distance between spiracle and pleural carina equal to two diameters of spiracle. Apical area flat, broadly rounded anteriorly (Fig. 27). Apical longitudinal carinae reaching transverse carina.

Fore wing with second recurrent vein postfurcal. Intercubitus as thin as abscissa of cubitus between intercubitus and second recurrent vein, longer than this abscissa. First abscissa of radius 1.5 times as long as width of pterostigma. Metacarp almost reaching apex of fore wing. Postnervulus intercepted in lower 0.4.

Legs moderately slender, hind femur somewhat thickened. Hind femur 3.8 times as long as broad, and 0.78 times as long as tibia. Hind spurs almost straight, very slightly curved apically. Claws not pectinate.

First tergite very slender, 5.3 times as long as posteriorly broad, petiole trapeziform in cross-section and postpetiole round in cross-section, entirely smooth, with rather large but shallow glymma at basal 0.45 of tergite. Second tergite 2.8 times as long as

anteriorly broad. Thyridial depression 3.0–4.0 times as long as broad. Ovipositor long and thin, slightly sinuate and strongly up-curved apically (Fig. 28); sheath about 3.3 times as long as first tergite and 2.3 times as long as hind tibia.

Head, mesosoma and first tergite black. Palpi and mandible (teeth black) brown. Clypeus black with lower margin narrowly brownish. Scape and pedicel of antenna yellowish brown, flagellum black with brownish hue. Legs extensively yellowish brown, mid and hind coxae dark brown, hind femur centrally brown (base and apex yellowish brown). Tegula mostly dark brown with apex pallid. Pterostigma dark brown. Metasoma behind first tergite orange-brown, tergite 2 basally blackish.

*Male unknown.*

*Distribution.* Laos, Thailand.

*Etymology.* This species is named after the type-locality, Bolikhamsai Province of Laos.

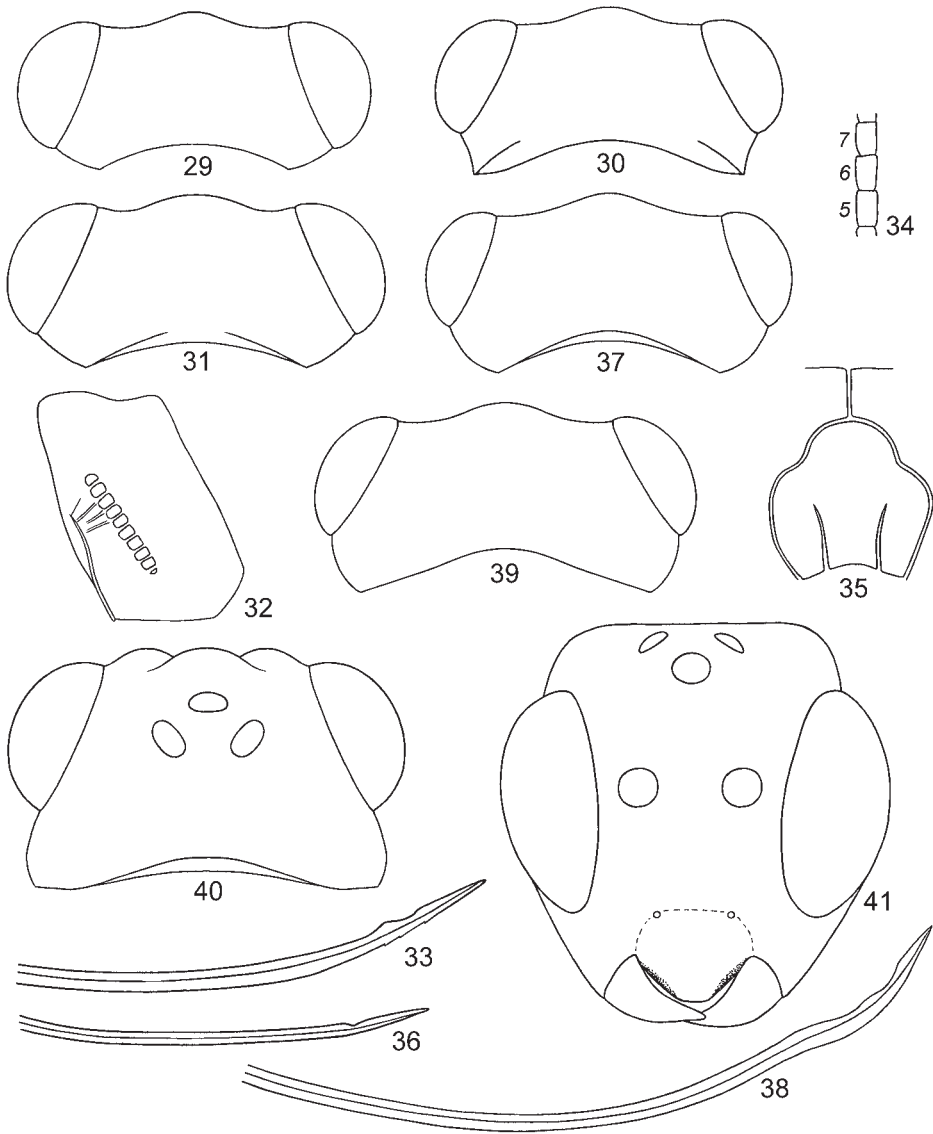
***Diaparsis (Diaparsis) brunnea* sp. nov.**  
(Fig. 29)

*Holotype.* Female; **Brunei**, Labi, mixed dip-terocarp forest, 200 m; Aug.–Sept. 1979; coll. I.D. Gauld (BMNH).

*Comparison.* Differs from other species of the genus by the combination of the very short and strongly narrowed temples behind the eyes (Fig. 29), entirely yellow-brown mandible, short second tergite, and brown hind leg.

*Description. Female* (holotype). Body length 3.6 mm. Fore wing length 2.4 mm.

Head strongly and almost linearly narrowed behind eyes in dorsal view (Fig. 29); temple 0.33 times as long as eye width. Eyes large, their inner orbits in frontal view subparallel. Mandible moderately slender, with upper tooth distinctly longer than lower tooth. Clypeus, in profile, weakly convex, mostly smooth, very finely granulate in lower 0.25, sparsely punctate in upper half. Malar space almost as long as basal width of mandible. Flagellum of antenna filiform,



**Figs 29–41.** *Diaparsis*, females (holotypes). 29, *D. brunnea* sp. nov.; 30, *D. dediticia* sp. nov.; 31–33, *D. crenulator* sp. nov.; 34–36, *D. hilaris* sp. nov.; 37, 38, *D. labiensis* sp. nov.; 39, *D. mandibulator* sp. nov.; 40, 41, *D. monstrosa* sp. nov. Head, dorsal view (29–31, 37, 39, 40); head, frontal view (41); flagellomeres 5–7 (34); mesopleuron (32); propodeum, dorsoposterior view (35); apex of ovipositor (33, 36, 38).

17-segmented; second flagellomere 2.5, mid flagellomeres about twice, and subapical flagellomere 1.4 times as long as broad. Face and frons rather densely granulate, finely and densely punctate (punctures mostly indistinct because of granulation).

Vertex finely granulate, indistinctly punctate. Temple very shallowly granulate, dull, indistinctly punctate. Occipital carina complete, well-developed.

Notaulus virtually absent, with short carina far from anterolateral margin of mes-

oscutum. Mesoscutum granulate, finely and densely punctate (punctures mostly indistinct because of granulation). Prepectal carina rather strong, dorsally not reaching anterior margin of mesopleuron. Foveate groove on anterior 0.6 of mesopleuron, deep and very broad, subvertical, with strong transverse rugae extending to prepectal carina. Mesopleuron granulate, centrally distinctly and rather densely punctate. Metapleuron finely granulate, indistinctly punctate. Propodeum with basal keel weak, 0.38 times as long as apical area. Dorsolateral area granulate, centrally with dense but mostly indistinct punctures. Propodeal spiracle round, distance between spiracle and pleural carina equal to 3.5 diameters of spiracle. Apical area granulate, impunctate, anteriorly rounded. Apical longitudinal carinae weak, reaching transverse carina.

Fore wing with second recurrent vein postfurcal. Intercubitus about as long as abscissa of cubitus between intercubitus and second recurrent vein, both rather thick. First abscissa of radius 1.34 times as long as width of pterostigma. Metacarp almost reaching apex of fore wing. Postnervulus intercepted distinctly below middle.

Legs moderately slender. Hind femur 4.4 times as long as broad, and 0.93 times as long as tibia. Hind spurs almost straight. Claws slender, not pectinate.

First tergite moderately slender, 3.9 times as long as posteriorly broad, round in cross-section, smooth, with vestige of glymma near middle; postpetiole, in dorsal view, 1.8 times as broad as petiole. Second tergite 1.43 times as long as anteriorly broad. Thyridial depression deep, almost 3.0 times as long as broad. Ovipositor short, slender, weakly upcurved, without dorsal subapical depression and teeth; sheath 1.1 times as long as first tergite and 1.15 times as long as hind tibia.

Head and mesosoma black. Palpi, mandible (teeth yellow-brown, their margins slightly reddish) and lower 0.3 of clypeus yellow-brown. Scape and pedicel of antenna yellowish; flagellum in basal half ventrally

yellowish, dorsally brownish, darkening towards apex. Fore and mid legs brownish yellow, coxae brownish. Hind leg predominantly brown with trochanters and apex of femur narrowly brownish yellow. Tegula dark brown. Pterostigma brown. Metasoma, including first tergite, predominantly dark brown.

*Male* unknown.

*Distribution*. Brunei.

*Etymology*. From the Latin "*brunneus*" (brown) because of its brown hind legs.

### ***Diaparsis (Diaparsis) convexa***

Khalaim, 2005

*Material*. Vietnam, Ha Son Binh Prov., Da Bac, Tuly, forest, bamboo; 22 Oct. 1990; coll. S.A. Belokobylskij; 1 female (ZIN).

*Distribution*. Russia (Primorskiy Terr.), Vietnam. **First record from Vietnam.**

*Variability*. The specimen from Vietnam differs from material from Primorskiy Terr. of Russia by the yellow coxae.

### ***Diaparsis (Diaparsis) crenulator sp. nov.*** (Figs 31–33)

*Holotype*. Female; Brunei, Bk. Retak, 1600 m; Sept. 1979; coll. I.D. Gauld (BMNH).

*Comparison*. Differs from other species of the genus through the combination of a sharp, crenulate foveate groove (Fig. 32), slender flagellum with 16 segments, and the shape of the ovipositor (Fig. 33).

*Description*. Female (holotype). Body length 3.7 mm. Fore wing length 2.7 mm.

Head very strongly and almost linearly narrowed behind eyes in dorsal view (Fig. 31); temple 0.35 times as long as eye width. Inner eye orbits, in frontal view, distinctly divergent dorsally. Mandible slender with upper tooth much longer than lower tooth. Clypeus smooth, with fine and sparse punctures in upper half. Malar space 0.9 times as long as basal width of mandible. Flagellum of antenna thin, filiform, with 16 segments; subbasal and middle flagellomeres 1.6–1.8, subapical flagellomeres 1.4 times as long as broad. Face and frons finely granulate and

finely (mostly indistinctly) punctate. Vertex dull, very finely punctate. Temple polished. Occipital carina mediodorsally narrowly interrupted (Fig. 31).

Notaulus with short weak crest distant from lateral margin of mesoscutum. Mesoscutum granulate and finely (partly indistinctly) punctate. Foveate groove on anterior half of mesopleuron, subvertical, deep, moderately broad, very sharp and strongly crenulate (Fig. 32). Mesopleuron finely and rather densely punctate, almost smooth between punctures. Metapleuron granulate, indistinctly punctate. Propodeum with all carinae distinct. Basal keel 0.4 times as long as apical area. Dorsolateral area finely granulate and finely punctate. Propodeal spiracle round, distance between spiracle and pleural carina equal to two diameters of spiracle. Apical area rounded anteriorly, slightly impressed along midline, granulate, indistinctly punctate anteriorly and with fine transverse wrinkles posteriorly. Apical longitudinal carinae complete, reaching transverse carina.

Fore wing with second recurrent vein postfurcal. Intercubitus thin, as long as abscissa of cubitus between intercubitus and second recurrent vein. First abscissa of radius 1.43 times as long as width of pterostigma. Metacarp almost reaching apex of fore wing. Postnervulus intercepted distinctly below middle.

Legs slender. Hind femur slightly clavate, 4.3 times as long as broad, and 0.94 times as long as tibia. Hind spurs almost straight. Claws slender, not pectinate.

First tergite slender, 4.6 times as long as posteriorly broad, round in cross-section, entirely smooth, weakly and rather gradually broadened towards apex, without glymma. Second tergite 1.8 times as long as anteriorly broad. Thyridial depression 4.0 times as long as broad. Ovipositor thin, weakly upcurved, with shallow dorsal subapical depression, rounded tooth before this depression and three fine teeth ventrally (Fig. 33); sheath 1.67 times as long as first tergite and 2.1 times as long as hind tibia.

Head black. Mesosoma reddish brown to dark reddish brown, mesoscutum black. Palpi, mandible (teeth reddish), scape and pedicel of antenna and tegula yellow. Flagellum yellowish basally to brown apically. Legs bright yellow, trochanters whitish. Pterostigma brown, yellow-marked basally and apically. Metasoma with first tergite yellowish brown, following tergites predominantly yellow with anterior brownish marks dorsally.

*Male* unknown.

*Distribution*. Brunei.

*Etymology*. Named after the sharp, crenulate foveate groove.

***Diaparsis (Diaparsis) dediticia* sp. nov.**  
(Fig. 30)

*Holotype*. *Female*; Vietnam, Vinh Phu Prov., Tam Dao, 1000 m, forest; 12 Nov. 1990; coll. S.A. Belokobylskij (ZIN).

*Paratypes*. Vietnam. Ha Son Binh Prov., Mai Chou, forest; 2 Nov. 1990; coll. S.A. Belokobylskij; 1 female (ZIN). Hanoi Prov., 70 km NW Ba Vi, 400 m, forest; 22 Nov. 1990; coll. E. Nartshuk; 1 female (ZIN). Brunei, Labi, mixed dipterocarp forest, 200 m; Aug.–Sept. 1979; coll. I.D. Gauld; 1 female (BMNH).

*Comparison*. May easily be distinguished from other species of the genus by the head concave behind the eyes, the short temple, and the occipital carina dorsally entirely absent (Fig. 30).

*Description*. *Female* (holotype). Body length 3.5 mm. Fore wing length 2.58 mm.

Head concave behind eyes in dorsal view (Fig. 30); temple short, 0.33 times as long as eye width. Mandible slender, upper tooth much longer than lower tooth. Clypeus wide, lenticular, slightly convex, smooth, with fine punctures in upper half. Malar space almost as long as basal width of mandible. Flagellum of antenna slender, weakly narrowed towards apex, with 16–17 segments (17 segments in holotype); all flagellomeres, except basal and apical ones, about twice as long as broad. Face and frons finely granulate, very finely and densely punctate. Vertex finely granulate, without

distinct punctures. Temple polished. Occipital carina dorsally entirely absent (Fig. 30).

Notaulus absent. Mesoscutum finely granulate, finely and densely punctate. Foveate groove on anterior part of mesopleuron, strongly oblique, broad and crenulate. Mesopleuron finely granulate, dull, centrally finely punctate. Propodeum with basal keel weak or indistinct, 0.44 times as long as apical area. Dorsolateral area finely granulate and very finely (indistinctly) punctate. Propodeal spiracle small, round, distance between spiracle and pleural carina equal to about 2.5 diameters of spiracle. Apical area granulate, anteriorly rounded. Apical longitudinal carinae complete, reaching transverse carina.

Fore wing with second recurrent vein postfurcal. Intercubitus short, abscissa of cubitus between intercubitus and second recurrent vein longer. First abscissa of radius 1.15 times as long as width of pterostigma. Metacarp almost reaching apex of fore wing. Postnervulus intercepted distinctly below middle.

Legs very slender. Hind femur slightly longer than tibia. Hind spurs thin, almost straight. Claws slender, not pectinate.

First tergite very slender, 5.7 times as long as posteriorly broad, round in cross-section, entirely smooth, without glymma. Second tergite 2.4 times as long as anteriorly broad. Thyridial depression shallow and long. Ovipositor thin, very weakly up-curved, with very shallow dorsal subapical depression; sheath somewhat longer than first tergite and almost 1.7 times as long as hind tibia.

Head, mesosoma, pterostigma and first tergite brown (head dorsally more or less dark brown). Palpi, mandible (teeth reddish), entire clypeus, tegula, scape and pedicel of antenna yellow. Flagellum yellowish basally to brown apically. Metasoma behind first tergite yellow to dark brown.

*Male* unknown.

*Distribution.* Vietnam, Brunei.

*Etymology.* From the Latin "*dediticius*" (surrendered).

***Diaparsis (Diaparsis) hilaris* sp. nov.**  
(Figs 34–36)

*Holotype.* Female; **Vietnam**, Hoa Binh Prov., Mai Chau Distr., Hang Kia, 20°44'N, 104°53'E, 1300 m; 25–26 Apr. 2002; coll. S.A. Belokobylskij (ZIN).

*Comparison.* Differs from other species of the genus through the combination of a thin ovipositor (Fig. 36), short malar space and the structure of the propodeum (Fig. 35).

*Description. Female* (holotype). Body length 4.1 mm. Fore wing length 3.05 mm.

Head strongly and very roundly narrowed behind eyes in dorsal view; temple 0.4 times as long as eye width. Upper tooth of mandible much longer than lower tooth. Clypeus, in profile, weakly convex in upper part and stronger convex in lower third, smooth, very finely punctate in upper 0.4. Malar space almost half as long as basal width of mandible. Flagellum of antenna filiform, with 19 segments; all flagellomeres, excepting basal and apical ones, about 1.5 times as long as broad (Fig. 34). Face and frons finely punctate, finely granulate, dull. Temple smooth and shining.

Notaulus with short strong U-shape crest somewhat distant from anterolateral margin of mesoscutum. Mesoscutum finely and densely punctate, finely granulate, dull. Foveate groove on anterior 0.75 of mesopleuron, strongly upcurved anteriorly, deep and wide, with strong transverse wrinkles. Mesopleuron dull peripherally to smooth and shining centrally, mostly finely and shallowly punctate, with central area above foveate groove virtually impunctate. Metapleuron very finely punctate, dull, with weak wrinkles in its lower part. Propodeum with basal keel moderately strong, 0.4 times as long as apical area. Dorsolateral area very shallowly punctate, very finely granulate to almost smooth, dull. Propodeal spiracle rather big, round; distance between spiracle and pleural carina subequal to two diameters of spiracle. Apical area widely rounded anteriorly (Fig. 35), dull, punctato-granulate anteriorly to punctatorugulose posteriorly (wrinkles more or less

transverse), impressed along midline. Apical longitudinal carinae distinct posteriorly, weak and vanishing anteriorly, not reaching transverse carina (Fig. 35).

Fore wing with second recurrent vein postfurcal, unpigmented in anterior half. Intercubitus somewhat shorter than abscissa of cubitus between intercubitus and second recurrent vein. First abscissa of radius 1.25 times as long as width of pterostigma. Metacarp reaching apex of fore wing. Postnervulus intercepted distinctly below middle.

Legs slender. Hind femur 5.0 times as long as broad, and 0.9 times as long as tibia. Hind spurs thin and almost straight. Claws very slender, not pectinate.

First tergite slender, 4.0 times as long as posteriorly broad, round in cross-section, entirely smooth, with very shallow glymma near middle. Second tergite 1.6 times as long as anteriorly broad. Thyridial depression deep, almost 3.0 times as long as wide. Ovipositor conspicuously thin, approximately half as high as middle flagellomere broad, weakly upcurved, with shallow dorsal subapical depression (Fig. 36); sheath somewhat longer than first tergite and hind tibia.

Body black. Palpi and legs yellowish (mid coxa slightly and hind coxa extensively brownish). Mandible (teeth black) and lower 0.4 of clypeus yellow-brown. Scape and pedicel of antenna yellow-brown, flagellum yellowish brown basally, gradually darkening towards apex. Tegula brownish. Pterostigma brown. Metasoma with first tergite black anteriorly to blackish with brown hue posteriorly, following tergites yellow ventrally to brown and dark brown dorsally.

*Male* unknown.

*Distribution.* Vietnam.

*Etymology.* From the Latin "*hilaris*" (cheerful, merry, gay).

***Diaparsis (Diaparsis) isfiriae***

Khalaim, 2008

(Figs 42–44)

*Distribution.* South China (Yunnan).

***Diaparsis (Diaparsis) karnatakana***  
**sp. nov.**

*Holotype.* Female; **India**, 25 km W Mudigere, Karnataka; 28 Oct. – 3 Nov. 1979; coll. J.S. Noyes, B.M. 1979-518 (BMNH).

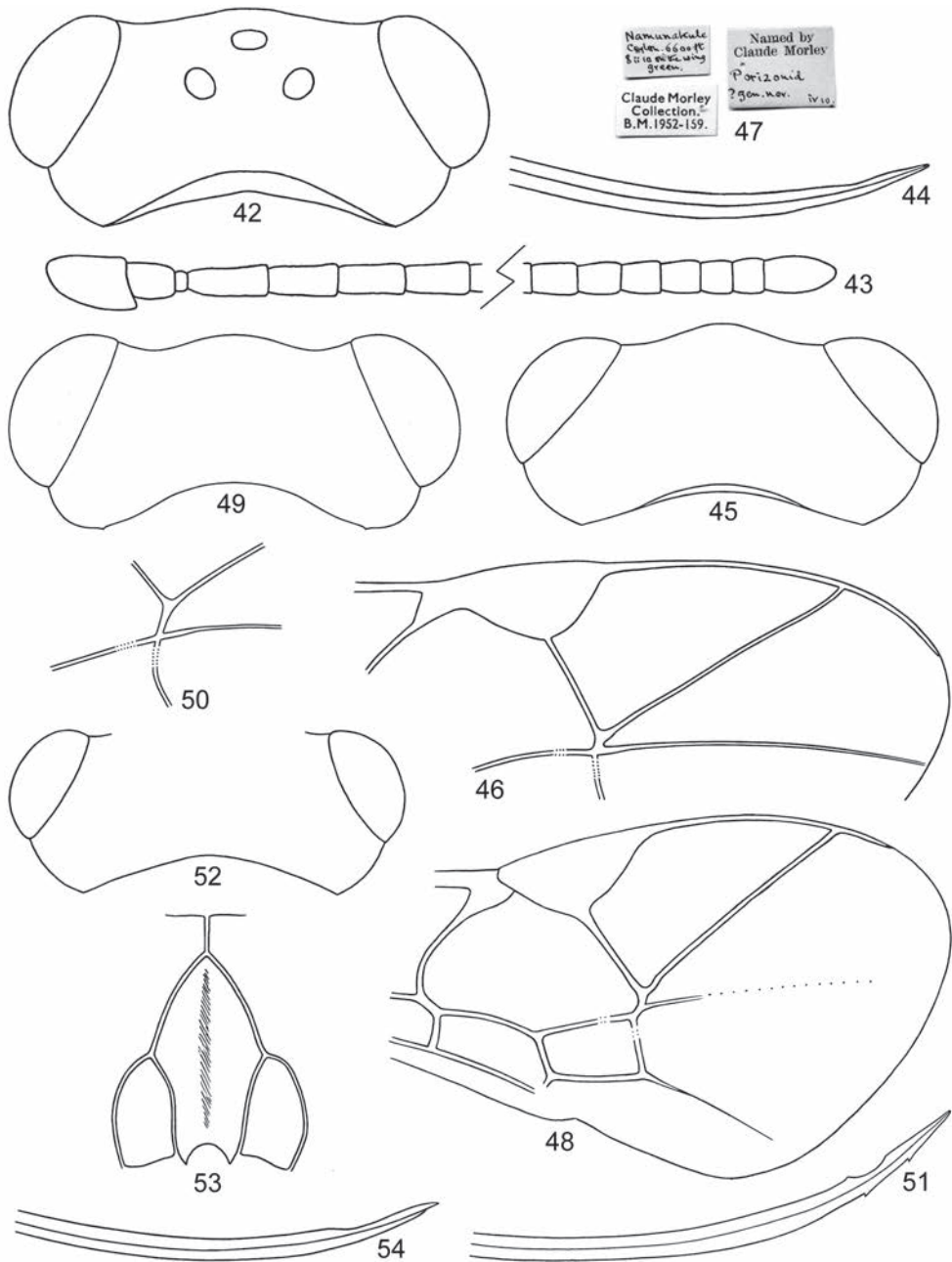
*Comparison.* Very similar to *D. labiensis* sp. nov. and *D. nikami* Kanhekar, 1988. Differs from *D. labiensis* sp. nov. by the evenly curved ovipositor, not sinuate apically, and from *D. nikami* by the interstitial second recurrent vein, the shorter malar space, and the longer metacarp, basal keel of propodeum, second tergite and ovipositor sheath. It also differs from *D. hyperae* Kusigemati, 1980 from Japan by the densely punctate propodeum and the head less narrowed behind the eyes in dorsal view.

*Description. Female* (holotype). Body length almost 4.0 mm. Fore wing length 2.75 mm.

Head roundly narrowed behind eyes in dorsal view; temple almost half as long as eye width. Mandible slender, weakly narrowed towards apex, with upper tooth much longer than lower tooth. Clypeus lenticular, in profile almost flat, smooth in lower half, dull and with fine punctures in upper half. Malar space 0.75 times as long as basal width of mandible. Flagellum of antenna very weakly narrowed towards apex, with 21 segments; all flagellomeres, excepting basal and apical ones, 1.3–1.5 times as long as broad. Face and frons finely and densely punctate over finely granulate, dull surface. Vertex finely granulate, dull, indistinctly punctate. Temple smooth, very finely and sparsely punctate. Occipital carina complete.

Notaulus weak, with few very fine wrinkles. Mesoscutum finely and densely punctate over finely granulate, dull surface. Foveate groove on anterior half of mesopleuron, strongly oblique, rather broad and deep, with transverse rugulae reaching anteriorly to prepectal carina. Mesopleuron distinctly and densely punctate, smooth or very shallowly granulate between punctures. Propodeum with distinct basal keel which is 0.48 times as long as apical area.





**Figs 42–54.** *Diaparsis*, females. 42–44, *D. isfiriae* (holotype); 45–47, *D. morleyi* sp. nov. (holotype); 48, *D. nikami* [from Kanhekar (1988), with changes]; 49–51, *D. propodeator* sp. nov. (49, 50 – paratype; 51 – holotype); 52–54, *D. pulchra* sp. nov. (holotype). Head, dorsal view (42, 45, 49, 52); base and apex of antenna (43); fore wing (46, 48); fragment of venation of fore wing (50); propodeum, dorsoposterior view (53); apex of ovipositor (44, 51, 54); labels (47).

Dorsolateral area with rather big and dense punctures (distance between punctures mostly shorter than diameter of puncture), finely granulate between punctures. Propodeal spiracle small and round, distance between spiracle and pleural carina equal to 2.5 diameters of spiracle. Apical area broadly pointed anteriorly, almost flat, with dense shallow punctures and fine transverse wrinkles posteriorly. Apical longitudinal carinae strong, reaching transverse carina.

Fore wing with second recurrent vein interstitial. First abscissa of radius 1.45 times as long as width of pterostigma. Metacarp ending somewhat short apex of fore wing. Postnervulus intercepted below middle.

Legs slender. Hind femur 0.94 times as long as tibia. Hind spurs slightly curved apically. Claws slender, not pectinate.

First tergite very slender, 4.8 times as long as posteriorly broad, round in cross-section, entirely smooth, without glymma. Second tergite 2.2 times as long as anteriorly broad. Thyridial depression 3.0 times as long as broad. Ovipositor weakly upcurved, with shallow dorsal subapical depression; sheath 2.17 times as long as first tergite and 2.5 times as long as hind tibia.

Head and mesosoma black. Palpi, mandible (teeth reddish), lower half of clypeus, scape and pedicel of antenna and legs yellow. Flagellum yellowish basally, darkening towards apex. Tegula brownish. Pterostigma brown, basally and distally pale. Mesosoma with first tergite dark brown, tergites 2 and following yellow ventrally, entirely brown dorsally and partly laterally.

*Male* unknown.

*Distribution.* India (Karnataka).

*Etymology.* Named after the type-locality, Karnataka.

***Diaparsis (Diaparsis) labiensis* sp. nov.**  
(Figs 37, 38)

*Holotype.* Female; **Brunei**, Labi, 200 m, mixed dipterocarp forest; Aug. – Sept. 1979; coll. I.D. Gauld (BMNH).

*Comparison.* Structurally most similar to *D. karnatakana* sp. nov. but differs from

this species by having an ovipositor which is sinuate apically (Fig. 38). Resembles *D. bolikhamsaica* sp. nov. and *D. niphadoctona*, which also possess apically sinuate ovipositors, but differs from these species by the interstitial second recurrent vein. Also differs from *D. bolikhamsaica* sp. nov. by the extensively punctate head and mesosoma, and the head more weakly narrowed behind the eyes in dorsal view (Fig. 37), and from *D. niphadoctona* by the sculpture of the propodeum and the clypeus lacking a ventral tooth.

*Description. Female* (holotype). Body length 4.4 mm. Fore wing length 3.0 mm.

Head roundly narrowed behind eyes in dorsal view (Fig. 37); temple 0.54 times as long as eye width. Mandible weakly narrowed, with upper tooth somewhat longer than lower tooth. Clypeus, in profile, weakly convex, smooth, with fine punctures in upper half. Malar space about 0.9 times as long as basal width of mandible. Flagellum of antenna somewhat narrowed towards apex, with 23 segments; all flagellomeres, excepting basal and apical ones, about 1.2–1.3 times as long as broad. Face and frons finely and densely punctate, finely granulate. Vertex weakly polished, dull. Temple smooth, finely and sparsely punctate. Occipital carina complete.

Notaulus weak, with fine wrinkles. Mesoscutum finely and densely punctate over finely granulate, dull surface. Foveate groove on anterior half of mesopleuron, strongly oblique, moderately broad, deep and crenulate. Mesopleuron very densely and evenly punctate, finely granulate and dull between punctures. Propodeum with all carinae strong. Basal keel half as long as apical area. Dorsolateral area very densely and evenly punctate, finely granulate and dull between punctures. Propodeal spiracle round, distance between spiracle and pleural carina equal to about 2.5 diameters of spiracle. Apical area slightly pointed anteriorly (dorsal sections of transverse carina very weakly arcuate). Apical longitudinal carinae reaching transverse carina.

Fore wing with second recurrent vein interstitial. Intercubitus short and thick. First abscissa of radius almost 1.3 times as long as width of pterostigma. Metacarp ending somewhat short apex of fore wing. Postnerve intercepted distinctly below middle.

Legs slender. Hind femur 3.9 times as long as broad, and 0.76 times as long as tibia. Hind spurs almost straight. Claws slender, not pectinate.

First tergite slender, 4.14 times as long as posteriorly broad, round in cross-section, entirely smooth, without glymma. Second tergite 1.82 times as long as anteriorly broad. Thyridial depression twice as long as broad. Ovipositor long, rather strongly up-curved, slightly sinuate apically (Fig. 38); sheath 2.6 times as long as first tergite and 2.45 times as long as hind tibia.

Head black. Mesosoma and first tergite black with reddish brown hue. Palpi yellow. Mandible (teeth reddish black), lower 0.4 of clypeus, scape and pedicel of antenna, tegula and legs brownish yellow. Flagellum black, basal flagellomeres yellowish ventrally. Pterostigma brown with pale spots basally and apically. Metasoma behind first tergite yellow ventrally to brown dorsally, tergite 2 dorsally with posterior transverse yellow band, following tergites dorsally with posterior subtriangular yellow mark.

*Male* unknown.

*Distribution.* Brunei.

*Etymology.* This species is named after the type-locality, Labi.

### ***Diaparsis (Diaparsis) mandibulator***

**sp. nov.**

(Fig. 39)

*Holotype.* Female; Laos, Bolikhamsai [Bolikhamsai] Prov., Ban Nape env., 18°20'N, 105°08'E, 350 m; 7–16 May 2004; coll. Jendek & Šauša (OLML).

*Comparison.* The new species is closely related to *D. convexa* but differs from this and all other species of the genus by the strongly twisted mandible (lower tooth turned under the upper tooth), so that the

mandible appears unidentate in frontal view. This species is also characterised by the head weakly rounded behind the eyes (Fig. 39).

*Description. Female* (holotype). Body length 5.3 mm. Fore wing length 3.3 mm.

Head weakly and roundly narrowed behind eyes in dorsal view (Fig. 39); temple 0.46 times as long as eye width. Mandible broad basally, strongly narrowed towards apex, distinctly twisted (lower tooth turned under the upper tooth), so that mandible appears unidentate in frontal view; upper tooth much longer than lower tooth. Clypeus rather narrow, almost flat, poorly separated from face, smooth, with fine punctures in upper half. Malar space subequal to basal width of mandible. Flagellum of antenna filiform, with 19 segments; flagellomeres 3 and 4 twice, subapical flagellomeres about 1.5 times as long as broad. Face and frons finely granulate, finely and very densely punctate. Vertex finely granulate, indistinctly punctate. Temple smooth and shining, with very fine but distinct punctures. Occipital carina complete.

Notaulus rather weak, with short wrinkle. Mesoscutum very finely granulate (partly almost smooth), finely and very densely punctate. Foveate groove moderately deep, situated slightly before center of mesopleuron, oblique, with transverse wrinkles. Mesopleuron very densely punctate (distance between punctures shorter than diameter of puncture), smooth between punctures. Metapleuron finely granulate and finely punctate. Propodeum with short basal keel which is 0.26 times as long as apical area. Propodeal spiracle round, distance between spiracle and pleural carina equal to 1.5 diameters of spiracle. Apical area longitudinally impressed along midline, pointed anteriorly, finely granulate or uneven anteriorly, with fine transverse wrinkles in posterior half. Apical longitudinal carinae complete, reaching transverse carina, with dorsal sections slightly arcuate (as in Fig. 53).

Fore wing with second recurrent vein postfurcal. Intercubitus longer than abscissa of cubitus between intercubitus and sec-

ond recurrent vein. First abscissa of radius 1.1 times as long as width of pterostigma. Metacarp almost reaching apex of fore wing. Postnervulus intercepted in lower 0.4.

Legs slender. Hind femur 0.86 times as long as tibia. Hind spurs almost straight. Claws not pectinate.

First tergite almost 4.0 times as long as posteriorly broad, slightly trapeziform in cross-section, entirely smooth, with rather deep elongate glymma somewhat behind middle. Second tergite 1.75 times as long as anteriorly broad. Thyridial depression deep, about 2.5 times as long as broad. Ovipositor weakly upcurved, with shallow dorsal subapical depression; sheath 1.85 times as long as first tergite and twice as long as hind tibia.

Head, mesosoma and first tergite black. Palpi and basal half of mandible (teeth blackish) yellowish. Clypeus in its lower 0.7 reddish brown, in upper part blackish. Scape and pedicel of antenna yellowish, flagellum pale brown basally, darkening towards apex. Legs brownish yellow, hind coxa slightly darkened basally, and hind femur brownish centrally. Tegula and pterostigma dark brown. Metasoma with tergites 2 and following dark brown with yellow posterior bands.

*Male* unknown.

*Distribution.* Laos.

*Etymology.* Named after the strongly twisted mandibles.

### *Diaparsis (Diaparsis) minquanensis*

Sheng & Wu, 1999

*Remarks.* *Diaparsis minquanensis* is not included in the key because some important diagnostic characters used in the key are not mentioned in the original description of this species (Sheng et al., 1999). Male paratype of *D. minquanensis* runs to the couplet 18 of the key but does not correspond to any species in couplets 18 and 19 (G. Broad, pers. comm.). It has longer temple than *D. absista* sp. nov., and flagellum yellowish brown over the basal third and greater number of flagellomeres than *D. viela* sp. nov. and *D. vietnamica* sp. nov. (these two species have en-

tirely black flagellum). The temple shape of *D. minquanensis* is more like *D. viela* sp. nov.

*Diaparsis minquanensis* can be distinguished from other species of the genus by the combination of the following characters of the female: flagellum with 23 elongate segments, malar space somewhat longer than basal width of mandible, foveate groove oblique, wide, deep and transversely wrinkled, mesopleuron punctate, propodeum indistinctly punctate, first tergite slender with well developed glymma near its midline (Sheng et al., 1999: Fig. 1), ovipositor robust with rather strong dorsal subapical depression (Sheng et al., 1999: Fig. 2), and sheath about as long as first tergite. Additional characters from the original description are given below.

*Description* (Sheng et al., 1999). *Male.* Body length 3.8–4.0 mm. Fore wing length 3.0–3.2 mm. Flagellum with 24–26 segments, all flagellomeres elongate. Malar space somewhat longer than basal width of mandible. Face evenly punctate, with small median tubercle dorsally. Frons evenly punctate. Vertex finely punctate. Temple polished, finely punctate. Occipital carina complete. Notaulus indistinct. Mesoscutum finely and densely punctate. Foveate groove oblique, wide and deep, with some transverse wrinkles. Mesopleuron punctate. Propodeum with indistinct punctures, with “median longitudinal carinae complete”. Propodeal spiracle small and round. Intercubitus shorter than abscissa of cubitus between intercubitus and second recurrent vein. Tarsal claws not pectinate. Metasoma strongly compressed, all tergites smooth. First tergite very slender, about 3.5 times as long as wide (probably more than 3.5 times as long as wide according to figure 2 in the original description; length of postpetiole about 1.6 times as long as wide), abruptly widened near the level of spiracles. Glymma distinct, slightly elongate, situated near the center of tergite. Thyridial depression elongate. Body predominantly black. Legs brown, coxae and hind femur black. Metasoma black, second tergite with brown hind

margin, posterior tergites laterally somewhat reddish brown.

*Female.* Body length 4.0 mm. Fore wing length 3.6 mm. Flagellum 23-segmented. Ovipositor weakly upcurved, with rather strong dorsal subapical depression, sheath about as long as first tergite. Base of antenna dark brown. Metasoma laterally and posteriorly reddish brown. Other characters as in male.

*Distribution.* East China (Henan).

*Biology.* Reared from *Lema decempunctata* Gebler, 1830 (Chrysomelidae) (Sheng et al., 1999).

### *Diaparsis (Diaparsis) minuta* sp. nov.

*Holotype.* Female; Vietnam, Ha Son Binh Prov., Da Bac, Tuly, forest; 23 Oct. 1990; coll. S.A. Belokobylskij (ZIN).

*Paratypes.* Vietnam. Vinh Phu Prov., Tam Dao, 1000 m, forest; 16 Nov. 1990; coll. S.A. Belokobylskij; 1 female (BMNH). Hoa Binh Prov., Mai Chau Distr., Hang Kia, 20°44'N, 104°53'E, 1300 m; 25–26 Apr. 2002; coll. S.A. Belokobylskij, 1 male (BMNH). Province, district and collector as above, Pa Co, 20°45'N, 104°54'E, 1100–1200 m; 19–21 Apr. 2002; 1 male (ZIN). Province and collector as above, Yen Thuy Distr., Hang Tram, 20°23'N, 105°36'E, 50 m; 29 Apr. 2002; 1 male (ZIN).

*Comparison.* Structurally similar to the East Palaearctic *D. minutissima* Khalaim, 2005, but differs from this species by the fore wing with second recurrent vein postfurcal.

*Description. Female* (holotype). Small species. Body length 2.6 mm. Fore wing length 1.93 mm.

Head strongly and almost linearly narrowed behind eyes in dorsal view; temple 0.47 times as long as eye width. Inner orbits of eyes, in frontal view, slightly divergent dorsally. Mandible slender, with upper tooth longer than lower tooth. Clypeus impunctate, smooth in lower part and granulate in upper part. Malar space subequal to basal width of mandible. Flagellum thin, filiform, very slender basally, with 16 segments; flagellomere 2 almost 3.0, middle flagellomeres twice, and subapical flagello-

mere 1.4 times as long as broad. Face, frons and vertex granulate, impunctate. Temple smooth. Occipital carina complete.

Mesosoma almost entirely granulate, impunctate (mesopleuron sometimes with fine punctures centrally). Notaulus with short but distinct carina. Foveate groove on anterior part of mesopleuron, weak, strongly oblique, with fine transverse wrinkles. Propodeum with basal keel weak and sometimes indistinct, about 0.57 times as long as apical area. Propodeal spiracle small, round, distance between spiracle and pleural carina 4.0–5.0 diameters of spiracle. Apical area flat, rounded anteriorly. Apical longitudinal carinae weak and usually not reaching transverse carina.

Fore wing with second recurrent vein postfurcal. Intercubitus moderately thick and subequal to abscissa of cubitus between intercubitus and second recurrent vein (sometimes somewhat shorter or longer). First abscissa of radius 1.2 times as long as width of pterostigma. Metacarp almost reaching apex of fore wing. Postnervulus intercepted somewhat below middle.

Legs slender. Hind femur 0.82 times as long as tibia. Claws slender, not pectinate.

First tergite slender, 4.0 times as long as posteriorly broad, round in cross-section, smooth, with small glymma somewhat behind middle. Second tergite almost twice as long as anteriorly broad. Thyridial depression about 3.0 times as long as broad. Ovipositor slender, weakly upcurved, with very shallow dorsal subapical depression; sheath 1.3 times as long as first tergite and hind tibia.

Body black (sometimes with brownish hue). Palpi, mandible (teeth reddish) and lower 0.4 of clypeus brownish yellow. Scape and pedicel of antenna yellow; flagellum brownish yellow basally to brown apically. Legs brownish yellow, all coxae brown to dark brown. Tegula brownish. Pterostigma brown. Metasoma behind first tergite dark brown.

*Male.* Temple slightly shorter, about 0.44 times as long as eye width. Inner eye

orbits, in frontal view, rather strongly divergent dorsally. Malar space very short, almost 0.3 times as long as basal width of mandible. Flagellum less slender, with 16–17 segments.

*Distribution.* Vietnam.

*Etymology.* From the Latin “*minutus*” (small) because of its small size.

***Diaparsis (Diaparsis) monstrosa* sp. nov.**  
(Figs 40, 41)

*Holotype.* Female; **Brunei**, Kuala, Belalong FSC, 4°34'N, 115°7'E, Malaise trap; May 1991; coll. N. Mawdsley, BMNH(E) 1991-173 (BMNH).

*Paratype.* Same data as holotype; 1 female (ZIN).

*Comparison.* This is the only species of *Diaparsis* with a unidentate mandible and a large head, strongly swollen behind the eyes (Fig. 40). It is also characterised by the extremely long clypeus (Fig. 41).

*Description. Female* (holotype). Body length 4.85 mm. Fore wing length 3.0 mm.

Head strongly expanded behind eyes in dorsal view (Fig. 40); temple 0.48 times as long as eye width. Mandible thick basally, strongly narrowed towards apex, with only blunt tooth (unidentate). Clypeus flat, 1.25 times as broad as long (Fig. 41), with ventrolateral margins somewhat impressed, distinctly and sparsely punctate, smooth between punctures. Malar space 1.1 times as long as basal width of mandible. Flagellum of antenna slightly narrowed towards apex, with 23–24 segments; all flagellomeres, excepting basal and apical ones, about 1.3 times as long as broad. Face, frons and vertex very densely punctate, finely granulate, dull. Temple with sparse distinct punctures, smooth and shining between punctures. Occipital carina strong laterally, weak or obsolete dorsally.

Mesosoma distinctly and densely punctate over finely granulate, dull surface (mesopleuron almost smooth centrally above foveate groove, and apical area of propodeum with transverse rugulae in its posterior half). Notaulus with short and moderately

strong rugula. Foveate groove strongly oblique, very deep, crenulate. Propodeum with all carinae well developed. Basal keel 0.44 times as long as apical area. Propodeal spiracle round, distance between spiracle and pleural carina equal to about 1.5 diameters of spiracle. Apical area rounded anteriorly. Apical longitudinal carinae reaching transverse carina.

Fore wing with second recurrent vein distinctly postfurcal. Intercubitus slightly longer than abscissa of cubitus between intercubitus and second recurrent vein. First abscissa of radius somewhat longer than width of pterostigma. Metacarp reaching apex of fore wing. Postnervulus intercepted distinctly below middle.

Legs slender. Hind spurs curved apically. Claws slender, not pectinate.

First tergite very slender, 5.25 times as long as posteriorly broad, round in cross-section, entirely smooth, without glymma or with very small indistinct glymma. Second tergite 2.2 times as long as anteriorly broad. Thyridial depression more than 3.0 times as long as broad. Ovipositor evenly upcurved, with very shallow dorsal subapical depression, without teeth; sheath almost 1.5 times as long as first tergite and 1.8 times as long as hind tibia.

Head, mesosoma and first tergite black. Palpi, scape and pedicel of antenna brownish yellow. Mandible (teeth black) and lower part of clypeus dark brown. Flagellum blackish, basally brownish yellow. Legs brownish. Tegula brown. Pterostigma dark brown. Metasoma behind first tergite brown to dark brown, tergites with hind margins more or less yellowish.

*Male* unknown.

*Distribution.* Brunei.

*Etymology.* Named after its large, disproportionate head with unidentate mandibles and long clypeus.

***Diaparsis (Diaparsis) morleyi* sp. nov.**  
(Figs 45–47)

*Holotype.* Female; **Sri Lanka**, “Namunakule Ceylon. 6600 ft 8 ii 10 [8 Feb. 1910] on the wing

green.", "Named by Claude Morley Porizonid ?gen. nov. iv 10 [Apr. 1910]", "Claude Morley Collection B.M. 1952-159." (Fig. 47) (BMNH).

*Comparison.* Differs from other species of the genus by the combination of the fore wing with an interstitial second recurrent vein, the head roundly narrowed behind the eyes (Fig. 45), weak sternaulus, pointed anteriorly apical area of the propodeum, and dark body.

*Description. Female* (holotype). Body length about 5.7 mm. Fore wing length 4.06 mm.

Head roundly narrowed behind eyes in dorsal view (Fig. 45); temple 0.54 times as long as eye width. Mandible moderately slender, upper tooth much longer than lower tooth. Clypeus poorly separated from face, smooth, finely and rather sparsely punctate in upper 0.7. Malar space 0.84 times as long as basal width of mandible. Flagellum of antenna very weakly narrowed towards apex with 25 segments; subbasal flagellomeres 1.7, and subapical flagellomeres 1.3 times as long as broad. Face and frons finely granulate, finely and densely punctate. Vertex granulate, impunctate. Temple almost smooth, finely and sparsely punctate. Occipital carina complete.

Notaulus absent. Mesoscutum finely granulate, finely and densely punctate. Foveate groove in center of mesopleuron, small, weak and shallow, with fine transverse wrinkles. Mesopleuron distinctly and moderately densely punctate, smooth between punctures. Metapleuron granulate, partly indistinctly punctate. Propodeum with weak carinae. Basal keel 0.3 times as long as apical area. Dorsolateral area rather densely punctate, very shallowly granulate, dull. Propodeal spiracle round, distance between spiracle and pleural carina equal to 3.0 diameters of spiracle. Apical area distinctly pointed anteriorly, uneven, almost flat. Apical longitudinal carinae developed on posterior 0.8, not reaching transverse carina.

Fore wing with second recurrent vein interstitial (Fig. 46). Intercubitus short.

First abscissa of radius 1.35 times as long as width of pterostigma. Metacarp ending somewhat short apex of fore wing. Postnerve intercepted distinctly below middle.

Legs moderately slender. Hind femur slightly clavate, 4.1 times as long as broad, and 0.85 times as long as tibia. Hind spurs weakly curved. Claws strongly curved, not pectinate.

First tergite moderately slender, 3.8 times as long as posteriorly broad, smooth, with petiole round in cross-section; post-petiole, in dorsal view, 2.3 times as broad as petiole. Glymma absent. Second tergite 1.5 times as long as anteriorly broad. Thyridial depression 2.5 times as long as broad. Ovipositor weakly upcurved, with two weak dorsal subapical teeth and depression between these teeth, with few fine teeth ventrally; sheath 2.3 times as long as first tergite and hind tibia.

Head with antenna, mesosoma and first tergite black. Palpi, mandible (teeth reddish) and lower 0.4 of clypeus yellow-brown. Legs brown, all coxae dark brown to blackish, hind femur gradually darkening in apical half, mid tibia and tarsus moderately and hind tibia strongly infuscate dorsally, hind tarsus blackish. Tegula dark brown to blackish. Pterostigma dark brown ventrally, blackish with brownish hue dorsally. Mesosoma behind first tergite predominantly dark brown to blackish, tergites 2 and following dorsally with posterior yellow-brown band (this band becoming triangular on posterior tergites), posterior tergites also with yellow-brown marks laterally.

*Male* unknown.

*Distribution.* Sri Lanka.

*Etymology.* Named in honour of the well-known British expert on Ichneumonidae, Mr Claude Morley.

### ***Diaparsis (Diaparsis) multiplicator***

Aubert, 1969

*Remarks.* This is a European species (Horstmann, 1971) with the eastern-most extent of its distribution in Ukraine (Kha-

laim, 2005). A similar species, *D. neoplicator* Khalaim, 2005, was described from the south of the Russian Far East (Khalaim, 2005). Sheng (Sheng et al., 1999) has recorded *D. multiplicator* from Liaoning Province of China but it is quite possible that this record belongs to a new species.

*Diaparsis multiplicator* may be distinguished from other species of *Diaparsis* listed in this paper by the combination of a 24–27-segmented flagellum (22–24-segmented in *D. neoplicator*), the absence of the foveate groove, distinctly punctate (and smooth between punctures) mesoscutum and mesopleuron (mesoscutum finely punctate and finely granulate in *D. neoplicator*), propodeum with the apical area pointed anteriorly, and the ovipositor sheath about 3.0 times as long as the first tergite.

*Distribution.* Europe, ? China (Liaoning).

*Biology.* Reared from *Curculio villosus* F. (Coleoptera: Curculionidae) in Europe (Horstmann, 1981).

***Diaparsis (Diaparsis) nikami***

Kanhekar, 1988

(Fig. 48)

*Remarks.* This is a distinct species of *Diaparsis*, which is well described and illustrated.

*Distribution.* India (Maharashtra).

***Diaparsis (Diaparsis) niphadoctona***

He, 1995

*Material.* Laos, Phongsaly [Phongsali] Prov., Phongsaly [Phôngsali], 21°41'2"N, 102°06'8"E, ~1500 m; 28 May – 20 June 2003; coll. Vit Kubáň; 1 female (OLML).

*Distribution.* North China (Gansu), Laos. **First record from Laos.**

*Biology.* Parasitoid of *Niphades castanea* Chao (Coleoptera: Curculionidae) on Chinese chestnut (He & Li, 1995).

***Diaparsis (Diaparsis) nitidulentis***

Khalaim & Sheng, 2009

*Distribution.* China (Ningxia Hui).

***Diaparsis (Diaparsis) propodeator***  
**sp. nov.**

(Figs 49–51)

*Holotype.* Female; **Brunei**, Labi, mixed dipterocarp forest, 200 m; Aug. – Sept. 1979; coll. I.D. Gauld (BMNH).

*Paratypes.* **Brunei.** Same data as holotype; 1 female (ZIN). Kuala Belalong Field Studies Centre, 4°34'N, 115°7'E, 3500 m, Malaise trap; May 1991; coll. N. Mawdsley, BMNH(E) 1991-173; 2 females (BMNH), 1 female & 1 male (ZIN). Same data as above, but March 1992; 1 female & 1 male (BMNH). **Malaysia.** Sarawak, Gunong Mulu National Park, R.G.S. Expedition 1977-8; coll. J.D. Holloway et al., B.M.1978–206; 1 female (BMNH). Province as above, 4th div. Gn. Mulu, R.G.S. Expedition; Feb. 1978; coll. N.M. Collins; 1 female (BMNH). Same data as above, but Apr. 1978; 1 female (BMNH). Same locality as above; 17 Sept. – 23 Oct. 1977; coll. D. Hollins, BM77-543; 1 female (ZIN). **Indonesia.** Java I., Tjibodas [Cibadak], 5000–7000 ft; Aug. 1913; coll. Koningsberger, Claude Morley Collection, B.M.1952-159, “stood under Porizonidae”; 1 male (BMNH). Sulawesi I., Sulawesi Utara [North Sulewesi], Dumoga-Bone National Park; 25 Feb. 1985; 1 female (BMNH). **Laos,** Phongsaly [Phongsali] Prov., Phongsaly [Phôngsali], 21°41.2'N, 102°06.8'E, ~1500 m; 28 May – 20 June 2003; coll. Vit Kubáň; 1 female (OLML).

*Comparison.* A large species which may easily be distinguished from all other species of the genus by the combination of the irregularly rugulose propodeum, the head strongly rounded behind the eyes (Fig. 49), and the fore wing with second recurrent vein interstitial and intercubitus long (Fig. 50).

*Description.* Female (holotype). Body length 5.9 mm. Fore wing length 4.0 mm.

Head very strongly rounded behind eyes in dorsal view (Fig. 49); temple 0.43 times as long as eye width. Mandible slender, very weakly narrowed towards apex, with upper tooth much longer than lower tooth. Clypeus, in profile, very weakly convex, smooth, distinctly and densely punctate in upper half. Malar space almost half as long as basal width of mandible. Flagellum of antenna narrowed towards apex, with 29–33 segments (30 segments in holotype); sub-basal and mid flagellomeres 1.2–1.4 times



as long as broad, subapical flagellomeres slightly elongate or rarely sub-square. Face and frons densely punctate; face more or less smooth, often dull in upper part; frons dull to almost smooth. Vertex and temple smooth, very finely punctate. Occipital carina complete.

Notaulus as subtriangular irregularly rugulose area. Mesoscutum evenly and very densely punctate, weakly polished between punctures. Foveate groove on anterior 0.6 of mesopleuron, strongly impressed, oblique, crenulate. Mesopleuron finely and mostly indistinctly punctate, more or less smooth between punctures. Propodeum with dorsolateral area irregularly rugulose. Basal keel distinct, 0.65 times as long as apical area. Propodeal spiracle rather big, round; distance between spiracle and pleural carina equal to 1.5–2.0 diameters of spiracle. Apical area broad, rounded anteriorly, almost entirely transversely rugulose. Apical longitudinal carinae well developed, usually reaching transverse carina.

Fore wing with second recurrent vein interstitial or sometimes very weakly post-furcal (Fig. 50). Intercubitus long and thin (Fig. 50). First abscissa of radius 1.35 times as long as width of pterostigma. Metacarp reaching apex of fore wing. Postnervulus intercepted distinctly below middle.

Legs slender. Hind femur narrower in basal part and broader in apical part, 0.79 times as long as hind tibia. Hind spurs weakly curved. Claws slender, not pectinate.

First tergite very long and slender, 5.3 times as long as posteriorly broad, round in cross-section, entirely smooth, without or with indistinct glymma near center. Second tergite 2.2 times as long as anteriorly broad. Thyridial depression about 4.0 times as long as broad. Ovipositor evenly and rather strongly upcurved, with shallow dorsal subapical depression and very fine and sparse teeth ventrally (Fig. 51); sheath about 2.5 times as long as first tergite and 2.7 times as long as hind tibia.

Head and mesosoma black. Palpi and mandible (teeth dark reddish brown or

blackish) yellow. Clypeus yellow in its lower part to brown or dark reddish brown in upper part. Scape and pedicel of antenna yellow; flagellum yellow ventrally, brownish dorsally, gradually darkening towards apex. Legs extensively yellow; hind leg with femur, tibia and tarsus more or less brownish. Tegula and pterostigma brown. First tergite of metasoma brown or dark brown. Metasoma behind first tergite yellow ventrally to yellow-brown or dark brown dorsally, tergites 2 and 3 darker than following tergites, with yellow transverse band posteriorly.

*Male.* Flagellum darker than in female, long and rather strongly narrowed towards apex, with 40–44 segments. Malar space shorter.

*Variability.* This species varies considerably in colour pattern with some specimens conspicuously darker or lighter than the description above.

*Distribution.* Common species. South-eastern Asia: North Laos, Brunei, Malaysia (Sarawak), Indonesia (Java, Sulawesi).

*Etymology.* Named after the irregularly rugulose propodeum.

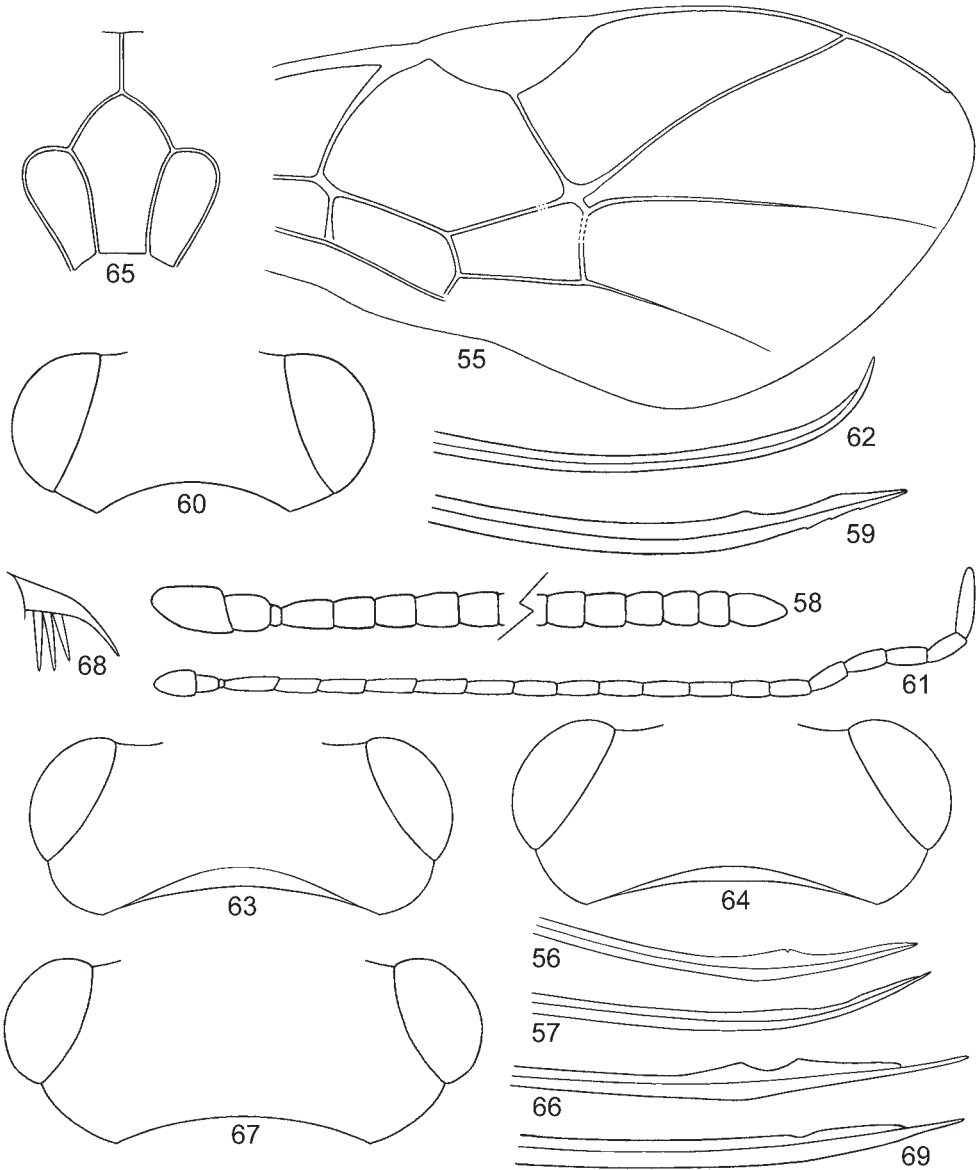
***Diaparsis (Diaparsis) pulchra* sp. nov.**  
(Figs 52–55)

*Holotype.* Female; **South Korea**, Gyeongsangnam Prov., 30 km NNW Jinju; 29 June 2002; coll. S.A. Belokobylskij (ZIN).

*Paratypes.* Same data as holotype; 2 females (ZIN). Same locality and collector, forest; 10 July 2002; 2 females (BMNH). Same locality and collector, 800 m, forest; 16 June 2002; 1 male (ZIN).

*Comparison.* *Diaparsis pulchra* sp. nov. may easily be distinguished from the other East-Asian species of *Diaparsis* by the combination of the weak foveate groove, propodeum with the apical area longitudinally impressed along the midline and pointed anteriorly (Fig. 53), fore wing with intercubitus short and thick (Fig. 55), and the ovipositor without a distinct dorsal subapical depression (Fig. 54).

*Description. Female* (holotype). Body length 4.0 mm. Fore wing length 3.5 mm.



**Figs 55–69.** *Diaparsis*, females. **55**, *D. pulchra* sp. nov. (paratype); **56**, **57**, *D. rara*; **58**, **59**, *D. saeva*; **60–62**, *D. sarawakiensis* sp. nov. (holotype); **63**, *D. viela* sp. nov. (holotype); **64–66**, *D. vietnamica* sp. nov. (holotype); **67–69**, *D. improvisator*. Head, dorsal view (60, 63, 64, 67); base and apex of antenna, lateral view (58); antenna, lateral view (61); fore wing (55); claw of hind leg (68); propodeum, dorsoposterior view (65); apex of ovipositor (56, 57, 59, 62, 66, 69).

Head strongly and roundly narrowed behind eyes in dorsal view (Fig. 52); temple 0.6 times as long as eye width. Upper tooth of mandible much longer than lower tooth. Clypeus, in profile, weakly convex,

smooth, with fine punctures in upper 0.6. Malar space 0.9 times as long as basal width of mandible. Flagellum of antenna filiform, with 17–18 segments; all flagellomeres, excepting basal and apical ones, 1.2–1.6 times

as long as broad. Face and frons finely and densely punctate (sometimes indistinctly) over finely granulate dull surface. Vertex indistinctly punctate, dull. Temple mostly very finely punctate, smooth and shining centrally.

Notaulus irregularly rugulose. Mesoscutum finely and very densely punctate, finely granulate, dull. Foveate groove on anterior part of mesopleuron, oblique, weak and rather shallow, transversely wrinkled. Mesopleuron entirely distinctly punctate (without impunctate area centrally), smooth and shining between punctures. Metapleuron usually indistinctly punctate, dull, moderately pubescent. Propodeum with basal keel very short, about 0.2 times as long as apical area (Fig. 53). Dorsolateral area finely granulate, anteriorly sometimes almost smooth, finely (often indistinctly) punctate. Propodeal spiracle round, distance between spiracle and pleural carina equal to 1.5–2.0 diameters of spiracle. Apical area distinctly impressed along midline, pointed anteriorly (Fig. 53), uneven, sometimes very finely punctate, with fine transverse wrinkles posteriorly. Dorsal sections of transverse carina slightly arcuate. Apical longitudinal carinae complete and well developed to incomplete, vanishing anteriorly and not reaching transverse carina.

Fore wing with second recurrent vein postfurcal. Intercubitus short and thick (Fig. 55). First abscissa of radius 1.4 times as long as width of pterostigma. Metacarp almost reaching apex of fore wing. Postnerve intercepted distinctly below middle.

Legs moderately slender. Hind femur 4.1 times as long as broad, and 0.89 times as long as tibia. Hind spurs weakly curved apically. Claws slender.

First tergite slender, 3.75 times as long as posteriorly broad, round in transverse section, entirely smooth, with small glymma near or behind middle, or without glymma. Second tergite 1.2 times as long as anteriorly broad. Thyridial depression well developed, very slightly elongate. Ovipositor distinctly upcurved, without teeth, with

dorsal subapical depression very shallow, almost indiscernible (Fig. 54); sheath 1.75 times as long as first tergite (1.65–1.8 in paratypes).

Body black; mesosoma and first tergite sometimes with brownish hue. Palpi, mandible (teeth black), lower 0.4 of clypeus, and scape and pedicel of antenna yellow-brown. Flagellum brownish yellow basally. Legs mostly brownish yellow to yellow-brown; all coxae (especially hind coxa) extensively brownish basally; hind leg with femur more or less entirely brownish, with tibia usually infuscate apically. Tegula brownish. Pterostigma brown. Metasoma behind first tergite yellow ventrally to dark brown and blackish dorsally.

*Male.* Flagellum with 19–20 segments (number of flagellomeres differing on right and left antennae on only available male specimen). Foveate groove weaker. Thyridial depression twice as long as wide. Clypeus with lower edge yellow.

*Distribution.* South Korea.

*Etymology.* From the Latin “*pulchrum*” (beautiful, handsome, fine, fair).

### *Diaparsis (Diaparsis) rara*

Horstmann, 1971

(Figs 56, 57)

*Distribution.* Europe, Caucasus, Kazakhstan, Russian South Siberia and Far East, China (Ningxia Hui, 1820 m).

### *Diaparsis (Diaparsis) saeva*

Khalaim, 2008

(Figs 58, 59)

*Distribution.* South China (Yunnan).

### *Diaparsis (Diaparsis) sarawakiensis*

**sp. nov.**

(Figs 60–62)

*Holotype.* Female; **Malaysia**, Borneo, Sarawak, Gn. Mulu, RGS Exp.; 17 Sept. – 23 Oct. 1977; coll. D. Hollis, BM77-543 (BMNH).

*Paratypes.* Same data as holotype; 6 females (BMNH), 2 females (ZIN). Malay peninsula, Pa-

hang, Cameron Highlands, Tanah Rata, Malaise trap; March – Apr. 2001; coll. Ong Pek Khoo; 1 female (BMNH).

**Comparison.** *Diaparsis sarawakiensis* sp. nov. differs from other species of the genus by the thick ovipositor, strongly upcurved at the apex (Fig. 62). It also may be distinguished by the combination of the impunctate clypeus, very slender flagellum (Fig. 61), strong crenulate foveate groove, and long basal keel of propodeum.

**Description.** *Female* (holotype). Body length almost 3.0 mm. Fore wing length 2.15 mm.

Head very strongly and almost linearly narrowed behind eyes in dorsal view (Fig. 60); temple very short, 0.42 times as long as eye width. Mandible slender, upper tooth much longer than lower tooth. Clypeus rather small, impunctate, smooth ventrally to finely granulate and dull dorsally. Malar space as long as basal width of mandible. Flagellum of antenna very slender, filiform, with 17–18 segments (Fig. 61); middle flagellomeres 2.5, subapical flagellomeres about 1.6 times as long as broad. Head impunctate, finely granulate, dull; temple almost smooth. Occipital carina dorsally more or less complete, but sometimes obsolescent.

Mesosoma impunctate, finely granulate, dull. Notaulus with rugula. Foveate groove on anterior 0.7 of mesopleuron, deep, crenulate, strongly oblique. Basal keel of propodeum 0.74 times as long as apical area. Propodeal spiracle small, distance between spiracle and pleural carina equal to 3.0–4.0 diameters of spiracle. Apical area anteriorly broad and more or less rounded. Apical longitudinal carinae usually reaching transverse carina.

Fore wing with second recurrent vein distinctly postfurcal. Intercubitus very short. First abscissa of radius subequal to width of pterostigma. Metacarp reaching apex of fore wing. Postnervulus intercepted distinctly below middle. Brachial cell posterodistally broadly open (second abscissa of postnervulus virtually absent).

Legs slender. Hind femur 0.87 times as

long as tibia. Hind spurs almost straight. Claws very slender, without teeth.

First tergite slender, entirely smooth, round in cross-section, usually without glymma (female from Pahang with rather large and deep glymma, and with furrow in front of glymma). Second tergite twice as long as anteriorly broad. Thyridial depression deep, more than 3.0 times as long as broad. Ovipositor thick, rather strongly compressed laterally, strongly upcurved at apex, without teeth (Fig. 62); sheath about as long as first tergite and somewhat longer than hind tibia.

Head, mesosoma and first tergite dark brown. Palpi, mandible (teeth reddish), scape and pedicel of antenna, tegula and legs yellow. Lower half of clypeus brownish yellow. Flagellum brownish yellow basally to dark brown apically. Pterostigma pale brown. Metasoma behind first tergite yellow ventrally to brown and dark brown dorsally.

*Male* unknown.

**Distribution.** Malaysia (Pahang, Sarawak).

**Etymology.** This species is named after the type-locality, Sarawak, where a large part of the material was collected.

***Diaparsis (Diaparsis) viela* sp. nov.** (Fig. 63)

**Holotype.** Female; Vietnam, Vinh Phu Prov., Tam Dao, 1000 m, forest; 13 Nov. 1990; coll. S.A. Belokobylskij (ZIN).

**Paratype.** Laos, Bolikhamxai [Bolikhamxai] Prov., Ban Nape env., 18°20'N, 105°08'E, 350 m; 7–16 May 2004; coll. Jendek & Šauša; 1 female (OLML).

**Comparison.** Differs from *D. vietnamica* sp. nov. by the head more weakly and roundly narrowed behind the eyes in dorsal view (Fig. 63), the longer temple and malar space, the occipital carina mediodorsally obsolescent, and by the shape of the ovipositor.

**Description.** *Female* (holotype). Body length 5.26 mm. Fore wing length 3.8 mm.

Head roundly narrowed behind eyes in dorsal view (Fig. 63); temple 0.56 times as long as eye width. Upper tooth of mandible

much longer than lower tooth. Clypeus, in profile, very weakly convex, smooth, finely and evenly punctate in its upper 0.6. Malar space as long as basal width of mandible. Flagellum of antenna narrowed towards apex, with 19 segments; flagellomeres, excepting the basal and the apical ones, 1.3–1.5 times as long as broad. Face and frons finely granulate, dull, very densely punctate. Vertex smooth, very finely punctate. Temple smooth and shining, very finely punctate to impunctate. Occipital carina mediodorsally obsolescent.

Notaulus weak, with one or few wrinkles. Mesoscutum very densely punctate, very finely granulate, dull. Foveate groove on anterior 0.6 of mesopleuron, oblique, broad, with transverse wrinkles. Mesopleuron distinctly and rather densely punctate, smooth and shining between punctures. Metapleuron rather densely pubescent. Propodeum with strong carinae. Basal keel 0.48 times as long as apical area. Dorsolateral area distinctly punctate, smooth and shining between punctures. Propodeal spiracle big and round, distance between spiracle and pleural carina equal to 2.0–2.5 diameters of spiracle. Apical area slightly pointed anteriorly (dorsal sections of transverse carina weakly arcuate, as in Fig. 65), indistinctly punctate to slightly uneven, almost flat. Apical longitudinal carinae strong and complete, reaching transverse carina.

Fore wing with second recurrent vein postfurcal, with short bulla on anterior part. First abscissa of radius 1.4 times as long as width of pterostigma. Intercubitus moderately thick, longer than abscissa of cubitus between intercubitus and second recurrent vein. Metacarp almost reaching apex of fore wing. Postnervulus intercepted distinctly below middle.

Legs slender. Hind femur slightly clavate, 4.7 times as long as broad, and 0.82 times as long as tibia. Hind spurs almost straight. Claws not pectinate.

First tergite very slender, 5.0 times as long as posteriorly broad, round in cross-section, entirely smooth. Glymma absent.

Second tergite 2.5 times as long as anteriorly broad. Thyridial depression very long, more than 4.0 as long as wide. Ovipositor weakly upcurved, with shallow dorsal subapical depression; sheath 1.77 times as long as first tergite (1.58 times in paratype) and 2.1 times as long as hind tibia (1.74 times in paratype).

Head, flagellum of antenna and mesosoma black. Palpi, mandible (teeth blackish), lower 0.25 of clypeus, scape and pedicel of antenna brownish yellow. Tegula brownish. Pterostigma brown. Legs brownish yellow; all coxae more or less brownish, hind femur brown except for base and apex, and hind tibia with apical fuscous mark on its outer surface. First tergite dark brown. Metasoma behind first tergite predominantly brownish yellow, dorsally dark brown.

*Male* unknown.

*Distribution.* Vietnam, Laos.

*Etymology.* Combination of the initial letters of Vietnam and Laos.

***Diaparsis (Diaparsis) vietnamica***  
**sp. nov.**

(Figs 64–66)

*Holotype.* Female; **Vietnam**, Hoa Binh Prov., Mai Chau Distr., Pa Co, 20°45'N, 104°54'E, 1100–1200 m; 27–28 Apr. 2002; coll. S.A. Belokobylskij (ZIN).

*Paratype.* Same data as holotype; 1 female (ZIN).

*Comparison.* Differs from *D. viela* sp. nov. by the head which is more strongly and less roundly narrowed behind eyes in dorsal view (Fig. 64), the shorter temple and malar space, the occipital carina distinct dorsally, and the shape of the ovipositor (Fig. 66).

*Description.* Female (holotype). Body length 4.4 mm. Fore wing length 3.2 mm.

Head moderately rounded behind eyes in dorsal view (Fig. 64); temple 0.46 times as long as eye width. Upper tooth of mandible much longer than lower tooth. Clypeus, in profile, weakly convex, smooth, finely and evenly punctate almost whole surface excepting lower 0.2. Malar space 0.7 times as long as basal width of mandible. Flagel-

lum of antenna narrowed towards apex, with 16–18 segments (18 segments in holotype); flagellomeres, excepting basal and apical ones, 1.3–1.5 times as long as broad. Face and frons finely granulate, dull, very densely punctate. Vertex smooth, very finely and rather densely punctate. Temple smooth and shining, very finely punctate to impunctate. Occipital carina complete.

Notaulus weak, with short crest somewhat distant from anterolateral margin of mesoscutum. Mesoscutum very densely punctate, finely granulate, dull. Foveate groove on anterior half of mesopleuron, subvertical, strong and wide, transversely wrinkled. Mesopleuron distinctly and rather densely punctate, smooth and shining between punctures. Metapleuron with weak wrinkles, densely pubescent. Propodeum short, all carinae strong. Basal keel 0.4 times as long as apical area (Fig. 65). Dorsolateral area distinctly punctate, smooth and shining (holotype) or dull (paratype) between punctures. Propodeal spiracle big and round, distance between spiracle and pleural carina subequal to 1.5 diameters of spiracle. Apical area anteriorly slightly pointed (dorsal sections of transverse carina arcuate) (Fig. 65), slightly impressed along midline, dull, punctate anteriorly and transversely wrinkled posteriorly. Apical longitudinal carinae strong and complete, reaching transverse carina.

Fore wing with second recurrent vein postfurcal, with short bulla anteriorly. First abscissa of radius 1.6 times as long as width of pterostigma. Intercubitus moderately thick, slightly longer than abscissa of cubitus between intercubitus and second recurrent vein. Metacarp reaching apex of fore wing. Postnervulus intercepted distinctly below middle.

Legs slender. Hind femur slightly clavate, 4.8 times as long as broad, and 0.9 times as long as tibia. Hind spurs thin and almost straight. Claws not pectinate.

First tergite very slender, 5.2 times as long as posteriorly broad, round in cross-section, entirely smooth. Glymma absent.

Second tergite twice as long as anteriorly broad. Thyridial depression twice as long as wide. Ovipositor weakly upcurved, with two distinct rounded dorsal subapical teeth (Fig. 66); sheath about 1.6 times as long as first tergite and almost twice as long as hind tibia.

Head, mesosoma and first tergite black. Palpi, mandible (teeth blackish), scape and pedicel of antenna brownish yellow. Flagellum black with basal flagellomere very narrowly brownish yellow basally. Clypeus in lower 0.25 yellowish brown. Tegula brownish. Pterostigma brown. Legs brownish yellow; hind coxa slightly brownish basally, hind femur brown in apical half, and hind tibia with apical fuscous mark on its outer surface. Metasoma behind first tergite brownish yellow to dark brown.

*Male* unknown.

*Distribution.* Vietnam.

*Etymology.* This species is named after the type-locality, Vietnam.

### ***Diaparsis (Diaparsis) zispina* sp. nov.**

*Holotype.* Female; Vietnam, Hoa Binh Prov., Mai Chau Distr., Hang Kia, 20°44'N, 104°53'E, 1300 m; 25–26 Apr. 2002; coll. S.A. Belokobylskij (ZIN).

*Paratype.* Same data as holotype; 1 female (ZIN).

*Comparison.* The new species is closely related to *D. nitidulentis* but has a stronger foveate groove, shorter temple, and longer second tergite.

*Description.* Female. Body length 4.43 mm. Fore wing length 3.1 mm.

Head strongly and slightly roundly narrowed behind eyes in dorsal view; temple almost half as long as eye width. Upper tooth of mandible much longer than lower tooth. Clypeus smooth, distinctly punctate in upper half. Malar space about 0.9 times as long as basal width of mandible. Flagellum of antenna weakly narrowed towards apex, with 22–23 segments (23 segments in holotype); subbasal flagellomeres about 1.8, middle flagellomeres about 1.4, and subapical flagellomeres 1.2 times as long as broad (flagellum of paratype less slender basally).

Face and frons granulate, finely and mostly indistinctly punctate. Vertex dull. Temple smooth, finely punctate. Occipital carina complete.

Notaulus with short and strong U-shaped crest distant from lateral margin of mesoscutum. Mesoscutum finely and densely punctate, finely granulate, dull. Foveate groove on anterior part of mesopleuron, oblique, slightly S-curved, deep and crenulate. Mesopleuron distinctly punctate, smooth between punctures. Propodeum with all carinae distinct. Basal keel almost 0.4 times as long as apical area. Dorsolateral area weakly polished, finely punctate. Propodeal spiracle round, distance between spiracle and pleural carina equal to 1.5–2.0 diameters of spiracle. Apical area anteriorly rounded, almost flat, finely granulate. Apical longitudinal carinae reaching transverse carina.

Fore wing with second recurrent vein postfurcal. Intercubitus moderately thick, as long as abscissa of cubitus between intercubitus and second recurrent vein or slightly shorter. First abscissa of radius 1.5 times as long as width of pterostigma. Metacarp almost reaching apex of fore wing. Postnervulus intercepted distinctly below middle.

Legs slender. Hind femur 4.8 times as long as broad, and 0.86 times as long as tibia. Hind spurs thin, almost straight. Claws not pectinate.

First tergite slender, 4.3 times as long as posteriorly broad, round in cross-section, entirely smooth, without distinct glymma. Second tergite 1.8 times as long as anteriorly broad. Thyridial depression deep, about 2.5 times as long as broad. Ovipositor up-curved, with dorsal subapical depression; sheath 1.43 times as long as first tergite and 1.47 times as long as hind tibia.

Body black. Palpi, mandible (teeth blackish) and lower 0.25 of clypeus brownish yellow. Scape, pedicel and base of flagellum brownish. Legs brownish yellow; hind leg with coxa brown, femur slightly brownish, tibia apically and tarsus infuscate. Tegula

yellow-brown. Pterostigma brown. Metasoma behind first tergite brownish yellow ventrally to dark brown and blackish dorsally.

*Male* unknown.

*Distribution.* Vietnam.

*Etymology.* After the Zoological Institute RAS, St. Petersburg, Russia.

### ***Diaparsis (Pectinoparsis) improvisator***

Khalaim, 2005

(Figs 67–69)

*Distribution.* Russia (Primorskiy Terr.), South Korea, Japan (Yamagata).

Genus ***Phradis*** Foerster, 1869

Medium sized, predominantly Holarctic genus with 37 species in the Palaearctic region (Khalaim, 2007b; Khalaim et al., 2009), one described (Khalaim, 2002b) and about five undescribed (Townes, 1971) species in the Nearctic region, two species in South Africa (Khalaim, 2007a), and five undescribed species in Australia (Gauld, 1984). *Phradis gibbus* (Holmgren, 1860) was recorded from North China by Chao (1976), and one unidentified male was found in material from Ningxia Hui Autonomous region of China (Khalaim & Sheng, 2009).

Some species of *Phradis* are common parasitoids of sap beetle larvae (Nitidulidae: *Meligethes* spp.) on rape in Europe (Horstmann, 1971).

### ***Phradis gibbus*** (Holmgren, 1860)

*Distribution.* Europe, south of Russian Far East, China (Shanxi; Chao, 1976).

### ***Phradis* sp.**

*Distribution.* China (Ningxia; Khalaim & Sheng, 2009).

Genus ***Probles*** Foerster, 1869

Moderately large genus with the majority of species in the Holarctic region. Forty

three species have been described from the Palearctic Region, predominantly from Europe (Horstmann, 1971, 1981; Khalaim, 2003, 2007b), and only one species is known from the Nearctic region. Undescribed species are known from Mexico, Central America, Afrotropics (Khalaim, pers. data) and Australia (Gauld, 1984). Townes (1971) mentioned a worldwide distribution of this genus.

Five species of the subgenera *Euporizon* and *Microdiaparsis* Horstmann, 1971 occur in China, East India and Vietnam, including one new species and one new combination. Also one unidentified male of the subgenus *Rugodiaparsis* Horstmann, 1971 was found in Ningxia Hui Autonomous Region of China (Khalaim & Sheng, 2009). Six undescribed species of *Euporizon* are recorded from South Korea and Vietnam; they will be published in a forthcoming paper.

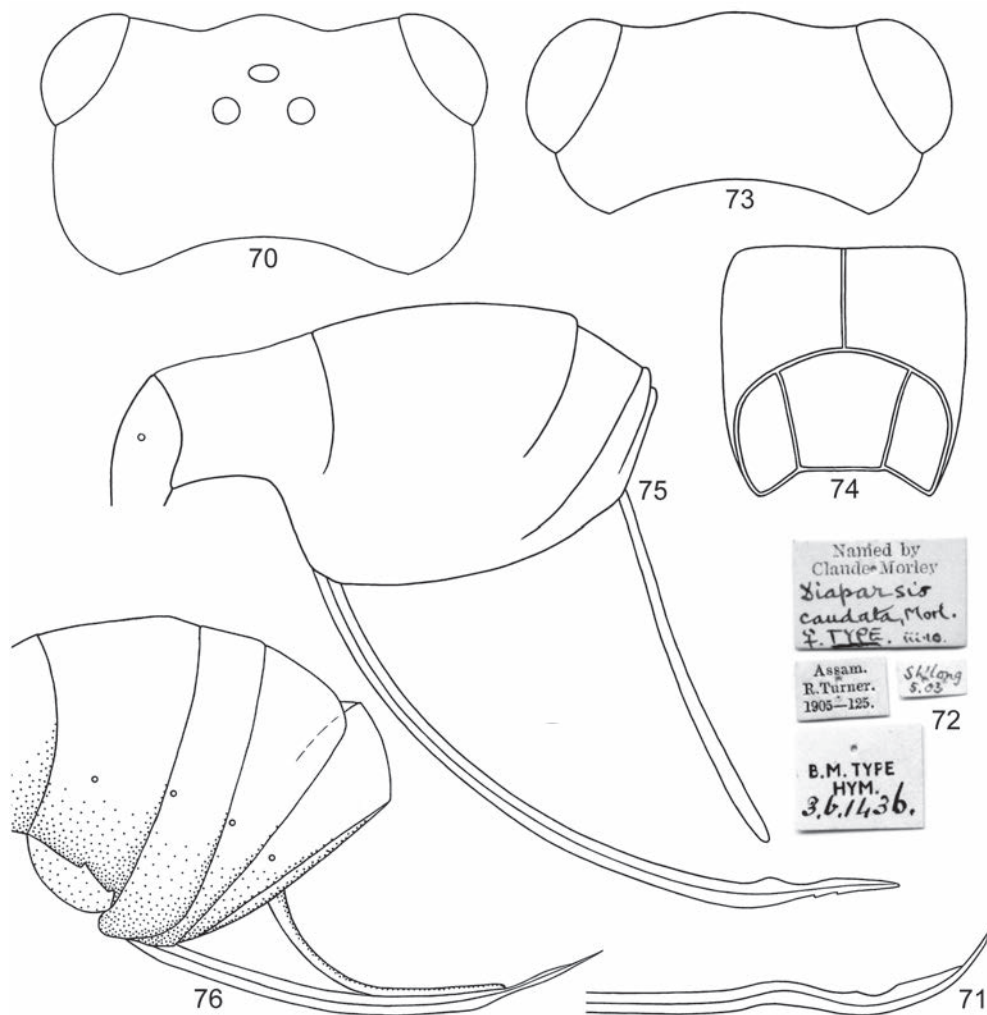
In Europe species of *Probles* have been reared from the beetle families Ciidae, Curculionidae, Endomycidae and Melandryidae (Horstmann, 1971, 1981).

**Key to subgenera and species of *Probles***

- 1. Dorsolateral area of propodeum irregularly rugulose. Propodeum with basal keel. Thyridial depression slightly elongate. Ovipositor short, with needle-like tip (Fig. 76), sheath about as long as first tergite . . . . . Subgenus ***Rugodiaparsis***
  - Dorsolateral area of propodeum not rugulose, smooth or granulate, sometimes punctate. Propodeum either with basal keel or basal area. Thyridial depression slightly elongate to very long. Ovipositor without needle-like tip, often much longer . . . . . 2
- 2. Temple, in dorsal view, shorter than eye width (Fig. 73). Ovipositor evenly upcurved, not sinuate apically. [Subgenus ***Euporizon***] . . . . . 3
  - Temple, in dorsal view, at least as long as eye width (Fig. 70). Ovipositor sinuate apically (Fig. 71). [Subgenus ***Microdiaparsis***] . . . . . 5
- 3. Propodeum with basal keel 0.84–1.0 times as long as apical area (Fig. 74); transverse carina very broadly arcuate (Fig. 74). Flagellum of female slightly clavate. Ovipositor strongly upcurved, robust, with dorsal subapical

- depression, tooth before this impression, and fine teeth ventrally (Fig. 75); sheath as long as first tergite or shorter . . . . . ***P. vietnamica* sp. nov.**
- Propodeum with shorter basal keel or basal area; transverse carina not as above. Flagellum filiform. Ovipositor shape varied; sheath often much longer than first tergite . . . . . 4
- 4. Temple, in dorsal view, 0.62 times as long as eye width. Flagellum with 17 segments; all flagellomeres, except basal and apical ones, 1.8–2.0 times as long as broad. Malar space half as long as basal width of mandible. Mesopleuron mostly punctate, with smooth impunctate area above foveate groove. Propodeum dorsally longitudinally wrinkled, with basal part 0.43 times as long as apical area. Thyridial depression slightly elongate. Ovipositor with two rounded subapical teeth dorsally, and one small tooth ventrally, its sheath 0.82 times as long as first tergite. Legs yellow-brown, hind tarsus slightly infusate . . . . . ***P. vulnifica***
  - Other combination of characters . . . . Six undescribed species of the subgenus ***Euporizon***
- 5. Temple, mesopleuron and dorsolateral area of propodeum impunctate, finely granulate, dull. Head rather strongly narrowed behind eyes in dorsal view. Ovipositor sheath 1.5–2.0 times as long as first tergite . . . . . ***P. caudiculata***
  - Temple, mesopleuron and dorsolateral area of propodeum distinctly punctate, smooth and shining between punctures. Head weakly narrowed behind eyes in dorsal view (Fig. 70). Ovipositor sheath much longer . . . . . 6
- 6. Flagellum with shortened segments; mid and subapical flagellomeres transverse. Face, frons and mesoscutum finely granulate, dull between punctures. Foveate groove long and narrow, deep, crenulate. Metacarp reaching 0.7 from distal end of radius to apex of fore wing. Fore and mid legs brownish yellow, hind leg brown. Ovipositor shorter than body . . . . . ***P. caudata*, new combination**
  - Flagellum slenderer, with mid flagellomeres slightly elongate and subapical flagellomeres subsquare. Face, frons and mesoscutum smooth and shining between punctures. Foveate groove situated in centre of mesopleuron, weak and shallow. Metacarp very short, slightly projecting beyond radius. All legs brown. Ovipositor longer than body . . . . . ***P. temulenta***





**Figs 70–76.** *Probles*. 70–72, *P. caudata* (female, holotype); 73–75, *P. vietnamica* sp. nov. (73, 75 – female, holotype; 74 – male, paratype); 76, *P. kunashirica* Khalaim, 2003. Head, dorsal view (70, 73); propodeum, dorsoposterior view (74); apex of metasoma with ovipositor (75, 76); apex of ovipositor (71); labels (72).

***Probles (Euporizon) vietnamica* sp. nov.**  
(Figs 73–75)

*Holotype.* Female; **Vietnam**, Vinh Phu Prov., Tam Dao, 1000 m, forest; 15 Nov. 1990; coll. S.A. Belokobylskij (ZIN).

*Paratypes.* Same data as holotype, but 13–16 Nov. 1990; 2 males (ZIN), 1 male (BMNH).

*Non type material.* **China**, Zhejiang Prov., Anjie Country, Long Wang Shan, forest; 21–22

Sept. 2004; coll. S.A. Belokobylskij; 1 female (ZIN). **Russia**, Primorskiy Terr., Spassk-Dalniy, forest; 25 July 1996; coll. S.A. Belokobylskij; 1 male (ZIN).

*Comparison.* Differs from other species of the genus by the propodeum with a very long basal keel and broadly rounded anteriorly apical area (Fig. 74).

*Description.* *Female* (holotype). Body length 4.0 mm. Fore wing length 3.33 mm.

Head strongly narrowed behind eyes in dorsal view (Fig. 73); temple 0.55 times as long as eye width. Upper tooth of mandible much longer than lower tooth. Clypeus, in profile, almost flat, smooth, with sparse punctures in upper half. Malar space short, half as long as basal width of mandible. Flagellum of antenna clavate, with 26 segments (8 apical flagellomeres distinctly wider than previous segments); flagellomeres 2 and 3 about twice, middle flagellomeres 1.5 times, and subapical flagellomeres about as long as broad. Face and frons finely and densely punctate, finely granulate. Vertex dull and densely punctate medially, and almost smooth and less densely punctate laterally. Temple smooth, finely and moderately densely punctate. Occipital carina complete.

Notaulus weak. Mesoscutum granulate, dull, densely punctate. Foveate groove long, extending from anterior margin of mesopleuron almost to base of mid coxa, strongly upcurved anteriorly, deep and crenulate. Mesopleuron smooth and shining centrally, granulate peripherally, punctate except for area above foveate groove. Metapleuron almost smooth, impunctate. Propodeum with basal keel 0.84 times as long as apical area. Dorsolateral area almost smooth, impunctate. Propodeal spiracle round, adjacent to pleural carina. Apical area very wide, broadly arcuate anteriorly (Fig. 74), uneven, impunctate. Apical longitudinal carinae reaching transverse carina.

Fore wing with second recurrent vein postfurcal. Intercubitus thin, about as long as abscissa of cubitus between intercubitus and second recurrent vein. First abscissa of radius 1.44 times as long as width of pterostigma. Metacarp reaching apex of fore wing. Postnervulus intercepted below middle.

Legs slender. Hind femur 0.86 times as long as tibia. Hind spurs straight. Claws rather large, not pectinate.

First tergite slender, slightly arcuate in its anterior one third (lateral view), round in cross-section, entirely smooth. Glymma situated in apical 0.7 of first tergite, small,

joining ventral part of postpetiole by fine groove. Second tergite 1.5 times as long as anteriorly broad. Thyridial depression about 2.5 times as long as broad. Ovipositor robust, evenly upcurved, with dorsal subapical depression and tooth before this depression, with two small teeth ventrally (Fig. 75); sheath slightly shorter than first tergite and somewhat longer than hind tibia.

Head, mesosoma and first tergite black. Palpi, mandible (teeth black), lower half of clypeus and tegula yellow. Scape and pedicel of antenna yellow; flagellum dark brown basally, darkening towards apex. Legs yellow (hind coxa brown basally). Pterostigma brown. Metasoma behind first tergite laterally yellow-brown, dorsally predominantly brown (second tergite posteriorly with yellowish transverse band).

*Male.* Flagellum with 25–27 segments, slightly narrowed towards apex, apically more slender than in female; subapical flagellomeres distinctly elongate. Malar space shorter. Temple longer.

*Variability.* Specimens from China and Russia have a predominantly granulate and impunctate sculpture of the head and mesosoma, a weaker and shorter foveate groove, and interstitial or slightly postfurcal second recurrent vein. They differ considerably from the specimens from Vietnam and there may possibly be a complex of species.

*Distribution.* Vietnam, ? East China (Zhejiang), ? Russia (Primorskiy Terr.).

*Etymology.* This species is named after the type-locality, Vietnam.

### ***Probles (Euporizon) vulnifica***

Khalaim & Sheng, 2009

*Comparison.* This species resembles the European *P. brevicornis* Horstmann, 1981 in that both species have the temple short, thyridial depression slightly elongate, and the ovipositor sheath distinctly shorter than the first tergite. But *P. vulnifica* may be recognised by the very slender flagellomeres and the longer body (about 4.0 mm in *P. vulnifica* and about 3.0 mm in *P. brevi-*

*cornis*). It also differs from *P. brevicauda* Horstmann, 1981 by the shorter temple and entirely yellow-brown legs.

*Distribution.* China (Ningxia Hui, 1820 m).

***Probles (Microdiaparsis) caudata***  
(Morley, 1913), **new combination**  
(Figs 70–72)

*Holotype.* Female; **India**, “Type C.M.”, “B.M. TYPE HYM 3.G.1436.”, “Named by Claude Morley *Diaparsis caudata*, Morl. female TYPE. iii.[19]10.”, “Assam. R. Turner. 1905–125.”, “Sh’ long 5.03”; according to the original description: “Assam : Shillong, 6000 ft. [1830 m], v.[19]03 (*Rowland Turner*)” (BMNH) (Fig. 72).

*Discussion.* This species was originally described by Morley (1913) as a member of the genus *Diaparsis*. I have examined the holotype of this species, and concluded that this is a typical species of *Probles* because it has the first metasomal segment with glymmae joining by a furrow to the ventral part of the postpetiole, propodeum with the basal area, mesopleuron with a long, well developed foveate groove, and a long thyridial depression. In this genus, it belongs to the subgenus *Microdiaparsis* as it has an apically sinuate ovipositor (Fig. 71) and long temples (Fig. 70). *Probles caudata* is structurally similar to *P. temulenta*, but has shorter flagellomeres of antenna, granulate face, frons and mesoscutum, a deep and long foveate groove, longer metacarp of the fore wing, brownish yellow fore and mid legs, and slightly shorter ovipositor.

*Description. Female* (holotype). Body length 5.7 mm. Fore wing length 4.0 mm.

Head weakly and roundly narrowed behind eyes in dorsal view (Fig. 70); temple 1.25 times as long as eye width. Malar space 0.85 times as long as basal width of mandible. Flagellum of antenna filiform, short and thick, with 27 segments; basal flagellomeres slightly elongate, middle and subapical flagellomeres distinctly transverse. Face and frons finely granulate, dull, densely and distinctly punctate (distance between punctures mostly shorter than diameter of puncture). Vertex and temple distinctly punctate,

smooth and shining between punctures.

Notaulus indistinct. Mesoscutum granulate, dull, densely punctate. Foveate groove narrow and long, deep, with strong but short transverse wrinkles, slightly up-curved anteriorly, extending from anterior margin of mesopleuron to base of mid coxa. Mesopleuron rather coarsely and densely punctate (excepting small impunctate area above foveate groove in anterior half of mesopleuron), smooth and shining between punctures. Metapleuron densely punctate, smooth and shining between punctures. Propodeum with well developed carinae. Basal area very narrow, 0.72 times as long as apical area; basal longitudinal carinae centrally indistinct. Dorsolateral area smooth and shining, densely punctate laterally to almost impunctate dorsally. Propodeal spiracle round, distance between spiracle and pleural carina somewhat shorter than one diameter of spiracle. Apical area uneven. Apical longitudinal carinae strong posteriorly and obsolescent anteriorly.

Fore wing with second recurrent vein postfurcal, unpigmented in anterior 0.4. Intercubitus subequal to abscissa of cubitus between intercubitus and second recurrent vein. First abscissa of radius distinctly longer than width of pterostigma. Metacarp reaching 0.7 from distal end of radius to apex of fore wing. Postnervulus intercepted somewhat below middle. Hind wing with nervellus very slightly reclivous.

Legs slender. Hind femur 4.7 times as long as broad, and 0.86 times as long as tibia. Hind spurs very slightly curved apically. Claws large, not pectinate.

First tergite of metasoma moderately slender, 4.8 times as long as posteriorly broad, almost entirely smooth. Glymma rather large, joining by deep groove to ventral part of postpetiole. Second tergite 2.3 times as long as anteriorly broad. Thyridial depression deep, more than 4.0 times as long as broad. Ovipositor almost as long as body, apically sinuate (Fig. 71).

Head, mesosoma and first tergite black. Scape and pedicel of antenna, lower part of

clypeus and pterostigma brown. Palpi, mandible (except for teeth), tegula, fore and mid legs brownish yellow. Hind leg with coxa blackish, the rest brown. Metasoma behind first tergite brownish yellow.

*Male* unknown.

*Distribution*. East India (Assam).

***Probes (Microdiaparsis) caudiculata***  
Khalaim, 2007

*Distribution*. Europe, Caucasus, Russian Siberia and Far East, Mongolia, China (Ningxia Hui, 1820 m).

***Probes (Microdiaparsis) temulenta***  
Khalaim, 2007

*Distribution*. China (Qunghai: 33°35'N, 96°20'E).

***Probes (Rugodiaparsis) sp.***

One unidentified male of the subgenus *Rugodiaparsis* was found in Ningxia Hui Autonomous Region of China, 1820 m (Khalaim & Sheng, 2009).

Genus ***Sathropterus*** Foerster, 1869

A small genus of two known species, one of which is described below. *Sathropterus pumilus* (Holmgren, 1860) is found almost worldwide. Hosts unknown.

**Key to species of *Sathropterus***

1. Foveate groove shallow, densely granulate or sometimes with fine irregular wrinkles. Propodeum with basal keel about 0.6 times as long as apical area. Metacarp ending far short of fore wing apex. Ovipositor longer than metasoma ..... ***S. pumilus***
- Foveate groove deep, crenulate, extending almost entire length of mesopleuron. Propodeum with basal keel indistinct, 0.8 times as long as apical area. Metacarp reaching apex of fore wing (Fig. 79). Ovipositor extremely short, about as long as apical depth of metasoma (Fig. 81) ..... ***S. secundus sp. nov.***

***Sathropterus pumilus*** (Holmgren, 1860)  
(Fig. 77)

*Material*. **Nepal**, Kathmandu, 1350–1390 m; June – July 1983; coll. M. Allen; 1 female & 1 male (BMNH). Same data as above, but 1310 m; Aug. 1981; 1 male (BMNH). **India**, Karnataka, Mudigere; 26 Oct. – 4 Nov. 1979; coll. J.S. Noyes; 4 females (BMNH).

*Distribution*. Europe, Caucasus, Middle Asia, Russian South Siberia and South of Far East, Mongolia, Nepal, India, South Africa, North and South America, Australia. **First record from India and Nepal.**

***Sathropterus secundus sp. nov.***  
(Figs 78–81)

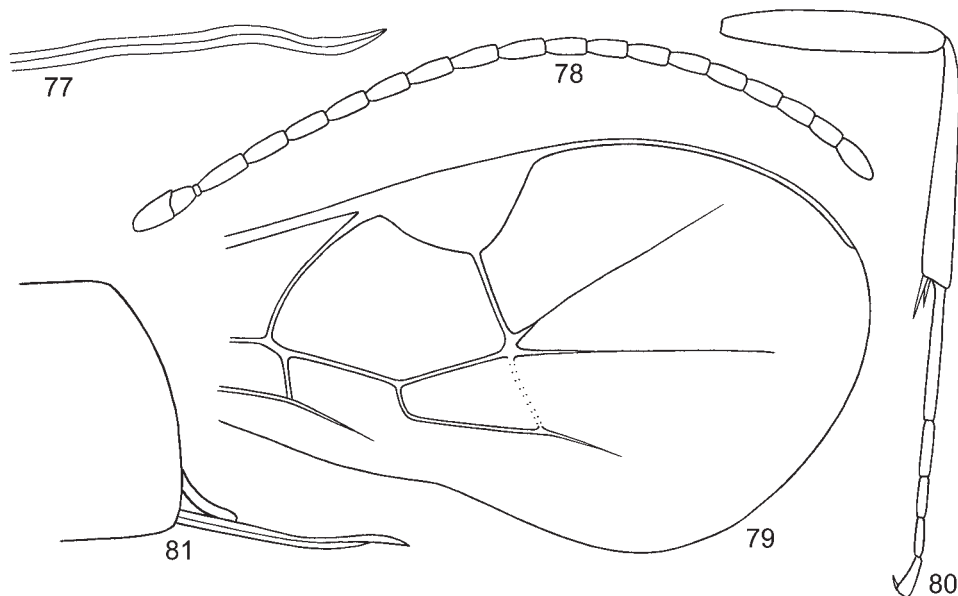
*Holotype*. Female; **Vietnam**, Vinh Phu Prov., Tam Dao, 1000 m, forest; 12 Nov. 1990; coll. S.A. Belokobylskij (ZIN).

*Description*. *Female* (holotype). Body length 2.6 mm. Fore wing length 2.1 mm.

Head strongly narrowed behind eyes in dorsal view, temple 0.56 times as long as eye width. Maxillary palp 4-segmented. Labial palp with 3 segments. Upper tooth of mandible much longer than lower tooth. Clypeus weakly convex, dull, impunctate. Malar space distinctly shorter than basal width of mandible. Flagellum of antenna filiform, slender, with 17 segments (Fig. 78). Head very finely granulate, dull and impunctate; temple smooth.

Mesosoma mostly smooth, impunctate. Notaulus well developed. Foveate groove very deep, crenulate, extending entire length of mesopleuron. Propodeum long. Transverse carina strong, raised laterally. Basal keel indistinct because of short transverse wrinkles. Basal part 0.8 times as long as apical area. Dorsolateral area smooth. Propodeal spiracle round, very small; distance between spiracle and pleural carina equal to 3.0 diameters of spiracle. Apical area coriaceous. Apical longitudinal carinae reaching transverse carina.

Fore wing without second recurrent vein (Fig. 79). First abscissa of radius somewhat longer than width of pterostigma.



**Figs 77–81.** *Sathropterus*, females. 77, *S. pumilus*; 78–81, *S. secundus* sp. nov. (holotype). Antenna (78); fore wing (79); hind leg without coxa and trochanters, lateral view (80); apex of metasoma with ovipositor (81); apex of ovipositor (77).

Metacarp reaching apex of fore wing. Brachial cell widely open posteriorly (Fig. 79).

Legs very slender (Fig. 80). Hind femur almost 5.0 times as long as broad, and 0.85 times as long as tibia. Hind spurs thin and almost straight. Claws not pectinate.

First tergite very slender, 4.8 times as long as posteriorly broad, with strongly striate dorsally and laterally petiole, and smooth postpetiole. Glymma small, isolated, situated far beyond middle of first tergite. Second tergite 2.4 times as long as anteriorly broad. Thyridial depression long, very shallow. Ovipositor very short, not exceeding posterior depth of metasoma, slightly sinuous apically (Fig. 81).

Body black. Palpi and mandible brownish. Base of antenna yellowish. Clypeus and tegula dark brown. Tegula and pterostigma brown. Legs yellow-brown, with all coxae brown to black, with hind femur brownish centrally and yellow-brown basally and apically, with hind tibia and tarsus fuscous apically. Metasoma behind first segment black with brownish hue.

*Male* unknown.

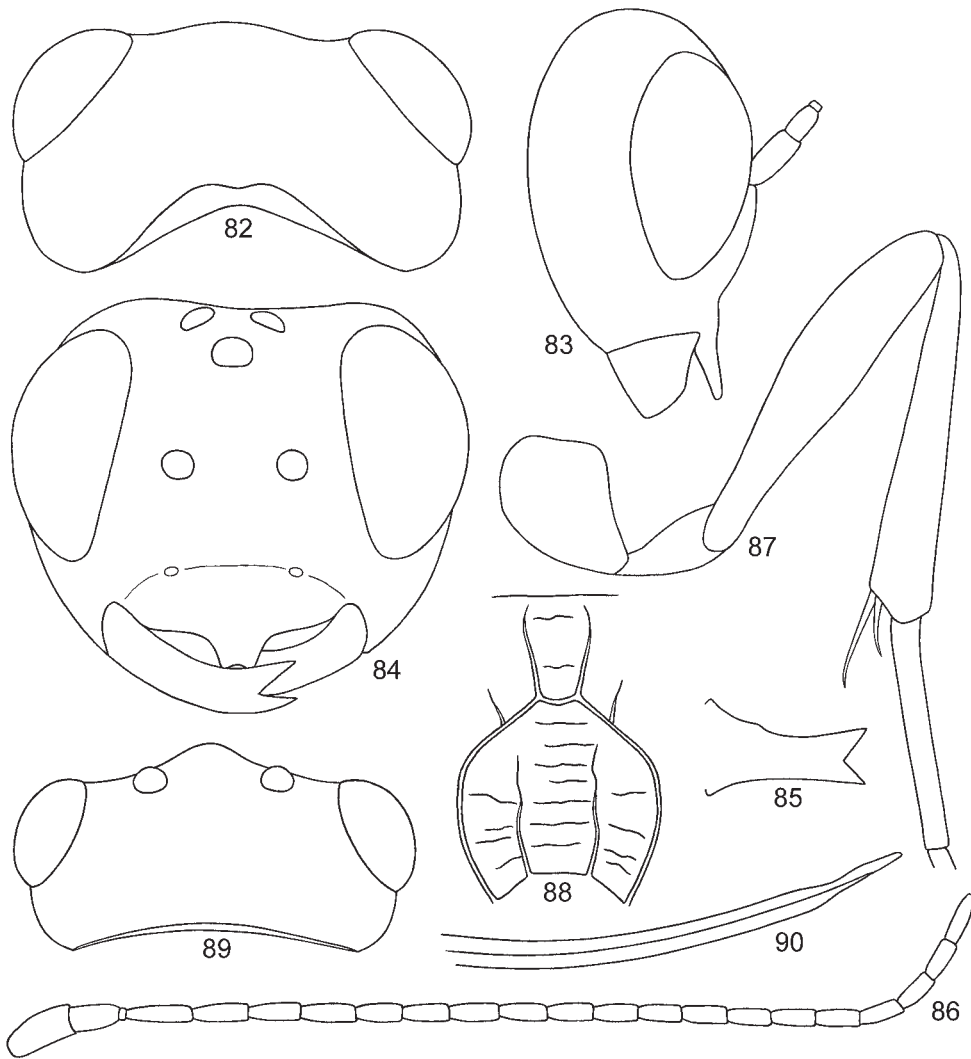
*Distribution.* Vietnam.

*Etymology.* From the Latin “*secundus*” (second), meaning the second species in the genus.

#### Genus *Slonopotamus* gen. nov.

Type species: *Slonopotamus elephantoides* sp. nov.

*Comparison.* *Slonopotamus* gen. nov. possesses a first metasomal segment without or with isolated glymma, not joining the ventral part of the postpetiole, and probably is most closely related to the genus *Diaparsis*. Species of the new genus resemble some large representatives of *Diaparsis* with coarsely rugulose propodeum, and deep and broad foveate groove. But *Slonopotamus* gen. nov. differs from this genus and other tersilochine genera by having a propodeum with extremely strong, raised basal longitudinal carinae, unusually large mandibles, and the male clypeus with a conspicuous proboscidiform prominence ventrally (Fig.



**Figs 82–90.** *Slonopotamus* gen. nov. (holotypes). **82–88,** *S. elephantoides* sp. nov. (male); **89, 90,** *S. indianus* sp. nov. (female). Head, dorsal view (82, 89); head, lateral view (83); head, frontal view (84); mandible (85); antenna (86); hind leg with incomplete tarsus, lateral view (87); propodeum, dorsoposterior view (88); apex of ovipositor (90).

84). The female is also characterised by a rugulose scutellum with long and strongly raised lateral longitudinal carinae.

*Remarks.* One species of this genus is described from male, and the other one from female. In spite of this, I consider that these are two different species because they can be distinguished by many characters which

usually don't depend of sex in other Tersilochinae.

*Etymology.* From Russian *slon* [elephant] and Ancient Greek *πόταμος* [river, stream]. Gender masculine.

*Composition.* Comprises two species described below from Laos and India.

**Key to species of *Slonopotamus* gen. nov.**

1. Head strongly rounded behind eyes in dorsal view (Fig. 82); temple 0.7 times as long as eye width. Fore wing with first abscissa of radius about as long as width of pterostigma. Second recurrent vein distinctly postfurcal, intercubitus equal to or slightly longer than abscissa of cubitus between intercubitus and second recurrent vein. Scutellum with lateral longitudinal carinae weak, extending to about 0.6 of scutellum and then indistinct. Head, in frontal view, with inner eye margins distinctly convergent dorsally (Fig. 84). Flagellum thin, filiform, with 19 segments (Fig. 86). Face and upper part of clypeus granulate and finely punctate, dull. Clypeus with conspicuous probosciform prominence medioventrally (Fig. 84) ..... *S. elephantoides* sp. nov., male [female unknown]
- Head less rounded behind eyes in dorsal view (Fig. 89); temple 0.55 times as long as eye width. Fore wing with first abscissa of radius about 1.5 times as long as width of pterostigma (Fig. 91). Second recurrent vein slightly postfurcal, intercubitus much longer than abscissa of cubitus between intercubitus and second recurrent vein (Fig. 91). Scutellum with longitudinal carinae strongly raised, extending to about 0.8 of scutellum. Head, in frontal view, with inner eye margins subparallel. Flagellum weakly but distinctly narrowed towards apex, with 26 segments. Face and clypeus with distinct and sharp punctures, smooth and shining between punctures. Clypeus with weak prominence medioventrally ..... *S. indianus* sp. nov., female [male unknown]

***Slonopotamus elephantoides* sp. nov.**  
(Figs 82–88)

*Holotype*. Male; Laos, Phongsaly [Phongsali] Prov., Phongsaly, 21°41' to 21°42'N, 102°06' to 102°08'E, ca. 1500 m; May – June 2003; coll. Kubán (OLML).

*Paratype*. Same data as holotype; 1 male (ZIN).

*Description*. *Male* (holotype). Body length 4.25 mm. Fore wing length 3.65 mm.

Head strongly rounded behind eyes in dorsal view (Fig. 82); temple 0.7 times as long as eye width. Head, in frontal view,

with inner eye margins distinctly convergent dorsally (Fig. 84). Mandible large (Fig. 85), weakly narrowed, with upper tooth longer than lower tooth. Clypeus sharply separated from face, with lower edge laterally strongly impressed and with conspicuous probosciform prominence medioventrally (Fig. 84). Clypeus almost entirely finely granulate and dull, finely punctate in its upper part, with medioventral prominence more or less smooth. Malar space 0.72 times as long as basal width of mandible. Face medially weakly protuberant (Fig. 82). Flagellum of antenna filiform, thin, very slender (Fig. 86), with 19 segments; all flagellomeres, except basal and apical ones, about twice as long as broad. Face and frons granulate, densely but mostly indistinctly punctate. Vertex dull. Temple weakly polished. Occipital carina complete.

Notaulus short, rather weak, with several irregular wrinkles. Mesoscutum without coarse crenulate groove along its lateral margin. Mesoscutum granulate and dull, partly indistinctly punctate. Scutellum with longitudinal carinae weak, extending from base to about 0.6 of scutellum and then indistinct. Foveate groove deep, crenulate, very broad anteriorly, narrower posteriorly, reaching from anterior margin of mesopleuron to base of mid coxa, strongly upcurved in anterior half of mesopleuron and almost horizontal in posterior half. Mesopleuron weakly polished, with indistinct punctures centrally. Metapleuron uneven, with wrinkles peripherally. Propodeum with strong, coarse carinae (less strong than in *S. indianus*). Basal area broadened anteriorly (basal longitudinal carinae next to anterior margin indistinct), twice as long as broad, and 0.64 times as long as apical area (Fig. 88). Dorsolateral area irregularly rugulose. Propodeal spiracle round, distance between spiracle and pleural carina subequal to two diameters of spiracle. Apical longitudinal carinae well developed posteriorly and obsolescent anteriorly near transverse carina.

Fore wing with second recurrent vein distinctly postfurcal. Intercubitus some-

what longer than abscissa of cubitus between intercubitus and second recurrent vein in holotype, and equal to this abscissa in paratype. First abscissa of radius subequal to width of pterostigma. Metacarp almost reaching apex of fore wing. Postnerve intercepted below middle.

Legs slender (Fig. 87). Hind femur broadened apically, 0.9 times as long as tibia. Hind spurs long, distinctly curved apically. Claws slender, not pectinate.

First tergite 5.1 times as long as posteriorly broad, round in cross-section, entirely smooth. Glymma absent or indistinct, far behind middle of tergite. Second tergite twice as long as anteriorly broad. Thyridial depression separated from anterior margin of the tergite, about 3.0 times as long as broad (measured from anterior margin of second tergite to posterior end of thyridia).

Head, mesosoma and first tergite black. Palpi yellowish. Mandible dark yellow, teeth reddish to black. Clypeus black. Scape and pedicel brownish yellow; flagellum brownish, gradually darkening towards apex. Tegula dark brown with small yellowish spot at apex. Pterostigma brown. Fore coxa brownish yellow, mid coxa brownish, hind coxa blackish. All trochanters, femora, tibiae and tarsi yellow-brown (hind femur brownish centrally). Metasoma behind first tergite dark brown.

*Female* unknown.

*Distribution*. Laos.

*Etymology*. From the Greek “*ἐλέφας*” (elephant).

***Slonopotamus indianus* sp. nov.**

(Figs 89–91)

*Holotype*. Female; **India**, Uttar Pradesh, between Badarinath and Govind Ghat, 2800 m; 9–11 July 1994; coll. Valen (OLML).

*Description*. *Female* (holotype). Body length 7.5 mm. Fore wing length 5.9 mm.

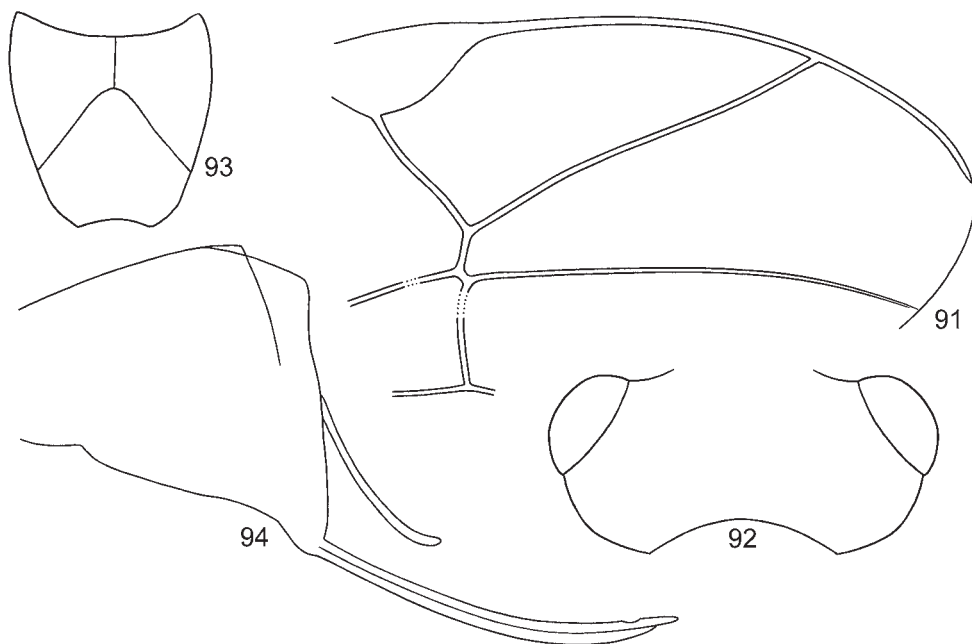
Head moderately rounded behind eyes in dorsal view (Fig. 89); temple 0.55 times as long as eye width. Head, in frontal view, with inner eye margins subparallel. Mandible large, weakly narrowed, upper tooth

distinctly longer than lower tooth. Clypeus weakly separated from face, with lower edge laterally impressed so that centrally clypeus seeming protuberant downwards, but much less than in *S. elephantoides*. Clypeus densely punctate in upper part and sparsely punctate in lower part, smooth between punctures. Malar space equal to basal width of mandible. Face medially strongly protuberant (Fig. 89). Flagellum of antenna very weakly narrowed towards apex, with 26 segments; subbasal flagellomeres about 1.8, middle about 1.5, and subapical 1.2–1.3 times as long as broad. Face densely punctate, smooth between punctures. Frons densely punctate, finely granulate and dull between punctures. Vertex and temple finely punctate, smooth. Occipital carina complete.

Notaulus short, but broad, irregularly and coarsely rugulose. Mesoscutum with coarse crenulate groove extending along its lateral margin from notaulus to base of scutellum. Mesoscutum granulate, dull, with lateral parts distinctly punctate, and central part indistinctly punctate. Scutellum with lateral longitudinal carinae strongly raised, extending from base to 0.8 of scutellum. Foveate groove very deep, crenulate, very broad anteriorly, narrower posteriorly, reaching from anterior margin of mesopleuron to base of mid coxa, strongly upcurved on anterior half of mesopleuron and almost horizontal on posterior half. Mesopleuron punctate, smooth between punctures, dorsally rugulose. Metapleuron centrally uneven, peripherally rugulose. Propodeum irregularly rugose, with very strong, coarse carinae. Basal area deeply impressed, short, anteriorly broadened, 1.35 times as long as anteriorly broad, 0.36 times as long as apical area. Propodeal spiracle round, rather big, distance between spiracle and pleural carina equal to about 1.5 diameters of spiracle. Apical area anteriorly rounded. Apical longitudinal carinae developed, reaching transverse carina.

Fore wing (Fig. 91) with second recurrent vein slightly postfurcal. Intercubitus





**Figs 91–94.** *Slonopotamus* gen. nov. and *Tersilochus*, females. **91.** *S. indianus* sp. nov. (holotype); **92–94.** *T. granulatus* sp. nov. (92, 93, holotype; 94, paratype). Fore wing (91); head, dorsal view (92); propodeum, dorsoposterior view (93); apex of metasoma with ovipositor (94).

thin and long, much longer than abscissa of cubitus between intercubitus and second recurrent vein. First abscissa of radius slightly sinuate, about 1.5 times as long as width of pterostigma. Metacarp almost reaching apex of fore wing. Postnervulus intercepted below middle.

Legs slender. Hind femur 0.85 times as long as tibia. Hind spurs slightly curved apically. Claws slender, not pectinate.

First tergite 3.25 times as long as posteriorly broad, trapeziform in cross-section, mostly smooth with petiole finely striate dorsally and before glymma. Glymma far behind middle of first tergite, moderately large, not joining by groove to ventral part of postpetiole. Second tergite almost 1.3 times as long as anteriorly broad. Thyridial depression distinct, about 2.5 times as long as broad. Ovipositor evenly upcurved, without teeth, with shallow dorsal subapical depression (Fig. 90); sheath 1.87 times as long as first tergite and twice as long as hind tibia.

Head, mesosoma and first tergite black. Palpi yellowish. Mandible blackish in basal half, brownish in apical half, teeth blackish. Clypeus and flagellum black. Scape and pedicel of antenna, pterostigma and tegula dark brown (tegula with small yellowish spot at apex). Fore coxa mostly brownish, ventrally yellowish. Mid and hind coxae blackish, narrowly yellowish apically. All trochanters yellowish. All femora reddish brown. Tibiae and tarsi brownish, infuscate. Metasoma behind first tergite yellowish brown.

*Male* unknown.

*Distribution.* India (Uttar Pradesh).

*Etymology.* This species is named after the type-locality, India.

#### Genus *Tersilochus* Holmgren, 1859

Moderately large, predominantly Holarctic genus with over 50 species in the Palaearctic region (Yu et al., 2005; Khalaim, 2007b) and only four described species in

the Nearctic region (Horstmann, 2001). Four species of *Tersilochus* occur in China (Khalaim & Sheng, 2009), one species with obscure status is known from Myanmar and Sri Lanka, and one new species is described from South Korea below.

Some species in Europe and North America are known as parasitoids of the beetle families Chrysomelidae, Curculionidae and Nitidulidae, two species were reared from Eriocraniidae (Lepidoptera) in leaf mines on *Betula* (Jordan, 1988), and some species probably parasitise sawfly larvae of the family Tenthredinidae (Hymenoptera).

**Key to subgenera and species of *Tersilochus***

*Tersilochus meridionalis* is not included to the key (see Remarks section under this species).

1. Tarsal claws pectinate [subgenus *Pectinolochus* Aubert, 1960]. Flagellum with 18 segments. Ovipositor with roundish dorsal subapical depression, sheath 1.2–1.4 times as long as first tergite. . . . . *T. bulyuki*
- Tarsal claws not pectinate [subgenus *Tersilochus*]. Flagellum with 15–24 segments. Ovipositor sometimes not as above . . . . . 2
2. [Male]. Body length 5.5 mm, fore wing length 2.0 mm; body 2.75 times as long as fore wing. Flagellum with 24 segments . . . . *T. orientalis*
- [Males and females]. Body length 3.1–3.9 mm; body 1.05–1.35 times as long as fore wing. Flagellum with 15–20 segments . . . . . 3
3. Legs entirely yellow. Mesosoma evenly and densely granulate, without distinct punctures. Foveate groove absent. Propodeum with weak or indistinct basal keel and transverse carina, with apical longitudinal carinae entirely absent (Fig. 93). Ovipositor with shallow dorsal subapical depression, without teeth (Fig. 94), sheath somewhat shorter than first tergite . . . . . *T. granulatus* sp. nov.
- Legs with at least hind coxa black and femur brown. Mesosoma distinctly punctate, or impunctate and smooth centrally. Foveate groove weak to well developed. Propodeum with strong basal keel or basal area, with apical longitudinal carinae distinct at least in posterior half. Ovipositor with two dorsal subapical teeth, its sheath much longer than first tergite . . . . . 4
4. Mesoscutum granulate, impunctate. Foveate groove as more densely granulate oblique

area in anterior part of mesopleuron, with very fine transverse wrinkles. Propodeum with rather strong basal keel. Ovipositor sheath 2.4 times as long as first tergite. Flagellum of antenna with 15–16 segments . . . . .

- . . . . . *T. runatus*
- Mesoscutum densely granulate, finely and densely punctate. Foveate groove well-developed, long and deep, crenulate. Propodeum with narrow, widened anteriorly basal area. Ovipositor sheath 1.8 times as long as first tergite. Flagellum of antenna with 20 segments . . . . . *T. ningxiator*

***Tersilochus (Pectinilochus) bulyuki***

Khalaim, 2007

*Distribution.* Mongolia, China (Inner Mongolia).

***Tersilochus (Tersilochus) granulatus***

**sp. nov.**  
(Figs 92–94)

*Holotype.* Female; **South Korea**, Gyeongsangnam Prov., 30 km NNW Jinju, 800 m, forest; 16 May 2002; coll. S.A. Belokobylskij (ZIN).

*Paratypes.* **South Korea**, same data as holotype; 2 females & 2 males (ZIN), 2 females & 1 male (BMNH). Same locality and collector; 29 May 2002; 4 females (ZIN). Same locality and collector; 30 May 2002; 1 female (ZIN).

*Comparison.* Differs from other species of the genus by the evenly and densely granulate mesosoma, the lack of a foveate groove, the propodeum with a very weak basal keel and transverse carina, without longitudinal carinae (Fig. 93), and by the short ovipositor (Fig. 94).

*Description.* Female (holotype). Body length 3.15 mm. Fore wing length 2.38 mm.

Head strongly and roundly narrowed behind eyes in dorsal view (Fig. 92); temple 0.85 times as long as eye width. Upper tooth of mandible longer than lower tooth. Clypeus smooth in its lower part to very finely granulate and finely punctate in upper part. Malar space subequal to basal width of mandible. Flagellum of antenna filiform, with 17–19 segments (18 flagellomeres in

holotype); mid flagellomeres about twice, subapical flagellomeres about 1.6 times as long as broad. Head densely and rather evenly granulate, without punctures.

Mesosoma densely and evenly granulate, mesopleuron with indistinct punctures centrally. Notaulus and foveate groove entirely absent. Propodeum with basal keel very weak or indistinct, 0.4 times as long as apical area (Fig. 93). Transverse carina very weak but usually more or less complete. Propodeal spiracle small, round; distance between spiracle and pleural carina equal to about two diameters of spiracle. Apical area slightly rounded or pointed anteriorly, without any vestige of longitudinal carinae (Fig. 93).

Fore wing with second recurrent vein distinctly postfurcal. Intercubitus short and thick, shorter than abscissa of cubitus between intercubitus and second recurrent vein. First abscissa of radius about 1.45 times as long as width of pterostigma. Metacarp ending somewhat short of apex of fore wing. Postnervulus intercepted distinctly below middle.

Legs slender. Hind femur 0.88 times as long as tibia. Hind spurs weakly curved apically. Claws not pectinate.

First tergite very slender, 4.6 times as long as posteriorly broad, round in cross-section, entirely smooth, with petiole slightly arcuate in lateral view. Glymma small, joining ventral part of postpetiole by distinct sharp groove, situated in apical 0.66 of first tergite. Second tergite 1.54 times as long as anteriorly broad. Thyridial depression very short, strongly transverse. Ovipositor short and robust, weakly and evenly upcurved, with shallow dorsal subapical depression (Fig. 94); sheath 0.74 times as long as first tergite and 0.88 times as long as hind tibia.

Head and mesosoma black. Palpi, mandible (teeth dark red), tegula and legs yellowish. Clypeus almost entirely yellowish-brown with upper margin narrowly blackish. Scape and pedicel of antenna yellowish brown, flagellum yellowish brown basally, gradually darkening towards apex. Pter-

ostigma brown. Metasoma behind first tergite yellow-brown; first tergite brown, but sometimes postpetiole also yellow-brown.

*Male.* Similar to female but malar space somewhat shorter and flagellum slenderer, with 17–18 segments.

*Distribution.* South Korea.

*Etymology.* Named after the densely and evenly granulate head and mesosoma.

### ***Tersilochus ? meridionalis* (Morley, 1913)**

*Remarks.* This species was described from two specimens (female and male) in the genus *Porizon* Fallén, 1813 by Morley (1913). Townes (Townes et al., 1961) transferred this species tentatively (with a “?”) to the genus *Tersilochus*. The generic status is not clear from the original description (Morley, 1913) as almost no diagnostic characters are mentioned. Information in the original description is also insufficient for identification of this species within the genus *Tersilochus*. The type of this species is deposited in the Museo Civico di Storia Naturale (Genoa, Italy).

*Distribution.* Myanmar, Sri Lanka.

### ***Tersilochus (Tersilochus) ningxiator***

Khalaim & Sheng, 2009

*Distribution.* China (Ningxia Hui, 1820 m).

### ***Tersilochus (Tersilochus) orientalis***

Uchida, 1942

*Distribution.* East and south of China: Liaoning (Uchida, 1942) and Fujian (Chao, 1976).

### ***Tersilochus (Tersilochus) runatus***

Khalaim & Sheng, 2009

*Distribution.* China (Ningxia Hui, 1820 m).

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