

First record of the New World genus *Pentapria* Kieffer, 1905 (Hymenoptera: Diapriidae: Spilomicrini) from Palaearctic Region

Первая находка рода из Нового Света *Pentapria* Kieffer, 1905 (Hymenoptera: Diapriidae: Spilomicrini) в Палеарктике

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The New World genus *Pentapria* Kieffer is recorded in the Palaearctic Region for the first time. Two new species of this genus, *P. ambiptera* sp. nov. and *P. grebennikovi* sp. nov., from the Russian Far East (Primorskiy Territory) and Japan are described and illustrated. Diagnosis of the genus *Pentapria* is specified. A key to two East Palaearctic species of *Pentapria* is provided.

Род из Нового Света *Pentapria* Kieffer впервые указывается для Палеарктики. Два новых вида этого рода (*P. ambiptera* sp. nov. и *P. grebennikovi* sp. nov.) с Дальнего Востока России (Приморский край) и из Японии описаны и проиллюстрированы. Уточнен диагноз рода *Pentapria*. Дан определительный ключ для двух восточнопалеарктических видов *Pentapria*.

Key words: parasitoids, Palaearctic Region, Russia, Hymenoptera, Diapriidae, *Pentapria*, new species, taxonomy, identification key

Ключевые слова: паразитоиды, Палеарктика, Россия, Hymenoptera, Diapriidae, *Pentapria*, новые виды, таксономия, определительный ключ

INTRODUCTION

Tribe Spilomicrini includes 27 genera with approximately 300 species in the world fauna (Johnson, 1992; Masner & García, 2002). Only four genera, *Entomacis* Foerster, 1856, *Idiotypa* Foerster, 1856, *Paramesius* Westwood, 1832 and *Spilomicrus* Westwood, 1832, comprising 81 species have been previously recorded in the Palaearctic Region (Hedqvist, 2007; Johnson, 1992).

The genus *Pentapria* Kieffer, 1905 have been never recorded previously from the Palaearctic Region (Kozlov, 1978; Johnson, 1992). This genus includes 14 species, of which three species are Nearctic (Fouts, 1939) and 11 species are Neotropical (Kief-

fer, 1905, 1910; Brèthes, 1916; Ogloblin, 1957; Fabritius, 1968). Actually, *Pentapria* is one of the largest and most polymorphic genera of the tribe Spilomicrini, as well as all Diapriinae in the Neotropical Region among which many new species are waiting their descriptions (Masner & García, 2002). In this paper, *Pentapria* is recorded for the fauna of the Palaearctic Region for the first time, with description of two new species from the Russian Far East and Japan.

All members of this genus are medium to large-sized parasitoids (1.5–6.0 mm) with smooth, shining and moderately to strongly depressed body. Among the Spilomicrini, *Pentapria* is closely related to *Idiotypa*, but differs in following features: clypeus moder-

ately convex, subtriangular, and in lateral view separated from upper margin of mandible by deep cleft; ocelli with semicircular groove posteriorly; propleural cervical reticulation present; all trochantelli absent. Probably, all species of *Pentapria* are parasitoids of pupae of family Stratiomyidae (Diptera) (Fouts, 1939).

MATERIAL AND METHODS

Nine specimens belonging to the genus *Pentapria* were collected in the Russian Far East and Japan in the mixed moist forests. Holotypes of two new species are deposited at the Zoological Institute of the Russian Academy of Sciences, St Petersburg, Russia (ZIN) and the Canadian National Collection of Insects, Ottawa, Canada (CNCI). The morphological terminology follows Masner & Garcia (2002), Miko et al. (2007) and Yoder (2004). Following additional terms and abbreviations are used: MGS brush – accumulation of multiporous gustatory sensilla on ventral side of female clavomeres; A1–A13 – antennomeres. The terms used for description of the ventral part of mesopleuron are showed on Fig. 26. All photographs were obtained using a Leica M165 stereomicroscope equipped with a Leica DFC450 camera. The montage of the image layers was prepared using Helicon Focus 5.0.

TAXONOMIC PART

Order **HYMENOPTERA**

Family **DIAPRIIDAE**

Subfamily **DIAPRIINAE**

Tribe **SPILOMICRINI**

Genus *Pentapria* Kieffer, 1905

Pentapria Kieffer, 1905: 34. Type species *Pentapria conjungens* Kieffer, 1905, by monotypy.

Antipapria Fabritius, 1968: 844. Type species *Antipapria depressa* Fabritius, 1968, by original designation. Synonymised by Masner & García (2002).

Bakeria Kieffer, 1906: 282. Type species *Bakeria complanata* Kieffer, 1906, by monotypy. Synonymised by Masner & García (2002).

Plutopria Kieffer, 1910: 48. Type species *Plutopria luctuosa* Kieffer, 1910, by monotypy. Synonymised by Masner & García (2002).

Spilomicrinus Ogloblin, 1957: 425. Type species *Spilomicrinus fernandezianus* Ogloblin, 1957, by original designation. Synonymised by Masner & García (2002).

Xenopria Fouts, 1939: 260. Type species *Xenopria columbiana* Fouts, 1939, by original designation. Synonymised by Masner (1964).

Diagnosis. Length of body specimens medium to large-sized (body length 1.5–6.0 mm). Body mainly ebony black, smooth and shining with scattered semidecumbent setae, setose cushions and foamy structures not developed. Head and mesosoma generally wider than high, sometimes moderately to strongly depressed dorso-ventrally, usually with deep scattered punctures, but sometimes with coarse sculpture. Ocelli with semicircular groove posteriorly, or without groove. Antennal shelf developed, toruli separated by deep gap, not connected by carina. Face below antennal shelf shallowly excavated. Clypeus separated from lower margin of supraclypeal area by sharp epistomal carina. Labrum is sclerotized and exposed, visible between mandibles. Antenna of male and female 13 segmented. Shallow pit on ventral side of A13 female antenna not developed. Propleural cervical reticulation present. Posterior pronotal sulcus absent. Mesoscutum with three, five or many pits anteriorly, anterior scutellar pit generally tripartite with two additional small lateral pits, sometimes these pits rugulose and not distinct, or scutellum anteriorly with number of small pits arranged in arc. Lobe of anterior mesopleural area absent. Mesepimeral sulcus present or absent. Matt mesopleural spot above mesocoxa absent. Transpleural sulcus present. Mesopleural carina absent. All trochantelli absent. Tegula completely covering lateral subapical lobe of humeral complex of fore wing base. Stigmal vein usually as long as marginal vein, but sometimes slightly lon-

ger. Hind wing without closed basal cell. Basal T2 notch present, T2 lateral notches absent or well developed. Basal S2 notch absent, S2 lateral notches present. S2 setose lines absent. S2 base cushion of setae absent.

***Pentapria ambiptera* sp. nov.**

(Figs 1–14)

Holotype. Female; **Russia**, Primorskiy Territory, vicinity of Spassk-Dal'niy, 31 July 1996, S.A. Belokobylskij leg. (ZIN).

Paratypes. **Russia**. Primorskiy Territory, 2 males, vicinity of Spassk-Dal'niy, meadow, 12 July 1993, S.A. Belokobylskij leg. (ZIN); 1 male, same locality and collector, 16–24 July 2006 and 24–25 Aug. 1981 (ZIN); 1 female, 20 km NNE of Partizansk, 9 July 1996, S.A. Belokobylskij leg. (ZIN); 1 female, vicinity of Vladivostok, 12–13 September 1982, V.I. Tobias leg. (ZIN). **Japan**, 1 female, Aichi, Mt. Chausu, 1300 m, 16 July 1992, K. Yamagishi leg. (CNCI); 1 female, Is. Ishidaki, forest, 19–21 Oct. 1999, S.A. Belokobylskij leg.

Comparative diagnosis. *Pentapria ambiptera* sp. nov. differs from another Palaearctic species of the genus by having the fore wing truncated at apex and folding in two halves along crease which is parallel by anterior margin of wing, the marginal vein very short, and the stigmal vein rather long (distinctly longer than length of marginal vein).

Description. **Female** (holotype). Length of body 3.9 mm. Length of fore wing 2.5 mm. Length of antenna 1.7 mm.

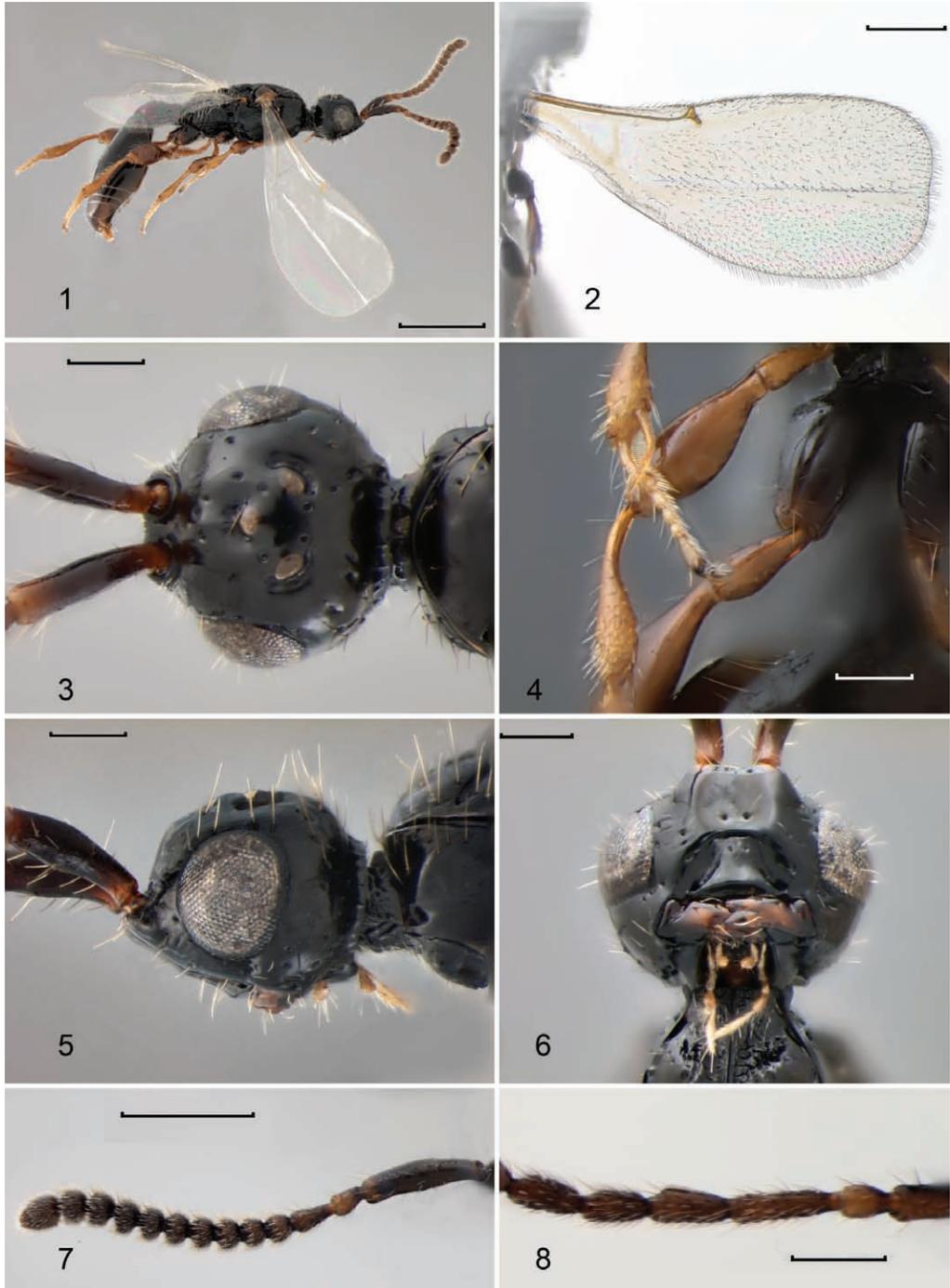
Body mainly black; legs except coxae, tegulae, antennal segments and mandibles reddish brown; palpi pale brown.

Head in dorsal view wider than long (26 : 24), slightly narrower than width of mesosoma (26 : 31), with few relatively long scattered setae and setigerous punctures. Ocelli large, situated closely to each other, posteriorly with semicircular grooves. Vertex behind ocelli covered with setigerous punctures. Occipital flange visible, narrow, foveolate along its all margin. Postgenal areas without cushion of setae, with sparse erect and long setae. Head in lateral view longer than high (20 : 24), with rounded and slightly flattened vertex. Head in front view

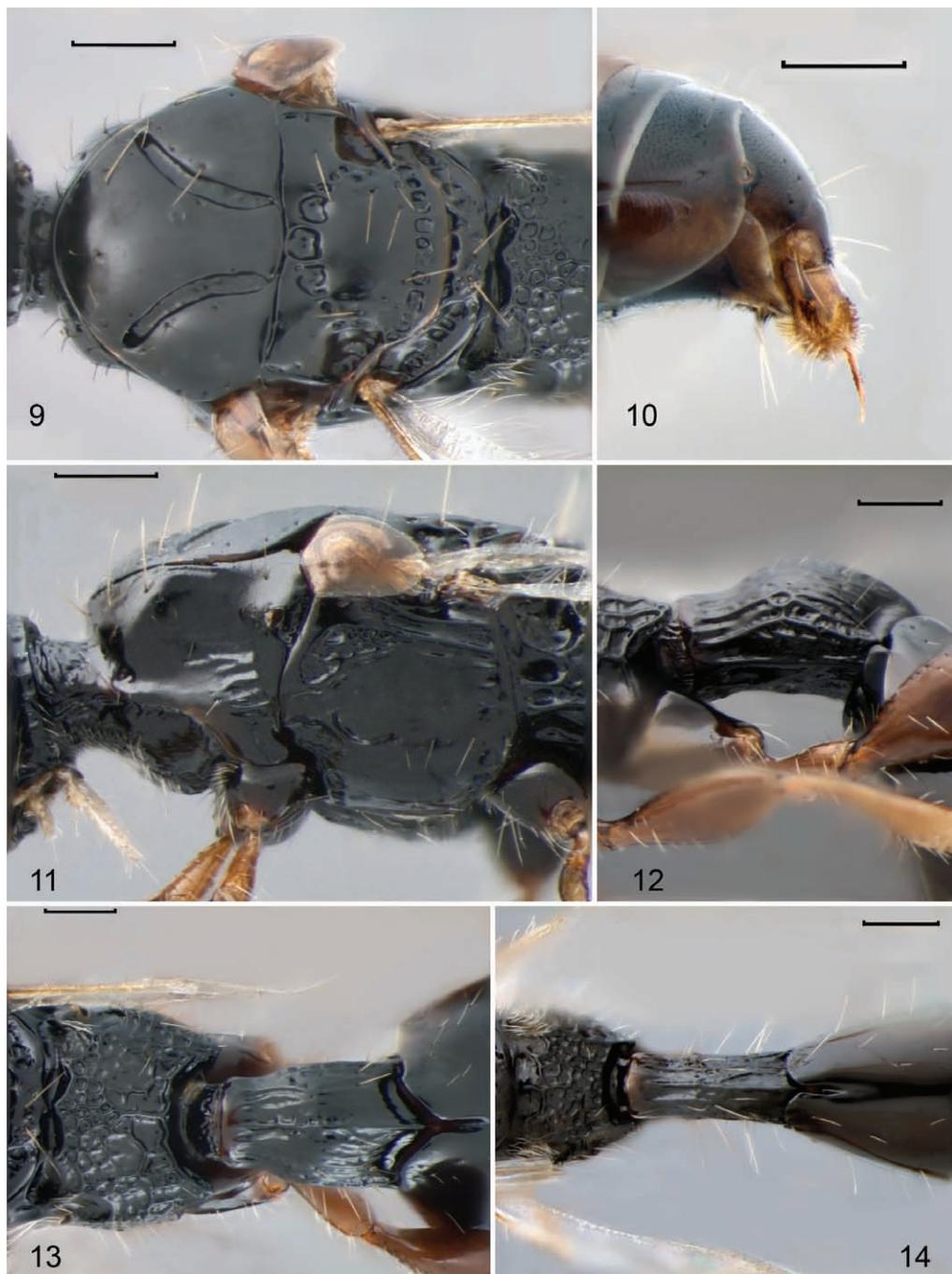
distinctly transverse, wider than high (27 : 22). Antennal shelf not sharply projecting, distinctly pressed medially between toruli. Face below antennal shelf not excavate. Eye large, malar space distinctly shorter than eye height (1 : 4). Malar sulcus weakly visible. Clypeus almost flat, subtriangular or semi-circular, as wide as high, truncate ventrally, separated from clypeal flange by sharp inflection. Epistomal sulcus deep; tentorial pits distinct and deep. Mandibles long, bidentate, with its widely separated basis; both teeth of mandibles subequal.

Antenna moniliform, with slender and non-abrupt clava. Scape and pedicel smooth, with few scattered setae, scape distinctly shorter than length of head (17 : 24). Antennomere A3 truncate pyramidal shape, covered with only more or less long setae; A4–A13 with dense and short pilosity and additionally with not numerous long semi-erect setae. Antennomeres A4–A13 separated by deep gaps. In lateral view, connection between clavomeres slightly dislocated towards by dorsal area, length of dorsal and ventral parts of clavomeres equal. MGS brush not developed on ventral side of antennomeres. Relative proportions of length and width of A1–A13 antennomeres in dorsal view as 40 : 8, 9 : 6, 12 : 6, 10 : 7, 9 : 7.5, 7 : 8, 7 : 8, 7 : 9, 7 : 9, 7 : 9, 7 : 9, 7 : 9.5.

Mesosoma in dorsal view distinctly longer than wide (55 : 27), in lateral view distinctly longer than high (55 : 25). Neck bare, with longitudinal grooves. Pronotum with sparse long setae; pronotal shoulders rounded and convex, without sculpture; spiracle cap visible from above; lateral pronotal area with longitudinal irregular furrows. Propleuron rugulose anteriorly, sparsely setose by short erect setae. Mesoscutum flattened, with erect sparse setae along notauli. Notauli complete throughout and well impressed, convergent posteriorly; distance between notauli in posterior part distinctly less than between notauli and humeral sulcus. Humeral sulcus not deep. Three anterior scutellar pits large, deep, almost equal to each other; posterior mar-



Figs 1–8. *Pentapria ambiptera* sp. nov., female (except 8). 1, whole insect, lateral view; 2, fore wing; head, dorsal (3), lateral (5) and frontal (6) view; 4, legs; 7, antenna, lateral view; 8, base of male antenna. Scale bars: 1 mm (1), 0.5 mm (2, 7), 0.2 mm (3–6, 8).



Figs 9–14. *Pentapria ambiptera* sp. nov., female (9, 10, 12, 13) and male (11, 14). mesosoma, dorsal (9) and lateral (11) view; 10, apical part of metasoma, lateral view; petiole, lateral (12) and dorsal (13, 14) view. Scale bars: 0.2 mm.

gin of scutellar disc with row of deep point; two or three lateral scutellar pits distinctly or weakly impressed. Tegula large. Mesopleuron with two deep longitudinal sulci under tegula and with complex sculpture anteriorly; sternaulus faintly impressed, situate, with setigerous punctures, area below it smooth, shining and bare. Acetabular carina, postacetabular sulcus, mesopleural epicoxal carina and mesopleural epicoxal sulcus developed on ventral surface of mesopleuron; mesodiscrimen broad. Dorsellum almost bare, coarse rugose. Propodeum distinctly transverse (31 : 25), median propodeal keel absent. Surface of propodeum and axillar depression completely coarsely rugose, with several setae. Propodeal spiracle cap relatively small, dark brown.

Fore wing truncated apically, reaching apex of metasoma; with venation distinctly reaching middle of wing. Costa nebulous, not pigmented; costal cell broad. Marginal vein very short, touching anterior margin of wing; postmarginal vein absent. Stigmal vein relatively long, distinctly longer than length of marginal vein and oblique to it; basal vein indistinct. Fore wings folding in two halves along crease, which is parallel by anterior margin of wing.

Tarsi of all legs distinctly shorter than femora and tibiae; tarsomere 4 of fore and mid legs subquadrate. All femora short and broad; hind femur strongly thickened. Claws curved.

Metasoma. Petiole in dorsal view longer than median width (22 : 12), weakly broadened posteriorly, entirely rugulose; in ventral view without setae and with same sculpture as on dorsal area; petiole in lateral view medially thickened. Details of petiole and base of syntergite as in Fig. 13. Gaster broad, depressed dorso-ventrally. Anterior margin of syntergite with deep median slot, laterally shallow pressed; posterior part of syntergite, surface of following four tergite and pygidium (T7) with microsculpturae and short scattered setae. T2 longer than wide (21 : 15). Following tergites (T3–T6) narrow. S2 in distant part without punctures.

S3–S5 narrow, with micropunctuation and sparse setae laterally. S6 as long as two preceding sternites combined, with long subvertical setae and zone of orange-brown pegs apically. Valve with zone of dense pegs on ventral and dorsal sides.

Variations. Length of body 3.4–4.0 mm. No significant variation in the limited material available.

Male. Length of body 2.7–3.9 mm. Similar to female, but differs mainly in antennal structures and petiole. Antenna filiform, 13-segmented; all flagellomeres densely pilose. A4 keel erect extending about 3/4 length of A4. Relative proportions of antennomeres length and width as 18 : 4, 6 : 3.2, 12 : 3, 9 : 3, 9 : 3, 8 : 3, 8 : 3, 8 : 3, 9 : 3, 9 : 3, 9 : 2.8, 9 : 2.8, 13 : 2.8. Petiole more elongate and slender coarsely rugose or with prolonged grooves only (Fig. 14). Face with transverse striae reaching orbit or almost smooth; head dorsally coarsely rugose between ocelli or without such sculpture.

Pentapria grebennikovi sp. nov.

(Figs 15–26)

Holotype. Female; **Russia**, Primorskiy Territory, Chuguevskaya District, 44°02.118'N, 134°12.166'E, 650 m, sifting, 21–25 May 2008, V. Grebennikov leg. (CNCI).

Comparative diagnosis. *Pentapria grebennikovi* sp. nov. differs from all other species of the genus by having the length of scape which is only slightly shorter than the height of the head, and by the shape of head.

Description. Female. Length of body 2.5 mm; length of fore wing 2.25 mm; length of antenna 1.5 mm.

Body mainly black; tegulae, mandibles, antennomeres A1–A10, coxae and femora dark brown to black; palpi, clavomeres (A11–A13), trochantelli, tibiae and tarsomeres yellowish-brown; veins of wing dark brown.

Head in dorsal view transverse (17 : 20), slightly narrower than mesosoma (20 : 24); without punctures but with scattered long setae. Ocelli large, without semicircular grooves posteriorly. Occipital flange

narrow, without sculpture. Postgenal areas without cushion of setae. Temples moderately receding (dorsal view). Head in lateral view higher than long (20 : 17), subglobular, with rounded and not flattened vertex. Head in front view subcircular, as wide as high. Antennal shelf not sharply projecting distinctly pressed medially between toruli. Face smooth with shallow pressed below antennal shelf. Epistomal sulcus distinct. Clypeus almost flat, subtriangular or semi-circular, smooth and shining, broader than higher (3 : 5), separated from clypeal flange by sharp inflection. Malar space distinctly shorter than height of eye (1 : 3). Malar sulcus absent. Tentorial pits distinct. Mandibles long, bidentate, their basis widely separated; lower tooth slightly longer than upper tooth.

Antenna moniliform, with slender and non abrupted clava. Scape slightly shorter than length of head (18 : 19). Scape and pedicel smooth, with few scattered long setae; antennomeres A4–A13 covered with numerous short and several long semi-erect setae. Antennomeres A5–A13 separated by deep gaps. In lateral view, connection between clavomeres slightly dislocated to dorsal area. Length of dorsal and ventral sides of clavomeres equal. MGS brush present on ventral side of A8–A13 antennomeres. Relative proportions of length and width of A1–A13 antennomeres in dorsal view as 33 : 6, 10 : 5.5, 12 : 4.5, 7 : 4.5, 6 : 5, 6 : 6, 6 : 6.5, 6.5 : 7.5, 7 : 8, 7 : 8, 7 : 8, 12 : 8.

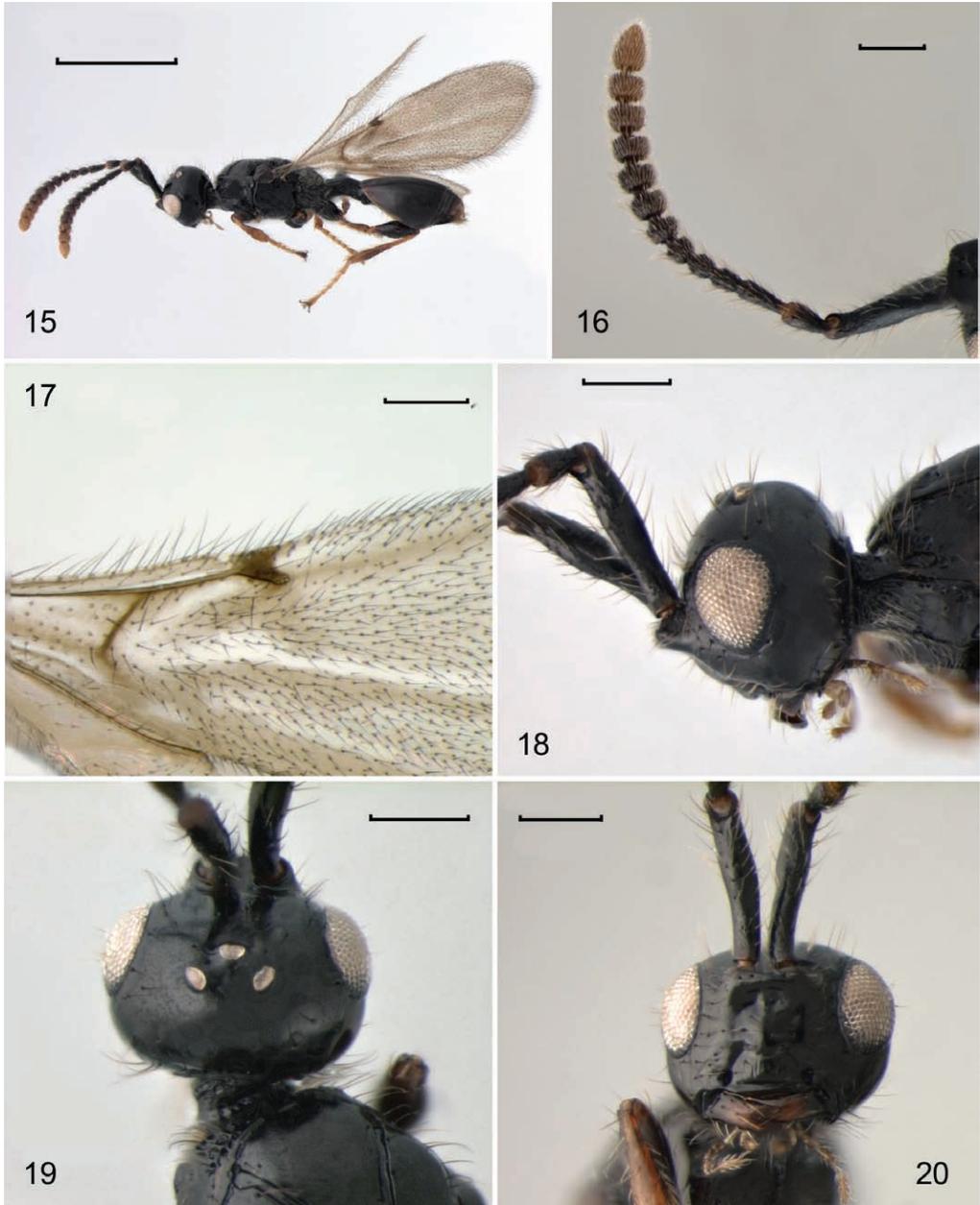
Mesosoma in dorsal view longer than wide (36 : 24), in lateral view longer than high (20 : 36). Neck bare, with longitudinal grooves. Cervical pronotal area smooth and bare in median part; pronotal shoulders convex, with numerous long setae, coarsely rugose; spiracle cap slightly visible from above; lateral pronotal area smooth and with posterior pronotal sulcus only. Propleuron rugulose and with sparse pilosity anteromedially. Mesoscutum not flattened, with erect sparse setae along notauli. Notauli complete throughout and well impressed, convergent posteriorly; distance

between notauli in posterior part distinctly shorter than between notauli and humeral sulcus (16 : 11). Humeral sulcus delicate but clearly impressed with setigerous punctures. Scutellum only with three relatively equal to each other scutellar pits and with few scattered setigerous punctures in lateral scutellar pits region; posterior margin of scutellar disc with row of deep points. Tegula large. Mesopleuron with two deep longitudinal sulci under tegula, with mixed sculpture above of median coxae and on place of mesopleural sulcus. Acetabular carina, postacetabular sulcus, mesopleural epicoxal carina and mesopleural epicoxal sulcus developed on ventral surface of mesopleuron; mesodiscrimint broad. Axilla smooth. Axillar depression, metascutellum and propodeum coarsely rugose and with numerous erect setae. Propodeum distinctly transverse (50 : 30); median propodeal keel absent. Propodeal spiracle cap relatively small, dark brown.

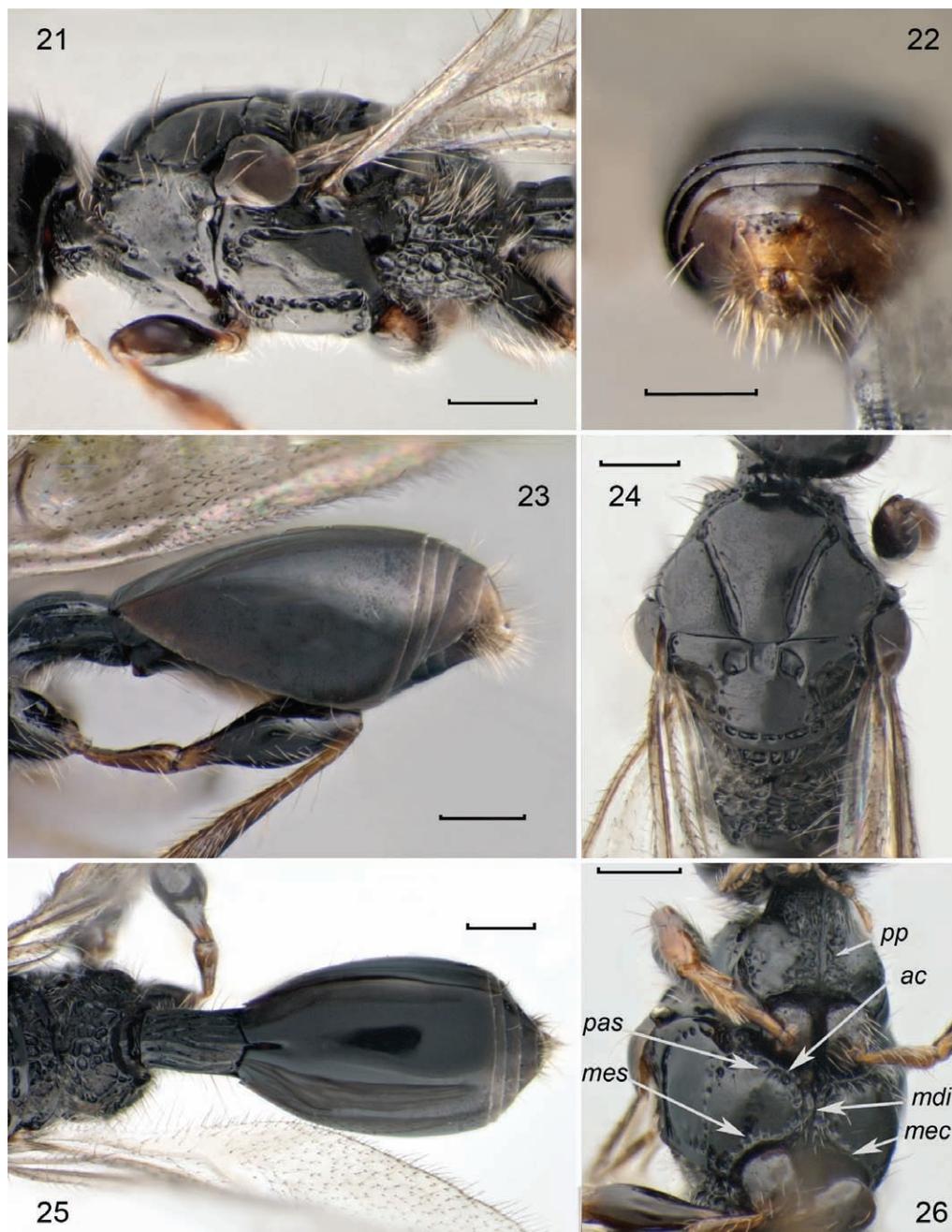
Fore wing 3.0 times as long as wide, proceeding beyond apex of gaster, with apex rounded. Venation slightly not reaching middle of fore wing. Costa not developed, costal cell broad; submarginal and basal vein well sclerotized. Marginal vein longer than its median width (5 : 7), touching anterior margin of wing. Stigmal vein short and broad. Postmarginal vein very short.

Tarsi of all legs distinctly longer than femora. Tarsomere 4 of fore leg subquadrate and of mid leg slightly elongate. All femora short and broad, hind femora incrassate. Claws curved.

Petiole cylindrical, in dorsal view longer than median width (5 : 3), not broadened posteriorly, covered by irregular longitudinal grooves. Petiole in lateral view curved, with short pilosity on ventral side. Details of petiole structure and base of sintergite as in Fig. 25. Gaster broad, not depressed dorso-ventrally. Anterior margin of syntergite with deep median slot, laterally almost without notch. Posterior part of syntergite and surface of following four tergites with microsculpturae and with short scattered



Figs 15–20. *Pentapria grebennikovi* sp. nov., female. **15**, whole insect, lateral view; **16**, antenna, lateral view; **17**, venation of wing; head, lateral (**18**), dorsal (**19**) and frontal (**20**) view. Scale bars: 1 mm (15), 0.2 mm (16–20).



Figs 21–26. *Pentapria grebennikovi* sp. nov., female. Mesosoma, lateral (21), dorsal (24) and ventral (26) view; 22, apex of metasoma, behind; metasoma, lateral (23) and dorsal (25) view; *ac*, acetabular carina; *pas*, postacetabular carina; *pp*, propleuron; *mec*, mesopleural epicoxal carina; *mes*, mesopleural epicoxal sulcus; *mdi*, mesodiscriment. Scale bars: 0.2 mm.

setae. Pygidium (T7) punctured and in numerous long erect setae. T2 longer than wide (7 : 10). Following tergites (T3–T6) narrow; T6 and syntergite situated perpendicularly each other (Fig. 23). S2 in distant part not punctured; S3–S6 sternites covered by micropunctures. S3–S5 narrow, with sparse setae laterally; S6 as long as three preceding sternites combined, with numerous long erect setae. Valve and S6 without pegs.

Male. Unknown.

Key to Palaearctic species of the genus *Pentapria*

1. Fore wing truncate apically, with longitudinal crease across of wing. Marginal vein of fore wing shorter than wide; basal and post-marginal veins not developed. Apical sternite and valve on ventral and dorsal sides in females with zone of dense pegs. Ocelli with deep furrows posteriorly. Scape distinctly shorter than height of head. Clavomeres A8–A13 without MGS brush. Head in front view transverse. Malar space 0.25 times height of eye. Pronotal shoulders without sculpture. Axillar depression bare *P. ambiptera* sp. nov.
- Fore wing rounded apically. Marginal vein of fore wing longer than wide; basal and post-marginal veins developed. Apical sternite and valve on ventral and dorsal sides in females without pegs. Ocelli without posterior furrow. Scape slightly shorter than height of head. Clavomeres A8–A13 with MGS brush on ventral side. Head in front view as high as wide. Malar space 0.35 times height of eye. Pronotal shoulders coarsely sculptured. Axillar depression with pilosity *P. grebennikovi* sp. nov.

ACKNOWLEDGEMENTS

We are very thankful to S.A. Belokobylskij (ZIN) for providing many useful editorial comments that helped clarify the text, to A.P. Rasnitsyn (Palaeontological Institute RAS, Moscow, Russia) for assistance in the preparation of photos, to L. Masner (CNCI) for valuable comments on the manuscript, helpful communications and loaned specimen of *Pentapria*, and to A.I. Khalaim (ZIN) for his corrections of the manuscript.

REFERENCES

- Brèthes J.** 1916. Hymenopteres parasites de l'Amerique meridionale. *Anales del Museo Nacional de Historia Natural de Buenos Aires*, **27**: 401–430.
- Fabritius N.D.M.** 1968. *Antipapria* n. gen., eine neue Diapriiden-Gattung aus Argentinien. (Hymenoptera, Proctotrupeoidea). *Travaux du Museum National d'Histoire Naturelle "Grigore Antipa"*, **8**: 841–844.
- Fouts R.M.** 1939. Description of one new genus and three new species of Diapriidae (Hymenoptera). *Proceedings of the Entomological Society of Washington*, **41**: 260–263.
- Hedqvist K.J.** 2007. A provincial catalog of Swedish Proctotrupeoidea. *Entomologisk Tidsskrift*, **128**: 113–116.
- Johnson N.F.** 1992. Catalog of World species of Proctotrupeoidea, exclusive of Platygastriidae (Hymenoptera). *Memoirs of the American Entomological Institute*, **51**: 1–825.
- Kieffer J.J.** 1905. Nouveaux Proctotrupides exotiques conserves au Musee Civique de Genes. *Annali del Museo Civico di Storia Naturale Giacomo Doria (Genova)*, **2**(2): 9–39.
- Kieffer J.J.** 1906. Beschreibung neuer Proctotrupiden aus Nord- und Zentralamerika. *Berliner Entomologische Zeitschrift*, **50**: 237–290.
- Kieffer J.J.** 1910. Beschreibung neuer suedamerikanischer im Zoologischen Muzeum zu Berlin aufbewahrter Diapriiden. *Entomologische Rundschau*, **27**: 39–56.
- Kozlov M.A.** 1978. 3. Fam. Diapriidae. In: **Medvedev G.S.** (Ed.) *Opredelitel' nasekomykh Evropeyskoy chasti SSSR* [Keys to the insects of the European part of USSR], **3**(2): 548–608. Leningrad: Nauka. (In Russian).
- Masner L.** 1964. A comparison of some Nearctic and Palearctic genera of Proctotrupeoidea (Hymenoptera) with revisional notes. *Časopis Československé Společnosti Entomologické*, **61**: 123–155.
- Masner L. & Garsia J.L.** 2002. The genera of Diapriinae (Hymenoptera: Diapriidae) in the New World. *Bulletin of the American Museum of Natural History*, **268**: 1–138.
- Miko I., Vilhelmsen L., Johnson N.F., Masner L. & Penzes Z.** 2007. Skeletomusculature of Scelionidae (Hymenoptera: Platygastroidea): head and mesosoma. *Zootaxa*, **1571**: 1–78.

- Ogloblin A.A.** 1957. Los insectos de las Islas Juan Fernandez. 35. Mymaridae, Ceraphronidae, Diapriidae y Scelionidae (Hymenoptera). *Revista Chilena de Entomologia*, **5**: 413–444.
- Yoder M.J.** 2004. Revision des especes nord-americaines du genre *Entomacis* (Hymenoptera: Diapriidae). *The Canadian Entomologist*, **136**: 323–405.

Received October 23, 2013 / Accepted November 15, 2013