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NEW SPECIES OF THE SUBFAMILY EUPHORINAE (HYMENOPTERA, BRACONIDAE) FROM EAST PALAEARCTIC. PART I

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The 59 new species of the subfamily Euphorinae from Russian Far East and Siberia, from Korea and Japan are described and illustrated: *Blacometeorus konishii* sp. n., *Blacus (Blacus) alexandri* sp. n., *B. (B.) compressus* sp. n., *B. (B.) dadianshanicus* sp. n., *B. (B.) dezhnevi* sp. n., *B. (B.) puber* sp. n., *Centistes (Ancylocentrus) kurilensis* sp. n., *C. (A.) mucri* sp. n., *C. (A.) parentalis* sp. n., *C. (Centistes) pumilio* sp. n., *C. (C.) shufanus* sp. n., *Cosmophorus undulatus* sp. n., *Dinocampus nipponicus* sp. n., *Elasmosoma trichopygidium* sp. n., *Leiophron (Euphorus) alkonost* sp. n., *L. (E.) gyrinus* sp. n., *L. (E.) janus* sp. n., *L. (E.) pygmaeus* sp. n., *L. (E.) reductus* sp. n., *L. (Leiophron) pardus* sp. n., *L. (L.) subapicalis* sp. n., *L. (Peristenus) antennator* sp. n., *L. (P.) cognatus* sp. n., *L. (P.) convexus* sp. n., *L. (P.) goral* sp. n., *L. (P.) fuscotibialis* sp. n., *L. (P.) rugitergum* sp. n., *L. (P.) shikotanicus* sp. n., *L. (P.) subfacialis* sp. n., *L. (P.) suiifunensis* sp. n., *L. (P.) tolerabilis* sp. n., *L. (P.) tristis* sp. n., *Marshiella aichiensis* sp. n., *Meteorus anastasiae* sp. n., *M. rex* sp. n., *M. sutshanicus* sp. n., *Perilitus (Microctonus) articulatus* sp. n., *P. (M.) cretaceus* sp. n., *P. (M.) hylobivorus* sp. n., *P. (M.) maritimus* sp. n., *P. (M.) modestus* sp. n., *P. (M.) rasnitsyni* sp. n., *P. (M.) sylvicola* sp. n., *P. (M.) taegeri* sp. n., *P. (M.) tuvaensis* sp. n., *Perilitus (Perilitus) dauricus* sp. n., *P. (P.) flavifacies* sp. n., *P. (P.) pappi* sp. n.,

P. (Townesilitus) haeselbarthi sp. n., *Pygostolus minax* sp. n., *Rilipertus dima* sp. n., *R. gondattii* sp. n., *Syntretus (Syntretus) abbreviator* sp. n., *S. (S.) areolatus* sp. n., *S. (S.) combinator* sp. n., *S. (S.) excavatus* sp. n., *S. (S.) grodekovi* sp. n., *S. (S.) kui* sp. n., *S. (S.) signatus* sp. n.

KEY WORDS: East Palaearctic, Braconidae, Euphorinae, new species.

С. А. Белокобыльский. Новые виды браконид подсемейства Euphorinae (Hymenoptera, Braconidae) из Восточной Палеарктики. Часть I-IV // Дальневосточный энтомолог. 2000. N 87-90. С. 1-124.

С Дальнего Востока России, Сибири, из Кореи и Японии описываются следующие новые виды браконид из подсем. Euphorinae: *Blacometeorus konishii* sp. n., *Blacus (Blacus) alexandri* sp. n., *B. (B.) compressus* sp. n., *B. (B.) dadianshanicus* sp. n., *B. (B.) dezhnevi* sp. n., *B. (B.) puber* sp. n., *Centistes (Ancylocentrus) kurilensis* sp. n., *C. (A.) mucri* sp. n., *C. (A.) parentalis* sp. n., *C. (Centistes) pumilio* sp. n., *C. (C.) shufanus* sp. n., *Cosmophorus undulatus* sp. n., *Dinocampus nipponicus* sp. n., *Elasmosoma trichopygidium* sp. n., *Leiophron (Euphorus) alkonost* sp. n., *L. (E.) gyrinus* sp. n., *L. (E.) janus* sp. n., *L. (E.) pygmaeus* sp. n., *L. (E.) reductus* sp. n., *L. (Leiophron) pardus* sp. n., *L. (L.) subapicalis* sp. n., *L. (Peristenus) antennator* sp. n., *L. (P.) cognatus* sp. n., *L. (P.) convexus* sp. n., *L. (P.) goral* sp. n., *L. (P.) fuscotibialis* sp. n., *L. (P.) rugitergum* sp. n., *L. (P.) shikotanicus* sp. n., *L. (P.) subfacialis* sp. n., *L. (P.) suifunensis* sp. n., *L. (P.) tolerabilis* sp. n., *L. (P.) tristis* sp. n., *Marshiella aichiensis* sp. n., *Meteorus anastasiae* sp. n., *M. rex* sp. n., *M. sutshanicus* sp. n., *Perilitus (Microctonus) articulatus* sp. n., *P. (M.) cretaceus* sp. n., *P. (M.) hylobivorus* sp. n., *P. (M.) maritimus* sp. n., *P. (M.) modestus* sp. n., *P. (M.) rasnitsyni* sp. n., *P. (M.) sylvicola* sp. n., *P. (M.) taegeri* sp. n., *P. (M.) tuvaensis* sp. n., *Perilitus (Perilitus) dauricus* sp. n., *P. (P.) flavifacies* sp. n., *P. (P.) pappi* sp. n., *P. (Townesilitus) haeselbarthi* sp. n., *Pygostolus minax* sp. n., *Rilipertus dima* sp. n., *R. gondattii* sp. n., *Syntretus (Syntretus) abbreviator* sp. n., *S. (S.) areolatus* sp. n., *S. (S.) combinator* sp. n., *S. (S.) excavatus* sp. n., *S. (S.) grodekovi* sp. n., *S. (S.) kui* sp. n., *S. (S.) signatus* sp. n.

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INTRODUCTION

During the preparing of the Braconidae part for the «Key to the insects of Russian Far East» many new species of subfamily Euphorinae were discovered. The descriptions of 59 new species from genera *Blacus* Nees, 1818, *Blacometeorus* Tobias, 1976, *Centistes* Haliday, 1835, *Cosmophorus* Ratzeburg, 1848, *Dinocampus* Förster, 1862, *Elasmosoma* Ruthe, 1858, *Leiophron* Nees, 1818, *Marshiella* Shaw, 1985, *Meteorus* Haliday, 1835, *Perilitus* Nees, 1818, *Pygostolus* Haliday, 1833, *Rilipertus* Haeselbarth, 1996, and *Syntretus* Förster, 1862 are given below. The used morphological terms follow Belokobylskij and Tobias (1998). The following abbreviations are used for morphological terms: *POL* - postocellar line,

OOL - ocular-ocellar line, *Od* - maximum diameter of lateral ocellus; for depository institutions: EIS - Entomological Institute Hokkaido University (Sapporo, Japan); IZANU - Institute of Zoology, Ukrainian Academy of Sciences (Kiev, Ukraine), NIAES - National Institute of Agro-Environmental Sciences (Tsukuba, Japan), NIAST - National Institute of Agricultural Science and Technology, (Suwon, Korea), ZISP - Zoological Institute, Russian Academy of Sciences (St. Petersburg, Russia); for collectors: S.B. - S.A. Belokobylskij; D.K. - D.R. Kasparyan. The references are given in the end of paper.

DESCRIPTIONS OF NEW TAXA

Blacometeorus konishii Belokobylskij, sp. n.

Figs 1-7

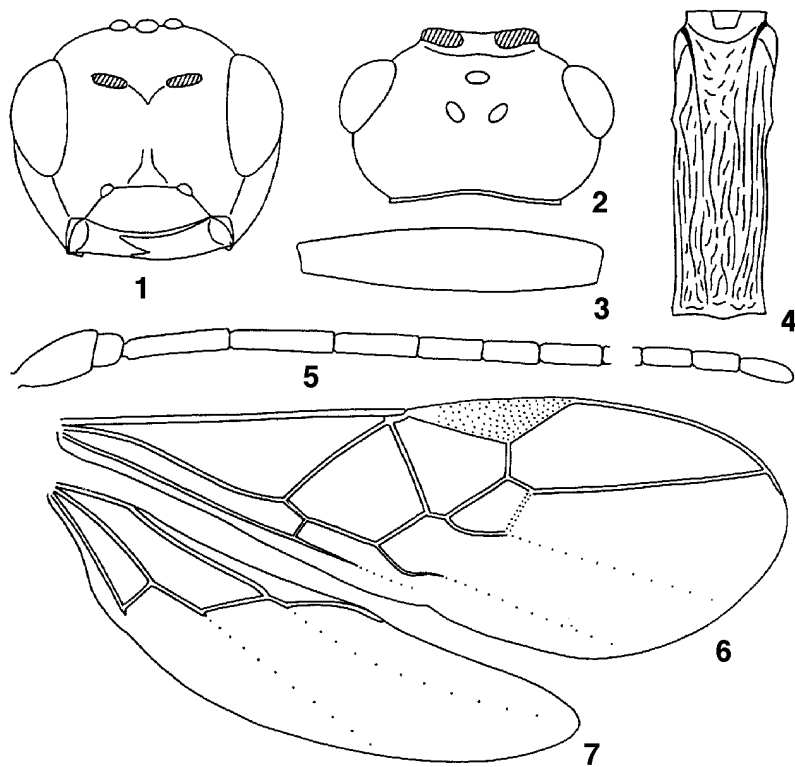
MATERIAL. Holotype: ♀, Japan: Hokkaido, Sapporo, Mt. Maruyama, 12.IX 1999 (S.B.) [ZISP].

DESCRIPTION. FEMALE. Body length 3.8 mm; fore wing length 3.1 mm. Width of head 1.6 times its median length. Occiput weakly concave. Temple behind eyes distinctly and roundly narrowed; transverse diameter of eye almost equal to length of temple (0.9 times on straight line). Frons weakly concave. Ocelli medium size, almost in equilateral triangle; *POL* equal to *Od*, 0.4 times *OOL*. Eye sparse setose, 1.5 times as high as broad. Malar suture shallow. Malar space height 0.75 times basal width of mandible, 0.3 times height of eye. Antennal tubercles small. Width of face 1.6 times its median height, 1.2 times height of eye. Tentorial pits small, distance between pits 1.5 times distance from pit to eye. Width of clypeus 2.7 times its median height, 0.6 times face width. Head distinctly and roundly narrowed below eyes.

Antenna slender, 17-segmented. Length of scape almost twice its width, 4 times length of pedicellus. First flagellar segment 4.2 times as long as its apical width, almost as long as second segment. Fourth flagellar segment 0.8 times as long as third one, 1.2 times as long as fifth one; fifth segment 0.9 time as long as sixth one. Length of penultimate segment 2.4 times its width, 0.8 times length of apical segment.

Thorax. Length 1.4 times its maximum height. Pronotum with very small pronope. Notauli deep, complete, crenulate. Prescutellar depression long, with distinct median carina, almost 0.5 times as long as scutellum. Scutellum with fine lateral carinae. Sternauli long, wide, shallow, rugulose. Propodeum without lateral tubercles, weakly and roundly abrupted in anterior 1/3 (lateral view), strongly and straightly abrupted in posterior 2/3.

Wings. Length of fore wing 2.7 times its width. Pterostigma narrow, its length 3.5 times maximum width. Radial cell unshortened. Parastigma small. Radial vein arising from middle of pterostigma. First radial abscissa 0.85 times as long as maximum width of pterostigma. Second radial abscissa 0.75 times first abscissa, 0.12 times straight third abscissa, 0.4 times first radiomedial vein. Second radiomedial cell narrow, its length 1.1 times maximum width. Recurrent vein 3 times second abscissa of medial vein. Discoidal cell narrowly sessile, its length 1.1 times its width.



Figs 1-7. *Blacometeorus konishii* sp. n. 1) head, frontal view; 2) head, dorsal view; 3) hind femur; 4) first abdominal tergite; 5) basal and apical segments of antenna; 6) fore wing; 7) hind wing.

Distance from nervulus to basal vein 1.4 times nervulus length. In hind wing, first abscissa of mediocubital vein 2.4 times as long as second abscissa.

Legs. Hind coxa with distinct curved dorsal keel. Hind femur 5 times as long as wide. Hind tarsus 0.9 times as long as hind tibia, its second segment 0.3 times as long as first segment, 1.2 times as long as fifth segment (without pretarsus).

Abdomen long and strongly compressed. First tergite long, weakly narrowed posteriorly, with small spiracular tubercles in basal 0.35. Apical width of first tergite 1.1 times its minimum width; length 2.8 times its apical width. Length of second and third tergites combined 4.2 times basal width of second tergite. Ovipositor sheath 2.4 times as long as first tergite, as long as thorax, 0.42 times as long as fore wing.

Sculpture and pubescence. Head smooth, face punctulate, with striation partly; frons laterally striate in anterior 1/3. Mesoscutum almost smooth, rugulose at short area medioposteriorly. Scutellum smooth, rugulose-punctulate laterally. Mesopleurae smooth at most part. Propodeum rugose reticulate, basolateral marginate areas in basal 1/3 smooth, areola very narrow, median carina present in basal 1/3. First abdominal tergite striate, rugulose in medioposterior part. Rest tergites smooth.

Colour. Body black. Antennae black, 4 basal segments reddish brown. Palpi yellowish brown. Legs light reddish brown, darker basally. Wings hyaline. Pterostigma yellow, dark apically. MALE unknown.

DISCUSSION. The new species is closely similar to *B. pusillus* (Hellén, 1958) (Tobias, 1982; Achterberg, 1988) and differs in having the first abdominal tergite longer and weakly narrowed apically, first flagellar segment equal to second segment, sixth segment longer, distance between hind ocelli equal to ocellar diameter, temple longer, malar space shorter, another shape of propodeum and light hind coxa and tarsus.

ETYMOLOGY. This species is named after Dr. K. Konishi, the well-known Japanese hymenopterist, who helped me during visit to Japan.

***Blacus (Blacus) alexandri* Belokobylskij, sp. n.**

Figs 8-15

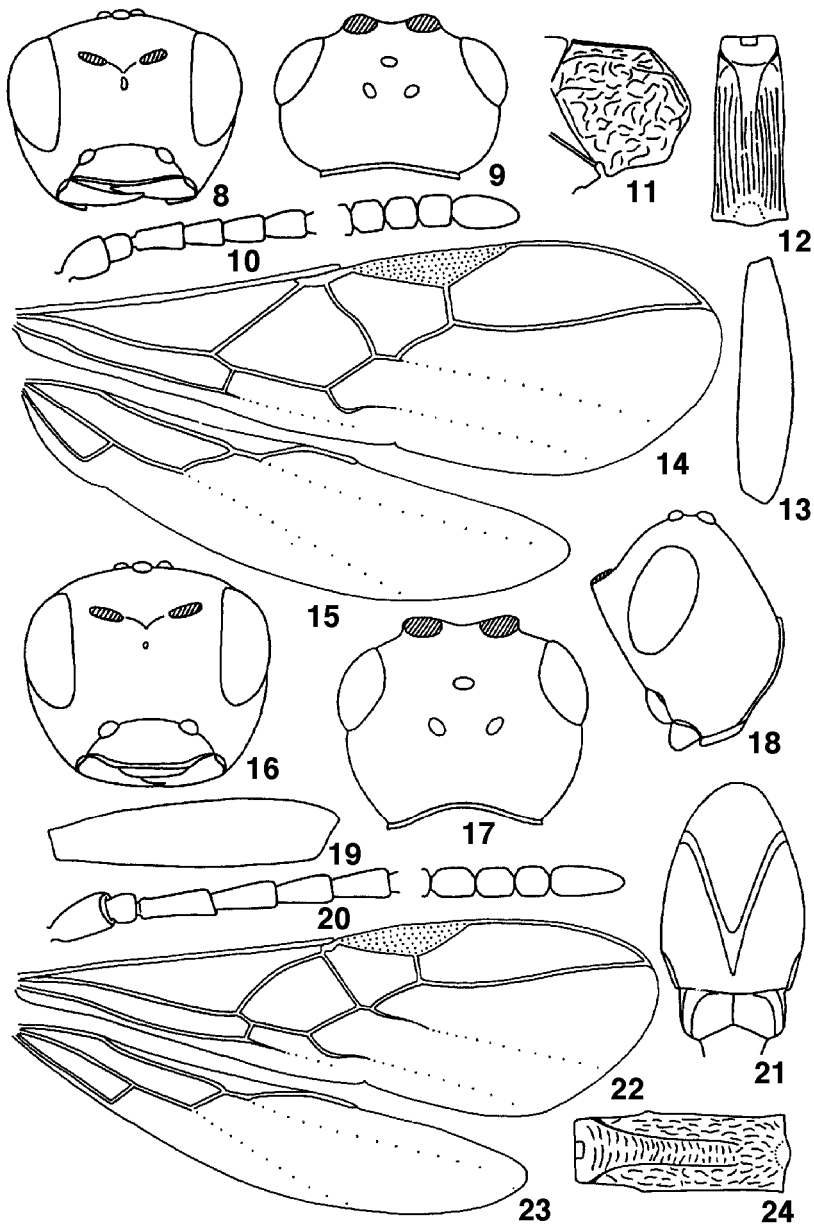
MATERIAL. Holotype: ♀, Russia: Primorskii krai, nature reserve "Kedrovaya Pad'", 28.V-21.VII 1989 (A. Kurejtshuk), "under bark of fur and into *Polyporus* on *Salix*" [ZISP]. Paratype: 1 ♂ with same label as holotype [ZISP].

DESCRIPTION. FEMALE. Body length 2.0 mm; fore wing length 1.8 mm. Width of head 1.5 times its median length, 1.5 times width of mesoscutum. Occiput rather weakly concave. Temple distinctly and roundly narrowed behind eyes; transverse diameter of eye almost equal to length of temple. Frons without distinct groove. Ocelli medium-sized, almost in equilateral triangle; *POL* 1.7 times *Od*, 0.55 times *OOL*. Eye glabrous, 1.7 times as high as broad. Malar suture absent. Malar space height equal to basal width of mandible, 0.3 times height of eye. Antennal tubercles very small. Width of face 1.4 times its median height, equal to height of eye. Tentorial pits distinct, distance between pits 1.8 times distance from pit to eye. Clypeal width 2.5 times its median height, 0.75 times face width. Head distinctly and roundly narrowed below eyes.

Antenna rather thick, 17-segmented. Length of scape 1.6 times its width. First flagellar segment 1.7 times as long as its apical width, as long as second segment. Length of penultimate segment 1.1 times its width, 0.6 times length of first segment, 0.5 times length of apical segment.

Thorax. Length 1.6 times its maximum height. Pronotum with small pronope. Notauli rather deep, complete, crenulate. Prescutellar depression long, with distinct median carina, almost smooth, 0.6 times as long as scutellum. Scutellum with rather distinct lateral carinae and without posterior lobe. Sternauli shallow, oblique, rugulose-striate. Propodeum without lateral tubercles, distinctly and convexly-roundly abruptly toward apex (lateral view).

Wings. Length of fore wing 3 times its width. Length of pterostigma 4.5 times its maximum width. Metacarpus 1.3 times as long as pterostigma. Parastigma large. Radial vein arising distinctly behind middle of pterostigma. First radial abscissa 0.9 times as long as maximum width of pterostigma, 0.13 times as long as weakly curved in basal half and straight in apical half second abscissa, 0.5 times as long as first radiomedial vein. Recurrent vein 3 times second abscissa of medial vein. Discoidal cell widely sessile, its length 1.7 times its width. Parallel vein distinctly curved basally. Distance from nervulus to basal vein 1.1 times nervulus length. In hind wing, first abscissa of mediocubital vein 1.4 times as long as second abscissa.



Figs 8-24. *Blacus alexandri* sp. n. (8-15) and *B. compressus* sp. n. (16-24). 8, 16) head, frontal view; 9, 17) head, dorsal view; 10, 20) basal and apical segments of antenna; 11) propodeum, lateral view; 12, 24) first abdominal tergite; 13, 19) hind femur; 14, 22) fore wing; 15, 23) hind wing; 18) head, lateral view; 21) mesoscutum.

Legs. Hind femur 4.5 times as long as wide. Hind tarsus 0.9 times as long as hind tibia, its second segment 0.4 times as long as first segment, 0.9 times as long as fifth segment (without pretarsus). Claws without black bristles.

Abdomen distinctly compressed. First tergite long, weakly widened posteriorly, with very small spiracular tubercles in basal 1/3. Apical width of first tergite 1.2 times its minimum width; length 2.2 times its apical width. Length of second and third tergites combined almost twice basal width of second tergite. Ovipositor sheath 2.2 times as long as first tergite, 0.38 times fore wing.

Sculpture and pubescence. Head smooth, face rugulose in upper 1/3. Mesoscutum and scutellum smooth. Mesopleurae smooth at large median part. Propodeum with distinct longitudinal carina in basal half and distinctly marginate large area in posterior half, densely rugose-reticulate. First abdominal tergite almost completely densely rugose-reticulate. Rest tergites smooth. Frons with sparse pale hairs, almost glabrous medially. Colour. Body reddish brown, head dark reddish brown, apical half of abdomen almost black. Antennae reddish brown, 2 basal segments paler. Palpi light reddish brown. Legs light reddish brown, hind coxa basally darker. Wings almost hyaline. Pterostigma brown.

MALE. Body length 1.9 mm; fore wing length 1.7 mm. Antenna slender and densely setose; first flagellar segment 2.5 times as long as its apical width, penultimate segment 1.6 times as long as wide. Parastigma large. Hind femur ventrally and hind tibia entirely with dense and erect hairs. Hind femur 5.7 times as long as wide. Otherwise similar to female.

DISCUSSION. The new species is similar to *B. (B.) modestus* Haeselbarth, 1973 (Haeselbarth, 1973) and differs in having the antenna thick, antennal segments short and wide, first abdominal tergite long, radial vein arising behind middle of pterostigma, propodeum with distinct longitudinal carina in anterior half and marginate large area in posterior half, discoidal cell widely sessile.

ETYMOLOGY. This species is dedicated to Alexandr Kirejtshuk.

***Blacus (Blacus) compressus* Belokobylskij, sp. n.**

Figs 16-24

MATERIAL. Holotype: ♀, Russia: Primorskii krai, Spassk-Dal'niy, shrubs, meadow, 6.VIII 1995 (S.B.) [ZISP]. Paratypes: Primorskii krai: 2 ♀, Anisimovka, forest, border of forest, meadow, 5-7.VI 1993, 26-27.VI 1996 (S.B.); 1 ♀, 10 km SW Sokol'chi, nature reserve Lazovskiy, forest, glades, 22-24.VII 1993 (S.B.) [ZISP].

DESCRIPTION. FEMALE. Body length 1.9-2.6 mm; fore wing length 1.6-2.0 mm. Width of head 1.4-1.5 times its median length, 1.7-1.8 times width of mesoscutum. Occiput concave. Temple distinctly and weakly roundly narrowed behind eyes, its length 1.1-1.3 times transverse diameter of eye. Frons without longitudinal groove. Ocelli small, in equilateral triangle; *POL* 1.5-2 times *Od*, 0.6 times *OOL*. Vertex almost linearly abruptly. Upper part of occipital carina placed almost at level of middle of eye. Eye almost glabrous, 1.4-1.6 times as high as broad. Malar suture absent. Malar space height 1.4-1.5 times basal width of mandible, 0.5-0.6 times height of eye. Antennal tubercles small. Width of face 1.4-1.5 times its median height, 1.2-1.3 times height of eye. Tentorial pits distinct, distance between pits 1.4-1.6 times distance from pit to eye. Width of clypeus almost 2.5 times its median height, 0.7-0.8 times face width. Head distinctly and roundly narrowed below eyes.

Antenna thick, 17-segmented. Length of scape 1.6-1.7 times its width. First flagellar segment 2.2-2.4 times as long as its apical width, 1.1-1.3 times as long as second segment. Length of penultimate segment 1.1-1.2 times its width, 0.5-0.6 times length of first segment, 0.4-0.45 times length of apical segment.

Thorax. Length 1.5-1.7 times its maximum height. Pronotum with small pronope. Length of mesoscutum 1.4-1.5 times its maximum width. Notauli deep, complete, crenulate. Prescutellar depression long, with distinct median carina, rugulose, 0.6 times as long as scutellum. Scutellum without lateral carinae and posterior lobe. Sternauli long, almost straight, shallow, rugulose. Propodeum without lateral tubercles, weakly and linearly abruptly in anterior half (lateral view), more strongly and regularly abruptly in posterior half.

Wings. Length of fore wing 3 times its width. Length of pterostigma 3.8-4.4 times its maximum width. Metacarpus 1.2-1.3 times as long as pterostigma. Parastigma very small. Radial vein arising almost from middle of pterostigma. First radial abscissa 0.6-0.9 times as long as maximum width of pterostigma, 0.1-0.15 times as long as almost straight or weakly curved second abscissa, 0.3-0.5 times as long as first radiomedial vein. Recurrent vein 3-4 times second abscissa of medial vein. Discoidal cell very shortly petiolate or (rarely) narrowly sessile, its length 1.3-1.4 times its width. Sclerotized part of third abscissa of medial vein almost as long as first radiomedial vein. Parallel vein distinctly curved basally. Distance from nervulus to basal vein 1-1.2 times nervulus length. In hind wing, first abscissa of mediocubital vein 1.7-2 times as long as second abscissa.

Legs. Hind femur 4-5 times as long as wide. Hind tarsus 0.9 times as long as hind tibia, its second segment 0.4 times as long as first segment, 1-1.1 times as long as fifth segment (without pretarsus). Claws without black bristles.

Abdomen strongly compressed. First tergite long, almost parallel-sided, with small spiracular tubercles in basal 1/3. Apical width of first tergite 1.2 times its minimum width or (rarely) equal to it; length 2.2-2.5 times its apical width. Length of second and third tergites combined 2-2.2 times basal width of second tergite. Ovipositor sheath 2.2-2.6 times as long as first tergite, 0.4-0.5 times fore wing, 1.2-1.4 times as long as hind tibia.

Sculpture and pubescence. Head smooth, frons anteriorly finely rugulose, face medially finely striate; sometimes face entirely smooth. Mesoscutum and scutellum smooth. Mesopleurae almost smooth medially, with fine punctulation partly. Propodeum with distinct longitudinal carina in basal half, with indistinct areola in posterior half, entirely and densely rugulose. First abdominal tergite completely densely rugulose-reticulate, with distinct dorsal carinae. Rest tergites smooth. Frons with very sparse hairs, partly glabrous.

Colour. Body black, abdomen dark reddish brown. Antennae dark reddish brown to black, 4 basal segments light reddish brown. Palpi light brown. Legs light reddish brown, hind legs reddish brown. Wings faintly infusate. Pterostigma brown.

MALE unknown.

DISCUSSION. The new species is similar to *B. (B.) stelfoxi* Haeselbarth, 1973 (Haeselbarth, 1973; Achterberg, 1988) and differs in having the vertex behind ocelli strongly and linearly abruptly (lateral view), lower position of upper part of occipital carina, mesoscutum narrow and discoidal cell petiolate.

***Blacus (Blacus) dadianshanicus* Belokobylskij, sp. n.**

Figs 25-33

MATERIAL. Holotype: ♀, Russia: Primorskii krai, 20 km ESE Partizansk, forest, 9-10. VII 1996 (S.B.) [ZISP]. Paratype: 1♀, Primorskii krai, 10 km SE Partizansk, shrubs, cretaceous slopes, 11.VII 1996 (S.B.) [ZISP].

DESCRIPTION. FEMALE. Body length 2.0 mm; fore wing length 1.8 mm. Width of head 1.7 times its median length, 1.2-1.3 times width of mesoscutum. Occiput weakly concave. Temple behind eyes almost parallel-sided in anterior half, distinctly roundly narrowed in posterior half; transverse diameter of eye almost equal to length of temple. Frons without or with shallow longitudinal groove. Ocelli small, almost in equilateral triangle; *POL* 1.5-1.7 times *Od*, 0.5-0.6 times *OOL*. Eye glabrous, 1.5 times as high as broad. Malar suture present, but indistinct. Malar space height 0.8-0.9 times basal width of mandible, 0.25-0.3 times height of eye. Antennal tubercles small. Width of face 1.8-2 times its median height, 1-1.1 times height of eye. Tentorial pits distinct, distance between pits 2.3 times distance from pit to eye. Width of clypeus twice its median height, 0.7 times face width. Head slightly and roundly narrowed below eyes.

Antenna rather slender, thickened towards apex, 17-segmented. Length of scape 1.7-1.8 times its width. First flagellar segment 3-3.3 times as long as its apical width, 1.1 times as long as second segment. Length of penultimate segment 1.1 times its width, 0.6 times length of first segment, 0.6 times length of apical segment.

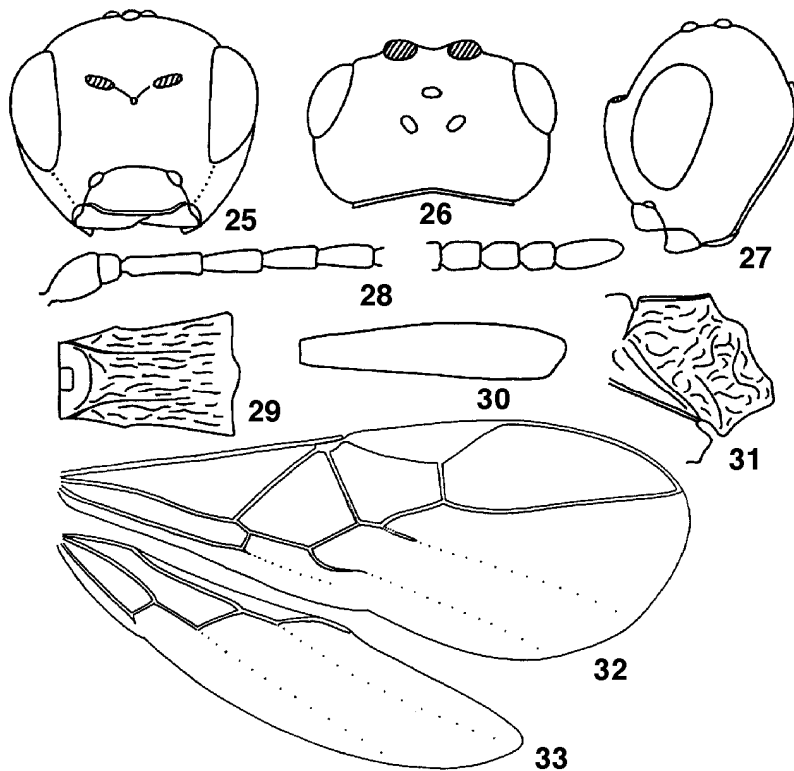
Thorax. Length 1.5-1.6 times its maximum height. Pronotum with distinct and small pronope. Notauli deep, complete, crenulate. Prescutellar depression short, with indistinct median carina, 0.4 times as long as scutellum. Scutellum with fine lateral carinae and without posterior lobe. Sternauli wide, shallow, rugulose-striate. Propodeum without lateral tubercles, very weakly abruptly in anterior 1/3 (lateral view), strongly and almost straightly abruptly in posterior 2/3.

Wings. Length of fore wing 2.5 times its width. Length of pterostigma 4 times its maximum width. Metacarpus 1.15-1.2 times as long as pterostigma. Parastigma small. Radial vein arising behind middle of pterostigma. First radial abscissa 0.9-1 times as long as maximum width of pterostigma, 0.15-0.17 times as long as weakly curved second abscissa, 0.5-0.6 times as long as first radiomedial vein. Recurrent vein 3.7-4 times second abscissa of medial vein. Discoidal cell very narrowly sessile, its length 1.3-1.4 times its width. Parallel vein distinctly curved basally. Distance from nervulus to basal vein equal to nervulus length. In hind wing, first abscissa of mediocubital vein 2-2.4 times as long as second abscissa.

Legs. Hind femur 4.7-5 times as long as wide. Hind tarsus 0.9-1 times as long as hind tibia, its second segment 0.5 times as long as first segment, 1.1 times as long as fifth segment (without pretarsus). Claws without black bristles.

Abdomen. First tergite rather short, distinctly widened posteriorly, with small spiracular tubercles in basal 1/3. Apical width of first tergite 1.8 times its minimum width; length 1.3 times its apical width. Length of second and third tergites combined 1.3 times basal width of second tergite. Hypopygium rather large. Ovipositor sheath 3.3-4 times as long as first tergite, 0.5-0.6 times fore wing, 1.6-1.8 times as long as hind tibia.

Sculpture and pubescence. Head entirely smooth. Mesoscutum almost entirely smooth. Scutellum finely and sparsely punctulate, almost smooth. Mesopleurae



Figs 25-33. *Blacus dadianshanicus* sp. n. 25) head, frontal view; 26) head, dorsal view; 27) head, lateral view; 28) basal and apical segments of antenna; 29) first abdominal tergite; 30) hind femur; 31) propodeum, lateral view; 32) fore wing; 33) hind wing.

almost smooth in large median part, sometimes very finely rugulose medially. Propodeum with distinct longitudinal carina in basal half, densely rugose-reticulate, marginated basolateral areas finely rugulose-punctulate or smooth. First abdominal tergite completely densely rugose-reticulate. Rest tergites smooth. Frons glabrous.

Colour. Body dark reddish brown, head darker or almost black. Antennae dark reddish brown to black, 2-3 basal segments light reddish brown. Palpi yellow. Legs light brown. Wings very faintly infuscate. Pterostigma brown.

MALE unknown.

DISCUSSION. The new species is similar to *B. (B.) errans* Nees, 1812 (Haeselbarth, 1973; Achterberg, 1988) and differs in having the ovipositor long, basal antennal segments short, first abdominal tergite short and frons glabrous.

***Blacus (Blacus) dezhevi* Belokobylskij, sp. n.**

Figs 34-40

MATERIAL. Holotype: ♀, Russia: Chukotka, 180 km lower from Omolon settlement on Omolon River, 10.VII 1976 (V. Marshakov) [ZISP].

DESCRIPTION. FEMALE. Body length 1.9 mm; fore wing length 1.7 mm. Width of head 1.5 times its median length, 1.25 times width of mesoscutum. Occiput distinctly concave. Temple behind eyes almost parallel-sided in anterior 1/3, strongly narrowed in posterior 2/3, transverse diameter of eye 1.4 times length of temple. Frons without longitudinal groove. Ocelli rather small, almost in equilateral triangle; *POL* almost twice *Od*, 0.7 times *OOL*. Eye glabrous, 1.6 times as high as broad. Malar suture absent. Malar space height 1.6 times basal width of mandible, 0.6 times height of eye. Antennal tubercles small. Width of face 1.5 times its median height, 1.4 times height of eye. Tentorial pits distinct, distance between pits 1.5 times distance from pit to eye. Width of clypeus 2.2 times its median height, 0.6 times face width. Head strongly and almost linearly narrowed below eyes.

Antenna weakly thickened towards apex, 17-segmented. Length of scape 1.4 times its width. First flagellar segment 3 times as long as its apical width, 1.1 times as long as second segment. Length of penultimate segment 1.7 times its width, 0.7 times length of first segment, 0.6 times length of apical segment.

Thorax. Length 1.5 times its maximum height. Pronotum with distinct and small pronope. Notauli rather deep, complete, crenulate in anterior half only. Prescutellar depression long, with distinct median carina, 0.5 times as long as scutellum. Scutellum with rather distinct lateral carinae, without posterior lobe. Sternauli long, wide, straight, rugulose. Propodeum with distinct lateral tubercles, weakly and linearly abruptly in anterior half (lateral view), strongly and regularly abruptly in posterior half.

Wings. Length of fore wing 2.7 times its width. Pterostigma narrow, its length almost 6 times its maximum width. Metacarpus 1.1 times as long as pterostigma. Parastigma small. Radial vein arising almost from distal 1/3 of pterostigma. First radial abscissa 1.2 times as long as maximum width of pterostigma, 0.1 times as long as distinctly curved second abscissa, 0.33 times as long as first radiomedial vein. Recurrent vein 5 times second abscissa of medial vein. Discoidal cell very narrowly sessile, its length 1.1 times its width. Parallel vein almost interstitial. Distance from nervulus to basal vein almost twice nervulus length. In hind wing, first abscissa of mediocubital vein 1.2 times as long as second abscissa.

Legs. Hind femur 4.8 times as long as wide. Hind tarsus 0.8 times as long as hind tibia, its second segment 0.4 times as long as first segment, 0.7 times as long as fifth segment (without pretarsus). Claws without black bristles.

Abdomen. First tergite long, weakly widened posteriorly, without distinct spiracular tubercles. Apical width of first tergite 1.3 times its minimum width; length 1.6 times its apical width. Length of second and third tergites combined 1.3 times basal width of second tergite. Ovipositor sheath 0.85 times as long as first tergite, 0.15 times fore wing.

Sculpture and pubescence. Head smooth. Mesoscutum almost smooth entirely. Scutellum coarsely rugulose-granulate. Mesopleurae medially almost smooth. Propodeum with distinct longitudinal carina in basal half, this carina divergent apically and these lateral carinae directed towards lateral tubercles; propodeum densely and entirely rugose-reticulate. First abdominal tergite completely densely rugose, with 2 long dorsal carinae. Rest tergites smooth. Frons almost entirely glabrous.

Colour. Body black, abdomen behind first tergite dark reddish brown. Antennae dark reddish brown, 2 basal segments light reddish brown. Palpi light brown. Legs light reddish brown, hind coxae dark. Wings faintly infuscate. Pterostigma light brown.

MALE unknown.

DISCUSSION. The new species is closely similar to *B. (B.) interstitialis* Ruthe, 1861 (Haeselbarth, 1973; Achterberg, 1988) and differs in having the distinct lateral tubercles of propodeum, first abdominal tergite short and weakly widened toward apex, ovipositor short, basal antennal segments short and second radial abscissa distinctly regularly curved.

ETYMOLOGY. This species is dedicated to S.I. Dezhnev (1605-1673), who was one of the Russian explorer on the Far East.

***Blacus (Blacus) puber* Belokobylskij, sp. n.**

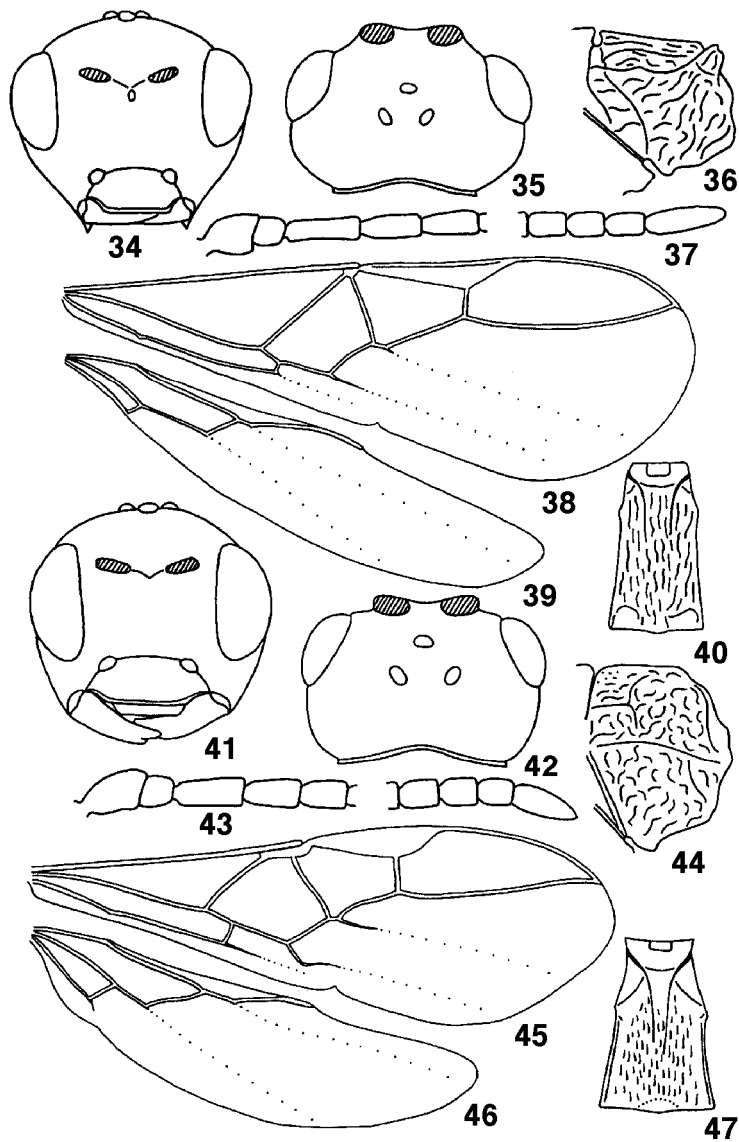
Figs 41-47

MATERIAL. Holotype: ♀, Russia: Primorskii krai, Spassk-Dal'niy, border of forest, glades, 8.VIII 1996 (S.B.) [ZISP]. Paratypes: 2 ♀, 1 ♂, with the same label as holotype [ZISP].

DESCRIPTION. FEMALE. Body length 3.3-3.5 mm; fore wing length 3.1 mm. Width of head 1.5-1.7 times its median length, 1.1 times width of mesoscutum. Occiput weakly concave. Temple behind eyes almost parallel-sided in anterior 1/3, roundly narrowed in posterior 2/3, transverse diameter of eye almost equal to length of temple. Frons without longitudinal groove. Ocelli medium-sized, in equilateral triangle; *POL* 1.4-1.8 times *Od*, 0.5 times *OOL*. Eye with sparse hairs, 1.6 times as high as broad. Malar suture absent. Malar space height 0.8 times basal width of mandible, 0.2-0.3 times height of eye. Antennal tubercles small. Width of face 1.4-1.6 times its median height, equal to height of eye. Tentorial pits distinct, distance between pits 2.3-2.5 times distance from pit to eye. Width of clypeus 2.5 times its median height, 0.85-0.9 times face width. Head slightly and roundly narrowed below eyes. Antenna rather thick, 17-segmented. Length of scape 1.6 times its width. First flagellar segment 1.8-2.2 times as long as its apical width, 1.1-1.2 times as long as second segment. Length of penultimate segment 1.4-1.5 times its width, 0.55-0.6 times length of first segment, 0.5 times length of apical segment.

Thorax. Length 1.5-1.6 times its maximum height. Pronotum with distinct and small pronope. Notauli deep anteriorly, shallow posteriorly, complete, crenulate. Prescutellar depression long, with distinct median carina, rugulose, 0.5 times as long as scutellum. Scutellum without lateral carinae and posterior lobe. Sternauli short, rather shallow, straight, rugulose-reticulate. Propodeum without or with very small lateral tubercles, almost not abruptly in anterior 1/3 (in lateral view), strongly and almost straightly abruptly in posterior 2/3.

Wings. Length of fore wing 2.8-3 times its width. Length of pterostigma 4-4.2 times its maximum width. Metacarpus 1.2-1.25 times as long as pterostigma. Parastigma large. Radial vein arising from distal 1/3-2/5 of pterostigma. First radial abscissa 1.1-1.2 times as long as maximum width of pterostigma, 0.18 times as long as weakly curved basally and straight at most part second abscissa, 0.6 times as long as first radiomedial vein. Recurrent vein 5-10 times second abscissa of medial vein. Discoidal cell widely sessile, its length 1.25-1.3 times its width. Parallel vein distinctly curved basally. Sclerotized part of third medial abscissa 0.6-0.65 times as long as first radiomedial vein. Distance from nervulus to basal vein 1.5-1.6 times nervulus length. In hind wing, first abscissa of mediocubital vein 2.5 times as long as second abscissa.



Figs 34-47. *Blacus dezhnevi* sp. n. (34-40) and *B. puber* sp. n. (41-47). 34, 41) head, frontal view; 35, 42) head, dorsal view; 36, 44) propodeum, lateral view; 37, 43) basal and apical segments of antenna; 38, 45) fore wing; 39, 46) hind wing; 40, 47) first abdominal tergite.

Legs. Hind femur 4 times as long as wide. Hind tarsus 0.8-0.9 times as long as hind tibia, its second segment 0.35-0.4 times as long as first segment, 0.8-0.9 times as long as fifth segment (without pretarsus). Claws without black bristles.

Abdomen. First tergite rather long, distinctly widened posteriorly, with distinct spiracular tubercles in basal 1/3. Apical width of first tergite 1.6-1.7 times its minimum width; length 1.3-1.5 times its apical width. Length of second and third tergites combined 1.5-1.7 times basal width of second tergite. Hypopygium rather large. Ovipositor sheath 1.5-1.8 times as long as first tergite, 0.3 times fore wing, 0.7-0.8 times as long as hind tibia.

Sculpture and pubescence. Head finely punctulate, almost smooth, face rugulose at most part. Mesoscutum finely punctulate, rugulose on short area medioposteriorly. Scutellum almost smooth. Mesopleurae medially widely smooth. Propodeum with distinct longitudinal carina in basal 1/3, densely rugulose, basolateral areas finely rugulose-granulate, partly almost smooth. First abdominal tergite finely and almost completely rugulose. Rest tergites smooth. Frons entirely densely setose.

Colour. Body reddish brown, sometimes darker, abdomen behind first tergite dark reddish brown or black. Antennae dark reddish brown, reddish brown in basal 1/3. Palpi light brown. Legs light reddish brown or light brown. Wings faintly infusate. Pterostigma yellow.

MALE. Body length 3.4 mm; fore wing length 3.1 mm. Head behind eye roundly narrowed. Antennae slender and long. First flagellar segment 3.3 times as long as its apical width; penultimate segment 1.8 times as long as width. Ventral side of hind femur and hind tibia with very dense and erect hairs. Hind femur 5 times as long as width. Length of first abdominal tergite 1.7 times its apical width. Parastigma strongly largened. Otherwise similar to female.

DISCUSSION. The new species is closely similar to *B. (B.) paganus* Haliday, 1835 and *B. (B.) radialis* Haeselbarth, 1973 (Haeselbarth, 1973; Achterberg, 1988) and differs in lacking the lateral tubercles of propodeum, in having the basal and apical antennal segments long and first abdominal tergite wide.

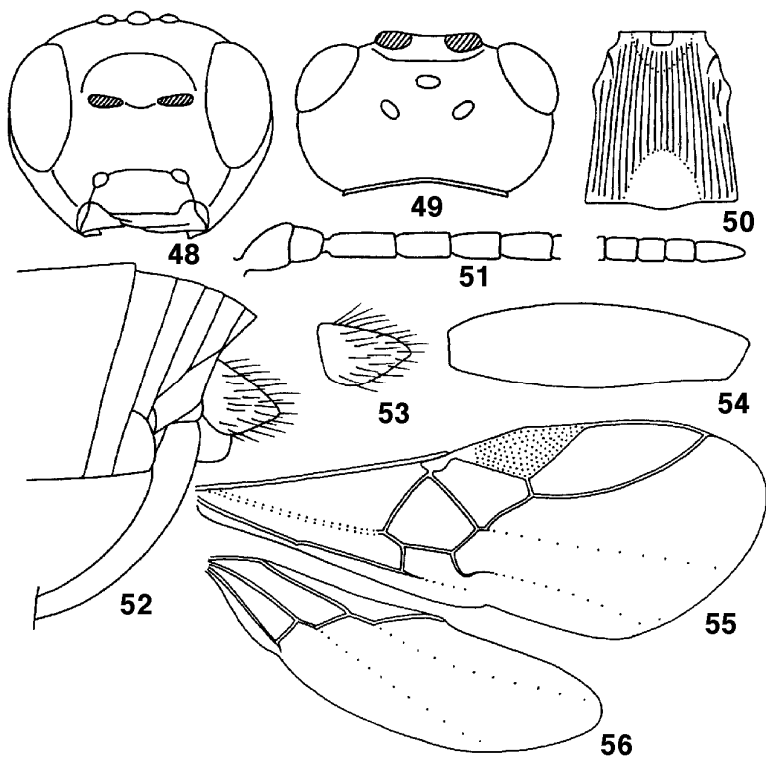
***Centistes (Ancylocentrus) kurilensis* Belokobylskij, sp. n.**

Figs 48-56

MATERIAL. Holotype: ♀, Russia: Kuril Is., Kunashir I., Sernovodsk, mixed forest, 28.VII 1981 (S.B.) [ZISP]. Paratype: 1 ♀, Kunashir I., 10 km S Yuzhno-Kuril'sk, mixed forest, 20.VII 1981 (S.B.) [ZISP].

DESCRIPTION. Female. Body length 2.5-2.8 mm; fore wing length 2.7-2.8 mm. Head width 1.8-1.9 times its median length, almost equal to width of mesoscutum (without tegulae). Temple behind eyes slightly convex in anterior 1/3, distinctly and almost linearly narrowed in posterior 2/3; length of temple 1.1 times transverse diameter of eye. Ocelli in triangle with base 1.5 times its sides; *POL* 2-2.5 times *Od*, almost equal to *OOL*. Eye without hairs, 1.6 times as high as broad. Malar space height 0.3 times eye height, 1-1.1 times basal width of mandible. Face width almost equal to eye height, 1.7-1.8 times height of face. Clypeus flat, its width twice maximum height, 0.8 times width of face. Distance between tentorial pits 2-2.5 times distance from pit to eye. Malar suture distinct. Hypostomal flanges distinct and pointed. Mandible twisted.

Antennae almost filiform, 24-25-segmented. First flagellar segment 2.8-3 times as long as its apical width, 1.1-1.2 times as long as second segment. Penultimate segment 1.3-1.4 times as long as wide, 0.45-0.5 times as long as first segment and 0.6 times as long as apical segment.



Figs 48-56. *Centistes (Ancylocentrus) kurilensis* sp. n. 48) head, frontal view; 49) head, dorsal view; 50) first abdominal tergite; 51) basal and apical segments of antenna; 52) apical part of abdomen and ovipositor; 53) ovipositor sheath; 54) hind femur; 55) fore wing; 56) hind wing.

Thorax. Length 1.4 times its height. Mesoscutum almost glabrous in posterior half. Notauli present, complete, but shallow, partly crenulate. Prescutellar depression deep, with median carina, sparsely crenulate, 0.4-0.5 times as long as scutellum. Scutellum convex. Sternauli distinct, long, S-curved, crenulate rugulose.

Wing. Fore wing 2.5-2.6 times as long as wide. Radial cell shortened, metacarpus (within radial cell) 0.9 times as long as pterostigma, 2.3 times as long as distance from apex of radial cell to apex of wing. Radial vein arising slightly behind middle of pterostigma. First radial abscissa 0.1 times second abscissa, which is distinctly and uniformly curved. First radiomedial vein 3.2-3.8 times first radial abscissa, 1.6 times recurrent vein. Recurrent vein distinctly antefurcal. Discoidal cell shortly petiolate anteriorly. Distance from nervulus to basal vein 0.7-1 times nervulus length. In hind wing, first abscissa of mediocubital vein 5.8-6.7 times second abscissa.

Legs. All femora weakly thickened. Fore femur 3.3-3.4 times as long as wide. Hind femur 3.4-3.5 times as long as wide. Hind tarsus 0.9 times as long as hind tibia; its second segment 0.5-0.6 times as long as first segment, 0.8 times as long as fifth segment (without pretarsus). Claws rather short.

Abdomen. First tergite not uniformly and almost linearly widened from base to apex, with small spiracular tubercles in basal 1/3. Apical width of first tergite 1.8-2 times its basal width; length almost equal to apical width. Combined length of second and third tergites 1.2-1.3 times basal width of second tergite. Second suture absent. Hypopygium simple and with long hairs. Ovipositor sheath rather short, wide, flat, distinctly narrowed apically, entirely with long and erect hairs; hair length 0.4-0.5 times maximum width of sheath. Length of sheath 1.3-1.5 times its maximum width, 0.5-0.6 times length of first tergite.

Sculpture. Head smooth, face densely and finely punctulate. Mesoscutum anteriorly punctulate, other part smooth. Sides of pronotum smooth, rugulose in anterior 1/3. Propodeum with fine longitudinal in basal half and fine transverse curved median carinae; rugulose-punctulate, smooth in small areas anterolaterally. First abdominal tergite striate, smooth in medioapical area. Rest tergites smooth.

Colour. Body black. Antenna basally (2 segments) and in apical half dark reddish brown or reddish brown, rest part of antenna light reddish brown or reddish brown. Palpi yellow. Legs light brown. Wings very faintly infuscate. Pterostigma brown, pale basally.

MALE unknown.

DISCUSSION. The new species is similar to *C. (A.) edentatus* Haliday, 1835 (Belokobylskij, 1992) and differs in having the ovipositor sheath wide, strongly narrowed toward apex and with long hairs and hypopygium without lateral setose tubercles.

***Centistes (Ancylocentrus) mucri* Belokobylskij, sp. n.**

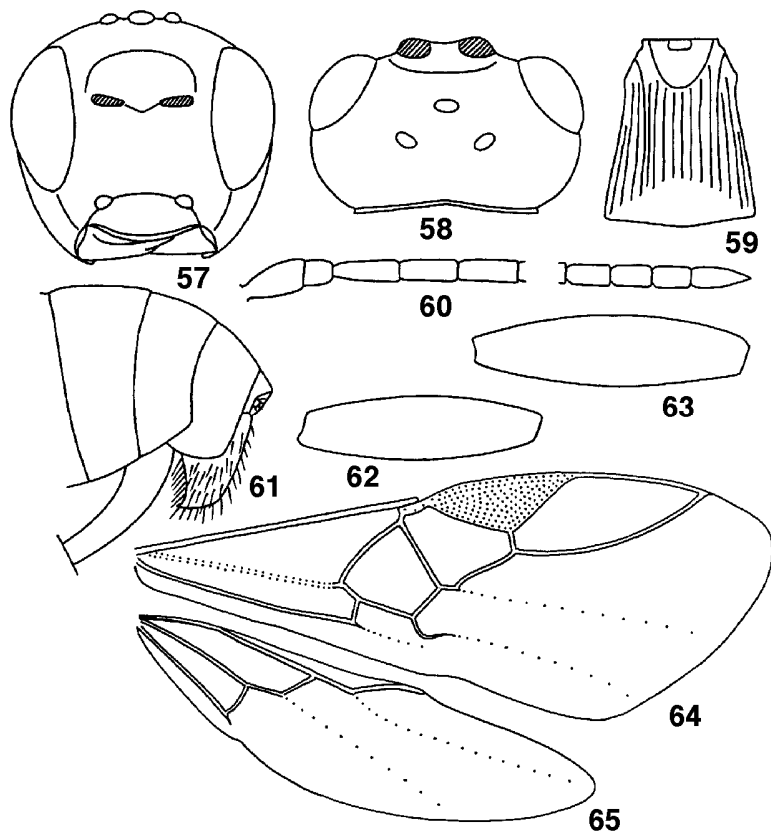
Figs 57-65

MATERIAL. Holotype: ♀, Russia: Primorskii krai, Spassk-Dal'niy, shrubs, border of forest, 31.VII 1996 (S.B.) [ZISP]. Paratypes: Primorskii krai: 3 ♀, Khasan, meadow, shrubs, sparse oak forest, 12-14.VIII 1998 (S.B.); 1 ♀, 5 km W Anisimovka, forest, glades, 6-9.VIII 1993 (S.B.); 1 ♀, 20 km SE Spassk-Dal'niy, forest, border of forest, 13.VII 1995 (S.B.) [all in ZISP].

DESCRIPTION. Female. Body length 2.1-2.8 mm; fore wing length 1.8-2.2 mm. Head width 1.7 times its median length, 1.1 times width of mesoscutum (without tegulae). Temple behind eyes almost parallel-sided in anterior 1/3, distinctly and almost linearly narrowed in posterior 2/3; length of temple 1-1.1 times transverse diameter of eye. Ocelli in triangle with base 1.5-1.6 times its sides; *POL* 2-2.5 times *Od*, 1.1-1.3 times *OOL*. Eye with sparse hairs or without it, 1.6 times as high as broad. Malar space height 0.3 times eye height, 0.8-0.9 times basal width of mandible. Face width 0.8-0.9 times eye height, 1.5-1.6 times height of face. Clypeus distinctly convex, its width 2-2.3 times maximum height, 0.8 times width of face. Distance between tentorial pits 2-2.2 times distance from pit to eye. Malar suture distinct. Hypostomal flanges short and pointed. Mandible distinctly twisted.

Antennae filiform, 19-21-segmented. First flagellar segment 2.5-3 times as long as its apical width, 1.1-1.2 times as long as second segment. Penultimate segment 1.7 times as long as wide, 0.6 times as long as first segment and 0.7 times as long as apical segment.

Thorax. Length 1.4 times its height. Mesoscutum almost glabrous in posterior 2/3. Notauli present, complete, rather deep, crenulate. Prescutellar depression deep, with



Figs 57-65. *Centistes (Ancylocentrus) mucri* sp. n. 57) head, frontal view; 58) head, dorsal view; 59) first abdominal tergite; 60) basal and apical segments of antenna; 61) apical part of abdomen and ovipositor; 62) fore femur; 63) hind femur; 64) fore wing; 65) hind wing.

median carina, almost smooth, 0.4-0.5 times as long as scutellum. Scutellum convex. Sternauli distinct, rather short, oblique, crenulate.

Wings. Fore wing 2.5 times as long as wide. Radial cell shortened, metacarpus (within radial cell) 0.8-0.85 times as long as pterostigma, 1.5-1.8 times as long as distance from apex of radial cell to apex of wing. Radial vein arising from middle of pterostigma. First radial abscissa almost 0.1 times second abscissa, which is uniformly curved. First radiomedial vein 4-4.3 times first radial abscissa, 1.5-1.7 times recurrent vein. Recurrent vein distinctly antefurcal. Discoidal cell shortly petiolate anteriorly. Distance from nervulus to basal vein 0.7-1 times nervulus length. In hind wing, first abscissa of mediocubital vein 2.8-3.5 times second abscissa.

Legs. All femora thickened. Fore femur 3.4-3.5 times as long as wide. Hind femur 3.5-4 times as long as wide. Hind tarsus 0.8-0.9 times as long as hind tibia; its second segment 0.5 times as long as first segment, 0.9 times as long as fifth segment (without pretarsus). Claws rather short.

Abdomen. First tergite uniformly and linearly widened from base to apex, with small spiracular tubercles in basal 1/3. Apical width of first tergite 2.2-2.5 times its basal width; length 1.1 times apical width. Combined length of second and third tergites 1.6-1.7 times basal width of second tergite. Second suture absent. Hypopygium simple and partly setose. Ovipositor sheath short, wide, flat, distinctly narrowed apically, its outer side curved and inner side straight, with long and erect hairs entirely; length of long hairs 0.4-0.5 times maximum width of sheath. Length of sheath 1.8-1.9 times its maximum width, 0.6 times length of first tergite.

Sculpture. Head and mesothorax smooth, face densely and finely punctulate. Sides of pronotum smooth in upper 1/4, coarsely rugose-striate in other part. Propodeum with median distinct longitudinal carina in basal half and high transverse carinae; smooth in anterior half, sparsely rugulose partly in posterior half. First abdominal tergite striate, smooth apically. Rest tergites smooth. Face with dense white and rather long hairs.

Colour. Body black. Antenna dark reddish brown to black, 4-5 basal segments light reddish brown. Palpi yellow. Legs light reddish brown, hind coxa black in basal 1/2-2/3. Wings faintly infusate. Pterostigma brown, pale basally and apically.

MALE unknown.

DISCUSSION. The new species is similar to *C. (A.) planivalvis* Belokobylskij, 1992 (Belokobylskij, 1992) and differs in having the discoidal cell petiolate, notauli crenulate, first abdominal tergite wide, antennal segments short, ovipositor sheath wide and irregularly round apically.

***Centistes (Ancylocentrus) parentalis* Belokobylskij, sp. n.**

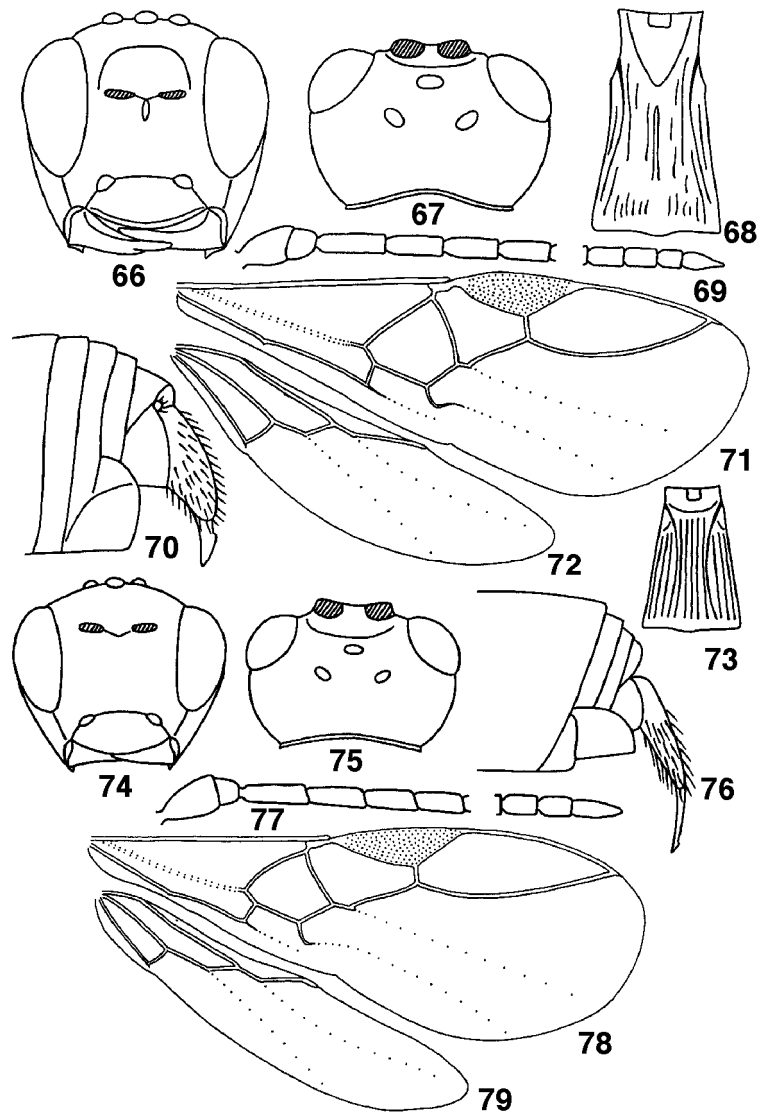
Figs 66-72

MATERIAL. Holotype: ♀, Russia: Primorskii krai, Spassk-Dal'niy, border of forest, glades, 8.VIII 1996 (S.B.) [ZISP]. Paratypes: Primorskii krai: 2 ♀ with same label as holotype; 1 ♀, 25 km SW Slavyanka, Sukhanovka, forest, shrubs, 18-20.VIII 1998 (S.B.) [ZISP].

DESCRIPTION. FEMALE. Body length 2.9-3.4 mm; fore wing length 2.8-3.3 mm. Head width 1.6-1.7 times its median length, 1.1 times width of mesoscutum (without tegulae). Temple behind eyes uniformly and roundly narrowed; length of temple 1.1-1.2 times transverse diameter of eye. Ocelli in triangle with base 1.3-1.4 times its sides; *POL* 1.4-1.7 times *Od*, 1.1-1.3 times *OOL*. Eye without hairs, 1.6 times as high as broad. Malar space height 0.2-0.25 times eye height, 0.6-0.8 times basal width of mandible. Face width 0.8 times eye height, 1.4 times height of face. Clypeus almost flat, its width 2.3-2.4 times maximum height, almost equal to width of face. Distance between tentorial pits 2.8-3 times distance from pit to eye. Malar suture distinct. Hypostomal flanges short and pointed. Mandible large and distinctly twisted, its length 1.1-1.2 times transverse diameter of eye. Head lower eyes weakly narrowed.

Antennae slender, filiform, 24-25-segmented. First flagellar segment 2.8-3 times as long as its apical width, 1-1.15 times as long as second segment. Penultimate segment 1.3-1.7 times as long as wide, 0.4 times as long as first segment and 0.6-0.7 times as long as apical segment.

Thorax. Length 1.4-1.5 times its height. Mesoscutum almost glabrous at most part (except anterior and lateral borders). Notauli present anteriorly at short part of mesoscutum. Mesoscutum with deep oval median depression in posterior 1/4.



Figs 66-79. *Centistes (Ancylocentrus) parentalis* sp. n. (66-72) and *C. (Centistes) pumilio* sp. n. (73-79). 66, 74) head, frontal view; 67, 75) head, dorsal view; 68, 73) first abdominal tergite; 69, 77) basal and apical segments of antenna; 70, 76) apical part of abdomen and ovipositor; 71, 78) fore wing; 72, 79) hind wing.

Prescutellar depression deep, with median carina, smooth, 0.3-0.4 times as long as scutellum. Scutellum convex. Sternauli shallow, oblique, narrow, crenulate.

Wing. Fore wing 2.5 times as long as wide. Radial cell weakly shortened, metacarpus (within radial cell) almost equal to pterostigma, 2.3-2.5 times as long

as distance from apex of radial cell to apex of wing. Radial vein arising almost from middle of pterostigma. First radial abscissa 0.1 times second abscissa, which is distinctly and uniformly curved. First radiomedial vein 2.3-2.5 times first radial abscissa, 1.7-1.8 times recurrent vein. Recurrent vein distinctly antefurcal. Discoidal cell shortly petiolate anteriorly. Distance from nervulus to basal vein almost equal to nervulus length. In hind wing, first abscissa of mediocubital vein 3-3.3 times second abscissa.

Legs. All femora weakly thickened. Fore femur 4 times as long as wide. Hind femur 3.5-3.8 times as long as wide. Hind tarsus 0.8 times as long as hind tibia; its second segment 0.5 times as long as first segment, 0.8 times as long as fifth segment (without pretarsus). Claws rather short and thick.

Abdomen. First tergite almost uniformly and linearly widened from base to apex, with small spiracular tubercles in basal 1/3. Apical width of first tergite 1.7-1.8 times its basal width; length 1.5 times its apical width. Combined length of second and third tergites almost twice basal width of second tergite. Second suture very fine. Hypopygium simple and glabrous. Ovipositor sheath rather short, wide, flat, roundly narrowed apically, round ventrally, with short numerous and erect hairs; hair length 0.2-0.3 times maximum width of sheath. Length of sheath 2.2-2.3 times its maximum width, 0.7 times length of first tergite.

Sculpture. Head smooth, face finely and densely punctulate. Mesothorax smooth. Sides of pronotum smooth, medially narrowly sculptured. Propodeum with fine longitudinal and strong transverse curved median carinae, smooth in anterior half, sparsely rugulose in posterior half. First abdominal tergite sparsely and irregularly striate, smooth apically, with short keel in median 1/3. Rest tergites smooth.

Colour. Head (except clypeus) and abdomen (except lateral parts of its basal half) black or dark reddish brown, rest part of body light reddish brown. Antenna dark reddish brown, 2 basal segments light brown. Palpi yellowish brown. Legs light brown. Wings very faintly infusate. Pterostigma brown, pale basally.

MALE unknown.

DISCUSSION. The new species is similar to *C. (A.) collaris* Thomson, 1895 and *C. (A.) medythiae* Maeto et Nagai, 1985 (Belokobylskij, 1992) and differs in having the head weakly narrowed ventrally, clypeus wide and narrow and mandible long.

***Centistes (Centistes) pumilio* Belokobylskij, sp. n.**

Figs 73-79

MATERIAL. Holotype: ♀, Russia: Primorskii krai, 15 km NW Partizansk, Brovnichi, forest, 29.VI 1996 (S.B.) [ZISP]. Paratypes: Primorskii krai: 1 ♀ with same label as holotype; 2 ♀, 15 km WNW Partizansk, Fridman, forest, 28.VI 1996 (S.B.); 1 ♀, Anisimovka, forest, border of forest, 26-27.VI 1996 (S.B.); 1 ♀, 10 km E Pos'et, Gvozdevo, oak forest, 1.VI 1989 (S.B.) [ZISP].

DESCRIPTION. FEMALE. Body length 1.5-1.9 mm; fore wing length 1.8-2.0 mm. Head width 1.6 times its median length, 1.25 times width of mesoscutum (without tegulae). Temple behind eyes almost parallel-sided in anterior 1/3, distinctly and almost linearly narrowed in posterior 2/3. Length of temple 1.2 times transverse diameter of eye. Ocelli in triangle with base 1.5-1.7 times its sides; *POL* 2-2.2 times *Od*, 0.9-1 times *OOL*. Eye with short and sparse hairs, 1.6-1.7 times as high as broad. Malar space height 0.3-0.4 times eye height, 1.1-1.2 times basal width of

mandible. Face width 0.9 times eye height, 1.3 times height of face. Clypeus weakly convex, its width almost twice maximum height, 0.8 times width of face. Distance between tentorial pits 1.5-2 times distance from pit to eye. Malar suture distinct. Hypostomal flanges short and pointed. Mandible distinctly twisted.

Antennae filiform, 21-22-segmented. First flagellar segment 2.8-3 times as long as its apical width, 1.1 times as long as second segment. Penultimate segment 1.5-1.7 times as long as wide, 0.6 times as long as first segment and 0.6-0.7 times as long as apical segment.

Thorax. Length 1.3-1.4 times its height. Mesoscutum almost glabrous in posterior half. Notauli entirely absent. Prescutellar depression deep, with median carina, smooth, 0.4 times as long as scutellum. Scutellum convex. Sternauli distinct, oblique, narrow, crenulate.

Wing. Fore wing 2.6 times as long as wide. Radial cell weakly shortened, metacarpus (within radial cell) 1.1 times as long as pterostigma, 3.5-4.5 times as long as distance from apex of radial cell to apex of wing. Radial vein arising behind middle of pterostigma. First radial abscissa 0.1 times second abscissa, which is distinctly and uniformly curved. First radiomedial vein 2.7-4.3 times first radial abscissa, 1.7-1.9 times recurrent vein. Recurrent vein distinctly antefurcal. Discoidal cell shortly petiolate anteriorly. Distance from nervulus to basal vein 0.5-0.9 times nervulus length. In hind wing, first abscissa of mediocubital vein 2-2.2 times second abscissa.

Legs. All femora more or less thickened. Fore femur 3-3.3 times as long as wide. Hind femur 3.7-4 times as long as wide. Hind tarsus 0.9 times as long as hind tibia; its second segment 0.5-0.6 times as long as first segment, 0.7 times as long as fifth segment (without pretarsus). Claws rather short.

Abdomen. First tergite uniformly and linearly widened from base to apex, with spiracular tubercles in basal 1/3. Apical width of first tergite 1.7-1.8 times its basal width; length 1.2-1.3 times its apical width. Combined length of second and third tergites 1.4 times basal width of second tergite. Second suture absent. Hypopygium simple. Ovipositor sheath rather long, narrow, flat, slightly narrowed apically, round ventrally, with short numerous and erect hairs; hair length 0.4-0.6 times maximum width of sheath. Length of sheath 3.8-4.3 times its maximum width, 0.8-0.9 times length of first tergite.

Sculpture. Head and mesothorax smooth. Sides of pronotum smooth in upper half, rugulose-granulate in lower half. Propodeum with median longitudinal carina in basal half and large areola in apical half, densely granulate in basolateral areas and smooth mediolaterally; apical half of propodeum sparsely rugose. First abdominal tergite almost entirely striate, with distinct dorsal carinae. Rest tergites smooth.

Colour. Body black. Antenna dark reddish brown, 4 basal segments light reddish brown or reddish brown. Palpi yellowish brown. Legs light reddish brown. Wings hyaline. Pterostigma brown.

MALE unknown.

DISCUSSION. The new species is similar to Chinese *C. (C.) guizhouensis* Chen et Achterberg, 1997 (Chen & Achterberg, 1997) and differs in having the antennal segments short, face less transverse, thorax short, propodeum granulate mostly in basal half, first abdominal tergite shorter, ovipositor sheath narrow and linearly narrowed toward apex, round apically and size small. *C. (C.) pumilio* sp. n. is similar also to *C. (C.) cuspidatus* Haliday, 1833 and differs in having the distinct narrow and crenulate sternauli, mesopleura in lower 1/3 smooth, basal flagellar segments slender, ovipositor sheath not strongly narrowed toward apex.

***Centistes (Centistes) shufanus* Belokobylskij, sp. n.**
Figs 80-88

MATERIAL. Holotype: ♀, Russia: Primorskii krai, 20 km SW Putsilovka, Monakino, forest, glades, 24-28.VI 1993 (S.B.) [ZISP].

DESCRIPTION. FEMALE. Body length 2.5 mm; fore wing length 2.3 mm. Head width 1.8 times its median length, 1.1 times width of mesoscutum (without tegulae). Temple distinctly and roundly narrowed behind eyes; length of temple 0.9 times transverse diameter of eye. Ocelli in triangle with base 1.3 times its sides; *POL* 2.2 times *Od*, 1.2 times *OOL*. Eye without hairs, 1.8 times as high as broad. Malar space height 0.25 times eye height, equal to basal width of mandible. Face width 0.8 times eye height, 1.5 times height of face. Clypeus convex, its width 2.3 times its maximum height, 0.8 times width of face. Distance between tentorial pits 2.7 times distance from pit to eye. Malar suture distinct. Hypostomal flanges short and obtuse. Mandible distinctly twisted.

Antennae filiform, remaining 20 segments. First flagellar segment 2.6 times as long as its apical width, 0.95 times as long as second segment. Subapical segments 1.5 times as long as wide.

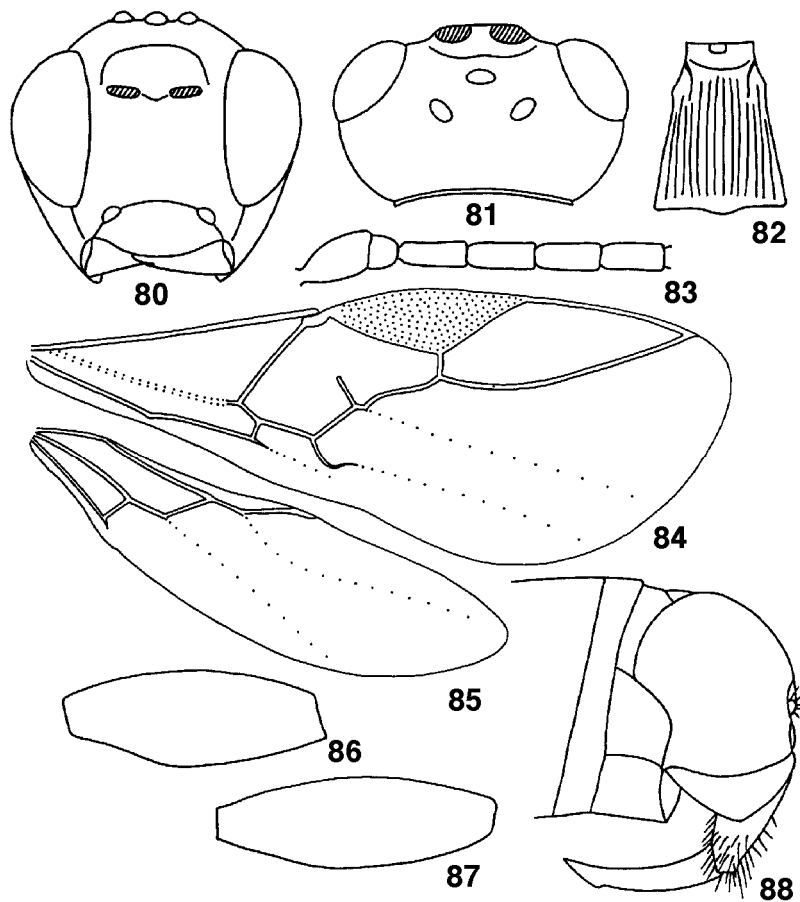
Thorax. Length 1.4 times its height. Pronope indistinct. Mesoscutum almost glabrous in posterior 3/4. Notauli entirely absent. Prescutellar depression deep, with median carina, smooth, 0.4 times as long as scutellum. Scutellum convex. Sternauli lost.

Wing. Fore wing 2.4 times as long as wide. Radial cell shortened, metacarpus (within radial cell) 0.9 times as long as pterostigma, 3.2 times as long as distance from apex of radial cell to apex of wing. Radial vein arising almost from middle of pterostigma. First radial abscissa 0.1 times second abscissa, which is weakly curved. First radiomedial vein 3.3 times first radial abscissa, 1.7 times recurrent vein. Recurrent vein distinctly antefurcal. First medial abscissa present in posterior 1/3 only, absent in anterior 2/3. Distance from nervulus to basal vein 1.4 times nervulus length. In hind wing, first abscissa of mediocubital vein 2.7 times second abscissa.

Legs. All femora thickened. Fore femur very thickened, 2.8-3 times as long as wide. Fore tarsal segments widened and shortened, second-fourth segments transverse. Hind femur 3 times as long as wide. Claws rather short and wide.

Abdomen. First tergite uniformly and linearly widened from base to apex, with distinct spiracular tubercles before middle. Length of first tergite 1.3 times its apical width. Combined length of second and third tergites 1.5 times basal width of second tergite. Second suture very fine. Hypopygium simple and with sparse setosity. Ovipositor sheath rather short, narrow, weakly thickened, slightly narrowed apically, almost round ventrally, with short, rather dense and erect hairs; hair length 0.4-0.6 times maximum width of sheath. Length of sheath 3 times its maximum width, 0.9 times length of first tergite.

Sculpture. Head and mesothorax smooth. Sides of pronotum almost entirely smooth. Metapleura smooth at most part. Propodeum with median longitudinal (in basal 1/2) and transverse high carinae, mainly smooth, rugulose only along carinae and laterally. First abdominal tergite almost entirely striate, smooth apically. Rest tergites smooth.



Figs 80-88. *Centistes (Centistes) shufanus* sp. n. 80) head, frontal view; 81) head, dorsal view; 82) first abdominal tergite; 83) basal segments of antenna; 84) fore wing; 85) hind wing; 86) fore femur; 87) hind femur; 88) apical part of abdomen and ovipositor.

Colour. Body black. Three basal segments of antennae pale brown, rest segments dark reddish brown to black. Palpi yellowish brown. Legs pale brown, coxae darker. Wings hyaline. Pterostigma dark brown, pale basally.

MALE unknown.

DISCUSSION. The new species is similar to *C. (C.) cuspidatus* Haliday, 1833 (Belokobylskij, 1992) and differs in having the sternauli and subalar depression smooth, first medial abscissa present in posterior 1/3 only, fore femur very thick and fore tarsus very widened. *C. (C.) shufanus* sp. n. is closely similar to Chinese *C. (C.) intermedius* Chen et Achterberg, 1997 (Chen & Achterberg, 1997) and differs in having the first abdominal tergite almost entirely striate, first flagellar segment wide and shorter than second one, malar space short, hind femur wide, another shape and setosity of ovipositor sheath.

***Cosmophorus undulatus* Belokobylskij, sp. n.**

Figs 89-96

MATERIAL. Holotype: ♀, Japan, Ryukyus, Ishigaki I., Shiramizu, 19-21.X 1999 (S.B.) [ZISP].

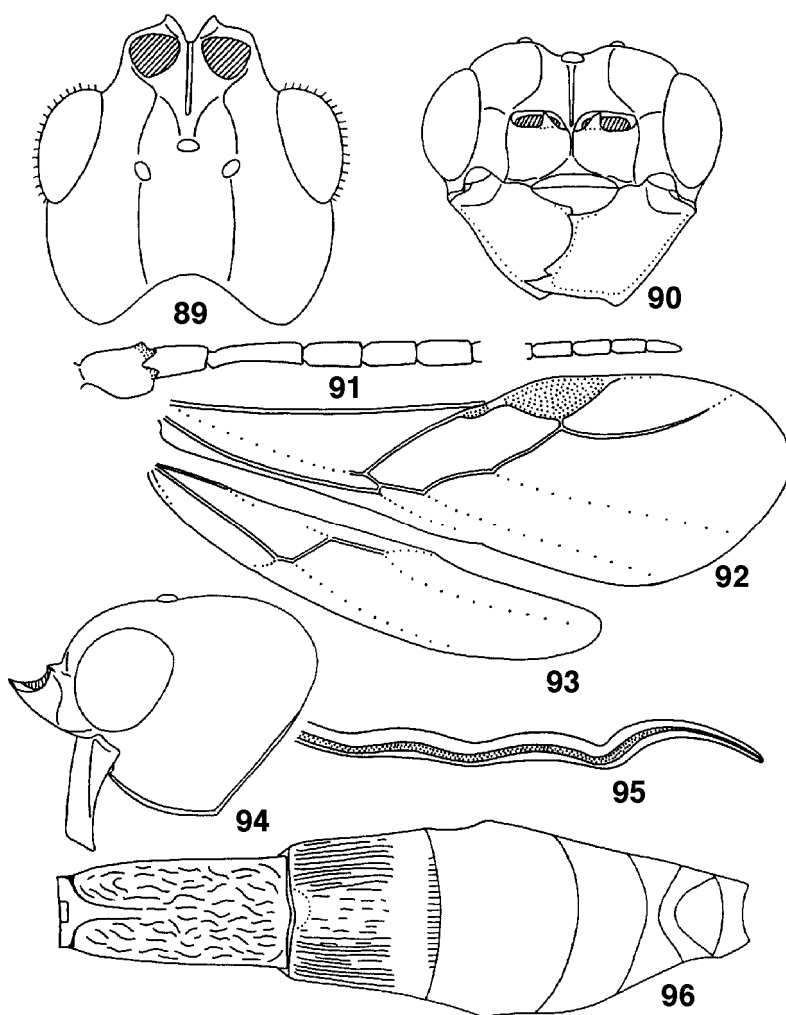
DESCRIPTION. FEMALE. Body length 3.1 mm; fore wing length 2.0 mm. Width of head 1.3 times its median length, slightly less than its maximum length, 1.3 times its height. Vertex with distinct wide longitudinal median depression. Occiput strongly concave. Temples behind eyes weakly and roundly narrowed, 1.1 times as long as transverse diameter of eye. Frons medially deeply concave, with high longitudinal keel. Ocelli small, in triangle with base 1.7 times its lateral sides; posterior margin of median ocellus placed slightly behind line between anterior margins of lateral ocelli. *POL* 2.8 times *Od*, 1.3 times *OOL*. Eye almost round, with rather dense and very short hairs, 1.1 times as high as broad. Malar space very narrow, almost absent medially. Antennal protuberances large, with wide pointed apical anteromedial process. Clypeus narrow. Area between eye and antennal tubercle concave. Mandible wide, widened apically, with inner median tooth, 2 apical teeth (upper tooth small, short and more or less obtuse; lower one long and pointed) and outer wide and obtuse prominence. Length of mandible 1.9 times its maximum width. Occipital carina present laterally only, its lower part strong and not fused with hypostomal carina.

Antenna setiform, 21-segmented, flagellum in basal half compressed. Scape weakly depressed, with 2 pointed wide apical teeth in anterior side; length of scape 1.3 times its maximum width, 1.3 times length of pedicellus. First flagellar segment 4 times as long as its apical width, 1.6 times as long as second segment. Second flagellar segment almost twice as long as wide. Length of penultimate segment 2.5 times its width, equal to length of apical segment.

Thorax. Length 1.9 times its maximum height. Dorsal part of thorax more or less flat. Notauli present on vertical part of mesoscutum only, completely absent on horizontal part. Prescutellar depression rather short, without median carina, distinctly crenulate, 0.3 times as long as scutellum. Scutellum without transverse posterior depression. Subalar depression shallow, rather wide and rugose. Sternauli shallow, short, narrow, crenulate. Mesopleura with additional oblique crenulate furrow from upper 1/6 of pleural suture to posterior end of sternauli. Prepectal carina present, widely interrupted ventrally. Mesosternal furrow narrow and shallow. Postpectal carina present.

Wings. Length of fore wing 2.8 times its width. Length of pterostigma 2.6 times its maximum width. Radial cell shortened, open apically; anterior margin of radial cell 0.9 times as long as pterostigma and 2.5 times as long as distance from apex of radial cell to apex of wing. Radial vein arising slightly behind middle of pterostigma. Second abscissa of radial vein regularly curved in basal half and absent apically. Parallel vein straight and unsclerotized. Recurrent vein forming distinct corner with first radiomedial vein. Nervulus very short and strongly postfurcal. Hind wing 4.8 times as long as wide. Second and fourth abscissae of costal vein absent. Medial and submedial cells open. Recurrent vein unsclerotized and antefurcal.

Legs. Hind femur 3.2 times as long as wide. Hind tarsus equal to hind tibiae, its second segment 0.4 times as long as first segment, 1.1 times as long as fifth segment (without pretarsus).



Figs 89-96. *Cosmophorus undulatus* sp. n. 89) head, dorsal view; 90) head, frontal view; 91) basal and apical segments of antenna; 92) fore wing; 93) hind wing; 94) head, lateral view; 95) apex of ovipositor; 96) abdomen.

Abdomen. First tergite weakly and roundly widened posteriorly, spiracular tubercles indistinct, dorsope very small. Apical width of first tergite 1.5 times its minimum width, length 1.9 times its apical width. Length of second tergite almost equal to basal width, 1.25 times length of third tergite. Ovipositor, compressed, with 3 arcuate and almost equivalent sections in apical 1/4. Ovipositor sheath weakly widened in apical 1/4, 1.2 times as long as abdomen, almost twice as long as thorax, 0.9 times as long as fore wing.

Sculpture and pubescence. Head smooth. Sides of pronotum finely sculptured in posterior 1/3, almost smooth at most part. Mesothorax smooth. Propodeum reticulate-rugulose, almost smooth in 2 small mediolateral areas, with semicircular distinct carina in posterior 1/3. Legs smooth. First abdominal tergite densely rugulose-reticulate. Second tergite rather finely and interruptedly striate at most part. Mesoscutum almost entirely shortly and rather densely setose.

Colour. Body dark reddish brown, head ventrally, antennal protuberances, mandible, lower part of pronotum and all propleura yellowish brown. Antennae black, 2 basal segments yellow, base of third and most part of fourth segments yellowish brown. Palpi yellow. Legs yellow, femora darker. Ovipositor sheath black. Wings faintly infusate. Pterostigma dark brown, paler basally and apically.

MALE unknown.

DISCUSSION. The new species is similar to Palaearctic *C. regius* Niezabitowski, 1910 and differs in having the mandible widened apically and with distinct additional inner tooth, occipital carina not fused ventrally with hypostomal one, thorax longer, mesoscutum setose, nervulus very short, hind femur wider, second tergite sculptured, ovipositor longer and undulate in apical 1/4.

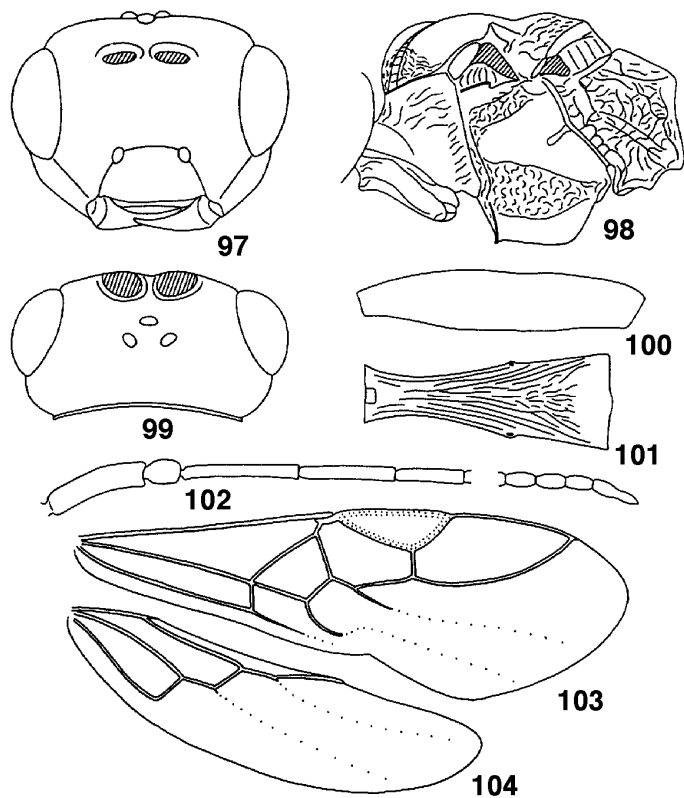
***Dinocampus nipponicus* Belokobylskij, sp. n.**

Figs 97-104

MATERIAL. Holotype: ♂, Japan: Aichi, Shitara, Uradani, 900 m, beech forest, EmT, 8-14.VIII 1994 (T. Kanbe) [NIAES].

DESCRIPTION. MALE. Body length 5.5 mm; fore wing length 3.8 mm. Width of head 1.8 times its median length, 1.2 times width of mesoscutum. Occiput weakly concave. Temples behind eyes weakly convex in anterior 1/3, strongly and linearly narrowed in posterior 2/3; transverse diameter of eye 1.7 times length of temple (2.2 times on straight line). Frons rather flat, shortly roundly concave near antennal sockets. Ocelli rather small, in triangle with base 1.3 times its lateral sides; posterior margin of median ocellus placed distinctly before line between anterior margins of lateral ocelli. *POL* 1.3 times *Od*, 0.4 times *OOL*; *Od* 0.3 times *OOL*. Eye glabrous, 1.25 times as high as broad. Malar suture present. Malar space wide, its height 1.25 times basal width of mandible, 0.5 times height of eye. Face angularly convex, with rather deep depression between antennal sockets, with vertical groove in upper 1/3. Width of face 1.9 times its median height, 1.5 times height of eye. Tentorial pits distinct, distance between pits almost equal to distance from pit to eye. Clypeus straight ventrally. Width of clypeus 1.6 times its median height, 0.5 times width of face. Clypeal suture fine and shallow. Head distinctly and roundly narrowed below eyes. Occipital carina complete dorsally, widely separated ventrally from hypostomal carina. Mandible distinctly twisted. Labial palpi 2-segmented. Maxillary palpi 5-segmented, second segment thickened, fourth and fifth segments short and slender, fifth segment 1.3 times as long as fourth segment, combined length of fourth and fifth segments slightly larger than length of third segment.

Antenna slender, filiform in basal 1/3, moniliform in apical 2/3, 24-segmented. Scape long, curved, distinctly constricted basally, widened medially and narrowed basally and apically (lateral view); its length 3.5 times maximum width, almost twice distance from antennal socket to anterior ocellus. First flagellar segment almost



Figs 97-104. *Dinocampus nipponicus* sp. n. 97) head, frontal view; 98) thorax, lateral view; 99) head, dorsal view; 100) hind femur; 101) first abdominal tergite; 102) basal and apical segments of antenna; 103) fore wing; 104) hind wing.

7 times as long as its apical width, 1.3 times as long as second segment. Length of penultimate segment twice its width, 0.5 times length of apical segment.

Thorax. Length 1.3 times its maximum height. Notauli rather wide, shallow, complete, reticulate-rugulose. Prescutellar depression deep, with distinct median and 2 additional lateral carinae, smooth, 0.3 times as long as scutellum. Scutellum convex, with distinct posterior reticulation. Metanotum without median tooth. Sternauli very shallow, wide, rugulose-punctulate. Propodeum without lateral tubercles, weakly roundly abruptly in anterior half, strongly and subvertically abruptly in posterior half (lateral view), weakly concave medially in posterior 2/3 (dorsal view).

Wings. Length of fore wing 2.7 times its width. Radial cell distinctly shortened; metacarpus almost as long as pterostigma, 2.2 times as long as distance from apex of radial cell to apex of wing. Radial vein arising from apical third of pterostigma. First radial abscissa almost perpendicular to pterostigma, 0.6 times as long as maximum width of pterostigma, 0.15 times as long as uniformly curved second abscissa, 0.4 times as long as first radiomedial vein. Recurrent vein strongly antefurcal, 1.1 times

as long as second medial abscissa, 0.8 times as long as sclerotized part of third medial abscissa. Nervulus interstitial. Mediocubital vein sclerotized. In hind wing, basal vein almost as long as third abscissa of costal vein and second abscissa of mediocubital vein.

Legs. Hind femur 5 times as long as wide. Hind tarsus almost as long as hind tibia, its second segment 0.5 times as long as first segment, 1.6 times as long as fifth segment (without pretarsus). Hind tibial spurs obtuse apically, densely and shortly setose in outer sides, glabrous in inner sides; inner spur 0.25 times and outer spur 0.4 times as long as hind basitarsus.

Abdomen. First tergite regularly widened from base to apex, not fused ventrally, with distinct spiracular tubercles near middle, without dorsope and laterope. Apical width of first tergite 1.3 times its width at level of spiracular tubercles, 2.3 times its minimum width; length of tergite 2.6 times its apical width. Length of second and third tergites combined 1.7 times basal width of second tergite.

Sculpture and pubescence. Head smooth, sometimes with sparse punctulation, frons finely striate near antennal sockets. Sides of pronotum rugose-reticulate, smooth upper and lower posteriorly. Mesoscutum smooth, with rather large rugulose-reticulate area medioposteriorly. Scutellum smooth, narrowly rugulose-striate laterally and posteriorly. Mesopleura smooth medially. Propodeum entirely coarsely and irregularly rugose-areolate. Hind coxa smooth, distinctly and finely striate dorsally. First abdominal tergite coarsely striate, smooth in posterior 1/5. Rest tergites smooth. Most part of mesoscutum glabrous.

Colour. Body brownish yellow; face, lower half of head, sides and ventral parts of thorax and abdomen yellow or whitish yellow. Antennae dark reddish brown, slightly paler apically, 2 basal segments yellow. Palpi yellow. Legs yellow, hind tibia (except yellow base), middle and hind tarsi reddish brown, but paler ventrally. Wings subhyaline. Pterostigma yellow.

FEMALE unknown.

DISCUSSION. The new species differs from type species, *D. coccinellae* (Schrank, 1802), in having the malar space longer, occipital carina not fused with hypostomal one ventrally, face smooth, scape and basal flagellar segments longer, median lobe of mesoscutum glabrous, radial cell of fore wing longer, nervulus interstitial, hind tibial spurs obtuse apically, first abdominal tergite narrow, striate and smooth in apical 1/5 and body brownish yellow.

REMARKS. Such morphological characters of *D. nipponicus* sp. n. as long scape of male, separated ventrally occipital and hypostomal carinae, and obtuse apically hind tibial spurs are distinctly separated new species in *Dinocampus*. However wing venation, structural characters of head, thorax and abdomen allow to include the new species in the genus *Dinocampus*.

(To be continued)

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