A taxonomic study of the bee genus *Evylaeus* Robertson of Eastern Siberia and the Far East of Russia (Hymenoptera: Halictidae)

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The paper presents the results of a taxonomic study of the bees of the genus *Evylaeus* mostly deposited at the Zoological Institute of the Russian Academy of Sciences (St. Petersburg) and the Institute of Biology and Soil Sciences of the Russian Academy of Sciences (Vladivostok). The new insular subspecies *Evylaeus baleicus insulicola* subsp. n. (from Sakhalin, Kunashir, and Japan), differing from the continental *E. baleicus baleicus* (Cockerell) in much narrower membranous retrorse lobe of the male gonocoxite, and the hitherto unknown males of *E. briseis* (Ebmer, 2005) and *E. transpositus* (Cockerell, 1925) are described. The following synonymy is ascertained: *Lasioglossum caliginosus* Murao et al., 2006 = *L. nemorale* Ebmer, 2006, syn. n. *E. eomontanus* (Ebmer, 2006) is considered a subspecies of *E. briseis*. Lectotypes are designated for the following nine nominal species: *Hylaeus rubellus* Eversmann, 1852 (= *E. calceatus*); *Halictus gracilis* Morawitz, 1865 (= *E. lucidulus*); *H. pallipes* Morawitz, 1865 (= *E. quadrinotatulus*); *H. dybowskii* Radoszkowski, 1876; *H. nodicornis* Morawitz, 1889; *H. amurensis* Vachal, 1902; *H. permicus* Blьthgen, 1923 (= *E. ellipticeps*); *H. problematicus* Blьthgen, 1923; and *H. semilaevis* Blьthgen, 1923. A total of 48 species of the genus are found in Eastern Siberia and the Far East of Russia. *E. apristus* (Vachal), *E. briseis* (Ebmer), and *E. laevoides* (Ebmer) are recorded for the first time from Russia; *E. albipes* (Fabricius), *E. fratellus* (Pйrez), and *E. vulsus* (Vachal), from Mongolia (Tцv); *E. affinis* (Smith), from South Korea (Gyeonysangnam); *E. hoffmanni* (Strand), from Japan (Honshu). A key to all species (except for species of the subgenus *Prosopalictus*) is given; it is provided with figures of the male genitalia. The annotated list of these species includes the data for each species on its synonymy, general distribution, published records from the above regions, and the material examined.

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Introduction

The genus *Evylaeus* Robertson, 1902 is accepted here in the sense considered by me earlier (Pesenko, 1986, 2000, 2007; Pesenko et al., 2000). In such a scope, the genus corresponds to the subgenera *Evylaeus* s. str., *Dialictus* Robertson (except for American "green" species), and *Acanthalictus* Cockerell of the genus *Lasioglossum* Curtis combined in the classification of Michener (2000). The subgeneric classification of the genus, including 29 subgenera, was published in my recent paper (Pesenko, 2007).

The genus exhibits both the solitary behaviour and nearly every degree of sociality, ranging from subsocial to primitively eusocial, including perennial colonies in the Western Palaearctic *E. marginatus* (Brullй). All species nest in soil. The members of the genus are mostly polyleges, except for species with elongate head and mouth parts (members of the subgenera *Rostrohalictus* and *Puncthalictus*), which are oligoleges of Lamiaceae, and some others.

Evylaeus is the largest genus of the family Halictidae. It comprises over 400 species occurring in all continents except for Australia. They are especially numerous in the Holarctic Region. The Palaearctic fauna consists of 318 currently recognised species. Two of them, *E. rufitarsis* (Zetterstedt) and *E. borealis* (Svensson et al.), are Holarctic in occurrence. Many species are transpalaearctic. In the Palaearctic Region, there are three distinct centres of the species richness of the genus: Mediterranean, Central Asian and Far Eastern. In the Eastern Palaearctic Region, 83 species of the genus occur. Of them, 48 species are recorded from Eastern Siberia and the Far East of Russia (including the results of the present

study). They belong to the following 12 subgenera: *Acanthalictus* (1 species), *Aerathalictus* (3), *Evylaeus* (7), *Fratevylaeus* (7), *Glauchalictus* (3), *Microhalictus* (8), *Minutulaeus* (2), *Nitidiusculaeus* (3), *Nodicornevylaeus* (1), *Prosopalictus* (10), *Smeathhalictus* (2), and *Truncevylaeus* (1).

Carinate *Evylaeus*

Subgenus **Minutulaeus** Pesenko, 2007; type species: *Hylaeus minutulus* Schenck, 1853, by original designation. The subgenus corresponds to the *Lasioglossum minutulum* species-group distinguished by Ebmer (1976b: 401; 1985a: 216) and to the *Evylaeus minutulus* group of Pesenko & Davydova (2004: 696). It comprises nine Palaearctic species.

Subgenus **Nodicornevylaeus** Pesenko, 2007; type species: *Halictus nodicornis* Morawitz, 1890, by original designation. A monotypic subgenus.

Subgenus **Evylaeus** Robertson, 1902; type species: *Halictus arcuatus* Robertson, 1893 (= *H. cinctipes* Provancher, 1888), by original designation. = *Halictus* subg. *Calchalictus* Warncke, 1975; type species: *Apis calceata* Scopoli, 1763, by original designation. = *Halictus* subg. *Inhalictus* Warncke, 1975; type species: *Hylaeus interruptus* Panzer, 1798, by original designation. The subgenus corresponds to the *Lasioglossum anguliceps*, *L. apristum*, *L. calceatum*, *L. interruptum*, *L. laeve*, and *L. laticeps* species-groups (or subgroups) distinguished by Ebmer (1974a: 144; 1974c: 199; 1978b: 313; 1995: 529, 539, 542, 560, 600; 2002: 839). The subgenus includes only a part of species listed by Warncke (1975: 96, 99; 1982: 108; 1984: 298) for his *Halictus* subg. *Calchalictus* and subg. *Inhalictus*. It comprises 29 Palaearctic species.

Subgenus **Fratevylaeus** Pesenko, 2007; type species: *Halictus fratellus* Pŭrez, 1903, by original designation. The subgenus corresponds to the *Lasioglossum fulvicorne-fratellum* species-group distinguished by Ebmer (1974a: 135; 1984: 319; 1995: 568; 2002: 842), Svensson et al. (1977: 219), Sakagami (1988: 345), and Sakagami et al. (1994: 12) (= *L. nigrum* group of Ebmer, 1982: 214). It comprises ten Palaearctic species.

Carinaless *Evylaeus*

Subgenus **Acanthalictus** Cockerell, 1924; type species: *Halictus dybowskii* Radoszkowski, 1877, by original designation. The subgenus corresponds to the monotypic subgenus *Acanthalictus* of the genus *Lasioglossum* in the classification of Michener (2000: 359).

Subgenus **Prosopalictus** Strand, 1913; type species: *Prosopalictus micans* Strand, 1913 (non *Halictus micans* Strand, 1909) = *Lasioglossum micante* Michener, 1993; by original designation. The subgenus corresponds to the *Lasioglossum sexstrigatum* species-group distinguished by Sakagami et al. (1966: 679), Ebmer (1978b: 316; 1980: 503; 1982: 220; 1985a: 219; 1996: 291; 1997: 925; 2002: 881), Ebmer et al. (1994: 30), Sakagami & Tadauchi (1995b: 195), and Sakagami & Ebmer (1996: 902). It comprises 19 Palaearctic species.

Subgenus **Microhalictus** Warncke, 1975; type species: *Melitta minutissima* Kirby, 1802, by original designation. The subgenus corresponds to the *Halictus semilucens* species-group distinguished by Blьthgen (1934: 20) and to the *Lasioglossum minutissimum* group s. l. of Ebmer (1976b: 405), including *L. lucidulum*, *L. minutissimum-semilucens*, *L. quadrinotatulum*, and *L. tarsatum* subgroups of Ebmer (1976b: 402; 1982: 221; 1987: 98; 1997: 924; 2002: 876, 878), Sakagami et al. (1982: 206), Ebmer & Sakagami (1985: 297), and Sakagami & Tadauchi (1995a: 142). The subgenus includes only a subset of the species listed by Warncke (1975: 85; 1982: 69; 1984: 278) for his *Halictus* subg. *Microhalictus*. It comprises 24 Palaearctic species.

Subgenus **Nitidiusculaeus** Pesenko, 2007; type species: *Melitta nitidiuscula* Kirby, 1802, by original designation. The subgenus corresponds to the *Halictus minutus* species-group distinguished by Blьthgen (1934: 15) and to the *Lasioglossum nitidiusculum* group of Ebmer (1976b: 401; 1997: 924, 925), Ebmer & Sakagami (1985: 297), and Sakagami & Tadauchi (1995a: 143). It comprises eight Palaearctic species.

Subgenus **Truncevylaeus** Pesenko, 2007; type species: *Halictus truncaticollis* Morawitz, 1877, by original designation. The subgenus corresponds to the *Lasioglossum villosulum* species-group distinguished by Ebmer (1976b: 402). It comprises seven Palaearctic species.

Green *Evylaeus*

Subgenus **Glauchalictus** Pesenko, 2007; type species: *Halictus problematicus* Blьthgen, 1923, by original designation. The subgenus corresponds to the *Lasioglossum atroglaucum* species-group distinguished by Ebmer (2002: 858). It comprises four Palaearctic species.

Subgenus **Aerathalictus** Pesenko, 2007; type species: *Melitta aerata* Kirby, 1802, by original designation. The subgenus corresponds to the *Lasioglossum aeratum* species-group distinguished by Ebmer (1976b: 403) (= *L. leucopum* group of Ebmer, 1978b: 313; 1997: 924; Ebmer & Sakagami, 1990: 836). It comprises seven Palaearctic species.

Subgenus **Smeathhalictus** Warncke, 1975; type species: *Melitta smeathmanella* Kirby, 1802,

by original designation. The subgenus corresponds to the *Halictus smeathmanellus* species-group distinguished by Blьthgen (1931a: 322; 1944: 26, 27) and to the *Lasioglossum morio* group s. l. of Ebmer (1976b: 401; 2002: 851), including the *Halictus alpigenus* group of Blьthgen (1937: 106; 1944: 27) and Warncke (1973b: 291) (= *Lasioglossum alpigenum* group or subgroup of Ebmer, 1974d: 56; 1975c: 97; 1978c: 57; 1981: 120; 1982: 217; 1985a: 209; 1997: 924; 1998: 414; 2002: 851, 855), *L. duckei* subgroup of Ebmer (1985a: 206, 208; 1998: 414; 2002: 855), *L. lissonotum* group of Ebmer (1975c: 97; 1978c: 59), *L. morio* group or subgroup of Ebmer (1984: 322; 1997: 924; 2002: 851), and *L. nitidulum* group of Ebmer, 1978c: 54; 1980: 488; 1996: 283; 2005: 375 (= *L. smeathmanellum* group or subgroup of Ebmer, 1974c: 56; 1982: 214; 1984: 324; 1997: 924; 2002: 855) combined. The subgenus includes only a subset of the species listed by Warncke (1975: 88; 1982: 81; 1984: 284) for his *Halictus* subg. *Smeathhalictus*. It comprises 42 Palaearctic species.

Material and methods

The communication presents the results of a taxonomic study of the bees of the genus *Evylaeus* mostly deposited at ZISP, IBSV, and ZMMU (explanation of abbreviations used see below), a total of 3226 specimens from Eastern Siberia and the Far East of Russia. The lectotypes of eight nominal species designated below are deposited at IZK and ZISP.

In the key to and descriptions of species below, the morphological terms follow Pesenko et al. (2000), Pesenko (2004, 2006, 2007), and Pesenko & Pauly (2005). The following abbreviations are used: S, metasomal sternum; T, metasomal tergum; e.g., T1 means tergum 1; S4, sternum 4, in metasomal (not abdominal) numeration. For description of the punctation, the following "formula" is used: interval of (typical) puncture diameters in μm and intervals of (typical) interspace widths estimated in the number of average puncture diameters (in parentheses), e.g., 28-35 μm / (2-3). All figures are original, excepting Figs 28, 32, 33, and 35 taken from Ebmer (2006) and Murao et al. (2006).

In the annotated list below and in the key to species, *E. minutuloides* (Ebmer, 1978) is not included. This nominal species known only from the type series from the southern Far East of Russia (Primorsk Terr.: Tigrovaya Pad) and northeastern China (Liaoning: Erdaochajlinche) is rather a junior synonym of *E. vulsus* (Vachal, 1903). It was not listed in the recent paper by Ebmer (2006) treating the halictids of the "Ussuri Region".

Members of the large, mostly East Palaearctic and Oriental subgenus *Prosopalictus* Strand need to be revised. This subgenus comprises 34 species; of them, 19 species are recorded from the Palaearctic Region. I believe that the actual number of species is noticeably less than the figures above. On this reason, (1) the annotated list contains only the published data (mostly by Ebmer, 1996, 2006) on the occurrence of species of this subgenus in Eastern Siberia and the Russian Far East (a total of 10 species); (2) these species are not included in the key.

In the annotated list below, species are provided with the sections "Published records" and "Material examined" including only the data from the territory under study. The words "Province" and "Autonomous Region" in names of administrative districts in China, "Aimak" in names of administrative districts in Mongolia, "Island" for Sakhalin, Kurils (Iturup, Kunashir, Urup, etc.) and Japanese Islands are omitted.

The position of some frequently mentioned localities is as follows: Amur Prov.: Klimoutsy (45 km W Svobodny), Simonovo (75 km W Svobodny); Primorsk Terr.: Evseyevka (20 km SE Spassk), Golubiny Utes (near Khasan), Gornotayezhnoe (20 km SE Ussuriisk), Kamenushka (28 km SE Ussuriisk), Okeanskaya (near Vladivostok), Ryazanovka (15 km S Slavyanka), Sedanka (near Vladivostok).

The following abbreviations are used in the text for indication of museums, institutions and private collections as depositaries for types and other material examined (curators are given in parentheses):

AMNY, American Museum of Natural History, New York, USA (J.G. Rozen and E. Quinter);

BML, Natural History Museum, London, United Kingdom (G.R. Else);

DEI, Deutsches Entomologisches Institut, Mьncheberg, Germany (H.H. Dathe);

EBM, private collection of Mr. Andreas W. Ebmer, Linz, Austria;

ELMAC, Entomological Laboratory of the Matsuyama Agriculture College, Japan;

FSF, Forschungsinstitut Senckenberg, Frankfurt an Main, Germany (J.-P. Kopelke);

HNB, Hungarian Natural History Museum, Budapest, Hungary (J. Papp);

HUS, Faculty of Agriculture, later Entomological Institute, Hokkaido University, Sapporo, Japan (the late S.F. Sakagami)**;**

IBSV, Institute of Biology and Soil Sciences, Russian Academy of Sciences, Vladivostok, Russia (A.S. Lelej);

IZK, Institute of Systematic and Experimental Zoology, Polish Academy of Sciences, Krakow, Poland (W. Celary);

KMB, Alexander Koenig Museum, Bonn, Germany;

KUF, Entomological Laboratory, Kyushu University, Fukuoka, Kyushu, Japan (O. Tadauchi);

MNB, Museum fьr Naturkunde an der Humboldt Universitдt zu Berlin, Germany (F. Koch);

MNP, Musйum National d'Histoire Naturelle, Paris, France (J. Casevitz-Weulersse);

NRS, Naturhistoriska Riksmuseet, Stockholm, Sweden (E. Erlandsson);

OLML, Oberцsterreichisches Landesmuseum, Linz, Austria (F. Gusenleitner);

USMW, U. S. National Museum of Natural History, Smithsonian Institution, Washington, D.C., USA (R.J. McGinley);

ZISP, Zoological Institute, Russian Academy of Sciences, St. Petersburg;

ZMK, Universitetets Zoologiske Museum, Copenhagen, Denmark (B. Petersen);

ZML, Zoologiska Museet, Lunds Universitet, Sweden (R. Danielsson);

ZMMU, Zoological Museum, Moscow University, Russia (A.V. Antropov);

ZMUH, Zoological Museum, Helsinki University, Finland (A. Pekkarinen);

ZSM, Zoologische Staatssammlung, Mьnchen, Germany (E. Diller and K. Schцnitzer);

ZSUH, Zoologische Sammlung, Universitдt Halle, Germany;

ZMUO, Zoological Museum, Oxford University, United Kingdom (C. O'Toole).

Key to species

1. Females 2
– Males 39
2(1). Head and mesosoma black, without metallic lustre; if head and mesosoma metallic green (in *E. apristus*) or black, with dark green lustre (in some females of *E. baleicus* from Sakhalin and Kunashir), mesopleuron granulose rugulate or alveolate, dull 3
– Head and mesosoma metallic green or blue. – Mesopleuron always distinctly punctate, shiny 33
3(2). Posterior vertical surface of propodeum entirely carinate along lateral margins (in *E. nodicornis* and some other species, the carina is ill-developed in its upper part) 4
– Posterior vertical surface of propodeum ecarinate at least at dorsolateral angle 19
4(3). Mesopleuron punctate, sometimes punctation barely noticeable because of granulate background . . . 5
– Mesopleuron reticulate rugulose and/or granulose, without traces of punctation at least on upper half. – T2-T4 with well-developed anterior bands or lateral spots of appressed hairs or tomentum 7
5(4). Mesoscutum medially polished or finely shagreened on interspaces, shiny. Dorsal surface of propodeum as long as scutellum. T1 on dorsal part finely, but distinctly punctate (12-15 μm / 1.5-4.0). T2 with anterior lateral spot of white tomentum; T3 with anterior band narrowed medially; T4 and T5 on discs entirely covered with tomentum. – Head rounded in front view, as high as wide. 5.5-6.0 mm . . . . . 3. **E. (Nodicornevylaeus) nodicornis** (Morawitz)
– Mesoscutum entirely densely shagreened on interspaces, dull or weakly shiny. Dorsal surface of propodeum nearly 0.75 times as long as scutellum. T1 on dorsal part impunctate or with several, microscopically fine punctures. T2 and T3 with small anterior lateral spots of tomentum or with their traces; T4 and T5 without tomentum on discs 6
6(5). Head transversely elliptical in front view, 0.8-0.85 times as high as wide. Metapostnotum sparsely striate, shiny. T3-T5 on posterior areas covered with relatively sparse yellowish hairs. 5.5-6.0 mm . . . . . 1. **E. (Minutulaeus) semilaevis** (Blьthgen)
– Head rounded in front view, about as high as wide. Metapostnotum with dense wavy striae, dull or weakly shiny. T3-T5 on posterior areas with white band-like pubescence. 5.0-5.5 mm . . . . . 3. **E. (Minutulaeus) yakuticus** Pesenko & Davydova
7(4). Head and mesosoma metallic dark green. Mesoscutum coarsely and relatively sparsely punctate (on disc, 30-45 μm / 0.3-2.0), polished on interspaces. – Metasoma entirely or partly reddish brown. Inner metatibial spur finely dentate. 6.8-7.5 mm . . . . . 6. **E. (Evylaeus) apristus** (Vachal)
– Head and mesosoma black (in some females of *E. baleicus* from Sakhalin and Kunashir, face, mesoscutum, and scutellum with slight dark green metallic lustre). Mesoscutum with other microsculpture of surface 8
8(7). Propodeum relatively short; its dorsal surface shorter than scutellum. Metapostnotum semilunate, more or less densely rugulose. Inner metatibial spur serrate, with many small triangular teeth closely adjoined with each other at bases (except for *E. hoffmanni* in which the spur has 2-3 relatively long thin teeth separated from each other; see Couplet 9) 9
– Propodeum long, its dorsal surface as long as scutellum or longer. Metapostnotum trapeziform, with distinct borders, relatively sparsely and mostly longitudinally rugulose. Inner metatibial spur with 2-5 relatively long teeth, separated from each other at bases 15
9(8). Head very short, transversely elliptical in front view, with weakly projecting clypeus, 0.8-0.85 times as high as wide. Inner metatibial spur with 2-3 relatively long sharp teeth separated from each other at bases. – T1 on dorsal part finely, but distinctly and relatively densely punctate (5-10 μm / 1-2, sometimes up to 3). In the head shape and the punctation of T1, the species is similar to *E. sibiriacus* of the subgenus *Fratevylaeus* (see Couplet 17). In addition to a shorter propodeum, *E. hoffmanni* differs from the latter in the following characters: mesoscutum shiny and much more sparsely punctate (20-30 μm / 0.3-1.0); pubescence of head and mesosoma white (in *E. sibiriacus*, upper half of face, vertex and dorsal surface of mesosoma with yellow or ochre-yellow pubescence). 6.0-7.5 mm . . . . . 8. **E. (Evylaeus) hoffmanni** (Strand)
– Head higher. Inner metatibial spur serrate 10
10(9). T1 entirely finely, but distinctly shagreened or finely strigulate (transversely aciculate), silky-dull, very finely and relatively densely punctate on dorsal part (10 μm / 1-3), on posterior area more finely and sparsely punctate, on convex and anterior surfaces impunctate. – Head rounded in front view, about as high as wide or somewhat wider than high. Clypeus on upper third usually finely and densely punctate, similarly to supraclypeal area, weakly shiny. 9.0-9.5 mm . . . . . 4. **E. (Evylaeus) affinis** (Smith)
– T1 entirely polished on interspaces (except for *E. albipes villosus* in which the metasomal terga are as if covered with glaucousness, dull; see Couplet 14) . . 11

11(10). Clypeus on upper third at least medially much more coarsely and sparsely punctate than supraclypeal area. T1 distinctly punctate on dorsal part. Metasoma always black and without metallic lustre. Posterior areas metasomal terga not translucent, black or brownish 12
– Clypeus on upper third finely and densely punctate, similarly to supraclypeal area. T1 with a few microscopically small punctures (5-7 μm / 3-7 and more) (except for *E. albipes villosus* in which the metasomal terga are densely finely punctate. but then the terga are as if covered with glaucousness, dull; see Couplet 14). T1-T3 frequently red. Posterior areas metasomal terga yellowish translucent 13
12(11). Larger, 8.5-9.5 mm. Head egg-shaped in front view, 1.05-1.1 times as high as wide. T1 more coarsely and somewhat more densely punctate on dorsal part (15-20 μm / 1-3; in females from Kurils and Japan, T1 frequently more sparsely and finely punctate or nearly impunctate) . . . . . 10. **E. (Evylaeus) nipponensis** (Hirashima)
– Smaller, 7.5-8.0 mm. Head rounded triangular in front view, 0.9 times as high as wide. T1 more sparsely and finely punctate (8-10 μm / 2-5) . . . . . 9. **E. (Evylaeus) laevoides** (Ebmer)
13(11). Larger on average, 8.5-10.0 mm. Head rounded triangular in front view, 0.85-0.9 times as high as wide. Metasoma black or partly red, without blue lustre . . . . . .7. **E. (Evylaeus) calceatus** (Scopoli)
– Smaller on average, 7.0-8.5 mm. Head egg-shaped in front view, about as high as wide. All metasomal terga or only T1 with distinct blue metallic lustre. (*E. albipes* with 2 subspecies) 14
14(13). Metasomal terga sparsely punctate, polished on interspaces, shiny . . . . . 5a. **E. (Evylaeus) albipes albipes** (Fabricius)
– Terga densely punctate and as if covered with glaucousness, dull . . . . . 5b. **E. (Evylaeus) albipes villosus** (Ebmer)
15(14). Metapostnotum silk-shiny, with weak, dense, more or less longitudinal rugulae. Head egg-shaped or rounded in front view, 1.0-1.1 times as high as wide. Frons coarsely and very densely granulate, matt. Mesoscutum on disc finely and sparsely punctate (12-20 μm / 0.8-2.0), densely shagreened on interspaces, matt. – Supraclypeal area and clypeus on upper half finely and not densely punctate, finely shagreened on interspaces, silk-shiny. Inner metatibial spur with 3-4 thin and relatively short teeth 6
– Metapostnotum with coarse, high, and usually sparse striae. Head rounded triangular or transversely elliptical in front view, 0.8-0.95 times as high as wide. Frons densely punctate, but with distinct interspaces. Mesoscutum on disc more coarsely punctate (20-40 μm), usually finely shagreened or nearly smooth on interspaces, dull or more or less shiny 17
16(15). Head egg-shaped in front view, 1.05-1.1 times as high as wide. Metapostnotum with rugulae which are usually not affaced on the posterior part (except for females from Kurils). T2 on most part of disc polished, shiny, sometimes with traces of fine strigulation (transverse aciculation). 6.5-7.5 mm. (Two subspecies not differing in females) . . . . . 13. **E. (Fratevylaeus) fratellus** (Pйrez)
– Head rounded in front view, as high as wide or somewhat shorter than wide. Metapostnotum with rugulae which are usually affaced on the posterior half or third. T2 on disc finely and densely strigulate, silky-dull. 6.5-7.0 mm . . . . . .16a. **E. (Fratevylaeus) subfulvicornis subfulvicornis** (Blьthgen)
17(15). Head transversely elliptical in front view, with weakly projecting clypeus, 0.8-0.9 times as high as wide. Clypeus on upper half laterally finely and densely punctate and matt, similarly to supraclypeal area, but medially twice more coarsely and sparsely punctate, shiny on interspaces. Mesoscutum very coarsely and densely punctate (on disc, 30-40 μm / 0.2-0.3). Metapostnotum with more or less dense rugulae, shiny. T1 on dorsal part finely, but distinctly and relatively densely punctate (5-10 μm / 1-2, sometimes up to 3). 6.5-7.5 mm . . . . . .15. **E. (Fratevylaeus) sibiriacus** (Blьthgen)
– Head rounded triangular in front view, with distinctly projecting clypeus, 0.9-0.95 times as high as wide. Clypeus on entire upper half punctate similarly to supraclypeal area. Mesoscutum more finely and sparsely punctate (on disc, 20-30 μm / 0.3-1.5 and more). Metapostnotum with sparse rugulae, shiny or dull. T1 on dorsal part impunctate or with a few microscopically small punctures 18
18(17). Mesoscutum densely punctate (on disc, 0.2-0.8), smooth or finely shagreened on interspaces, shiny. Inner metatibial spur with 2-3 long, relatively thick teeth and one short tooth. 5.5-7.0 mm . . . . .14a. **E. (Fratevylaeus) fulvicornis melanocornis** (Ebmer)
– Mesoscutum more sparsely punctate (on disc, 0.5-1.5, sometimes up to 2), shagreened on interspaces, dull or slightly shiny. Inner metatibial spur with 3-6 (usually with 4-5) long and thin teeth. 6-8 mm. (Three species virtually not differing in females) . . . . . .11. **E. baleicus** (Cockerell), 12. **E. caliginosus** (Murao et al.) and 17. **E. vulsus** (Vachal)
19(3). Larger, 11-13 mm. Mandible tridentate (with two subapical teeth). Head short, very thick (genal area much wider than eye in lateral view of head); clypeus shortened. Mesopleuron granulate rugose, without traces of punctation. – Dorsal surface of propodeum convex, inclined, gradually curved onto its posterior vertical and lateral surfaces . . . . . 18. **E. (Acanthalictus) dybowskii** (Radoszkowski)
– Smaller, 4-10 mm. Mandible normal (bidentate, i.e with one subapical tooth). Head flat (genal area as wide as or narrower than eye in lateral view of head); clypeus of usual height. Mesopleuron punctate or granulate 20
20(19). Mesepisternum impunctate, finely granulate, matt. Propodeum long; its dorsal surface as long or longer than scutellum, flat or concave, horizontal, forming a distinct right angle with posterior vertical surface at least medially. Metapostnotum usually well marked along lateral and posterior margins by transverse carina or sharp change of sculpture (rugulose or granulate). T2-T4 on posterior areas finely strigulate (transversely aciculate) 21
– Mesepisternum distinctly punctate, frequently smooth on interspaces, shiny. Propodeum usually shorter than scutellum 23
21(20). Head egg-shaped in front view, somewhat higher than wide. Mesoscutum more sparsely punctate (in middle of disc, 0.5-1.5 sometimes up to 2). Metapostnotum distinctly concave, with relatively coarse wavy striae reaching its posterior margin, which is frequently provided with a weak carina. T1 impunctate. 6.5-7.5 mm . . . . . 39. **E. (Nitidiusculaeus) rufitarsis** (Zetterstedt)
– Head rounded or shortly rounded triangular in front view. Mesoscutum more densely punctate. Metapostnotum nearly flat, finely granulate, with very fine and dense, ill-developed striae not reaching posterior margin of dorsal surface of propodeum; latter pass-

ing onto its posterior vertical surface at rounded right angle. T1 on dorsal part finely, but distinctly punctate 22

22(21). Head as high as wide or somewhat (not more than 1.05 times) wider than high. Mesoscutum somewhat more sparsely punctate (in middle of disc, 0.3-0.8, sometimes up to 1). T2-T4 laterally with barely noticeable, short, yellowish hairs. Pubescence of T5 around furrow dark brown. 6.0-6.5 mm . . . . . 37. **E. (Nitidiusculaeus) allodalus** (Ebmer & Sakagami)

– Head 0.85-0.9 times as high as wide. Mesoscutum densely punctate (< 0.5). T2-T4 laterally covered with long and relatively dense whitish hairs directed backward. Pubescence of T5 around furrow orange-brown, concealed with white hairs. 6.0-6.5 mm . . . . . 38a. **E. (Nitidiusculaeus) matianensis pluto** (Ebmer)

23(20). Dorsal surface of propodeum flat, horizontal, forming a distinct right angle with posterior vertical surface at least medially. Pubescence of mesosoma relatively long and dense, yellowish brown (in fresh individuals). Mesoscutum sparsely and relatively coarsely punctate (on disc, 20-30 µm / 1-3), polished on interspaces, with distinct oily lustre. Metapostnotum coarsely and sparsely striate, more or less shiny; frequently striae not reaching posterior margin of dorsal surface of propodeum; thus metapostnotum bordered with transverse shiny swelling, shiny. – Head 0.9-0.95 (rarely 0.85) times as high as wide. 6.0-7.5 mm . . . . . 40. **E. (Truncevylaeus) villosulus** (Kirby)

– Dorsal surface of propodeum convex, inclined, widely gradually curved onto its posterior vertical and lateral surfaces (sometimes medially at a rounded obtuse angle). Pubescence of mesosoma relatively short and sparse, usually whitish, sometimes dark brown. Mesoscutum more finely and usually more densely punctate, frequently shagreened on interspaces, without oily lustre. Metapostnotum, as a rule, more finely and densely rugulose to granulate 24

24(23). T2-T4 on posterior areas with white, narrow, band-like pubescence of appressed hairs interrupted medially . . . . . Subgenus **Prosopalictus** (10 species; see nos. 27-36 in "Annotated list")

– Metasomal terga without posterior hair bands . . . 25

25(24). Larger, on average, 6-8 mm. Head transversely elliptical in front view, 0.85-0.95 times as high as wide 26

– Smaller, on average, 5-6 mm. Head rounded or longitudinally elliptical in front view, 1.05-1.1 times as high as wide 29

26(24). Mesoscutum (on disc, 20-30 µm / 0.3-1.0, sometimes up to 2) and scutellum (10-20 µm / 0.2-0.5) regularly densely punctate with punctures of approximately equal size. T1 on dorsal part distinctly punctate (10-15 µm / 0.3-1.5, medially up to 5). – Supraclypeal area with distinct shiny interspaces between punctures. Mesepisternum very densely granuloso-punctate, with striation, dull. Metapostnotum flat, entirely with dense fine striae, weakly shiny. Posterior areas of metasomal terga dark, not translucent or brownish translucent. T2 on posterior half of disc regularly densely punctate (15-20 µm / 0.3-1.5). 6.5-7.5 mm . . . . . 19. **E. (Microhalictus) amurensis** (Vachal)

– Mesoscutum and scutellum (at sides of median line) irregularly sparsely punctate (1-3 and more). T1 entirely impunctate or its dorsal part with very sparse fine punctures (8-10 µm) 27

27(26). Smaller, 6.0-6.5 mm. Mesoscutum more regularly punctate with punctures of approximately equal sizes (25-35 µm / 1-3, sometimes up to 4). Mesepisternum on upper part very densely punctate with shallow punctures, striate on interspaces, on lower part shagreened, impunctate, silky-dull. Posterior areas of metasomal terga widely translucent, yellowish or hyaline. T1 on posterior half of dorsal part and on anterior half of posterior area usually with very sparse fine punctures (8-10 µm). T2 and T3 only with traces of anterior lateral spots of sparse tomentum. – Metapostnotum flat, entirely with dense fine striae, weakly shiny or dull . . . . . 26. **E. (Microhalictus) transpositus** (Cockerell)

– Larger, 7-8 mm. Mesoscutum very irregularly punctate with punctures of different diameters (15-35 µm). Mesepisternum entirely shiny, punctate with very fine and shallow punctures, with distinct smooth interspaces. Metapostnotum convex, more or less shiny, with relatively sparse and coarse striae usually not reaching its posterior margin. Posterior areas of metasomal terga dark, not translucent or brownish translucent. T1 impunctate. T2 and T3 with well developed anterior white tomentose bands narrowed or interrupted medially 28

28(27). Mesoscutum less sparsely punctate (0.5-4). Metapostnotum weakly shiny, entirely with dense fine rugulae, medially usually reticulate-rugulose, only laterally striate; sometimes rugulae somewhat not reaching posterior margin of metapostnotum . . . . . 23. **E. (Microhalictus) quadrinotatulus** (Schenck)

– Mesoscutum more sparsely punctate (1.5-6.0, sometimes more). Metapostnotum shiny, with sparser and coarser striae occupying anterior half or third of metapostnotum . . . . . 24. **E. (Microhalictus) sakagamii** (Ebmer)

29(25). Larger, on average, 5.5-6.0 mm. Clypeus densely and more or less regularly punctate with large elongate punctures, finely shagreened on interspaces, silky-dull; many punctures arranged into rows forming longitudinal furrows. Propodeum longer; its dorsal surface only somewhat shorter than scutellum. T1 on dorsal part distinctly punctate (1-3, up to 5). T2-T4 laterally with long, moderately dense inclined yellowish hairs. – Supraclypeal area entirely densely punctate, shagreened on interspaces, matt. Mesoscutum on disc moderately sparsely punctate (0.5-1.5 or 0.5-2), usually entirely or on most of surface shagreened on interspaces. Posterior areas of metasomal terga widely translucent, yellowish or hyaline. (*E. sulcatulus*, with two subspecies) 30

– Smaller, on average, 4.5-5.5 mm. Clypeus punctate with round punctures not forming furrows. Propodeum short; its dorsal surface much shorter than scutellum. T1 entirely polished, with few fine punctures on dorsal part (in some females from Irkutsk and Chita Prov., T1 sparsely, but distinctly punctate). T2-T4 laterally with short sparse whitish hairs . . . 31

30(29). Head as high as wide or somewhat (not more than 1.05 times) higher than wide. Mesepisternum more coarsely and densely punctate with deeper punctures. Striae on metapostnotum somewhat not reaching its posterior margin at least medially. T1 on dorsal part punctate with coarser and deeper punctures (10-12 µm) . . . . . 25b. **E. (Microhalictus) sulcatulus sulcatulus** (Cockerell)

– Head 1.07-1.15 times as high as wide. Mesepisternum less coarsely and densely punctate with shallow punctures. Striae on metapostnotum occupying only anterior half of its surface. T1 on dorsal part punctate with finer and shallower punctures (6-10 µm). – In females from Kurils (Shikotan), mesoscutum more

sparsely punctate (on disc, 0.5-1.5, sometimes up to 2) . . . . . 25a. **E. (Microhalictus) sulcatulus longifacies** (Sakagami & Tadauchi)

31(29). Propodeum longer; its dorsal surface 0.8-0.85 times as long as scutellum. Metapostnotum more or less triangular, nearly throughout rugulose. T2-T4 nearly impunctate. – Head rounded in front view, as high as wide or somewhat higher than wide. Mesoscutum more sparsely punctate (on disc, 0.4-1.5), shagreened (sometimes very finely) on interspaces, dull. 4.5-4.8 mm . . . . . 22. **E. (Microhalictus) lucidulus** (Schenck)

– Propodeum shorter; its dorsal surface only somewhat longer than metanotum. Metapostnotum semilunate, with sparse striae only on anterior half. T2-T4 on discs sparsely, but distinctly punctate 32

32(31). Head rounded in front view, as high as wide or somewhat higher than wide (usually not more than 1.05 times; but in females from Shikotan, nearly 1.1 times). Clypeus on upper third and supraclypeal area more sparsely punctate (0.5-1.5, sometimes up to 2.5). Mesoscutum more sparsely punctate (0.4-1.5), shagreened (sometimes very finely) on interspaces, dull or silk-shiny. 5.3-5.5 mm . . . . . 21. **E. (Microhalictus) eriphyle** (Ebmer)

– Head elongate elliptical in front view, 1.05-1.1 times as high as wide. Clypeus on upper third and supraclypeal area more densely punctate (0.1-0.8). Mesoscutum more densely punctate (0.2-0.8), entirely polished on interspaces, shiny. 4.8-5.3 mm . . . . . 20. **E. (Microhalictus) epiphron** (Ebmer)

33(2). Smaller on average, 4.5-5.5 mm. Propodeum short, its dorsal surface 0.75-0.85 times as long as scutellum. Metapostnotum entirely densely and relatively coarsely rugulose. – Body entirely metallic green or blue-green. Mesoscutum relatively densely punctate (< 1), on most of surface smooth or finely shagreened on interspaces, more or less shiny. Posterior areas of metasomal terga yellowish translucent. T2-T4 with anterior bands or lateral spots of short appressed hairs or tomentum. 34

– Larger on average, 5.5-6.3 mm. Propodeum long, its dorsal surface as long as scutellum or somewhat longer. Striae of metapostnotum not reaching posterior margin of dorsal surface of propodeum 35

34(33). T1 entirely polished on interspaces. Head 0.9-0.95 times as high as wide. Body darker, metallic dark green or deep blue-green, sometimes face and mesoscutum with yellowish lustre. 5.0-5.5 mm . . . . . 42. **E. (Aerathalictus) leucopus** (Kirby)

– T1 on anterior surface at least laterally and frequently on convex surface densely finely strigulate (transversely aciculate) and/or shagreened, dull; usually entirely densely punctate over shagreened background. Head about as high as wide. Body usually paler, metallic goldish or yellowish green. 4.5-5.2 mm. (Two species virtually not distinguished in females) . . . . . 41. **E. (Aerathalictus) angaricus** (Cockerell) and 43. **E. (Aerathalictus) viridellus** (Cockerell)

35(33). Body entirely metallic green. Mesoscutum densely or relatively densely (up to 1.5) punctate. T2-T4 with anterior lateral spots or bands of white tomentum. – T1 entirely polished, on dorsal part finely and relatively densely punctate (0.3-1.0). Posterior areas of metasomal terga at least on posterior halves yellowish translucent, nearly over entirely width not separated from discs by steps 36

– Body black, only head and mesosoma with dark green or deep-blue metallic lustre. Mesoscutum sparsely punctate (1-3). T2-T4 without anterior bands or spots of tomentum 38

36(35). Head egg-shaped in front view, 1.1-1.2 times as high as wide. Clypeus and supraclypeal area densely punctate (< 1), usually more or less dull. Mesoscutum more densely punctate (0.3-1). Inner metatibial spur with three very long processes. 5.5-6.3 mm . . . . . 48. **E. (Smeathhalictus) ellipticeps** (Blʁthgen)

– Head more or less rounded in front view, as high as wide or somewhat (not more than 1.05 times, rarely up to 1.1) higher than wide. Clypeus and supraclypeal area much more sparsely punctate, shiny. Mesoscutum more sparsely punctate (0.5-1.5). Inner metatibial spur with five relatively short processes. 5.5-6.0 mm. (*E. briseis*, subspecies of which are weakly distinguished by females) 37

37(36). Metasomal terga more brightly metallic green; their posterior areas usually yellowish translucent. T1 entirely polished (between punctures on punctate dorsal part), only with traces of fine strigulation (transverse aciculation) on posterior area . . . . . 47a. **E. (Smeathhalictus) briseis briseis** (Ebmer)

– Terga darker, black or dark brown, with deep blue-green metallic lustre (usually slight); their posterior areas usually weakly and narrowly translucent. T1 usually on anterior and convex surfaces and on posterior area finely strigulate (transversely aciculate; sometimes only with traces of such an aciculation) . . . . . 47b. **E. (Smeathhalictus) briseis eomontanus** (Ebmer)

38(35). Head transversely elliptical in front view, 0.9-0.95 times as high as wide. Metapostnotum with distinct, more or less longitudinal rugulae, shiny (except for some females from Kunashir, in which the metapostnotum is nearly the same as that of *E. problematicus*). Posterior vertical surface of propodeum narrowly rounded along borders with lateral surfaces, without carina. All metasomal terga finely and densely strigulate (transversely aciculate), silky-dull. T1 without punctation; T2 and T3 with obscure sparse punctures on aciculate background. Posterior areas of metasomal terga yellowish translucent . . . . . 44. **E. (Glauchalictus) miyabei** (Murao et al.)

– Head rounded in front view, as high as wide or somewhat higher than wide. Metapostnotum finely and obscurely granulate, silky-dull, only on anterior half usually with ill-developed rugulae. Posterior vertical surface of propodeum with distinct lateral carina. T1 polished; T2 relatively densely punctate; T3 obscurely punctate; all metasomal terga without strigulation (transverse aciculation), shiny. Posterior areas of terga not translucent or dark testaceus translucent. (Two species not distinguished in females) . . . . . 45. **E. (Glauchalictus) problematicus** (Blʁthgen) and 46. **E. (Glauchalictus) virideglaucus** (Ebmer & Sakagami)

39(1). Head and mesosoma black, without metallic lustre; if head and mesosoma metallic green (in *E. apristus*), mesopleuron granulate rugose, dull 40

– Head and mesosoma metallic green or blue. – Mesopleuron always distinctly punctate, shiny 72

40(39). Posterior vertical surface of propodeum entirely carinate along its lateral margins (in *E. nodicornis* and some other species, carina ill-developed in upper third). – T1 entirely polished, usually finely and sparsely punctate 41

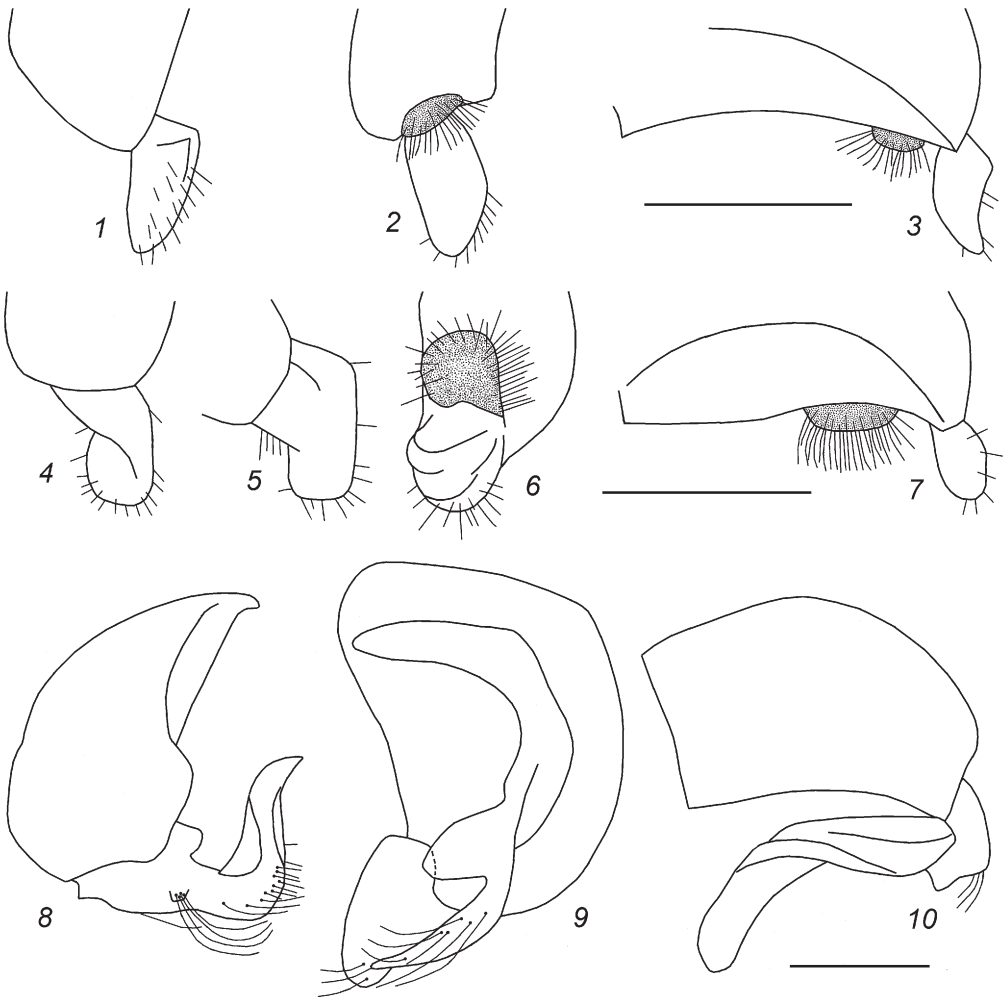
– Posterior vertical surface of propodeum ecarinate at least at dorsolateral angles 61

41(40). Mesopleuron with punctation, which is sometimes weakly noticeable because of granulate background 42

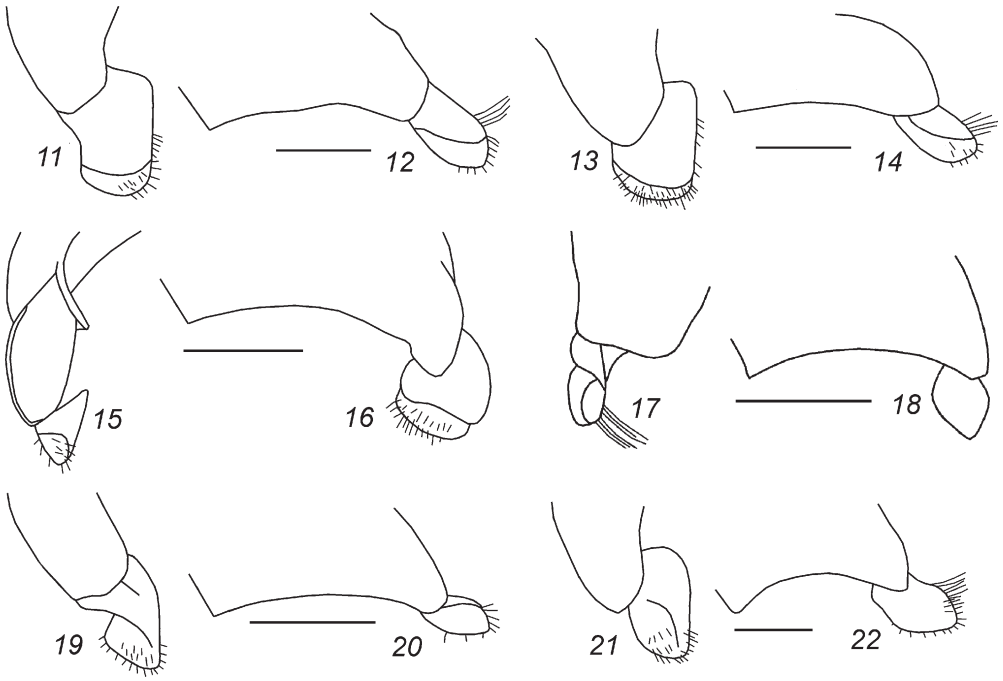
– Mesopleuron reticulate rugulose and/or granulate shagreened, without traces of punctation at least on upper half. – T2-T4 with well-developed anterior bands or lateral spots of appressed hairs or tomentum. Membranous retrorse lobe of gonocoxite flat and large or missing 44

42(41). Head in front view egg-shaped owing to high and narrow clypeus, 1.05-1.1 times as high as wide. Antenna very short, reaching only mid-length of scutellum; 2nd flagellomere 1.1-1.2 times as long as its diameter. Middle flagellomeres distinctly convex on lower side; three last flagellomeres thickened. Flagellum on lower side ochre-yellow, except for three last flagellomeres, which are entirely black or dark brown. Mesoscutum more coarsely and densely punctate (28-30 μm / 0.3-1.0**).** T1 on dorsal part densely punctate (0.5-1.0). T2-T4 with anterior bands of white tomentum narrowed medially; T2-T6 laterally and T7 entirely covered with long white hairs directed backward. Genital capsule very large in comparison with body size. Membranous retrorse lobe of gonocoxite very large (longer than gonocoxite), relatively narrow, curved mesad (Fig. 9), nearly bare. Gonostylus large, with large process directed anterodorsad (Fig. 8); gonostylus looking like bilobed in ventral view of genital capsule (Fig. 9). 6.0-6.5 mm . . . . . 3. **E. (Nodicornevylaeus) nodicornis** (Morawitz)

– Head shorter, as high as wide or wider than high. Antenna long, reaching mid-length of T1 or anterior margin of T2; 2nd flagellomere 1.8 times as long as its diameter. Middle flagellomeres nearly flat on lower side; three last flagellomeres not thickened. All flagellomeres on lower side ochre-brown, sometimes ochre-yellow. Mesoscutum more finely and sparsely punctate (20-24 μm / 0.5-1.5 or 0.5-2.0). T1 on dorsal part very sparsely punctate (3-7). Metasoma much weaker pubescent, only T2 and T3 with traces of anterior spots of sparse tomentum at sides. Membra-



Figs 1-10. *Evylaeus* subgenera *Minutevylaeus* and *Nodicornevylaeus*, males. **1-3**, *E. semilaevis*; **4-7**, *E. yakuticus*; **8-10**, *E. nodicornis*. 1, 4, 5, 8, gonostylus in its plane (left, posterior view of genital capsule); 2, 6, membranous retrorse lobe (punctured) of gonocoxite in its plane (left, ventral view of genital capsule); 3, 7, 10, gonocoxite and gonostylus in lateral view; 9, gonocoxite and gonostylus (left, ventral view of genital capsule). Scale bar: 0.25 mm.



Figs 11-22. *Evylaeus* subg. *Evylaeus*, males. **11**, **12**, *E. affinis*; **13**, **14**, *E. albipes*; **15**, **16**, *E. apristus*; **17**, **18**, *E. hoffmanni*; **19**, **20**, *E. laevoides*; **21**, **22**, *E. nipponensis*. 11, 13, 15, 17, 16, 21, gonostylus in its plane (left, posterior view of genital capsule); 12, 14, 16, 18, 20, 22, gonocoxite and gonostylus in lateral view. Scale bar: 0.25 mm.

nous retrorse lobe of gonocoxite very small, shorter than gonostylus, thick, rounded or elliptical, with long dense thin bristles. Gonostylus small, of simple structure, without process 43

43(42). Head transversely elliptical in front view, 0.9 times as high as wide. Part of clypeus projecting below eyes less than half of its length. Metapostnotum semilunate, with fine and more or less longitudinal rugulae. T2 on disc very sparsely punctate (medially, 2-4, sometimes up to 7). Membranous retrorse lobe of gonocoxite narrow, elliptical (Fig. 2). Gonostylus narrow, rounded triangular, narrowed apically (in posterior view of genital capsule; Fig. 1), concave on anterior surface (in lateral view of genital capsule; Fig. 3). 5.5-6.0 mm . . . . . 1. **E. (Minutulaeus) semilaevis** (Blьthgen)

– Head rounded triangular in front view, as high as wide. Part of clypeus projecting below eyes more than half of its length. Metapostnotum triangular, coarsely alveolate rugulose. T2 on disc more densely punctate (0.5-1.0, sometimes up to 2). Membranous retrorse lobe of gonocoxite broad, more or less rounded (Fig. 6). Gonostylus relatively broad, more or less rectangular, not narrowed apically (in posterior view of genital capsule; Figs 4, 5), convex on anterior surface (in lateral view of genital capsule; Fig. 7). 5.5-6.0 mm . . . . . 2. **E. (Minutulaeus) yakuticus** Pesenko & Davydova

44(41). Gonocoxite without membranous lobe (Figs 11-22). Gonostylus short, usually more or less flattened, about as long as wide, directed backward or posteromesad in relation to gonocoxite. Antenna short or of moderate length, nor reaching metasoma (except for *E. apristus* and *E. hoffmanni*, in which the antenna is long, but in that case the head is very short; see Couplets 45 and 47). T7 with short hairs. – Flagellum on lower side dark brown or almost black . . . 45

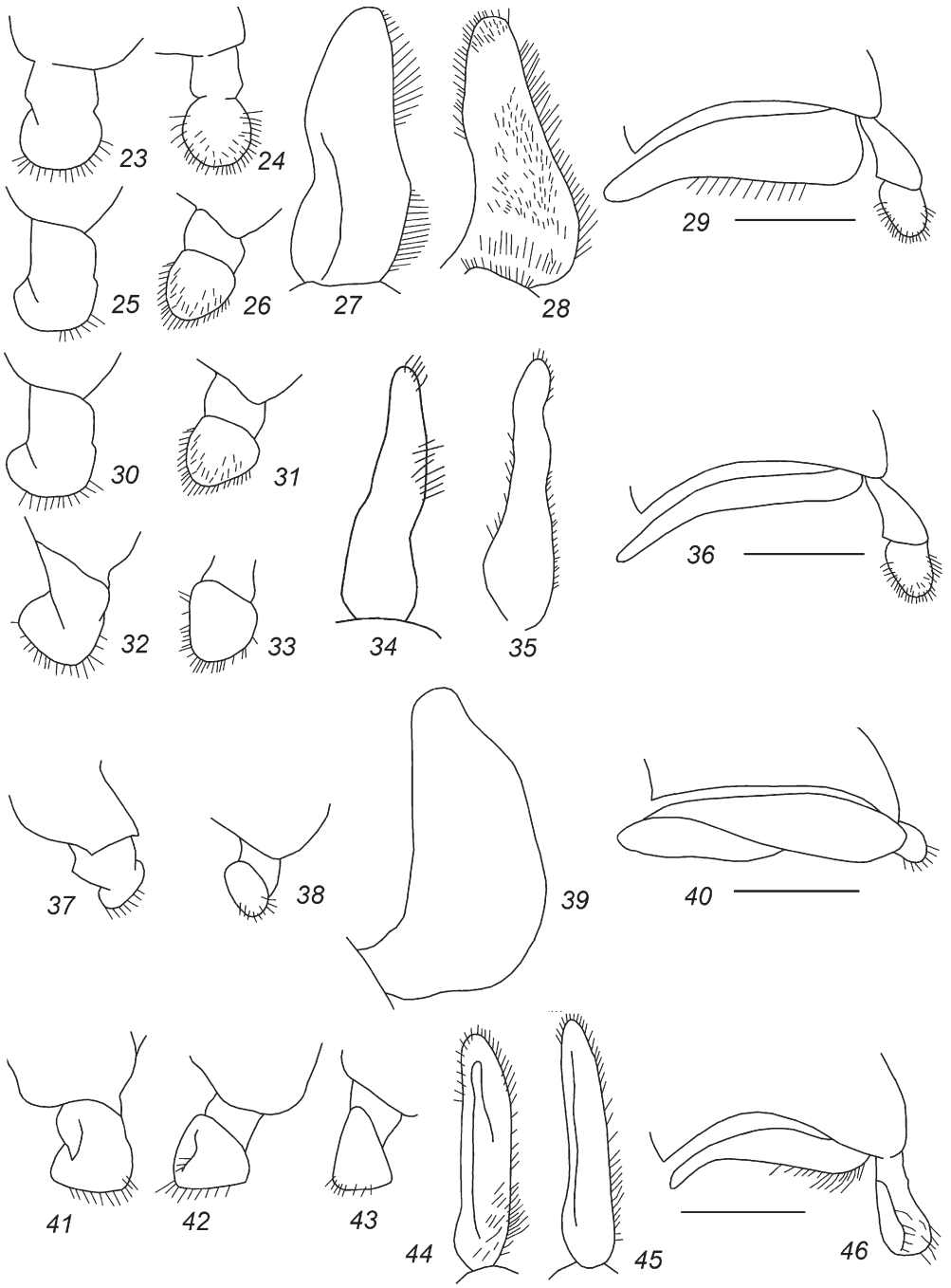
– Gonocoxite with membranous lobe, directed forward (retrorse). Gonostylus elongate, 2-4 times as long as wide, directed downward in relation to gonocoxite at right or obtuse angle. Antenna long, reaching T1 or T2 (except for *E. sibiriacus*, in which the antenna reaches only the mid-length of the metapostnotum). T7 with long hairs 51

45(44). Head and mesosoma metallic dark green. Gonocoxite with acute triangular median process at posterior margin (Fig. 15). Gonostylus very large, nearly as long as gonocoxite, with triangular apical lobe (Fig. 15). – Head rounded triangular in front view, 0.9-0.95 times as high as wide. Antenna reaching midlength or posterior margin of propodeum; 2nd flagellomere 1.6-1.8 times as long as its diameter. Mesoscutum very densely punctate, dull. 8-9 mm . . . . . 6. **E. (Evylaeus) apristus** (Vachal)

– Head and mesosoma black, without metallic lustre. Gonocoxite and gonostylus of other shape 46

46(45). Labrum and mandibles yellow. Mesoscutum entirely or almost entirely polished on interspaces, shiny. anterior tomentose bands of T2-T4 represented by small lateral spots. – Head as high as wide or wider than high. Metasomal sterna with relatively dense and long hairs 47

– Labrum and mandible black (except for *E. albipes*, in which the labrum and mandibles are yellow, but in



Figs 23-46. *Evylaeus* subg. *Fratevylaeus*, males. **23-29**, *E. baleicus baleicus*; **30-36**, *E. baleicus insulicola*; **37-40**, *E. caliginosus*; **41-46**, *E. vulsus*. 23, 25, 30, 32 (after Murao et al., 2006: Fig. 6*f*; outline), 37, 41, gonostylus in its plane (left, posterior view of genital capsule); 24, 26, 31, 33 (after Murao et al., 2006: Fig. 6*e*; outline), 38, 42, 43, gonostylus in anteroventral view of genital capsule; 27, 28 (after Ebmer, 2006: Fig. 37), 34, 35 (after Murao et al., 2006: Fig. 6*i*; outline), 39, 44, 45, membranous retrorse lobe of gonocoxite in its plane (left, ventral view of genital capsule); 29, 36, 40, 46, gonocoxite and gonostylus in lateral view. In Figs 32, 33, and 35, males from Japan; in Figs 30, 31, 34, and 36, males from Sakhalin and Kunashir; in all other figures, males from Amur Prov. and Primorsk Terr. of Russia. Scale bar: 0.25 mm.

that case the head is higher than wide and the metasomal sterna are almost bare). Mesoscutum shagreened on interspaces at least on anterior half, dull. T2-T4 usually with continuous anterior tomentose bands. – Gonostylus flattened, more or less rectangular in its plane (in posterior view of genital capsule; Figs 11, 13, 21) 48

47(46). Head 0.8-0.9 times as high as wide. Antenna long, reaching T1; 2nd flagellomere 2.0-2.5 times as long as its diameter. Mesoscutum more densely and finely punctate (20-30 µm / 0.3-0.6), on anterior fourth usually dull or weakly shiny. Scutellum flattened, entirely dull. Gonostylus not flattened, elongate elliptical in posterior view of genital capsule (Fig. 17). – In shape and coloration of the head and in the antenna length, the species is similar to *E. sibiriacus* of the subgenus *Fratevylaeus* (see Couplet 50). In addition to a shorter propodeum, *E. hoffmanni* differs from the latter in the following characters: mesoscutum shiny, more finely and sparsely punctate; pubescence of head and mesosoma white (in *E. sibiriacus*, pubescence of upper half of face, vertex, and dorsal surface of mesosoma ochre-yellowish). 5.5-8.0 mm . . . . . 8. **E. (Evylaeus) hoffmanni** (Strand)

– Head about as high as wide. Antenna shorter, reaching only metanotum or anterior margin of propodeum; 2nd flagellomere 1.3-1.5 times as long as its diameter. Mesoscutum more coarsely and sparsely punctate (in middle of disc, 30-40 µm / 0.5-1.5 and more), entirely polished on interspaces. Scutellum convex, on disc shiny. Gonostylus flattened, more or less rectangular in its plane (in posterior view of genital capsule; Fig. 19). 7.0-7.5 mm . . . . . 9. **E. (Evylaeus) laevoides** (Ebmer)

48(46). Antenna very short, not reaching scutellum; 2nd flagellomere 1.2 times as long as its diameter. – Head rounded in front view, about as high as wide. Labrum and mandibles black. T1 and T2 relatively finely, but densely punctate (10-15 µm / 0.5-1.0), on posterior area obscurely and more sparsely punctate. Metasomal sterna with relatively long and dense hairs. 9.5-10.0 mm . . . . . 4. **E. (Evylaeus) affinis** (Smith)

– Antenna relatively long, reaching anterior margin or mid-length of propodeum; 2nd flagellomere 1.5-1.8 times as long as its diameter 49

49(48). Legs entirely dark, black or dark brown. Metasoma always black. T1 on dorsal part more coarsely and densely punctate (20-30 µm / 0.5-1.0), finely shagreened on interspaces. Metasomal sterna with relatively dense hairs. – Head egg-shaped in front view, 1.1 times as high as wide. Labrum and mandibles black. 7.5-9.0 mm . . . . . 10. **E. (Evylaeus) nipponensis** (Hirashima)

– Middle and hind tibiae on proximal and distal parts, middle and hind tarsi entirely yellow. T1-T3 frequently red. T1 on dorsal part more finely (usually twice more finely than in *E. nipponensis*) and usually more sparsely punctate, polished on interspaces. Metasomal sterna with hardly noticeable pubescence . . . 50

50(49). Larger on average, 8.5-9.5 mm. Head rounded triangular in front view, wider than high. Labrum and mandibles usually dark . . . . . 7. **E. (Evylaeus) calceatus** (Scopoli)

– Smaller on average, 7.0-8.5 mm. Head egg-shaped in front view, as high as wide or higher than wide. Labrum and mandibles yellow. (Two subspecies not distinguished in males) . . . . . 5. **E. (Evylaeus) albipes** (Fabricius)

51(44). Head 1.05-1.1 times as high as wide. Antenna very long, reaching mid-length or posterior margin of T2. Flagellum on lower side ochre-yellow. Gonostylus directed anteroventrad in relation to ventral surface of gonocoxite (Figs 44, 52, 61), 2-4 times as long as its maximum width (Figs 47, 50, 59). – Clypeus yellow on lower half; labrum brown or dark yellow; mandibles black. 2nd hind tarsomere about as long as wide. Mesoscutum entirely densely shagreened, matt. Tibiae entirely dark; tarsi entirely yellow to partly dark yellow. Metasomal sterna with short and sparse hairs 52

– Head 0.85-0.95 times as high as wide. Antenna shorter, reaching mid-length of metapostnotum, posterior end of mesosoma or mid-length of T1, rarely anterior margin of T2. Flagellum on lower side dark brown or black, in *E. caliginosus* and *E. vulsus* sometimes rusty- or light-brown (except for *E. fulvicornis*, in which the flagellum is ochre-yellow). Gonostylus directed posteroventrad in relation to ventral surface of gonocoxite (Figs 29, 36, 40, 46, 55, 58), not more than 1.5 times as long as wide (Figs 23-26, 30-33, 37, 38, 41-43), except for *E. fulvicornis* (Fig. 53) and *E. sibiriacus* (Fig. 56), in which the gonostyli are longer 54

52(51). Head rounded triangular in front view, as high as wide or somewhat wider than high. Mesoscutum entirely finely (15-20 µm) and medially not densely (0.5-1.5) punctate with obscure punctures. Membranous retrorse lobe of gonocoxite small (1.5 times as long as gonocoxite; Fig. 61), flat, narrowly triangular, pointed at apex, 2.5 times as long as its maximum width (in middle; Fig. 60). 6.5-7.5 mm . . . . . 16a. **E. (Fratevylaeus) subfulvicornis subfulvicornis** (Blьthgen)

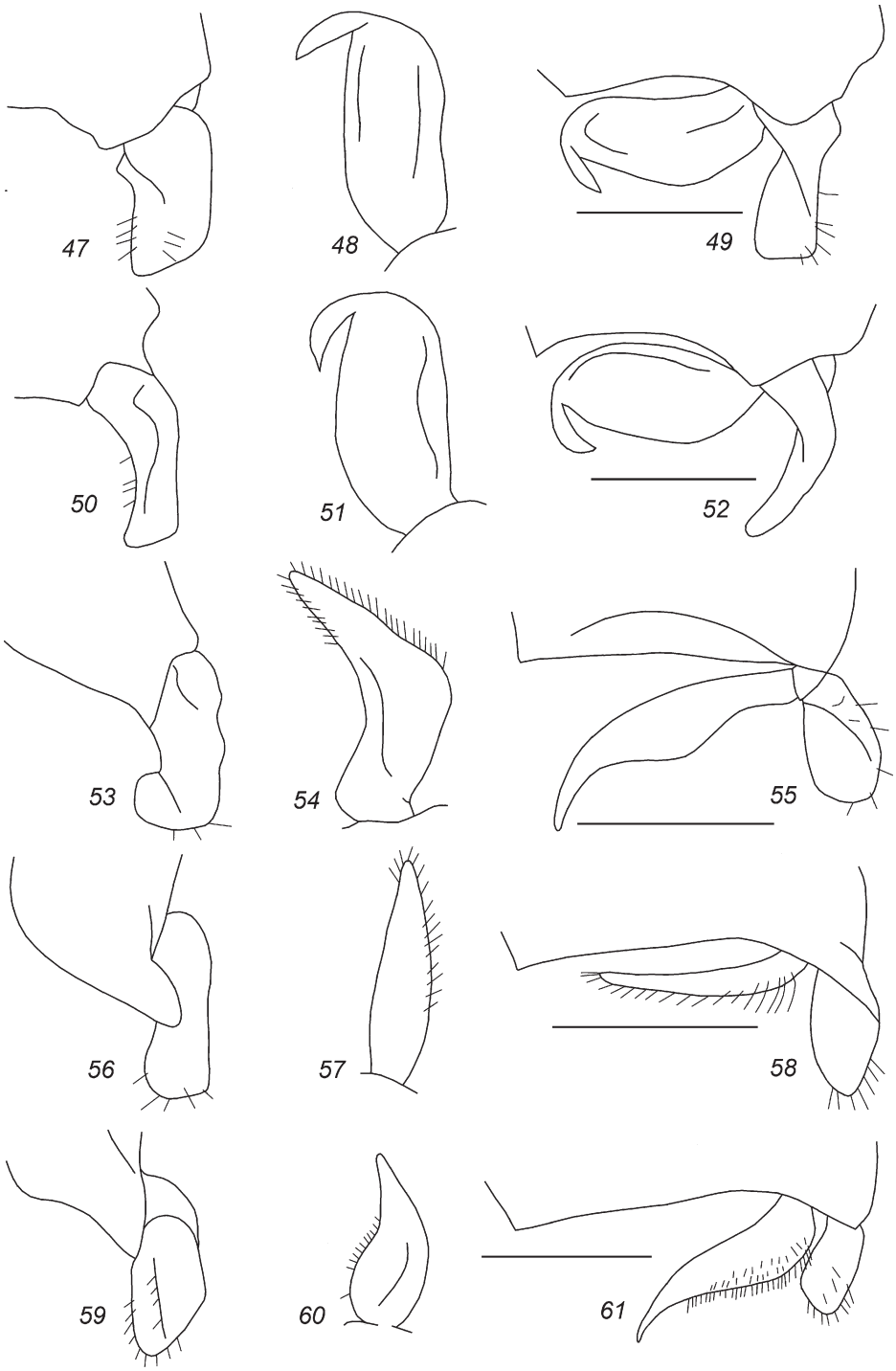
– Head egg-shaped in front view, 1.05-1.1 times as high as wide. Mesoscutum on anterior fourth coarsely granuloso-rugulose, on rest surface obscurely, relatively coarsely and densely punctate (on disc, 20-30 µm / 0.5-1.5). Membranous retrorse lobe of gonocoxite large (somewhat longer than gonocoxite; Figs 49, 52), relatively broad, elongate elliptical, narrowed subapically, at apex curved backward or posteroventrad at acute angle (Figs 48, 51). 6.5-7.5 mm. (*E. fratellus* with two subspecies) 53

53(52). Gonostylus long and narrow, 3.5-4.0 times as long as wide in posterior view of genital capsule (Fig. 50). . . . 13b. **E. (Fratevylaeus) fratellus fratellus** (Pěrez)

– Gonostylus shorter and wider, twice as long as wide in posterior view of genital capsule (Fig. 47) . . . . . 13a. **E. (Fratevylaeus) fratellus betulae** (Ebmer)

54(51). Antenna a little shorter, reaching only mid-length of metapostnotum or posterior end of mesosoma. Mesoscutum on disc very coarsely and very densely punctate (30-50 µm / 0.2-0.3), shagreened in interspaces, weakly shiny or dull. 2nd hind tarsomere 2.5 times as long as wide. Metasomal sterna with relatively long and dense erect hairs. – Clypeus on lower half, labrum and mandibles yellow. Flagellum on lower side dark brown. Tibiae at proximal and distal ends and tarsi entirely yellow. T1 on dorsal surface finely, but distinctly and usually relatively densely punctate (10-15 µm / 0.5-2.0, sometimes more). Posterior areas of metasomal terga dark or narrowly translucent. Membranous retrorse lobe of gonocoxite short (nearly 0.67 times as long as gonocoxite; Fig. 58), flat, elongate triangular, pointed at apex, 4-5 times as long as its maximum width (at base; Fig. 57). 6.5-7.5 mm . . . . . 15. **E. (Fratevylaeus) sibiriacus** (Blьthgen)

– Antenna longer, reaching mid-length of T1 or anterior margin of T2. Mesoscutum more finely and sparsely punctate (except for *E. fulvicornis*, in which the



Figs 47-61. *Evylaeus* subg. *Fratevylaeus*, males. **47-49**, *E. fratellus betulae*; **50-52**, *E. fratellus fratellus*; **53-55**, *E. fulvicornis melanocornis*; **56-58**, *E. sibiriacus*; **59-61**, *E. subfulvicornis subfulvicornis*. 47, 50, 53, 56, 59, gonostylus in its plane (left, posterior view of genital capsule); 48, 51, 54, 57, 60, membranous retrorse lobe of gonocoxite in its plane (left, ventral view of genital capsule); 49, 52, 55, 58, 61, gonocoxite and gonostylus in lateral view. Scale bar: 0.25 mm.

mesoscutum is densely, but finely (15 μm) punctate; see Couplet 57). 2nd hind tarsomere less than twice as long as wide. Metasomal sterna with short and sparse hairs 55

55(54). Flagellum on lower side ochre-yellow. Mesoscutum entirely densely shagreened, regularly finely (15 μm) and very densely (nearly without interspaces) punctate, matt. Membranous retrorse lobe of gonocoxite long, somewhat longer than gonocoxite (Fig. 55), 2.0-2.5 times as long as its maximum width (in mid-length), narrow, curved, with wide triangular process at outer margin, pointed or very narrowly rounded at apex (Fig. 54). Gonostylus relatively long, strongly broadened apically (forming a bootlike figure) in posterior view of genital capsule, 2.0-2.5 times as long as its maximum width (at apex; Fig. 53). 6.5-7.0 mm . . . . . 14a. **E. (Fratevylaeus) fulvicornis melanocornis** (Ebmer)

– Flagellum on lower side dark, at most rusty- or light-brown. Mesoscutum with other microsculpture of surface. Membranous retrorse lobe of gonocoxite of other shape. Gonostylus short, weakly broadened at apex, 1.3-1.5 times as long as wide (Figs 23-26, 30-33, 37, 38, 41-43) 56

56(55). Mesoscutum at least on anterior half granulate and obscurely punctate, dull. Thickened distal part of gonostylus rounded or rounded triangular in anterior view of genital capsule (Figs 24, 26, 31, 33). – Clypeus entirely black. Flagellum on lower side black or dark brown. Legs black or dark brown, sometimes tarsi dark yellow. Membranous retrorse lobe of gonocoxite elongate triangular, rounded at apex (Figs 27, 28, 34, 35). Gonostylus at apex more or less rounded in posterior view of genital capsule (Figs 23, 30) or nearly straight (Figs 25, 32). 7.0-8.5 mm. (*E. baleicus* with two subspecies) 57

– Mesoscutum on disc distinctly punctate (20-30 μm / 0.3-1.0, sometimes up to 1.5), finely shagreened on interspaces, medially usually more or less shiny. Thickened distal part of gonostylus of other shape. Coloration of clypeus, antennal flagellum, and legs variable, but more frequently clypeus on lower half or third, tibiae at proximal and distal ends and tarsi entirely yellow 58

57(56). Membranous retrorse lobe of gonocoxite relatively broad, 2.5-3.0 times as long as its maximum width (at base; Figs 27, 28) . . . . . 11a. **E. (Fratevylaeus) baleicus baleicus** (Cockerell)

– Membranous retrorse lobe of gonocoxite very narrow, 4.5-5 times as long as its maximum width (at base; Figs 34, 35) . . . . . 11b. **E. (Fratevylaeus) baleicus insulicola** ssp. n.

58(56). Membranous retrorse lobe of gonocoxite broad, 1.5-2.0 times as long as its maximum width (Fig. 39), rolled into longitudinal semi-tube, widely rounded at apex. Gonostylus widely rounded at apex (Fig. 37); its thickened distal part elliptical in anterior view of genital capsule (Fig. 38). 6-8 mm . . . . . 12. **E. (Fratevylaeus) caliginosus** (Murao et al.)

– Membranous retrorse lobe of gonocoxite flat and very narrow; 4-5 times as long as wide (Figs 44, 45). Gonostylus truncate at apex (Figs 41); its thickened distal part triangular in anterior view of genital capsule (Figs 42, 43). 6-8 mm . . . . . 17. **E. (Fratevylaeus) vulsus** (Vachal)

59(40). Usually larger, 11-13 mm (sometimes 7-10 mm; a very variable species in body size of males). Lower margin of clypeus reflected forward. Labrum with very large median prominence having longitudinal furrow. Mesepisternum granulate rugulose, without traces of punctation. Metasoma nearly L-shaped in lateral view owing to metasomal segments 6 and 7 sharply directed downward. S2 in front of posterior area with large transverse swelling, nearly hairless. Subsequent sterna with lateral brush of long dense hairs. – Antenna short. Dorsal surface of propodeum convex, inclined, gradually curved onto posterior vertical and lateral surfaces of propodeum. Membranous retrorse lobe of gonocoxite longitudinally biplicate, narrow (in folded condition), lancet-shaped (Fig. 63), directed anteromesad (Fig. 64). Gonostylus rectangular rhomboidal in its plane (in posterior view of genital capsule), about as long as wide (Fig. 62) . . . . . 18. **E. (Acanthalictus) dybowskii** (Radoszkowski)

– Smaller, 4-10 mm. Clypeus regularly flattened or convex. Labrum without median prominence. Mesepisternum granulate or punctate. Metasoma more or less straight along lower outline. S2 flat. S2-S4 on posterior half with relatively dense and regular pubescence of relatively long hairs 60

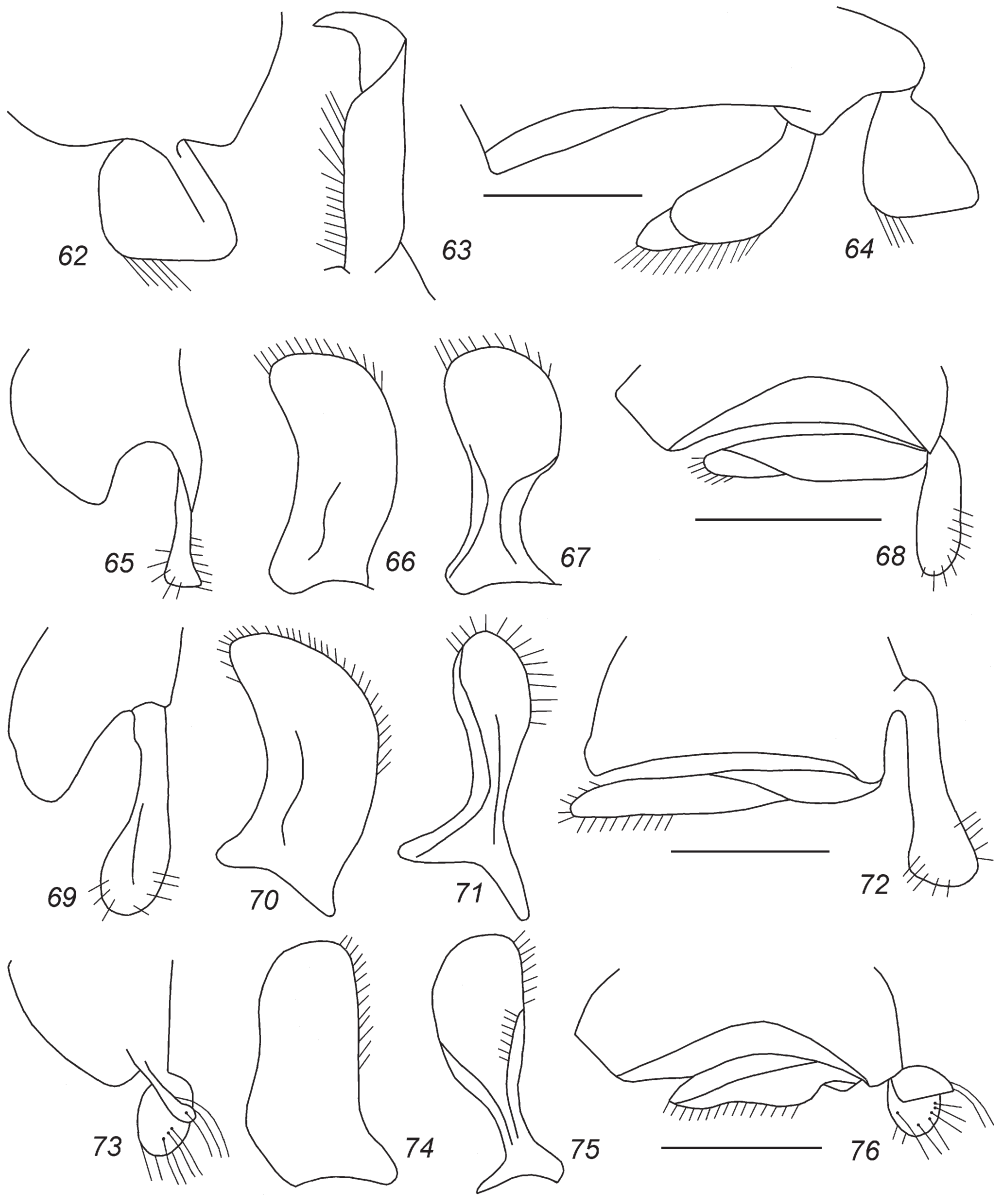
60(59). Mesepisternum impunctate, finely granulate, matt (except for *E. allodalus*, in which the lower half of the mesepisternum and sometimes mesopleuron are entirely distinctly punctate). Antenna long, reaching metasoma; 2nd flagellomere 1.5-2.0 times as long as its diameter. S8 more or less straight along posterior margin. Gonostylus narrow and long, broadened at apex (Figs 65, 69), directed downward in relation to gonocoxite (Figs 68, 72). – Head relatively thin; genal area narrower than eye in lateral view of head. Flagellum on lower side dark ochre. Dorsal surface of propodeum flat or concave, horizontal, forming a distinct right angle with its posterior vertical surface at least medially. Metapostnotum finely rugulose to granulate, dull. Metasomal sterna on discs with relatively dense and long pubescence of erect hairs. Membranous retrorse lobe of gonocoxite large, relatively broad, elongate elliptical (Figs 66, 70), frequently rolled into semi-tube in proximal part and so looking like a leaf with petiolus (Figs 67, 71) 61

– Mesepisternum distinctly punctate, frequently smooth on interspaces, shiny. Antenna shorter. S8 with long posterior median process. Gonostylus short and relatively broad 63

61(60). Head egg-shaped in front view, somewhat longer than wide. Mesoscutum more finely punctate (on disc, 15 μm), entirely finely shagreened on interspaces, dull. Dorsal surface of propodeum as long as or somewhat longer than scutellum. Metapostnotum distinctly concave, with relatively coarse wavy striae reaching its carinate posterior margin. Tarsi dark yellow or reddish-ochre, shortened; 2nd hind tarsomere as long as wide. T3 on posterior area finely strigulate (transversely aciculate). 6.5-7.5 mm. – Mesoscutum sparsely punctate (1-2, sometimes up to 3) . . . . . 39. **E. (Nitidiusculaeus) rufitarsis** (Zetterstedt)

– Head rounded or shortly triangular rounded in front view, as high as wide or somewhat wider than high. Mesoscutum somewhat more coarsely punctate (15-20 μm), on disc smooth on interspaces, shiny. Dorsal surface of propodeum 0.75-0.8 times as long as scutellum. Metapostnotum nearly flat, with fine obscure rugulae not reaching posterior margin of dorsal surface of propodeum; latter curved onto posterior vertical surface of propodeum at narrowly rounded right angle. Tarsi not shortened, their coloration varying from yellow to black, 2nd hind tarsomere 1.5-2.0 times as long as wide 62

62 (61). Mesoscutum on disc more densely punctate (0.5-1.0). Mesepimerom and lower half of mesepisternum



Figs 62-76. *Evylaeus* subgenera *Acanthalictus*, *Nitidiusculaeus*, and *Truncevylaeus*; males. **62-64**, *E. dybowskii*; **65-68**, *E. allodalus*; **69-72**, *E. rufitarsis*; **73-76**, *E. villosulus*. 62, 65, 69, 73, gonostylus in its plane (left, posterior view of genital capsule); 63, 66, 67, 70, 71, 74, 75, membranous retrorse lobe of gonocoxite in its plane (left, ventral view of genital capsule); 64, 68, 72, 76, gonocoxite and gonostylus in lateral view. Scale bar: 0.25 mm.

distinctly punctate, more or less shiny on interspaces. 6.0-7.0 mm . . . . . 37. **E. (Nitidiusculaeus) allodalus** (Ebmer & Sakagami)

– Mesoscutum on disc more sparsely punctate (medially 0.5-2.0). Mesopleuron entirely matt, without punctation. 6.5 . . . . . 38a. **E. (Nitidiusculaeus) matianensis pluto** (Ebmer)

63(60). Dorsal surface of propodeum flat, horizontal, forming with posterior vertical surface a distinct, more or less right angle at least medially. Pubescence of mesosoma relatively long and dense, yellowish brown (in fresh individuals). – Head thick, genal area wider than eye (in lateral view of head). Clypeus often entirely black. Antenna short, reaching only mid-

length of scutellum; 2nd flagellomere about as long as its diameter. Flagellum on lower side dark ochre. Mesoscutum coarsely and sparsely punctate (on disc, 20-30 μm / 0.5-4.0 and more), entirely polished on interspaces. Metapostnotum with coarse sparse striae not reaching posterior margin of dorsal surface of propodeum, with shiny transverse swelling on posterior fourth. Mesepisternum coarsely punctate, shiny. Tarsi shortened, 2nd hind tarsomere as long as wide. Metasomal sterna on discs with relatively dense and long pubescence of erect hairs. Membranous retrorse lobe of gonocoxite large, relatively broad, elongate elliptical (Fig. 74), frequently rolled into semi-tube in proximal part and so looking like a leaf with petiolus (Fig. 75). Gonostylus broad and short, of complicate structure (Fig. 73), directed backward in relation to gonocoxite (Fig. 76). 5.0-6.5 mm . . . . . 40. **E. (Truncevylaeus) villosulus** (Kirby)

– Dorsal surface of propodeum convex, inclined, gradually curved onto posterior vertical and lateral surfaces of propodeum. Pubescence of mesosoma short and relatively sparse, usually whitish, but sometimes brown 64

64(63). Head thick; genal area at posteroinferior angle with tooth, which is sometimes ill-developed. Mandible long, sabre-shaped . . . . . Subgenus **Prosopalictus** (10 species; see nos. 27-36 in "Annotated list")

– Head without tooth and usually not thickened. Mandible usual 65

65(64). Head transversely elliptical in front view, 0.85-0.95 times as high as wide (except for *E. amurensis*, in which the head is somewhat higher than wide). Mesoscutum sparsely punctate (on disc, up to 2 and more). Gonostylus with very long dense bristles 66

– Head rounded or egg-shaped in front view, 1.0-1.1 times as high as wide. Mesoscutum relatively densely punctate on disc (0.4-1.0, sometimes up to 1.5). Gonostylus nearly bare, only with few short bristles. – 2nd flagellomere 1.0-1.2 times as long as its diameter. Tarsi not shortened, 2nd hind tarsomere 1.5-2.0 times as long as its maximum width. Membranous retrorse lobe of gonocoxite shorter than gonocoxite. Body length 4.0-5.5 mm 71

66(65). Smaller, body length 4.7-5.5 mm. Propodeum relatively long, its dorsal surface 0.85-0.9 times as long as scutellum. Tarsi not shortened, 2nd hind tarsomere 1.5-1.7 times as long as its maximum width. Posterior areas of metasomal terga widely hyaline or yellowish translucent. Pubescence of S4 and S5 in form of lateral brush of long dese plumose hairs, which are not shorter, but denser than those on S2 and S3, those more or less regularly pubescent. Membranous retrorse lobe of gonocoxite relatively large (only somewhat shorter than gonocoxite; Fig. 85), elongate elliptical, very widely rounded at apex, bare (Fig. 84). Gonostylus rhomboidal elliptical in posterior view of genital capsule (Fig. 83). – 2nd flagellomere 1.1-1.2 times as long as its diameter. Metapostnotum flat or weakly concave, throughout finely and densely striate, dull or slightly shiny . . . . . 26. **E. (Microhalictus) transpositus** (Cockerell)

– Larger, body length 6-7 mm. Propodeum short, its dorsal surface 0.7 times as long as scutellum. Tarsi shortened, 2nd hind tarsomere as long as its maximum width. Posterior areas of metasomal terga dark or brownish translucent. S4 and S5 more or less regularly pubescent along entire width with shorter hairs than those on S2 and S3. Membranous retrorse lobe of gonocoxite of other form, with marginal bristles. Gonostylus narrow and long 67

67(66). Head more or less rounded in front view, somewhat wider than high. Mesoscutum more densely punctate (on disc, 0.5-2). Metapostnotum flat, throughout finely and densely striate, dull. T1 on dorsal part and posterior area distinctly punctate (0.8-3.0). S2 with lateral swelling. S3 with smooth transverse median swelling. Gonocoxite with long dense bristles. Gonostylus L-shaped in posterior view of genital capsule, not broadened apically. – 2nd flagellomere 1.6 times as long as its diameter. 6.0 . . . . . 19. **E. (Microhalictus) amurensis** (Vachal)

– Head transversely elliptical in front view, 0.85-0.95 times as high as wide. Mesoscutum very sparsely punctate (on disc, 1-5). Metapostnotum convex, with sparse striae on anterior one or two thirds, polished on posterior part. T1 entirely polished, impunctate or with few microscopically fine punctures on dorsal part. S2 and S3 flat. Gonocoxite bare (Figs 77, 79, 80, 82). Gonostylus more or less straight, trapeziform, broadened apically in posterior view of genital capsule (Figs 77, 80). Body length 6-7 mm 68

68(67). 2nd flagellomere 1.6-1.8 times as long as its diameter . . . . . 23. **E. (Microhalictus) quadrinotatulus** (Schenck)

– 2nd flagellomere 1.1-1.3 times as long as its diameter . . . . . 24. **E. (Microhalictus) sakagamii** (Ebmer)

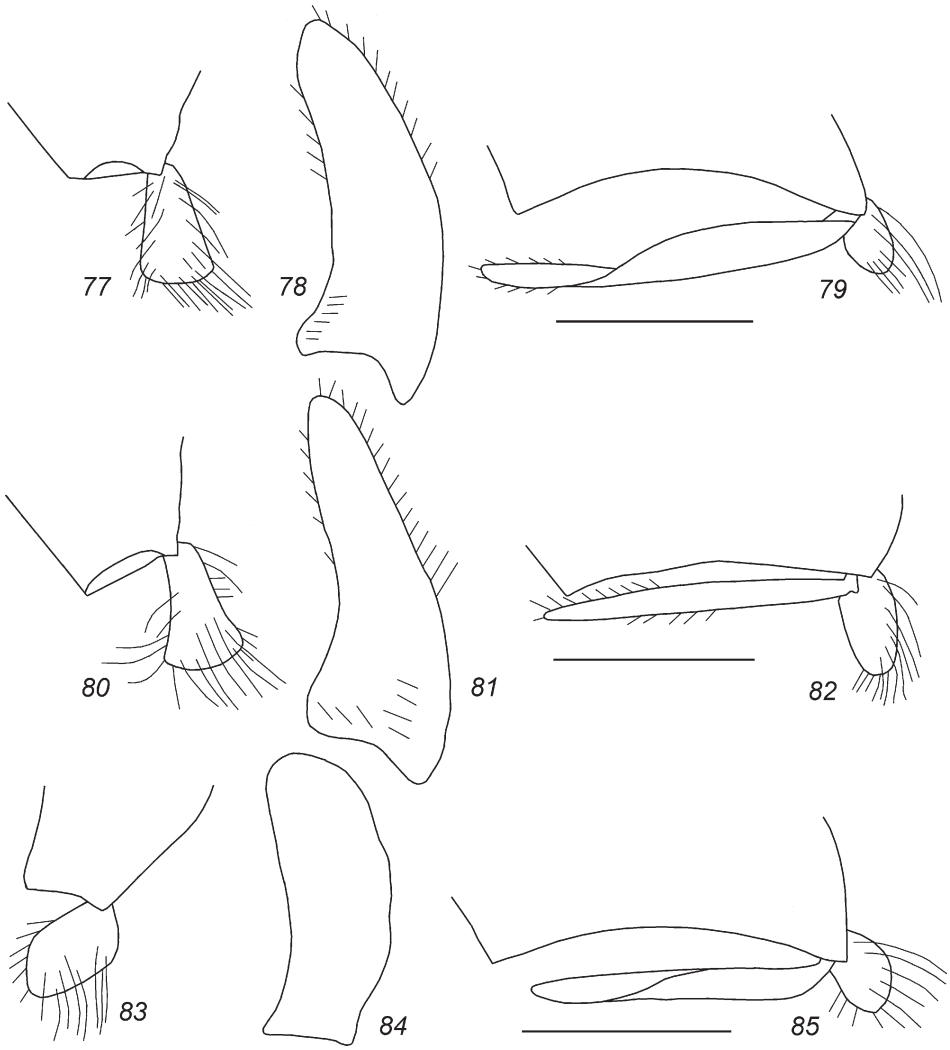
69 (65). Larger on average, body length 5.0-5.5 mm. Head egg-shaped in front view, with more strongly projecting clypeus, 1.05-1.1 times as high as wide. Propodeum long, its dorsal surface about as long as scutellum. Metapostnotum concave medially (except for males from Kurils, in which the metapostnotum is flat). T1 on dorsal part distinctly punctate (1-3), its posterior area distinctly separated from dorsal part by step along entire width. Posterior areas of metasomal terga widely hyaline of yellowish translucent, with obscure punctation or its traces. Membranous retrorse lobe of gonocoxite very broad, elliptical triangular, straight along inner margin (Fig. 96). – Gonostylus small, more or less triangular in posterior view of genital capsule, rounded at apex (Fig. 95). (Two subspecies not distinguished in males) . . . . . 25. **E. (Microhalictus) sulcatulus** (Cockerell)

– Smaller on average, body length 4-5 mm. Head rounded in front view, with shortened clypeus, 1.0-1.05 times as high as wide. Dorsal surface of propodeum distinctly shorter than scutellum. Metapostnotum flat or somewhat convex. T1 entirely polished, impunctate or with few microscopically fine punctures on dorsal part (except for males of *E. epiphron* from Buryatia, in which T1 is distinctly punctate); its posterior area not separated from dorsal part medially. Posterior areas of metasomal terga dark or narrowly translucent, polished. Membranous retrorse lobe of gonocoxite less broad, elongate triangular, regularly narrowed toward apex, curved 70

70(69). Metapostnotum more or less regularly finely and densely rugulose on entire surface, dull. Membranous retrorse lobe of gonocoxite relatively short (0.7 times as long as gonocoxite; Fig. 94), moderately broad, pointed at apex, twice as long as its maximum width (at base; Fig. 93). – Gonostylus small, elongate elliptical in posterior view of genital capsule (Fig. 92) . . . . . 22. **E. (Microhalictus) lucidulus** (Schenck)

– Metapostnotum striate only on anterior one or two thirds. Membranous retrorse lobe of gonocoxite rounded at apex 71

71(70). Membranous retrorse lobe of gonocoxite large (about as long as gonocoxite; Fig. 88), moderately broad, twice as long as its maximum width (at base;



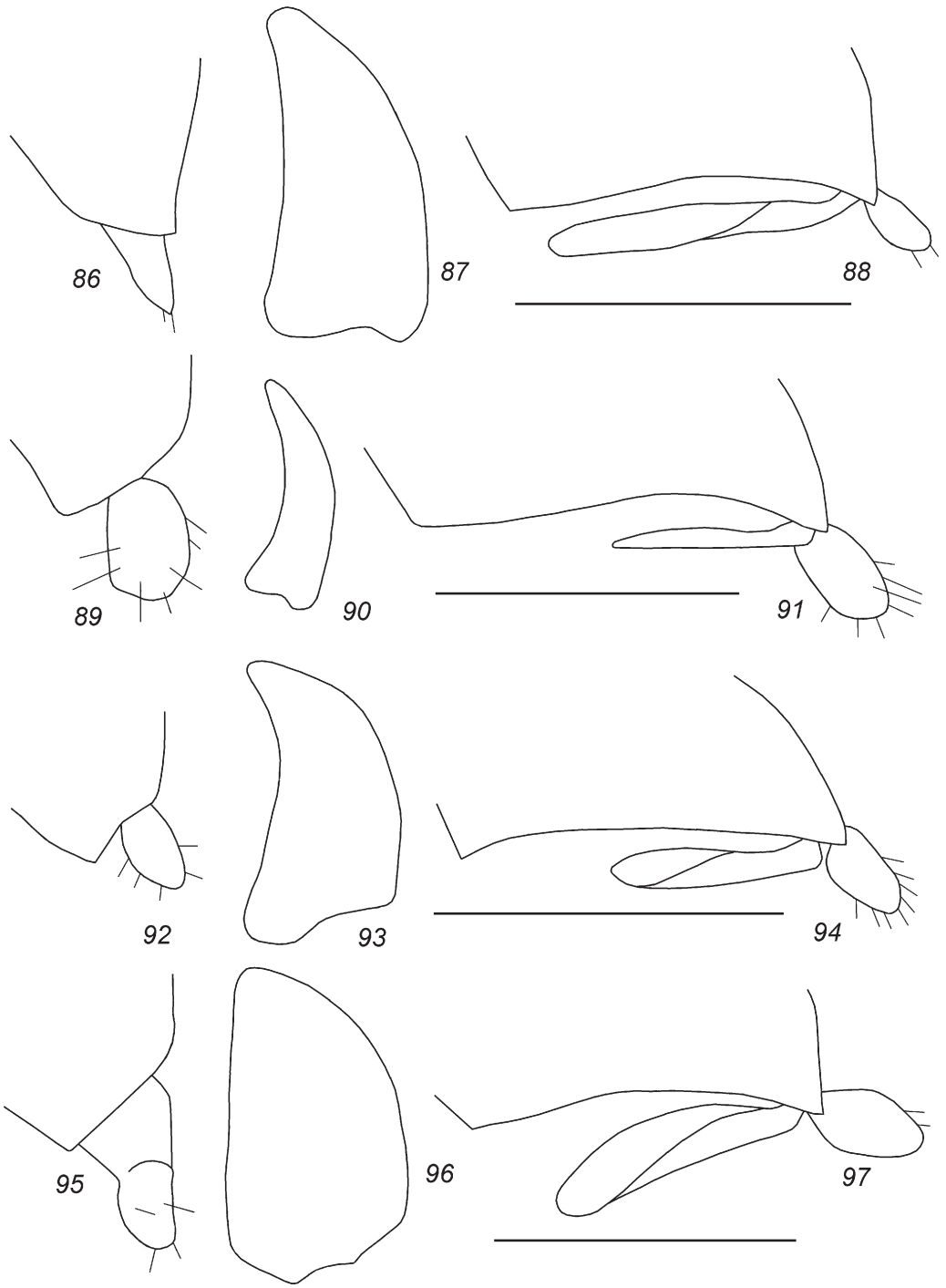
Figs 77-85. *Evylaeus* subg. *Microhalictus*, males. **77-79**, *E. quadrinotatulus*; **80-82**, *E. sakagamii*; **83-85**, *E. transpositus*. 77, 80, 83, gonostylus in its plane (left, posterior view of genital capsule); 78, 81, 84, membranous retrorse lobe of gonocoxite in its plane (left, ventral view of genital capsule); 79, 82, 85, gonocoxite and gonostylus in lateral view. Scale bar: 0.25 mm.

Fig. 87). Gonostylus triangular, narrowed towards apex in posterior view of genital capsule (Fig. 86) . . . . . 20. **E. (Microhalictus) epiphron** (Ebmer)

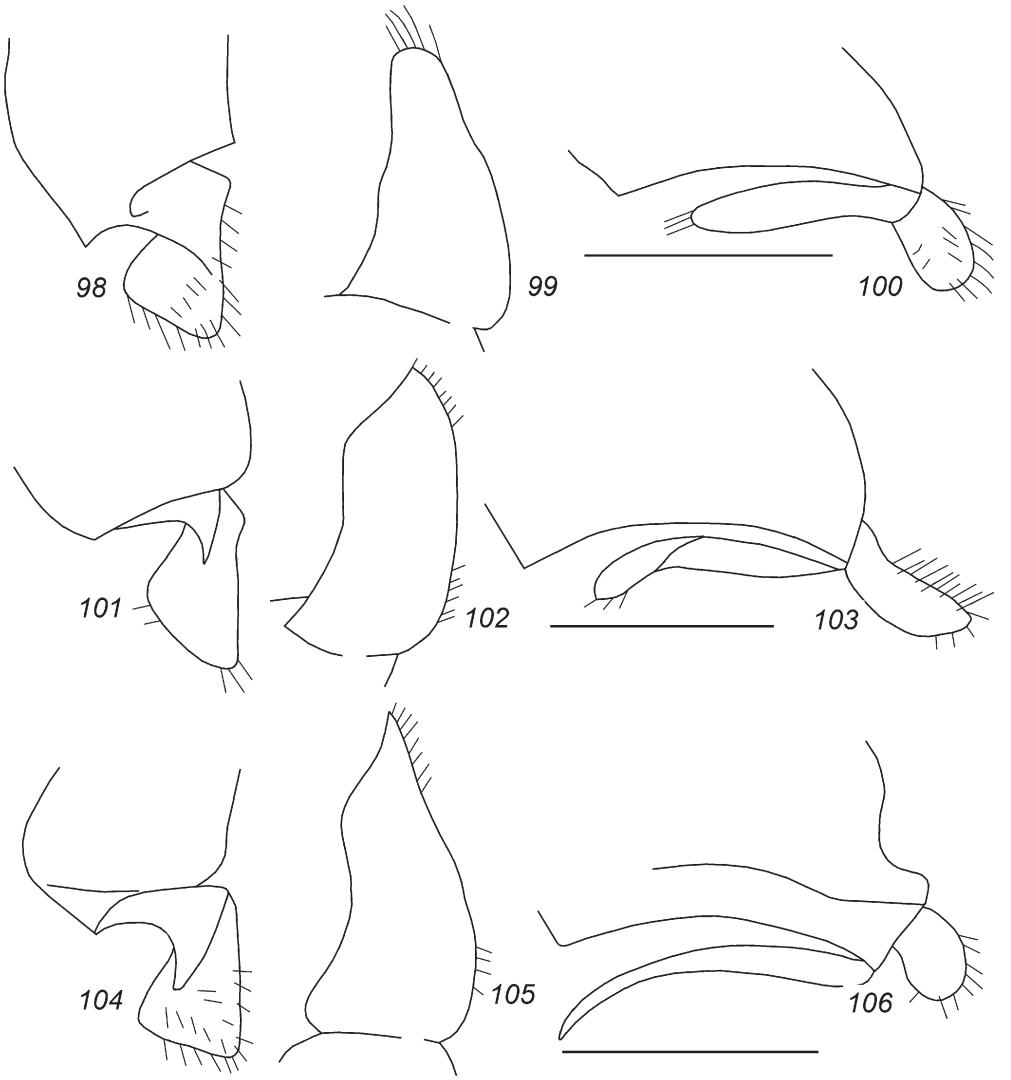
– Membranous retrorse lobe of gonocoxite small (nearly half as long as gonocoxite; Fig. 91), narrow, 4 times as long as its maximum width (at base; Fig. 90). Gonostylus roundly rectangular, not narrowed apically in posterior view of genital capsule (Fig. 89) . . . . . 21. **E. (Microhalictus) eriphyle** (Ebmer)

72(39). Smaller on average, 4.0-5.3 mm. Antenna short, reaching only scutellum; 2nd flagellomere as long as or shorter than its diameter. Propodeum short, its dorsal surface 0.75-0.8 times as long as scutellum. Metasoma shortened, elliptical in dorsal view; its maximum width situated at level of posterior margin of T2 or mid-length of T3. – Body entirely metallic green or blue-green (sometimes metasoma black, with weak deep-blue metallic lustre). Tarsi yellow. T2-T4 with anterior bands or lateral spots of appressed hairs or tomentum. Posterior areas of metasomal terga usually translucent at least partly. Gonostylus small (in relation to gonocoxite; Figs 100, 103, 106), triangular in its plane (in posterior view of genital capsule), narrowed at base (Figs 98, 101, 104). – Membranous retrorse lobe of gonocoxite relatively broad, more or less triangular, 1.5-2.0 times as long as its maximum width (at base; Figs 99, 102, 105) 73

– Larger on average, 5.3-6.5 mm. Antenna long, reaching posterior end of mesosoma or T2; 2nd flagellomere 1.3-2.0 times as long as its diameter. Propo-



Figs 86-97. *Evylaeus* subg. *Microhalictus*, males. **86-88**, *E. epiphron*; **89-91**, *E. eriphyle*; **92-94**, *E. lucidulus*; **95-97**, *E. sulcatulus*. 86, 89, 92, 95, gonostylus in its plane (left, posterior view of genital capsule); 87, 90, 93, 96, membranous retrorse lobe of gonocoxite in its plane (left, ventral view of genital capsule); 88, 91, 94, 97, gonocoxite and gonostylus in lateral view. Scale bar: 0.25 mm.



Figs 98-106. *Evylaeus* subg. *Aerathalictus*, males. **98-100**, *E. angaricus*; **101-103**, *E. leucopus*; **104-106**, *E. viridellus*. 98, 101, 104, gonostylus in its plane (left, posterior view of genital capsule); 99, 102, 105, membranous retrorse lobe of gonocoxite in its plane (left, ventral view of genital capsule); 100, 103, 106, gonocoxite and gonostylus in lateral view. Scale bar: 0.25 mm.

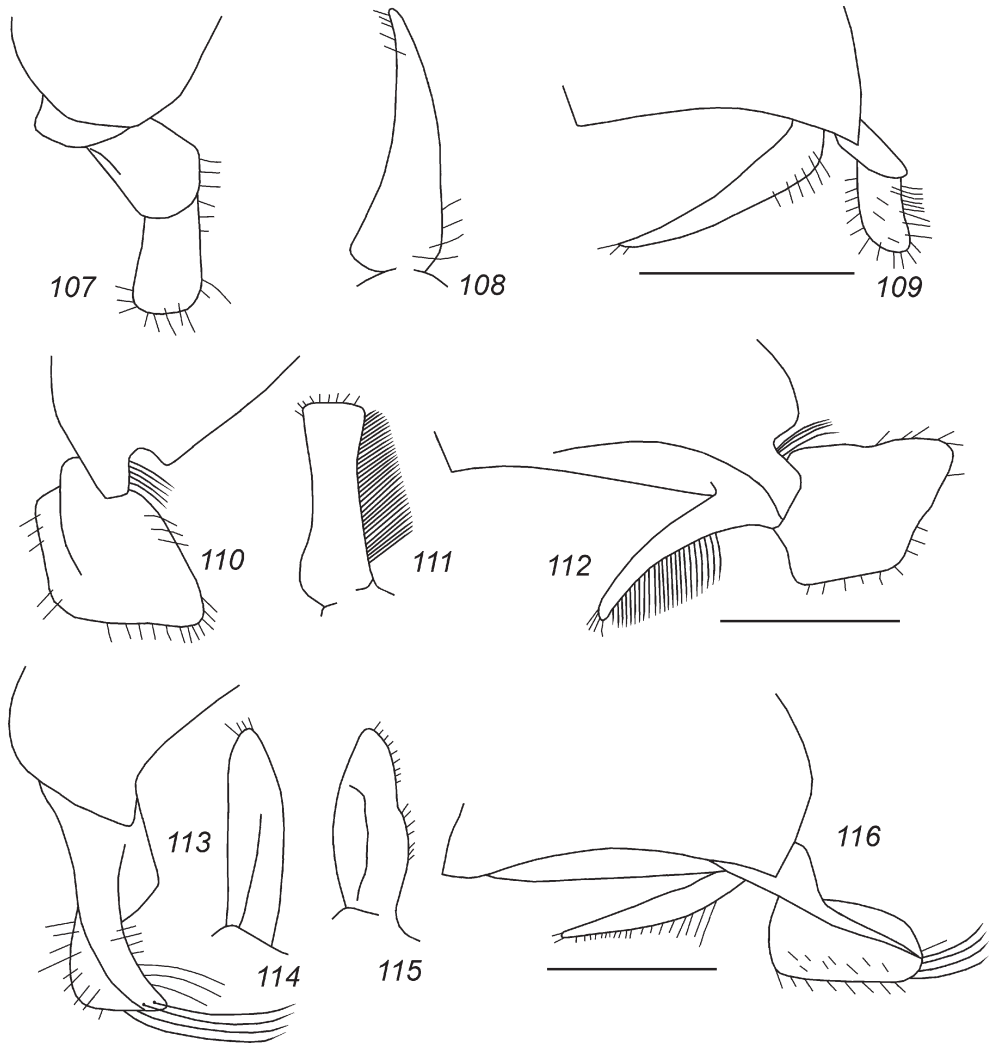
deum long, its dorsal surface as long as or somewhat longer than scutellum. Metasoma elongate, narrowed backward; its maximum width situated at level of posterior margin of T3 or mid-length of T4. Gonostylus large, of other shape 75

73(72). S3-S5 medially nearly bare, laterally with tufts of long dense erect hairs. Membranous retrorse lobe of gonocoxite rounded at apex, with 4-5 long thick bristles (Fig. 99). – Body usually metallic green, with yellowish lustre. Clypeus on lower third yellow to dark yellow; labrum and mandibles usually dark . . . . . 41. **E. (Aerathalictus) angaricus** (Cockerell)

– Metasomal sterna more or less uniformly pubescent on posterior halves of discs and on posterior areas with relatively sparse hairs, directed backward. Membranous retrorse lobe of gonocoxite pointed at apex, with hardly visible thin and short bristles (Figs 102, 105) 74

74(73). Body darker, metallic deep-blue green. Clypeus on lower half or third, labrum and mandibles yellow. Gonostylus with maximum width at level of its mid-length (Fig. 101), concave on anterior surface in lateral view of genital capsule (Fig. 103) . . . . . 42 **E. (Aerathalictus) leucopus** (Kirby)

– Body paler, metallic goldish green or green with yellowish lustre, rarely without such a lustre. Clypeus, labrum and mandibles dark, dark brown or black; sometimes clypeus with small dark yellow spot. Gonostylus with maximum width at apex (Fig. 104), convex on



Figs 107-116. *Evylaeus* subg. *Glauchalictus*, males. **107-109**, *E. miyabei*; **110-112**, *E. problematicus*; **113-116**, *E. virideglaucus*. 107, 110, 113, gonostylus in its plane (left, posterior view of genital capsule); 108, 111, 114, 115, membranous retrorse lobe of gonocoxite in its plane (left, ventral view of genital capsule); 109, 112, 116, gonocoxite and gonostylus in lateral view. Scale bar: 0.25 mm.

anterior surface in lateral view of genital capsule (Fig. 106) . . . . 43. **E. (Aerathalictus) viridellus** (Cockerell)

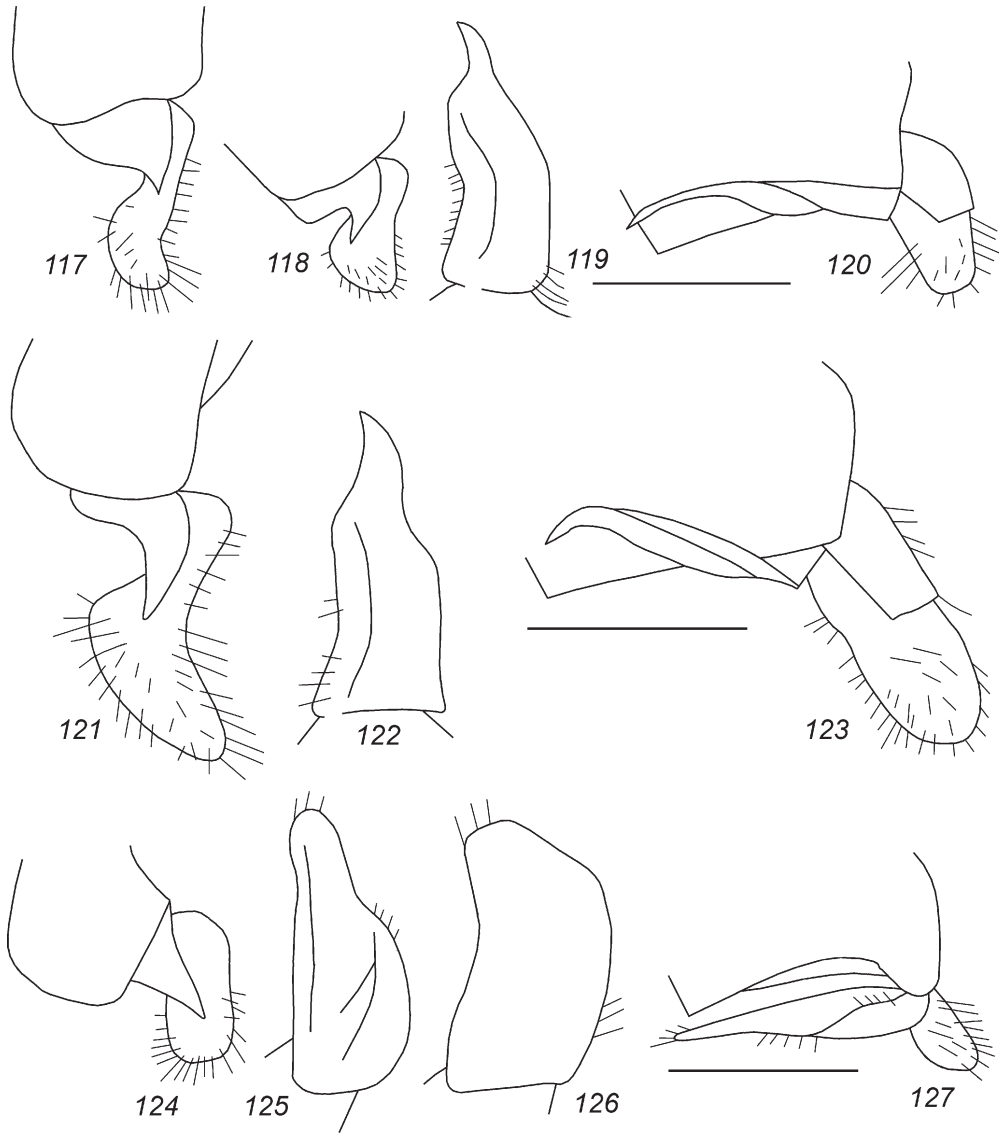
75(72). Head egg-shaped in front view, 1.05-1.2 times as high as wide. 2nd flagellomere 1.3-1.7 times as long as its diameter. Metasomal terga metallic green or black, with green metallic lustre. T2-T4 with anterior bands or lateral spots of white tomentum 76

– Head rounded or transversely elliptical in front view, as high as wide, wider than high, or somewhat (not more than 1.05 times) higher than wide. 2nd flagellomere 1.8-2 times as long as its diameter. Metasomal terga black or dark brown, without metallic lustre. T2-T4 without anterior bands or spots of appressed hairs or tomentum 78

76(75). Head 1.1-1.2 times as high as wide. Face, including clypeus, dull. Legs entirely dark. Membranous retrorse lobe of gonocoxite widely rounded at apex (Figs 125, 126). Gonostylus elongate elliptical (Fig. 124). 5.5-6.0 mm . . . . . 48. **E. (Smeathhalictus) ellipticeps** (Blьthgen)

– Head 1.05-1.1 times as high as wide. Face, including clypeus, silk-shiny. Tarsi yellow. Membranous retrorse lobe of gonocoxite pointed at apex (Figs 119, 122). Gonostylus curved mesad (Figs 117, 118, 121). 5.3-5.7 mm. (*E. briseis* with two subspecies) 77

77(76). Metasomal terga more brightly metallic green; their posterior areas usually yellowish translucent. T1 more coarsely and densely punctate (1-2 or 1-3).



Figs 117-127. *Evylaeus* subg. *Smeathhalictus*, male. **117-120**, *E. briseis briseis*; **121-123**, *E. briseis eomontanus*; **124-127**, *E. ellipticeps*. 117, 118, 121, 124, gonostylus in its plane (left, posterior view of genital capsule); 119, 122, 125, 126, membranous retrorse lobe of gonocoxite in its plane (left, ventral view of genital capsule); 120, 123, 127, gonocoxite and gonostylus in lateral view. Scale bar: 0.25 mm.

Gonostylus weakly curved (Figs 117, 118) . . . . . 48a. **E. (Smeathhalictus) briseis briseis** (Ebmer)

– Metasomal terga darker, black or dark brown, with deep-blue green metallic lustre (usually weak); their posterior areas usually weakly and narrowly translucent. T1 more finely and sparsely punctate (1-5). Gonostylus strongly curved (Fig. 121) . . . . . 48b. **E. (Smeathhalictus) briseis eomontanus** (Ebmer)

78(75). Head 0.9-0.95 times as high as wide. Antenna reaching posterior end of mesosoma. Mesoscutum more coarsely and densely punctate (on disc, 20-30 μm / 0.3-1.0), shiny. Tibiae at proximal and distal ends and tarsi entirely yellow. Metasoma of usual shape for the genus, not thickened in posterior part. T7 of normal structure, with sparse hairs of moderate length. S2-S5 unmodified: flat, with straight posterior margins, with uniform pubescence of relatively short and sparse hairs directed backward. Membranous retrorse lobe of gonocoxite long (as long as gonocoxite; Fig. 109), elongate triangular, pointed

at apex, 3 times as long as its maximum width (at base; Fig. 108). Gonostylus elongate cylindrical, pubescent on all sides with short bristles (Figs 107, 109) . . . . . 44. **E. (Glauchalictus) miyabei** (Murao et al.)

– Head as high as or somewhat higher than wide. Antenna reaching T2. Mesoscutum finely and sparsely punctate (on disc, 15-20 □m / 1-3), finely shagreened on interspaces, silky-dull. Legs entirely dark, black or dark brown. Metasoma thickened in posterior part, at level of segments 4 and 5, similar to male metasoma of many species of *Dufourea*. T7 elongate, narrowed toward topologically posterior margin, curved downward, with tuft of long dense hairs. S2-S4 in middle with tufts of long dense erect hairs, especially long on S4. S4 with median depression and lateral swelling; S5 shortened, with deep rounded excision at posterior margin. Membranous retrorse lobe of gonocoxite short, 1.5 times as long as gonocoxite (Figs 112, 116), of other shape. Gonostylus of other shape 79

79(78). S4 with very dense brush of long erect hairs (1.5-2.0 times as long as width of metabasitarsus). S5 along margins of excision with dense and high comb of thick brownish hairs, with goldish lustre. Membranous retrorse lobe of gonocoxite elongate rectangular, truncate at apex, with row of thick long dense bristles along outer margin (Figs 111, 112). Gonostylus weakly elongate, rhomboidal rectangular in its plane, covered with short thin bristles, only at base with several more or less long bristles directed posterodorsomesad (Figs 110, 112) . . . . . 45. **E. (Glauchalictus) problematicus** (Blьthgen)

– S4 with sparser brush of less long erect hairs (shorter than width of metabasitarsus). S5 weaker emarginate, with relatively short and sparse whitish hairs at sides. Membranous retrorse lobe of gonocoxite lancet-shaped, narrowed apically, poorly pubescent, varying in its width (Figs 114, 115). Gonostylus elongate, of complicated angulate shape, at apex with 4-5 very long thick bristles directed mesad (Figs 113, 116) . . . . . 46. **E. (Glauchalictus) virideglaucus** (Ebmer & Sakagami)

Annotated list of species

1. **Evylaeus (Minutulaeus) semilaevis** (Blьthgen, 1923)

Halictus semilaevis Blьthgen, 1923: 329. ♂♀. Lectotype (**designated here**): ♂, labels: "Siberie occid." [rather erroneous label], "*Halictus minutissimus* K." (written by Morawitz), "*Hal. semilaevis* m. ♂. Type [written by Blьthgen]. P. Blьthgen det. [printed]"; IZK. The species was described from 1 ♂ and 1 ♀; both the specimens are available at IZK. The male was designated as the lectotype, because of strong damage of the female (the paralectotype with labels: "Siberie orient.", "*Hal. semilaevis* m. ♀. Type. P. Blьthgen det."): head lost, metasoma presented by some parts glued.

Halictus (*Evylaeus*) *minutulus speculiferus* Cockerell, 1937: 2; junior homonym of *Halictus speculiferus* Cockerell, 1929 (= *Seladonia vicina*). ♀. Holotype: ♀, "Siberia: Smolenschina" [Irkutsk Prov.: Smolenskoe, 10 km SW Irkutsk]; AMNY. Synonymy by Ebmer (1996: 281).

Halictus (*Evylaeus*) *minutulus speculigerus* Cockerell, 1938a: 81; nom. n. pro *Halictus minutulus speculiferus* Cockerell, 1937.

Taxonomy. Ebmer, 1978a: 204, 205 (*Lasioglossum speculigerum*), 205; 1996: 281; 2005: 378; Pesenko & Davydova, 2004: 698-699, Table 5.

Published records. Irkutsk Prov.: "Smolenschina" [Smolenskoe, 10 km SW Irkutsk] (Cockerell, 1937: 2; *Halictus minutulus speculiferus*), Irkutsk (Ebmer, 1996: 282); Khabarovsk Terr.: 20 km N Bikin (Ebmer, 1996: 281); Primorsk Terr.: Lazovskii Nature Reserve, Ryazanovka (15 km SW Slavyanka), 40 km SW Ussuriisk, 40 km E Ussuriisk (Ebmer, 1996: 281; 2006: 563).

Material examined (31 ♂, 153 ♀). Chita Prov.: Chita; Amur Prov.: Khingan Nature Reserve, Klimoutsy, Natal'ino, 40 km NNW Svobodny, Simonovo; Khabarovsk Terr.: 5 km W Birakan, Khabarovsk, Komsomolsk-on-Amur, Pivan; Primorsk Terr.: Anisimovka, 10 km NW Artem, Barabash-Levada, 10 km E Chernigovka, Gornotayezhnoe, Kamenushka, Khasan, Lazo, Lazovskii Nature Reserve (Benevskoe locality), Novogeorgievka, 15 km S Partizansk, 10 km E Pos'yet, 15 km SE Pos'yet, 25 km SE Slavyanka, Spassk, 30 km NW Spassk, 30 km SE Ussuriisk, 50 km ESE Ussuriisk, Ussuri Nature Reserve, Vladivostok, Yakovlevka.

Distribution. An Eastern Palaearctic species. Eastern Siberia and Southern Far East of Russia (Altai, south of Irkutsk Prov., Khabarovsk and Primorsk Terr.; **first record**: Amur Prov.), Mongolia (Hovd, Тцv, and Цvцr-Hangay: Ebmer, 1982: 214; 2005: 375), northeastern China (Heilonjiang: Ebmer, 1978a: 205).

2. **Evylaeus (Minutulaeus) yakuticus** Pesenko & Davydova, 2004

Evylaeus yakuticus Pesenko & Davydova, 2004: 696, Figs 10-18, Table 5. ♀♂. Holotype: ♀, Yakutia: Abaga near Olekminsk; ZISP.

Published records. Yakutia: Yakutsk (Blьthgen, 1924b: 282; "*Halictus setulosus*"; Pesenko & Davydova, 2004: 696); also see Material examined.

Material examined (87 ♂, 86 ♀). Krasnoyarsk Terr.: Krasnoyarsk; Chita Prov.: 15 km SE Chita, Kaidalovka River (near Chita), Nerchinsk, 7 km N Priargunsk; Yakutia: 10 km SW Olekminsk, Olekminsk, Malaya Cherepanikha (near Olekminsk), mouth of Labya River, Yakutsk, Markha (near Yakutsk), Chuchur-Muran (near Yakutsk), Sergelyakh (near Yakutsk), 30 km SSE Yakutsk, 75 km S Yakutsk, Kyzyl-Yuryuie (near "Bulus" icing), Bestyakh (on Lena River, 50 km ENE Yakutsk), Novopokrovskoe (on Amga River), Khattygy-Terde (on Amga River), Amginskaya Sloboda, 60 km N Amga, Petropavlovskoe (on Aldan River); Amur Prov.: Klimoutsy, Simonovo, Ulunga.

Distribution. South of Eastern Siberia: Yakutia; **first records**: south of Krasnoyarsk Terr., Chita and Amur Prov.

3. **Evylaeus (Nodicornevylaeus) nodicornis** (Morawitz, 1889)

Halictus nodicornis Morawitz, 1889: 364. ♂, "Mongolei: Chodta-tschai" (type locality in description; China: Gansu; Edzin-gol Valley; co-ordinates of the locality see Ebmer, 2005: 374). Lectotype (**designated here**): ♂, labels: golden circle, "Mongolei, Chodta-tschai. Potanin" (written by Morawitz), "C[ollection] of F. Morawitz" (printed, in Cyrillic), "*Halictus nodi-*

cornis F. Morawitz" (written by Morawitz); ZISP. This is a single specimen available from the type series.

Taxonomy. Ebmer, 1982: 211, 213 (♀), Figs 13, 14, Photo 3 in Taf. I; 1985a: 216; Pesenko & Davydova, 2004: 698-699, Table 5.

Published records. Irkutsk Prov.: Irkutsk (Ebmer, 1982: 212).

Material examined (8 ♂). Irkutsk Prov.: Irkutsk, Kurkutskaya, Olkhon Island; Chita Prov.: 7 km N Priargunsk.

Distribution. An Eastern Palaearctic species. Russia (south of Irkutsk Prov.; **first record**: Chita Prov.), northern China (Gansu: Morawitz, 1889: 364; Neimenggu: Ebmer, 1982: 211), Mongolia (Uvs and Tцv: Ebmer, 1982: 211, 213; 2005: 374).

4. **Evylaeus (Evylaeus) affinis** (Smith, 1853) (*E. calceatus* group)

Halictus affinis Smith, 1853: 64. ♂. Syntype(s): "Foocho-foo, North China" [= Fujiang: Fuzhou]; BML.

Halictus leoninus Vachal, 1903: 130. ♂, non ♀ (= *Evylaeus duplex*). Syntypes: 4 ♂, Japan [no locality]; MNP, examined. Synonymy by Blьthgen (1926c: 348; = *Halictus mandarinus*).

Halictus mandarinus Strand, 1910a: 192. ♀. Holotype: ♀, China: "Kiautschou, Tsingtou" [now Shandong: Qingdao]; MNB; examined. Synonymy by Blьthgen (1930b: 71).

Halictus nagasakiensis Strand, 1910a: 201. ♀. Holotype: ♀, Japan: Nagasaki; MNB, examined. Synonymy by Blьthgen (1922: 54; = *Halictus mandarinus*).

Halictus investigator Strand, 1910a: 203. ♀. Holotype: ♀, China: "Tsingtou, Iltisberge" [now Shandong: Qingdao]; MNB; examined. Synonymy by Ebmer (1978a: 202).

Halictus investigatoris Strand, 1915: 63. ♀. Conditional name. Syntypes: 2 ♀, China: "Tsingtou" [now Shandong: Qingdao]; DEI; examined. Synonymy by Ebmer (1995: 532).

Taxonomy. Blьthgen, 1924b: 80 (key), 256 (key), 276; 1926c: 348 (*Halictus mandarinus*); 1929b: 107 (*H. investigator*); 1930b: 71; Ebmer, 1978a: 202; 1995: 532.

Published records. Primorsk Terr.: 10 km E Chernigovka, Gornotayezhnoe, Partizansk, Samarka, 20 km S Vladivostok (Ebmer, 1978a: 201; 1995: 533; 1996: 278; 1999: 678; 2006: 556).

Material examined (17 ♂, 19 ♀): Khabarovsk Terr.: Khabarovsk, Komsomolsk-on-Amur; Primorsk Terr.: Blagodatnoe, Gaivoron, Golubiny Utes, Khasan, Lazo, Lazovskii Nature Reserve (no locality), Murav'yevka, Nikolaevka, Novokachalinsk, Spassk, 20 km S Spassk, Ussuri Nature Reserve.

Distribution. An Eastern Palaearctic species. Southern Far East of Russia (Primorsk Terr.; **first record**: Khabarovsk Terr.), northern and eastern China (Blьthgen, 1924b: 276, *Halictus mandarinus*; Gansu: Blьthgen, 1930b: 71; 1934: 4; Beijing and Heilongjiang: Ebmer, 1995: 533; 1996: 279; Shandong: Strand, 1910a: 192, *H. mandarinus*; 1910a: 203, *H. investigator*; 1915: 63, *H. investigatoris*; Fujian: Smith, 1853: 64; Ebmer, 1995: 533; 1996: 279), North Korea (Ebmer, 1995: 533), South Korea (**first record**: "Gyeonysangnam Prov., 30 km NNW Jinju, 12.VI.2002, leg. S. Belokobylskij", 1 ♀; ZISP), Japan (Blьthgen, 1924b: 276, *Halictus mandarinus*; Hokkaido, Honshu, Shikoku, Kyushu, and Okinawa: Vachal, 1903: 130, *H. leoninus*; Strand, 1910a: 201, *H. nagasakiensis*; Ikudome, 1978: 320, 322; 1981: 161; Azuma & Kinjo, 1987: 313; Haneda, 1990: 6; Iwata, 1997: 640), Taiwan (Blьthgen, 1924b: 276, *H. mandarinus*; Ebmer, 1996: 279).

5. **Evylaeus (Evylaeus) albipes** (Fabricius, 1781) (*E. calceatus* group)

This is a transpalaearctic species common in moderate zones of the region as far as the Pacific Ocean in the east; in the southern part of its range, in mountains. It comprises two subspecies differing only in the sculpture and coloration of the female metasoma (see Couplet 14 in the "Key to species"). The nominotypical subspecies occupies the most part of the species range. The Far Eastern *E. albipes villosus* (Ebmer, 1995) occurs only in Amur Prov. and Primorsk Terr. (Table 1). Thus, both of those are recorded from the region under study.

5a. **Evylaeus (Evylaeus) albipes albipes** (Fabricius, 1781)

Apis albipes Fabricius, 1781: 486. ♂. Lectotype: ♂, Italy: no locality; designated by Warncke (1973: 23); ZMK.

Hylaeus abdominalis Panzer, 1798: H. 53, Taf. 19. ♂. Syntype(s): no locality [Austria:]; lost. Synonymy by Spinola (1806: 115).

Halictus malachurellus Strand, 1909: 40. ♂. Holotype: ♂, "Europa": no locality; MNB, examined. Synonymy by Blьthgen (1920: 84).

Halictus albipes var. *alpicola* Blьthgen, 1921: 284. ♀. Syntypes: Switzerland: Sils Maria; Germany: Oberstorf; MNB, examined. Synonymy by Ebmer (1971: 92).

Halictus albipes var. *rubelloides* Blьthgen, 1924: 55 (key), 274 (material). ♀. Syntypes: 1 ♀, "Buchara"; 1 ♀, "Alai, Ferghana"; MNB; examined. Synonymy by Ebmer (1971: 93).

Taxonomy (selected references). Blьthgen, 1924b: 55, 83 (key), 94 (key), 274 (key); Ebmer, 1971: 65 (key), 79 (key), 92; 1974b: 116, 123; 1988: 598; 1995: 533; 2006: 556, Fig. 19 (♂); Pesenko et al., 2000: 213 (key), 239.

Published records. Primorsk Terr.: Terney (Ebmer, 1978a: 202; 1996: 279); Sakhalin: Kholmsk (Ebmer, 1995: 533; 2006: 556); Kurils: Iturup and Urup (Ebmer, 1995: 533).

Material examined (42 ♂, 53 ♀). Krasnoyarsk Terr.: Konnyi Island (on Yenisei River), Krasnoyarsk, 45 km E Krasnoyarsk; Irkutsk Prov.: Bratsk, Bunbui, Dar'ino (between Kirensk and Vitim), Irkutsk, Listvyanka, Melnikovo, Nizhneudinsk, Shivanda; Chita Prov.: Balzino, Karymskaya Station, 35 km SE Karymskaya Station; Buryatia: Gromotukha-Sumilikha River (northeastern shore of Lake Baikal), Kyakhta; Khabarovsk Terr.: Kom-

Table 1. Occurrence of females of *E. albipes* belonging to different forms in Eastern Siberia and the Far East of Russia (a total of 161 individuals).

Region	Typical form	Intermediate form	Form *villosus* (percentage, in parentheses)
Krasnoyarsk Terr.	5	–	–
Irkutsk Prov.	11	–	–
Chita Prov.	2	–	–
Khabarovsk Terr.	1	–	-
Amur Prov.	18	16	30 (46/9%)
Primorskii Terr.	5	2	26 (78/8%)
Sakhalin	11	–	–
Kurils	34	–	–
Total	87	20	54

somolsk-on-Amur; Sakhalin: 20 km N Nevelsk, Starodubskoe, Tymovsk, 15 km NE Yuzhnosakhalinsk; Iturup: Atsonapuri Volcano, Kurilsk, Kuybyshevskii Zavod, Zolotoe; Shikotan: northern shore of Anama Bay, Delphin Bay, Inemosari (= "Dimitrov") Bay, Malokurilsk, Tiretosi (= "Tserkovnaya") Bay; Kunashir: Alekhino, Dubovoe, Lake Lagunnoe, Mendeleyevo, Yuzhnokurilsk.

Distribution. North Africa: Algeria. Europe nearly throughout, as far in the north as Ireland, Sweden, and Udmurtia, to northern Spain in the south. Asia: Asia Minor, Iran, Uzbekistan, Mongolia (**first record**: "Sangin, (near Urga) [now Songino near Ulanbaatar, Tцv], N Mongolia, 27.VII.1905, leg. P. Kozlov", 1 ♂; ZISP), northern and northeastern China (Blьthgen, 1934: 4; Ebmer, 1978a: 202, 1995: 522; 1996: 279), North Korea (Ebmer, 1978b: 314), Russia (southern Siberia, Sakhalin, and Kurils: Ebmer, 1995: 533), northern Japan (Hokkaido and Honshu: Fukuda et al., 1973: 163; Usui et al., 1976: 228; Ebmer, 1978a: 201; 1995: 533).

5b. **Evylaeus (Evylaeus) albipes villosus** (Ebmer, 1995)

Lasioglossum (*Evylaeus*) *albipes villosum* Ebmer, 1995: 533, Fig. 58. ♀. Holotype: ♀, Russia: Ryazanovka (Primorsk Terr.); EBM.

Taxonomy. Ebmer, 1996: 279; 2006: 556, Figs 17, 18 (♂).

Taxonomic note. Earlier, Ebmer (1996: 279) wrote that ssp. *villosus* differs from the nominotypical subspecies only in the females. I share this opinion. However, recently Ebmer (2006: 556) has indicated that the males of these subspecies differ in the structure of the gonocoxite: its dorsal inner margin is curved at right angle in ssp. *albipes* (Fig. 19), but at obtuse angle in ssp. *villosus* (Fig. 18). This difference shown on photos is rather an artifact of different views to the genital capsule: dorsal view of the capsule of ssp. *villosus* and posterodorsal, of ssp. *albipes*. In fact, the dorsal inner margin of the gonocoxite is curved at obtuse angle of varying sizes in both the subspecies.

Published records. Primorsk Terr.: Vladivostok (Blьthgen, 1934: 4, *Halictus albipes*), Lazovskii Nature Reserve, Ryazanovka, 30 km W Vladivostok (Ebmer, 1995: 533; 1996: 279; 2006: 556).

Material examined (42 ♂, 107 ♀). Amur Prov.: Blagoveshchensk, Khingan Nature Reserve, Klimoutsy, Simonovo; Primorsk Terr.: Adimi, Anisimovka, Barabash-Levada, Brovnichi, Golubiny Utes, Gornotayezhnoe, Gorskaya Station, Khasan, 20 km S Khorol, 40 km E Kraskino, Lazo, Lazovskii Nature Reserve (3 localities), Okeanskaya, 15 km E Pos'yet, Ryazanovka, 25 km SW Slavyanka, Sidemi, Vladivostok.

Distribution. Far East of Russia: Amur Prov. (**first record**) and Primorsk Terr.

6. **Evylaeus (Evylaeus) apristus** (Vachal, 1903) (*E. apristus* group)

Halictus apristus Vachal, 1903: 130. ♀. Holotype: ♀, Japan: "Nikkon Moyen, env. de Tokio et Alpes de Nikko" (on label); MNP. The lectotype designation by Ebmer (1978b: 313) is unnecessary.

Sphecodes pallidulus Matsumura, 1912: 209. ♀. Syntype(s): Japan: Kumamoto (Kyushu); ?lost. Synonymy by Ebmer (1978b: 313).

Taxonomy. Matsumura, 1930: 178; 1931: 9; 1932: 7, 11 (*Sphecodes pallidulus*); Hirashuma, 1957: 4; Ebmer, 1978b: 313, 1995: 542, 543 (♂), Figs 63, 64; 2002: 840, Figs 60-62; Ikudome, 1999: 582; Murao & Tadauchi, 2005: 43, Figs 1*a-g*, 2*a-g*, 3*a*, 3*b*, 4*a-d*.

Material examined (4 ♂, 11 ♀). Primorsk Terr.: "Kedrovaya Pad" Nature Reserve; Kunashir: Alekhino.

Distribution. An Eastern Palaearctic species. South of the Far East of Russia (**first record for Russia**; Primorsk Terr., Kunashir), North Korea (Ebmer, 1995: 543), China ("Fukuen" [Fujian]: Ebmer, 2002: 840), Japan (Hokkaido, Honshu, Shikoku, Kyushu, Yakushima, and Okinawa: Vachal, 1903: 130; Matsumura, 1931: 72; Ikudome, 1978: 322; Azuma & Kinjo, 1987: 314; Haneda, 1990: 6; Ikudome & Nakamura, 1994: 6; 1996: 176; Ebmer, 1995: 543; 2002: 840; Murao & Tadauchi, 2005: 49).

7. **Evylaeus (Evylaeus) calceatus** (Scopoli, 1763) (*E. calceatus* group)

Apis calceata Scopoli, 1763: 301. ♂. Neotype: ♂, Austria: Zell Pfarre (Carinthia); designated by Ebmer (1974b: 113); ZSM; examined.

Hylaeus cylindricus Fabricius, 1793: 302. ♀. Lectotype: ♀, Germany: no locality; designated by Warncke (1973a: 25); ZMK. Synonymy by Blьthgen (1921: 285).

Melitta fulvocincta Kirby, 1802: 68. ♀♂. Lectotype: sex not indicated, England: Bargham; designated by Ebmer (1978a: 200); BML. Synonymy by Morawitz (1876: 243; = *Halictus cylindricus*).

Melitta obovata Kirby, 1802: 75. ♀. Lectotype: ♀, England: Bargham; designated by Ebmer (1978a: 201); BML. Synonymy by Ebmer (1978a: 201).

Andrena vulpina Fabricius, 1804: 326; junior homonym of *Apis vulpina* Christ, 1791 (*Andrena* sp.). ♀. Lectotype: ♀, Germany: no locality; designated by Warncke (1973a: 25) (for critical comment, see Ebmer, 1974b: 124); ZMK. Synonymy by Warncke (1973a: 25).

Halictus terebrator Walckenaer, 1817: 72. ♀♂. Syntypes: France: Toutenville; lost. Synonymy by Lepeletier (1841: 276; = *Halictus vulpinus*).

Hylaeus rubellus Eversmann, 1852: 35 (key to females), 40; junior homonym of *Halictus rubellus* Haliday, 1836. ♀, "Hab. in promontoris Uralensibus" (type locality in description). Lectotype (**designated here**): ♀; labels: "Orb [Orenburg]" (written by Eversmann), "*Hylaeus rubellus* Pall[as]. Mpt. [Manuscript], B. M. [Berliner Museum]" (written by Eversmann), "C[ollection] of Eversmann" (printed, in Cyrillic); ZISP. Three other females from the type series available at ZISP with labels "Spassk" (written by Eversmann) are labelled as paralectotypes. Synonymy by Strand (1921: 274).

Hylaeus bipunctatus Schenck, 1853: 160. ♂. Syntype(s): Germany: [Hessen]; lost. Synonymy by Schenck (1853: 289; = *Hylaeus abdominalis*) and by Schenck (1861: 409; *Hylaeus cylindricus* var. *bipunctatus*).

Halictus rubens Smith, 1854: 423; nom. n. pro *Hylaeus rubellus* Eversmann, 1852.

Halictus rufiventris Giraud, 1861: 460; nom. n. pro *Hylaeus rubellus* Eversmann, 1852.

Halictus cylindricus var. *rhodostoma* Dalla Torre, 1877: 180. ♂. Syntype(s): Italy: Nagarй (Trento); lost. Synonymy by Warncke (1973b: 294).

Halictus calceatus ulterior Cockerell, 1929: 588. ♀♂. Holotype: ♀, Russia: " Smolenschina (near Irkutsk), Siberia" [Smolenskoe, 10 km SW Irkutsk]; ?lost. Synonymy by Ebmer (1978a: 201).

Taxonomy (selected references). Blьthgen, 1924b: 55 (key), 81 (key), 93 (key), 274 (key); Ebmer, 1971: 65 (key), 78 (key), 93; 1974a: 129; 1974b: 113, 121, 124; 1978a: 201; 1988: 597; 1995: 530; 1996: 278; Sakagami & Munakata, 1972: 411; Pesenko et al., 2000: 213 (key), 236, Figs 339, 340, 377, 387, 429, 430.

Published records. South of Irkutsk Prov.: "Smolenschina" [Smolenskoe, 10 km SW Irkutsk] (Cockerell, 1929: 588, *Halictus calceatus ulterior*); Yakutia (Pesenko & Davydova, 2004: 694; see Material examined); Primorsk Terr.: "Kongaus" [now Anisimovka], Tibelty, Okeanskaya (Cockerell, 1924: 582, 1929: 588), Sedanka (Gussakovskij, 1932: 64), Ternei, Samarka, Litovka Mt. (near Anisimovka), Ryazanovka (15 km SW Slavyanka), Samarka, Shkotovo, Sputnik (near Vladivostok), Sedanka, 30 km W Vladivostok, Zhuravlevka (near Samarka) (Ebmer, 1978a: 201; 1995: 530; 1996: 278), Lazovskii Nature Reserve (Ebmer, 2006: 555); Sakhalin: Aniva (Ebmer, 1995: 530); Kunashir (no locality; Konakov, 1956: 166): Dubovoe (Proshchalykin, 2003: 6).

Material examined (79 ♂, 175 ♀). Krasnoyarsk Terr.: Krasnoyarsk; Irkutsk Prov.: Irkutsk, Markovo (on Kaya River), Melnikovo (near Irkutsk); Chita Prov.: Andrianovka Station; Buryatia: Dureny (left bank of Chikoi River), Tampuda River (northeastern shore of Lake Baikal), Ust-Kiran; Yakutia: Vilyuisk, Yakutsk, 30 km SSE Yakutsk, 50 km ESE Yakutsk; Amur Prov.: Khingan Nature Reserve; Klimoutsy, Simonovo; Jewish Autonomous Prov.: 40 km NW Amurzet; Khabarovsk Terr.: Komsomolsk-on-Amur, Solnechny; Primorsk Terr.: Anisimovka, Golubiny Utes, Gornotayezhnoe, Gorskaya Station, Kamen-Rybolov, "Kedrovaya Pad" Nature Reserve, Khasan, 30 km N Khasan, Kievka, Lazo, Lazovskii Nature Reserve (4 localities), Nikolaevka, Novokachalinsk, Partizansk, 15 km S Partizansk, 15 km NE Pos'yet, Ryazanovka, Sidemi, 25 km SW Slavyanka, Spassk, 15 km W Spassk, 25 km E Spassk, Talamu Bay, Terekhovka, Ternei, 20 km NE Ussuriisk, 20 km SE Ussuriisk, Vladivostok, Yakovlevka; Sakhalin: Bykovo, 20 km SE Il'inskaya, Lake Tunaicha, Tymovsk; Shikotan: northern shore of Anama Bay, Malokurilsk, Meteorological Station; Kunashir: Alekhino, Lake Goryacheye.

Distribution. A common polyzonal transpalaearctic species, from Atlantic to Pacific Ocean. In the Eastern Palaearctic Region: Russia (south of Irkutsk Prov., Yakutia, Primorsk Terr., and Kunashir; **first records**: Chita and Amur Prov., Buryatia, Jewish Autonomous Prov., Khabarovsk Terr., Sakhalin and Shikotan), northern and northeastern China (Gansu: Morawitz, 1889: 364; *H. cylindricus*; Xinjiang: Morawitz, 1880: 367, *H. cylindricus*; Ebmer, 1978a: 201; 1996: 278), Mongolia (Tцv and Цmnцgovi: Ebmer, 1982: 211; 2005: 371), North Korea (Ebmer, 1978b: 314), northern Japan (Hokkaido, Honshu, and Kyushu: Sakagami & Munakata, 1972: 411; Ebmer, 1995: 530; Iwata, 1997: 640).

8. **Evylaeus (Evylaeus) hoffmanni** (Strand, 1915) (*E. laticeps* group)

Halictus hoffmanni Strand, 1915: 65. ♀. Syntypes: 7 ♀, China: "Tsingtou" [now Shandong: Qingdao]; DEI; examined.

Halictus atropis Strand, 1915: 63. ♂. Syntypes: 2 ♂, China: "Tsingtau" [now Shandong: Qingdao]; DEI; examined. Synonymy by Blьthgen (1926b: 399; also see Ebmer, 1995: 563).

Halictus shishkini Cockerell, 1925: 6, 7 (key). ♂. Holotype: ♂, Russia: "Kongaus" [now Primorsk Terr.: Anisimovka]; USMW. Synonymy by Ebmer (1978a: 202).

Halictus suprafulgens Cockerell, 1925: 9. ♀. Holotype: ♀, Russia: "Okeanskaya" [near Vladivostok, Primorsk Terr.]; USMW. Synonymy by Ebmer (2006: 557).

Halictus speculicaudatus Cockerell, 1931: 16. ♀. Holotype: ♀, China: Zф-Sи (Shanghai Municipality); AMNY. Synonymy by Ebmer (2006: 557).

Taxonomy. Blьthgen, 1926c: 399; Ebmer, 1978a: 202; 1980: 502; 1995: 563; 1996: 279; 2006: 557.

Published records. Primorsk Terr.: "Kongaus" [now Anisimovka] (Cockerell, 1925: 6, *Halictus shishkini*), Okeanskaya (Cockerell, 1925: 9, *H. suprafulgens*), Ka-

menushka, Lazovskii Nature Reserve, Sputnik (near Vladivostok), Tigrovy (Ebmer, 1996: 279; 2006: 557).

Material examined (46 ♂, 56 ♀). Amur Prov.: Arkhara, Khingan Nature Reserve; Klimoutsy; Khabarovsk Terr.: Amurstalevskaya Mt., Khabarovsk, Komsomolsk-on-Amur; Primorsk Terr.: Anisimovka, 15 km E Dmitrievka, Evseyevka, Kamen-Rybolov, Kamenushka, "Kedrovaya Pad" Nature Reserve, Khasan, Kievka, Lazovskii Nature Reserve (Benevskoe locality), Novogeorgievka, Novokachalinsk, Partizansk, Ryazanovka, 25 km SW Slavyanka, Spassk, 30 km NW Spassk, 35 km NE Spassk, 20 km SE Ussuriisk, Ussuri Nature Reserve, Vladivostok.

Distribution. An Eastern Palaearctic species. Southern Far East of Russia (Primorsk Terr.; **first records**: Amur Prov. and Khabarovsk Terr.), North Korea (Ebmer, 1995: 564; 1996: 279), eastern China (Heilongjiang, Jiangsu, Shaanxi, and Shandong: Strand, 1915: 63, "*Halictus atropis*"; 1915: 65; Ebmer, 1978a: 202; 1995: 564; 1996: 279; 2006: 557; Shanghai: Cockerell, 1931: 16, *H. speculicaudatus*), Japan (**first record**; 2 ♀ at ZISP with labels: "Japan, S. Honshu", "Kibi-Wakayama, 6-12.IV.1969, [leg.] M. Matsuura", "*Lasioglossum* (*Evylaeus*) *vulsum* (Vach.), det. Sakagami 1983").

9. **Evylaeus (Evylaeus) laevoides** (Ebmer, 2005) (*E. laevis* group)

Lasioglossum (*Evylaeus*) *laevoides* Ebmer, 2005: 371, Figs 18-20, 23-25. ♀♂. Holotype: ♀, Mongolia: 90 km N Ulabaatar; OLML.

Material examined (2 ♂). Irkutsk Prov.: Irkutsk; Buryatia: Ust-Kiran.

Distribution. An Eastern Palaearctic species. Eastern Siberia (**first record for Russia**; south of Irkutsk Prov. and Buryatia), Mongolia (Тцv and Uvs), China (Heilongjiang: Harbin).

10. **Evylaeus (Evylaeus) nipponensis** (Hirashima, 1953) (*E. calceatus* group)

Halictus nipponensis Hirashima, 1953: 134, Fig. 1 in Pl. 5. ♀. Holotype: ♀, Japan: Omogo valley (Shikoku Island); ELMAC.

Taxonomy. Ebmer, 1995: 534, 535 (♂), Figs 4, 5, 59, 60; 1996: 279.

Published records. Khabarovsk Terr.: 20 km N Bikin (Ebmer, 1996: 279), 25 km SE Khabarovsk (Ebmer, 2006: 556); Primorsk Terr.: Kamenushka, Lazovskii Nature Reserve, Ryazanovka (15 km SW Slavyanka), Tikhoe (near Razdolnoe), Ussuriisk (Ebmer, 1995: 535; 1996: 279; 2006: 555); Sakhalin: Yuzhnosakhalinsk (Proshchalykin et al., 2004: 160).

Material examined (56 ♂, 108 ♀). Amur Prov.: Khingan Nature Reserve; Khabarovsk Terr.: Bychykha, 15 km SW Elabuga, Khabarobsk, Khekhtsyr, Sobolevo (20 km S Vyazemskoe); Primorsk Terr.: Anisimovka, 20 km S Barabash-Levada, 10 km SE Chernigovka, Gaivoron, Gornotayezhnoe, "Kedrovaya Pad" Nature Reserve, Kievka, Lazovskii Nature Reserve (6 localities), Okeanskaya, 15 km SW Partizansk, Russkii Island, Ryazanovka, Sedanka, Slavyanka, 25 km SW Slavyanka, Spassk, 20 km NW Spassk, 20 km SSE Spassk, 30 km NW Spassk, Troitsa Bay, 20 km E Ussuriisk, Vladivostok; Sakhalin: Kuznetsovo; Kunashir: Golovnin Volcano, Sernovodsk, Yuzhnokurilsk, 17 km S Yuzhnokurilsk.

Distribution. An Eastern Palaearctic species. Southern Far East of Russia (Khabarovsk and Primorsk Terr., Sakhalin; **first records**: Amur Prov. and Kunashir), South Korea (Ebmer, 2006: 556), Japan (Hokkaido, Honshu, Shikoku, and Okinawa: Hirashima, 1953: 134; Azuma & Kinjo, 1987: 313; Haneda, 1990: 6; Ebmer, 1995: 535; 1996: 279). The record from the Kurils (Kunashir) by Pesenko (1986: 141) concerns *Lasioglossum harmandi* (**corrected here**).

11. **Evylaeus (Fratevylaeus) baleicus** (Cockerell, 1937)

This is an Eastern Palaearctic species with two subspecies differing only in the structure of the male membranous retrorse lobe of gonocoxite (see Couplet 57 in the "Key to species"). The nominotypical subspecies occurs in the mainland (south of Eastern Siberia, southern Far East of Russia, northeastern China, and Korean Peninsula). *E. baleicus insulicola* ssp. n. is an insular subspecies described below from Sakhalin, Kunashir, and Hokkaido.

Murao et al. (2006: 36) and Ebmer (2006: 560, 562) have listed different characters to distinguish females of the close *E. baleicus*, *E. caliginosus*, and *E. vulsus*. However, in both the character sets, the distinctions are very subtle to be used as diagnostic characters. On this reason, the data on the distribution of these three, widely sympatric species are based only on males.

11a. **E. (Fratevylaeus) baleicus baleicus** (Cockerell, 1937)

Halictus (*Evylaeus*) *baleicus* Cockerell, 1937: 1. ♀♂. Holotype: ♀, Russia: "Ust-Balei" [Chita Prov.: Balei]; AMNY.

Taxonomy. Ebmer, 1978a: 203; 1995: 571; 2006: 559, 560, 562, Figs 35-37.

Published records. Irkutsk Prov.: "Smolenschina" [Smolenskoe, 10 km SW Irkutsk] (Cockerell, 1937: 2); Chita Prov.: Ust-Balei; Primorsk Terr.: Sputnik (near Vladivostok) (Ebmer, 1996: 280), Lazovskii Nature Reserve, Tigrovy (Ebmer, 2006: 558).

Material examined (33 ♂). Primorsk Terr.: Anisimovka, 10 km SE Chernigovka, "Kedrovaya Pad" Nature Reserve, Khasan, 20 km ESE Spassk, 30 km NW Spassk, Tigrovy, 50 km ESE Ussuriisk, Ussuri Nature Reserve.

Distribution. Eastern Siberia and southern Far East of Russia (south of Irkutsk Prov., Chita Prov., Primorsk Terr.), northeastern China (Heilongjiang: Ebmer, 1978a: 203; 1995: 571), North Korea (Ebmer, 1978b: 314), South Korea (Ebmer, 2006: 558).

11b. **E. (Fratevylaeus) baleicus insulicola** subsp. n.

Holotype. ♂, **Russia**: Kunashir: Lake Goryacheye, 13.IX.1976, leg. V. Kuznetsov [label in Cyrillic]; ZISP.

Paratypes (a total of 27 ♂; paratypes from Russia with labels in Cyrillic). **Russia**: *Sakhalin*: 2 ♂, Novoaleksandrovsk, 26.VII.1978, leg. A. Kupianskaya, IBSV, ZISP; 1 ♂, same locality, 27.VII.1978, leg. A. Lelej, ZISP; 1 ♂, Starodubskoe, 31.VII.1978, leg. A. Lelej, IBSV; 1 ♂, Yuzhnosakhalinsk, 5.VIII.1978, leg. A. Kupianskaya, IBSV; 2 ♂, same locality, 7.VIII.1978, leg. A. Kupianskaya, IBSV, ZISP; same locality, 1 ♂, 7.VIII.1978, leg. A. Lelej, ZISP; 1 ♂, 20 km W Aniva, 9.VIII.1978, leg. A. Kupianskaya, IBSV; 1 ♂, same locality, 9.VIII.1978, leg. A. Lelej, IBSV; 1 ♂, 7 km N Bykovo, Naiba River, 17.VII.2003, leg. A. Lelej & S. Storozhenko, IBSV; *Kunashir*: 1 ♂, Dubovoe, 8.VIII.1980, leg. A. Lelej, ZISP; 4 ♂, Lake Goryacheye, 13.IX.1976, leg. V. Kuznetsov, IBSV, ZISP; 1 ♂, same locality, 28.VII.1981, leg. Yu. Pesenko, ZISP; **Japan**: *Hokkaido*, 1 ♂, no locality, 26.IX.1972, leg. Kawano Moiwa, ZISP; 1 ♂, Tenneru nr. Kushiro, 1968, leg. E. Ohtsuka, ZISP.

Taxonomy (as *Lasioglossum baleicum*). Sakagami et al., 1994: 11, 13, Figs 9, 15, 19; Murao et al., 2006: 36, Figs 3*b*, 4*c*, 6*e*, 6*f*, 6*i*, 6*l*.

Published records from Russia (as *Lasioglossum baleicum*). Sakhalin: Aniva, Kholmsk, 20 km N Kholmsk (Ebmer, 1995: 571; 1996: 280; 2006: 558).

Diagnosis. The new subspecies differs from *E. baleicus baleicus* in much narrower membranous retrorse lobe of the male gonocoxite (cf. Figs 34, 35 and 27, 28). This difference was overlooked by taxonomists, although formally it has been fixed in published figures of the lobe of *E. baleicus* males from Japan (Sakagami et al., 1994: Fig. 19; Murao et al., 2006: Fig. 6*i*) and that of the male from Primorsk Terr. of Russia (Ebmer, 2006: Fig. 37).

Distribution. Sakhalin, southern Kurils (Kunashir), Japan (Hokkaido, Honshu, Kyushu, and Okinawa: Ebmer, 1978a: 203; 1995: 571; 1996: 280; Azuma & Kinjo, 1987: 313; Haneda, 1990: 6; Iwata, 1997: 640; in all the papers, as *Lasioglossum baleicum*).

12. **Evylaeus (Fratevylaeus) caliginosus** (Murao, Ebmer & Tadauchi, 2006)

Lasioglossum (*Evylaeus*) *caliginosum* Murao et al., 2006 (30 June): 36, Figs 1*a*-*h*, 2*a*, 2*b*, 3*a*, 4*a*, 5*a*, 6*a*, 6*b*, 6*g*, 6*j*. ♀♂. Holotype: ♀, Japan: Sapporo (Hokkaido); KUF.

Lasioglossum (*Evylaeus*) *nemorale* Ebmer, 2006 (21 July): 559, Figs 20-26, 38, 39. ♂♀. Holotype: ♂, Russia: Lazovskii Nature Reserve (Tachingouz locality, Primorsk Terr.); OLML. **Syn. n.**

Taxonomy. Ebmer, 2006: 559, 560, 562, Figs 31, 32.

Published records. Primorsk Terr.: Lazo, Lazovskii Nature Reserve (Konrad and Pryamushka localities), 40 km E Ussuriisk, Ussuri Nature Reserve (Murao et al., 2006: 41; Ebmer, 2006: 558; Ebmer, 2006: 559, *L. nemorale*).

Material examined (53 ♂). Irkutsk Prov.: Irkutsk, Melnikovo (near Irkutsk), Nizhneudinsk; Amur Prov.: Blagoveshchensk, Klimoutsy, Simonovo; Khabarovsk Terr.: Khabarobsk, Lake Khumni, Komsomolsk-on-Amur, Malmyzh; Primorsk Terr.: Anisimovka, "Kedrovaya Pad" Nature Reserve, Lazovskii Nature Reserve (Tachingouz locality), Novogeorgievka, Partizansk, 15 km SW Partizansk, Sedanka, Spassk, 30 km NW Spassk, 20 km SE Ussuriisk, 30 km SW Ussuriisk, Ussuri Nature Reserve, Vangon, Vladivostok.

Comment on the synonymy. Based on examination of numerous individuals of the *E. baleicus-E. caliginosus-E. vulsus* complex from Primorsk Terr. and other parts of the Russian Far East, I conclude that only three species of this complex occur in the region under study. In the original description of *Lasioglossum nemorale*, there is no noticeable difference of the latter from the very variable *E. caliginosus*. Also I examined the female paratype of *Lasioglossum nemorale* (deposited at IBSV), but did not benefit from it because of indivisibility of species of this complex from females (see "Taxonomic note" for *E. baleicus*).

Distribution. An Eastern Palaearctic species. Southern Far East of Russia (Primorsk Terr.; **first records**: south of Irkutsk Prov., Amur Prov. and Khabarovsk Terr.), Mongolia (Ebmer, 2006: 560, *Lasioglossum nemorale*; additional material available at ZISP: Dornod: 10 km SE Salkhit Mt., 2 ♂; Hentiy: Bayan-adrag, 1 ♂), northeastern China (Heilongjiang: Ebmer, 2006: 559, *L. nemorale*), Japan (Hokkaido, Honshu, and Kyushu: Murao et al., 2006: 41).

13. **Evylaeus (Fratevylaeus) fratellus** (Pŭrez, 1903)

A transpalaearctic species subdivided into two subspecies differing only in the structure of the male gonostylus (see Couplet 53 in the "Key to species"). The nominotypical subspecies is in widely distributed Europe in cold and moderate zones, in the south in mountains. *E. fratellus betulae* (Ebmer, 1978) is an Eastern Palaearctic subspecies. The record of the species (under the name *Halictus freygessneri*) from Morocco by Strand (1909: 7) was based on misidentification. The record of the species (under the name *Halictus freygessneri*) from Kamchatka by Gussakovskij (1932: 64) concerns *E. rufitarsis* (see Ebmer in Svensson et al., 1977: 227).

13a. **Evylaeus (Fratevylaeus) fratellus betulae** (Ebmer, 1978)

Lasioglossum (*Evylaeus*) *fratellum betulae* Ebmer, 1978b: 314, Fig. 8. ♂♀. Holotype: ♂, North Korea: Samzi-yan (Ryang-gang Prov.); HNB.

Lasioglossum (*Evylaeus*) *nupricola* Sakagami, 1988: 337, Figs 1-18, 23-25. ♀♂. Holotype: ♀, Japan: Iwozan Mt. (Hokkaido Island); HUS. Synonymy by Pesenko (2007: ??).

Taxonomy. Ebmer, 1978b: 314; 1988: 617; 1995: 573; 1996: 280; Pesenko, 2007: ??; Pesenko & Davydova, 2004: 695.

Published records. Yakutia (Pesenko & Davydova, 2004: 695; see Material examined); Kamchatka: Petropavlovsk (Alfken, 1929: 7), Elizovo (Gussakovskij, 1932: 64, "*Halictus laevis*"), Klyuchi, Chapina (Blьthgen, 1936: 7); Primorsk Terr.: 30 km SE Chuguevka, Lazovskii Nature Reserve, Ussuriisk (Ebmer, 1995: 573; 1996: 280; 2006: 562); Sakhalin: Ozerskii (Sakagami, 1988: 337; Ebmer, 1995: 573, *Lasioglossum nupricola*; 1996: 281), Kurils: Kunashir (Konakov, 1956: 166), Urup (Sakagami, 1988: 337; Hirashima, 1989: 681, *L. nupricola*); Iturup (Ebmer, 1995: 573, *L. nupricola*).

Material examined (38 ♂, 45 ♀). Yakutia: Chona River, Tomporuk River (Verkhoyansk Mt. Range), Khorintsy (on Lena River), 75 km SSE Yakutsk, 22 km E Aldan, Neryungri, 15 km NW Lake Bolshoi Toko; Kamchatka: Elizovo, Kamenskoe, Nachiki, Uzon, Zhupanovo; Amur Prov.: Klimoutsy; Khabarovsk Terr.: 10 km E Arka, Gornoe (Myaochan Mts.), Komsomolsk-on-Amur, Suluk; Primorsk Terr.: Anisimovka, Khualaza, Lazovskii Nature Reserve, Partizansk; Sakhalin: Aniva, Novikovo, Novoaleksandrovsk, Ozerskii, 15 km NE Yuzhnosakhalinsk; Iturup: Atsonapuri Volcano, Lake Blagodatnoe, Lesozavodsk; Shikotan: northern shore of Anama Bay, Malokurilsk; Urup: Kaiso-san Mt.; Kunashir: Alekhino, Golovnino, Phumarol Valley, Yuzhnokurilsk.

Distribution. Eastern half of Eastern Siberia and Far East of Russia (Yakutia, Kamchatka, Primorsk Terr., Sakhalin, and Kurils; **first records**: Amur Prov. and Khabarovsk Terr.), Mongolia (**first record**: "Sudzukte gorge [in Noen-ula], southwestern Hentiy Mts. [Тцv; see Kerzhner, 1972: 80], 13.VII.1925, leg. P. Kozlov", 1 ♀; ZISP), North Korea (Ebmer, 1978: 314), northern Japan (Hokkaido and Honshu: Sakagami, 1988: 337; Haneda, 1990: 6; Ebmer, 1995: 573; *Lasioglossum nupricola*).

13b. **Evylaeus (Fratevylaeus) fratellus fratellus** (Pйrez, 1903)

Halictus subfasciatus Nylander, 1848: 200; junior homonym of *Hylaeus subfasciatus* Imhoff, 1832 (*Lasioglossum subfasciatum*). ♀♂. Lectotype: ♀, Finland: "Uleaborg" [Oulu]; designated by Ebmer (1974a: 131); ZMUH. Synonymy by Blьthgen (1926c: 350).

Halictus fratellus Pйrez, 1903: ccxiv (in Journal, p. 42). ♀. Lectotype: ♀, Spain: Barcelona; designated by Ebmer (1972: 626); MNP.

Halictus freygessneri Alfken, 1905: 6; nom. n. pro *Halictus subfasciatus* Nylander, 1848.

Halictus norvegicus Strand, 1910b: 337. ♂. Holotype: ♂, Norway: Ranum-Oberhalden; MNB, examined. Synonymy by Blьthgen (1921: 281; = *Halictus freygessneri*).

Halictus niger auctorum (e.g., Warncke, 1973b: 294; 1975: 99); non *Halictus niger* Viereck, 1903 (*Evylaeus niger*). Europe, misidentification. See Ebmer (1974a: 131).

Lasioglossum nigrum auctorum (e.g., Ebmer, 1971: 99; 1972: 626); non *Halictus niger* Viereck, 1903 (*Evylaeus niger*). Europe, misidentification. See Ebmer (1974a: 131).

Taxonomy (selected references). Blьthgen, 1924b: 94, 95 (key), 261 (key), 279; 1926c: 350; Ebmer, 1971: 66 (key), 67 (key), 79 (key), 82 (key), 99, Figs 72, 108a, 108b; 1972: 626 (*Lasioglossum nigrum*); 1974a: 131, 136 (key); 1978b: 314, Fig. 8; 1988: 615; Svensson et al., 1977: 222, Figs 12-14; Sakagami, 1988: 346; Pesenko et al., 2000: 217 (key), 261, Figs 352, 353, 391, 416, 445, 446; 2002: 57 (key), 80 (key), Figs 152, 153, 191, 216, 239, 240.

Material examined (4 ♂, 4 ♀). Krasnoyarsk Terr.: Lake Shira; Irkutsk Prov.: Dar'ino (between Kirensk and Vitim), Irkutsk; Chita Prov.: Lake Ivan-ozero.

Distribution. Europe nearly throughout, as far in the north as 67°N (in Lappland), in the south in mountains; Asia: Western Siberia and southwestern part of Eastern Siberia (**first record**; south of Krasnoyarsk Terr., south of Irkutsk Prov. and Chita Prov.).

14. **Evylaeus (Fratevylaeus) fulvicornis** (Kirby, 1802)

A transpalaearctic species subdivided into four subspecies: ssp. *fulvicornis* (for synonymy see Ebmer, 1995: 569) distributed in Europe and Western Siberia as far in the east as Altai; ssp. *antelicus* (Warncke, 1975) occurring in Transcaucasus, Asia Minor, and northern Iran; Taiwanian ssp. *koshunocharis* (Strand, 1914); and Eastern Palaearctic ssp. *melanocornis* (Ebmer, 1988) (see below). The latter differs from the nominotypical subspecies only in the longer hind tarsus of the male. The record of the species from northwestern China ("NW. Mongolia") by Morawitz (1880: 367) concerns *E. subfulvicornis subfulvicornis* (see Ebmer, 1982: 214).

14a. **Evylaeus (Fratevylaeus) fulvicornis melanocornis** (Ebmer, 1988)

Lasioglossum (*Evylaeus*) *fulvicorne melanocorne* Ebmer, 1988: 608, Figs 14, 15, 17. ♂♀. Holotype: ♂, Russia: Irkutsk; EBM.

Taxonomy. Ebmer, 1995: 569; 2005: 375; Pesenko & Davydova, 2004: 695.

Published records. Irkutsk Prov.: Irkutsk (Blьthgen, 1924b: 279, *Halictus fulvicornis*), Kadilny (Ebmer, 1988: 608); Yakutia (Pesenko & Davydova, 2004: 695; see Material examined).

Material examined (10 ♂, 118 ♀). Krasnoyarsk Terr.: Krasnoyarsk; Irkutsk Prov.: Irkutsk; Yakutia: Yakutsk, mouth of Buotama River, mouth of Tuolba River; Amur Prov.: Khingan Nature Reserve, Klimoutsy, Simonovo; Jewish Autonomous Prov.: 40 km NW Amurzet; Khabarovsk Terr.: Komsomolsk-on-Amur, Pivan; Primorsk Terr.: Khasan, 15 km W Pokrovka, 25 km SW Slavyanka, Spassk; Sakhalin: Novikovo, Sokol (9 km S Dolinsk); Kunashir: Mendeleyevo.

Distribution. Eastern Siberia and Far East of Russia (Altai, south of Irkutsk Prov., Yakutia; **first records**: south of Krasnoyarsk Terr., Khabarovsk and Primorsk Terr., Amur and Jewish Autonomous Prov., Sakhalin, and Kunashir), Mongolia (Тцv: Blьthgen, 1924b: 279, *H. fulvicornis*; Ebmer, 1988: 608; 1995: 569; 2005: 375).

15. **Evylaeus (Fratevylaeus) sibiriacus** (Blьthgen, 1923)

Halictus sibiriacus Blьthgen, 1923: 327. ♀. Holotype: ♀, "Ostsiberien" [no locality]; IZK; examined.
Halictus solovieffi Cockerell, 1925: 4. ♀. Holotype: ♀, Russia: "Kongaus" [now Primorsk Terr.: Anisimovka]; USMW. Synonymy by Ebmer (1978a: 202).

Taxonomy. Blьthgen, 1924b: 87 (key), 280; Ebmer, 1978a: 202; 1995: 571 (♂); Sakagami et al., 1994: 11, Figs 2, 11, 14, 21.

Published records. Primorsk Terr.: "Kongaus" [now Anisimovka] (Cockerell, 1925: 4, *Halictus solovieffi*), Litovka Mt. (near Anisimovka), Ryazanovka (15 km SW Slavyanka) (Ebmer, 1996: 280), Tigrovy (Ebmer, 2006: 558).

Material examined (9 ♂, 27 ♀). Primorsk Terr.: Anisimovka, 10 km NW Artem, Evseyevka, Gornotayezhnoe, Kamenushka, "Kedrovaya Pad" Nature Reserve, Lazovskii Nature Reserve (Tachingouz locality), Partizansk, Perevoznoe, Pos'yet, Ryazanovka, Sedanka, Spassk, Vityaz, Vladivostok.

Distribution. An Eastern Palaearctic species. Southern Far East of Russia (Primorsk Terr.), northeastern China (Heilongjiang: Ebmer, 1978a: 202; 1995: 571; 2006: 558), North Korea (Ebmer, 1978b: 314; 1995: 571), Japan (Hokkaido, Honshu, Kyushu, Izu, and Okinawa: Blьthgen, 1924b: 280; Usui et al., 1976: 228; Ebmer, 1978a: 202; 1995: 571; Azuma & Kinjo, 1987: 313; Haneda, 1990: 6; Takahashi & Sakagami, 1993: 274; Ikudome & Nakamura, 1995: 51; 1996: 176; Iwata, 1997: 640).

16. **Evylaeus (Fratevylaeus) subfulvicornis** (Blьthgen, 1934)

This is a transpalaearctic species subdivided into two subspecies. *E. subfulvicornis austriacus* (Ebmer, 1974) is a Western Palaearctic subspecies recorded from Middle and Southern Europe, Asia Minor, Georgia, southeastern Kazakhstan, and Kyrghyzstan. The nominotypical subspecies is distributed in the Eastern Palaearctic Region (see below). It differs from *E. subfulvicornis austriacus* only in some characters of the male: hind tarsus longer, T1 and T2 more sparsely punctate; gonocoxite stronger convex ventrally.

16a. **Evylaeus (Fratevylaeus) subfulvicornis subfulvicornis** (Blьthgen, 1934)

Halictus subfulvicornis Blьthgen, 1934: 11, Fig. 5. ♂. Holotype: ♂, China: "S. Kansu" [Lu-pa-sze, 80 km N Minshan; for co-ordinates, see Ebmer (1995: 573; 2005: 374)]; NRS.

Taxonomy. Ebmer in Svensson et al., 1977: 222, Figs 15-17; Ebmer, 1982: 213 (♀), Photo 4 in Taf. II; 1988: 610, 612, Figs 21, 22, 24, 25, 27-29; 1995: 573; 1996: 281; 2005: 374; Pesenko & Davydova, 2004: 696.

Published records. Yakutia: Tomtor (Ebmer, 1995: 573; Pesenko & Davydova, 2004: 696), see also Material examined; Primorsk Terr.: Ussuriisk (Ebmer, 1996: 281).

Material examined (42 ♂, 74 ♀). Krasnoyarsk Terr.: Mon'yero River (Khatanga basin); Chita Prov.: Chita, 15 km SE Chita, Nerchinsk, Lake Shchuch'ye; Yakutia: Bakhanai-Bashim, Balagannakh, Zhigansk, upper reaches of Kele River (Verkhoyansk Mt. Range), Notara River, Chona River (near mouth of Markhan River), Tea on Vilyui River, Yakutsk, mouth of Buotama River, 30 km SSE Yakutsk, Berdzhiges summer stand on Amga River, 15 km S Tebyulyakh, 30 km ESE Ust-Nera, Artyk, 20 km NNE Sasyr (Cherskii Mt. Range), Nelkan, 85 km S Neryungri; Kamchatka: Kamenskoe, Klyuchi; Magadan Prov.: 12 km N Seimchan, 50 km N Seimchan; Amur Prov.: Klimoutsy; Primorsk Terr.: 40 km SE Chuguevka, Kievka, southwestern slope of Sergeyevskii Range, 40 km NNE Ternei; Sakhalin: Ozerskii; Kunashir: Yuzhnokurilsk.

Distribution. Eastern Siberia and Southern Far East of Russia (Yakutia and Primorsk Terr.; **first records**: north of Krasnoyarsk Terr., Chita, Magadan, and Amur Prov., Kamchatka, Sakhalin, and Kunashir), Mongolia (Tцv and Uvs: Ebmer, 1982: 213; 1995: 573; 2005: 374), North Korea (Ebmer, 1978b: 315, *Lasioglossum austriacum*; 1988: 612; 1995: 573), northwestern and northern China (Xinjiang: Morawitz, 1880: 367, *Halictus fulvicornis*; Gansu: Blьthgen, 1934: 11).

17. **Evylaeus (Fratevylaeus) vulsus** (Vachal, 1903)

Halictus vulsus Vachal, 1903: 130. ♂. Lectotype: ♂, Japan: "Nikkon Moyen, env. de Tokio et Alpes de Nikko" (on label); designated by Ebmer (1978a: 202); MNP.
Halictus trispinis Vachal, 1903: 131. ♀. Holotype: ♀, Japan: "Nikkon Moyen, env. de Tokio et Alpes de Nikko" (on label); MNP. Synonymy by Blьthgen (1926c: 349; also see Ebmer et al., 2006: 31).

Taxonomy. Blьthgen, 1926c: 349; Ebmer, 1978a: 202; 1995: 571 (*Lasioglossum trispine*); 1996: 571 (*L. trispine*); 2006: 558, 559, 560, 562, Figs 33, 34; Ebmer et al., 2006: 31, Figs 1*a*-g; Murao et al., 2006: 36, Figs 3*a*, 4*b*, 6*c*, 6*d*, 6*h*, 6*k*.

Published records. Primorsk Terr.: Ternei (Ebmer, 1978b: 203, *Lasioglossum suprafulgens*), 56 km SE Chuguevka, 40 km SW Ussuriisk, 40 km E Ussuriisk (Ebmer, 1996: 280, *L. trispine*), 70 km NW Plastun (Ebmer et al., 2006: 33), Lazovskii Nature Reserve (Konrad and Pryamushka localities; Ebmer, 2006: 558; Murao et al., 2006: 41).

Material examined (27 ♂). Krasnoyarsk Terr.: Krasnoyarsk; Irkutsk Prov.: Irkutsk; Amur Prov.: Klimoutsy, Korsakovo (100 km W Svobodny), Simonovo; Jewish Autonomous Prov.: Londoko Station; Primorsk Terr.: Anisimovka, "Kedrovaya Pad" Nature Reserve, Lazo, Pos'yet, Spassk, 20 km NW Spassk, 20 km SE Ussuriisk; Kunashir: Golovnino, Mendeleyevo.

Distribution. South of eastern Siberia and southern Far East of Russia (Primorsk Terr.; **first records**: south of Krasnoyarsk Terr., Amur and Jewish Autonomous Prov., Kunashir), Mongolia (**first record**: " Sangin, Urga [now Songino near Ulanbaatar, Tцv], leg. P. Kozlov, 30.VII.1905, 1 ♂), Japan (Hokkaido, Honshu, and Kyushu:

Murao et al., 2006: 41). The record of the species by Ebmer (1995: 570) from Altai concerns *E. fulvicornis melanocornis* (see Ebmer, 2006: 558).

18. **Evylaeus (Acanthalictus) dybowskii** (Radoszkowski, 1876)

Halictus dybowskii Radoszkowski, 1876: 110. ♀, "Amur. Dybows." (type locality and collector in description; Khabarovsk Terr., leg. Dybowski). Lectotype (**designated here**): ♀; labels: "Dybows." (printed), golden circle, "*Dybowski* [sic!] sp. n." [written by Radoszkowski], "*Hal. dybowskii* Rad. ♀. Type [written by Blьthgen]. Blьthgen det. [printed]"; IZK. The lectotype is one of the well preserved specimens selected from 6 ♀ labelled "Dybows."; it is a single specimen bearing the label "Type" [written by Blьthgen] at IZK.

Halictus dubowskii: Dalla Torre, 1896: 61; erroneous spelling of *Halictus dybowskii*.

Halictus griseipennis Cockerell, 1924: 185. ♀. Holotype: ♀, Russia: "Kongaus" [now Primorsk Terr.: Anisimovka]; USMW. Synonymy by Ebmer (1978a: 209).

Taxonomy. Cockerell, 1910: 364; 1924a: 184 (♂); Blьthgen, 1923: 317; 1926b: 409; Ebmer, 1978a: 209; 1996: 284; Michener, 2000: 357 (key), 359.

Published records. Khabarovsk Terr. (no locality; Radoszkowski, 1876: 110); Primorsk Terr.: "Kongaus" [now Anisimovka] (Cockerell, 1924a: 184, *Acanthalictus griseipennis*; 185, *A. dybowskii*; 1924b: 582, *A. dybowskii*), Sedanka (Gussakovskij, 1932: 63), Banevurovo (S of Ussuriisk), Chuguevka, 28 km SE Chuguevka, Lazovskii Nature Reserve, Kamenushka, Khasan, Krounovka, Przhewalskii Mt., Ryazanovka (15 km SW Slavyanka), Samarka, Tigrovaya Pad, Ussuriisk, 40 km E Ussuriisk (Ebmer, 1978a: 211; 1996: 285; 2006: 568); Sakhalin: Ozerskii, Novoaleksandrovsk (Proshchalykin et al., 2004: 160).

Material examined (61 ♂, 111 ♀). Amur Prov.: 20 km E Arkhara, Khingan Nature Reserve; Khabarovsk Terr.: 15 km SW Elabuga, Komsomolsk-on-Amur; Primorsk Terr.: Anisimovka, Barabash-Levada, Chernigovka, 10 km SE Chernigovka, 50 km ESE Chuguevka, Evseyevka, Gornotayezhnoe, Kamenushka, "Kedrovaya Pad" Nature Reserve, 7 km E Khasan, Kievka, 20 km SW Krounovka, Lazovskii Nature Reserve (9 localities), Monakino (near Partizansk), 15 km SSW Nezhino, Partizansk, Samarka, Sedanka, Spassk, 20 km NW Spassk, 20 km SSE Spassk, 30 km NW Spassk, 50 km SSE Ussuriisk, Shkotovo, Vinogradovka, Vladivostok, Yakovlevka.

Distribution. An Eastern Palaearctic species. Southern Far East of Russia (Primorsk Terr. and Sakhalin; **first records**: Amur Prov. and Khabarovsk Terr.), North Korea (Ebmer, 1996: 285), northeastern China (Helongjiang: Ebmer, 1978a: 211).

19. **Evylaeus (Microhalictus) amurensis** (Vachal, 1902) (*E. quadrinotatulus* group)

Halictus amurensis Vachal, 1902: 227. ♀, "rapportйes par Dybovski de la rйgion du fleuve Amour" (type locality in description, Khabarovsk Terr.). Lectotype (**designated here**): ♀; labels: "Dybows." (printed), "*Hal. amurensis* Vach. ♀. Type [written by Blьthgen]. Blьthgen det. [printed]"; IZK. The lectotype is one of the well preserved specimens selected from 9 ♀ labelled "Dybows." and 3 ♀ labelled "Siberie orient." belonging to the type series at IZK; it is a single specimen bearing the label "Type" (written by Blьthgen).

Taxonomy. Blьthgen, 1923: 311; Ebmer, 1978a: 208, 209 (♂), Figs 14, 15; 1996: 285; 2002: 878, 880; 2006: 569; Sakagami et al., 1982: 207, 209, Fig. 20.

Published records. Khabarovsk Terr. (no locality; Vachal, 1902: 227): 25 km SE Khabarovsk (Ebmer, 2006: 569); Primorsk Terr.: 37 km SE Dalnerechensk, Kamenushka, Lazovskii Nature Reserve, Plastun, Przhewalskii Mt., Samarka, Tigrovaya Pad, Ussuri Nature Reserve, 40 km E Ussuriisk (Ebmer, 1978a: 209; 1996: 285; 2006: 569).

Material examined (50 ♀). Khabarovsk Terr.: mouth of Gorin River, Komsomolsk-on-Amur, Pivan, Suluk, Shargol; Primorsk Terr.: Anisimovka, Brovnichi, 10 km E Chernigovka, 50 km ESE Chuguevka, Gornotaezhnoe (20 km SE Ussuriisk), Kaimanovka, Kamenushka, Kievka, Lazovskii Nature Reserve (Benevskoe locality, 15 km NNE Preobrazhenie Bay, Sukhoi Klyuch locality), Monakino (near Partizansk), Partizansk, Sedanka, Spassk, Ussuriisk, Ussuri Nature Reserve.

Distribution. An Eastern Palaearctic species. Southern Far East of Russia (Khabarovsk and Primorsk Terr.), northeastern China (Shaanxi, Heilongjiang, and Jilin: Ebmer, 1978a: 209; 1996: 285; 2006: 569).

20. **Evylaeus (Microhalictus) epiphron** (Ebmer, 1982) (*E. semilucens* group)

Lasioglossum (*Evylaeus*) *epiphron* Ebmer, 1982: 221, Figs 17-20, Photo 9 in Taf. IV. ♀♂. Holotype: ♀, Mongolia: 20 km NW Hovd; ZSUH.

Taxonomy. Ebmer, 1996: 288, 289, 290; 2006: 571.

Published records. Primorsk Terr.: Lazovskii Nature Reserve (no locality; Ebmer, 2006: 571).

Material examined (3 ♂, 42 ♀). Irkutsk Prov.: Irkutsk, Melnikovo; Buryatia: Kyakhta; Amur Prov.: Klimoutsy, 20 km W Poyarkovo; Khabarovsk Terr.: Khabarovsk; Primorsk Terr.: Brovnichi, "Kedrovaya Pad" Nature Reserve, Lazovskii Nature Reserve, Khasan, Yuzhnomorskoi.

Distribution. Far East of Russia (Primorsk Terr.; **first records**: Irkutsk and Amur Prov., Khabarovsk Terr.), Mongolia (Hovd and Цνцr-Hangay: Ebmer, 1982: 221; 2005: 379).

21. **Evylaeus (Microhalictus) eriphyle** (Ebmer, 1996) (*E. semilucens* group)

Lasioglossum (*Evylaeus*) *eriphyle* Ebmer, 1996: 288, Figs 4, 5, 18-23. ♀♂. Holotype: ♀, Russia: Ussuriysk (Primorsk Terr.); EBM.

Published records. Khabarovsk Terr.: Bikin, 20 km N Bikin (Ebmer, 1996: 288); Primorsk Terr.: Kraskino, Lazovskii Nature Reserve, 40 km E Ussuriisk, 40 km SE Ussuriisk (Ebmer, 1996: 288; 2006: 571).

Material examined (18 ♂, 35 ♀). Amur Prov.: Khingan Nature Reserve (Kundur), Klimoutsy, Simonovo;

Khabarovsk Terr.: Bikin; Jewish Autonomous Prov.: 40 km NW Amurzet; Primorsk Terr.: Anisimovka, Khasan, 12 km E Pos'yet, 15 km SE Pos'yet, Sedanka, 25 km SW Slavyanka, Spassk, 20 km NE Spassk, Yakovlevka; Shikotan: northern shore of Anama Bay, southern shore of Anama Bay; Kunashir: Yuzhnokurilsk.

Distribution. An Eastern Palaearctic species. Southern Far East of Russia (Khabarovsk and Primorsk Terr.; **first records**: Amur and Jewish Autonomous Prov., southern Kuril Islands), central China (Shaanxi: Ebmer, 2006: 571).

Taxonomic note. The differences between *E. eriphyle* and *E. epiphron* (see no. 20) in the relative length of the propodeum and in the sculpture of the body listed by Ebmer (1996, 288, 289) actually cannot be diagnostic characters of the species because of their wide overlap.

22. **Evylaeus (Microhalictus) lucidulus** (Schenck, 1861) (*E. lucidulus* group)

Hylaeus lucidulus Schenck, 1861: 292. ♀. Lectotype: ♀, Germany: Wiesbaden; designated by Ebmer (1975: 240); in "Mus. Wiesbaden".

Hylaeus tenellus Schenck, 1861: 293. ♂. Lectotype: ♂, Germany: Wiesbaden; designated by Ebmer (1975: 241); in "Mus. Wiesbaden". Synonymy by Blьthgen (1919: 82).

Halictus gracilis Morawitz, 1865: 77. ♀♂. Lectotype (**designated here**): ♀, labels: golden circle, "Petrop[olis]" [Russia: St. Petersburg, written by Morawitz], "*gracilis* Mor. Type" [written by Morawitz]; ZISP. Synonymy by Schenck (1874: 163).

Halictus unguinosus Pйrez, 1903: ccxvii. ♀. Lectotype: ♀, France: Royan; designated by Ebmer (1972: 629); MNP. Synonymy by Alfken (1912: 33; = *Halictus gracilis* Morawitz).

Halictus chotanensis Strand, 1909: 26. ♀. Syntypes: 3 ♀, China (Xinjiang): Chotan [Hotan], Rhodos, Jarkand [Yarkend]; MNB. Synonymy by Blьthgen (1921: 275).

Taxonomy (selected references). Blьthgen, 1924a: 457 (key), 530 (key); Ebmer, 1971: 77 (key), 90 (key), 122, Figs 101a, 101b; 1975b: 240, 241, 292; 1988: 664; Sakagami & Tadauchi, 1995a: 159, 165 (key), Figs 1, 2, 7, 14, 25, 26, 33, 47, 48; Pesenko et al., 2000: 226 (key), 280, Figs 464-466; Herrmann, 2001: 713.

Material examined (1 ♀). Krasnoyarsk Terr.: Krasnoyarsk, 8.VIII.1988, leg. D. Kasparyan.

Distribution. A Western Palaearctic species. North Africa: Morocco; Europe nearly throughout: from Spain and England in the west, the Urals in the east, middle Finland (65° N; Ebmer, 1988: 664) and St. Petersburg in the north, and continental Greece and Crete in the south; Asia: Palestine, Asia Minor, Iran, Afghanistan, Turkmenistan, Uzbekistan, Tajikistan, Kazakhstan, western China (Xinjiang, Strand, 1909: 26, *H. chotanensis*; Shaanxi, Ebmer, 2005: 379), Mongolia (Ich-Bogd; Ebmer, 1982: 221), south of Krasnoyarsk Terr. (**first record**). Record of the species from Primorsk Teritory (Sedanka) by Gussakovskij (1932: 64) is based on misidentification.

23. **Evylaeus (Microhalictus) quadrinotatulus** (Schenck, 1861) (*E. quadrinotatulus* group)

Halictus quadrinotatulus Schenck, 1861: 393. ♀. Syntypes: "Pommern [Poland: Pomorze District] und Schweiz"; lost.

Halictus pallipes Morawitz, 1865: 72. ♀♂, "Duderhof" (type locality in description; Russia: 30 km S St. Petersburg). Lectotype (**designated here**): ♀; labels: golden circle, "Duderhof, VIII, 19", "*pallipes* Mor. Type." (Morawitz's hand); ZISP. This is a single specimen from Duderhof available at ZISP. There are also two other specimens (both females) labelled "Petrop." [Petropolis = Petersburg]. Synonymy by Blьthgen (1919: 78).

Halictus megacephalus Schenck, 1869: 308. ♀♂. Syntypes: "PreuЯen" [Germany or Poland]; lost. Synonymy by Alfken (1904: 1).

Halictus sexsignatus Schenck, 1869: 311. ♀. Lectotype: ♀, Germany: Lippstadt; designated by Ebmer (1975b: 244); FSF. Synonymy by Blьthgen (1919: 78).

Halictus pallidipes: Dalla Torre, 1896: 75; erroneous spelling of *Halictus pallipes*.

Taxonomy (selected references). Blьthgen, 1924a: 419 (key), 493 (key); Ebmer, 1970: 27 (key), 28 (key); 1971: 74 (key), 90 (key), 104; 1975b: 241, 243, 244; 1978a: 208, Fig. 13; 1988: 662; Sakagami et al., 1982: 206, 207, Figs 17, 19; Pesenko et al., 2000: 225 (key), 275, Figs 334, 365, 383, 399, 458, 459.

Taxonomic note. The difference between the close *E. quadrinotatulus* and *E. sakagamii* (see no. 24) in the structure of the male gonostylus (presence vs. absence of basomedial elbow-shaped projection), given by Ebmer (1978: Figs 12, 13) and Sakagami et al. (1982: 207), is an artifact of preparation (i.e. somewhat different views of genital capsule). Actually, the male gonostyli of these species do not differ (cf. Figs 77 and 80).

Published records. Chita Prov.: Chita (Ebmer, 1988: 662); Yakutia (Pesenko & Davydova, 2004: 696; see Material examined).

Material examined (3 ♂, 43 ♀). Krasnoyarsk Terr.: Yeniseisk; Irkutsk Prov.: Zhdanovskaya (on Lower Tunguska River); Buryatia: Dureny (left bank of Chikoi River); Chita Prov.: Andrianovka Station (35 km SE Karymskaya Station); Yakutia: Chona River (near mouth of Markhay River), mouth of Vilyui River, 10 km N Yakutsk, 30 km SSE Yakutsk, 6 km NNE Kachikatsa.

Distribution. An Eurosiberian species. Europe nearly throughout, from France in the west, to the Urals in the east, to northern Poland, southern Finland (62°N) and Udmurtia in the north, to northern Italy in the south. Asia: Asia Minor, Siberia as far in the east as Chita and Yakutia. The record of the species from Algeria by Alfken (1914: 190) has not been confirmed later.

24. **Evylaeus (Microhalictus) sakagamii** (Ebmer, 1978) (*E. quadrinotatulus* group)

Lasioglossum (*Evylaeus*) *sakagamii* Ebmer, 1978a: 207, Fig. 12. ♀♂. Holotype: ♀, China: Harbin (Heilongjiang); KMB.

Taxonomy. Sakagami et al., 1982: 198, Figs 1-16, 18.

Published records. Primorsk Terr.: Lazovskii Nature Reserve (no locality; Ebmer, 2006: 569).

Material examined (5 ♂, 12 ♀). Khabarovsk Terr.: Garmakhta (Efimov Island), Khabarovsk, Komsomolsk-on-Amur; Primorsk Terr.: Anisimovka, Gornotayezhnoe, Khasan Lake, Kievka, Novokachalinsk, 25 km SW Slavyanka, Spassk, 60 km E Spassk.

Distribution. An Eastern Palaearctic species. Russian Far East (Primorsk Terr.; **first record**: Khabarovsk Terr.), China (Xinjiang: Sakagami et al., 1982: 198; Heilongjiang: Ebmer, 1978: 207; Fujian and Shaanxi: Ebmer, 2005: 379; **first record**: Neimenggu: "Dyn-Yuan-in, northern Alashan [65 km W Yinchuang, Helanshan Mt. Range], 9-21.VII.1908, leg. P. Kozlov", 1 ♂; ZISP), North Korea (Ebmer, 1978: 315), northwestern Mongolia (Hovd: Ebmer, 1982: 221; Sakagami et al., 1982: 198), Japan (Hokkaido and Honshu: Ebmer, 1982: 221; Sakagami et al., 1982: 198; Haneda, 1990: 8).

25. **Evylaeus (Microhalictus) sulcatulus** (Cockerell, 1925) (*E. semilucens* group)

This is an Eastern Palaearctic species divided into two subspecies duffering only in some characters of the female (see Couplet 30 in "Key to species"). The nominotypical subspecies occurs in the mainland (southern Far East of Russia). *E. sulcatulus longifacies* (Sakagami & Tadauchi, 1995) is an insular subspecies (southern Kurils and northern Japan).

25a. **Evylaeus (Microhalictus) sulcatulus longifacies** (Sakagami & Tadauchi, 1995)

Lasioglossum (*Evylaeus*) *longifacies* Sakagami & Tadauchi, 1995: 150, 165 (key), Figs 1-3, 11, 20, 29, 41, 42. ♀♂. Holotype: ♀, Japan: Sapporo (Hokkaido); HUS.

Taxonomy. Ebmer, 1996: 287, 288 (*Lasioglossum sulcatulum longifacies*).

Material examined (1 ♂, 13 ♀). Shikotan: northern shore of Anama Bay, southern shore of Anama Bay; Iturup: Kurilsk; Kunashir: Alekhino.

Distribution. Kurils (**first record for Russia**: Shikotan, Iturup, and Kunashir), northern Japan (Hokkaido and Honshu).

25b. **Evylaeus (Microhalictus) sulcatulus sulcatulus** (Cockerell, 1925)

Halictus sulcatulus Cockerell, 1925: 9. ♀. Syntypes: Russia [Primorsk Terr.]: 5 ♀, "Okeanskaya" [near Vladivostok]; 1 ♀, Kudia River; USMW and MNB; 1 ♀ at MNB examined.

Taxonomy. Ebmer, 1982: 219, Photo 8 in Plate III; 1985a: 220; 1996: 287 (♂), 288.

Published records. Primorsk Terr.: Okeanskaya, Kudia River (Cockerell, 1925: 10), Anisimovka, Kamenushka, Krounovka, Lazovskii Nature Reserve, Sputnik (near Vladivostok), 40 km E Ussuriisk (Ebmer, 1996: 287; 2006: 571).

Material examined (32 ♂, 66 ♀). Amur Prov.: Khingan Nature Reserve; Khabarovsk Terr.: mouth of Gorin River, Pivan, Khabarovsk; Primorsk Terr.: Anisimovka, 10 km NW Artem, Barabash-Levada, Brovnichi, 10 km SE Chernigovka, Evseyevka, Golubiny Utes, Gornotayezhnoe, Kamenushka, "Kedrovaya Pad" Nature Reserve, Khasan, Lazovskii Nature Reserve, Lyalichi (on Ilistaya River), 15 km SSW Nezhino, 10 km E Partizansk, 15 km SW Partizansk, 30 km NW Partizansk, 12 km SE Pos'yet, 15 km E Pos'yet, Sedanka, 25 km SW Slavyanka, Spassk, 20 km SSE Spassk, 30 km NW Spassk, 30 km E Spassk, Trudovoe, 20 km E Ussuriisk, 30 km SE Ussuriisk, 50 km ESE Ussuriisk, Ussuri Nature Reserve, Vityaz, Vladivostok, Zimoveiny Klyuch.

Distribution. Southern Far East of Russia (Primorsk Terr.; **first record**: Amur Prov. and Khabarovsk Terr.).

26. **Evylaeus (Microhalictus) transpositus** (Cockerell, 1925) (*E. semilucens* group)

Halictus transpositus Cockerell, 1925: 8. ♀. Holotype: ♀, Russia: "Kongaus" [now Primorsk Terr.: Anisimovka]; USMW.

Halictus tutihensis Cockerell, 1925: 8. ♀. Holotype: ♀, Russia: "Tutihe" (Primorsk Terr.); USMW. Synonymy by Ebmer (1996: 286).

Taxonomy. Ebmer, 1996: 286; 2002: 879.

Published records. Amur Prov. (no locality; Proshchalykin, 2004: 6); Primorsk Terr.: "Kongaus" [now Anisimovka] (Cockerell, 1925: 8), "Tutihe", Kudia River (Cockerell, 1925: 8; *H. tutihensis*), Sedanka (Gussakovskij, 1932: 64, "*Halictus lucidulus*"), Anisimovka, Litovka Mt. (near Anisimovka), 40 km SW Ussuriisk (Ebmer, 1996: 287), Lazovskii Nature Reserve (Ebmer, 2006: 569, "*Lasioglossum huanghe*", personal communication by Mr. A.W. Ebmer).

Material examined (21 ♂, 74 ♀). Amur Prov.: Klimoutsy, Simonovo; Khabarovsk Terr.: Komsomolsk-on-Amur, Dva Brata Mt. (Khekhtsyr); Primorsk Terr.: Anisimovka, 10 km SE Chernigovka, Evseyevka, Golubiny Utes, Gornotayezhnoe, "Kedrovaya Pad" Nature Reserve, Lazo, Lazovskii Nature Reserve (Suputinka River, Tachingouz locality), Livadiya, Lyalichi (on Ilistaya River), Okeanskaya, 15 km SE Partizansk, Ryazanovka (15 km SW Slavyanka), Sedanka, Sukhanovka (25 km SW Slavyanka), Spassk, 20 km E Spassk, 30 km W Spassk, 20 km S Cape Turii Rog, 20 km NE Ussuriisk, 40 km SW Ussuriisk, Vladivostok.

Male (nov.). *Structure*. Body length 4.7-5.5 mm. Head transversely elliptical in front view, 0.85-0.9 times as high as wide. Clypeus projecting by third or fourth of its length below eyes. Antenna short, reaching mid-length or posterior margin of scutellum; 2nd flagellomere 1.1-1.2 times as long as its diameter. Propodeum relatively long, its dorsal surface 0.85-0.9 times as long as scutellum, flat or weakly concave. Posterior vertical surface of propodeum ecarinate along its lateral and dorsal margins, gradually curved onto lateral surfaces of propodeum. Metapostnotum ecarinate along its posterior margin. Metasoma elongate elliptical, with maximum width at level of anterior half of segment 3. Tarsi usu-

al, not shortened; 2nd hind tarsomere 1.5-1.7 times as long as wide. Discs of T2-T4 weakly convex, not depressed on anterior parts (at their graduli). Posterior areas of T1 not separated from their discs by step medially; those of T2-T4 distinctly separated along entire width. Membranous retrorse lobe of gonocoxite relatively large, only somewhat shorter than gonocoxite (Fig. 85), elongate elliptical, 2.0-2.5 times as long as wide, very widely rounded at apex, hairless (Fig. 84). Gonostylus large, rhomboidal elliptical in posterior view of genital capsule, with long dense bristles (Fig. 83).

Sculpture. Clypeus on lower third regularly coarsely and densely punctate (30-35 μm / 0.2-0.5) with rounded punctures, polished on interspaces, shiny; on upper two thirds twice more finely punctate, shagreened on interspaces, dull or weakly shiny. Supraclypeal area obscurely finely punctate, shagreened on interspaces, dull or weakly shiny. Frons very densely punctate, nearly without interspaces, matt. Paraocular and genal areas more sparsely and obscurely punctate, more or less shiny. Vertex densely punctate (< 1), with distinct polished interspaces, shiny. Mesoscutum relatively finely and sparsely punctate (on disc, 15-20 μm / 1-2 or more), polished on interspaces, shiny. Scutellum usually with similar punctation at sides of mid-line, shiny. Mesepisternum on upper two thirds densely punctate (0.2-0.5), shiny on interspaces; on lower third, nearly impunctate, finely granulose and/or shagreened, dull or weakly shiny. Metapostnotum throughout finely and densely striate, dull or weakly shiny. Lateral and posterior vertical surfaces of propodeum granulose, dull or weakly shiny. T1 polished, on anterior and convex surfaces impunctate, on dorsal parts and anterior half of posterior area very finely and sparsely punctate (5-7 μm / 2-5 and more). T2 and T3 with traces of strigulation, twice more coarsely and densely punctate on discs, nearly impunctate on posterior areas, shiny.

Coloration. Body black, metasoma sometimes brownish black. Clypeus yellow on lower third; labrum and mandibles yellow. Antennal flagellum on upper side dark brown, on lower side ochre- or light-brown. Tarsi and end of tibiae dark yellow or light brown. Posterior areas of metasomal terga widely hyaline or yellowish tranlucent.

Vestiture. Lower half of face and anterolateral projection of pronotum covered with dense white tomentum. Pubescence of vertex and mesosoma whitish. T2-T4 without anterior bands or lateral spots of tomentum. Ventral surface of metasoma with long, dense, plumose hairs; S2 and S3 pubescent more or less throughout; S4 and S5, in form of lateral brush of hairs, which are not shorter, but denser than hairs on S2 and S3.

Distribution. An Eastern Palaearctic species. Southern Far East of Russia (Amur Prov. and Primorsk Terr.; **first record**: Khabarovsk Terr.), northern Japan (Hokkaido, Honshu, and Kyushu: Haneda, 1990: 8; Ikudome & Nakamura, 1995: 52; 1996: 176; Ebmer, 1996: 286; Iwata, 1997: 640).

27. **Evylaeus (Prosopalictus) brachycephalus** (Cockerell, 1925)

Halictus brachycephalus Cockerell, 1925: 11. ♀. Syntypes: 3 ♀, Russia: "Kongaus" [now Primorsk Terr.: Anisimovka]; USMW and MNB, 1 ♀ at MNB, examined.

Taxonomy. Ebmer, 1982: 219; 1996: 292; 2006: 572.

Published records. Primorsk Terr.: "Kongaus" [now Anisimovka] (Cockerell, 1925: 11), Lazovskii Nature Reserve (Ebmer, 2006: 572).

Distribution. An Eastern Palaearctic species. Southern Far East of Russia (Primorsk Terr.).

28. **Evylaeus (Prosopalictus) gorge** (Ebmer, 1982)

Lasioglossum (*Evylaeus*) *gorge* Ebmer, 1982: 219, Photo 7 in Taf. III. ♀♂. Holotype: ♀, Mongolia: Ich-bogd (Bajan-Hongor); ZSUH.

Evylaeus gorgis: Pesenko & Davydova, 2004: 695. Erroneous spelling.

Taxonomy. Ebmer, 2005: 378.

Published records. Yakutia: 60 km N Amga, Khattygy-Terde (on Amga River), Novopokrovskoe (on Amga River), Yakutsk, 10 km N Yakutsk, 10 km SSW Yakutsk, 50 km ENE Yakutsk, 30 km SSE Yakutsk, 75 km SSE Yakutsk (Pesenko & Davydova, 2004: 695).

Distribution. An Eastern Palaearctic species. Russia (Altai: Ebmer, 2005: 378; Yakutia: Pesenko & Davydova, 2004: 695), Mongolia (Bayan-Hongor, Uvs, and Tμv: Ebmer, 1982: 219; 2005: 378).

29. **Evylaeus (Prosopalictus) kankaucharis** (Strand, 1914)

Halictus kankaucharis Strand, 1914: 161. ♀. Holotype: ♀, "Formosa: Koshun" [now Taiwan: Kankau = Kangkou Island]; DEI; examined.

Taxonomy. Blьthgen, 1925: 115 (♂); Ebmer, 1978: 316; 1982: 219, 1996: 292; 2006: 572.

Published records. Primorsk Terr.: Lazovskii Nature Reserve, Sputnik (near Vladivostok) (Ebmer, 2006: 572).

Distribution. Russian Far East (Primorsk Terr.), North Korea (Ebmer, 1978: 316), Taiwan (Strand, 1914: 161), southeastern China (Kanton [Guangzhou]: Blьthgen, 1925: 115), Japan (Tokyo: Blьthgen, 1925: 115).

30. **Evylaeus (Prosopalictus) kiautschouensis** (Strand, 1910)

Halictus kiautschouensis Strand, 1910a: 195. ♀. Holotype: ♀, China: "Kiautschou, Tsingtou" [now Shandong: Qingdao]; MNB; examined.
Halictus kiautschauensis Blьthgen, 1922: 54; unjustified emendation of *Halictus kiautschouensis* Strand, 1910.

Taxonomy. Ebmer, 1978a: 212; 1996: 292; 2006: 572.
Published records. Khabarovsk Terr.: Bikin (Ebmer, 1996: 292); Primorsk Terr.: Anisimovka, Lazovskii Nature Reserve, Litovka Mt. (near Anisimovka), Ryazanovka (15 km SW Slavyanka), 40 km SW Ussuriisk, 30 km W Vladivostok (Ebmer, 1996: 292; 2006: 572).
Distribution. An Eastern Palaearctic species. Southern Far East of Russia (Khabarovsk and Primorsk Terr.), North Korea (Ebmer, 1978b: 316; 1996: 293), eastern China (Heilongjiang and Shandong: Strand, 1910a: 195; Ebmer, 1978a: 212; 1996: 293), northern Japan (Hokkaido: Ebmer, 1996: 293).

31. **Evylaeus (Prosopalictus) monstrificus** (Morawitz, 1891)

Halictus monstrificus Morawitz, 1891: 147. ♂. Lectotype: ♂, Russia: Irkutsk; designated by Ebmer (1985a: 219); ZISP; examined.
Halictus temporalis Arnold, 1894: 165; unavailable name as it was published in the synonymy of *Halictus monstrificus* Morawitz, 1891.

Taxonomy. Ebmer, 1985a: 219, Figs 27, 28.
Published records. Irkutsk Prov.: Irkutsk (Morawitz, 1891: 147).
Distribution. An Eastern Palaearctic species. South of Eastern Siberia (Irkutsk).

32. **Evylaeus (Prosopalictus) pallilomus** (Strand, 1914)

Halictus pallilomus Strand, 1914: 160. ♀, non ♂ (= *E. speculinus*; see Ebmer, 1978a: 212). Syntypes: "Formosa" [Taiwan]: Taihorin, 8 ♀; Taihorinsho, 2 ♀; DEI; examined.

Taxonomy. Blьthgen, 1925: 114 (♂); 1926a: 646, 671 (key), 673 (key); 1928: 393 (key), 402 (key); 1929b: 107; 1931a: 342 (key); Ebmer, 1978a: 212; 1982: 220; 1996: 294; 2006: 573.
Published records. Khabarovsk Terr.: Bikin, Khabarovsk (Ebmer, 1996: 294; 2006: 573); Primorsk Terr.: Anisimovka, Lazovskii Nature Reserve Shkotovo, 37 km SE Dalnerechensk, Ryazanovka (15 km SW Slavyanka), Ussuriisk, 40 km E Ussuriisk, Vladivostok, 30 km W Vladivostok (Ebmer, 1996: 294; 2006: 573).
Comment on the name. Here I follow the name of the species accepted by Ebmer (1978a: 212), who labelled one of the females from the type series at DEI (examined by me) as the lectotype, but did not yet published the lectotype designation.
Distribution. Southeastern Palaearctic and Northern Oriental Regions. Southern Far East of Russia (Khabarovsk and Primorsk Terr.), North Korea (Ebmer, 1996: 294), South Korea (Ebmer, 2006: 573), eastern China (Heilongjiang: Ebmer, 1978a: 212; Zheijang: Ebmer, 1996: 294), Taiwan (Strand, 1914: 160), northern Japan (Hokkaido, Honshu, and Shikima: Takahashi & Sakagami, 1993: 275; Ebmer, 1996: 294).

33. **Evylaeus (Prosopalictus) perplexans** (Cockerell, 1925)

Halictus perplexans Cockerell, 1925: 10. ♀. Syntypes: Russia [Primorsk Terr.]: "Preobragenya [Preobrazhenie] Bay", 4 ♀; "Low Lighthouse" [30 km SE Olga], 1 ♀; AMNY and ZISP, 1 ♀ at ZISP examined.

Taxonomy. Ebmer, 1996: 293; 2006: 571 (?= *L. trichorinus*).
Published records. Khabarovsk Terr.: 20 km N Bikin, Khabarovsk (Ebmer, 1996: 293); Primorsk Terr.: "Low Lighthouse" (30 km SE Olga), "Preobragenya [Preobrazhenie] Bay" (Cockerell, 1925: 10), Anisimovka (Ebmer, 1996: 293).
Distribution. An Eastern Palaearctic species. Southern Far East of Russia (Khabarovsk and Primorsk Terr.).

34. **Evylaeus (Prosopalictus) simplicior** (Cockerell, 1931)

Halictus simplicior Cockerell, 1931: 16. ♀. Holotype: ♀, China: Zф-Sи (Shanghai Municipality); AMNY.

Taxonomy. Ebmer, 1978b: 316; 1980: 503; 1996: 293.
Published records. Khabarovsk Terr.: 20 km N Bikin (Ebmer, 1996: 293); Primorsk Terr.: Anisimovka, Litovka Mt. (near Anisimovka), Ryazanovka (15 km SW Slavyanka) (Ebmer, 1996: 293).
Distribution. An Eastern Palaearctic species. Southern Far East of Russia (Khabarovsk and Primorsk Terr.), North Korea (Ebmer, 1978b: 316; 1996: 293), China (Shanghai: Cockerell, 1931: 16), central Japan (Izu: Takahashi, 1992: 28; Takahashi & Sakagami, 1993: 275; Ebmer, 1996: 293).

35. **Evylaeus (Prosopalictus) speculinus** (Cockerell, 1925)

Halictus pallilomus: Strand, 1914: 160. ♂, non ♀ (*Evylaeus pallilomus*; see Ebmer, 1978a: 212). Syntypes: "Formosa" [Taiwan]: Taihorin, 2 ♂; DEI; examined.
Halictus perplexans var. *speculinus* Cockerell, 1925: 11. ♀. Holotype: ♀, Russia: "Preobrageniya" [Preobrazhenie] Bay" (Primorsk Terr.); USMW.

Taxonomy. Ebmer, 1978a: 212; 1996: 294; 2006: 573.
Comment on the name. See *Evylaeus pallilomus*.
Published records. Primorsk Terr.: "Preobragenya [Preobrazhenie] Bay", Kudia River (Cockerell, 1925: 11; *Halictus perplexans* var. *speculinus*).
Distribution. An Eastern Palaearctic species. Southern Far East of Russia (Primorsk Terr.),

North Korea (Ebmer, 1978b: 316), northeastern China (Heilongjiang: Ebmer, 1978a: 212).

36. **Evylaeus (Prosopalictus) trichorhinus** (Cockerell, 1925)

Halictus trichorhinus Cockerell, 1925: 11. ♀. Holotype: ♀, Russia: "Low Lighthouse" [30 km SE Olga] (Primorsk Terr.); USMW.

Taxonomy. Ebmer, 1996: 292.

Published records. Primorsk Terr.: "Low Lighthouse" (30 km SE Olga) (Cockerell, 1925: 11), Kamenushka, Lazovskii Nature Reserve, Shkotovo, 30 km W Vladivostok (Ebmer, 1996: 287; 2006: 571).

Distribution. An Eastern Palaearctic species. Southern Far East of Russia (Primorsk Terr.), central Mongolia (Тцv: Ebmer, 2005: 379), central China (Shaanxi and Shanxi: Ebmer, 2006: 571).

37. **Evylaeus (Nitidiusculaeus) allodalus** (Ebmer & Sakagami, 1985)

Lasioglossum (*Evylaeus*) *allodalum* Ebmer & Sakagami, 1985: 301 (key), 302 (key), 305, Figs 2, 3, 9, 12. ♀♂. Holotype: ♀, Japan: Kuriyagawa (Honshu); HUS.

Taxonomy. Ebmer, 1996: 285.

Published records. Primorsk Terr.: Anisimovka, 28 km SE Chuguevka, Lazovskii Nature Reserve, Ryazanovka (15 km SW Slavyanka) (Ebmer, 1996: 285; 2006: 570).

Material examined (11 ♂, 24 ♀). Khabarovsk Terr.: Pivan; Jewish Autonomous Prov.: Londoko; Primorsk Terr.: Anisimovka, 10 km SE Chernigovka, "Kedrovaya Pad" Nature Reserve, 50 km N Khasan, Lazovskii Nature Reserve, Partizansk, Sedanka, 25 km SE Slavyanka, 20 km ESE Spassk, Vladivostok, 40 km W Vladivostok.

Variability. According to the original description of *E. allodalus* (see Ebmer et Sakagami, 1985: 306) and its diagnosis for distinguishing the species from the close *E. matianensis pluto* (see Ebmer, 1997: 926), the labrum and tarsi of the male of *E. allodalus* are pale, varying from yellow to yellowish brown. However, in all the males of *E. allodalus* examined by me, the labrum and tarsi are black or dark brown.

Distribution. An Eastern Palaearctic species. Southern Far East of Russia (Primorsk Terr.; **first record**: Jewish Autonomous Prov. and Khabarovsk Terr.), western China (Gansu and Yunnan: Ebmer, 2004: 131), northern Japan (Hokkaido and northern Honshu: Ebmer & Sakagami, 1985: 305; Ebmer, 1996: 285), Nepal (Ebmer, 2004: 131).

38. **Evylaeus (Nitidiusculaeus) matianensis** (Blьthgen, 1926)

This is a Central and Eastern Asian species divided into two subspecies. The nominotypical subspecies is known from central China, northern India, and Nepal. *E. matianensis pluto* (Ebmer, 1980) is distributed in Middle Asia and Russian Far East (see below). The latter differs from the nominotypical subspecies (known only from female) in more densely punctate mesoscutum and metasomal terga.

38a. **Evylaeus (Nitidiusculaeus) matianensis pluto** (Ebmer, 1980)

Lasioglossum (*Evylaeus*) *matianense pluto* Ebmer, 1980: 497. ♀. Holotype: ♀, Kyrghyzstan: Arkit (Chatkal Mt. Range); EBM.

Taxonomy. Ebmer & Sakagami, 1985: 299 (key), 309; Ebmer, 1997: 926 (♂), Figs 1-5; 2006: 570.

Published records. Primorsk Terr.: Lazovskii Nature Reserve (no locality; Ebmer, 2006: 570).

Distribution. Southern Kazakhstan (Ebmer, 1997: 926), Uzbekistan (Ebmer & Sakagami, 1985: 309; Ebmer, 1997: 926), Kyrghyzstan (Ebmer, 1980: 497; 1997: 926), Russia (Primorsk Terr.).

39. **Evylaeus (Nitidiusculaeus) rufitarsis** (Zetterstedt, 1838)

Halictus rufitarsis Zetterstedt, 1838: 462. ♂♀. Lectotype: ♀, Sweden: Karungi (Lappland); designated by Ebmer (1982: 219); ZML.

Halictus parumpunctatus Schenck, 1869: 306. ♂. Lectotype: ♂, Germany: [Hessen]; designated by Ebmer (1974b: 118); FSF. Synonymy by Blьthgen (1921: 281).

Halictus lucidus Schenck, 1869: 309. ♀. Syntypes: Germany: Lippstadt; lost. Synonymy by Blьthgen (1921: 281).

Halictus atricornis Smith, 1870: 26. ♀♂. Lectotype: ♀, England: Cheshire; designated by Ebmer (1978a: 206); ZMUO. Synonymy by Blьthgen (1922: 47).

Taxonomy (selected references). Blьthgen, 1924a: 461 (key), 528 (key); 1958: 194; Ebmer, 1971: 76 (key), 85 (key), 87 (key), 102, Figs 109a, 109b; 1974b: 118; 1975b: 243, 244; 1978a: 206; 1982: 219; 1988: 658; Svensson et al., 1977: 227; Ebmer & Sakagami, 1985: 299 (key), 301 (key), 308, Figs 5, 7, 10; Pesenko et al., 2000: 232 (key), 290, Figs 408, 418, 427, 482-484.

Published records. Kamchatka: Elizovo (Strand, 1909: 14; Alfken, 1929: 7; Gussakovskij, 1932: 64, "*Halictus freygessneri*"; Blьthgen, 1934: 3), Chapina, Petropavlovsk (Blьthgen, 1936: 7); Yakutia (Pesenko & Davydova, 2004: 696; see Material examined); Primorsk Terr.: 56 km SE Chuguevka, Lazovskii Nature Reserve (Ebmer, 1996: 286; 2006: 570); Kurils: Kunashir (no locality; Konakov, 1956: 166).

Material examined (28 ♂, 88 ♀). Irkutsk Prov.: Baibit (on Podkamennaya Tunguska River), Nepa (on Lower Tunguska River), mouth of Chiskovaya River; Chita Prov.: Chita, 15 km SE Chita; Yakutia: Dungalakh (near mouth of Maya River); upper reaches of Tukulan River (Verkhoyansk Mt. Range), Vilyui-Chirimekh road, Yakutsk, 10 km N Yakutsk, 35 km SSE Yakutsk, 75 km SSE Yakutsk, mouth of Vilyui River, Khomurgan-Arbyn summer stand (near mouth of Aldan River), mouth of Labyiya River, mouth of Ulakhan-an River, 60 km NE Amga, Petropavlovskoe (on Aldan River), Sasyr (Cher-

skii Mt. Range), Nelkan, 35 km upstream of mouth of Tuksan River (Tokinskii Stanovik Mt. Range); Kamchatka: 10 km S Dolinovka (Milkovo District), Elizovo, Kamenskoe, Klyuchevskaya Mt., Kozyrevsk, Shanino, Shchapino; Magadan Prov.: 12 km N Seimchan, Sibit, Talon (150 km W Magadan); Amur Prov.: Klimoutsy, Skovorodino, Ulunga; Khabarovsk Terr.: Gornoe (Myaochan Mts.), Komsomolsk-on-Amur, Pivan, Suluk; Primorsk Terr.: Anisimovka; Sakhalin Island: Ekhaba Bay, Goryachie Klyuchi, Lake Rybach'ye, 15 km SE Yuzhnosakhalinsk; Urup.

Distribution. Cold and moderate Holarctic Region; in Nearctic Region, from Alaska and Labrador in the north as far as Ontario and Michigan in the south; in Palaearctic Region from Atlantic to Pacific Ocean, in forest tundra, taiga, deciduous forest and forest steppe zones; in Europe, boreo-montane, from England and Spain in the west, to the Urals in the east; to northern Sweden, northern Poland and northern Finland (67°N) in the north, to Italy and Krasnodar Terr. of Russia in the south; in Asia, as far as Azerbaijan, Iran and southeastern Kazakhstan in the south. Eastern Palaearctic Region: Russia (Kamchatka, Yakutia, Primorsk Terr., Kuril Islands; **first records:** Irkutsk, Chita, Magadan, and Amur Prov., Khabarovsk Terr., Sakhalin), Mongolia (Uvs and Tцv: Ebmer, 1982: 219; 1996: 286; 2005: 378; **first record**: Hovd, 20 km NW Bulgan, 4-6.VII.1980, leg. M. Kozlov, 1 ♀; ZISP), North Korea (Ebmer, 1978b: 315), eastern China (Heilonjiang and Fujian: Ebmer, 1978a: 206; 1996: 286).

40. **Evylaeus (Truncevylaeus) villosulus** (Kirby, 1802)

Melitta villosula Kirby, 1802: 62. ♂. Lectotype: ♂, England: no locality; designated by Ebmer (1988: 649); BML.

Melitta punctulata Kirby, 1802: 66. ♀. Holotype: ♀, England: Barham; BML. Synonymy by Dalla Torre (1896: 90).

Halictus hirtellus Schenck, 1869: 311. ♀♂. Lectotype: ♀, Germany: Elberfeld near Letmathe; designated by Ebmer (1975: 244); FSF. Synonymy by Blьthgen (1922: 48).

Halictus medinai Vachal, 1895: 148. ♂. Holotype: ♀, Spain: Seville; in "Mus. Seville". Synonymy by Blьthgen (1923: 239).

Halictus pauperatulellus Strand, 1909: 44. ♂. Syntypes: 2 ♂, Algeria: Blidah-Mйdйah; MNB. Synonymy by Blьthgen (1922: 318).

Halictus trichopsis Strand, 1914: 156. ♂. Holotype: ♂,"Formosa [Taiwan]: Taihorin"; DEI; examined. Synonymy by Blьthgen (1923: 241).

Halictus melanomitratus Strand, 1914: 156. ♀. Holotype: ♀, "Formosa [Taiwan]: Taihorin"; DEI. Synonymy by Blьthgen (1923: 241).

Halictus melanomitratus var. *mitratolus* Strand, 1914: 158. ♀. Holotype: ♀, "Formosa" [Taiwan]: Taihorin"; DEI. Synonymy by Blьthgen (1923: 241).

Halictus villosulopsis Blьthgen, 1926a: 540. ♀. Syntypes: 3 ♀, India: Shillong (Assam State); BML. Synonymy by Ebmer (1978a: 207).

Halictus pahanganus Blьthgen, 1928: 374, 395 (key), Fig. 12. ♂. Holotype: ♂, Malaysia: Lubok Tamang (Pahang State); BML. Synonymy by Ebmer (1978a: 207).

Halictus barkensis Blьthgen, 1930c: 224. ♀♂. Syntypes: 1 ♀, 1 ♂, Libya: Bengazi; MNB; examined; 1 ♀, 1 ♂, Libya: Cirene; 1 ♀, Libya: Derna; in collection of "R.U. Agrario in Bengasi". Synonymy by Warncke (1976: 94).

Halictus villosulus perlautus Cockerell, 1938a: 82. ♂♀. Holotype: ♂, Morocco: Asni; BML. Synonymy by Warncke (1973b: 290).

Halictus (*Evylaeus*) *rufotegularis* Cockerell, 1938b: 7. ♀. Holotype: ♀, Morocco: Ifrane; AMNY. Synonymy by Ebmer (1976a: 253; 21 March) and Warncke (1976: 95; 15 October).

Halictus villiersi Benoist, 1941: 80. ♀. Holotype: ♀, Morocco: Tachdirt pass (Grand Atlas); MNP. Synonymy by Warncke (1973b: 290).

Halictus berberus Benoist, 1941: 81. ♂. Holotype: ♂, Morocco: Djebel M'Goun; MNP. Synonymy by Warncke (1976: 94).

Taxonomy (selected references). Blьthgen, 1920: 100 (key), 124 (key); 1921: 277 (*Halictus villosulus*), 278 (*H. hirtellus*); 1922: 48; 1922: 318; 1923: 239, 241; 1923: 19; 1924a: 451 (key), 460 (key), 463 (key), 529 (key); 1933: 19; Ebmer, 1971: 74 (key), 88 (key), 106, Fig. 75; 1975b: 244; 1976a: 251, Fig. 49 (♀; *Lasioglossum berberum*), 252, 253 (*L. villosulum*); 1978a: 207 (*L. villosulum trichopse*); 1988: 649 (*L. villosulum villosulum*), 650 (*L. villosulum trichopse*); 1998: 368 (*L. villosulum trichopse*); Warncke, 1973b: 290; 1976: 94, 95; 1982: 87, 88; Pesenko et al., 2000: 234 (key), 291, Figs 409, 419, 485-487 (*Evylaeus villosulus villosulus*).

Taxonomic note. Ebmer (1978a: 207; 1988: 650; 1998: 368) distinguishes *E. villosulus trichopsis* (Strand, 1914) as a separate subspecies distributed in Eastern Palaearctic and Oriental Regions and differing from the nominotypical subspecies only by shorter head of both the sexes. However, examination by me of an extensive material from Europe, Transcaucasia, Middle Asia, Siberia, Russian Far East, and China did not confirm the above difference. Therefore, the species is considered here as not subdivided into subspecies.

Published records. Primorsk Terr.: Lazovskii Nature Reserve, Partizansk, 40 km SW Ussuriisk (Ebmer, 1996: 285; 2006: 569).

Material examined (8 ♂, 16 ♀). Irkutsk Prov.: Yurty (120 km E Kansk); Amur Prov.: 20 km W Arkhara; Primorsk Terr.: Anisimovka, Barabash-Levada, 10 km SE Chernigovka, Innokent'yevka, Kievka, 40 km E Kraskino, Novokachalinsk, 10 km E Partizansk, 15 km E Pos'yet, Ryazanovka (15 km SW Slavyanka), Spassk, Ussuriisk, Ussuri Nature Reserve.

Distribution. A transpalaearctic and Oriental species. North Africa; Europe nearly throughout, as far as northern Poland, Lithuania, middle Finland (to 64°N) and Udmurtia in the north; Asia: Near East, Arabian Peninsula, Afghanistan, Tajikistan, southern Siberia (**first record**: Irkutsk Prov.), south of Russian Far East (Primorsk Terr.: Ebmer, 1996: 285; 2006: 569; **first record**: Amur Prov.), Mongolia (Hovd and Bayan-Hongor: Ebmer, 1982: 219; 2005: 378; *L. villosulum trichopse*), China (Gansu and Sichuan: Morawitz, 1890: 365; *Halictus punctulatus*; Heilongjiang: Ebmer, 1978a: 207; *L. villosulus*; Shanxi, Shaanxi, and Yunnan; Ebmer, 2006: 570; *L. villosulum*

trichopse), North Korea (Ebmer, 1978b: 315; *L. villosulum trichopse*), Japan (Hokkaido: Usui et al., 1976: 228; Izu: Takahashi & Sakagami, 1993: 271, 275; Honshu: Haneda, 1990: 8; Okinawa: Azuma & Kinjo, 1987: 314), Taiwan (Strand, 1914: 156, 158); eastern India (Himalayas; Blьthgen, 1926a: 540, *Halictus villosulopsis*), Nepal (Ebmer, 2004: 131; *L. villosulum trichopse*), Malaysia (Pahang State; Blьthgen, 1928: 374, *H. pahanganus*).

41. **Evylaeus (Aerathalictus) angaricus** (Cockerell, 1937)

Halictus (*Chloralictus*) *angaricus* Cockerell, 1937: 1. ♀. Holotype: ♀, Russia: "Ust-Balej" [Chita Prov.: Balej]; AMNY.

Taxonomy. Ebmer, 1978a: 206; 1978b: 313; 1982: 217 (♂); 1996: 284; 2005: 377.

Published records. Chita Prov.: Ust-Balei on Angara River (Cockerell, 1937: 1); Primorsk Terr.: Lazovskii Nature Reserve (Ebmer, 2006: 568). Records of the species from Yakutia by Pesenko & Davydova (2004: 694) concern *E. briseis eomontanus* (see below, no. 46a).

Material examined (12 ♂, 9 ♀). Chita Prov.: Andrianovka Station, Chita, Priargunsk; Amur Prov.: 20 km E Arkhara, Korsakovo (100 km W Svobodny), Simonovo; Primorsk Terr.: Anisimovka, Gornotayezhnoe, Novokachalinsk, Ryazanovka.

Taxonomic note. Ebmer (1996: 284) has examined the holotypes (females) of *E. angaricus* and the close *E. viridellus* (see below) and found a single difference between them. The body of the holotype of *E. angaricus* is darker (metallic blue-green), whereas in the holotype of *E. viridellus*, the body is yellowish green. The same difference between the males of two the species, in addition to a very strong difference in the pubescence of the metasomal sterna, was indicated by Ebmer (1982: 217) earlier. The overwhelming majority of individuals (females and easily identified males as well) of *E. angaricus* and *E. viridellus* from Eastern Siberia and the Russian Far East examined by me are yellowish green or goldish green. A few darker individuals sometimes occur in the populations of both the species. Hence, the females of these species have no morphological difference. The females of *E. angaricus* can be identified only in those regions where *E. viridellus*, distributed in Khabarovsk and Primorsk Terr., does not occur. On this reason, the data on the distribution of these two species in Khabarovsk and Primorsk Terr. are mostly based on males.

Distribution. An Eastern Palaearctic species. South of Eastern Siberia and southern Far East of Russia (Chita and Amur Prov., Primorsk Terr.), Mongolia (Tцv and Hovd: Ebmer, 1982: 217; 2005: 377; Ebmer & Sakagami, 1990: 837; **first record**: Hentiy, 12 km N Gal-shir, 30.VII.1971, leg. M. Kozlov, 1 ♂; ZISP).

42. **Evylaeus (Aerathalictus) leucopus** (Kirby, 1802)

Melitta leucopus Kirby, 1802: 59. ♂. Lectotype: ♂, England: no locality; designated by Ebmer (1988: 638); BML.

Lasioglossum (*Evylaeus*) *leucopum*: Ebmer, 1970: 64; 1975: 269. Erroneous spelling.

Taxonomy (selected references). Blьthgen, 1924a: 483 (key), 544 (key); Ebmer, 1970: 45 (key), 47 (key), 64; 1975a: 269; 1985b: 277; 1988: 638; Ebmer & Sakagami, 1990: 836; Pesenko et al., 2000: 234 (key), 295, Figs 336, 372, 384, 410, 488-490.

Published records. Yakutia (Pesenko & Davydova, 2004: 695; see Material examined).

Material examined (8 ♂, 9 ♀). Krasnoyarsk Terr.: Krasnoyarsk; Irkutsk Prov.: Irkutsk, Bratsk, Melnikovo (near Irkutsk), Nizhneudinsk; Buryatia: Boyarski (on southern shore of Lake Baikal);Yakutia: Olekminsk, Nizhni Kuranakh (25 km N Aldan).

Distribution. An Eurosiberian species. Europe nearly throughout, from Ireland, England, and Spain in the west, as far as southern Sweden, northern Poland, middle Finland (64°N), and Udmurtia in the north; in the south (in Spain and Greece), in mountains. Asia: Asia Minor, northern Iran, Siberia as far as Buryatia and Yakutia in the east. The records of the species from Uzbekistan and Tajikistan by Morawitz (1876: 220) concern *E. aeratus* (see Blьthgen, 1937: 106; *Halictus viridiaeneus*).

43. **Evylaeus (Aerathalictus) viridellus** (Cockerell, 1931)

Halictus (*Chloralictus*) *viridellus* Cockerell, 1931: 14. ♀. Holotype: ♀, China: Zф-Sи (Shanghai Municipality); AMNY.

Taxonomy. Ebmer, 1978b: 312 (♂), Figs 5-7; 1980: 502; 1982: 217; 1996: 283.

Published records. Khabarovsk Terr.: 20 km N Bikin, Khabarovsk (Ebmer, 1996: 283); Primorsk Terr.: 28 km SW Chuguevka, Zhuravlevka (near Samarka) (Ebmer, 1996: 283), Lazovskii Nature Reserve (Ebmer, 2006: 568).

Material examined (20 ♂, 56 ♀). Khabarovsk Terr.: Khabarovsk, Komsomolsk-on-Amur, 15 km W Smidovich; Primorsk Terr.: Anisimovka, Arsen'yev, Barabash-Levada, Evseyevka, "Kedrovaya Pad" Nature Reserve, Khasan, 15 km W Khasan, 40 km E Kraskino, Lazovskii Nature Reserve (Perekatnoe locality, 15 km NE Preobrazhenie Bay, 10 km SE Sokolchi locality), Novokachalinsk, Okeanskaya, 15 km S Partizansk, 15 km E Pos'yet, Samarka, 25 km SW Slavyanka, Spassk, 15 km NE Spassk, 20 km NW Spassk, 20 km SSE Spassk, Vladivostok.

Distribution. An Eastern Palaearctic species. South of Eastern Siberia and Southern Far East of Russia (Khabarovsk and Primorsk Terr.), North Korea (Ebmer, 1978b: 312), eastern China (Heilongjiang: Ebmer, 1978a: 206; Shanghai: Cockerell, 1931: 14).

44. **Evylaeus (Glauchalictus) miyabei** (Murao, Ebmer & Tadauchi, 2006)

Lasioglossum (*Evylaeus*) *miyabei* Murao et al., 2006: 42, Figs 7*a-g*, 8*a*, 8*b*,9*a-f*, 12*a*. ♀♂. Holotype: ♀, Japan: Sapporo (Hokkaido); KUF.

Taxonomy. Ebmer, 2006: 564.

Published records. Primorsk Terr.: Lazovskii Nature Reserve (Pryamushka and Tachingouz localities; Murao et al., 2006: 46; Ebmer, 2006: 564).

Material examined (9 ♂, 11 ♀). Primorsk Terr.: Anisimovka, Evseyevka, "Kedrovaya Pad" Nature Reserve, Lazovskii Nature Reserve (Benevskoe locality), 15 km SW Partizansk, Russkii Island, 25 km SW Slavyanka, Vladivostok; Kunashir: Alekhino, Mendeleyevo, Tret'yakovo, 17 km S Yuzhnokurilsk.

Distribution. Southern Far East of Russia (Primorsk Terr.; **first record**: Kunashir), Japan (Hokkaido, Honshu, and Kyushu: Murao et al., 2006: 46).

45. **Evylaeus (Glauchalictus) problematicus** (Blьthgen, 1923)

Halictus problematicus Blьthgen, 1923: 331. ♀, no locality [in description: "vermutlich sibirischer Herkunft"]. Lectotype (**designated here**): ♀; labels: red square, "*Hal. problematicus* m. ♀. Type [written by Blьthgen]. P. Blьthgen det. [printed]"; IZK. The species was described from three females. In addition to the lectotype, two females (paralectotypes) with labels "*Hal. problematicus* m. ♀. Cotype. P. Blьthgen det." are deposited at IZK and MNB, examined.

Taxonomy. Blьthgen, 1929a: 64; Ebmer, 1970: 71; 1978b: 311; 1996: 282; 2002: 858, 865 (♂), Figs 145, 150-152, 156-161; 2006: 563; Murao et al., 2006: Fig. 12*c*.

Published records. Sakhalin: Aniva, Kalinino, Kholmsk, 20 km N Kholmsk, 30 km N Kholmsk, Ozerskii (Ebmer, 1978b: 311; 1996: 282; 2002: 866); Kurils: Iturup, Urup (Ebmer, 1978b: 311; 1996: 282).

Material examined (65 ♂, 75 ♀). Sakhalin: 20 km W Aniva, 20 km SW Aniva, Boshnyakovskii Pass, Dolinsk, 20 km SE Il'inskaya, Kholmsk, Kostromennoe, Kuznetsovo, Cape Levenorn, Novikovo, Novoaleksandrovsk, Ozerskii, Pionerskii (20 km N Kholmsk), Sokol (9 km S Dolinsk), Starodubskoe, Lake Tunaicha, Shebunino, Yuzhnosakhalinsk; Iturup: Lake Blagodatnoe, Cape Eugene, Kuybyshevskii Zavod, Kurilsk, Lesozavodsk, Odesskii Zavod, 5 km N Reidovo, Zolotoe; Shikotan: northern shore of Anama Bay, Delphin Bay, Malokurilsk; Kunashir: Alekhino, Aliger, Dubovoe, Golovnin Volcano Caldera, Golovnino, 5 km N Golovnino, Lake Goryacheye, Lake Lagunnoe, Mendeleyevo, Tret'yakovo, Yuzhnokurilsk.

Taxonomic note. Ebmer (2006: 563) reported that the females of *E. problematicus* and *E. virideglaucus* are undistinguishable. From this fact, confirmed during my present study, two conclusions should be derived.

(1) The distributional ranges of these species can be established only on the basis of the occurrence of males. The distribution of both the species in the Russian Far East appears to be well-defined on the basis of numerous males from this region examined by me (89 ♂) and six males from Japan (Hokkaido: Sapporo; Honshu: Fukushima Pref.: Hinoemata) as well: *E. virideglaucus* occurs only in the continental part of the region (Khabarovsk and Primorsk Terr.); *E. problematicus*, only in the insular part of the region (Sakhalin and southern Kurils) and in Japan. In my opinion, the records of *E. problematicus* from North Korea and Primorsk Terr. by Ebmer (1978: 311; 1996: 282), both based only on females, actually concern *E. virideglaucus* (see also Ebmer, 2006: 561).

(2) *E. problematicus* was described by Blьthgen (1923: 331; in *Halictus*) only from three females of unclear origin ("probably from Siberia"). Radoszkowski's collection (deposited at IZK) includes specimens from both, Khabarovsk Terr. and Japan. Ebmer retained the name *Lasioglossum problematicum* for the Japanese species. Whether this decision was correct, is unclear.

In the recent paper by Ebmer (2006: 564), the characteristics of the male genitalia of *E. problematicus* (including reference to figures in Ebmer, 2002) concern actually *E. virideglaucus* and vice versa.

Distribution. An insular Eastern Palaearctic species. Southern Far East of Russia (Sakhalin, southern Kurils), northern Japan (Hokkaido and Honshu: Usui et al., 1976: 228; Ebmer, 1978b: 311; 1996: 282; 2002: 866; Haneda, 1990: 5). The record of the species from Perm by Ebmer (1978b: 312) refers to *E. ellipticeps* (see Ebmer, 1982: 216).

46. **Evylaeus (Glauchalictus) virideglaucus** (Ebmer & Sakagami, 1994)

Lasioglossum (*Evylaeus*) *virideglaucum* Ebmer & Sakagami in Ebmer et al., 1994: 27, Figs 17, 19. ♂♀. Holotype: ♂, China: Heishu, 35 km N Lijang (Yunnan); EBM.

Taxonomy. Ebmer, 2002: 858, 864, Figs 141-144; 2006: 563, 564; Murao et al., 2006: Fig. 12*d*.

Published records. Primorsk Terr.: Lazovskii Nature Reserve, Ryazanovka (15 km SW Slavyanka), Samarka, Tikhoe (near Razdolnoe), 36 km S Ussuriisk, Ussuriisk, 40 km SW Ussuriisk, 40 km E Ussuriisk, 30 km W Vladivostok, Zhuravlevka (near Samarka) (Ebmer, 1996: 282, "*E. problematicus*"; 2006: 563, 564, "*E. problematicus*" and *E. virideglaucus*).

Material examined (24 ♂, 41 ♀). Khabarovsk Terr.: Bitsovo (20 km N Bikin); Primorsk Terr.: 15 km NW Artem, Barabash-Levada, Gornotayezhnoe, "Kedrovaya Pad" Nature Reserve, Lazovskii Nature Reserve, Okeanskaya, Ryazanovka, Sedanka, 25 km SW Slavyanka, 20 km SE Ussuriisk, 30 km SE Ussuriisk, 50 km SE Ussuriisk, Vladivostok.

Distribution. A continental Eastern Palaearctic species. Southern Far East of Russia (Primorsk Terr.; **first record**: Khabarovsk Terr.), North Korea (Ebmer, 1978b: 311, "*E. problematicus*"), China (Yunnan, Sichuan, and Shanxi: Ebmer & Sakagami, 1994: 27; Ebmer, 2002: 864). The record of the species from Japan (Yakushima and Honshu; Ebmer & Sakagami, 1994: 27) based on females needs confirmation.

47. **Evylaeus (Smeathhalictus) briseis** (Ebmer, 2005) (*E. smeathmanellus* group)

The species has been recently described on the basis of three females from central Mongolia (Цмнцgovi and Bajan-Hongor). Here, it is considered an Eastern Palaearctic species consisting of two subspecies: nominotypical one, recorded from Mongolia and Tuva [Tyva Republic] of Russia, and ssp. *eomontanus* (Ebmer, 2006), distributed in Eastern Siberia and Russian Far East. The latter taxon was originally described as a separate species (both in the genus *Lasioglossum*), however, differences between these taxa are very subtle and not shared by all individuals, so to be considered infraspecific. The diagnosis of the hitherto unknown male of *E. briseis briseis* is given below, in the diagnosis of *E. briseis eomontanus*.

Diagnosis. *E. briseis* is similar to *E. ellipticeps* (Blьthgen, 1923), another Eastern Palaearctic species of the subgenus *Smeathhalictus*. It clearly differs from the latter in the following characters. *Both sexes*: head shorter, 1.0-1.05 times in females, 1.05-1.1 times in males as high as wide (vs. 1.1-1.2 times, in *E. ellipticeps*); mesoscutum somewhat more coarsely and sparsely punctate (0.5-1.5; vs. 0.3-1.0, in *E. ellipticeps*). *Females*: clypeus and supraclypeal area sparsely punctate (> 1), shiny (vs. < 1, dull, in *E. ellipticeps*); inner metatibial spur with five relatively short teeth (vs. three long processes, in *E. ellipticeps*). *Male*: face, including clypeus silk-shiny (vs. dull, in *E. ellipticeps*); tarsi yellow (vs. dark, in *E. ellipticeps*); membranous retrorse lobe pointed at apex (Figs 119, 122) (vs. widely rounded at apex, in *E. ellipticeps*; Figs 125, 126); gonostylus curved mesad (Figs 117, 118, 121) (vs. elongate elliptical, in *E. ellipticeps*; Fig. 124).

47a. **Evylaeus (Smeathhalictus) briseis briseis** (Ebmer, 2005)

Lasioglossum (*Evylaeus*) *briseis* Ebmer, 2005: 375, Figs 28-30. ♀. Holotype: ♀, Mongolia: 40 km W Dalanzadgad (Цмнцgovi); OLML.

Taxonomy. Ebmer, 2006: 566.

Material examined (7 ♂). Tuva: Lake Khindiktik, 60 km W Mugur-aksu, 2270 m, mountain steppe, 8.VIII. 1987, leg. Yu. Pesenko, ZISP.

Distribution. Tuva (**first record for Russia**), Mongolia (Цмнцgovi and Bajan-Hongor: Ebmer, 2005: 375; **first record**: Hovd, Altan-huhei Mt. Range, 60 km N Myangat, 4.VIII.1970, leg. I. Kerzhner, 1 ♂; ZISP).

47b. **Evylaeus (Smeathhalictus) briseis eomontanus** (Ebmer, 2006), stat. n.

Lasioglossum (*Evylaeus*) *eomontanum* Ebmer, 2006: 565, Figs 41-43, 47, 48, 54, 55. ♀, ?non ♂. Holotype: ♀, Russia: Gorelaya Sopka Mt. (N of Lazo, Primorsk Terr.); OLML.

Published records. Yakutia (Pesenko & Davydova, 2004: 694; "*Evylaeus angaricus*", misidentification; see Material examined); Primorsk Terr.: Gorelaya Sopka Mt. (N of Lazo), Lazovskii Nature Reserve (Konrad and Tachingouz localities; Ebmer, 2006: 565; "*Lasioglossum eomontanum*").

Material examined (54 ♂, 59 ♀). Irkutsk Prov.: Melnikovo (near Irkutsk); Yakutia: Artyk (on Nera River), Bakhanay-nashin, Neryungri, mouth of Olekma River, Olekminsk, 16 km S Tebyulyakh, 30 km ESE Ust-Nera, 90 km ESE Ust-Nera, Verkhoyansk; Chukotka: Omolon River (150 km downstream Omolon Vill.); Magadan Prov.: lower reaches of Bulun River (tributary of Kolyma River), 50 km N Seimchan; Primorsk Terr.: Anisimovka, Gorelaya Sopka Mt. (N of Lazo) (paratypes of *Lasioglossum eomontanum*), 20 km SW Krounovka.

Diagnosis. Examination of a large series of females of ssp. *eomontanus* (a total of 59 ♀, including two paratypes collected with the holotype) from its vast distributional range has shown a significant variability in the sculpture of the clypeus and mesoscutum and in some other characters. On this reason, only a few of the differences between *Lasioglossum briseis* and *L. eomontanum* indicated by Ebmer (2006: 566) can be diagnostic. As distinct from ssp. *briseis*, the metasomal terga of both sexes in ssp. *eomontanus* are usually (not always) darker, black or dark brown, with blue-green lustre (usually slight); their posterior areas usually dark, not translucent or narrowly dark yellow translucent; T1 of the female is usually finely strigulate (transversely aciculate) on the anterior surface, convex part, and posterior area (frequently T1 only with traces of such a strigulation or sometimes throughout polished). The lone character which permits to distinguish these subspecies accurately is the structure of the male gonostylus: it is strongly curved mesad (in posterior view of the genital capsule) in ssp. *eomontanus* (Fig. 121), but slightly curved in ssp. *briseis* (Figs 117, 118). Also T1 of the males of ssp. *eomontanus* is more finely and sparsely punctate (1-5) than that of males of ssp. *briseis* (1-2 or 1-3).

Taxonomic note. The description of the male of *Lasioglossum eomontanum* by Ebmer (2006: 567) rather concerns the male of *E. ellipticeps*, at least in the structure of the genitalia (see Ebmer, 2006: Figs 54, 55). Below, the true male of ssp. *eomontanus* is described.

Male. *Structure*. Body length 5.3-5.7 mm. Head nearly elliptical in front view, 1.05-1.1 times as high as wide. Clypeus projecting by two thirds of its length below eyes. Antenna long, reaching posterior end of mesosoma; 2nd flagellomere 1.3-1.7 times as long as its diameter. Propodeum long, its dorsal surface as long as scutellum, slightly concave. Posterior vertical surface of propodeum ecarinate along upper two thirds

of lateral margins, gradually curved onto lateral surfaces of propodeum. Metapostnotum ecarinate along its posterior margin. Metasoma elongate, broadened towards its posterior end, with maximum width at level of posterior margin of segment 3. Tarsi short; 2nd hind tarsomere as long as wide. Metasomal terga moderately convex on their discs, shallowly depressed in anterior parts (at their graduli). Posterior areas of terga nearly not separated from their discs by step. Membranous retrorse lobe of gonocoxite triangular, at apex pointed, 2.0-2.5 times as long as wide (Fig. 122). Gonostylus large, strongly curved mesad (Fig. 121).

Sculpture. Clypeus densely finely punctate on upper two thirds (< 1), with a few shallow pits on lower third, polished on interspaces, shiny. Supraclypeal area obscurely finely punctate, finely shagreened on interspaces, silky-dull. Paraocular area and frons very densely punctate, silk-shiny, sometimes frons or its middle part dull. Mesoscutum relatively coarsely and sparsely punctate (on disc, 15-25 μm / 0.3-1.5, sometimes up to 2.0), polished or finely shagreened on interspaces, shiny. Scutellum usually twice less coarsely and sparsely punctate, shiny. Mesopleuron very densely punctate, slightly shining. Metapostnotum moderately coarsely and densely striate; striae usually not reaching its posterior margin. Lateral and posterior vertical surfaces of propodeum granulose, dull. T1 polished or with tracks of fine strigulation on anterior surface, convex part, and posterior margin; only dorsal surface with punctation, which is fine and very sparse (1-5). T2 and T3 more coarsely and densely punctate on discs (1-2 or 1-3), polished on interspaces; usually with very fine strigulation on posterior areas.

Coloration. Head and mesosoma metallic dark green or blue-green; mesoscutum sometimes with yellowish lustre. Metasoma black, with metallic blue-green lustre, sometimes very slight. Clypeus yellow on lower third; labrum and mandible usually brown, sometimes labrum dark yellow. Antennal flagellum on upper side brown, on lower side ochre-yellow. Tarsi yellow; rest parts of legs dark brown. Posterior areas of metasomal terga dark or narrowly dark yellow tranlucent.

Vestiture. Lower half of face covered with dense whitish tomentum. Pubescence of frons, vertex, genal areas, and mesosoma dirty-yellowish. T2-T4 with anterior lateral spots of whitish tomentum. Ventral surface of metasoma with not dense whitish hairs directed backward, which become longer and denser on sides of the posterior halves of S3-S5 and laterotergites 3-5.

Distribution. Eastern Siberia and Russian Far East (Primorsk Terr.; **first records**: south of Irkutsk Prov., Yakutia, Chukotka, and Magadan Prov.).

48. **Evylaeus (Smeathhalictus) ellipticeps** (Blьthgen, 1923) (*E. smeathmanellus* group)

Halictus ellipticeps Blьthgen, 1923: 254. ♀. Holotype: ♀, Russia: "Amur (Staudinger)" [?Khabarovsk Terr.]; MNB; examined.

Halictus permicus Blьthgen, 1923: 330. ♂ "Perm" (in description). Lectotype (**designated here**): ♂; labels: "Perm" (Radoszkowski's hand), "*leucopus* K." (written by Radoszkowski), "*Halictus permicus* m. ♂. Type [written by Blьthgen]. P. Bluthgen det. [printed]"; IZK. The species was described from two males. The second male (paralectotype) labelled "*Halictus permicus* m. ♂. Cotype. P. Bluthgen det." is deposited at MNB, examined. Synonymy by Ebmer (1978b: 310).

Halictus (*Chloralictus*) *mayacensis* Cockerell, 1924b: 582. ♀. Syntypes: 19 ♀, Russia: "Low Lighthouse" [30 km SE Olga; Primorsk Terr.]; 17 ♀ at USMW, 2 ♀ ("cotypes") at ZISP, examined. Synonymy by Blьthgen (1931b: 215).

Taxonomy. Blьthgen, 1931b: 215; Ebmer, 1978b: 310; 1982: 215; 1996: 282, 283; 2006: 566, 567, Figs 44-46, 49, 50-53.

Published records. Yakutia (Pesenko & Davydova, 2004: 694; see Material examined); Khabarovsk Terr.: "Amur" (Blьthgen, 1923: 255), 20 km N Bikin (Ebmer, 1996: 283); Primorsk Terr.: "Low Lighthouse" (30 km SE Olga) (Cockerell, 1924b: 582, *Halictus mayacensis*).

Material examined (13 ♂, 54 ♀). Irkutsk Prov.: Maritui; Yakutia: mouth of Labya River (right bank of Lena River); Khabarovsk Terr.: Bikin, Komsomolsk-on-Amur, Myaocham Mt. Range; Primorsk Terr.: Anisimovka, Barabash-Levada, Chandalaz Mt. Range, Evseyevka, "Kedrovaya Pad" Nature Reserve, 7 km E Khasan, Kievka, 20 km SW Krounovka, Okeanskaya, 15 km SW Partizansk, Russkii Island, Ryazanovka, 25 km SW Slavyanka, Spassk, 30 km SE Ussuriisk, Vladivostok.

Distribution. A Siberian and Eastern Palaearctic species, from the Urals in the west, as far in the east as the Pacific Ocean. Eastern Palaearctic Region: Russia (Yakutia, Khabarovsk and Primorsk Terr.; **first record**: south of Irkutsk Prov.), Mongolia (Тцv and Uvs: Ebmer, 1982: 215; 2005: 375), North Korea (Ebmer, 1978b: 310).

Discussion: distributional patterns

In the fauna of Eastern Siberia and the Russian Far East, the genus *Evylaeus* is the richest among all other genera of Halictinae. It consists of 48 species, i.e. 15.1% of the Palaearctic fauna of the genus. The genus *Evylaeus* is represented in the Eastern Palaearctic Region by diverse zoogeographical (chorological) elements, i.e. species having different geographical ranges:

(1) Holarctic (1 species), *E. rufitarsis*;

(2) transpalaearctic or nearly so (7), *E. albipes*, *E. calceatus*, *E. fratellus*; *E. fulvicornis*, *E. matianensis*, *E. subfulvicornis*, and *E. villosulus*;

(3) Western Palaearctic, only penetrating into the Eastern Palaearctic Region as far as Lake Baikal and Yakutia (3), *E. leucopus*, *E. lucidulus*, *E. quadrinotatulus*;

Table 2. Occurrence of *Evylaeus* species in Eastern Siberia and the Far East of Russia.

Species	Cisbaikalia[1]	Transbaikalia[2]	Yakutia	Northern Far East[3]	Southern Far East[4]	Sakhalin	Kurils
E. affinis	–	–	–	–	+	–	–
E. albipes	+	+	–	–	+	+	+
E. allodalus	–	–	–	–	+	–	–
E. amurensis	–	–	–	–	+	–	–
E. angaricus	–	+	–	–	+	–	–
E. apristus	–	–	–	–	+	–	+
E. baleicus	+	+	–	–	+	+	+
E. brachycephalus	–	–	–	–	+	–	–
E. briseis	+	–	+	+	+	–	–
E. calceatus	+	+	+		+	+	+
E. caliginosus	+	–	–	–	+	–	–
E. dybowskii	–	–	–	–	+	+	–
E. ellipticeps	+	–	+	–	+	–	–
E. epiphron	+	–	–	–	+	–	–
E. eriphyle	–	–	–	–	+	–	+
E. fratellus	+	+	+	+	+	+	+
E. fulvicornis	+	–	+	–	+	+	+
E. gorge	–	–	+	–	–	–	–
E. hoffmanni	–	–	–	–	+	–	–
E. kankaucharis	–	–	–	–	+	–	–
E. kiautschouensis	–	–	–	–	+	–	–
E. laevoides	+	+	–	–	–	–	–
E. leucopus	+	+	+	–	–	–	–
E. lucidulus	+	–	–	–	–	–	–
E. matianensis	–	–	–	–	+	–	–
E. miyabei	–	–	–	–	+	–	+
E. monstrificus	+	–	–	–	–	–	–
E. nipponensis	–	–	–	–	+	+	+
E. nodicornis	+	+	–	–	–	–	–
E. pallilomus	–	–	–	–	+	–	–
E. perplexans	–	–	–	–	+	–	–
E. problematicus	–	–	–	–	–	+	+
E. quadrinotatulus	+	+	+	–	–	–	–
E. rufitarsis	+	+	+	+	+	+	+
E. sakagamii	–	–	–	–	+	–	–
E. semilaevis	+	+	–	–	+	–	–
E. sibiriacus	–	–	–	–	+	–	–
E. simplicior	–	–	–	–	+	–	–
E. speculinus	–	–	–	–	+	–	–
E. subfulvicornis	+	+	+	+	+	+	+
E. sulcatulus	–	–	–	–	+	–	+
E. transpositus	–	–	–	–	+	–	–
E. trichorhinus	–	–	–	–	+	–	–
E. villosulus	+	–	–	–	+	–	–
E. viridellus	–	–	–	–	+	–	–
E. virideglaucus	–	–	–	–	+	–	–
E. vulsus	+	–	–	–	+	–	+
E. yakuticus	+	+	+	–	+	–	–
Total: 48	21	13	11	4	40	10	14

Notes: Explanation of regions: (1) Tuva, south of Krasnoyarsk Terr., and south of Irkutsk Prov.; (2) Buryatia and Chita Prov.; (3) Chukotka, Kamchatka, and Magadan Prov.; (4) Amur Prov., Khabarovsk (including Jewish Autonomous Prov.) and Primorsk Terr.

(4) endemic or subendemic to the Southeastern Palaearctic Region (28), *E. affinis*, *E. allodalus*, *E. amurensis*, *E. angaricus*, *E. apristus*, *E. baleicus*, *E. briseis*, *E. caliginosus*, *E. dybowskii*, *E. ellipticeps*, *E. epiphron*, *E. eriphyle*, *E. hoffmanni*, *E. kankaucharis*, *E. kiautschouensis*, *E. laevoides*, *E. nipponensis*, *E. pallilomus*, *E. sakagamii*, *E. semilaevis*; *E. sibiriacus*, *E. simplicior*, *E. speculinus*, *E. sulcatulus*, *E. trichorhinus*, *E. viridellus*, *E. virideglaucus*, and *E. vulsus*;

(5) endemic to the western part of the Southeastern Palaearctic Region (Eastern Siberia, Mongolia, and northern China) (4), *E. gorge*, *E. monstrificus*, *E. nodicornis*, and *E. yakuticus*;

(6) endemic to the south of the Russian Far East and Japan (5), *E. brachycephalus*, *E. miyabei*, *E. perplexans*, *E. problematicus*, and *E. transpositus*.

Thus, the majority of species (37 species, 77.1% of the fauna) are endemic or subendemic to the Southeastern Palaearctic Region (see the three last items).

The occurrence of *Evylaeus* species in different parts of the region under study, according to the available data, is given in the Table 2 below. The fauna of the Southern Far East of Russia includes the most number of species (40), the fauna of the Northern Far East of Russia are the poorest (4 species).

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