

A Review of the Subgenera *Nanodiaparsis*, *Ischnobatis*, and *Lanugoparsis* subgen. n. of the Genus *Diaparsis* Förster (Hymenoptera, Ichneumonidae) with Descriptions of New Species

A. I. Khalaim

Zoological Institute, Russian Academy of Sciences, St. Petersburg, 199034 Russia

Received September 21, 2001

Abstract—The subgenera *Ischnobatis*, *Nanodiaparsis*, and *Lanugoparsis* subgen. n., of the genus *Diaparsis* are reviewed and four new species of this genus are described. *D. (N.) ussuriensis* sp. n. (southern Primorskii Territory) is very similar to *D. (N.) frontella*, differing in the short basal area of the propodeum and complete longitudinal carinae of the apical area. *D. (N.) manukyani* sp. n. (Kunashir, Kuril Islands) differs from the European *D. (N.) aperta* in the smooth and punctate mesopleuron, shorter ovipositor sheath, and ovipositor with wider subapical dorsal notch and distinct apical ventral teeth. *D. (N.) clypeata* sp. n. (environs of St. Petersburg) is easily distinguished from other species by the following characters: head long and weakly narrowed behind eyes, mandibles large, clypeus about 4 times as wide as long, and ovipositor with a distinct tooth before subapical dorsal notch. *Lanugoparsis* subgen. n., comprising the only species *D. (L.) clavata* sp. n. (East Europe, Central Asia), is easily recognized by its short, 16–18-segmented antenna with large ultimate segment, dense velvet pubescence of propodeum, and narrow ovipositor nearly as long as body. A key to all 5 Palaearctic species of the subgenus *Nanodiaparsis* is given. New data are presented on the distribution of *D. (N.) aperta*, *D. (N.) frontella*, and *D. (Ischnobatis) stramineipes*.

Ichneumonids of the subfamily Tersilochinae, which includes the genus *Diaparsis*, are larval endoparasites of small beetles of the families Nitidulidae, Cisidae, Chrysomelidae, Curculionidae, etc. Tersilochinae are among the smallest ichneumonids, being from 1.6 to 9.5 mm long. The European fauna of the subfamily was revised by Horstmann (1971, 1981). The results of this revision are reflected in the keys by Kasparyan (1981).

Nanodiaparsis Horstmann was originally (Horstmann, 1971) described as a genus related to the genus *Diaparsis*, and comprised only two European species: *D. aperta* (Thomson) and *D. frontella* (Holmgren). Later, Horstmann (1981) downgraded *Nanodiaparsis* to a subgenus of *Diaparsis* and presented new data on the distribution of its species in West Europe.

In the present paper, three new species of the subgenus *Nanodiaparsis* are described, one from Europe (NW Russia) and two from the southern part of Far Eastern Russia, a key is given to females of all 5 species of this subgenus, with 3 European and 2 Far-Eastern species included, and the eastern borders of distribution ranges are refined for previously known species. New data on the distribution are presented for

D. (I.) stramineipes (Brischke), the only species of the subgenus *Ischnobatis* Förster. A new species, *D. clavata* sp. n., is described from eastern Europe and central Asia, and a new subgenus, *Lanugoparsis*, similar in some characters to the subgenus *Nanodiaparsis*, is established to accommodate this new species.

The material used in the present paper is deposited at the Zoological Institute, Russian Academy of Sciences (St. Petersburg) and Institute of Zoology, National Academy of Sciences of Ukraine (Kiev). The types of new species are kept at the Zoological Institute, Russian Academy of Sciences.

GENUS *DIAPARSIS* FÖRSTER, 1869

The genus *Diaparsis* comprises 5 subgenera: *Diaparsis* s. str. (18 species; distributed worldwide), *Ischnobatis* Förster (1 species; Palaearctic), *Lanugoparsis* subgen. n. (1 species; Palaearctic), *Nanodiaparsis* Förster (5 species; Palaearctic), and *Pseudaneuclis* Horstmann (1 species; Europe).

Subgenus *ISCHNOBATIS* Förster, 1869

Type species *Thersilochus (Ischnobatis) stramineipes* Brischke, 1880.

Description. Ventral part of occipital carina curved outwards to form a wide lobe, separated by crenulate groove from temple at the level of ventral third of eye, and forming a upwards-produced tooth at junction with hypostomal carina.

Diaparsis (Ischnobatis) stramineipes
(Brischke, 1880)

Material. A total of 10 ♀ and 4 ♂ examined. Russia: St. Petersburg, Yaroslavl, Buryatia (Selenduma Settl.), Chita Province (15 km NE of Olovyannaya), Kunashir Island (Dubovoe); Ukraine: Zaporozh'e Province (20 km NE of Melitopol), Donetsk Province ("Khomutovskaya Step" Nature Reserve, Amvrosievka).

Distribution. A Transpalaeartic boreal species. Russia, Ukraine, Kazakhstan. Ireland, S England, Germany, Denmark, S Sweden, Hungary.

Biology. A parasite of ?*Balaninus* sp. (in galls of *Pontania*) and *Curculio salicivorus* Paykull (Curculionidae). Flying from May to July.

Subgenus *NANODIAPARSIS* Horstmann, 1971

Type species *Thersilochus frontellus* Holmgren, 1860.

Description. Prepectal carina forming very acute angle with anterior margin of mesopleura. Basal area of propodeum in the form of longitudinal (occasionally indistinct) carina, more than half as long as apical area and often equal to it in length (in other subgenera, except *Lanugoparsis* subgen. n., basal area shorter). Antennae 20–26-segmented. Most of head and mesosoma usually finely granulate, matte. Sternauli absent or hardly marked in the form of rugosity. Ovipositor strong, weakly bent upwards, with dorsal apical notch.

Key to species of the subgenus Nanodiaparsis
(females)

1. Sheath of ovipositor distinctly shorter than tergite I 2.
- Sheath of ovipositor longer than tergite I 3.
2. Basal propodeal carina longer than, or as long as apical area; apical area transverse, usually round, its longitudinal carinae usually absent or incomplete (Figs. 9, 11) 1. *D. (N.) frontella* (Holmgren).
- Basal propodeal carina distinctly shorter than apical area; apical area elongate, nearly as long as wide,

with complete longitudinal carinae (Figs. 10, 12)
..... 2. *D. (N.) ussuriensis* sp. n.

3. Temples long, weakly narrowed behind eyes (Fig. 3); mandibles strongly enlarged, with subparallel sides (Fig. 6); clypeus very short, almost 4 times as wide as high (Fig. 4)
..... 5. *D. (N.) clypeata* sp. n.

—Temples rather short, strongly narrowed behind eyes (Fig. 2); mandibles not enlarged, distinctly narrowed apically (Fig. 5); clypeus not shortened, about twice as wide as high (Fig. 4) 4.

4. Mesopleura granulate, impunctate or partly and indistinctly punctate; sheath of ovipositor nearly twice as long as tergite I; ovipositor ventroapically without teeth 3. *D. (N.) aperta* (Thomson).

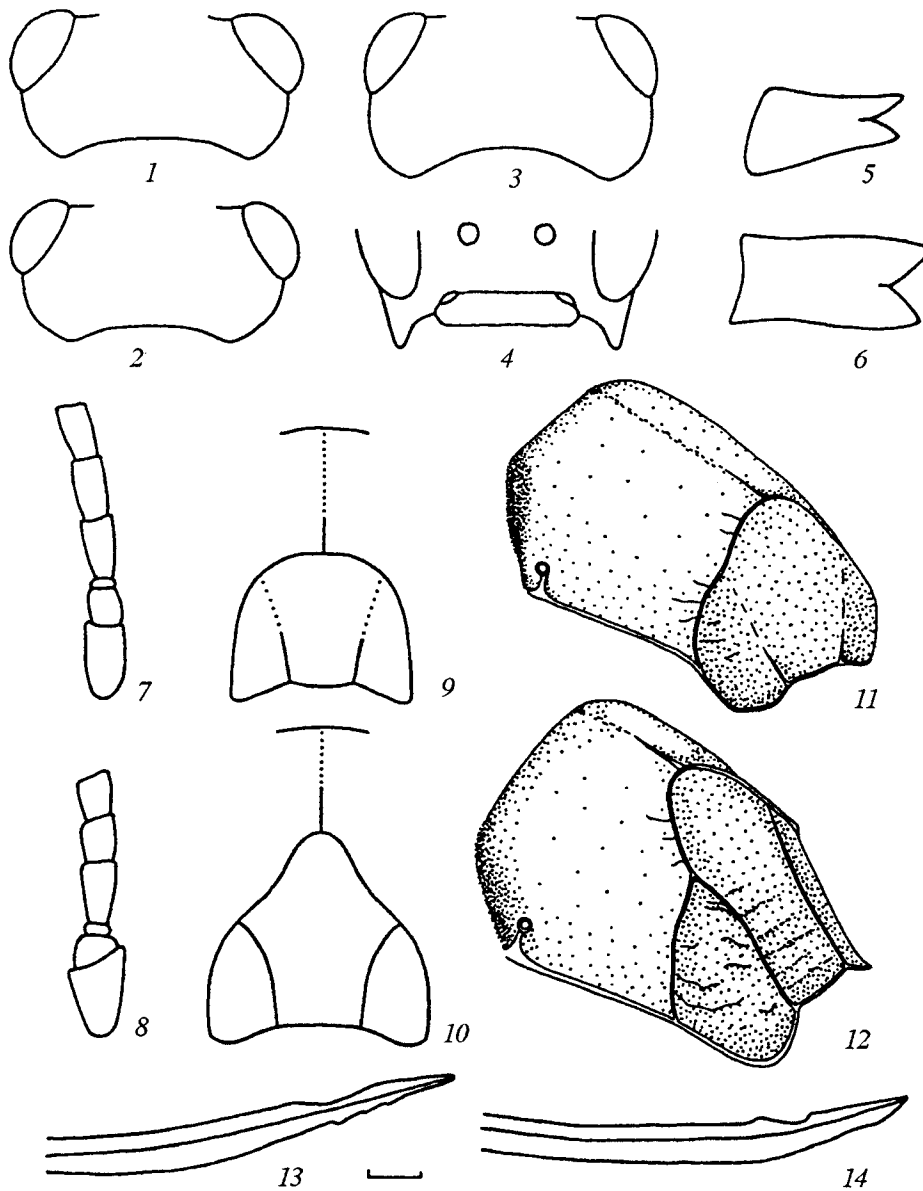
—Mesopleura entirely with fine, but distinct punctuation over smooth surface; sheath of ovipositor slightly longer than tergite I; ovipositor ventroapically with teeth (Fig. 13)
..... 4. *D. (N.) manukyani* sp. n.

1. *Diaparsis (Nanodiaparsis) frontella*
(Holmgren, 1860) (Figs. 9, 11)

Variability. In some specimens, propodeum with quite developed longitudinal carinae of apical area. Occasionally, apical area slightly elongate (this character is most pronounced in a specimen from Chita Province).

Material. A total of 80 ♀ and 9 ♂ examined. Russia: Krasnodar Territory (Sochi), Stavropol Territory (20 km N of Stavropol), Chita Province (20 km N of Kondui Settl.); Estonia: Elva; Byelorussia: 20 km W of Turov, Turov, 30 km E of Turov, Belovezhskaya Pushcha Nature Reserve; Ukraine: Transcarpathian Province (Rakhov), Ternopol Province (Nature Reserve Medobory), Kiev, Poltava Province (Mirgorod), Nikolaev Province (Tiligul Firth), Crimea (Karagach Range, Angarskii Pass, Simferopol, Bakhchisarai); Moldavia: Brichany; Georgia: Abkhazia (Gulripshi), Sioni, 35 km W of Tsiteli-Tskaro; Azerbaijan: She-makha, Badara; Kazakhstan: East-Kazakhstan Province (10 km ENE of Nikitinka).

Distribution. A Western-Palaeartic southern-boreal species. Russia (North Caucasus, Chita Province), Estonia, Byelorussia, Ukraine, Moldavia, Georgia, Azerbaijan, East Kazakhstan. England, France (including Corsica), Germany, Sweden, Finland, Czech Republic, Hungary.



Figs. 1–14. *Diaparsis* Förster. (1–3) head dorsally: (1) *D. ussuriensis* sp. n., (2) *D. manukyani* sp. n., (3) *D. clypeata* sp. n.; (4) *D. clypeata* sp. n., face and clypeus; (5, 6) mandible: (5) *D. aperta*, (6) *D. clypeata* sp. n.; (7, 8) base of antenna: (7) *D. manukyani* sp. n., (8) *D. clypeata* sp. n.; (9, 10) basal and apical areas of propodeum: (9) *D. frontella*, (10) *D. ussuriensis* sp. n.; (11, 12) propodeum: (11) *D. frontella*, (12) *D. ussuriensis* sp. n.; (13, 14) apex of ovipositor: (13) *D. manukyani* sp. n., (14) *D. clypeata* sp. n. Scale to Figs. 13–14: 0.2 mm.

Biology. A parasite of *Scolytus rugulosus* (Müller) (Scolytidae). Flying from July to October.

2. *Diaparsis* (*Nanodiaparsis*) *ussuriensis* Khalaim, sp. n. (Figs. 1, 10, 12)

The species is close to *D. frontella*, differing from it in the shorter basal carina and the shape of the apical area of propodeum (see the key). The sternauli are marked with distinct rugosity (in *D. frontella*, the ster-

nauli are not marked or, at most, the granulation is slightly denser in this place). The new species may be considered an eastern vicariant of *D. frontella*.

Description. Female. Temples roundly narrowed behind eyes (Fig. 1). Upper mandibular tooth longer than lower one. Clypeus smooth, with sparse punctures in upper part. Malar space distinctly shorter than basal width of mandible. Antennae 20–24-segmented. Face, frons, and vertex more or less granulate, finely

punctate. Temples, in places, finely and sparsely punctate over smooth or, in part, finely granulate surface.

Mesosoma punctate, more or less smooth, matte shining, finely granulate in places. Sternauli marked with rugosity. Propodeum finely rugose-granulate, matte; basal carina distinctly shorter than apical area; apical area elongate, nearly as long as wide, with complete longitudinal carinae (Figs. 10, 12).

Most of tergite I smooth. Pedicel finely striate before glymmae and sometimes dorsally. Glymmae rounded. Thyridia 2–3 times as long as wide. Sheath of ovipositor distinctly shorter than tergite I. Ovipositor short; apex of lower valve usually weakly serrate.

Body black. Antennae pale basally. Palpi, mandibles (except teeth), tegulae, and legs red-brown. Pterostigma brown. Coxae darkened, hind ones almost black. Metasoma behind tergite I dark brown.

Size (mm). Lengths: body 4.0; fore wing 3.0; mesosoma 1.3; tergite I 0.86; tergite II 0.44; ovipositor sheath 0.6. Widths: head 0.9; mesosoma 0.7; tergite II in anterior part 0.21.

Male unknown.

Material. Holotype: ♀, Primorskii Territory, 20 km SE of Ussuriisk, Gornotaezhnoe, forest, glades, 2.VIII.1991 (Belokobylskij). Paratypes: Primorskii Territory, label as in holotype, 1 ♀; Vladivostok, Marine cemetery, oak forest, bushes, 24.VIII.1988 (Belokobylskij), 1 ♀; Shkotovo District, Peishula, mixed forest, 29.VII.1972 (Kuslitskii), 1 ♀; Ussuri (Suputinskii) Nature Reserve, on blooming Umbelliferae and *Matricaria*, 30.VII.1972 (Kozlov), 1 ♀; Lazo (Sudzhinskii) Nature Reserve, Tachingouz Bay, oak forest, 8–9.VIII.1972 (Kozlov), 1 ♀.

Distribution. Russia: Primorskii Territory.

3. *Diaparsis (Nanodiaparsis) aperta* (Thomson, 1889) (Fig. 5)

Variability. In some specimens, tergite I with slightly marked groove connecting glymmae with ventral side of postpetiole.

Material. A total of 18 ♀ and 2 ♂ examined. Russia: Stavropol Territory (Teberda Nature Reserve); Moldavia: Kishinev, Tatareshty; Ukraine: Crimea (Mt. Chatyr-Dag, Karagach Range); Georgia: Abkhazia (Lake Ritsa); Armenia: Kafan, Goris; Azerbaijan: Zakataly Nature Reserve; Kirgizia: Chonuryukty. Slovakia: Bratislava.

Distribution. Central and southern Europe, Turkey, Caucasus, Kirghizia.

Flying from May to August.

4. *Diaparsis (Nanodiaparsis) manukyani* Khalaim, sp. n. (Figs. 2, 7, 13)

The species is close to the European *D. aperta*, differing in the shining and distinctly punctate mesopleura, shorter ovipositor sheath, and the shape of the ovipositor (see the key).

Description. Female. Temple length almost equal to eye width; temples moderately narrowed behind eyes (Fig. 2). Upper mandibular tooth longer than lower one. Mandibles punctate in basal part. Clypeus smooth, in upper part with scarce punctures. Malar space shorter than basal width of mandible. Antenna 21-segmented (Fig. 7). Face and frons finely granulate; frons, in addition, minutely punctate. Vertex and temples matte, with very fine and scattered punctures.

Mesonotum with indistinct punctuation over minutely granulate matte surface. Mesopleura for the most part smooth, matte shining, with moderately dense punctuation. Metapleura granulate. Propodeum indistinctly rugose-granulate (sometimes almost smooth), matte; basal area shorter than apical; longitudinal carinae of apical area marked only in its distal part.

Metacarpus slightly not reaching apex of fore wing.

Most of tergite I smooth. Glymmae rounded, forming moderately long groove anteriorly. Thyridia more than twice as long as wide. Ovipositor sheath slightly longer than tergite I. Ovipositor strong, with smooth dorsal notch at apex, distinctly serrate ventrally (Fig. 13).

Body black. Antennae dark with paler bases. Palpi, mandibles (except for teeth), clypeus apically, tegulae, and legs, all red-brown. Pterostigma brown. Coxae and metasoma behind tergite I dark brown.

Size (mm). Lengths: body 3.9; fore wing 3.2; mesosoma 1.4; tergite I 0.86; tergite II 0.43; ovipositor sheath 1.2. Widths: head 0.9; mesosoma 0.7; tergite II in anterior part 0.25.

Male unknown.

Material. Holotype: ♀, Kuril Islands, Kunashir, Golovnina Volcano, 24.VIII.1973 (Kasparyan). Paratype: Kuril Islands, Kunashir, Tretyakovo, 3.VIII.1973 (Kasparyan), ♀.

Etymology. The species is named after Andranik Manukyan who greatly contributed to the study of ichneumonids in Russia.

Distribution. Russia: Kunashir Island.

5. *Diaparsis (Nanodiaparsis) clypeata* Khalaim, sp. n.
(Figs. 3, 4, 6, 8, 14)

This species is easily distinguished from other species of the subgenus by the long temples weakly narrowed behind eyes, strongly enlarged mandibles, short clypeus, small distance between the posterior ocelli, presence of a distinct groove connecting the glymmae with the ventral side of the postpetiole, and shape of ovipositor (see the key).

Description. Female. Temples long, very weakly narrowed behind eyes (Fig. 3). Mandibles strongly enlarged, almost parallel-sided, punctate in basal part; their upper tooth longer than lower one (Fig. 6). Clypeus very short, almost 4 times as wide as long, with almost straight upper and lower margins (Fig. 4), separated from face by sharp straight groove; surface of clypeus tuberculate. Malar space equal to half of mandible basal width. Antennae 24-segmented, attached below middle of head; flagellum with short segments (Fig. 8). Distance between posterior ocelli distinctly less than that between posterior ocellus and eye. Face short, indistinctly rugose-punctate. Frons, vertex, and temples smooth, shining; frons with very fine and scattered punctures.

Mesonotum and mesopleura with very fine and scattered punctures over more or less smooth surface. Sternauli slightly marked with weak wrinkles. Propodeum dorsolaterally with fine punctation over smooth or, in places, finely granulate surface. Propodeal carinae mostly weak and incomplete. Basal area of propodeum distinctly shorter than apical area. Apical area shallowly rugose, rounded in anterior part.

Metacarpus not reaching apex of fore wing.

Glymmae located somewhat behind middle of tergite I and connected with ventral side of postpetiole by distinct groove. Most of tergite I smooth; pedicel shortly and finely striate before and below glymmae. Thyridia nearly twice as long as wide. Ovipositor sheath slightly longer than tergite I. Ovipositor strong, with distinct dorsal notch and tooth anterior to it (Fig. 14).

Body black. Antennae pale basally. Palpi, mandibles (except for teeth), lower part of clypeus, tegulae, and legs yellow-red. Pterostigma and metasoma be-

hind tergite I dark brown. Middle and hind coxae darkened (hind ones almost black).

Size (mm). Lengths: body 4.7; fore wing 3.5; mesosoma 1.5; tergite I 0.8; tergite II 0.47; ovipositor sheath 1.0. Widths: head 0.92; mesosoma 0.6; tergite II in anterior part 0.26.

Male. Antennae 26-segmented. Clypeus longer, with rounded upper and lower margins.

Material. Holotype: ♀, 16 km S of St. Petersburg, environs of Pushkin, meadow, willows, 23.VIII.1987 (Kasparyan). Paratypes: label as in holotype, 1 ♀, 2 ♂.

Distribution. Russia: environs of St. Petersburg.

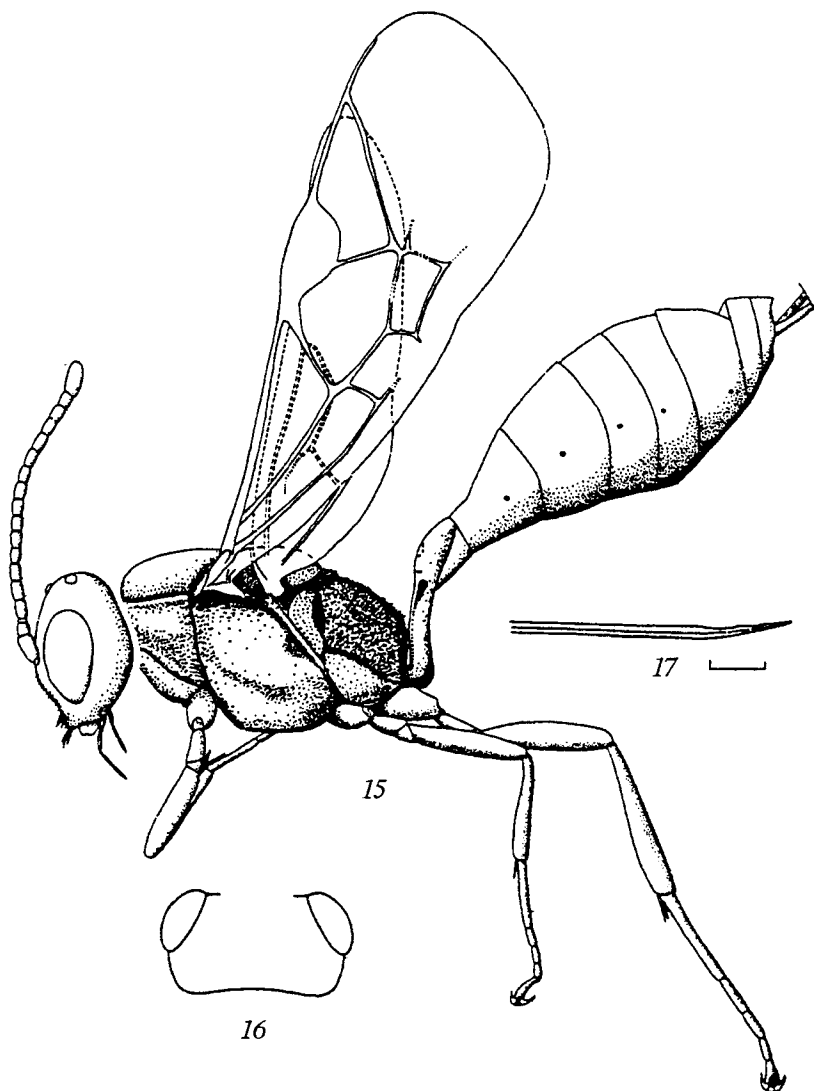
Subgenus *LANUGOPARSIS* Khalaim, subgen. n.
(Fig. 15)

Type species *Diaparsis (Lanugoparsis) clavata* Khalaim, sp. n.

This subgenus is easily distinguished from others by the short, clavate, 16–18-segmented female antenna with enlarged ultimate segment, dense velvet pubescence of the propodeum, and very slender, long (nearly as long as body), and scarcely curved ovipositor. The new subgenus is close to the subgenus *Nanodiaparsis* in the following characters: prepectal carina making a very acute angle with the anterior margin of the mesopleura and long, longer than the apical area, basal area of the propodeum. In species of the subgenus *Diaparsis* s. str., the ovipositor is sometimes of the same length, but thicker. Other features of the body structure and wing venation are given in the description of the species and in Fig. 15.

Diaparsis (Lanugoparsis) clavata Khalaim, sp. n.
(Figs. 15–17)

Description. Female. Temples relatively short, feebly narrowed behind eyes (Fig. 16). Upper mandibular tooth longer than lower tooth. Malar space slightly shorter than basal width of mandible. Hypostomal carina absent, surface there usually with fine longitudinal wrinkles. Clypeus smooth, punctate in upper part, with rounded ventral margin. Antenna short, 16–18-segmented; segments relatively short, more or less clavate; ultimate segment usually markedly larger than others (Fig. 15). Distance between posterior ocelli subequal to that between posterior ocellus and eye. Face and frons finely granulate and indistinctly punctate. Vertex with very fine and scattered punctation over minutely granulate surface. Temples smooth, matte shining, with minute and scattered punctation.



Figs. 15–17. *Diaparsis clavata* sp. n., female. (15) habitus; (16) head dorsally; (17) apex of ovipositor. Scale: 0.2 mm.

Mesosoma granulate; mesonotum, in addition, finely punctate. Mesosternum punctate over smooth surface. Notauli and sternauli absent. Propodeum entirely covered with velvety pubescence, with sculpture and carinae of propodeum, therefore, invisible. Basal area of propodeum longer than, or subequal to apical area. Distance between propodeal spiracles and pleural carina exceeding 3 diameters of spiracle.

Second recurrent vein postfurcal, not pigmented in anterior part. Metacarpus distinctly not reaching apex of fore wing. Medial vein not pigmented distally.

Most of tergite I smooth. Glymmae rounded, not connected by groove with ventral side of postpetiole; surface of pedicel sometimes finely striate before glymmae. Thyridia 1.5–2.0 times as long as wide.

Ovipositor sheath slightly shorter than body. Ovipositor straight (only slightly curved apically) and very slender (compare Fig. 17 with Figs. 13–14); subapical dorsal notch shallow (Fig. 17).

Body black. Palpi, mandibles (except for teeth), lower part of clypeus, tegulae, pterostigma, and legs red-brown. Coxae, trochanters, middle and hind femora, and hind tibiae darkened (to black).

Size (mm). Lengths: body 3.9; fore wing 2.5; antenna 1.3; mesosoma 1.3; tergite I 0.7; tergite II 0.4; ovipositor sheath 2.9. Widths: head 0.8; mesosoma 0.6; tergite II in anterior part 0.25.

Male. Antenna 22–24-segmented, nonclavate; ultimate segment not enlarged.

Material. Holotype: ♀, western Kazakhstan [Ural] Province, Priuralnyi District, 3 km S of State Farm Krasnovskii, forest cutting, on Umbelliferae, 12.VI.1951 (Tobias). Paratypes. Russia: Volgograd, Agricultural Institute, steppified waste land, 11.VI.1977 (Kasparyan), 1 ♀, 2 ♂. Kazakhstan: label as in holotype, 3 ♀, 5 ♂; Akmolinsk Province: near Mts. Kokchetav, flood-plain of Terisakkan River, on flowers, 2. and 13.VI.1957 (Tobias), 2 ♀; 10 km N of Lake Zharkol (Southern), left bank of Terisakkan River, steppe forbs, 23.VI.1957 (Tobias), 1 ♀; same locality, on flowers, 23.VI.1957 (Tobias), 9 ♀, 4 ♂; Kokchetav Province, Borovoe, 12.VII.1932 (Popov), 1 ♀; Karaganda Province, Mts. Kent, on Umbelliferae flowers, 23.VII.1957 (Tobias), 1 ♀; Semipalatinsk Province, NNW of Tarbagatai, 20.VII.1983 (Belokobylskij), 1 ♀. Mongolia: Gobi Altai Aimak, 15 km ENE of Dzakhoi, 16.VII.1970 (Kerzhner), 1 ♀; Hovd Aimak, spring Nariin-Bulak, Ikh-Khavtgiin-Nuru Range, 24.VII.1970 (Kerzhner), 1 ♀, 1 ♂.

Distribution. Russia (Volgograd), Kazakhstan, Mongolia.

ACKNOWLEDGMENTS

The author is grateful to A.G. Kotenko and N.B. Narolskii (Institute of Zoology, National Academy of Sciences of Ukraine) for the material supplied.

REFERENCES

1. Horstmann, K., Revision der europäischen Tersilochinen I (Hymenoptera, Ichneumonidae), *Veröff. Zool. Staatssamml. München*, 1971, vol. 15, pp. 45–138.
2. Horstmann, K., Revision der europäischen Tersilochinen II (Hymenoptera, Ichneumonidae), *Spixiana*, München, 1981, suppl. 4.
3. Kasparyan, D.R., Subfamily Tersilochinae, *Opredelitel' nasekomykh Evropeiskoi chasti SSSR* (A Key to the Insects of the European USSR), Vol. 3, *Pereponchatokrylye* (Hymenoptera), Part 3, Leningrad: Nauka, 1981, pp. 351–368.
4. Townes, H., The Genera of Ichneumonidae, *Mem. Amer. Entomol. Inst.*, 1971, no. 17, part 4.
5. Yu, D. and Horstmann, K., Catalogue of World Ichneumonidae (Hymenoptera), *Mem. Amer. Entomol. Inst.*, 1997, vol. 58, part 2, pp. 764–1558.