Entomofauna

ZEITSCHRIFT FÜR ENTOMOLOGIE

Band 27, Heft 11: 133-168 ISSN 0250-4413 Ansfelden, 30. April 2006

New genera and species of gall midges from the Russian Far East
(Diptera, Cecidomyiidae)

Zoya A. FEDOTOVA & Vasily S. SIDORENKO

Abstract

New taxa of gall-midges (Diptera, Cecidomyiidae) from Russian Far East are described: *Coquillettomyia clara* **sp. nov.**, *C. rara* **sp. nov.**, *Karshomyia* (*K.*) *melioria* **sp. nov.**, *K.* (*Hiastatus*) *pusilla* **sp. nov.**, *Gybbosidiplosis admixta* **sp. nov.**, *Lianodiplosis taeniata* **gen. nov.** et **sp. nov.**, *Poridiplosis semiaperta* **gen. nov.** et **sp. nov.**, *Ligulodiplosis fimbriata* **gen. nov.** et **sp. nov.**, *Setodiplosis unifaria* **gen. nov.** et **sp. nov.**, *Efferatodiplosis ornata* **gen. nov.** et **sp. nov.**, *Aquidiplosis ampla* **sp. nov.**, *Resseliella tenera* **sp. nov.**, *Dicrodiplosis marikovskii* **sp. nov.**, *Spirodiplosis implexa* **gen. nov.** et **sp. nov.**

Zusammenfassung

Neue Taxa von Gallmücken (Diptera, Cecidomyiidae) aus Russland Fern Ost werden beschrieben: *Coquillettomyia clara* **sp. nov.**, *C. rara* **sp. nov.**, *Karshomyia* (*K.*) *meliorius* **sp. nov.**, *K.* (*Hiastatus*) *pusilla* **sp. nov.**, *Gybbosidiplosis admixta* **sp. nov.**, *Lianodiplosis taeniata* **gen. nov.** et **sp. nov.**, *Poridiplosis semiaperta* **gen. nov.** et **sp. nov.**, *Ligulodiplosis fimbriata* **gen. nov.** et **sp. nov.**, *Setodiplosis unifaria* **gen. nov.** et **sp. nov**., *Efferatodiplosis ornata* **gen. nov.** et **sp. nov.**, *Aquidiplosis ampla* **sp. nov.**, *Resseliella tenera* **sp. nov.**, *Dicrodiplosis marikovskii* **sp. nov.**, *Spirodiplosis implexa* **gen. nov.** et **sp. nov.**

Introduction

This article is devoted to descriptions of some new taxa of gall midges collected in 2001 and 2004 in Primorskii krai, Russia. Holotypes and part of the paratypes of the new

species are deposited in the Zoological Institute, St.-Petersburg, Russia, the other paratypes in the collections of the Institute of Biology and Soil Science, Far Eastern Division of the Russian Academy of Sciences, Vladivostok.

The abbreviations used throughout the text are as follows: F1, F2, ... F15 = length of flagellomeres 1, 2, ... 15; LT = light trap; MT = Malaise trap; PT = pit-fall trap.

Genus *Coquillettomya* FELT, 1908

Coquillettomya clara FEDOTOVA & SIDORENKO sp. nov. (Figs 1-6)

Material. Holotype ♂ (slide 153/2 LT 6): Russia, Primorskii krai, 30 km SE Ussuriysk, Kamenushka, 22.VIII.2001 (V. SIDORENKO).

Description. ♂: Body length 1.20 mm, wing length 2.15 mm, width 0.65 mm. Flagellum lost, scape slightly enlarged distally, 1.6 times as long as wide. Distal nodes of flagellomeres elongated, with slight excision, proximal nodes almost rounded. Circumfilar loops of flagellomeres long, with almost equal basal, medial and apical whorls reached to apex of proximal and distal necks on middle flagellomeres. F1 5.8 times as long as wide, distal neck of F1 1.2 times shorter than distal node; distal node 1.3 times as long as proximal neck and 1.5 times longer than proximal node. F2 slightly shorter than F1. F5 5.2 times as long as wide, distal neck 1.1 times longer than distal node; distal node 1.1 times as long as proximal neck and 1.5 times longer than proximal node, the last 1.7 times longer than distal neck. Palpi lost. Tarsal claws simple, almost rectangular, equal in length with empodium. Wing almost parallel-sided, maximally enlarged distally. Vein R1+2 joining C before wing middle, R4+5 almost straight and joining C distinctly at wing apex. Fork of Cu situated at longer distance from the base of wing than point R1+2 joining C. Gonocoxites slightly enlarged medially, with dense deep pores, 2.0 times as long as wide, with wide sclerotized spots. Gonostylus slightly curved medially, with narrow excision on ventral side, slightly enlarged basally, 1.3 times shorter than gonocoxites, 4.5 times as long as wide. Cerci with oviform lobes and wide triangular excision. Hypoproct 1.4 times narrower than cerci, spattle-shaped, wide rounded apically, with group of setae near apex. Aedeagus strongly sclerotized, curved basally, with more sclerotized central rod, hook-form apically.

♀ unknown.

Relationship. New species differs from another known species of *Coquillettomya* by long, basally curved aedeagus; long parallel-sided wing; dense pores on gonocoxites. New species closely related to *C. elongata* BU & ZHENG, 1994 from China, but differs by more long, strongly curved gonostylus; apically narrowed thin aedeagus (not almost parallel-sided as *C. elongata*); hook-formed (not truncate) apex of aedeagus; wide cerci and hypoproct; simple tarsal claws (non dentated). New species differs from *C. rara* sp. nov., described below, by more narrow gonocoxites, almost straight gonostylus and very long curved basally aedeagus.

Coquillettomya rara FEDOTOVA & SIDORENKO sp. nov. (Figs 7, 8)

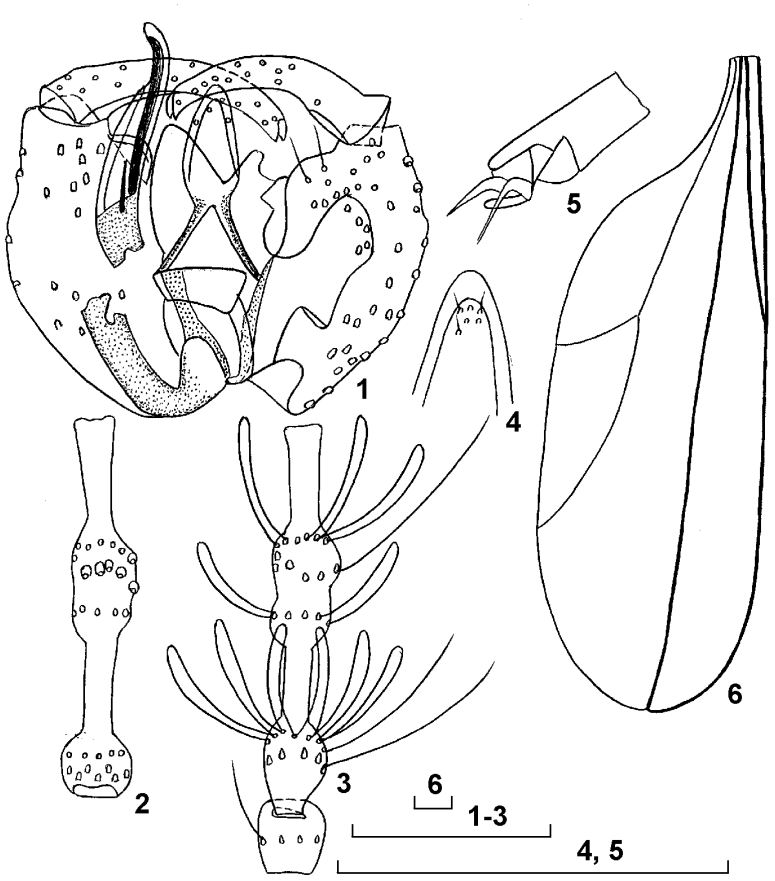
Material. Holotype ♂ (slide 195/1 PT): Russia, Primorskii krai, vic. Vladivostok, Sputnik, swamp, 4.VIII.2003 (V. SIDORENKO).

Description. ♂: Body length 1.78 mm. Flagellum lost, scape slightly enlarged distal-

ly,1.6 times as long as elongated pedicel. Palpi lost. Gonocoxites slightly enlarged laterally, 1.3 times as long as wide, with large fungus-shaped medial protrusion on inner side. Gonostylus almost straight, with long narrow excision on ventral side, 1.1 times shorter than gonocoxites, slightly enlarged basally, 5.5 times as long as wide. Cerci and hypoproct reduced. Aedeagus with strongly sclerotized thin apex, other parts less sclerotized, almost rectangular, 1.5 times shorter than gonostylus, with strongly sclerotized basal protrusions.

♀ unknown.

Relationships. New species differs from other known *Coquillettomya* species by presence of large fungus-shaped medial protrusion on inner side of very wide gonocoxites. New species similar to *C. elongata* BU & ZHENG, 1994 but differs by enlarged gonocoxi-



Figs 1-6. *Coquillettomyia clara* sp. nov., male: 1 genitalia; 2 F5; 3 pedicel, F1; 4 apex of hypoproct; 5 tarsal claw; 6 wing. Scale line = 0.1 mm.

tes, strongly sclerotized thin apex of aedeagus (not almost parallel-sided, emarginated apically) and straight long gonostylus.

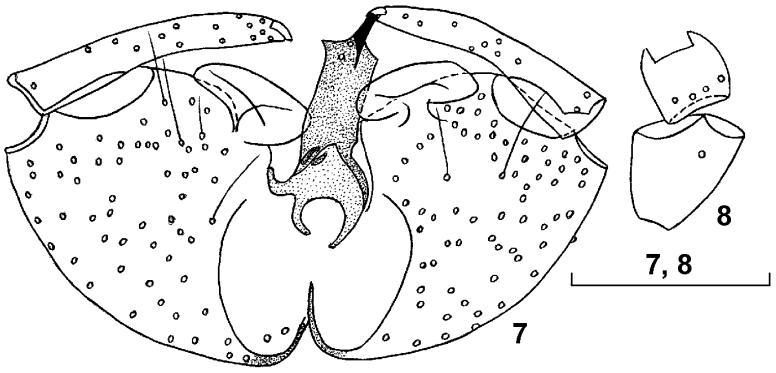
***Coquillettomya hyppocrepica* FEDOTOVA & SIDORENKO sp. nov.** (Figs 9-20)

Material. Holotype ♂ (slide 196/1 PT): Russia, Primorskii krai, Vladivostok, IV.2004 (V. SIDORENKO).

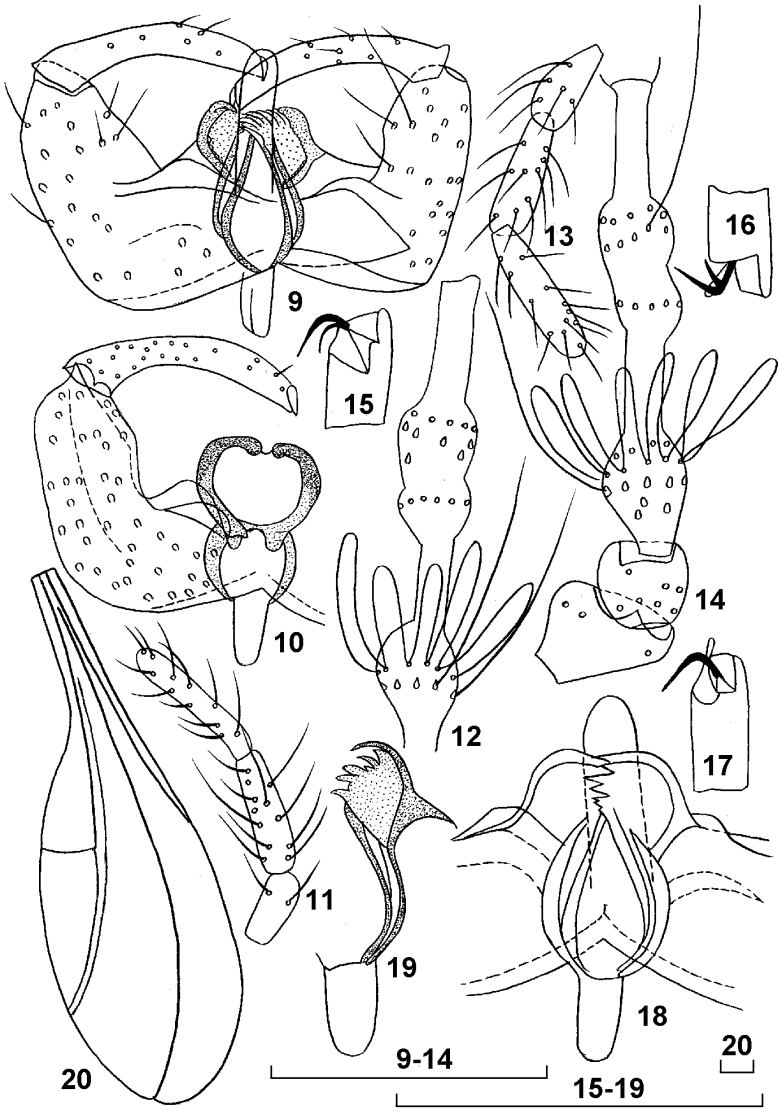
Description. ♂: Body length 1.1 mm. Scape light, slightly enlarged distally, 1.4 times as long as transversal pedicel, pedicel and flagellum sclerotized. Sensorial filae of flagellomeres with short loops not reaching to the next node. Terminal antennal segments lost. Pedicel as long as wide, slightly enlarged laterally. F1 5.7 times as long as wide, with very short basal neck, distal neck 1.2 times shorter than distal node; distal node 1.6 times as long as proximal neck and 1.1 times longer than proximal node. F1 and F2 almost equal in length. Tarsal claws of mid and hind legs dentated, hook-form; empodium as long as claw. Tarsal claw of fore legs simple. Palpi 3-segmented, its ratio 1:1.4:1.5 or 1:1.8:2.1, last segment almost parallel-sided, rounded apically. Wing very long, maximally enlarged distally, 3.1 times as long as wide. Fork of Cu situated on equal distance from the base of wing and from point R1+2 joining C. R4+5 joining C far behind wing apex. Gonocoxites thin, short, slightly enlarged laterally, or parallel-sided, 2.2 times as long as wide, with very sclerotized wide pectinate protrusion on dorsal side. Gonostylus slightly curved medially, 1.2 times shorter than gonocoxites, slightly enlarged basally, 4.5 times as long as wide. Cerci and hypoproct reduced. Aedeagus wide, as long as gonocoxites, parallel-sided distally and enlarged basally, with pair of lateral sclerotized strips. Aedeagal complex in the form of wide horseshoe strongly sclerotized marginally, 2 times wider than aedeagus.

♀ unknown.

Relationship. New species differs from other known species by presence of strongly sclerotized pectinate medial protrusion on inner side of gonocoxites. New species closely



Figs 7, 8. *Coquillettomyia rara* sp. nov., male: 1 genitalia; 2 scape and pedicel. Scale line = 0.1 mm.



Figs 9-20. *Coquillettomyia hyppocrepica* sp. nov., male: 9 genitalia (ventral view); 10 genitalia (dorsal view); 11, 13 palpus (variation of shape); 12 F2; 14 scape, pedicel and F1; 15 tarsal claw (hind leg); 16 tarsal claw (mid leg); 17 tarsal claw (fore leg); 18 aedeagus and basal outgrowths of gonocoxites; 19 basal outgrowths of gonocoxites; 20 wing. Scale line = 0.1 mm.

related to *C. uvae* MÖHN, 1955 from Germany, but differs by almost rounded emargi-nated dorsal plate of aedeagal complex, not reached base of gonocoxites (*C. uvae* with elongated concaved apically dorsal plate reached to base of gonocoxites); strongly expan-ded gonocoxites; long gonostylus and aedeagus; elongated sensorial filae of whorls of flagellomeres.

Genus *Karshomyia* FELT, 1908

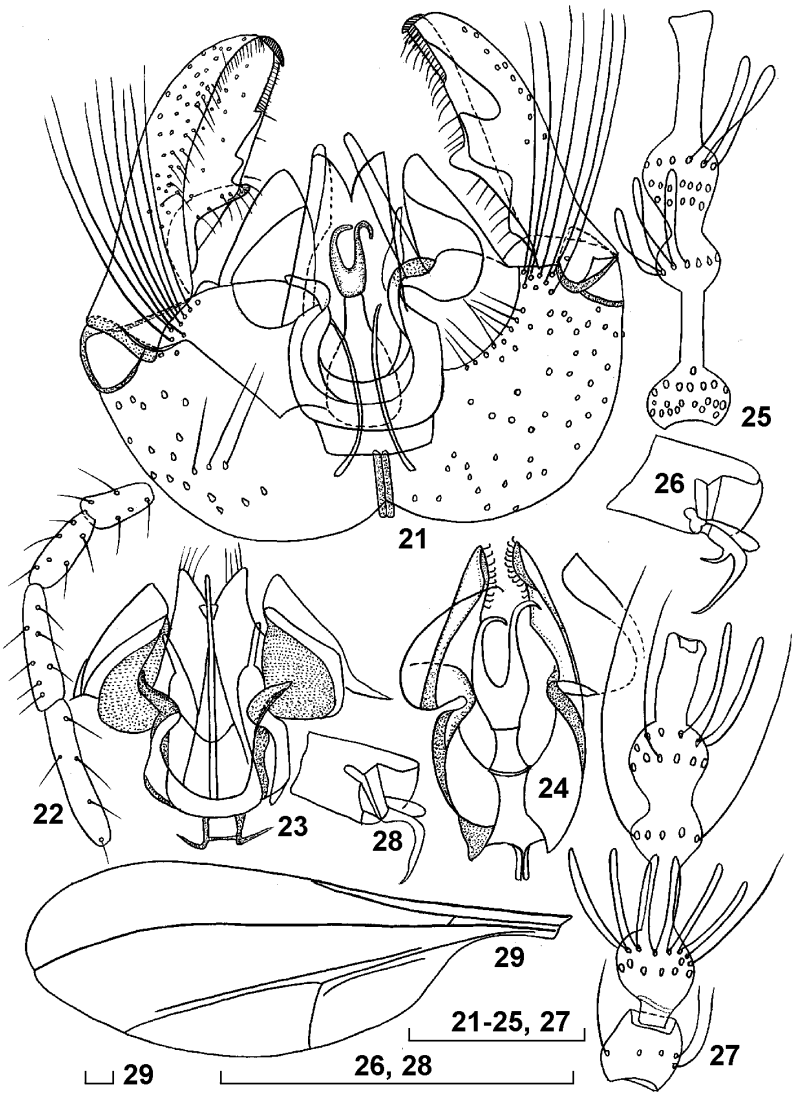
45 species are known according to World Catalog of the Cecidomyiidae (GAGNÉ, 2004). Recently 5 species from the Russian Far East were added in *Karshomyia* (FEDOTOVA & SIDORENKO 2004c).

***Karshomyia* (*Karshomyia*) *melioria* FEDOTOVA & SIDORENKO sp. nov.** (Figs 21-40)

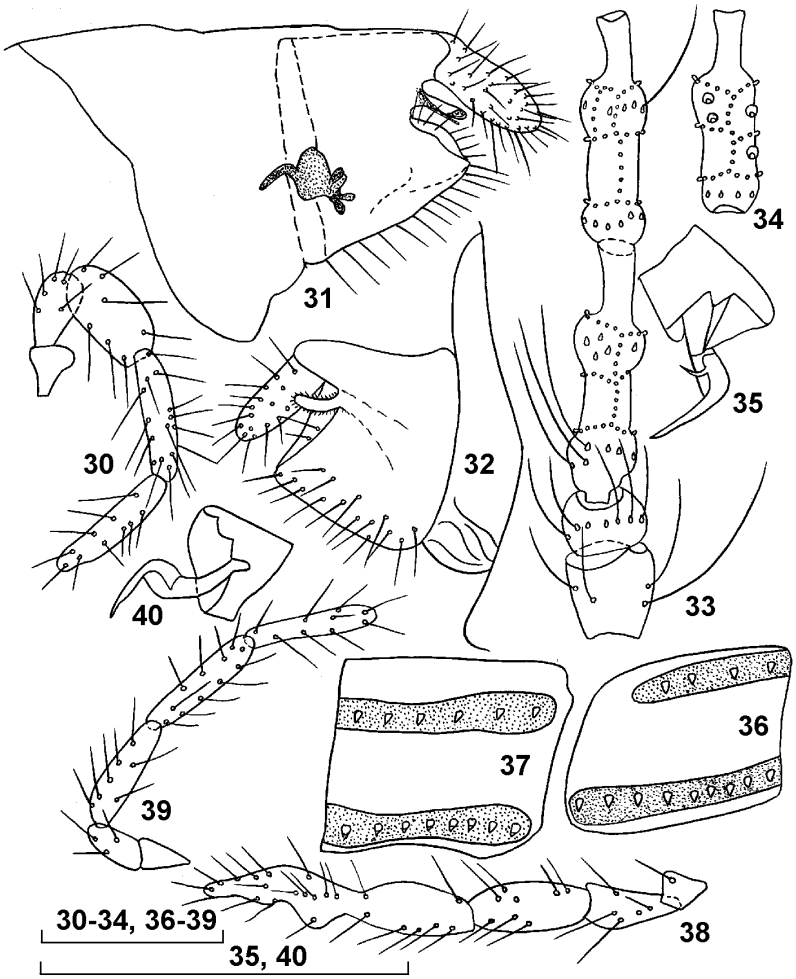
Material. Holotype ♂ (slide 197/1 LT): Russia, Primorskii krai, Kedrovaya Pad' Re-serve, 17.VIII 2004 (V. SIDORENKO). Paratypes 2 ♀♀ (slide 197/2-3 LT), the same local-ity.

Description. ♂: Body length 1.74 mm, wing length 2.50 mm, width 0.96 mm. Last sensorial filae of flagellomeres with short loops not reaching the next node. Terminal antennal segments lost. Necks of last F longer than necks of proximal F. Pedicel and base F1 and F2 light. Pedicel as long as wide and slightly enlarged laterally. F1 5.1 times as long as wide, with very short basal neck, distal neck 1.7 times shorter than distal node; distal node 2.4 times as long as proximal neck and 1.5 times longer than proximal node. F1 and F2 almost equal in length. F5 4.9 times as long as wide, distal neck 1.1 times shorter than distal node; distal node 2.4 times as long as proximal node and 2.2 times as long as proximal neck. Tarsal claws of mid and hind legs simple, hook-form; empodium as long as claw. Fore legs with dentated tarsal claw. Palpi 4-segmented, its ratio 1:1.3:1.8:2.2, last segment almost parallel-sided, straight. Thorax light brown. Wing very long, maximally enlarged distally, 2.9 times as long as wide. Fork of Cu situated on equal distance from the base of wing and from point R1+2 joining C; pCu and additional vein near M3+4 visible. M4+5 joining C far behind apex of wing Gonocoxites 1.1 times as long as wide, strongly dilated apically, widely rounded laterally, with almost straight apical margin. Apical lobe triangular, partly declinated dorsally. Inner side of gonocoxites with long, thin and apically dilated protrusion, covered by hook-form setae. Gonocoxites densely covered by large pores, apically with bunch of long setae. Gonostylus on ventral side with small protrusion medially, triangularly incised basally, covered by small setae near ventral margin of cavity and with small narrowed claws, 2.9-3.1 times as long as wide, 1.2 times longer than gonocoxites. Cerci much longer than gonocoxites, with pair of triangular apical lobes, strongly dilated basally, with triangular excision, 2.7 times wider than hypoproct. Hypo-proct slightly sclerotized, strongly swollen distally, with pair long curved protrusions. Aedeagus very thin, cylindrical, visible on ventral side genitalia. Apex of aedeagus elon-gated and narrowed. Abdominal tergite and sternite with pair interrupted plates and one row of triangular pores.

♀: Body length 2.17 mm, wing length 2.54 mm, width 1.0 mm. Scape light, pedicel and flagellum strongly sclerotized. Last segments of antennae lost, scape slightly swollen distally, 1.6 times as long as pedicel, basal node of F1 with very small basal neck. F1 1.1 times as long as F2. F1 3.9 times as long as wide, basal node 2.6 times as long as neck. F5



Figs 21-29. *Karshomyia melioria* sp. nov., male: 21 genitalia; 22 palpus; 23 aedeagus, cerci, basal outgrowths of gonocoxites (ventral view); 24 hypoproct and basal outgrowths of gonocoxites (dorsal view); 25 F5; 26 tarsal claw (fore leg); 27 pedicel and F1; 28 tarsal claw (hind leg); 29 wing. Scale line = 0.1 mm.



Figs 30-40. *Karshomyia melioria* sp. nov., female: 30, 38, 39 palpus (variation of shape); 31 VIII abdominal segment and ovipositor; 32 ovipositor (variation of shape); 33 scape, pedicel F1 and F2; 34 F5; 35 tarsal claw (fore leg); 36 abdominal tergite; 37 abdominal sternite; 40 tarsal claw (hind leg). Scale line = 0.1 mm.

3.3 times as long as wide, basal node 2.5 times longer than neck, with 3 rings of sensorial filae connected by commissures. Palpi 4-segmented, its ratio 1:1.8:2.1:2.1 or 1:1.2:1.3:1.4, 4th segment almost parallel-sided. Sometimes two last segments fused. Ovipositor (IX and X abdomen segment) short, 1.1 times as long as wide. Apical plate 2.5 times as long as

wide, somewhat darker than last part of ovipositor, 2.5 times as long as ventral plate. Ovipositor with small ventral sclerotized spot.

Relationship. New species differs from other known species by presence of very long triangular apical protrusion of gonocoxites reaching to middle of gonostylus and wide gonocoxites, with almost straight apical margin. New species closely related to *K. setosa* MAMAEV & M. KRIVOSHEINA, 1997 from Moscow Area, Caucasus and Primorye, but differs by more wide gonostylus, not narrowed basally cerci, long branches of hypoproct, rounded inner sclerotized structure between gonocoxites (not transverse) and more large sizes of apical protrusion of gonocoxites reaching to apex of cerci.

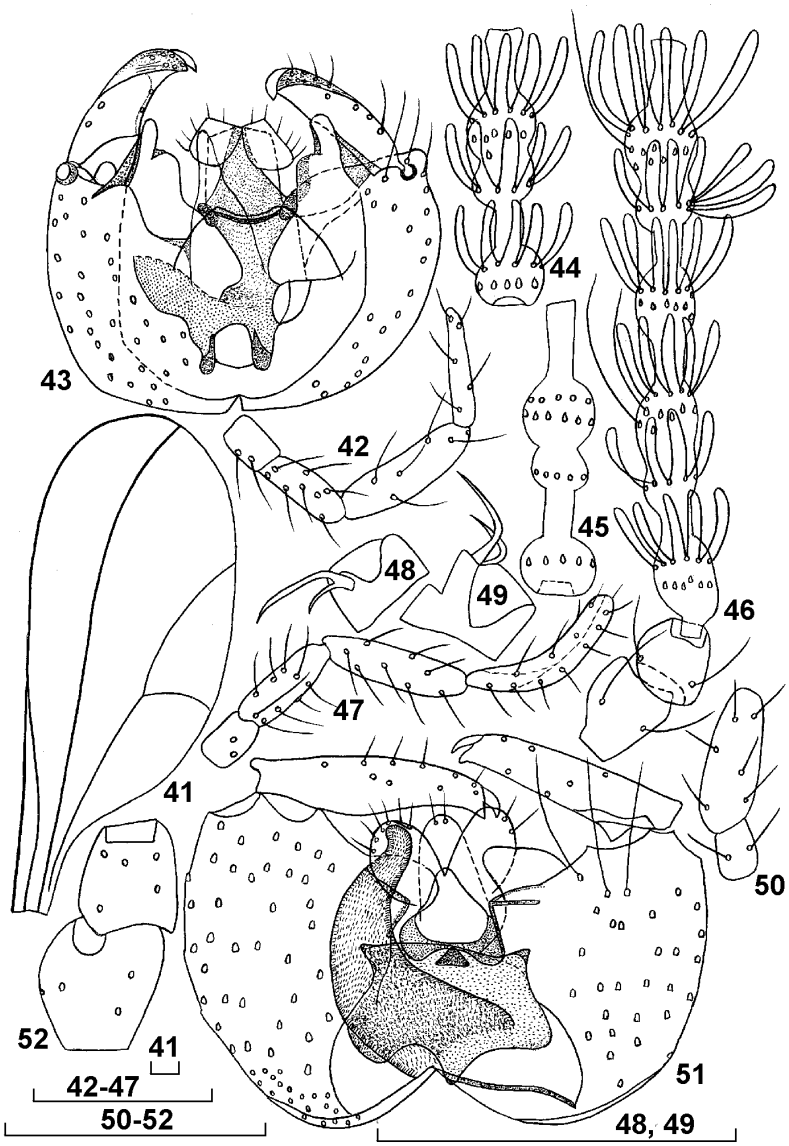
***Karschomyia* (*Hiastatus*) *pusilla* FEDOTOVA & SIDORENKO sp. nov.** (Figs 41-49)

Material. Holotype ♂ (slide 37 LT 19/1b): Russia, Primorskii krai, 30 km SE Ussuriysk, Kamenushka, 15.IX.2001 (V. SIDORENKO).

Description. ♂: Body length 1.29 mm, wing length 2.27 mm, width 0.81 mm. Last sensorial filae of flagellomeres with long loops reaching the next node. Terminal antennal segments lost. Necks of last F longer than necks of proximal F. Pedicel longitudinally compressed and slightly enlarged laterally, 1.2 times shorter scape. F1 5.0 times as long as wide, with very short basal neck, distal neck 2.6 times shorter than distal node; distal node 2.6 times as long as proximal neck and 1.1 times longer than proximal node. F1 and F2 almost equal in length. F5 3.9 times as long as wide, distal neck 1.5 times shorter than distal node; distal node 1.8 times as long as proximal node and 2.7 times as long as proximal neck. Tarsal claws of mid and hind legs simple, hook-form, empodium lost. Tarsal claws of fore legs dentated. Palpi 4-segmented, its ratio 1:1.8:2.8:2.2 or 1:1.9:1.7:2:6, last segment thin, almost parallel-sided, straight or curved. Thorax light brown, with 3 dark brown dorsal stripes. Wing very wide, maximally enlarged distally, 2.6 times as long as wide. Fork of Cu situated on equal distance from the base of wing and from point R1+2 joining C. Gonocoxites 1.9 times as long as wide, strongly dilated apically, widely rounded laterally. Apical lobe of gonocoxites thin, rounded apically. Inner side of gonocoxites with small rounded protrusions. Gonocoxites densely covered by large pores and basally by setae. Gonostylus apically with dense tubercules and stripes, maximally dilated basally, with small narrowed claws, ventral side without setose cavity in middle, slightly curved apically, 3.8 times as long as wide, 1.7 times smaller than gonocoxites. Cerci slightly longer than gonocoxites, with pair of obtused apical lobes and strongly dilated basally, 1.6 times wider than hypoproct. Hypoproct slightly sclerotized, strongly swollen medially, rhomboid, with obtused apex and strongly sclerotized transversal medial structure. Aedeagus thick, slightly narrowed in apical third, strongly enlarged basally, not longer than gonocoxites. Apex of aedeagus rounded.

♀ unknown.

Relationship. New species differs from other known species by presence of rhomboid sclerotized structure of hypoproct and narrowed gonostylus. New species similar to *K.* (*H.*) *mamaevi* FEDOTOVA & SIDORENKO, 2004 from Russian Far East (FEDOTOVA & SIDORENKO 2004c), but differs from it by more short and narrow rounded apical protrusion (not hook-form) and absence of apico-medial pointed protrusion of gonocoxites, more narrowed gonostylus with thin apical claw, absence of setose cavity in middle of gonostylus and form of aedeagus (thin, strongly sclerotized, acerated in *mamaevi*) and short middle flagellomeres (length 5.1 times as long as wide in *mamaevi*), with short sen-



Figs 41-52. *Karshomyia pusilla* sp. nov., male (41-49) and *Gybbosidiplosis admixta* sp. nov, male (50-52): 41 wing; 42, 47, 50 palpus (42, 47 variation of shape); 43, 51 genitalia; 44, 45 F5 (variation of shape); 46 scape, pedicel, F1, F2; 48 tarsal claw (fore leg); 49 tarsal claw (mid leg); 52 scape and pedicel. Scale line = 0.1 mm.

sorial whorls loops not reaching the next node.

Genus *Gybbosidiplosis* FEDOTOVA, 2003

Genus includes 2 species from the Russian Far East (FEDOTOVA 2003).

Gybbosidiplosis admixta FEDOTOVA sp. nov. (Figs 50-52, 70)

Material. Holotype ♂ (slide 81/2 LT 5 B): Russia, Primorskii krai, 30 km SE Ussuriysk, Kamenushka, 23.VIII.2001 (V. SIDORENKO).

Description. ♂: Body length 1.27 mm, wing length 1.9 mm, width 0.84 mm. Pedicel longitudinally compressed and slightly enlarged laterally, 1.1 times shorter than scape. F1 4.0 times as long as wide, with short basal neck, distal neck 1.8 times shorter than distal node; distal node 2.7 times as long as proximal neck and 1.2 times longer than proximal node. F1 with apical white collaret, as long as F2. Last flagellomeres, wing and tarsal claws lost. Palpi 2-segmented, its ratio 1:3, last segment enlarged, widened apically. Thorax dark brown. Gonocoxites 1.4 times as long as wide, strongly dilated medially, widely rounded laterally. Inner side of gonocoxites with small rounded protrusions apicomedially. Gonostylus almost straight, with small narrowed claws, ventral side without wide basal ventral incision, 4.8 times as long as wide, 1.3 times smaller than gonocoxites. Aedeagus curved basally, with dense setae apically, equal in length with cerci and hypoproct. Apex of aedeagus curved. Cerci bilobed, with wide triangular excision, 2.1 times wider than hypoproct. Hypoproct slightly sclerotized, strongly enlarged medially. Basal central sclerotized plates with obtuse apex and strongly sclerotized triangular medial structure.

♀ unknown.

Relationship. New species closely related to *G. laesa* FEDOTOVA, 2003, but differs by strongly enlarged gonocoxites, less emarginated on ventral side at the base of gonostylus; very wide lobes of cerci; 2-segmented (not 3-4) palpi; very wide medio-apical protrusions of gonocoxites and strongly constricted distal node of flagellomeres.

Genus *Lianodiplosis* FEDOTOVA & SIDORENKO gen. nov.

Type species: *Lianodiplosis taeniata* FEDOTOVA & SIDORENKO sp. nov.

Diagnosis. Eyes very large, occupied nearly entire head. Head without postvertical peak. Male flagellomeres with two nodes: distal nodes slightly narrower than proximal ones, with narrowing on mid segments and with two short whorls of circumfilar loops, not reached middle of next proximal and distal necks, one medial ring filae and two whorls of setae. Female flagellomeres with basal node, covered by rings of sinuous filae, and short neck. Palpi 4-segmented. Wing maximally enlarged distally. Vein R4+5 almost straight and joining C distinctly behind wing apex, forked Cu, M3+4 and pCu present. Male genitalia with short enlarged gonocoxites and short curved gonostylus. Gonostylus strongly pointed apically, ventrally covered by almost straight dark stripes. Cerci with excision and rounded lobes. Hypoproct longer than cerci and gonocoxites, with narrow excision and enlarged apical lobes. Aedeagus very thin, pointed apically, enlarged basally, more sclerotized than hypoproct, equal in length with gonocoxites. Ovipositor strongly sclerotized, ventrally with wavy sclerotized plates.

Relationship. New genus resembles monotypic *Bicornidiplosis* FEDOTOVA, 2003 from Primorskii krai, but differs from it by thin sclerotized sharply pointed aedeagus (not conical, strongly enlarged basally in *B. acrescentis* FEDOTOVA, 2003); almost rounded, without narrowing, distal node of flagellomeres and ring medial sensorial filae of flagellomere (loops in *B. acrescentis*); form of wide lobes of hypoproct, longer than gonocoxites (V-formed triangular lobes, shorter than gonocoxites in *B. acrescentis*).

Lianodiplosis taeniata FEDOTOVA & SIDORENKO sp. nov. (Figs 53-63)

Material. Holotype ♂ (slide 198/1 PT): Russia, Primorskii krai, Vladivostok, VI.2004 (V. SIDORENKO). Paratypes 3 ♀♀ (slide 198/2-4 PT), the same locality.

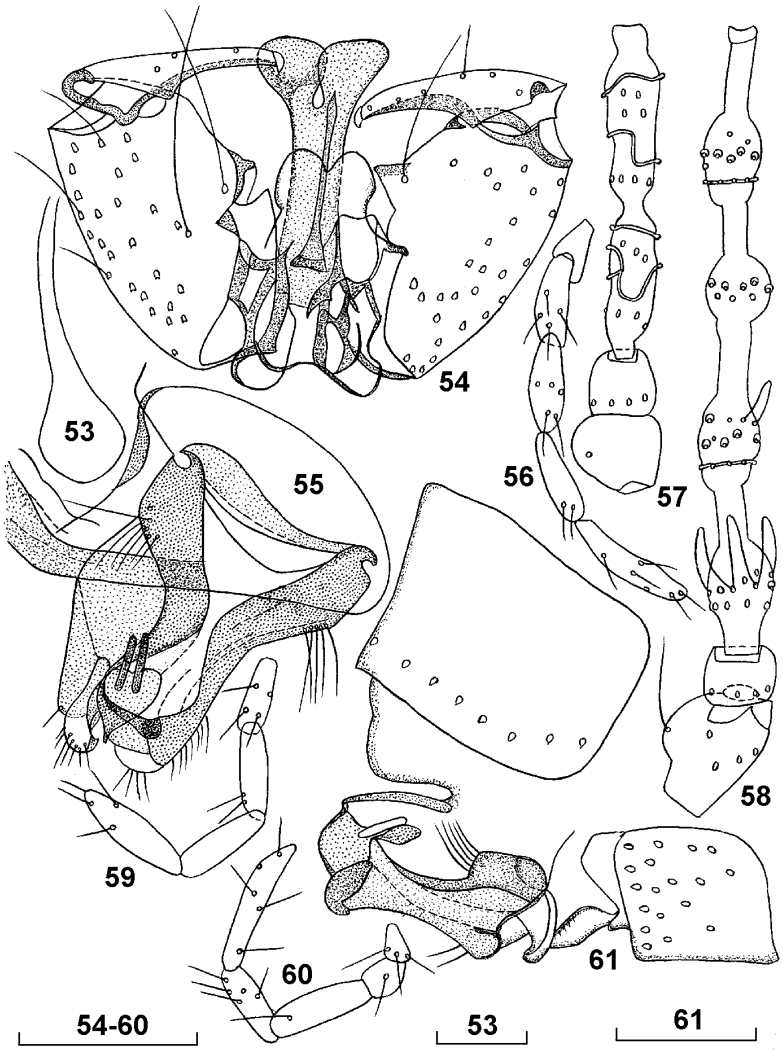
Description. ♂: Body length 1.64 mm, wing length 2.13 mm, width 0.71 mm. Last antennal segments lost, pedicel transversal, 1.3 times shorter than trapezoid scape. Basal node of F1 longer and wider than other ones, distal node of flagellum slightly larger. F1 5.1 times as long as wide, distal node 1.3 times as long as distal neck; distal node 1.1 times shorter than proximal one and 1.8 times as long as proximal neck. Proximal neck 1.4 times shorter than distal one. F2 1.1 times shorter than F1. Whorls of circumfilar loops not reaching of middle of next necks. Veins of wings very dark, especially C, R1+2 and R4+5. R4+5 with pore near point of connecting Rs. Wings 2.1 times as long as wide, vein R1+2 joining C at middle, R4+5 connected with Rs on 1/4 basal part of R4+5. Halter very long. Palpi 4-segmented, situated on palpiger, its ratio 1:1.1:1:1.5, 4th segment slightly enlarged proximally. Tarsal claws lost. Gonocoxites strongly enlarged medially, 1.6 times as long as wide, with triangular sclerotised protrusion. Gonocoxites with various pores. Gonostylus shorter than gonocoxites, proximally slightly sclerotized and strongly incurved, 3.4 times as long as wide, enlarged basally. Hypoproct basally almost parallel-sided, with enlarged apical lobes and narrow excision between its. Cerci wide, with apical ovoid lobes, but 1.4 times narrower than distal part of hypoproct. Aedeagus strongly pointed apically. Abdominal tergites with one row of setae along distal margin. Abdominal sternites with numerous setae.

♀: Body length 2.01-2.30 mm, wing length 2.20-2.39, width 0.76-0.81 mm. Pedicel transverse, 1.3 times shorter than scape, basal nodes of flagellomeres elongated, with slight narrowing near basal third. F1 3.4 times as long as wide, distal neck 10.2 times shorter than basal node. F1 1.1 times shorter than or equal in length with F2. Palpi 4-segmented, its ratio 1:1.3:1.3:1.6, 4th segment slightly enlarged distally and pointed apically. Ovipositor strongly sclerotized, 1.4 times as long as wide, ventrally with wavy sclerotized plates, ending by setose apical plates. Lateral sides of ovipositor with pair basal bunches of long setae.

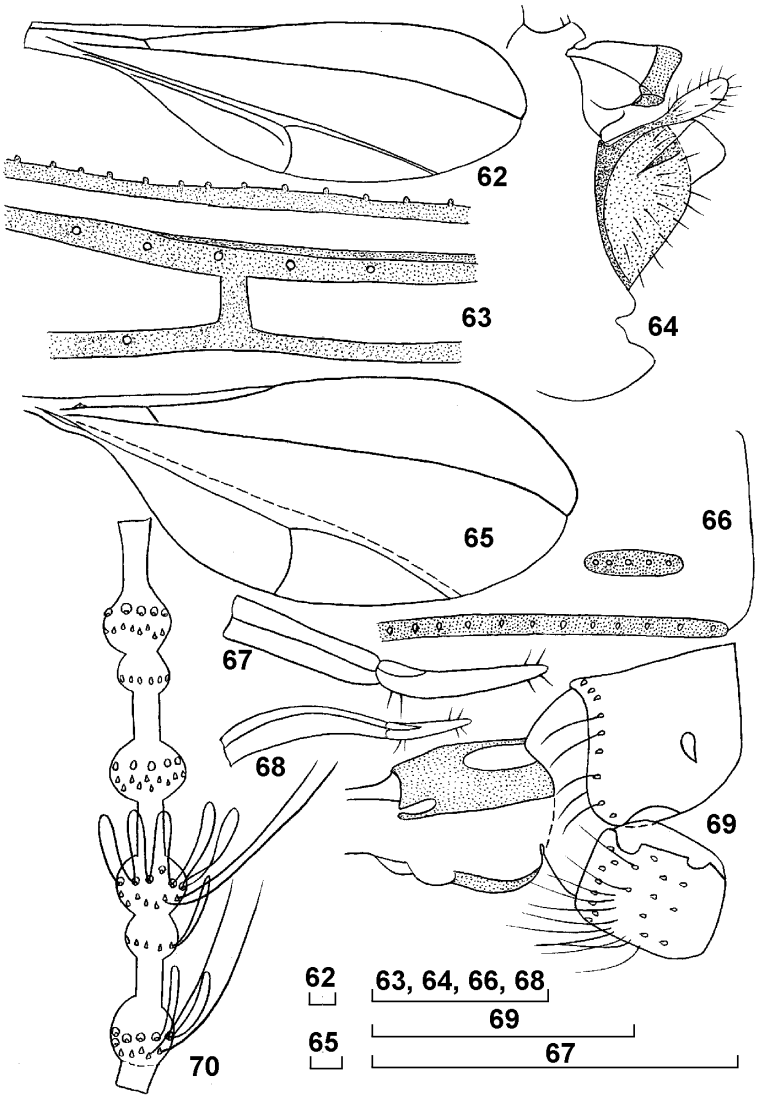
Genus *Poridiplosis* FEDOTOVA gen. nov.

Type species: *Poridiplosis semiaperta* FEDOTOVA sp. nov.

Diagnosis. Eyes very large, occupied nearly entire head. Head with postvertical peak. Pedicel, scape and flagellum sclerotized, palpi unsclerotized. Male flagellomeres with two rounded nodes: distal ones without narrowing on all segments and proximal ones. Female flagellomeres with short stem. Male flagellomeres with two whorls of circumfilar loops, medial sensorial ring and two whorls of setae. Circumfilar loops of flagellomeres short, equal in length, distal loops not reaching to the next proximal node. Proximal neck of



Figs 53-61. *Lianodiplosis taeniata* gen. nov. et sp. nov., male (53, 54, 56, 58) and female (55, 57, 59-61): 53 halter; 54 genitalia; 55 ovipositor (ventral view); 56, 59, 60 palpus (variation of shape); 57, 58 scape, pedicel, F1 and F2; 61 VIII abdominal segment and ovipositor. Scale line = 0.1 mm.



Figs 62-70. *Lianodiplosis taeniata* sp. nov., male (62, 63), *Ligulodiplosis fimbriata* sp. nov., female (64), *Setodiplosis unifaria* sp. nov., male (65-66), *Efferatodiplosis ornata* sp. nov., female (67-69), *Gybbosidiplosis admixta* sp. nov, male (70): 62, 65 wing; 63 veins C, R1+2, R4+5, Rs; 64, 69 ovipositor; 66 V abdomen tergite; 67, 68 apex ovipositor; 69 VIII and base of IX abdominal segment; 70 F1 and F2. Scale line = 0.1 mm.

flagellomeres very short as long as narrowing. Palpi 4-segmented. Last flagellomeres and tarsal claws lost. Wing almost semicircular, maximally enlarged distally. Vein R1+2 joining C near wing middle, R4+5 strongly sclerotized, almost straight and joining C distinctly at wing apex. Fork Cu situated at longer distance from the base of wing than point R1+2 joining C, pCu and M1+2 present. Male genitalia with long gonocoxites and slender gonostylus. Gonocoxites broad, almost straight laterally, with medio-basal sclerotized protrusion on inner side. Gonostylus slightly curved distally, slightly enlarged basally, with thin claw. Cerci with rounded apical lobes, divided by triangular emargination, slightly sclerotized, asymmetrical. Hypoproct slightly sclerotized, asymmetrical, longer than cerci, narrowed basally and rounded apically, at the base as wide as aedeagus. Aedeagus whole, oval, widely rounded apically, many longer cerci, sclerotized along distal margin. Abdominal tergites wide, strongly sclerotized, with setae on distal margin, groups of lateral pores and latero-proximal and latero-distal lacunes. Abdominal sternites with dense setae, marginaly and lateraly sclerotized. Ovipositor short, unsclerotized, with two apical plates.

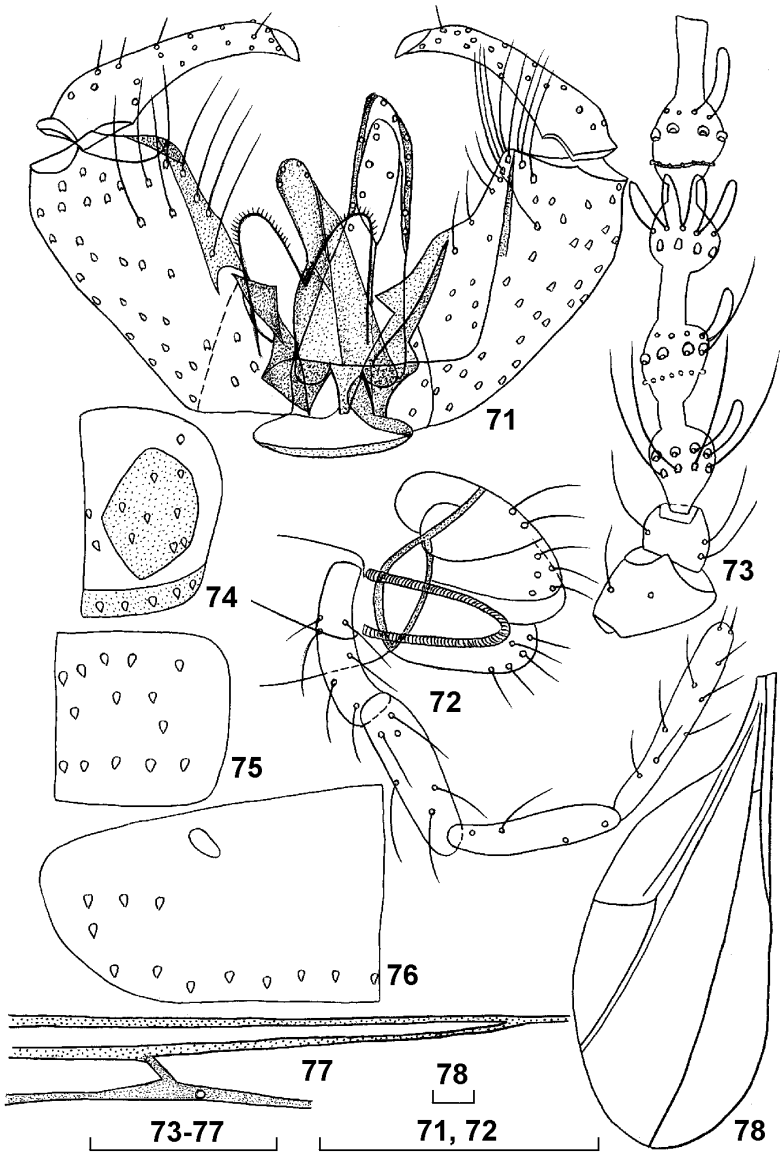
Relationship. New genus differs from other known genera by presence of wide and long aedeagus, covered by pores along margin; whole cerci and hypoproct; triangular sclerotized protrusion on medial side of gonocoxites. New genus similar to *Anulidiplosis* FEDOTOVA, 2004, with single species from Primorskii krai (FEDOTOVA & SIDORENKO 2004b), but differs from it by absence of apical protrusion on narrow hypoproct (not wide, almost parallel-sided), elongated whorls of circumfilar loops on flagellomeres, narrowed aedeagus (not enlarged before apex), very long palpi, presence of sclerotized protrusions on gonocoxites and additional vein pCu and M1+2.

Poridiplosis semiaperta FEDOTOVA sp. nov. (Figs 71-78, 86-89)

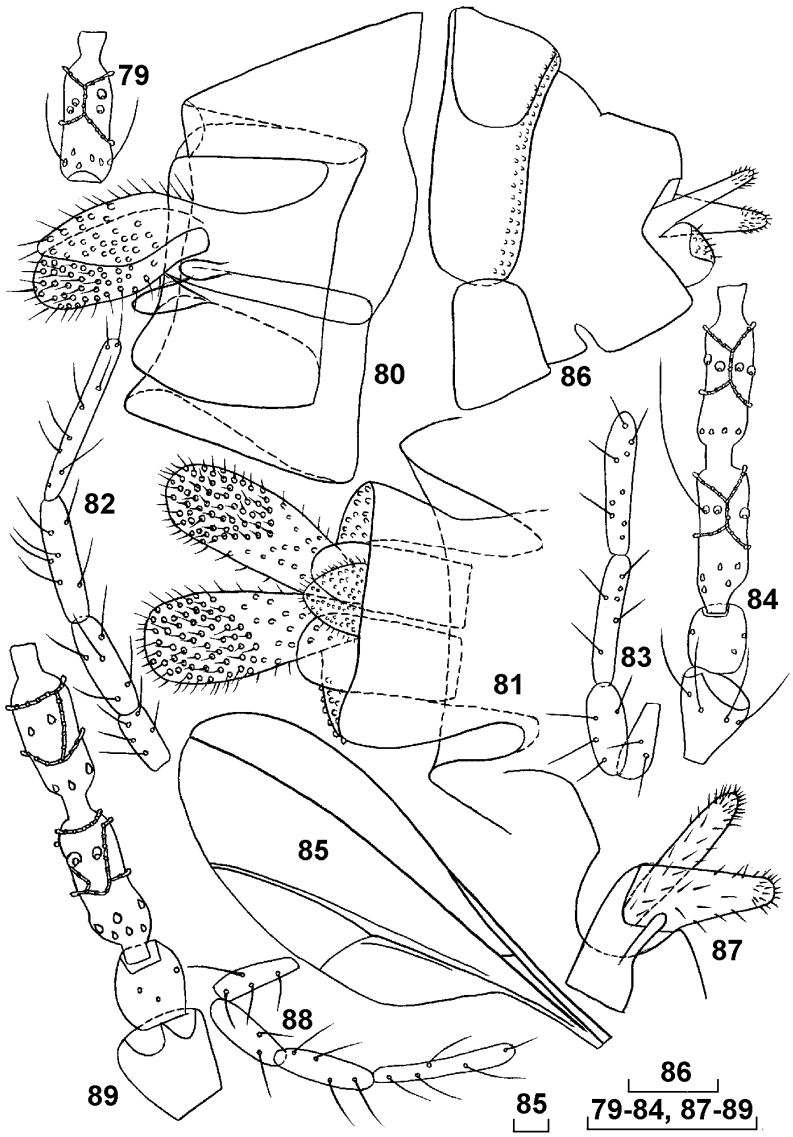
Material. Holotype ♂ (slide 199/1 PT): Russia, Primorskii krai, Vladivostok, VI.2004 (V. SIDORENKO). Paratype ♀ (slide 199/2 PT), the same locality.

Description. ♂: Body length 1.83 mm, wing length 2.20 mm, width 0.83 mm. Pedicel 1.6 times shorter than scape. F1 and F2 almost equal in length. F1 with long basal node. F1 3.8 times as long as wide, distal neck 1.5 times shorter than distal node. Distal node of F1 almost equal in length with proximal one and 4.2 times longer than proximal neck. F12 and some last flagellomeres lost. Palpi 4-segmented, its ratio 1:1.1:1.1:1.4, 4th segment slightly enlarged distally, widely rounded apically. Wing 2.5 times as long as wide. Vein R4+5 with large pore near Rs. Gonocoxites distally with obtuse apex, 2.0 times as long as wide. Gonostylus 1.2 times shorter than gonocoxites and about 3.9 times as long as wide. Cerci almost parallel-sided. Hypoproct and cerci equal in wide near base but hypoproct longer than cerci. Aedeagus longer than gonocoxites, with numerous pores on distal half and marginal sclerotization.

♀: Body length 2.36 mm, wing length 2.33, width 0.8 mm. Pedicel elongated, 1.2 times shorter than scape, basal nodes of flagellomeres elongated, with slight narrowing near basal third. F1 3.1 times as long as wide, distal neck 6.5 times shorter than basal node. F1 and F2 almost equal in length. Palpi 4-segmented, its ratio 1:1:1.1:1.6, 4th segment almost parallel-sided, rounded apically. Flagellomeres with elongated commissure between two rings of sensorial filae. Ovipositor short, unsclerotized, 3.9 times as long as wide, ending by triangular setose apical plates, directed ventro-caudally. Apical plates 2.3 times as long as wide. Ventral plate 2.1 times shorter than apical ones.



Figs 71-78. *Poridiplosis semiaperta* sp. nov., male: 71, genitalia; 72 mouth parts; 73, scape, pedicel, F1 and F2; 74 III abdominal sternite; 75 VI abdominal sternite; 76 VI tergite; 77 veins C, R1+2, Rs, R4+5; 78 wing. Scale line = 0.1 mm.



Figs 79-89. *Dicrodiplosis marikovskii* sp. nov., female (79-85) and *Poridiplosis semi-aperta* sp. nov., female (86-89): 79 F5; 80, 87 ovipositor (lateral view); 81 ovipositor (ventral view); 82, 83, 88 palpus (82, 83 variation of shape); 84, 89 scape, pedicel, F1 and F2; 85 wing; 86 ovipositor, VII and VIII abdominal segment. Scale line = 0.1 mm.

Genus *Ligulodiplosis* FEDOTOVA gen. nov.

Type species: *Ligulodiplosis fimbriata* Fedotova sp. nov.

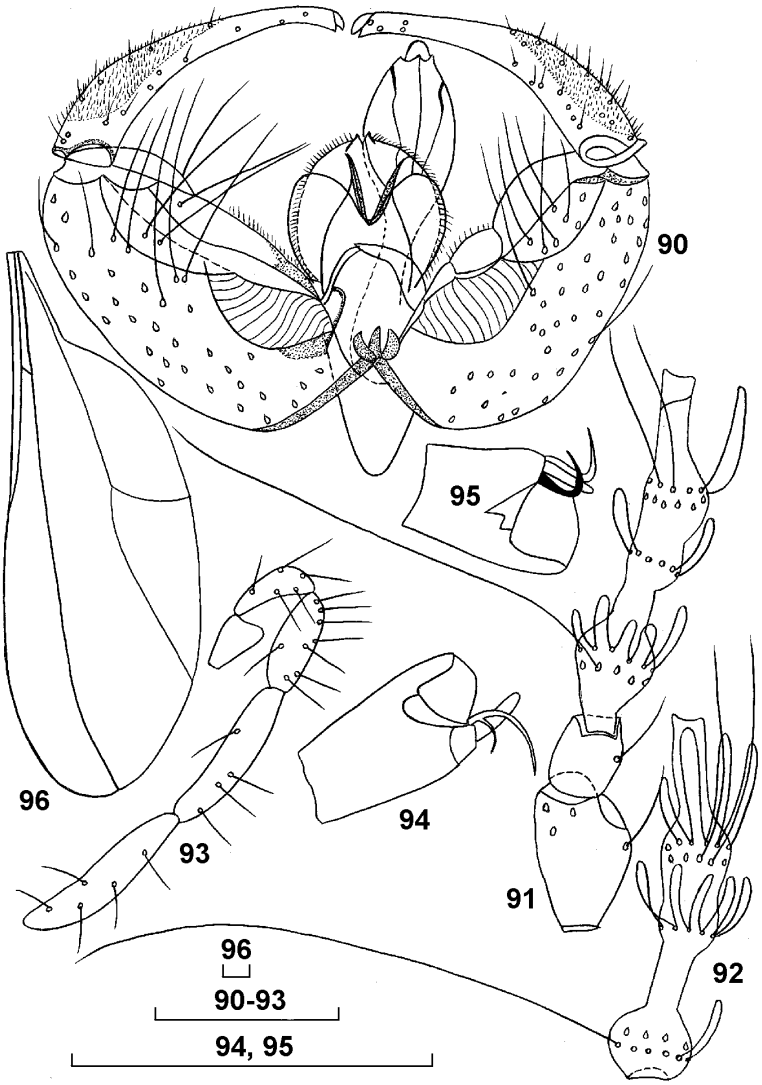
Diagnosis. Eyes very large, occupied nearly entire head capsule. Head without post-vertical peak. Male flagellomeres with two nodes: elongated distal ones, with narrowing on all segments and rounded or semicircular proximal ones. Female flagellomeres with basal node and short stem. Male flagellomeres with three whorls of circumfilar loops of sensorial filae and two whorls of setae. Circumfilar loops of flagellomeres with short filae, not reaching to the next node, loops of basal and mid whorls shorter than apical whorl. One seta of basal whorls almost 2 times longer than flagellomere. Terminal antennal segment lost. Palpi 4-segmented, on palpiger. Tarsal claws fore and mid legs dentated, hind simple (♂) or dentated (♀), semicircularly curved, empodium slightly longer or shorter than claw. Wings elongated, maximally enlarged distally. Vein R1+2 joining C almost at wing middle, Rs joining R4+5. R4+5 slightly curved and joining C distinctly beyond wing apex. Vein pCu absents; forked Cu presents. Fork of Cu situated at shorter distance from the base of wing than point R1+2 joining C. Gonocoxites broad, strongly rounded basally, with preapical rounded lobes on inner side near apex. Gonostylus slightly curved before apex, distinctly covered by microtrichiae dorso-basally. Cerci widely concaved, almost equal in wide with rounded setose hypoproct. Hypoproct with inner sclerotized dark structures, narrowed basally, enlarged and widely rounded apically, Aedeagus thin apically and strongly enlarged laterally in distal part and almost parallel-sided, thin at the base, longer than gonocoxites.

Relationship. New genus related to genus *Mirabilidiplosis* FEDOTOVA, 2003 from Primorskii krai (FEDOTOVA 2003, FEDOTOVA & SIDORENKO 2004b), but differs from it by long gonostylus, swollen aedeagus, medial whorls of sensorial loops (not ring sensorial filae), absence setose plates in medial part of gonocoxites; stronger curved vein R4+5 behind wing apex.

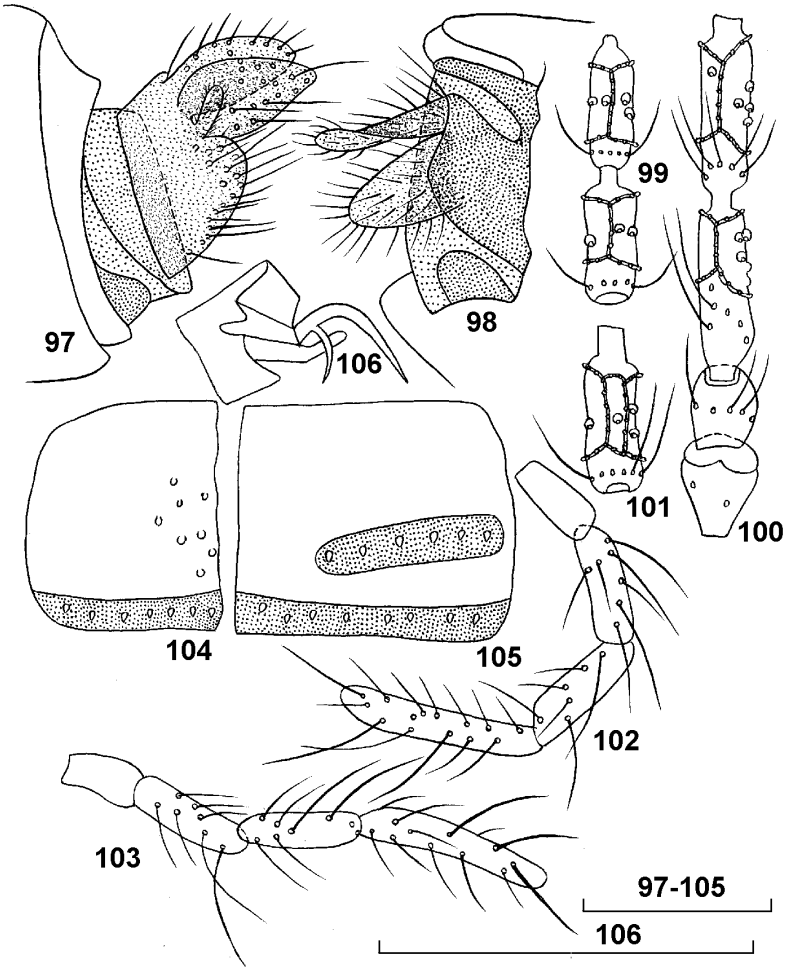
Ligulodiplosis fimbriata FEDOTOVA sp. nov. (Figs 64, 90-106)

Material. Holotype ♂ (slide 200/1 MT): Russia, Primorskii krai, Kedrovaya Pad' Reserve, 18.VIII.2004 (V. SIDORENKO). Paratypes 3 ♀♀ (slide 200/2 MT), 1 ♀ (slide 200/3 LT), the same locality, 18.VIII.2004.

Description. ♂: Body length 1.64 mm, wing length 2.37, width 0.86 mm. Scape, pedicel and flagellum strongly sclerotized. Pedicel slightly elongated, 3.6 times shorter than scape. Distal nodes of flagellomeres elongated, with strong narrowing, proximal nodes almost rounded. Flagellomeres strongly sclerotized. Circumfilar loops of flagellomeres with short loops, not reaching to apex of next proximal and distal necks. F1 4.8 times as long as wide, distal neck 1.1 times shorter than distal node; distal node 2.8 times as long as proximal neck and almost equal in length with basal node. Apex distal of neck white,last part of F1 dark. F2 1.1 times shorter than F1. F5 4.4 times as long as wide, distal neck equal in length with distal node. Distal node of F5 1.2 times longer than proximal one and 2.0 times longer than proximal neck. Palpi 4-segmented, its ratio 1:1.2:1.9:2.1, 4th seg-ment slightly enlarged and rounded medially. Wing 2.1 times as long as wide. Apical part of gonocoxites with subapical rounded lobe on inner side. Gonocoxites 1.9 times as long as wide. Gonostylus 1.1 times shorter than gonocoxites, slightly curved distally, and about 5.4 times as long as wide. Cerci with very wide excision between very rounded large



Figs 90-96. *Ligulodiplosis fimbriata* gen. nov. et sp. nov., male: 90, genitalia; 91, scape, pedicel and F1; 92 F4; 93 palpus; 94 tarsal claw (fore leg); 95 tarsal claw (hind leg); 96 wing. Scale line = 0.1 mm.



Figs 97-106. *Ligulodiplosis fimbriata* gen. nov. et sp. nov., female (97-103, 106) and male (104, 105): 97, 98 ovipositor (variation of shape); 99 F11 and F12; 100 scape, pedicel, F1 and F2; 101 F5; 102, 103 palpus (variation of shape); 104 IV abdominal sternite; 105 IV tergite; 106 tarsal claw (fore leg). Scale line = 0.1 mm.

lobes. Hypoproct strongly setosed, as wide as cerci; slightly sclerotized, enlarged laterally. Aedeagus with thin cylindrical apical protrusion and very wide distal part. Tergites of abdomen light, with sclerotized stripe along distal margin and in the middle lateral side, covered by one row of setae.

♀: Body length 2.11-2.30 mm, wing length 2.07-2.44 mm, width 0.81-0.96 mm. Pedicel and flagellum strongly sclerotized, scape slightly lighter. Pedicel elongated, 1.2 times shorter than scape, basal nodes of flagellomeres elongated, almost parallel-sided, with short stem. F1 3.8 times as long as wide, distal neck 8.2 times shorter than basal node. F1 1.1 as long as F2. F5 3.2 times as long as wide, distal neck 4.1 times shorter than basal node. F12 with elongated apex, 1.1 times shorter than F11. Palpi 4-segmented, its ratio 1:1.3:1.4:2.3 or 1:1.6:1.6:2.5, 4th segment almost parallel-sided, rounded apically, covered by very long thick and thin short setae. Flagellomeres with two elongated commissures of sensorial filae between two rings. Tarsal claw dentated; empodium shorter than claw. Ovipositor short, strongly sclerotized as well as distal half of VIII abdominal segment, 1.6 times as long as wide, ending by setose apical plates, directed dorsocaudally. Apical plates 1.8 times as long as wide. Ventral plate 2.8 times shorter than apical plates.

Genus *Setodiplosis* FEDOTOVA gen. nov.

Type species: *Setodiplosis unifaria* FEDOTOVA sp. nov.

Diagnosis. Eyes very large, occupied nearly entire head. Head with small postvertical peak. Male flagellomeres with two nodes: long distal ones, with narrowing on all segments and rounded proximal ones. Male flagellomeres with three whorls of circumfilar loops and two whorls of setae. Circumfilar loops of flagellomeres short, not reaching to the next node. One setae and one loop in basal whorl much longer than flagellomere. Female flagellomeres with long apical neck and light narrowing or without it, basal node covered by sensorial circular filae and with commissures between it. Mouth parts short, clypeus pointed, emarginated thin stripes. Palpi 4-segmented. Tarsal claws simple, almost rectangularly curved, ending by hook; empodium and claws equal in length. Wing elongated, maximally enlarged distally. Rs joining R1+2 at middle. Vein R1+2 joining C before wing middle, R4+5 slightly curved and joining C distinctly behind wing apex. M3+4 and forked Cu present. Fork of Cu situated rather far from the base of wing than point R1+2 joining C. Male genitalia with long gonocoxites and slender curved gonostylus. Gonostylus distally with dorsal row of thick short setae, strongly incised at the base. Cerci with ovoid lobes. Hypoproct narrow, concaved apically, enlarged basally, with large lateral sclerotized spots at the base, shorter than cerci. Aedeagus equal in length with sclerotized gonocoxites, hook-formed at the base, enlarged medially. Mid abdominal tergites with distal emarginated sclerotized setose plate and additional setose plates on lateral sides. Ovipositor short, with pair pointed apical plates, VIII abdominal segment strongly sclerotized.

Relationship. New genus closely related to monotypic genus *Olladiplosis* FEDOTOVA, 2004 from Primorskii krai (FEDOTOVA & SIDORENKO 2004b), but differs from it by strongly curved (not straight) aedeagus at the base; enlarged basally hypoproct; row of strong setae on gonostylus; elongated distal nodes of flagellomeres with narrowing (not rounded); simple tarsal claws (not dentated); 4-segmented (not 3) palpi; R4+5 joining wing apex.

Setodiplosis unifaria FEDOTOVA sp. nov. (Figs 65, 66, 107-120)

Material. Holotype ♂ (slide 201/1 LT): Russia, Primorskii krai, Kedrovaya Pad' Reserve, 17.VIII.2004 (V. SIDORENKO). Paratype 3 ♀♀ (slide 201/2-4 LT), 17-18.VIII. 2004,

the same locality.

Description. ♂: Body length 2.1 mm, wing length 2.31 mm, width 0.86 mm. Scape 1.3 times as long as pedicel, enlarged medially. Basal node of F1 slightly wider and longer than others; distal node of flagellum with deep medial constriction. F1 1.1 times as long as F2. F1 5.6 times as long as wide, distal node 1.9 times as long as distal neck; distal node 1.3 times as long as proximal one and 1.9 times as long as proximal neck. Proximal and distal necks equal in length. F5 4.2 times as long as wide, distal node 1.3 times shorter than distal neck. Distal node 1.6 times as long as proximal one and 1.7 times as long as proximal neck. F12 and some apical F lost. Wings 2.2 times as long as wide. Vein R4+5 slightly curved apically. Tarsal claws simple, curved proximally, empodium and claws equal in length. Palpi 4-segmented, its ratio 1:1.8:2.3:2.5, 4th segment slightly enlarged distally, blunt apically. Gonocoxites slightly enlarged laterally, 1.8 times as long as wide. Gonostylus slightly enlarged basally and bent distally, 1.3 times shorter than gonocoxites, 5.1 times as long as wide. Cerci slightly enlarged medially, with triangular excision, unsclerotized. Hypoproct narrow, slightly sclerotized, concaved apically and enlarged basally, 1.6 times narrower than cerci. Aedeagus strongly sclerotized, 1.3 times narrower than hypoproct at the base.

♀: Body length 1.31 mm, wing length 1.83 mm, width 0.77 mm. Scape 1.2 times as long as pedicel, enlarged basally. Basal node F1 not wider but longer than others. F1 1.5 times as long as F2. F1 4.8 times as long as wide, basal node 3.6 times as long as neck. F5 3.2 times as long as wide, basal node 3.1 times as long as neck. Some apical F lost. Tarsal claws shorter than in male, curved proximally; empodium and claws equal in length. Palpi 4-segmented, its ratio 1:1.5:1.6:1.5, 4th segment slightly enlarged distally, rounded apically. Apical plates of ovipositor 1.8 times as long as wide, covered by long setae.

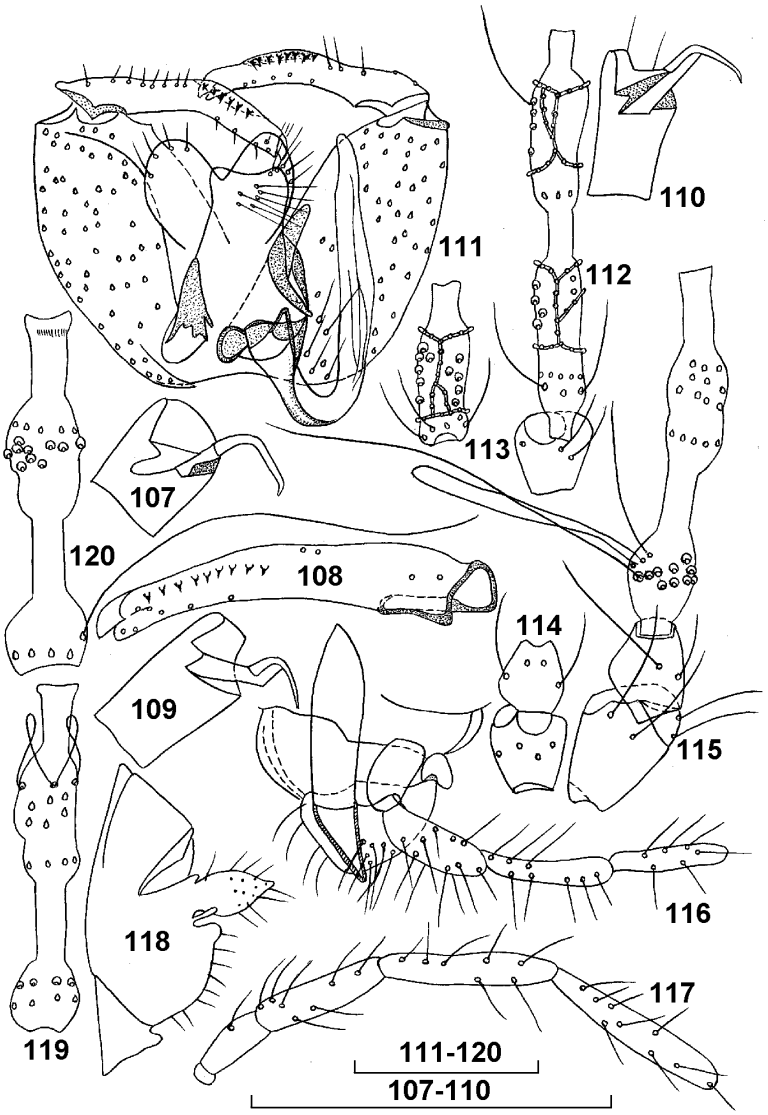
Genus *Aquidiplosis* FEDOTOVA, 2004

Genus includes two species from the Russian Far East (FEDOTOVA & SIDORENKO 2004b).

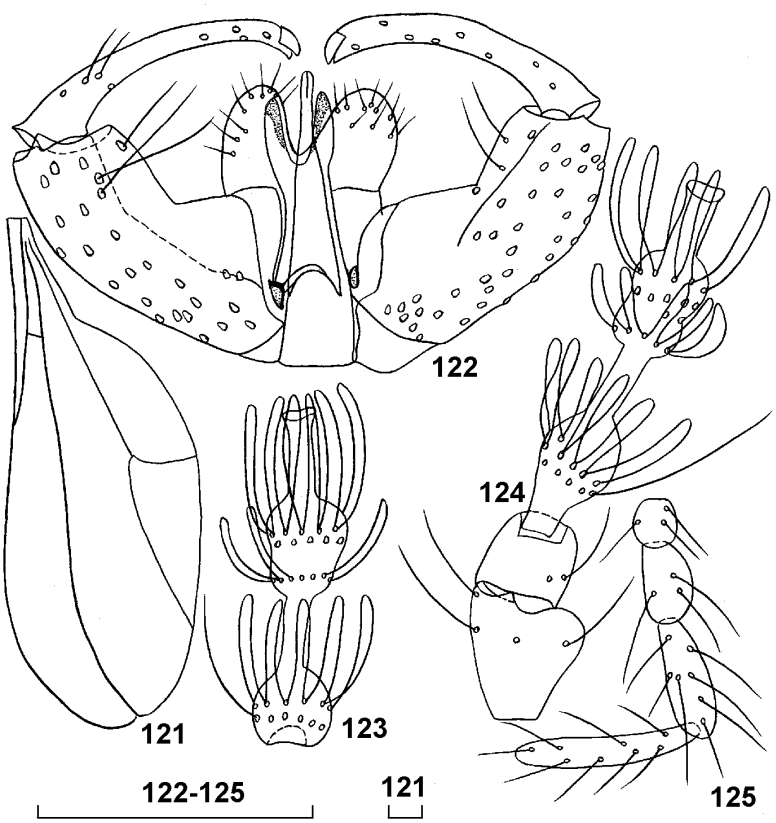
Aquidiplosis ampla FEDOTOVA sp. nov. (Figs 121-131)

Holotype ♀ (slide 202/1 LT): Russia, Primorskii krai, Kedrovaya Pad' Reserve, 17.VIII 2004 (V. SIDORENKO). Paratypes 1 ♂, 2 ♀♀ (slide 202/2-6 LT), the same locality, 18.VIII. 2004 (V. SIDORENKO).

Description. ♂: Body length 1.19 mm, wing length 1.61-1.79 mm, width 0.69-0.71 mm. Pronotum with 3 elongated dark-brown spots. Scape, pedicel and flagellum slightly sclerotized as flagellomeres; apex of distal neck of flagellomeres light. Last segments of antennae lost, mid flagellomeres with short whorls of sensorial loops, proximal and distal loops longer. Scape strongly swollen distally, 1.4 times as long as pedicel, basal node of F1 with basal neck, slightly longer than others, rounded, distal node of flagellum with slight narrowing. F1 1.1 times as long as F2. F1 5.1 times as long as wide, distal node 1.4 times as long as distal neck; distal node 1.3 times shorter than proximal node, last 1.9 times as long as proximal neck. Proximal neck and distal neck equal in length. F4 4.3 times as long as wide, distal node 1.1 times longer than distal neck. Distal node 1.3 times as long as proximal node and 1.4 times as long as proximal neck. Wings 2.6 times as long as wide. Vein R4+5 strongly curved distally. Tarsal claws lost. Palpi 4-segmented, its ratio



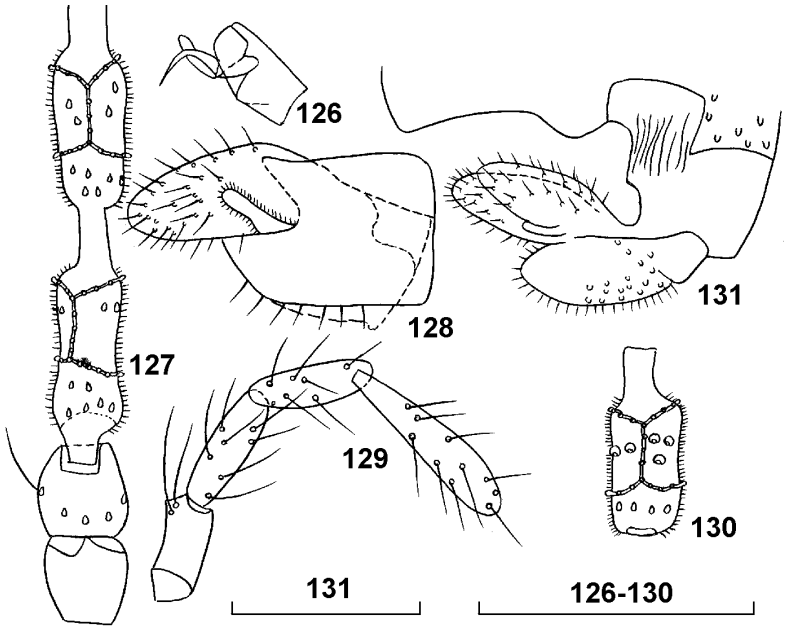
Figs 107-120. *Setodiplosis unifaria* sp. nov., male (107, 108, 111, 115, 117, 119, 120) and female (109, 110, 112-114, 116, 118): 107, 109, 110 tarsal claws (variation of shape); 108 gonostylus; 111 genitalia; 112 pedicel, F1 and F2; 113 F5; 114 scape and pedicel; 115 scapus, pedicel and F1; 116 mouth parts; 117 palpus; 118 ovipositor; 119 F2; 120 F3. Scale line = 0.1 mm.



Figs 121-125. *Aquidiplosis ampla* sp. nov., male: 121 wing; 122 genitalia; 123 F4; 124 scape, pedicel and F1; 125 palpus. Scale line = 0.1 mm.

1:1.6:2.4:3.5, 4th segment slightly dilated distally, rounded apically. Gonocoxites strongly curved medially, with rectangular basal protrusion, 2.5 times as long as wide. Gonostylus equal in length with gonocoxites, slightly curved, not swollen basally, 4.4 times as long as wide. Cerci strongly enlarged distally, with triangular excision. Hypo-proct narrowed medially, sclerotized along excision, with oval lobes and oval excision, 2.6 times narrower than cerci. Aedeagus strongly enlarged basally, dissected apically. Distal margin of abdominal tergites and sternites with row of setae situated on sclerotized strip.

♀: Body length 2.14-2.67 mm, wing length 2.06-2.82 mm, width 0.83-0.98 mm. Scape and base F1 light, pedicel and flagellum strongly sclerotized. Flagellomeres densely covered by strict microtrichiae. Last segments of antennae lost, pedicel strongly swollen basally, slightly longer than scape, basal node of F1 with long basal neck. F1 1.2 times as



Figs 126-131. *Aquidiplosis ampla* sp. nov., female: 126 tarsal claw (fore leg); 127 scape, pedicel, F1 and F 2; 128 ovipositor; 129 palpus; 130 F5; 131 ovipositor and VIII abdominal segment. Scale line = 0.1 mm.

long as F2. F1 3.7 times as long as wide, basal node 3.9 times as long as distal neck. F5 2.6 times as long as wide, basal node 2.7 times longer than neck. Palpi 4-segmented, its ratio 1:1.4:1.3:2.1, 4th segment dilated distally. Tarsal claws simple, semicircular, empodium longer than claws. Ovipositor short, telescopic, direct dorso-caudally, 1.8-2.0 times as long as wide, with apical ventral lobe, which 2.8 times as long as wide. Apical plates oviform, 1.4 times as long as wide, 2.4 times longer than ventral plate.

Relationship. New species related to *Aquidiplosis cornuta* FEDOTOVA, 2004 from Primorskii krai (FEDOTOVA & SIDORENKO 2004b), but differs from it by scleritization of hypoproct, long sensorial loops, reaching to next node, more short F1 and long 4 segment of palpi, long cerci and hypoproct, reaching to apex of gonocoxites and shorter aedeagus.

Genus *Resseliella* SEITNER, 1906

47 species are known in the world fauna (GAGNÉ 2004). Additionally one species was described from the Russian Far East (FEDOTOVA & SIDORENKO 2004a).

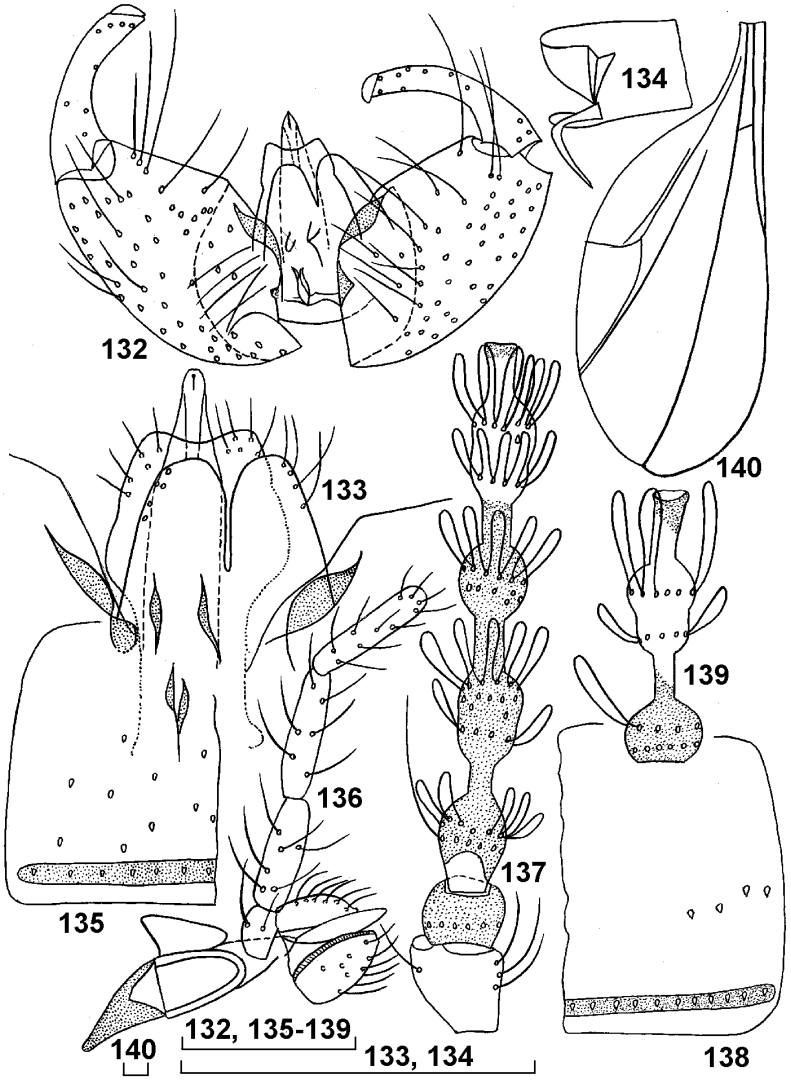
***Resseliella tenera* FEDOTOVA sp. nov.** (Figs 132-148)

Holotype ♂ (slide 203/1 LT): Russia, Primorskii krai, Kedrovaya Pad' Reserve, 18. VIII.2004 (V. SIDORENKO). Paratypes 2 ♀♀ (slide 203/2-3 LT), the same locality, 17.VIII. 2004 (V. SIDORENKO).

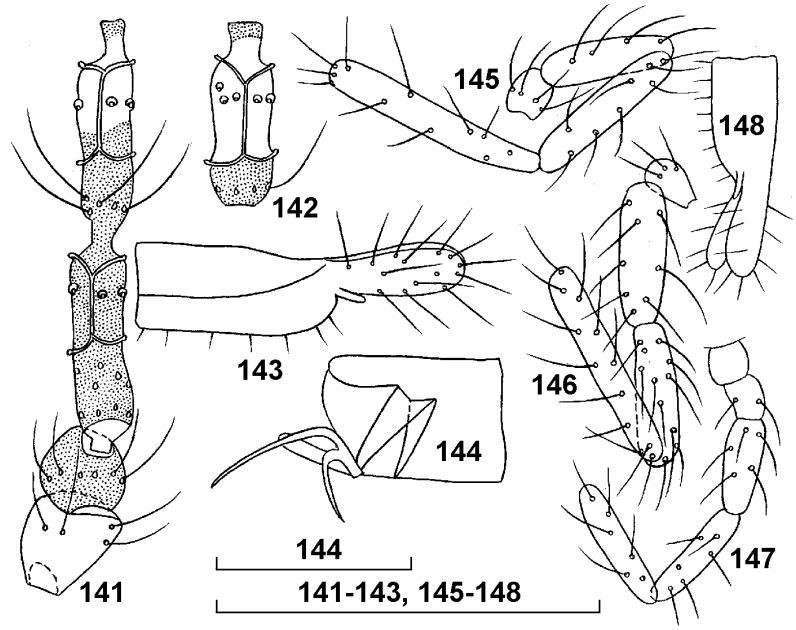
Description. ♂: Body length 2.03 mm, wing length 2.16 mm, width 0.87 mm. Postvertical peak developed. Scape unsclerotized, but pedicel, F1 and basal node, proximal neck and apex distal neck F2 strongly sclerotized, flagellum slightly sclerotized. Basal node and apex of distal neck of mid flagellomeres sclerotized. Last segments of antennae lost, mid flagellomeres with short whorls of sensorial loops; proximal and distal loops longer, slightly reached to next nodes. Scape enlarged apically, 1.3 times as long as transversal pedicel, basal node of F1 without basal neck, slightly longer than others, elongated distal node of F1 without narrowing. Mid F without narrowings. F1 as long as F2. F1 4.2 times as long as wide, distal node 1.8 times as long as distal neck; distal node 1.1 times shorter than proximal node, last 3.1 times as long as proximal neck. Proximal neck 1.6 times shorter than distal neck. F5 3.9 times as long as wide, distal node 1.2 times longer than distal neck. Distal node 1.3 times as long as proximal node and 1.8 times longer than proximal neck. Palpi 4-segmented, its ratio 1:2.3:2.7:2.7, 2-4 segments almost parallel-sided, rounded apically. Wings 2.4 times as long as wide. Vein R4+5 slightly curved distally, joining C behind apex of wing. Tarsal claws of hind legs simple, hook-form. Abdominal tergite IV with row of setae on distal sclerotized margin; fore setae situated near middle of lateral side. Abdominal sternite IV with one row of setae on distal sclerotized margin. Gonocoxites slightly enlarged basally, with fusiform sclerotized part at the base of inner side, 1.8 times as long as wide. Gonostylus 1.5 times shorter than gonocoxites, strongly curved medially, and swollen basally, 3.2 times as long as wide. Cerci strongly enlarged distally with elongated oval lobes and triangular excision. Hypoproct slightly narrowed medially, enlarged basally as cerci, emarginated apically, 1.2 times narrower than cerci. Aedeagus strongly enlarged basally, dissected apically.

♀: Body length 1.78-2.31 mm, wing length 2.47-1.86 mm, width 0.71-1.01 mm. Scape 1.3 times as long as pedicel. F with dark spots of sclerotization on basal third and near apex of neck. Pedicel, F1 and half of F2 dark. Last segments of antennae lost. F1 1.2 times as long as F2. F1 3.9 times as long as wide, basal node 8.0 times as long as distal neck. F5 2.9 times as long as wide, basal node 3.9 times longer than neck. Palpi 4-segmented, its ratio 1:2.7:3.3:4.6 or 1:2.6:2.6:4, 4th segment almost parallel-sided, rounded apically. Legs without dark scales. Tarsal claws of fore legs with basal denticle, strongly curved back, empodium as long as claws. Ovipositor telescopic, long, slightly sclerotized. Apical plates covered by long setae, 2.9 times as long as wide, slightly enlarged apically.

Relationship. New species related to *Resseliella poecilantha* FEDOTOVA & SIDORENKO, 2004 from Primorskii krai (FEDOTOVA & SIDORENKO 2004a), but differs from it by unsclerotized scape, shorter nodes of mid flagellomeres and more long proximal neck of male (distal node of F5 in *R. poecilantha* 1.7 times longer than distal neck), very slight narrowing of hypoproct (almost absent); equal length of 3rd and 4th segments of palpi (in *R. poecilantha* 1:2.7:2.5:3.5); narrower cerci and hypoproct, more narrower than wide of gonocoxites, strongly curved gonostylus and more wide wing (length not 2.7 times as long as wide). Female differs by short 4th segment of palpi and slightly enlarged apical plates of ovipositor.



Figs 132-140. *Resseliella tenera* sp. nov., male: 132 genitalia; 133 cerci, hypoproct and aedeagus; 134 tarsal claw (hind leg); 135 IV abdominal sternite; 136 mouth parts; 137 scape, pedicel F1 and F2; 138 IV abdominal tergite; 139 F5; 140 wing. Scale line = 0.1 mm.



Figs 141-148. *Resseliella tenera* sp. nov., female: 141 scape, pedicel F1 and F2; 142 F5; 143, 148 apex of ovipositor (variation of shape); 144 tarsal claw (fore leg); 145, 146, 147 palpus (variation of shape). Scale line = 0.1 mm.

Genus *Efferatodiplosis* FEDOTOVA gen. nov.

Type species: *Efferatodiplosis ornata* FEDOTOVA sp. nov.

Diagnosis. Eyes very large, occupied nearly entire head capsule. Head without post-vertical peak. Male flagellomeres with round distal node, without constriction on mid segments and rounded or transverse proximal ones. Male flagellomeres with two whorls of circumfilar loops, mid circumfilar ring and two whorls of setae. Circumfilar loops of flagellomeres with long loops on proximal nodes, reaching to the next node, longer than loops of distal nodes. Female flagellomeres with long neck and two rings of sensorial filae. Palpi 4-segmented. Tarsal claws simple, hook-form; empodium shorter than claw or equal in length. Wing elongated, maximally enlarged distally. Vein R1+2 joining C far before wing middle, Rs joining R1+2 near middle. R4+5 almost straight and joining C distinctly at wing apex. M3+4 absents, forked Cu presents. Fork of Cu situated on longer distance from the base of wing than point R1+2 joining C. Abdominal tergites with one row of setae along distal margin and two lateral lacunes. Male genitalia with short gonocoxites and gonostylus. Gonocoxites with large parts of medio-basal sclerotization; gonostylus with dorso-basal parts of scleratization. Cerci with rounded lobes and strongly dilated

basally. Hypoproct sclerotized, almost parallel-sided, narrower than cerci, as long as cerci and aedeagus. Aedeagus strongly sclerotized, enlarged basally, narrowed sub-apically, with rhomboid structure of sclerotization at the base. Ovipositor telescopic, very long and thin similar with species of the genus *Contarinia* RD.

Relationship. New genus related to *Fissuratidiplosis* FEDOTOVA, 2004 with single species from Primorskii krai (FEDOTOVA & SIDORENKO 2004b), but differs from it by strongly sclerotized and wider hypoproct; absence of basal triangular outgrowths of gonocoxites; wider cerci and hypoproct; medial ring of sensorial filae of flagellomeres (not whorl of sensorial loops); almost straight R4+5 joining at apex (not behind) of wing.

***Efferatodiplosis ornata* FEDOTOVA sp. nov.** (Figs, 67-69, 149-160)

Holotype ♂ (slide 204/1 PT): Russia, Primorskii krai, Vladivostok, IV.2004 (V. SIDORENKO). Paratype 1 ♀ (slide 204/2 PT), the same locality.

Description. ♂: Body length 1.69 mm, wing length 1.54 mm, width 0.59 mm. Scapus, pedicel and flagellum strongly sclerotized. Last segments of antennae lost, scape strongly swollen distally, 1.6 times as long as pedicel, basal node of F1 with basal neck, slightly longer than others, rounded, distal node of flagellum without constriction. F1 1.2 times as long as F2. F1 4.5 times as long as wide, distal node 1.4 times as long as distal neck; distal node 1.1 times shorter than proximal node, last 2.5 times as long as proximal neck. Proximal neck 1.5 times shorter than distal neck. F5 3.8 times as long as wide, distal node 1.1 times longer than distal neck. Distal node 1.4 times as long as proximal node and 1.5 times as long as proximal neck. Wings 2.3 times as long as wide. Vein R4+5 almost straight. Tarsal claws simple, curved distally, empodium narrow. Palpi 4-segmented, its ratio 1:1.1:1.8:2.4, 4th segment slightly dilated distally, rounded apically. Gonocoxites strongly sclerotized, slightly enlarged basally, 1.7 times as long as wide. Gonostylus 1.6 times shorter than gonocoxites, almost straight and swollen basally, 3.6 times as long as wide. Cerci strongly enlarged medially with triangular excision, slightly sclerotized. Hypoproct narrowed apically, sclerotized, emarginated apically, 1.8 times narrower than cerci. Aedeagus strongly enlarged basally, rounded apically, 1.1 times narrower than hypoproct at the base and 1.9 times narrower than cerci.

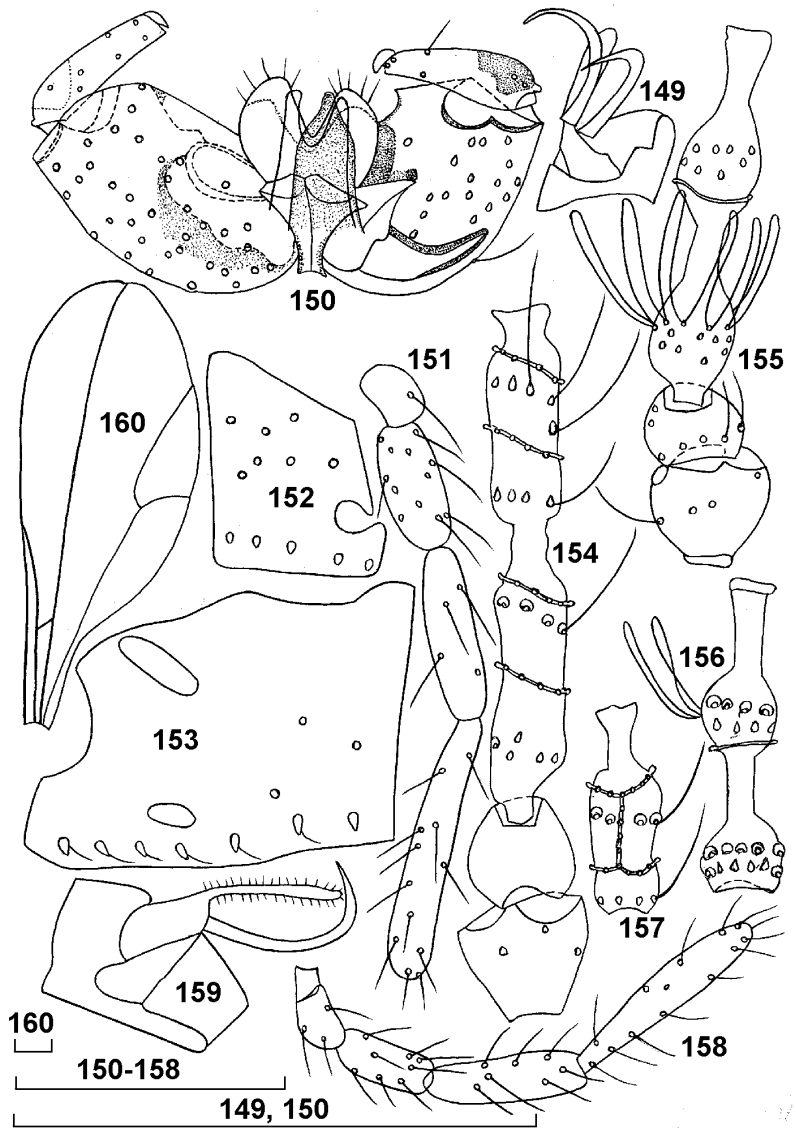
♀: Body length 1.27 mm, wing length 2.30 mm, width 0.90 mm. Scapus, pedicel and flagellum strongly sclerotized. Last segments of antennae lost, scape strongly swollen distally, 1.2 times as long as pedicel, basal node of F1 with basal neck. F1 1.3 times as long as F2. F1 3.9 times as long as wide, basal node 6.5 times as long as distal neck. F5 2.8 times as long as wide, basal node 3.0 times longer than neck. Palpi 4-segmented, its ratio 1:2.1:2.6:3.7 or 1:1.9:2.6:4, 4th segment almost parallel-sided. Ovipositor telescopic, very long, similar with *Contarinia* species, apically with undivided apical plates.

Genus *Dicrodiplosis* KIEFFER, 1895

Cosmopolitan genus with 12 species, including 3 Palaearctic ones. Known as predators of scale insects (GAGNÉ 2004). New genus for the fauna of Russia.

***Dicrodiplosis marikovskii* FEDOTOVA sp. nov.** (Figs 79-85)

Holotype ♀ (slide 205/1-2 LT): Russia, Primorskii krai, Kedrovaya Pad' Reserve, 18.



Figs 149-160. *Efferatodiplosis ornata* sp. nov., male (149, 150, 152, 153, 155, 156, 158, 160) and female (151, 154, 157, 159): 149, 159 tarsal claw; 150 genitalia; 151, 158 palpus; 152 V sternite; 153 V tergite; 154 scapus, pedicel, F1 and F2; 155 scapus, pedicel and F1; 156, 157 F5; 160 wing. Scale line = 0.1 mm.

VIII.2004 (V. SIDORENKO). Paratype 1 ♀ (slide 206/2 LT), 1 ♀ (slide 206/3 LT), the same locality, 18.VIII.2004 (V. SIDORENKO).

Description. ♀: Body very dark, length 1.93 mm, wing length 2.23-2.26 mm, width 0.76-0.83 mm. Eyes very large, occupied nearly entire head capsule. Head with short postvertical peak. Scape strongly enlarged apically. Male flagellomeres with elongated node, without constriction on mid segments and short stem. Scape unsclerotized, but pedicel and flagellum strongly sclerotized. Last segments of antennae lost. Scape 1.4 times as long as rounded pedicel, F1 with small basal neck, slightly longer than F2. F1 3.5 times as long as wide, basal node 6 times as long as neck. F5 2.8 times as long as wide, basal node 5 times longer than stem. Palpi 4-segmented, its ratio 1:1.6:1.9:2.6 or 1:1.2:1.6:1.8, all segments parallel-sided, 4th segment rounded apically. Wings 3.0 times as long as wide. Vein R4+5 slightly curved, joining in apex of wing, R1+2 2.0 times shorter than R4+5. Tarsal claws lost. Ovipositor strongly sclerotized. Apical plates enlarged apically, covered by short setae, 2.6-2.8 times as long as wide. Ventral plate 3.7-3.9 times shorter than apical plate. Ventral part of ovipositor with two wide lobes, visible from ventral side. Ovipositor (IX and X abdominal segments) 1.5 times as long as wide. Abdominal tergites with row of setae along distal margin, two lateral lacunas and group of setae between its. Abdominal sternites with distal row of setae and group of lateral setae.

Relationship. New species related to *D. pectinata* MARIKOVSKIJ, 1953 from Kazakhstan, but differs from it by more short and wide female flagellomeres, less curved R4+5 joining near (not far from apex) wing apex; sclerotized elongated ovipositor, consists of only one (not two) segments and longer apical plates of ovipositor.

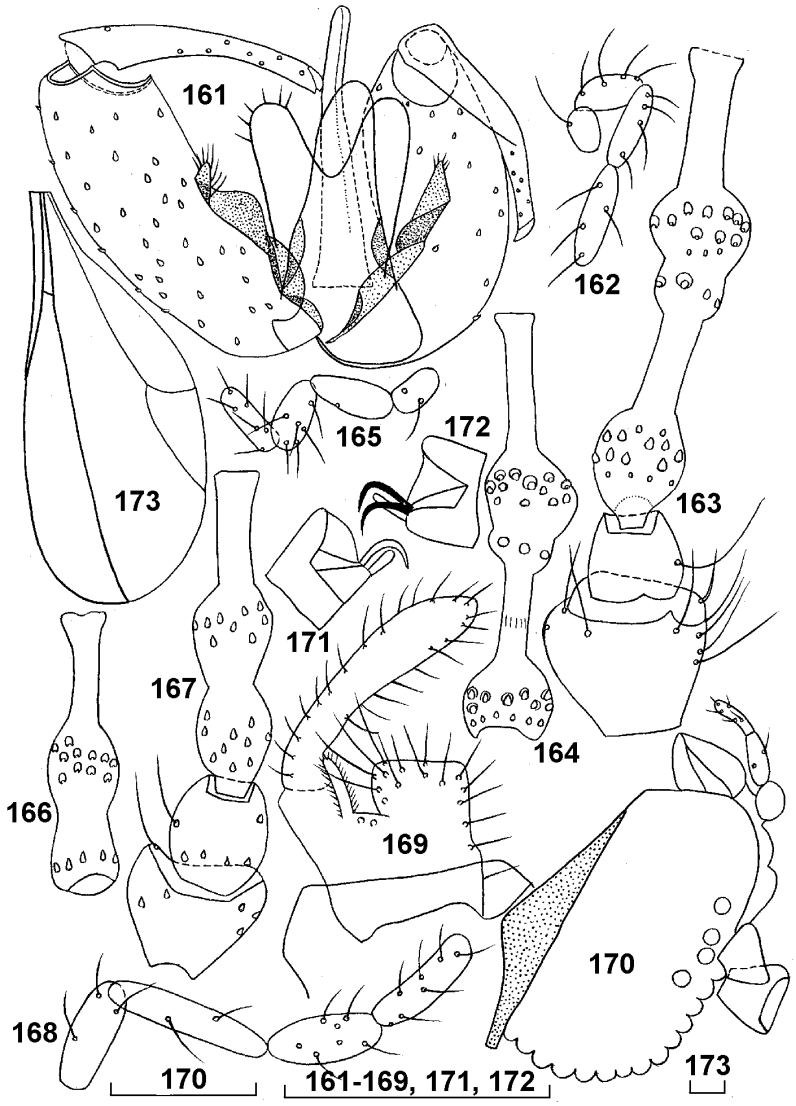
Etymology. New species is named in honour of Prof. P.I. MARIKOVSKIJ.

Genus *Spirodiplosis* FEDOTOVA gen. nov.

Type species: *Spirodiplosis implexa* FEDOTOVA sp. nov.

Diagnosis. Eyes very large, occupied nearly entire head capsule. Head with short postvertical peak. Scape strongly swollen, enlarged apically. Male flagellomeres with elongated distal node, with constriction on mid segments and rounded or transverse proximal ones. Male flagellomeres with three whorls of circumfilar loops and two whorls of setae. Female flagellomeres with long neck and basal node, with medial constriction and two whorls of setae. Palpi 4-segmented. Tarsal claws simple, hook-form, empodium shorter than claw. Wing not elongated, maximally enlarged distally. Vein R1+2 joining C far before wing middle, Rs joining R1+2 near middle. R4+5 almost straight and joining C distinctly at wing apex or slightly before it. Fork of Cu situated on longer distance from the base of wing than point R1+2 joining C. Abdominal tergites and sternites with row of setae along distal margin, light. Male genitalia with long gonocoxites and gonostylus. Gonocoxites with large parts of medio-basal sclerotization and triangular protrusion with short black setae; gonostylus slightly curved basally and very thin distally. Cerci with rounded lobes. Hypoproct slightly sclerotized and dilated basally, as long as cerci. VIII-X abdominal segments distinctly sclerotized. Ovipositor short, telescopic, with long apical plate, directed ventro-caudally. Ventral side of IX abdominal segment slightly elongated and obtused apically.

Relationship. New genus related to *Lestodiplosis* KIEFER, 1894, but differs from it by strongly enlarged gonocoxites, cerci and hypoproct; very small triangular protrusion in medial part of gonocoxites; aedeagus strongly enlarged toward the base (thin and parallel-



Figs 161-173. *Spirodiplosis implexa* sp. nov., male (161-165, 173) and female (166-172): 161 genitalia; 162, 165, 168 palpus (162, 165 variation of shape); 163, 167 scapus, pedicel and F1; 164, 166 F5; 169 ovipositor; 170 head (lateral view); 171, 172 tarsal claw; 173 wing. Scale line = 0.1 mm.

sided in *Lestodiplosis*); presence of long sclerotized parts on gonocoxites; almost straight R4+5 joining near (far from apex in *Lestodiplosis*) wing apex; sclerotized elongated ovipositor with very long apical plates.

***Spirodiplosis implexa* FEDOTOVA sp. nov.** (Figs 161-173)

Holotype ♂ (slide 206/1 LT): Russia, Primorskii krai, Kedrovaya Pad' Reserve, 18. VIII.2004 (V. SIDORENKO). Paratypes 1 ♀ (slide 206/2 LT), 1 ♀ (slide 206/3 LT), the same locality, 18.VIII.2004 (V. SIDORENKO).

Description. ♂: Body length 1.17 mm, wing length 1.54 mm, width 0.61 mm. Scape unsclerotized, but pedicel and flagellum slightly sclerotized. Last segments of antennae lost. Scape 1.8 times as long as transversal pedicel, basal node of F1 with small basal neck, slightly longer than others, almost rounded, distal node F1 with narrowing as well as F2. F1 1.1 times as long as F2. F1 4.8 times as long as wide, distal node 1.1 times as long as distal neck; distal node as long as proximal node, last 1.4 times as long as proximal neck. Proximal neck 1.5 times shorter than distal neck. F5 4.7 times as long as wide, distal node 1.5 times longer than distal neck. Distal node 1.1 times as long as proximal node and neck. Palpi 4-segmented, its ratio 1:1.6:1.8:2.3, all segments swollen, 4th - rounded apically. Wings 2.3 times as long as wide. Vein R4+5 almost straight, joining slightly before wing apex. R1+2 1.3 times shorter than R4+5. Gonocoxites slightly enlarged medially, with sclerotized part and small triangular protrusion on the middle of inner side, 2.4 times as long as wide. Gonostylus 1.3 times shorter than gonocoxites, slightly curved medially, 5.8 times as long as wide. Cerci with elongated oval lobes and oval excision. Hypoproct slightly narrowed apically, enlarged basally as cerci, rounded apically, 1.3 times narrower than cerci. Aedeagus strongly enlarged basally, longer than gonocoxites.

♀: Body length 2.00-2.11 mm, wing length 1.82-2.02 mm, width 0.86-0.94 mm. Scape 1.1 times as long as pedicel. Last segments of antennae lost. F1 1.1 times as long as F2. F1 4.3 times as long as wide, basal node 1.8 times as long as distal neck. F5 4.1 times as long as wide, basal node 1.4 times longer than neck. Palpi 4-segmented, its ratio 1:1.4:1:1 or 1:2.1:2.1:2.5, 4th segment almost parallel-sided, rounded apically. Tarsal claws rounded medially, empodium almost equal in length with claws. Ovipositor slightly sclerotized. Apical plates enlarged apically, covered by long setae, 4.9 times as long as wide, slightly enlarged apically. Ventral plate 4.1 times shorter than apical one. Ovipositor (IX and X abdominal segments) 2.2 times as long as wide.

References

BU, W.J. & ZHENG, L.Y. 1994: On the genus *Coquillettomyia* FELT from China (Diptera: Cecidomyiidae). - Acta entomologica Sinica 37 (3): 353-358.

FEDOTOVA, Z.A. 2003: New species from new genera of gall midges (Diptera, Cecidomyiidae) from the Russian Far East. - An International Journal of Dipterological Research 14 (1): 43-72.

FEDOTOVA, Z.A. & SIDORENKO, V.S. 2004a: New taxa of gall midges from Russian Far East (Diptera, Cecidomyiidae). - Entomofauna 25 (2): 97-116.

FEDOTOVA, Z.A. & SIDORENKO, V.S. 2004b: New genera and species of gall midges (Diptera, Cecidomyiidae) from the Russian Far East. - An International Journal of Dipterological Research 15 (2): 163-185.

FEDOTOVA, Z.A. & SIDORENKO, V.S. 2004c: New species of gall midges of the genus *Karshomyia* FELT, 1908 (Diptera, Cecidomyiidae) and related new genera from the Russian Far East. - Far Eastern Entomologist 137: 1-32.

GAGNÉ, R.J. 2004: A catalog of the Cecidomyiidae (Diptera) of the world. - Memoirs of the Entomological Society of Washington 25: 1-408.

MAMAEV, B.M. & KRIVOSHEINA, M.G. 1997: To the taxonomy of the gall midges of the genus *Karschomyia* FELT, 1908 (Diptera, Cecidomyiidae) with description of 11 new species. - Russian entomological journal 6 (3-4): 75-81.

MÖHN, E. 1955: Neue freilebende Gallmücken-Gattungen. - Deutsche Entomologischie Zeitschrift (N.F.) 2 (3/4): 127-151.

Addresses of authors:

Zoya A. FEDOTOVA
Samara Academy of Agriculture
Ust-Kinelskii
Samara Province
Russia 446442
<zoya-fedotova@mail.ru>

Vasily S. SIDORENKO
Institute of Biology and Soil Sciences
Far Eastern Division of the Russian Academy of Sciences
Vladivostok
Russia 690022
<entomol@ibss.dvo.ru>

Literaturbesprechung

SCHWOERBEL, J. BRENDELBERGER, H. 2005: Einführung in die Limnologie. - Elsevier/Spektrum Akademischer Verlag, München, 9. Aufl., 340 S.

Mit der 9. Auflage erfährt dieses klassische Lehrbuch abermals eine deutliche Überarbeitung. Neu eingearbeitet wurden Themen wie z.B. die Paläolimnologie, die aquatischen Hyphomyceten und die Flussauen. Saprobienindex, Protisten und Fettsäuren wurden ergänzt und aktualisiert; begleitend sind ca. 350 neue Literaturzitate eingearbeitet worden.

Dem Aufbau eines Lehrbuches entsprechend, beginnt die "Einführung in die Limnologie" mit der Stellung der Limnologie im System der Naturwissenschaften, der geschichtlichen Entwicklung und einem Kapitel zum Wasserkreislauf sowie der Einteilung der Binnengewässer. Mit den folgenden 5 Kapitel, "Struktur und physikalische Eigenschaften des Wassers", "Physikalische Verhältnisse im Gewässer", "Lebensgemeinschaften im Gewässer", "Stoffhaushalt der Gewässer I und II" wird der Bogen zum letzten Kapitel "Angewandte Limnologie" gespannt. Ein ausführliches Glossar und das Literaturverzeichnis beschließen das Werk. Auch wenn das buch nicht mehr als Taschenbuch vorliegt, zeigt es doch noch den Charakter eines solchen und bleibt - im Sinne des verstorbenen Jürgen SCHWOERBEL - **die** kompakte, deutschsprachige Einführung in die Ökologie der Süßgewässer.

R. GERSTMEIER

LECOINTRE, G. & LE GUYADER, H. 2005: Biosystematik. - Springer-Verlag, Heidelberg. 696 S.

Dies ist das erste Werk, das eine vollständige und zusammenhängende Klassifizierung **aller** Lebewesen (Pflanzen und Tiere) bietet, die ausschließlich auf der evolutiven Abstammung basiert. Die Darstellung erfolgt in Stammbäumen (Phylogenien), die die Abstammungs- und Verwandtschaftsbeziehungen zeigen. Der Stammbaum des Lebens, der hier vorgestellt wird, entspricht einer verschachtelten Serie von Klada (Gruppen); Taxa wie z.B. Fische, Reptilien, Gymnospermen werden über Bord geworfen, weil diese Gruppen nicht monophyletisch sind. Damit sich trotzdem über diese Gruppen informieren kann, sind sie im Anhang unter "Wo stehen sie?" aufgeführt. Gerade in diesem Anhang zeigt sich die "Unsinnigkeit" solcher Gruppen wie "Reptilien" oder gar "Algen". Es wird für viele Lehrende (v.a. an Gymnasien, aber durchaus auch im Grundstudium der Universitäten) schwer werden, die alten "Hierarchien" über Bord zu werfen und den Schülern eine "moderne" Systematik zu bieten. Für jedes Kladon werden "Allgemeine Merkmale" aufgezeigt (einige Vertreter sind abgebildet), es folgt die kurze Darstellung der "Ökologie" und die Präsentation der "Speziellen Merkmale" (dies sind die Beschreibungen der Synapomorphien, also diejenigen Argumente, die für eine Monophylie des Kladons sprechen); Artenzahlen, ältestes bekanntes Fossil und heutiges Vorkommen werden kurz und übersichtlich in einer Box abgehandelt. Jedes Kapitel beginnt mit dem Stammbaum der relevanten Klada. Also, z.B. die Euarthropoda spalten sich in Cheliceriformes und Mandibulata, die einzelnen Klada der Mandibulata sind Myriapoda und in der Schwestergruppe (Pancrustacea) die Remipedia, Cephalocarida, Maxillopoda, Branchiopoda, Malacostraca und Hexapoda. Im wesentlichen haben die Autoren dabei morphologische Merkmale zugrundegelegt; nur wenn es hier viele Widersprüche gab, wurde auf molekulare Daten zurückgegriffen. Z.T. werden aber auch konkurrierende Ergebnisse dargestellt.

Bei aller Knappheit ist die Einleitung (die aktuellen Methoden der phylogenetischen Systematik) doch recht gut verständlich und mit anschaulichen Beispielen belegt.

In der Tat, bei aller anfänglichen Skepsis, dieses Buch überzeugt. Es muss ja nicht alles so bleiben wie es ist - Systematik ist ja etwas fließendes, aber der Grundstock ist gelegt. Man kann nur hoffen, dass dieses Buch breiten Eingang in Schulen und Universitäten findet. R. GERSTMEIER

Druck, Eigentümer, Herausgeber, Verleger und für den Inhalt verantwortlich:
Maximilian SCHWARZ, Konsulent für Wissenschaft der O.Ö. Landesregierung,
Eibenweg 6, A-4052 Ansfelden, E-Mail: maxschwarz@inode.at
Redaktion: Erich DILLER (ZSM), Münchhausenstrasse 21, D-81247 München, Tel.(089)8107-251
Fritz GUSENLEITNER, Lungitzerstrasse 51, A-4222 St. Georgen a.d. Gusen
Wolfgang SCHACHT, Scherrerstrasse 8, D-82296 Schöngeising, Tel. (089) 8107-302
Erika SCHARNHOP, Himbeerschlag 2, D-80935 München, Tel. (089) 8107-102
Emma SCHWARZ, Eibenweg 6, A-4052 Ansfelden
Dr. Wolfgang SPEIDEL, Museum Witt, Tengstrasse 33, D-80796 München
Thomas WITT, Tengstrasse 33, D-80796 München, E-Mail: thomas@witt-thomas.com
Postadresse: Entomofauna (ZSM), Münchhausenstrasse 21, D-81247 München,
E-Mail: erich.diller@zsm.mwn.de oder: wolfgang.schacht@zsm.mwn.de