Entomofauna

ZEITSCHRIFT FÜR ENTOMOLOGIE

Band 25, Heft 7: 97-116 ISSN 0250-4413 Ansfelden, 15. April 2004

New taxa of gall midges from 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: *Dentifibula marikovskajae* **sp. nov.**, *Silvestriola mescheryakovi* **sp. nov.**, *Calyptradiplosis turriformis* **gen.** et **sp. nov.**, *Heterostylidiplosini* **tribe nov.**, *Heterostylidiplosis serpentinus* **gen.** et **sp. nov.**, *Resseliella poecilantha* **gen.** et **sp. nov.**, *Auritadiplosis rhombeus* **gen.** et **sp. nov.** and *Lanidiplosis latus* **gen.** et **sp. nov.** *Karshomyia fungicola* MAMAEV & M. KRIVOSHEINA, 1997 is transferred to the genus *Heterostylidiplosis* gen. nov. on the basis of structure of male genitalia. *Dentifibula marikovskajae* sp. nov. and *Silvestriola mescheryakovi* sp. nov. are recorded as predators of Coccoidea.

Zusammenfassung

Neue Taxa von Gallmücken (Diptera, Cecidomyiidae) aus Russland Fern Ost werden beschrieben: *Dentifibula marikovskajae* **sp. nov.**, *Silvestriola mescheryakovi* **sp. nov.**, *Calyptradiplosis turriformis* **gen.** et **sp. nov.**, *Heterostylidiplosini* **tribe nov.**, *Heterostylidiplosis serpentinus* **gen.** et **sp. nov.**, *Resseliella poecilantha* **gen.** et **sp. nov.**, *Auritadiplosis rhombeus* **gen.** et **sp. nov.** and *Lanidiplosis latus* **gen.** et **sp. nov.** *Karshomyia fungicola* MAMAEV & M. KRIVOSHEINA, 1997 wird aufgrund der männlichen Genitalstruktur in die Gattung *Heterostylidiplosis* gen. nov. gestellt. *Dentifibula marikovskajae* sp. nov. und *Silvestriola mescheryakovi* sp. nov. werden als Parasiten von Coccoidea festgestellt.

Introduction

The gall midges (Diptera, Cecidomyiidae) were collected during summer 2001 in the vicinity of Kamenushka near Ussuriyskii Reserve (Primorskii krai, Russia). There are some new taxa within the collected material, which are described below. Holotypes and a part of the paratypes of the new species are deposited in the Zoological Institute of Russian Academy of Sciences, St.Petersburg, the other paratypes in the collections of Samara Academy of Agriculture, Ust-Kinelskii, Samarskaya oblast, and 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. For morphological characters: F1, F2 ... = flagellomeres 1, 2 ...; for collecting methods: LT = light trap; MT = Malaise trap; WT = window trap.

Tribe Contariniini RÜBSAAMEN & HEDICKE, 1926

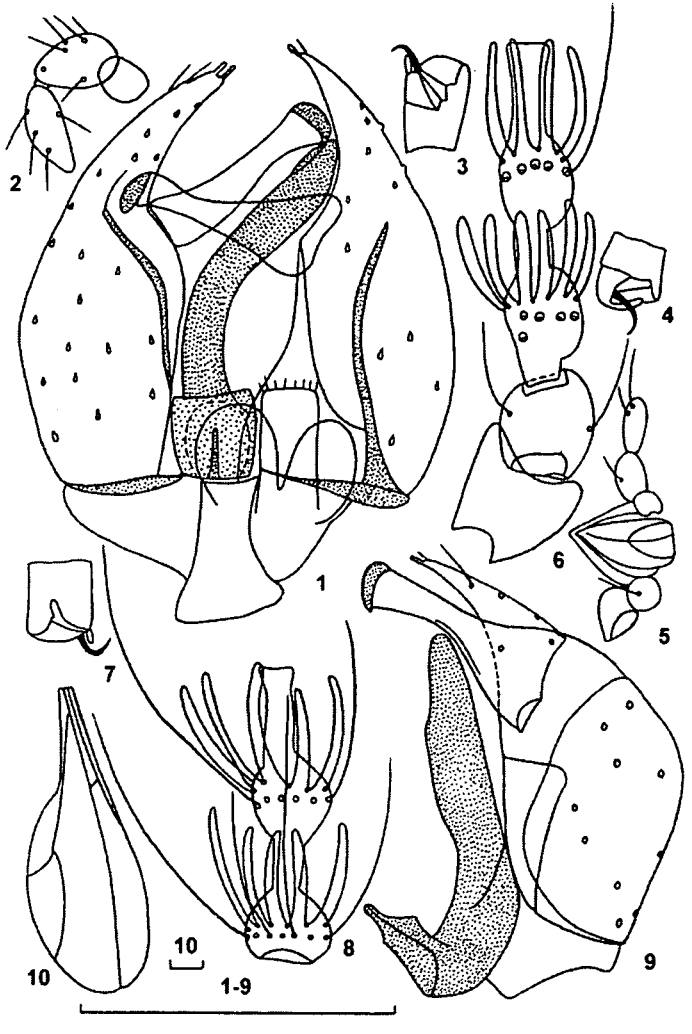
Dentifibula marikovskajae FEDOTOVA & SIDORENKO sp. nov. (Figs 1-10)

Material. Holotype ♂ (slide 63 MT 1/1): Russia, Primorskii krai, 30 km SE Ussuriysk, Kamenushka, 30.VI.2001 (V. SIDORENKO). Paratype ♂ (slide 63 MT 1/2), same locality, 30.VI.2001 (V. SIDORENKO).

Description. ♂: Body length 0.7 - 0.8 mm, wing length 1.0 mm, width 0.4 mm. Antennae with 2+12 segments, scape enlarged apically, almost equal in length with rounded pedicel, scape 0.1 times as long as pedicel. F1 1.1 times as long as F2, basal node of F1 not longer than basal nodes of other flagellomeres. F1 4.3 times as long as wide, distal node and distal neck equal in length; distal node 1.2 times shorter than proximal node and 2.7 times as long as proximal neck. F5 3.4 times as long as wide, distal node and distal neck equal in length; distal node 1.2 times as long as proximal node and 1.9 times as long as proximal neck. F12 and some apical flagellomeres lost. Wings with dark spots along veins, 2.6 times as long as wide. Vein R_{4+5} almost straight, joining *C* before wing apex. Tarsal claw simple, hook-shaped, empodium shorter than claw. Palpi 3-segmented, its ratio 1 : 1.7 : 1.9, segment 3 strongly swollen, tapered or rounded apically. Gonocoxite strongly enlarged basally, with long tapering lobe apically, 2.4 - 3.2 times as long as wide. Gonostylus 2.0 - 2.1 times shorter than gonocoxite, slightly concaved medially, 2.1 - 3.5 times as long as wide, distal half strongly enlarged. Cerci with long oval apical lobes, with small deep emargination, unsclerotized. Hypoproct slightly sclerotized, almost parallel-sided, equal in length with cerci, more than 3.5 times shorter than gonocoxites, 2.2 times narrower than cerci. Aedeagus slightly sclerotized, almost parallel-sided, but strongly recurved, with rounded apex, not longer than gonocoxites. Genital base wide, slightly sclerotized.

♀ unknown.

Relationship. The new species is closely related to *D. nigritarsis* MO, 1992 from China, but differs by 3-segmented (not 4-segmented) palpi, less rounded lateral sides of gonocoxites in proximal half, straight (not rounded) apex of hypoproct, elongated and rounded (not obtused) lobes of cerci, parallel-sided (not enlarged at base) gonostyles without dark



Figs 1-10. *Dentifibula marikovskajae* sp. nov., male: 1 genitalia; 2 palpus; 3, 4, 7 tarsal claw (variation of shape); 5 mouth parts; 6 scape, pedicel, F1; 8 F5; 9 gonocoxite, gonostylus and aedeagus (variation of shape); 10 wing. Scale line = 0.1 mm.

spots in distal half, more elongated wing (length 2.6 times as long as wide, not 2.2 times) and more elongated necks of middle flagellomeres.

Biology. Larvae are endoparasitic predators of Coccoidea.

Etimology. The new species is named in memory of the apidologist T.P. MARIKOVSKAJA (1946-2001).

Remark. There are only three Palaearctic species of *Dentifibula* FELT, 1908. One species, *D. turcmenorum* MAMAEV, 1986, was recorded from Turkmenistan. Recently 2 species were described from China, *D. nigritarsis* MO, 1992 and *D. magna* MO & LIU, 2003. The other species are distributed in India, Ceylon and North America (GROVER 1965, HARRIS 1968, GAGNÉ 1973).

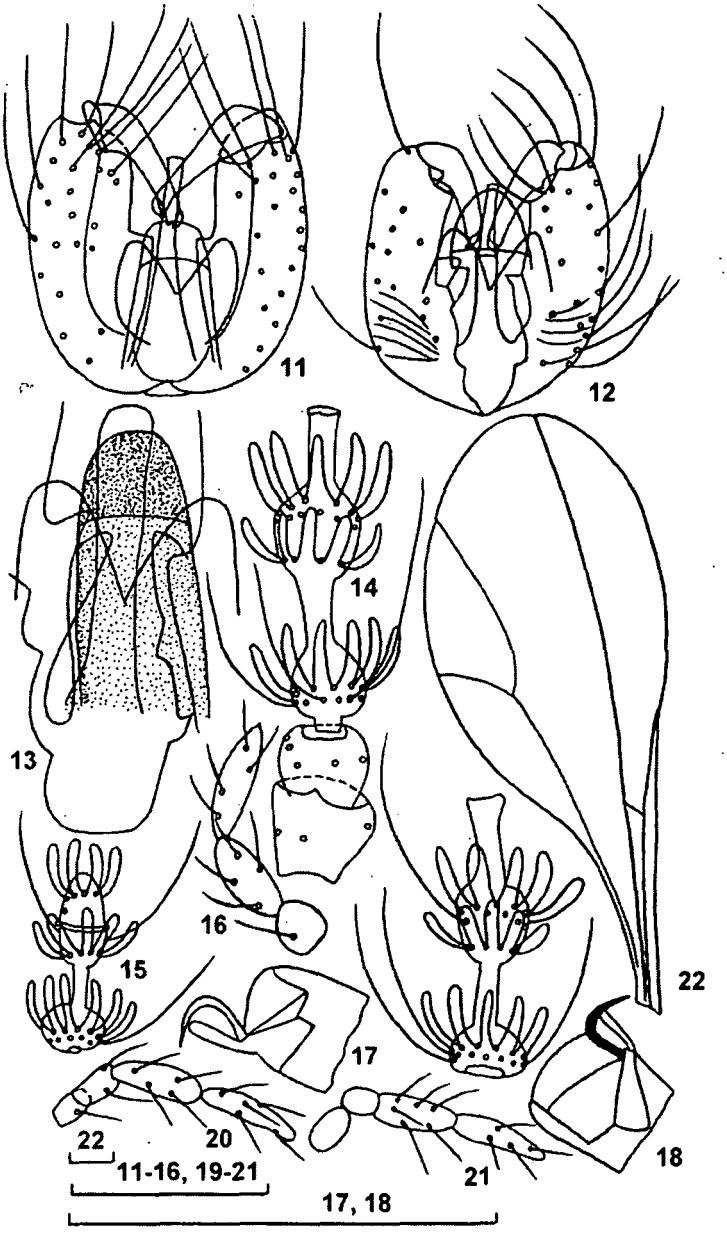
Tribe Lestodiplosini HARRIS, 1966

Silvestriola mescheryakovi FEDOTOVA sp. nov. (Figs 11-22)

Material. Holotype ♂ (slide 105/1): Russia, Primorskii krai, near Vladivostok, Sascharnij klutch, larvae are predators of *Pseudaulacaspis cockerelli* (COOLEY) on *Actinidia kolomycta*, 4.VI.1981, emerged 12.VI.1981 in laboratory (A. MESCHERYAKOV). Paratype♂ (slide 105/2), data as holotype.

Description. ♂: Body length 1.1 - 1.2 mm, wing length 1.2 - 1.4 mm, width 0.5 - 0.6 mm. Head with postvertical peak. Antennae with 2+12 segments. Scape enlarged apically, pedicel 1.2 times shorter than scape. Distal node of flagellomeres elongated, proximal node transversal. Sensorial filae of flagellomeres with short loops not reaching apex of proximal and distal necks. F1 3.4 times as long as wide, distal neck 1.2 times shorter than distal node; distal node 1.5 times as long as proximal node and proximal neck. F5 2.4 times as long as wide, distal neck 1.1 times as long as distal node; distal node 2.4 times as long as proximal node and 1.3 times as long as proximal neck. F12 without protrusion. Tarsal claw recurved basally, almost rectangular, simple, empodium equal in length with claw. Palpi 3-segmented, its ratio 1 : 2.4 : 3.0 or 1 : 1.9 : 3.2, segment 3 enlarged distally or parallel-sided, with pointed apex. Wing strongly elongated, maxim in distal part, 2.4 time as long as wide. Vein R_{1+2} joining C before wing middle, R_{4+5} not strongly curved and joining C distinctly before wing apex, forming a very large cell. M_{3+4} and forked Cu present. Fork of Cu situated at longer distance from wing base than point R_{1+2} joining C. Gonocoxite slightly dilated basally, widely rounded laterally, with 2-3 long setae near apex, 1.1 times as long as wide. Gonocoxite with small triangular medio-basal outgrowths. Gonostylus 2.0 times shorter than gonocoxite, 4.7 - 5.2 times as long as wide, slightly slender distally, swollen basally and bent medially or subapically. Aedeagal complex reduced. Cerci small, with short apical rounded or oviform lobes and wide triangular emargination. Hypoproct slightly sclerotized, swollen basally, with or without slightly concaved apex. Sometimes hypoproct slightly enlarged basally and obtused apically.

Figs 11-22. *Silvestriola mescheryakovi* sp. nov., male: 11, 12 genitalia (variation of shape); 13 cerci, hypoproct, aedeagus and basal outgrowths of gonocoxites (variation of shape); 14 scape and pedicel and F1 (variation of shape); 15 F12; 16, 20, 21 palpus (variation of shape); 17, 18 tarsal claw (variations); 19 F5; 22 wing. Scale line = 0.1 mm.



Aedeagus thin, slightly enlarged basally and obtused apically, longer than cerci and hypoproct. Basal outgrowths of gonocoxites very small, rounded or triangular, with spots of sclerotization on inner side.

♀ unknown.

Relationship. The new species is closely related to *S. silvestrini* (KIEFFER, 1910), but differs from it by less swollen gonostylus at base; not widened cerci and hypoproct; more thick aedeagus, with obtused (not rounded) apex; it developes in coccid (SKUHRAVÁ 1997).

Etimology. The species is named in honour of collector A. MESCHERYAKOV.

Genus *Calyptradiplosis* FEDOTOVA gen. nov.

Type species: *Calyptradiplosis turriformis* FEDOTOVA sp. nov.

Eyes very large, occupying nearly entire head capsule. Head without postvertical peak. Antennae with 2+12 segments; male and female F1 and F2 fused. Male flagellomeres with two nodes: elongated distal nodes with narrowing on all segments and with rounded proximal ones. Male flagellomeres with three whorls of sensorial filae and two whorls of setae. Sensorial filae of flagellomeres with short loops not reaching next node. Appendage of terminal antennal segment with elongated protrusion, narrowed apically. Palpi 4-segmented. Tarsal claw simple, rectangularly curved, empodium slightly shorter than claw. Wing elongated, enlarged distally. Vein R_{1+2} joining C far before wing middle, R_{4+5} strongly curved and joining C distinctly behind wing apex. M_{3+4} and forked Cu present. Fork of Cu situated at slightly longer distance from wing base than point R_{1+2} joining C. Male genitalia with stout gonocoxites and narrow gonostylus. Gonocoxites broad, widely rounded laterally, with round or triangular medio-basal protrusions. Gonostylus shortened basally, slightly recurved apically, with wide claw. Cerci short, emarginated. Hypoproct slightly rounded and concaved apically, densely covered by short setae. Aedeagus elongated, thin, enlarged basally and recurved subapically, slightly sclerotized.

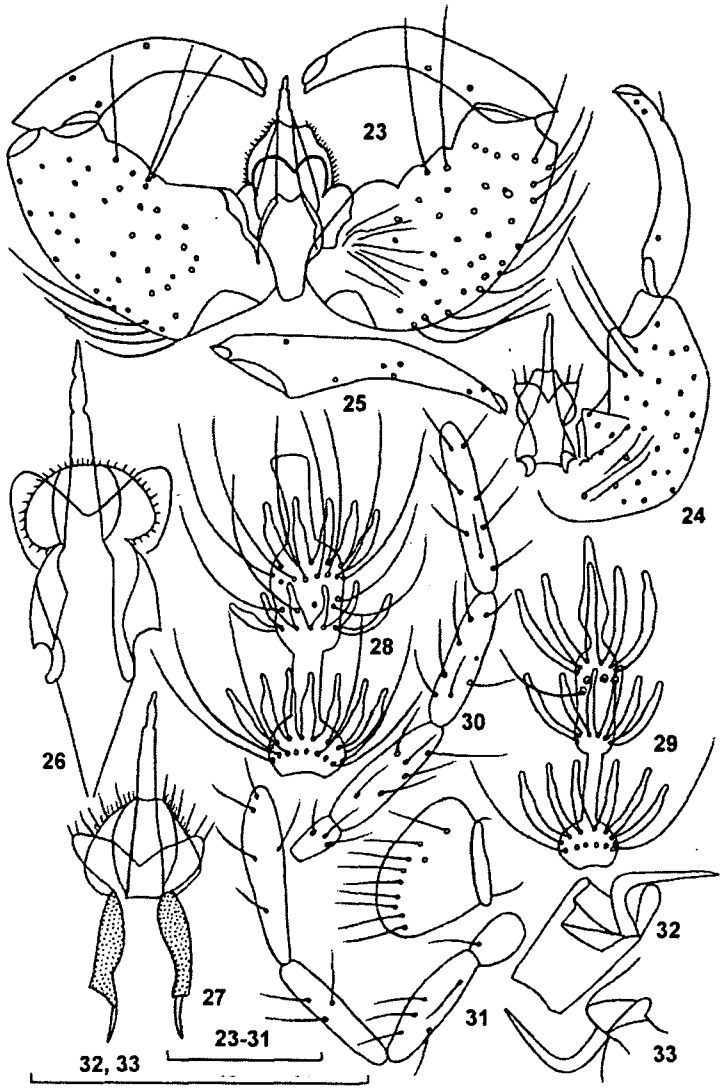
Species included: only type species.

Relationship. The new genus differs from other known genera by the presence of very long, pointed aedeagus and very small parts of aedeagal complex (seen in *Tessarodiplosis* BAYLAC, 1988), equally rounded nodes of male flagellomeres; two whorls of sensorial loops; curved vein R_{4+5} joining C far from wing apex; shortened thin gonostylus and very narrow hypoproct (BAYLAC 1988). The new genus also resembles *Dichodiplosis* RÜBSAAMEN by the form of aedeagus, but has very thin and long hypoproct (SKUHRAVÁ 1997).

Calyptradiplosis turriformis FEDOTOVA, sp. nov. (Figs 23-33, 42, 43)

Material. Holotype ♂ (slide 67 LT 6/1): Russia, Primorskii krai, 30 km SE Ussuriysk, Kamenushka, 23.VIII.2001 (V. SIDORENKO). Paratypes ♂♂ (slides 67 LT 5 Â 2/2 and 67/7010-3/ 3), same locality (Z. FEDOTOVA).

Description. ♂: Body length 1.2 - 2.0 mm, wing length 2.0 - 2.5 mm, width 0.9 - 1.4 mm. Antennae with 2+12 segments. Distal nodes of flagellomeres elongated, proximal nodes transversal. Sensorial filae of flagellomeres with short loops, not reaching apex of proximal and distal necks. F5 4.1 times as long as wide, distal neck 1.3 times as long as



Figs 23-33. *Calyptradiplosis turriformis* sp. nov. male: 23 genitalia; 24 part genitalia (variation of shape); 25 gonostyles; 26, 27 cerci, hypoproct, aedeagus of gonocoxites (variation of shape); 28 F5; 29 F12; 30 palpus; 31 mouth parts; 32, 33 tarsal claw. Scale line = 0.1 mm.

distal node; distal node 2.0 times as long as proximal node and 1.7 times as long as proximal neck. F12 with elongated tapering protrusion, almost equal in length with proximal node. Apex of tibia and base of 1st tarsomere with scales. Tarsal claw simple, rectangularly curved at base, empodium smaller than claw. Palpi 4-segmented, its ratio 1 : 2.3 : 2.4 : 2.9 or 1 : 2.3 : 2.4 : 2.9, segment 4 enlarged distally or parallel-sided, with rounded apex. Wing strongly elongated, maximal enlarged distally. Vein R_{1-2} joining C before wing middle, R_{4+5} strongly curved and joining C distinctly behind wing apex, forming a very large cell. M_{3+4} and forked Cu present. Fork of Cu situated at longer distance from wing base than point of R_{1+2} joining C. Gonocoxite not strongly dilated basally, widely rounded laterally, with 2-3 long setae near apex, 1.1 times as long as wide. Gonostylus 2.0 times smaller than gonocoxite, 4.7 - 5.2 times as long as wide, distally narrow, swollen basally, slightly bent medially or subapically. Aedeagal complex strongly reduced. Cerci small, with short apical rounded or oviform lobes and with wide triangular excision. Hypoproct slightly sclerotized, strongly swollen basally, with straight or slightly concaved apex. Sometimes hypoproct slightly enlarged basally and obtused apically. Aedeagus thin, slightly enlarged basally, not shorter than gonocoxites but more long than cerci and hypoproct. Apex of aedeagus pointed apically, with rough steped lateral sides. Basal outgrowths of gonocoxites very small, rounded or triangular, with spots of sclerotization on inner side.

♀ unknown.

Tribe Heterostylidiplosini FEDOTOVA, tribe nov.

Female flagelomeres with long stem, with 2 whorls of setae, sensorial filae simple, with 2 rings and 2 longitudinal connectives. Basal enlargements and base of stems covered by microtrichiae. Male genitalia with stout gonocoxites and slender gonostylus. Gonocoxites broad, rounded laterally. Gonostylus asymmetrical, with claw, strongly enlarged proximally, one of the gonostyles with long protrusion. Cerci short, emarginated, hypoproct rounded apically, densely covered by long setae. Aedeagus elongated, consists of two thin, very long tubes situated above gonocoxites and curved backward to apex of abdomen, slightly sclerotized. Genitalia basally with large hexagonal capsule with two large sexual products (probably spermatophores) in tubules. Tubules curved caudally to apex of genitalia and ended by conical narrowing. Lamellae of ovipositor 2-segmented, terminal segment with 2 long terminal setae.

Genus *Heterostylidiplosis* FEDOTOVA gen. nov.

Type species: *Heterostylidiplosis serpentinus* FEDOTOVA sp. nov.

Eyes very large, occupying nearly entire head capsule. Head without postvertical peak. Antennae with 2+12 segments; male and female F1 and F2 fused. Male flagellomeres with two nodes: long distal nodes with narrowing on all segments and rounded proximal ones. Male flagellomeres with three whorls of sensorial filae and two whorls of setae. Sensorial filae of flagellomeres with short loops not reaching next node. Appendage of terminal antennal segment subsessile, rounded, with finger-like apical part. Palpi 4-segmented. Tarsal claw dented, rectangularly curved, empodium shorter than claw. Wing

elongated, maximally enlarged distally. Vein R_{1+2} joining C far before wing middle, R_{4+5} strongly curved and joining C distinctly behind wing apex. M_{3+4} and forked Cu present. Fork of Cu situated almost at equal distance from wing base and point of R_{1+2} joining C. Male genitalia with stout gonocoxites and slender gonostylus. Genitalia described above. The female was known only for *H. fungicola* (MAMAEV & M. KRIVOSHEINA 1997) and has following characters: basal enlargements of flagellar segments 2.8 - 3.0 times as long as wide, with 2 whorls of setae, sensorial filae simple with 2 rings and 2 longitudinal connectives, stem about 1/3 as long as basal enlargement. Basal enlargements and base of stems covered by microtrichiae. Lamellae of ovipositor 2-segmented, terminal segment about 4 times as long as broad, with 2 long terminal setae.

Species included: Type species and *Heterostylidiplosis fungicola* MAMAEV & M. KRIVOSHEINA, 1997:78 **comb. nov.** (from *Karschomyia*).

Relationship. The new genus differs from the other known genera by the presence of 2 very long tubules at the base of aedeagus and a different shape of right and left gonostyles. There is one species from genus *Karschomyia* with the same characters (figs 45-47): *K. fungicola* described from Prymorye (MAMAEV & KRIVOSHEINA 1997). From the others species of the genus *Karschomyia* the new genus differs by enlarged gonocoxites and elongated aedeagus (SKUHRAVÁ 1986, 1997, GAGNÉ 1973, 1994, MAMAEV & KRIVOSHEINA 1997).

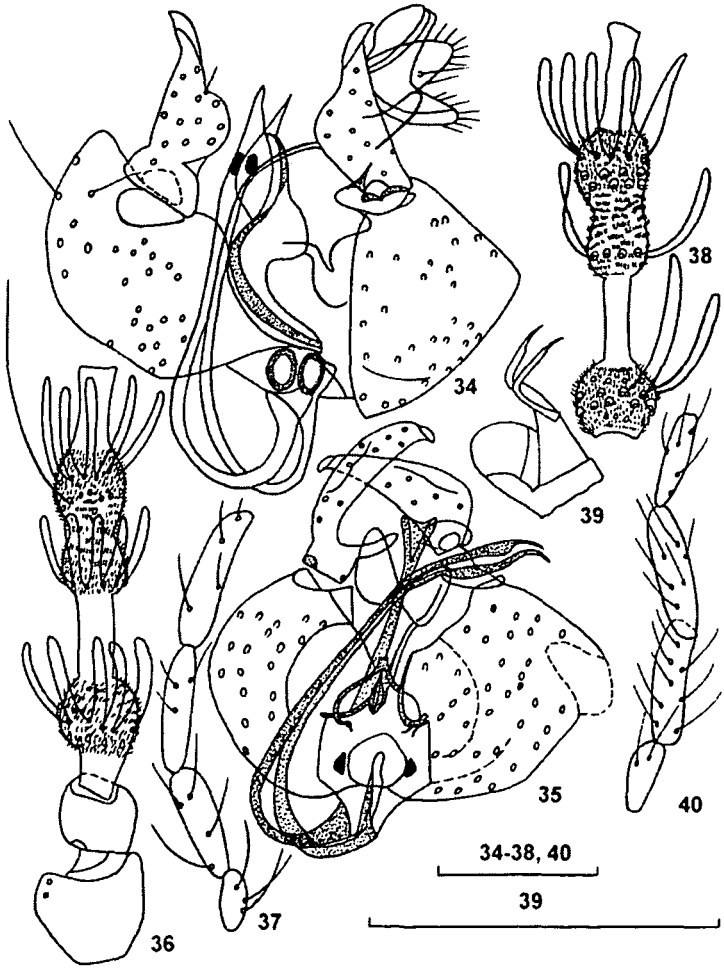
Biology. Larvae of *H. fungicola* develope in polyporous fungi.

Etimology. The name of the genus is formed from greek hetero = different, a part of the word gonostyli and from the traditional ending -diplosis for genera of subfamily Cecidomyiinae.

Heterostylidiplosis serpentinus FEDOTOVA sp. nov. (Figs 34-40, 41)

Material. Holotype ♂ (slide 37 LT 19/1): Russia, Primorskii krai, 30 km SE Ussuriysk, Kamenushka, 15.IX.2001 (V. SIDORENKO). Paratype ♂ (slide 17 LT 16 H/2), same locality, 31.VIII.2001 (V. SIDORENKO).

Description. ♂: Body length 1.2 - 1.3 mm, length of wing 2.1 mm, width 0.8 mm. Antennae with 2+12 segments, scape 1.5 times as long as pedicel, basal node F1 wider and longer than others, distal node of flagellum with deep constriction. F1 1.1 times as long as F2. F1 1.9 times as long as wide, distal node 1.9 times distal neck; distal node 1.2 times as long as proximal node and 1.9 times as long as proximal neck. Proximal neck equal length with distal neck. F5 4.8 times as long as wide, distal node 1.3 times as long as distal neck. Distal node 1.9 times as long as proximal node and 1.8 times as long as proximal neck. F12 and some apical F lost. Wings 2.7 times as long as wide. Vein R_{4+5} strongly curved apically, forming a large apical cell. Tarsal claw simple, curved medially, empodium shorter than claw. Palpi 4-segmented, its proportion 1 : 1.9 : 2 : 2.4, segment 4 almost parallel-sided, rounded apically. Gonocoxite strongly enlarged apically, with wide excision on dorsal side, 1.3 - 1.4 times as long as wide. Gonostylus 1.2 times shorter than gonocoxite, slightly bent and strongly swollen medially, 2.8 - 3.5 times as long as wide, proximally slightly enlarged. One of the gonostylus with long basal protrusion. Cerci with long oviform apical lobes and small triangular emargination, non-sclerotized. Hypoproct slightly sclerotized, strongly enlarged basally, rounded apically, equal in length



Figs 34-40. *Heterostylidiplosis serpentinus* sp. nov., male: 34, 35 genitalia (variation of shape); 36 scape, pedicel and F1 (variation of shape); 37, 40 palpus (variation of shape); 38 F5; 39 tarsal claw. Scale line = 0.1 mm.

with cerci, longer than gonocoxites and about 2.0 times narrower than cerci. Aedeagus rod-shaped with apical triangular enlargment, or obtused apically, longer than gonocoxites. Tubules curved caudally, 2.4 times longer than gonocoxites.

♀ unknown.

Relationship. The new species is similar to *H. fungicola*, but differs from it by more swollen gonostylus; presence of protrusion on one of the gonostylus; less elongated and not recurved medially aedeagus; presence of small cerci and hypoproct and longer tubules of aedeagus (in *H. serpentinus* 2.4 times longer than gonocoxites and in *H. fungicola* about 1.5 times).

Etimology. The name of the new species is formed from latin serpentinus = serpentine form of aedeagus, which looks like two long curved structures.

Tribe Clinodiplosini RÜBSAAMEN & HEDICKE, 1926

Resseliella poecilantha FEDOTOVA & SIDORENKO sp. nov. (Figs 44, 48-58)

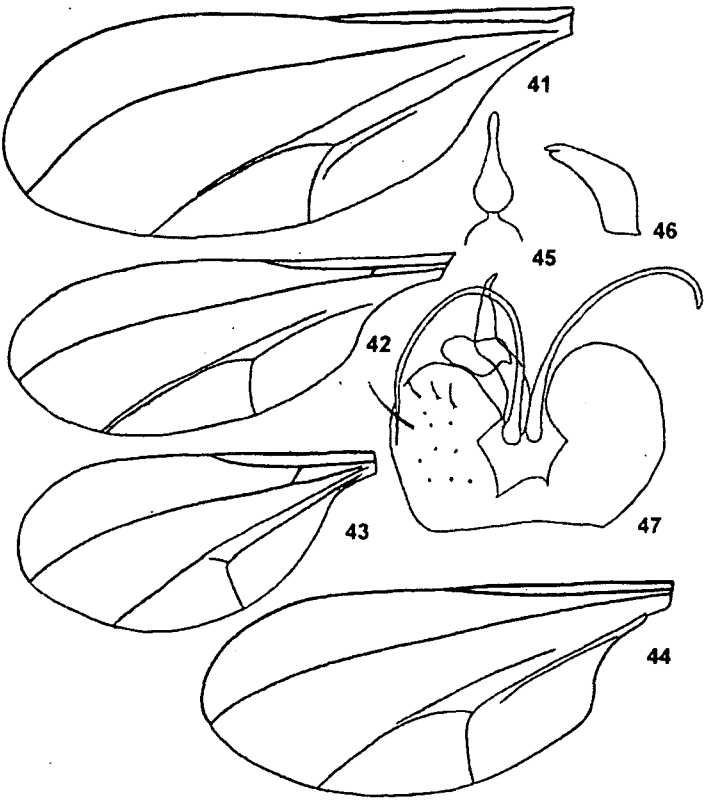
Material. Holotype ♂ (slide 42 LT 3/1): Russia, Primorskii krai, 30 km SE Ussuriysk, Kamenushka, 16.III.2001 (V. SIDORENKO). Paratypes 3♂♂ 3♀♀ (slide 42 LT 3 /2-5), same locality, 16.III.2001; 1♀ (slide 42 LT 1/6), same locality, 16.VII.2001 (V. SIDORENKO).

Description. ♂: Body length 2.4 - 2.8 mm, wing length 2.8 - 3.1 mm, width 1.0 - 1.1 mm. Postvertical peak developed. Antennae with 2+12 segments. Scape enlarged apically, 1.3 times as long as rounded pedicel. F necks not elongated toward antennal apex, proximal nodes and apical half of distal neck dark. F5 3.7 times as long as wide, distal node 1.7 times as long as distal neck, distal node 1.7 times as long as proximal node and 3.5 times as long as proximal neck; proximal node and distal neck equal in length. F12 and some last flagellomeres lost. Palpi 4-segmented, its ratio 1 : 2.7 : 2.5 : 3.5, 4th segment strongly enlarged apically. Tarsal claw of fore leg with long denticle, curved proximally, empodium shorter than claw; claw on hind leg simple. Wings 2.7 times as long as wide. Vein R_{1+2} joining C almost at middle of wing. R_{4+5} curved distally. Gonocoxite wide, almost oval apically, 1.9 times as long as wide, with medio-basal spots of sclerotization. Gonostylus 1.3 times shorter than gonocoxite, slightly swollen basally, bent proximally, 4.6 times as long as wide. Cerci with long oviform lobes and wide triangular excision. Hypoproct equal in length with cerci, slightly concaved apically, narrowed medially, enlarged basally, 1.2 times narrower than cerci. Aedeagus equal in length with gonocoxites, strongly widened basally and finger-like apically.

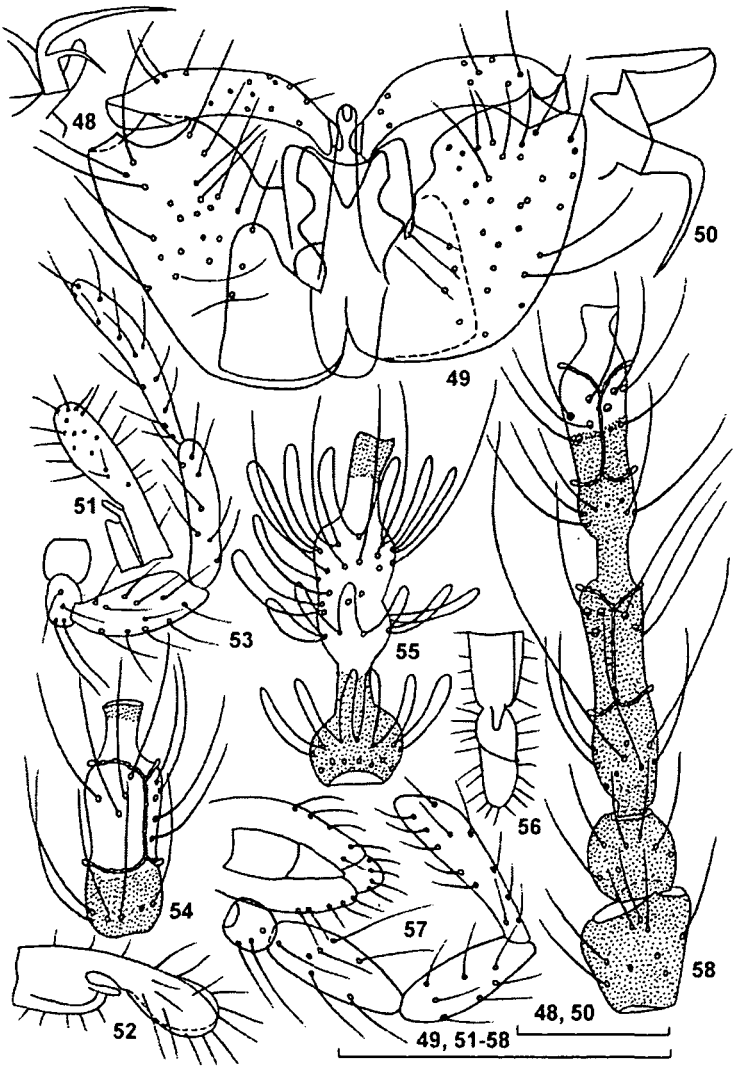
♀: Body length 2.5 - 2.8 mm with retracted ovipositor. Antennae with 2+12 segments, scape 1.3 times as long as pedicel. F with dark spots of scleratization on basal third and near apex of neck. Scape, pedicel, F1 and half of F2 dark. F1 1.2 times as long as F2. F5 3.0 times as long as wide; node 3.2 times smaller than basal node. F12 lost. Palpi 4-segmented, its ratio 1 : 3.2 : 3.5 : 4.7, 4th segment almost parallel-sided, rounded apically. Legs with transversal strips of black scales. Ovipositor telescopic, long. Apical plates covered by long setae, longer than those on ventral side of segment IX of abdomen, 2.7 - 3.0 times as long as wide, enlarged apically, fused ventrally, where length 3.9 times longer than wide. Ventral plate 3.2 - 4.7 times shorter than apical plate.

Relationdship. The new species is closely related to *R. quercivora* MAMAEV, 1965

from Krasnodarsky kraj, but differs from it by the presence of narrowing in middle part of hypoproct, more thick gonostylus and long cerci, equal in length with hypoproct, longer lobes of cerci (not shortly semicircular). The new species differs from other species of the genus by motley legs and antennae.



Figs 41-47. 41 *Heterostylidiplosis serpentinus* sp. nov.; 42, 43 *Calyptradiplosis turriformis* sp. nov. (variation of shape); 44 *Resseliella poecilantha* sp. nov.; 45-47 *Heterostylidiplosis fungicola* MAMAEV & M. KRIVOSHEINA: 41-44 wing; 45 F12; 46 gonostylus; 47 genitalia. (Figs 45-47 from MAMAEV & KRIVOSHEINA 1997).



Figs 48-58. *Resseliella poecilantha* sp. nov. (49, 50, 55, 57 = male; 48, 51-54, 56, 58 = female): 49 genitalia; 48 tarsal claw of fore tarsus; 50 tarsal claw of hind tarsus; 51, 52, 56 apex of ovipositor (51, 52 = lateral; 56 = ventral); 53 palpus; 54, 55 F5; 57 mouth parts; 58 scape, pedicel, F1, F2. Scale line = 0.1 mm.

Tribe Cecidomyiini RÜBSAAMEN & HEDICKE, 1926

Genus *Auritadiplosis* FEDOTOVA gen. nov.

Type species: *Auritadiplosis rhombeus* FEDOTOVA sp. nov.

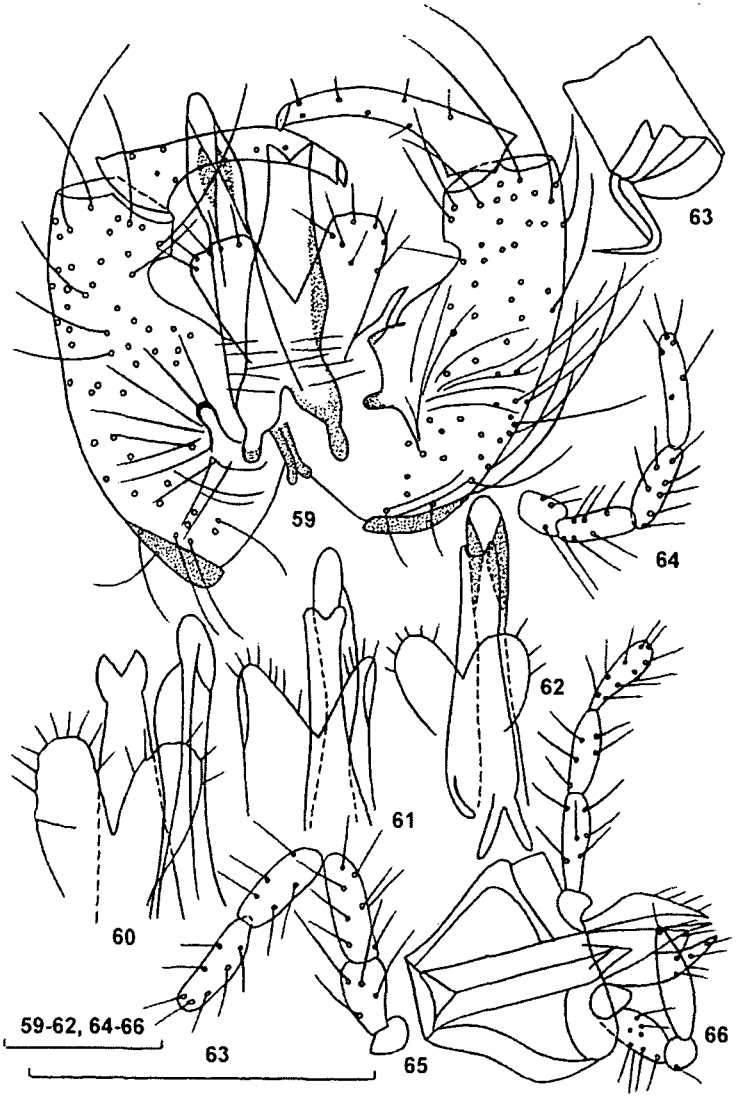
Eyes very large, occupying nearly entire head capsule. Head without postvertical peak. Antennae with 2+12 segments, male and female F1 and F2 fused. Pedicel, scape and base of F1 slightly sclerotized, without spots. Male flagellomeres with two nodes: elongated distal nodes with narrowing on all segments and rounded proximal ones. Male flagellomeres with three whorls of sensorial filae and two whorls of setae. Sensorial filae of flagellomeres with short loops not reaching next node. Appendage of terminal antennal segment with elongated rhombic protrusion, narrowed apically. Necks of last F longer than necks of proximal F. Palpi 4-segmented. Tarsal claw simple, acute-angled curved, empodium equal in length with claw. Wing elongated, maximally enlarged medially. Vein R_{1+2} joining C far before wing middle, R_{4+5} strongly curved and joining C distinctly behind wing apex. M_{3+4} and forked Cu present. Fork of Cu situated at longer distance from wing base than point of R_{1+2} joining C. Male genital with long gonocoxites and slender gonostylus. Gonocoxites broad, almost straight laterally, without medio-basal cavity on inner side. Gonostylus slightly recurved apically, with wide claw. Cerci bilobed and emarginated. Hypoproct narrowed subapically, slightly rounded and concaved apically. Aedeagus elongated, longer than gonocoxites, thin, slightly sclerotized and enlarged basally, recurved subapically.

Relationship. The new genus differs from other known genera by the presence of very large outgrowths in distal part of aedeagus; form of gonocoxites, with large excision on inner side and complicated form of thin hypoproct, narrowed apically, and an additional vein situated above M_{3+4}. The new genus is more close to *Ischnodiplosis* KIEFFER, 1913 from tribe Lestodiplosini with a single species from France (SKUHRAVÁ 1997), but differs from it by more enlarged gonocoxites, shorter aedeagus, elongated hypoproct, long proximal and distal necks of distal part of antennae and very enlarged base of aedeagus and hypoproct.

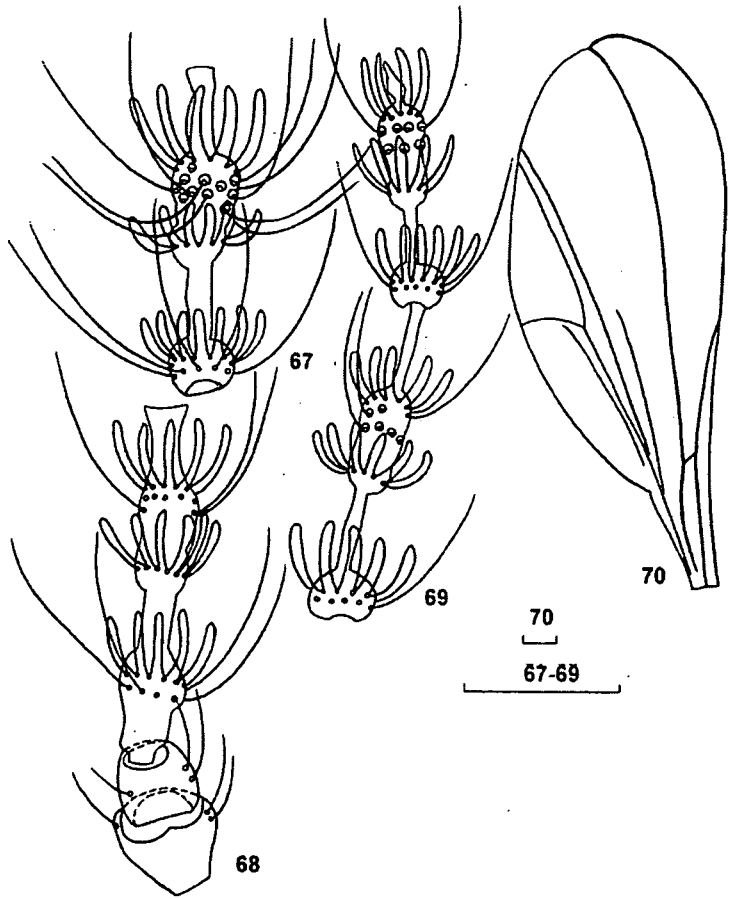
Auritadiplosis rhombeus FEDOTOVA sp. nov. (Figs 59-70)

Material. Holotype ♂ (slide WT 19/7010/31): Russia, Primorskii krai, 30 km SE Ussuriysk, Kamenushka, 16.VII.2001 (Z. FEDOTOVA). Paratypes 3♂♂ (slide WT 19/7010/32-34), same locality; 1♂ (slide WT 19/7010/5), 1♂ (slide 19 LT 2H/6), same locality (Z. FEDOTOVA).

Description. ♂: Body length 1.1 - 1.6 mm, length of wing 1.5 - 1.8 mm, width 0.5 - 0.7 mm. Pedicel 1.1 times shorter than scape, and almost as long as wide. F1 longer than other flagellomeres, with longer basal node. F1 5.5 times as long as wide, distal neck 1.3 times shorter than distal node. Distal node of F1 almost equal in length with proximal one and 1.8 times longer than proximal neck. F5 about 5.0 times as long as wide, distal neck 2.1 times shorter than distal node. Distal node of F5 1.4 time longer than proximal one and 1.8 times longer than proximal neck. Palpi 4-segmented, its ratio 1 : 1.6 : 1.8 : 2.3 or 1 : 1.5 : 0.9 : 0.9 or 1 : 2.5 : 2.2 : 2.2, 4th segment widely rounded apically. Wing 2.5



Figs 59-66. *Auritadiplosis rhombeus* sp. nov., male: 59 genitalia; 60-62 cerci, hypoproct and aedeagus (variation of shape); 63 tarsal claw; 64, 65 palpus (variation of shape); 66 mouth parts.



Figs 67-70. *Auritadiplosis rhombeus* sp. nov., male: 67 F5; 68 scape, pedicel and F1; 69 F11 and F12; 70 wing.

times as long as wide. Medial part of gonocoxites distally with wide excision subapically. Gonocoxites 2.2 times as long as wide. Gonostyles 1.7 times shorter than gonocoxites, slightly curved, and about 2.8 times as long as wide. Cerci with different apical excision, rounded, acutangular and triangular lobes and deep triangular emargination, with rounded lateral sides. Hypoproct 1.9 - 2.1 times narrower than cerci; slightly sclerotized, swollen proximally, with small apical excision. Medio-apical outgrowths rounded, slightly sclerotized. Aedeagus with rhombic swelling apically, enlarged basally and apically.

♀ unknown.

Genus *Lanidiplosis* FEDOTOVA gen. nov.

Type species: *Lanidiplosis latus* FEDOTOVA sp. nov.

Eyes completely occupying head. Antennae with 2+12 segments, male F1 and F2 fused. Male flagellomeres with two nodes: distal and proximal nodes rounded, with long proximal and distal neck. Male flagellomeres with two whorls of sensorial loop-formed filae, one additional ring of sensorial fila and two whorls of setae. Palpi 4-segmented. Tarsal segments lost. Wing maximally enlarged medially. Vein R_{1+2} joining C before wing middle, R_{4+5} almost straight and joining C distinctly at wing apex. M_{3+4}, pCu absent; forked Cu present. Fork of Cu situated on equal distance from wing base than point of R_{1+2} joining C. Male genitalia widely transversal, not rounded, with long parallel-sided gonocoxites and slender gonostylus. Gonocoxites with large oval outgrowths, covered by woolly downiness. Gonostylus with claw, slightly enlarged proximally, slightly curved distally. Cerci very small, deeply emarginated. Hypoproct wide, complicated, with apical quadrate protrusion, and narrowed apically. Aedeagus almost parallel-sided, strongly enlarged subbasally. Gonocoxites medio-basally with strongly sclerotized stripes.

Species included: Only type species.

Relationship. The new genus differs from other known genera by the presence of very large outgrowths at base of gonocoxites, complicated form of hypoproct and rounded distal and proximal nodes of flagellomeres. The new genus is close to *Monobremia* KIEFFER, 1912 from tribe Bremiini, but differs from it by long, oval (not triangular) outgrowths of gonocoxites; absence of extraordinary elongated circumfilar loops, rounded distal and proximal nodes and very enlarged aedeagus and hypoproct.

Etimology. The name of the new genus is formed from latin lana = wool-like, because of the wool-like cover of the outgrowths of hypoproct, and from the traditional ending (-diplosis) for genera of subfamily Cecidomyiinae.

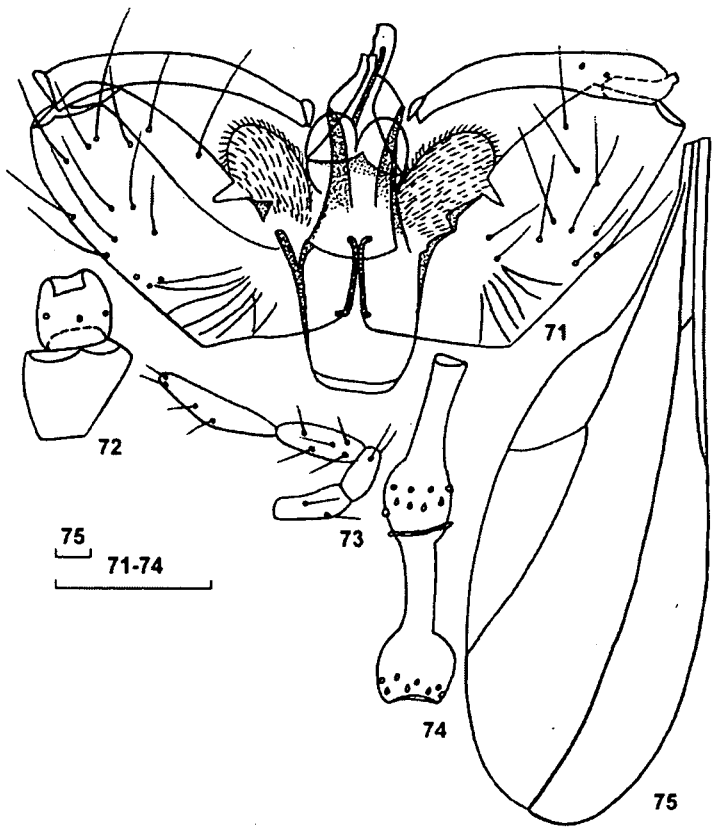
Lanidiplosis latus FEDOTOVA sp. nov. (Figs 52-56)

Material. Holotype ♂ (slide 36 WT 3/1): Russia, Primorskii krai, 30 km SE Ussuriysk, Kamenushka, 16.VII.2001 (V. SIDORENKO).

Description. ♂: Body length 1.7 mm, length of wing 2.1 mm, width 0.7 mm. Antennae with 2+12 segments, scape enlarged apically, transversal pedicel 1.3 times shorter and narrower than scape. Proximal and distal nodes of flagellum rounded, shorter than proximal and distal necks. Sensorial filae of flagellomeres with short loops, not reaching apex of proximal and distal necks. F5 4.4 times as long as wide, distal neck 1.4 times as long as distal node; distal node 1.8 times as long as proximal node and 1.2 times shorter than proximal neck. F12 lost. Palpi 4-segmented, its ratio 1 : 0.8 : 1.3 : 1.8, 4th segment pointed apically. Wing strongly elongated, 2.9 times as long as wide. Vein R_{1+2} joining C before wing middle. Gonocoxite almost straight, 2.2 times as long as wide. Gonostylus 1.2 times smaller than gonocoxite, 5.8 times as long as wide, almost straight distally, swollen basally, slightly bent medially or subapically. Aedeagal complex very small in comparision with outgrowths of gonocoxites. Cerci small, with short apical rounded lobes and narrow triangular notch. Hypoproct longer than gonocoxites, 1.3 times narrower than cerci, slightly sclerotized, not strongly swollen basally, conical narrowed subapically, with small obtuse protrusion, also slightly dilated near narrowing. Aedeagus thick, obtused

apically, slightly enlarged basally, as wide as cerci. Aedeagus longer than hypoproct. Apex of aedeagus obtused apically. Basal outgrowths of gonocoxites connected with each other by short triangular bridge.

♀ unknown.



Figs 71-75. *Lanidiplosis latus* sp. nov., male: 71 genitalia; 72 scape and pedicel; 73 palpus; 74 F5. Scale line = 0.1 mm.

References

BAYLAC, M. - 1988. Description de *Tessaradiplosis* genre nouveau pour *Cecidomyia entomophila* PERRIS (Diptera, Cecidomyiidae). - Revue française d'entomologie. (N. S.) 10 (1): 31-35.

FELT, E.P. - 1908. Appendix D. - New York State Museum Bulletin 124: 286-422.

GANGÉ, R.J. - 1973. Family Cecidomyiidae. - In DELFINADO, M.D. & HARDY, D.E. (Eds): A Catalogue of the Diptera of Oriental Region 1: 480-517.

GROVER, P. - 1965. Studies on Indian Gall Midges 15 (Cecidomyiidae, Diptera). One New Genus and New Species of Bifilini. - Marcellia. 32 (1): 111-126.

HARRIS, K.M. - 1968. A Systematic Revision and Biological Review of the Cecidomyiid Predators (Diptera: Cecidomyiidae) on World Coccoidae (Hemiptera: Homoptera). - Transactions Royal Entomological Society London 119: 401-494.

MAMAEV, B.M. - 1986. New Diptera (Cecidomyiidae) in Turkmenistan fauna. - Izvestija Akademii nauk Turkmenskoj SSR (Ser. biol.) 5: 65-68 (in Russian).

MAMAEV, B.M. & KRIVOSHEINA, N.P. - 1965. Larvae of gall midges. Diptera, Cecidomyiidae. - Moskva: Nauka 1-278 (in Russian).

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.

MO, T.-L. - 1992. - A Cecidomyiid genus (Diptera: Cecidomyiidae) new to China with description of a new species. - Entomotaxonomica 14 (4): 293-295.

MO, T.-L. & LIU, T. - 2003. A new species of the genus *Dentifibula* (Diptera: Cecidomyiidae) from China. - Entomotaxonomica 25 (1) :51-53.

SKUHRAVÁ, M. - 1997. 2.7. Family Cecidomyiidae. In PAPP, L. & DARVAS, B. (Eds.): Contribution to a Manual of Palaearctic Diptera. Vol. 4. Budapest, Academia Kiado: 72-205.

Addresses of authors

Zoya A. FEDOTOVA
Samara Academy of Agriculture
Ust-Kinelskii
Samara Province, Russia 446442
<sai@transit.samara.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

DE WAAL, F.B.M. & TYACK, P.L. 2003: Animal Social Complexity. Intelligence, culture, and individualized societies. - Harvard University Press, Cambridge. 616 S.

Noch vor etwa 25 Jahren spekulierten Primatologen, dass Intelligenz - zumindest bei Affen - sich infolge einer Adaptation an ein kompliziertes soziales Milieu aus Freundschaft und Rivalität evolviert hat. Inzwischen haben zahlreiche Studien an anderen langlebigen Säugetieren (wie z.B. Wale, Elefanten, Löwen, Hyänen) gezeigt, dass soziale Komplexität viel weiter verbreitet ist. Vielfach führt individuelle Innovation über die Ausweitung innerhalb einer Gruppe zu einer ausgesprochenen "Kultur". Tiere haben eine große Varietät an Traditionen entwickelt, die wiederum Fitness und Überleben beeinflußt. Unglücklicherweise ist die Forschung heute extrem spezialisiert, sei es, dass es nur um spezielle taxonomische Einheiten geht oder um Themen wie vokale Kommunikation versus sozialer Wahrnehmung. Dieses Buch versucht gemeinsame Prinzipien von Sozialität und Erkenntnis vorzustellen, eingeteilt in folgende 5 Kapitel: 1. Life History and Brain Evolution (Primaten, Delphine, Elefanten), 2. Evolution of Cooperative Strategies (Schimpansen, Kapuzineraffen, Delphine, Hyänen, Spermwal), 3. Social Cognition (Seelöwen, Affen, Hyänen), 4. Communication (Schimpansen, Papageien, Fledermäuse, Delphine), 5. Cultural Transmission (Schimpansen, Affen, Kapuzineraffen, Killerwal, Vögel). Die Autorenliste bietet international höchstes Niveau, u.a. seien hier nur genannt: Carel VAN SCHAIK, Christophe BOESCH, Frans DE WAAL, Jan VAN HOOFF und Tetsuro MATSUZAWA.

Eine komplexe, faszinierende und höchst anregende Lektüre. 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@everyday.com
Redaktion: Erich DILLER (ZSM), Münchhausenstrasse 21, D-81247 München, Tel.(089)8107-159
Fritz GUSENLEITNER, Lungitzerstrasse 51, A-4222 St. Georgen / Gusen
Wolfgang SCHACHT, Scherrerstrasse 8, D-82296 Schöngeising, Tel. (089) 8107-146
Erika SCHARNHOP, Himbeerschlag 2, D-80935 München, Tel. (089) 8107-102
Emma SCHWARZ, Eibenweg 6, A-4052 Ansfelden
Thomas WITT, Tengstrasse 33, D-80796 München, e-mail: witt-thomas@t-online.de
Postadresse: Entomofauna (ZSM), Münchhausenstrasse 21, D-81247 München, Tel.(089) 8107-0,
Fax (089) 8107-300, e-mail: erich.diller@zsm.mwn.de oder: wolfgang.schacht@zsm.mwn.de