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Gall midges of subfamily Lestremiinae from Estonia, Latvia and Lithuania: checklist and description of new species

(Diptera: Cecidomyiidae)

With 12 figures in text

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Summary

A total of 116 gall midge species belonging to the subfamily Lestremiinae (Cecidomyiidae) are reported from the East Baltic region, 48 species from Estonia, 113 from Latvia, and 42 from Lithuania. Additionally, information on the morphology of adults is given for the following species: *Aprionus barbatus*, *A. betulae* (description of female), *A. complicatus*, *A. inquisitor*, *A. insignis* (description of female), *A. laevis*, *A. onychophorus* (including description of female), *A. tiliamcorticis*, *Lestremia parvostylia* (description of female), *Monardia (Monardia) monilicornis* (including description of male), *Neurolyga bilobata* (including description of female), and *Peromyia subborealis*. Three new species are described: *Groveriella baltica* sp. n., *Heterogenella multifurcata* sp. n., and *Strobliella brachycornis* sp. n.

Key words

Diptera, Cecidomyiidae, Lestremiinae, Estonia, Latvia, Lithuania, checklist, new species

Zusammenfassung

Über das Vorkommen von insgesamt 116 Gallmücken-Arten aus der Unterfamilie Lestremiinae (Diptera, Cecidomyiidae) in den drei ostbaltischen Republiken wird berichtet, im einzelnen sind dies 48 Arten in Estland, 113 in Lettland und 42 in Litauen. Zusätzliche imaginal-morphologische Informationen werden zu folgenden Arten vermittelt: *Aprionus barbatus*, *A. betulae* (Beschreibung der Weibchen), *A. complicatus*, *A. inquisitor*, *A. insignis* (Beschreibung der Weibchen), *A. laevis*, *A. onychophorus* (einschließlich Beschreibung der Weibchen), *A. tiliamcorticis*, *Lestremia parvostylia* (Beschreibung der Weibchen), *Monardia (Monardia) monilicornis* (einschließlich Beschreibung der Männchen), *Neurolyga bilobata* (einschließlich Beschreibung der Weibchen) und *Peromyia subborealis*. Drei Arten werden als neu für die Wissenschaft beschrieben: *Groveriella baltica* sp. n., *Heterogenella multifurcata* sp. n. und *Strobliella brachycornis* sp. n.

1 Introduction

Our knowledge of the subfamily Lestremiinae is in large part restricted to those few regions in the world where there has been long-term activity in gathering material and information. The senior author has for many years collected the lestremiine fauna of East Baltic countries, Estonia, Lithuania and, in particular, Latvia. This collection, in care of the Faculty of Biology, University of Latvia, Riga (FBUL), contains reared adult specimens as well as those collected by sweepnet and exhauster. Larvae of many species are also represented, but are not described in this paper.

Until now, little has been published on East Baltic Lestremiinae, or those data have been scattered within several, sometimes hardly accessible, publications (cf. KARPA et al. 1990, MELECIS et al. 1981, SPUNGIS 1977, 1979, 1980, 1982a, b, 1983, 1984, 1985, 1988, 1993). Some additional species records for East Baltic Lestremiinae were published by MAMAIEVA & MAMAIEV (1972).

In this paper, the authors list all species of Lestremiinae recorded from the territory of the three East Baltic countries and of which reference material is available in the SPUNGIS collection (cf. section 2.1). Further, supplementary morphological information on single species is given in section 2.2. Three species of Lestremiinae are described as new to science (section 2.3). Their type material is deposited in Riga (FBUL). Some paratypes of the new species that were collected in Germany, are in the JASCHHOF collection in the Zoological Institute and Museum, Greifswald (ZIMG). Systematic concept and morphological terminology follow usage in JASCHHOF (1998a, b).

2. Results

2.1 Checklist of East Baltic Lestremiinae

Taxa are listed in alphabetical order and are continuously numbered. Species records are confirmed in detail by locality and date of collecting when they have not been previously published and when the total number of records does not exceed five. Abbreviations are EE for Estonia, LV for Latvia, and LT for Lithuania. Species without references in the text are new for one of the three countries, or new for all the East Baltic region. Notes on biology refer to only the material studied. The number of specimens studied, given in this paper, does not necessarily correspond with the present number of specimens kept in the SPUNGIS collection, because not all specimens were preserved as slide mounts. Two species were previously reported for the region in question, but not incorporated in this list since their identification was based on larvae alone and the identifications are now considered doubtful. These species are *Mycophila nikoleii* MÖHN, 1960 (cf. SPUNGIS 1977), and *Peromyia minutissima* MAMAIEV, 1963 (cf. SPUNGIS l. c.).

1. *Acoenonia nana* MEYER & SPUNGIS, 1994

Material studied: 1 male.

LV: Randa Meadows, 13.07.1994.

Biology: adult collected in coastal meadow.

2. *Acoenonia parvolobata* MAMAIEV & BEREST, 1992

Material studied: 23 larvae, 5 females, 6 males.

LV: 1 locality (cf. SPUNGIS 1979, as *A. europaea* MAMAIEV, 1964).

Biology: larvae found in soil of birch forests.

Remark: In the SPUNGIS collection there are two males and one female of another *Acoenonia* species similar to but distinct from *parvolobata*. It was considered to be *A. europaea* by both BEREST and MAMAIEV (pers. comm.). Even so, we hesitate to redescribe *europaea* on the basis of the Baltic material until we have seen the holotype. The holotype of *parvolobata*, studied previously by one of us (M. J.), corresponds to the species redescribed in JASCHHOF (1998a: 132 ff.) as well as to the Baltic material listed here under *A. parvolobata*. Confusingly, all these specimens do not fit the description for *parvolobata* (MAMAIEV & BEREST 1992) but do fit that of *europaea* (MAMAIEV 1964).

3. *Allaretella germanica* MEYER & SPUNGIS, 1994**Material studied:** 1 female.

LV: Darzini, 04.06.1980.

Biology: adult collected in pine forest.

The following species of *Anarete* were identified by using information in EDWARDS (1938) and MAMAEV (1969). Nevertheless, we both agree that there is serious need for a revisional study of *Anarete* species, as suggested in JASCHHOF (1998a).

4. *Anarete coracina* (ZETTERSTEDT, 1851) sensu EDWARDS, 1938**Material studied:** 1 larva, 6 females, 2 males.

LV: 4 localities (cf. SPUNGIS 1988).

Biology: larva found in soil, adults collected in pine forests and in manured meadow.

(**Note:** EDWARDS (1938) tentatively identified British *Anarete* specimens as belonging to *coracina*, without having realized that the type-specimen of *Sciara coracina* ZETTERSTEDT, 1851 represents a Sciarid fly [cf. JASCHHOF 1998a: 552]).

5. *Anarete corni* (FELT, 1907)**Material studied:** 6 females, 2 males.

LV: 7 localities (cf. SPUNGIS 1979).

Biology: adults collected in pine forests and in meadows.**6. *Anarete coronata* MAMAEV, 1964****Material studied:** 1 female, 3 males.

LV: Teichi Bog, 23.05.1988, 22.07.1991; Mazsalaca, 05.06.1992.

Biology: adults collected in pine forest and in peat bog.**7. *Anarete heracleana* EDWARDS, 1938****Material studied:** 2 females, 6 males.

LV: Salaspils, 24.-25.06. and 02.07.1976; Jumprava, 04.09.1984; Ciemupe, 02.08.1985.

Biology: adults collected in various meadows.**8. *Anarete lacteipennis* KIEFFER, 1906****Material studied:** 5 females, 9 males.

LV: 3 localities (cf. SPUNGIS 1988).

Biology: adults collected in various meadows.**9. *Anaretella defecta* (WINNERTZ, 1870)****Material studied:** 1 larva, about 40 females, numerous males.

EE: 10 localities. LV: 21 localities (cf. SPUNGIS 1980, as *A. defecta* (WINNERTZ, 1870), *A. bicincta* MAMAEV, 1964, *A. magnicornis* MAMAEV, 1964 and *A. strobli* EDWARDS, 1938). LT: 4 localities (cf. SPUNGIS 1993, as *A. bicincta* MAMAEV, 1964).

Biology: larvae found in soil, adults collected in various forests.**10. *Anaretella iola* PRITCHARD, 1951****Material studied:** 2 males.

LV: Teichi Reserve near Sildas, 20.05.1977.

Biology: adults collected in wet birch forest.

11. *Aprionus accipitris* JASCHHOF, 1997

Material studied: 16 larvae, 1 female, 3 males.

EE: Kamara, 17.07.1987. LV: Birzi, 28.07.1977; Teichi, 09.06.1987.

Biology: larvae found among mosses in peat bog, adults collected in various forests.

12. *Aprionus acutus* EDWARDS, 1938

Material studied: 1 male.

LV: 1 locality (cf. SPUNGIS 1988).

Biology: adult collected in deciduous forest.

13. *Aprionus barbatus* MAMAIEV, 1963

Material studied: 2 males.

LV: 2 localities (cf. SPUNGIS 1988).

Biology: adults collected in deciduous forests.

(See also redescription of males in section 2.2.)

14. *Aprionus betulae* JASCHHOF, 1996

Material studied: numerous larvae, 4 females, 39 males.

EE: Kaansoo, 18.07.1987; Tamme, 01.08.1987; Vosu, 11.08.1987. LV: Moricsala, 21.06.1977; Jumprava, 04.05.1984, 05.07.1985; Saulkalne, 05.06., 22.07. and 29.07.1985; Luknas, 04.06.1990.

Biology: larvae found in soil of deciduous forests, adults usually collected in deciduous but also in mixed and spruce forests.

(See also description of females in section 2.2.)

15. *Aprionus bidentatus* (KIEFFER, 1894)

Material studied: 4 males.

LV: Darzini, 08.09.1978, 25.05.1984; Odziena, 21.07.1981; Milzkalne, 17.08.1983.

Biology: adults collected in various forests.

16. *Aprionus bifidus* MAMAIEV, 1963

Material studied: numerous larvae, 5 females, 33 males.

EE: Kaika, 10.07.1987; Niuni, 12.07.1987; Kamara, 17.07.1987; Tori, 18.07.1987; Jagala, 10.09.1987. LV: 7 localities. LT: Seda, 22.08.1989; Markine, 19.08.1989.

Biology: larvae found in soil of mixed pine/oak forest, adults usually collected in coniferous forests and rarely in mixed or deciduous forests.

17. *Aprionus bispinosus* EDWARDS, 1938

Material studied: 1 female, 27 males.

EE: Rapla, 01.08.1987; Vosu, 11.08.1987; Vaiatu, 06.09.1987. LV: 6 localities (cf. SPUNGIS 1983). LT: 2 localities (cf. SPUNGIS 1993).

Biology: adults collected in various forests.

18. *Aprionus brachypterus* EDWARDS, 1938

Material studied: several larvae, numerous males.

EE: Kamara, 17.07.1987. LV: 9 localities. LT: Voskonis, 17.08.1988; Sauleniai, 19.08.1988.

Biology: larvae found in decaying wood of poplar, adults collected in various deciduous forests.

19. *Aprionus carinatus* JASCHHOF, 1996**Material studied:** 28 males.EE: Voru, 11.07.1987; Iuiga, 06.09.1987. LV: 6 localities [cf. SPUNGIS 1977, 1983, all as *A. flavidus* (WINNERTZ, 1870)]. LT: 2 localities [cf. SPUNGIS 1993, as *A. flavidus* (WINNERTZ, 1870)].**Biology:** adults collected in various deciduous and mixed forests.**20. *Aprionus complicatus* MAMAEV & BEREST, 1995****Material studied:** 2 males.

LV: Gospari, 29.06.1978; Valmiera, 06.06.1981.

Biology: adults collected in various forests.

(See also remarks on morphology in section 2.2.)

21. *Aprionus confusus* MAMAEV, 1969**Material studied:** 11 males.

EE: Vatla, 27.07.1987. LV: Valmiera, 02.07. and 16.07.1980, 15.06.1985; Krustkalni, 27.06.1984; Saulkalne, 05.06.1985, 28.07.1987.

Biology: adults collected in various deciduous forests.**22. *Aprionus corniculatus* MAMAEV, 1963****Material studied:** 3 males.

EE: Vosu, 11.08.1987. LV: 2 localities (cf. SPUNGIS 1988).

Biology: collected in various coniferous forests.**23. *Aprionus cornutus* BEREST, 1986****Material studied:** 2 males.

EE: Vosu, 11.08.1987. LV: Moricsala, 10.08.1979.

Biology: adults collected in oak and spruce forests.**24. *Aprionus dentifer* MAMAEV, 1965****Material studied:** 10 larvae, numerous males.

EE: Viru-Nigula, 05.09.1987; Pagari, 06.09.1987; Iuiga, 06.09.1987; Puurmani, 07.09.1987. LV: 4 localities (cf. SPUNGIS 1980). LT: 2 localities (cf. SPUNGIS 1993).

Biology: larvae found in soil of pine forests, adults collected in coniferous and mixed forests.**25. *Aprionus ensiferus* JASCHHOF, 1996****Material studied:** 1 male.

LV: Teichi Bog, 22.06.-22.07.1993.

Biology: adult collected in peat bog.**26. *Aprionus flavidus* (WINNERTZ, 1870)****Material studied:** 11 larvae, numerous males.LV: 6 localities (cf. SPUNGIS 1988, as *A. aequatus* MAMAEV, 1963). LT: 1 locality (see SPUNGIS 1993, as *A. aequatus* MAMAEV, 1963).**Biology:** larvae found in rotten pine stump, adults collected in various deciduous and mixed forests.

27. *Aprionus halteratus* (ZETTERSTEDT, 1852)

Material studied: 1 female, 20 males.

LV: Saulkalne, 09.09.1982, 07.05., 14.05., 27.08. and 07.09.1984; Darzini, 28.05.1980; Jau-nokra, 21.08.1985; Jumprava, 28.05.1985. LT: Seda, 22.08.1989; Klaipeda 23.08.1989.

Biology: adults collected in various deciduous and mixed forests.

28. *Aprionus inquisitor* MAMAEV, 1963

Material studied: numerous larvae, 5 females, 13 males.

EE: Sultsi, 17.07.1987; Tamme, 01.08.1987. LV: 1 locality (cf. SPUNGIS 1988).

Biology: larvae found in soil of spruce forests, adults collected in spruce forests.

(See also remarks on morphology in section 2.2.)

29. *Aprionus insignis* MAMAEV, 1963

Material studied: several larvae, 39 females, numerous males.

EE: Viljandi, 17.07.1987; Suure-Jaani, 18.07.1987; Kamara, 17.07.1987. LV: 7 localities. LT: Zuvintai, 20.08.1988; Karmelava, 21.08.1988.

Biology: larvae found in rotten bark of deciduous trees, adults collected in various deciduous forests.

(See also description of females in section 2.2.)

30. *Aprionus laevis* MOHRIG, 1967

Material studied: 50 larvae, 5 females, 2 males.

LV: Broceni, 19.05.1981; Darzini, 05.05.1980.

Biology: larvae found in soil of coniferous forests, adults reared from those larvae.

(See also remarks on morphology in section 2.2.)

31. *Aprionus lapponicus* JASCHHOF & MAMAEV, 1997

Material studied: 3 females, 11 males.

EE: Kaagjarve, 10.07.1987; Valga, 12.07.1987. LV: 6 localities.

Biology: adults collected in various deciduous and coniferous forests.

32. *Aprionus longicollis* MAMAEV, 1963

Material studied: 12 males.

LV: 4 localities (cf. SPUNGIS 1988). LT: Sauleniai, 19.08.1988.

Biology: adults collected in various deciduous forests.

33. *Aprionus miki* KIEFFER, 1895

Material studied: 34 larvae, 7 females, 50 males.

LV: 10 localities (cf. SPUNGIS 1980, Karpa et al. 1990, all as *A. insignis* MAMAEV, 1963). LT: 3 localities (cf. SPUNGIS 1993, as *A. insignis* MAMAEV, 1963).

Biology: larvae found in rotten bark of deciduous trees, adults collected in various forests.

34. *Aprionus onychophorus* BEREST, 1991

Material studied: 49 larvae, 1 female, 23 males.

EE: Haanja, 11.07.1987. LV: Augsciems, 01.05.1982; Darzini, 16.06.1981, 12.06.1985; Mo-ricsala, 04.08.1976.

Biology: larvae found in soil of deciduous forests, males collected in various deciduous forests.

(See also redescription of males and description of females in section 2.2.)

35. *Aprionus paludosus* JASCHHOF & MAMAEV, 1997

Material studied: 9 males.

EE: Liiva, 28.07.1987; Panga, 30.07.1987; Urge, 19.07.1987. LV: Karsava, 18.08.1985; Saka, 25.08.1987.

Biology: adults collected in various deciduous and coniferous forests and meadows.

36. *Aprionus pratincolus* JASCHHOF & MEYER, 1995

Material studied: 15 larvae, 2 females, 7 males.

EE: Pihlta, 20.08.1976. LV: Kaibala, 17.04.1985; Skriveri, 16.07.1985.

Biology: larvae found in soil of meadows, adults collected in meadows.

37. *Aprionus separatus* MAMAEV & JASCHHOF, 1997

Material studied: 1 male.

LV: Aizkraukle, 18.07.1985.

Biology: adult collected in wet pine forest.

38. *Aprionus similis* MAMAEV, 1963

Material studied: numerous larvae, 32 females, 18 males.

EE: Vosu, 11.08.1987. LV: 12 localities (cf. SPUNGIS 1979).

Biology: larvae found in rotten bark of coniferous and deciduous trees, adults collected in coniferous forests.

39. *Aprionus spiniger* (KIEFFER, 1894)

Material studied: numerous larvae, numerous females, numerous males.

EE: 14 localities. LV: 30 localities (cf. SPUNGIS 1983, 1985, MELECIS et al. 1981). LT: 8 localities (cf. SPUNGIS 1993).

Biology: larvae usually found in soil of coniferous forests, adults usually collected in coniferous forests.

40. *Aprionus subacutus* JASCHHOF, 1997

Material studied: 5 males.

LT: 1 locality (cf. SPUNGIS 1993, as *A. acutus* EDWARDS, 1938).

Biology: adults collected in deciduous forest.

41. *Aprionus terrestris* MAMAEV, 1963

Material studied: 13 larvae, 2 females, 4 males.

LV: 1 locality (cf. SPUNGIS 1977). LT: 2 localities (cf. SPUNGIS 1993).

Biology: larvae found in soil of birch forest, adults collected in various forests.

42. *Aprionus tiliamcorticis* MAMAEV, 1963

Material studied: 3 larvae, 8 males.

LV: 4 localities (cf. SPUNGIS 1988, 1980, in latter as *A. angulatus* MAMAEV, 1963).

Biology: larvae found in rotten wood of wild cherry, adults collected in deciduous forests. (See also remarks on morphology in section 2.2.)

43. *Aprionus ungulatus* JASCHHOF, 1997

Material studied: 17 males.

EE: Leisi, 30.07.1987. LV: Moricsala, 01.08.1977, 10.08.1979; Saulkalne, 29.07.1985.

Biology: adults collected in deciduous forests.

44. *Bryomyia bergrothi* KIEFFER, 1895

Material studied: numerous larvae, 6 females, numerous males.

EE: Kauksi, 06.09.1987; Jagala, 10.08.1987; Niuni, 12.07.1987. LV: 25 localities (cf. SPUNGIS 1979). LT: 5 localities (cf. SPUNGIS 1993).

Biology: larvae found in soil of various forests, usually in spruce and deciduous forests, adults collected in various forests.

45. *Bryomyia gibbosa* (FELT, 1907)

Material studied: numerous larvae, numerous females, numerous males.

EE: 6 localities. LV: 35 localities (cf. SPUNGIS 1980, KARPA et al. 1990). LT: 16 localities (cf. SPUNGIS 1993).

Biology: larvae found in soil of various forests, adults collected in various forests.

46. *Bryomyia producta* (FELT, 1908)

Material studied: numerous larvae, numerous females, numerous males.

EE: 10 localities. LV: 23 localities (cf. SPUNGIS 1979, 1985, all as *B. apsectra* EDWARDS, 1938). LT: 12 localities (including one published in MAMAeva & MAMAev 1972, as *B. producta* (FELT, 1908) and *B. apsectra* EDWARDS, 1938).

Biology: larvae usually found in soil of pine forests, adults usually collected in coniferous forests.

47. *Campylomyza armata* MAMAEV, 1963

Material studied: numerous males.

EE: Kauksi, 06.09.1987; Kunda, 05.09.1987; Aa, 05.09.1987; Pagari, 06.09.1987; Laeva, 06.09.1987. LV: 7 localities (cf. SPUNGIS 1985).

Biology: adults usually collected in deciduous and mixed forests.

48. *Campylomyza bicolor* MEIGEN, 1818

Material studied: 26 males.

LV: Lautere, 06.09.1977; Saulkalne, 26.09.1980; Jumprava, 20.09.1983; Tervete, 21.09.1985; Darzini, 03.10.1982.

Biology: adults collected in deciduous forests.

(**Note:** This species was already recorded for Latvia by B. A. GIMMERTHAL (1842: 4) but no specimens remain in his collection confirming the identification.)

49. *Campylomyza cornuta* JASCHHOF, 1998

Material studied: 1 male.

LT: Paluse, 16.08.1988.

Biology: adult collected in pine forest.

50. *Campylomyza coronoidea* JASCHHOF, 1998

Material studied: numerous males.

LV: Darzini 28.09., 06.10. and 12.10.1979, 03.10.1982; Jumprava, 20.09.1983; Sigulda, 21.09.1977, 30.09.1980.

Biology: adults usually collected in deciduous forests.

51. *Campylomyza dilatata* FELT, 1907

Material studied: 12 larvae, 1 female, 6 males.

LV: 4 localities (cf. SPUNGIS 1979).

Biology: larvae found in soil, adults collected in meadows and orchards.

52. *Campylomyza flavipes* MEIGEN, 1818

Material studied: numerous larvae, numerous females, numerous males.

EE: 13 localities. LV: 27 localities (cf. SPUNGIS 1985, as *C. flavipes* and *C. bicolor* MEIGEN, 1818). LT: 1 locality (cf. MAMAEVA & MAMAEV 1972).

Biology: larvae found in soil of various habitats, adults collected in various forests and meadows.

53. *Campylomyza furva* EDWARDS, 1938

Material studied: 11 males.

LV: Jumprava, 17.09.1985.

Biology: adults collected in spruce forest.

54. *Campylomyza ormerodi* (KIEFFER, 1913)

Material studied: numerous larvae, numerous females, numerous males.

EE: Poltsamaa, 07.09.1987; Voru, 11.07.1987; Kunda, 05.09.1987; Visu, 11.08.1987. LV: 22 localities (cf. SPUNGIS 1985, as *C. armata* MAMAEV, 1963). LT: Sarai, 17.08.1988; Rudninkai, 18.08.1988; Saulenai, 19.08.1988.

Biology: larvae found in soil of various habitats, adults collected in various forests and meadows.

55. *Campylomyza serrata* JASCHHOF, 1998

Material studied: 4 males.

LV: Darzini, 25.05.1984; Koknese, 11.09.1977; Teichi Reserve near Sildas, 20.05.1992. LT: Zarasai, 16.08.1988.

Biology: adults collected in various forests.

56. *Campylomyza tridentata* JASCHHOF, 1997

Material studied: numerous males.

EE: Puurmani, 07.09.1987; Kauksi, 06.09.1987. LV: Sigulda, 26.09.1977; Jumprava, 14.09.1984.

Biology: adults collected in various forests.

57. *Catocha latipes* HALIDAY, 1833

Material studied: numerous larvae, 21 females, 20 males.

LV: 8 localities (cf. SPUNGIS 1979).

Biology: males collected in various forests and meadows.

58. *Excrescentia mutuata* MAMAEV & BEREST, 1991

Material studied: numerous larvae, 7 females, 7 males.

LV: Slitere, 21.04.1983; Koknese, 26.04.1985.

Biology: larvae found in rotten polyporous fungi and under rotten bark of deciduous trees, adults reared from those larvae.

59. *Groveriella baltica* sp. n.

Material studied: 5 males.

EE: Puurmani, 07.09.1987. LV: Milzkalne, 09.09.1980; Mazsalaca, 18.09.1990.

Biology: adults collected in spruce and mixed spruce/deciduous forests.

(Note: This species is described in section 2.3 of this paper)

60. *Heterogenella cambrica* (EDWARDS, 1938)**Material studied:** 1 male.

LV: Saulkalne, 10.06.1985.

Biology: adult collected in deciduous forest.**61. *Heterogenella hybrida* MAMAEV, 1963****Material studied:** 80 larvae, 2 females, 9 males.

EE: Niuni, 12.07.1987. LV: 4 localities (cf. SPUNGIS 1980, 1982a). LT: 1 locality (cf. SPUNGIS 1993).

Biology: larvae found in soil of deciduous forests, adults collected in various forests.**62. *Heterogenella multifurcata* sp. n.****Material studied:** 8 males.

EE: Sultsi, 17.07.1987; Kaansoo, 18.07.1987; Tori, 18.07.1987; Valga, 12.07.1987; Urge, 19.07.1987. LV: Kegums, 27.07.1983; Antropova, 20.08.1985.

Biology: adults collected in various forests.**(Note:** This species is described in section 2.3 of this paper.)**63. *Heterogenella transgressoris* JASCHHOF, 1998****Material studied:** 5 males.

EE: Niuni, 12.07.1987; Tori, 18.07.1987; Urge, 19.07.1987. LV: Alsviki, 06.07.1983.

Biology: collected in various forests.**64. *Lestremia cinerea* MACQUART, 1826****Material studied:** numerous larvae, numerous females, numerous males.

EE: 10 localities. LV: 17 localities (cf. SPUNGIS 1977, 1984). LT: 8 localities (cf. SPUNGIS 1993).

Biology: larvae found in soil and on mould covering decaying wood, adults collected in various forests.**65. *Lestremia leucophaea* (MEIGEN, 1818)****Material studied:** 5 females, numerous males.

EE: Ahaste, 27.07.1981; Audru, 27.07.1987; Sipa, 01.08.1987; Mustvae, 06.09.1987. LV: 19 localities (cf. SPUNGIS 1979, 1983, 1984). LT: 5 localities (cf. SPUNGIS 1993).

Biology: adults collected in various forests.**66. *Lestremia parvostylia* JASCHHOF, 1994****Material studied:** 8 females, 23 males.

EE: Tapa, 04.09.1987; Kunda, 05.09.1987; Aa, 05.09.1987; Kauksi, 06.09.1987; Puurmani, 07.09.1987. LV: Koknese, 07.09.1985; Luknas, 04.06.1990.

Biology: collected in spruce, deciduous and mixed forests.**(See also description of females in section 2.2.)****67. *Micromya lucorum* RONDANI, 1840****Material studied:** numerous males.

LV: 5 localities (cf. SPUNGIS 1979). LT: 1 locality (cf. SPUNGIS 1993).

Biology: collected in meadows at forest edge. Males were found to form swarms consisting of some hundreds up to thousands of individuals (SPUNGIS 1984).

68. *Monardia (Monardia) abnormis* MAMAEV, 1963**Material studied:** 10 males.

LV: Saulkalne, 24.05. and 23.06.1984.

Biology: adults collected in deciduous forest.**69. *Monardia (Monardia) antennata* (WINNERTZ, 1870)****Material studied:** 17 males.

LV: 5 localities (cf. SPUNGIS 1988).

Biology: adults collected in various forests.**70. *Monardia (Monardia) monilicornis* (ZETTERSTEDT, 1838)****Material studied:** numerous females, numerous males.

LV: Darzini, 28.09.1978; Teichi Reserve near Sildas, 22.05.1992 (leg. F. SAVICH).

Biology: adults emerged from prepupae found in strongly rotten stump of white alder.

(See also description of males and supplement to morphology of females in section 2.2.)

71. *Monardia (Monardia) obsoleta* EDWARDS, 1938**Material studied:** about 20 larvae, 2 females, 7 males.

LV: 6 localities.

Biology: larvae found in fruit-bodies of various polyporous fungi living on deciduous trees and on spruce, also in rotten wood, adults collected in deciduous forests.**72. *Monardia (Monardia) stirpium* KIEFFER, 1895****Material studied:** numerous larvae, 13 females, numerous males.

LV: Raiskums, 04.05.1985.

Biology: larvae found in strongly rotten wood.**73. *Monardia (Trichopteromyia) modesta* (WILLISTON, 1896)****Material studied:** 1 female, 3 males.

LV: Valmiera, 01.08.1981; Maza Skaista, 29.06.1978.

Biology: adults collected in deciduous forests.**74. *Monardia (Xylopriona) atra* (MEIGEN, 1804)****Material studied:** several larvae, 11 females, numerous males.EE: Kauksi, 06.09.1987. LV: 18 localities (cf. SPUNGIS 1977, 1982b, all as *Tetraxyphus ater*).LT: 3 localities (see SPUNGIS 1993, as *Tetraxyphus ater*).**Biology:** larvae usually found in soil of deciduous and spruce forests, adults collected in deciduous and spruce forests.**75. *Monardia (Xylopriona) furcifera* (MAMAEV, 1963)****Material studied:** 2 females, 19 males.LV: 4 localities (cf. SPUNGIS 1988, as *Tetraxyphus furcifer*). LT: 3 localities (cf. SPUNGIS 1993, as *Polyardis furcifera*).**Biology:** adults collected in deciduous forests.**76. *Monardia (Xylopriona) toxicodendri* (FELT, 1907)****Material studied:** about 30 larvae, 6 females, 46 males.

LV: 11 localities (cf. SPUNGIS 1979).

Biology: larvae found in soil of forests and meadows, adults collected in meadows and deciduous and, more rarely, coniferous forests.

77. *Neurolyga bifida* (EDWARDS, 1938)**Material studied:** 32 males.LV: 4 localities [cf. SPUNGIS 1988, as *Cordylomyia truncata* (FELT, 1912)].**Biology:** adults collected in deciduous forests.**78. *Neurolyga bilobata* (MAMAEV & ROZHNOVA, 1982)****Material studied:** 9 females, numerous males.EE: Tapa, 04.09.1987; Aizu, 07.09.1987; Puurmani, 07.09.1987. LV: 3 localities (cf. SPUNGIS 1988, as *Cordylomyia collaris* MAMAEV, 1963).**Biology:** adults collected in deciduous and spruce forests.

(See also redescription of males and description of females in section 2.2.)

79. *Neurolyga fenestralis* RONDANI, 1840**Material studied:** 1 male.LV: Jumprava, 20.04.1984. Other Latvian specimens, formerly published under a junior synonym for *N. fenestralis*, *Cordylomyia xylophila* EDWARDS, 1938 (cf. SPUNGIS 1988), actually belong to an undescribed *Neurolyga* species.**Biology:** adult collected in mixed forest.**80. *Neurolyga sylvestris* (FELT, 1907)****Material studied:** 30 males.LV: 8 localities [cf. SPUNGIS 1988, as *Cordylomyia rudis* (WINNERTZ, 1870)]. LT: 1 locality (cf. SPUNGIS 1993, as *Cordylomyia rudis* (WINNERTZ, 1870)).**Biology:** collected in various forests.**81. *Neurolyga truncata* (FELT, 1912)****Material studied:** 3 males.

EE: Vatla, 27.07.1987; Niuni, 12.07.1987. LV: Salaspils, 02.08.1977.

Biology: adults collected in deciduous forests.**82. *Neurolyga verna* (MAMAEV, 1963)****Material studied:** 9 males.LV: 2 localities (cf. SPUNGIS 1988, as *Cordylomyia verna*).**Biology:** collected in various forests in May.**83. *Peromyia apposita* JASCHHOF, 1997****Material studied:** 7 males.

LV: Saulkalne, 18.05.1983; Mazsalaca, 03.07., 24.07. and 28.08.1989; Teichi Reserve, 30.06.1991, 20.05.1992.

Biology: usually collected in pine forests.**84. *Peromyia bicolor* (EDWARDS, 1938)****Material studied:** 7 females, 13 males.

EE: Kiiu, 10.08.1987. LV: Smiltene, 15.07.1976; Valka, 20.08.1978; Darzini, 09.07.1978, 21.06.1980. LT: Ignalina, 16.08.1988; Paluse, 16.08.1988; Pavavare, 17.08.1988; Nemencine, 17.08.1988; Markine, 19.08.1988.

Biology: adults collected in pine forests.

85. *Peromyia bidentata* BEREST, 1988

Material studied: 2 males.

LV: Darzini, 12.09.1979. LT: 1 locality (cf. SPUNGIS 1993).

Biology: adults collected in pine forests.

86. *Peromyia borealis* (FELT, 1919)

Material studied: 11 larvae, 1 females, 19 males.

LV: 2 localities (cf. SPUNGIS 1983).

Biology: larvae found in soil of deciduous forests, adults collected in deciduous forests and orchards.

87. *Peromyia caricis* (KIEFFER, 1901)

Material studied: numerous larvae, numerous females, numerous males.

EE: Kamara, 17.07.1987. LV: 19 localities. LT: Sarai, 17.08.1988; Markine, 19.08.1988.

Biology: larvae found in soil of forests, adults collected in various forests.

88. *Peromyia composita* JASCHHOF, 1997

Material studied: 1 male.

LV: Salaspils, 20.09.1976.

Biology: adult collected in orchard.

89. *Peromyia cornuta* (EDWARDS, 1938)

Material studied: numerous larvae, numerous females, numerous males.

LV: 12 localities (cf. Spungis 1983, 1985). LT: 1 locality (cf. MAMAEVA & MAMAEV 1972).

Biology: larvae found in soil of deciduous and rarely mixed forests, adults collected in deciduous and mixed forests.

90. *Peromyia curta* JASCHHOF, 1997

Material studied: 3 females, 27 males.

LV: 7 localities. LT: Seda, 22.08.1989.

Biology: adults collected in deciduous forests.

91. *Peromyia diadema* MAMAEV, 1963

Material studied: numerous larvae, numerous females, numerous males.

EE: Sultsi, 17.07.1987, Viki, 29.07.1987. LV: 5 localities (cf. SPUNGIS 1979, 1982a, 1983, 1985).

Biology: larvae found in soil of deciduous forests, adults collected in various forests.

92. *Peromyia edwardsi* BEREST, 1994

Material studied: 2 males.

LV: Valka, 20.08.1978; Lautere, 11.08.1978.

Biology: adults collected in pine and poplar forests.

93. *Peromyia fagiphila* JASCHHOF, 1997

Material studied: numerous larvae, numerous females, numerous males.

EE: Ahaste, 27.07.1987; Suurju, 19.07.1987; Pangodi, 12.07.1987. LV: numerous localities.

LT: Sauleniai, 19.08.1988; Metelai, 19.08.1988; Joniskai, 22.08.1989; Seda, 22.08.1988.

Biology: larvae usually found in soil of deciduous and mixed forests, adults collected in various forests.

94. *Peromyia fungicola* (KIEFFER, 1901)

Material studied: 7 females, 29 males.

LV: 5 localities (cf. SPUNGIS 1977). LT: 2 localities (cf. SPUNGIS 1993).

Biology: adults usually collected in coniferous forests.

95. *Peromyia intermedia* (KIEFFER, 1895)

Material studied: 1 male.

LV: Mazsalaca, 29.05.1989.

Biology: adult collected in pine forest.

96. *Peromyia mitrata* JASCHHOF, 1997

Material studied: 4 males.

LV: Bramberge, 31.05.1981; Antropova, 20.08.1985. LT: Seda, 22.09.1989; Klaipeda 23.08.1989.

Biology: adults collected in deciduous forests.

97. *Peromyia modesta* (FELT, 1907)

Material studied: about 20 larvae, 3 females, 22 males.

EE: Orissare, 28.07.1987. LV: Broceni, 25.08.1977, 24.05.1978, 24.04. and 22.05.1979; Saulkalne, 24.05., 12.07. and 09.07.1984, 28.03. and 22.07.1985; Sigulda, 10.06.1978; Antropova, 20.08.1985; Augsciems, 01.05.1982. LT: Karmelava, 21.08.1988.

Biology: larvae found in soil of deciduous forests and under decaying bark of deciduous trees, adults collected in deciduous forests.

98. *Peromyia monilis* MAMAEV, 1965

Material studied: numerous larvae, 12 females, 6 males.

LV: 14 localities (cf. SPUNGIS 1977).

Biology: larvae found in rotten bark of deciduous trees, adults collected in various forests.

99. *Peromyia muscorum* (KIEFFER, 1895)

Material studied: 2 males.

LV: 1 locality (cf. SPUNGIS 1977).

Biology: adults collected in oak forest.

100. *Peromyia nemorum* (EDWARDS, 1938)

Material studied: 40 males.

EE: Kunda, 05.09.1987; Viru-Nigula, 05.09.1987; Jiuga, 06.09.1987; Niuni, 12.07.1987. LV: Saulkalne, 05.09.1981, 07.09.1984; Jumprava, 17.09.1985.

Biology: adults usually collected in coniferous and mixed forests.

101. *Peromyia ovalis* (EDWARDS, 1938)

Material studied: 2 males.

LV: Moricsala, 03.-04.08.1976; Skriveri, 02.08.1985.

Biology: adults collected in meadow and at forest edge.

102. *Peromyia palustris* (KIEFFER, 1895)

Material studied: about 25 larvae, 5 females, 6 males.

EE: Valga, 12.07.1987; Sultsi, 17.07.1987; Suurju, 19.07.1987. LV: 14 localities. LT: Pava-vare, 17.08.1988; Metelai, 19.08.1988; Vanagiskis, 21.08.1988.

Biology: larvae found in soil of pine forests, adults collected in pine forest.

103. *Peromyia perpusilla* (WINNERTZ, 1870)**Material studied:** 1 male.

LT: Pavavare, 17.08.1988. There is no valid record for Latvia; the one reported by SPUNGIS (1977, larvae) is a misidentification.

Biology: adult collected in pine forest.**104. *Peromyia photophila* (FELT, 1907)****Material studied:** 21 larvae, 16 males.

LV: 9 localities (cf. SPUNGIS 1988).

Biology: larvae found in soil of various forests and meadows, adults collected in various forests.**105. *Peromyia ramosa* (EDWARDS, 1938)****Material studied:** numerous larvae, 8 females, 29 males.

LV: 12 localities (cf. SPUNGIS 1979). LT: Rudninkai, 18.08.1988; 1 additional locality (cf. MAMAEVA & MAMAEV 1972).

Biology: larvae usually found in soil of Scotch pine forests, adults collected in pine forests, rarely in deciduous forests and meadows.**106. *Peromyia subborealis* JASCHHOF, 1997****Material studied:** numerous larvae, females and males.LV: 17 localities [cf. SPUNGIS 1980, 1982a, 1985, MELECIS et al. 1981, all as *P. trimera* (EDWARDS, 1938)].**Biology:** larvae found in soil of various forests, adults collected in various forests. (See also remarks on morphology in section 2.2.)**107. *Peromyia tschirnhausi* JASCHHOF, 1996****Material studied:** numerous larvae, 30 females, 21 males.

LV: 10 localities.

Biology: larvae usually found in soil of deciduous forests, adults usually collected in deciduous and spruce forests.**108. *Peromyia upupoides* JASCHHOF, 1997****Material studied:** several larvae, 8 males.

LV: Darzini, 05.06., 11.06., 20.08. and 25.08.1979; Jekabpils, 13.05.1979; Mazsalaca, 20.06.1989.

Biology: larvae found in soil of pine forests, adults collected in pine forests.**109. *Peromyia viklundi* JASCHHOF, 1997****Material studied:** 2 females, 5 males.

LV: Darzini, 28.05.1980; Jumprava, 18.05.1982, 16.07.1985; Mazsalaca, 01.05.1989; Aizkraukle, 02.08.1985.

Biology: adults collected in coniferous forests and meadows.**110. *Polyardis adela* PRITCHARD, 1947****Material studied:** several larvae, 19 males.

EE: Viru-Nigula, 05.09.1987. LV: Krumini, 27.07.1983; Ligatne, 26.05.1984; Krustkalni, 11.05.1984; Saulkalne, 28.07.1986; Garkalne, 28.04.1983. LT: Saulenai, 19.08.1988; Seda, 22.08.1988; Sarai, 17.08.1988.

Biology: larvae found in soil of various forests, adults usually collected in deciduous and spruce forests.

111. *Polyardis bispinosa* (MAMAEV, 1963)

Material studied: numerous larvae, females and males.

LV: 19 localities (cf. SPUNGIS 1980, 1985, all as *Tetraxyphus bispinosus*).

Biology: larvae found in soil of various forests, adults collected in various forests.

112. *Polyardis micromyoides* JASCHHOF, 1998

Material studied: 29 larvae, 5 females, 17 males.

EE: Niuni, 12.07.1987; Kaansoo, 18.07.1987; Panga, 30.07.1987. LV: Jumprava, 05.06.1985; Mazsalaca, 20.06.1989; Saulkalne, 28.07.1986. LT: Naujoje-Akmene, 12.05.1987.

Biology: larvae found in soil of coniferous forests, adults collected in various coniferous forests.

113. *Polyardis silvalis* (RONDANI, 1840)

Material studied: about 25 larvae, numerous males.

EE: Ahaste, 27.07.1987; Hanila, 27.07.1987; Kaansoo, 18.07.1987. LV: 17 localities. LT: Seda, 22.08.1989; Zuvintas, 20.08.1988; Svencionis, 16.08.1988; Karmelava, 21.08.1988.

Biology: larvae usually found in soil of deciduous forests, adults usually collected in deciduous forests.

114. *Skuhraviana triangulifera* MAMAEV, 1963

Material studied: numerous larvae, 12 females, 10 males.

EE: Kamara, 17.07.1987; Viljandi, 17.07.1987; Kaansoo, 18.07.1987. LV: 8 localities (cf. SPUNGIS 1980).

Biology: larvae found in soil of deciduous forests and in rotten bark of deciduous trees, adults collected in various forests.

115. *Strobliella brachycornis* sp. n.

Material studied: 1 female.

LV: Jumprava, 17.05.1983.

Biology: adult collected in meadow.

(Note: This species is described in section 2.3 in this paper.)

116. *Wasmaniella clauda* (PRITCHARD, 1951)

Material studied: 1 male.

LV: Moricsala, 21.06.1977.

Biology: adult collected in wet meadow.

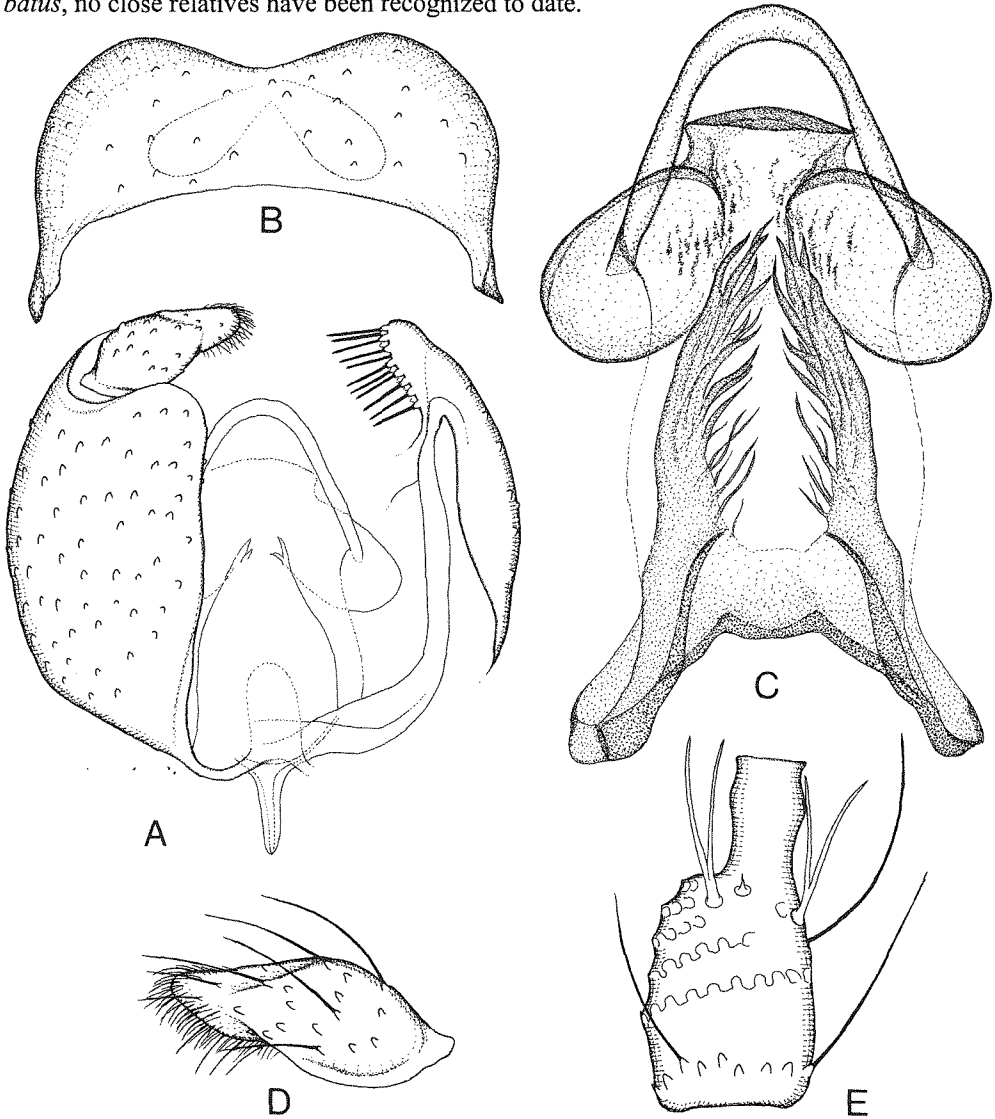
2.2 Remarks on various species and Redescriptions

***Aprionus barbatus* MAMAEV, 1963**

(Figs 1A-E)

We identified the two *barbatus*-males in the SPUNGIS collection according to the brief original description lacking illustrations (MAMAEV 1963: 450-451). The characters of the tegmen and subanal plate as described by MAMAEV correspond with those of the specimens studied here. *Aprionus barbatus* is distinguished from all other *Aprionus* species by its unique tegmen with

a large U-shaped cap and two longitudinal stems fringed into numerous irregular finger-like processes. *Aprionus multispinosus*, when described by YUKAWA (1971) from Japan, was considered similar to *barbatus* by sharing a tegmen with fringed longitudinal stems. Now it is apparent that tegminal structures of the two species are only superficially similar. For *A. barbatus*, no close relatives have been recognized to date.



Figs 1A-E: *Aprionus barbatus* MAMAEV, 1963, male; **A:** genitalia, tergite 9 omitted, left part: ventral view, right part: dorsal view; **B:** tergite 9, dorsal view; **C:** tegmen and subanal plate, ventral view; **D:** gonostylus, ventral view; **E:** flagellomere 4, lateral view.

Redescription of males:

Body size: 1.5 mm.

Head: postfrons bilobed, with few setae. Occiput with setae and scales in posterior third; postgenae densely covered with scales and setae. Eye bridge 2-3 facets long. Neck of flagello-

mere 4 (Fig. 1E) clearly shorter than node; node with 1 basal whorl of setae, medially with 1 complete and 4 incomplete crenulate whorls of long setae, distally with 3-4 bifurcated sensory hairs, occasionally with additional simple sensory hairs and few sensory spines. Palpi 3-segmented; first segment with sensory hairs ventrally; third segment clearly longer than second; all segments with setae and scales.

Thorax: scutum laterally, along parapsidal sutures and in anterior half between these portions covered with setae and scales. Claws arched at right angle with distal side longer than proximal, with 2-3 minute teeth behind slight swelling at midlength. Empodia reduced to few hairs. Halteres densely covered with scales. Wings: R1 = 2 1/2 -3 rs; CuA2 strongly curved distally, extending to wing margin; pattern of sensory pores as usual in *Aprionus*, but rs-pore sometimes dislocated to lie on proximal section of R5.

Abdomen: tergites and sternites covered with scales and setae except those of segment 1. Pattern of tergal plaques: 0 / 2 / 2 / 2 / 2 / 1 / 0 / 0; pleural plaques present.

Terminalia: gonocoxites (Fig. 1A) fused ventrally by sclerotized rib leading into membranous aedeagus; dorsodistally with comb of about 15 strong spines inside. Gonostyli (Figs 1A and 1D) small compared with gonocoxites; in proximal half convex and with long setae outside and with shorter setae inside; in distal half tapering to tip and covered with long hairs, apex blunt and without teeth or spines. Tegmen (Fig. 1C) membranous with faintly outlined lateral contours and conspicuous, large U-shaped cap, centrally with 2 longitudinal stems cut into numerous irregular, narrow, finger-like processes of various size forming a fringe; parameral apodemes strongly developed. Subanal plate (Fig. 1C) consisting of two large ovoid lobes with sclerotized margins and irregular dark dots in centre, lobes fused distally by a bridge with strongly sclerotized distal margin. Tergite 9 (Fig. 1B) strongly vaulted, proximolateral edges with narrow processes, distal margin slightly emarginated medially and broadly rounded laterally. Tergite 10 bilobed, pubescent.

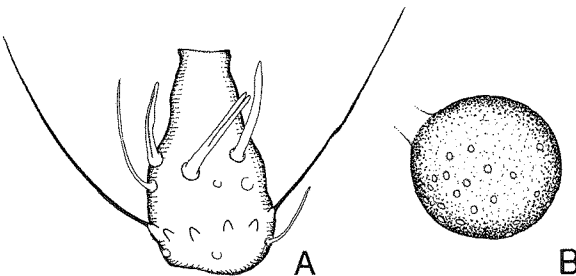
***Aprionus betulae* JASCHHOF, 1996**

(Figs 2A and B)

Females of this species are described here for the first time. Their characters are considered too unspecific for certain identification of this species.

Description of females:

Body length: 2.5 mm.



Figs 2A and B: *Aprionus betulae* JASCHHOF, 1996, female; **A:** flagellomere 4, lateral view; **B:** spermatheca.

Head: antennae with 9-10 flagellomeres. Flagellomere 4 (Fig. 2A) slender, with neck shorter than node; node with 1 sparse

whorl of sensory hairs basally, more distally of latter with 1 whorl of long setae, medially with incomplete whorl of slender, short sensory hairs, distally with 3-4 strong sensory hairs, some of them bifurcated or 2-pointed. Palpus 3-segmented.

Thorax: with wings of normal or reduced length. When brachypterous, thorax strongly reduced in size and with sparse, short setation, filled with eggs instead of muscles; wing length about one third of abdomen's length.

Abdomen: spermatheca 1 (Fig. 2B), globular, strongly sclerotized, with small pores on one side.

***Aprionus complicatus* MAMAEV & BEREST, 1995**

(Figs 3A-C)

To date, *A. complicatus* was known from only two males collected in Ukraine (MAMAEV & BEREST 1990). Because the gonostyli of the holotype specimen were distorted on the slide mount, their true shape and structure in the illustration by JASCHHOF (1998a: 359, Fig. 149b) could be misleading. Two additional specimens studied here clearly show a pointed but toothless apex to the gonostyli (Fig. 3A-C). Additional characters, to fill in the descriptions in MAMAEV & BEREST (1990, under preoccupied name, *A. rostratus*) and JASCHHOF (1998a) are as follows:

Figs 3A-C: *Aprionus complicatus* MAMAEV & BEREST, 1995, male; A-C: gonostyli, various specimens, from various angles of view.

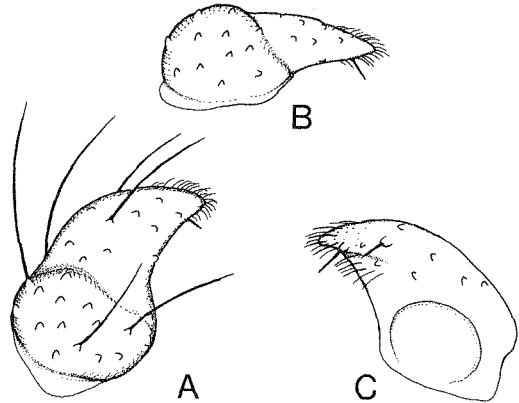
Male.

Head: postfrons bilobed, with few setae.

Occiput and palpi with setae and scales.

Thorax: halteres covered with narrow scales. Wings: R1 = 2 1/2-3 rs.

Abdomen: segment 1 non-setose. Pattern of tergal plaques not quite certain, but probably: 0 / 2 / 2 / 1 / 1 / 0-1 / 0 / 0.

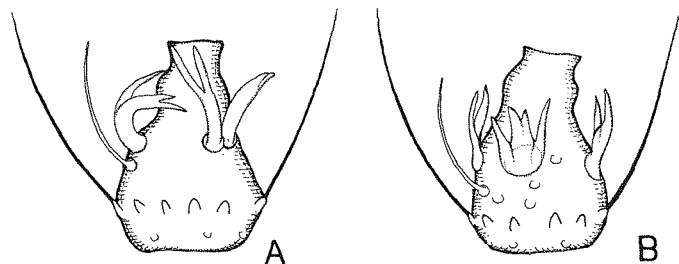


***Aprionus inquisitor* MAMAEV, 1963**

(Figs 4A and B)

One of the two females studied is brachypterous, the morph described previously (JASCHHOF 1998a), the other is macropterous. Both females have some of the antennal sensillae very broad and irregularly branched in two to four processes (Figs 4A and B).

Figs 4A and B: *Aprionus inquisitor* MAMAEV, 1963, female; A and B: flagellomere 4, various specimens.



***Aprionus insignis* MAMAEV, 1963**

(Figs 5A and B)

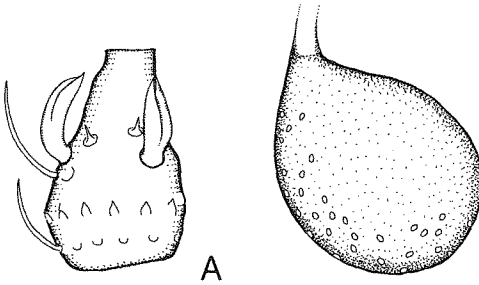
The females of *insignis* are described here for the first time. The distinction from other female *Aprionus* continues to be doubtful because of the lack of true species-specific characters. Among seven specimens studied (with evenly stretched abdomen), body length is variable depending on whether the abdomen contains eggs or not. None of the specimens indicates wing reduction in this species.

Description of females:

Body length: 1.7- 2.3 mm.

Head: antennae with 10-12 flagellomeres, with terminal flagellomere constricted. Flagellomere 4 (Fig. 5A) pear-shaped, with neck shorter than node; node with 1 sparse whorl of sensory hairs basally, more distally of latter with 1 whorl of long setae, medially with incomplete whorl of slender, short sensory hairs, distally with 3-4 broad sensory hairs or flattened sensillae variable in shape (variable even in a single flagellomere), often more than one-pointed. Palpus 3 to 4-segmented.

Abdomen: spermatheca 1 (Fig. 5B), globular to slightly ovoid, strongly sclerotized, with small pores on one side.



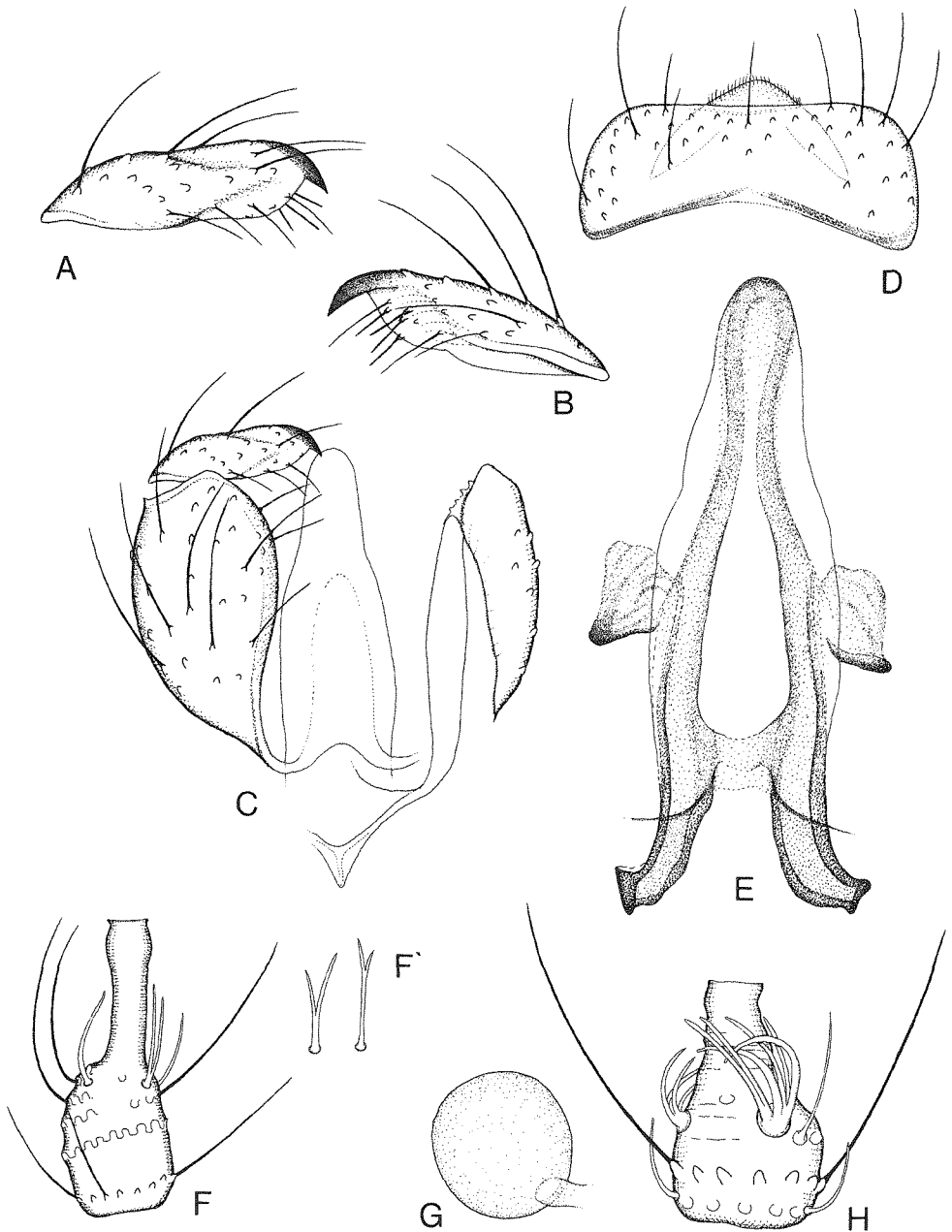
Figs 5A and B: *Aprionus insignis* MAMAEV, 1963, female; **A:** flagellomere 4, lateral view; **B:** spermatheca.

***Aprionus laevis* MOHRIG, 1967**

Four females of *A. laevis*, studied here in more detail than previously, serve to complete the descriptions in MOHRIG (1967) and JASCHHOF (1998a). All four specimens are brachypterous; they have a single globular and weakly sclerotized spermatheca each, and the cerci are covered with strong, spine-like setae.

***Aprionus onychophorus* BEREST, 1991**
(Figs 6A-H)

Specimens in the SPUNGIS collection belonging to *A. onychophorus* were identified by comparison with the original description by BEREST (1991). The East Baltic material of *onychophorus* largely fits this description except for the eye bridge which was described by BEREST to be little longer. Even so, there remains a trace of uncertainty in identification: BEREST (l. c.) compared her *onychophorus* with *A. cardiophorus* MAMAEV, both distinguished by a different shape of tergite 9 (described as heart-shaped in *cardiophorus*) and by lacking branched antennal sensory hairs in *cardiophorus*. When compared with the illustration of male terminalia of *onychophorus* in this paper (Figs 6A-E), the shape of the gonostylus and tegmen is more similar to that figured for *cardiophorus* (MAMAEV 1963: 449, Fig. 3k) than to that of *onychophorus* in BEREST (1991: 103, Fig. 1.4). Possibly, *onychophorus* and *cardiophorus* are identical which will be determined by studying the monotype of *cardiophorus*. Within the genus *Aprionus*, *onychophorus* belongs to the polyphyletic group of species lacking finger-like tegminal processes (*flavoscuta*-group in JASCHHOF 1998a). *A. onychophorus* is characterized by the combination of following characters: flattened gonostyli with strong apical tooth, long tegmen with dark belt surrounding a central opening, and subanal-plate reduced to two separated (?) sclerotized portions at midlength of tegmen.



Figs 6A-H: *Aprionus onychophorus* BEREST, 1991; **A:** gonostylus, ventral view; **B:** dito, dorsal view; **C:** male genitalia, tergite 9 omitted, left part: ventral view, right part: dorsal view; **D:** tergite 9, dorsal view; **E:** tegmen and subanal plate, ventral view; **F:** flagellomere 4 of male, lateral view; **F':** antennal sensillae in males, variations; **G:** spermatheca; **H:** flagellomere 4 of female, lateral view.

Redescription of males:

Body size: 1.2-1.4 mm.

Head: postfrons bilobed, with few setae. Occiput with 2 postocellar bristles and setae in posterior third. Postgenae covered with setae of various length and few scales. Eye bridge 2-3 facets long laterally and 3-4 facets at vertex. Neck of flagellomere 4 (Fig. 6F) slightly shorter to slightly longer than node; node with 1 basal whorl of setae, with 1-2 complete and 3-4 incomplete crenulate whorls of long setae medially and with few scattered sensory hairs of various length distally. As a rule, some of the sensory hairs are 2-pointed to bifurcated (Fig. 6F'). Palpus 4-segmented; first segment slightly swollen and with sensory hairs ventrally; segments 2-4 of about same length; all segments with setae and narrow scales.

Thorax: scutum with 2 lateral and 2 dorsocentral rows of setae; lateral setae longer than dorsal. Claws arched at right angle with distal side longer than proximal, at midlength with 1-2 minute teeth behind slight swelling. Empodia reaching one third of claw length. Halteres densely covered with narrow scales. Wings: R1 = 1 1/2 rs; rs more diagonal compared with other *Aprionus* species.

Abdomen: segment 1 non-setose. Tergites 2-8 with setae concentrated laterally; sternites 2-8 covered with setae. Pattern of tergal plaques: 0 / 2 / 2 / 2 / 1 / 1 / 0-1 / 0; pleural plaques present.

Terminalia: gonocoxites (Fig. 6C) fused ventrally by a curved sclerotized rib leading into membranous aedeagus; covered with setae of various length; dorsal transverse bridge rather narrow. Gonostyli (Figs 6A and B) strongly flattened, broadest in proximal third (when seen from above); outside with long setae, and inside with shorter, weaker setae and 3-6 weak subapical spines; with strong, arched apical tooth. Tegmen (Fig. 6E) longer than gonocoxites, rounded distally, membranous, without pairs of fingerlike processes, with dark (sclerotized?) belt surrounding a central opening. Subanal plate (Fig. 6E) small, appearing as irregularly sclerotized structure on both sides at midlength of tegmen. Tergite 9 (Fig. 6D) covered with setae of various length, plate-like, rectangular to trapezoidal, distal margin straight, proximal margin with rib-like sclerotization interrupted medially. Tergite 10 large, extending beyond distal margin of tergite 9, appearing bilobed but fused distally, pubescent.

Description of females:

Body size: 2.0 mm.

Head: antenna with 13 flagellomeres, terminal flagellomere constricted and with second node. Flagellomere 4 (Fig. 6H) approximately pear-shaped, with neck little shorter than node; node with 1 basal whorl of fine sensory hairs, 1 whorl of long setae, 4 furcate sensillae each with 5-6 branches, and additional sensory hairs and sensory spines.

Terminalia: spermatheca 1 (Fig. 6G), globular, weakly sclerotized.

***Aprionus tiliamcorticis* MAMAEV, 1963**

The shape of gonostyli in this species is more complex than the illustrations in MAMAEV (1963: 449, Fig. 3g) and JASCHHOF (1998a: 371, Fig. 156b) suggest. The gonostyli appear different seen from various angles. Slide mounted specimens limit the angle of view. The gonostyli are slightly flattened and slightly tapered to the apex, and the distal third is curved dorsad. One of three subapical spines is inserted at the outer margin of the gonostylus, the other two are directed inwards.

***Lestremia parvostylia* JASCHHOF, 1994**

(Fig. 7)

Females of *parvostylia* are described here for the first time. They have antennal flagellomeres with the necks longest of all *Lestremia* species, but we doubt whether this character is helpful for distinguishing species, in particular, *L. leucophaea*.

Description of females:

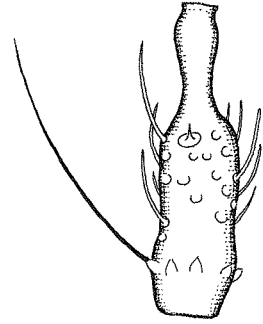
Body size: 2.9-3.1 mm.

Head: antennae with 9 flagellomeres. Flagellomere 4 (Fig. 7) as in other *Lestremia* species with neck somewhat longer compared with congeners.

Thorax: legs with underside of tarsomeres with sparse sole of short, spine-like setae.

Abdomen: probably with 1 unsclerotized, slightly ovoid spermatheca.

Fig. 7: *Lestremia parvostylia* JASCHHOF, 1994, female; flagellomere 4, lateral view.

***Monardia (Monardia) monilicornis* (ZETTERSTEDT, 1838)**

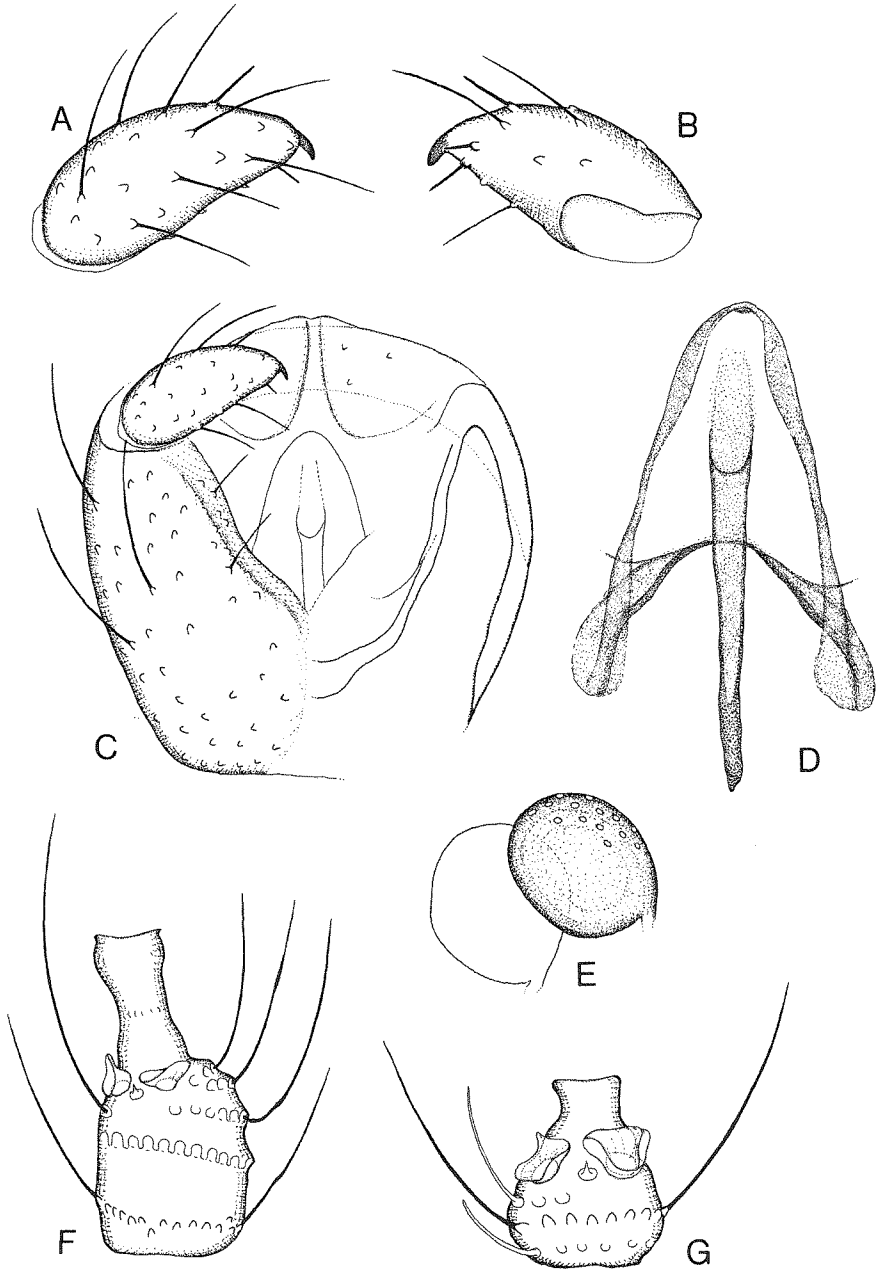
(Figs 8A-G)

Males of *monilicornis* remained undescribed to date, whereas females were redescribed recently on the basis of four specimens (three of them in poor condition, including the holotype, cf. JASCHHOF 1998a). Female *monilicornis* specimens in the SPUNGIS collection correspond with those described previously except for two insignificant details: R1 was found a little shorter (2 1/2 times as long as rs versus 3-3 1/2), and the empodia were reduced to approximately 1/4 of claw's length (not reduced to just few hairs). We have no doubt that all these specimens belong to a single species, *M. monilicornis*. The females of *monilicornis* are similar to other large-sized *Monardia* s. str. species known only from the female sex, e. g., *magna*, *canadensis* and *multiarticulata* (for comparison, cf. JASCHHOF l. c.). Males are distinguished from other *Monardia* (*M.*) species with toothed gonostyli and four palpus segments (cf. *caucasica*, *lignivora*) by the markedly tapered gonostyli with a fingernail-like, curved apical tooth. *Monardia* (*M.*) *lignivora* has egg-shaped gonostyli with a subapical-pointed tooth, *caucasica* has elongated, slightly tapered gonostyli with straight, pointed apical tooth). *Monardia* (*M.*) *caucasica* is the most similar to *monilicornis* in most of its characters (antennae, palpi, setation on head and scutum, wings), but its claws have 3-4 distinct teeth and its empodia are extended to 3/4 of claw length, longer than in other representatives of this subgenus.

Description of males:

Body size: 2.0-2.3 mm.

Head: postfrons bilobed, prominent, covered with setae and scales. Occiput in posterior half and postgenae entirely covered with setae and scales. With 1 row of postocular bristles. Eye bridge 2-3 facets long laterally and 3-4 facets at vertex. Antennae with 12 flagellomeres; scapus markedly larger than pedicel. Neck of flagellomere 4 (Fig. 8F) shorter than node; node with 1 dense whorl of setae basally, 1 complete and 3 incomplete crenulate whorls of long setae medially, and 2 flattened sensillae each arising from a large pore distally, additionally with few sensory spines. Palpus 4-segmented; segment 1 enlarged, densely covered with sensory hairs ventrally; distal segments of approximately same length; all segments with setae and scales.



Figs 8A-G: *Monardia (M.) monilicornis* (ZETTERSTEDT, 1838); **A:** gonostylus, ventral view; **B:** dito, dorsal view; **C:** male genitalia, left part: ventral view, right part: dorsal view; **D:** tegmen and genital rod; **E:** spermathecae; **F:** flagellomere 4 of male, lateral view; **G:** flagellomere 4 of female, lateral view.

Thorax: scutum densely covered with long setae laterally and scale-like setae and scales dorsally. Claws slightly and evenly arched, without teeth. Empodia reduced, extending to 1/4 of claw length. Halteres densely covered with scales. Wings: R1 = 2 rs; CuA-fork long, CuA2 occasionally reaching wing margin; arrangement of macrotrichia and pattern of sensory pores as usual in *Monardia*.

Abdomen: segment 1 non-setose. Tergites and sternites 2-8 densely covered with long setae and narrow scales; medium segments with 1-2 patches of setae laterally. Pattern of tergal plaques: 0 / 2 / 2 / 2 / 1 / 1 / 0 / 0; pleural plaques present.

Terminalia: gonocoxites (Fig. 8C) with broadly V-shaped neckline, membranous and non-setose along medial line, with setae of various length elsewhere. Gonostyli (Figs 8A and B) broadest in proximal third, evenly tapering to tip, with long setae outside and shorter and finer setae inside; apical tooth small, slightly curved, appearing fingernail-like rounded; with 2 short subapical spines directed inwards and 1 longer spine directed outwards. Genital rod (Fig. 8D) strong, as long as tegmen, with opening in distal third, strongly sclerotized except portion beyond opening. Tegmen (Fig. 8D) pyramid-shaped, with rounded to pointed apex. Tergite 9 appearing as narrow sclerotized band, covered with setae of various length, distal margin broadly rounded. Tergite 10 (Fig. 8C) large, bilobed, pubescent and with a few short setae distally. Sternite 10 very faintly membranous, with few hairs and short setae distally.

Supplement to female description:

Body size: 3.5-4.5 mm.

Head: palpus usually 4- and occasionally 3-segmented, when 3-segmented with terminal segment longest.

Thorax: claws with up to 3 minute teeth, apparently lacking in other specimens. Wings: R1 = 2 1/2 rs.

Abdomen: setae and scales markedly shorter than in males. Segments 2-5 with 2-3 elongated patches of setae laterally. Ovipositor slender, with sternite 8 and genital fork very long.

Neurolyga bilobata MAMAEV & ROZHNOVA, 1982

(Figs 9A-G)

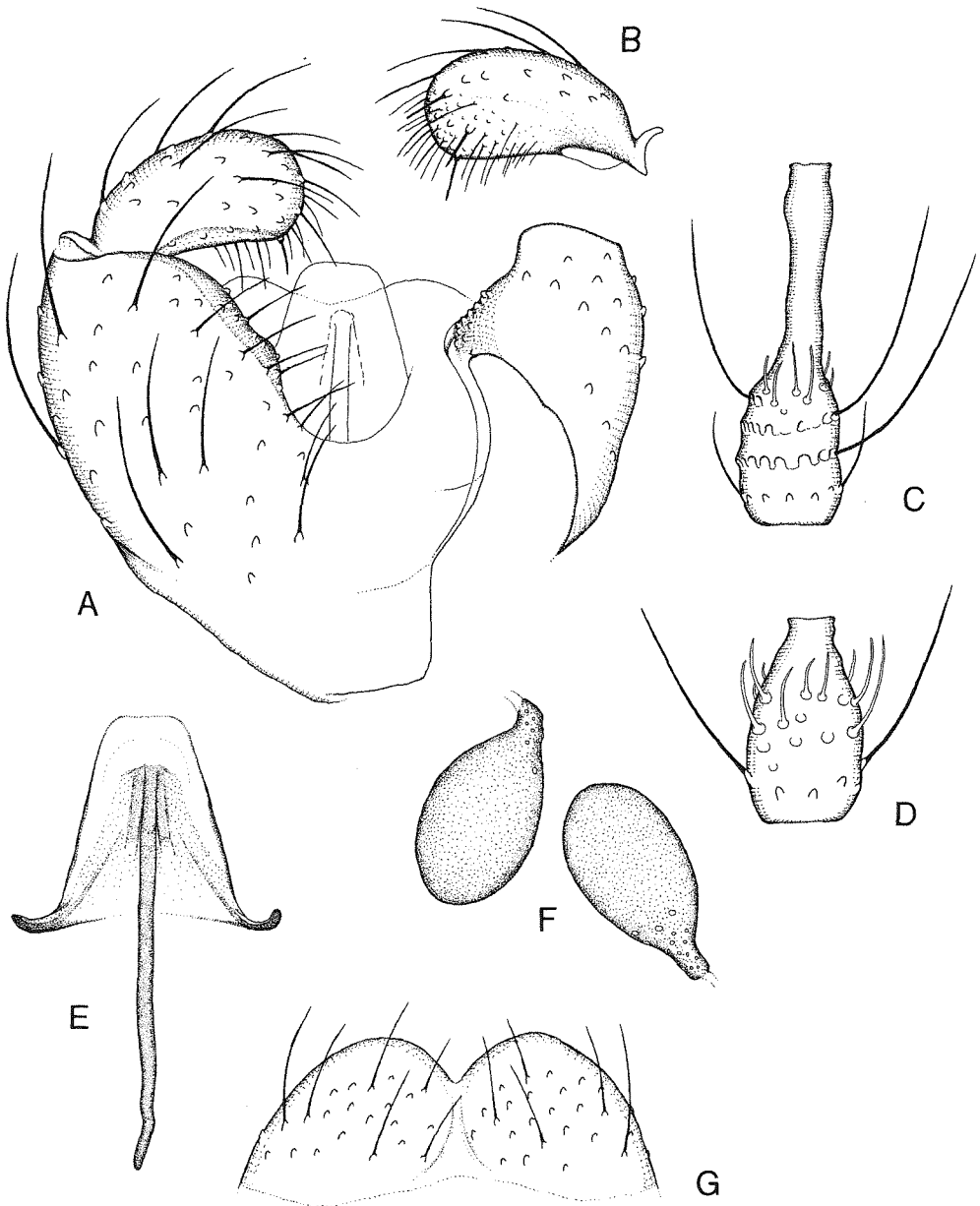
The material studied here was identified by using the original description of *N. bilobata*, particularly the illustration of male terminalia (MAMAEV & ROZHNOVA 1982: 21, Fig. 3.2). Species-specific characters in males are as follows: gonocoxites extended ventrobasally, genital rod long and with a simply structured tegmen and, particularly, tergite 9 with medially emarginated distal margin. We found slight differences in the Baltic material (see below) compared with the description of the type-specimen from Ukraine: the latter was described as having the medial flagellomeres with necks the same length as nodes, claws with two strong teeth, and empodia reaching only 2/3 of claw length. The female of *bilobata* is described here for the first time. The spermathecae, characterized by their short but distinct sclerotized appendix, may allow the identification of *bilobata* females.

Redescription of males:

Body size: 1.4-1.6 mm.

Head: postfrons slightly bilobed, non-setose. Occiput in posterior third, postgenae entirely covered with long setae, without distinct postocular and postocellar bristles. Eye bridge without facets laterally, medial eye-portion up to 5 facets long. Neck of flagellomere 4 (Fig. 9C) markedly longer than node; node basally with 1 whorl of short setae, medially with 1(-2) complete and 2(-1) incomplete crenulate whorls of long setae, distally with scattered sensory hairs and few sensory spines. Palpus 4-segmented; segment 1 with sensory hairs ventrally; segment 4 longest.

Thorax: scutum with scattered setae laterally, along and anteriorly between parapsidal sutures. Legs lacking distinct scales, with scale-like setae on tarsi. Claws crescent-shaped, with 1-2 minute teeth at midlength. Empodia longer than claws. Stems of halteres with setae, knobs covered with scale-like setae. Wings: R1 = 2 1/2-3 rs; r-m = 2 rs; CuA-fork very acute; CuA2



Figs 9A-G: *Neurolyga bilobata* (MAMAEV & ROZHNOVA, 1982); **A:** male genitalia, left part: ventral view, right part: dorsal view; **B:** gonostylus, dorsal view; **C:** flagellomere 4 of male, lateral view; **D:** flagellomere 4 of female, lateral view; **E:** tegmen and genital rod, ventral view; **F:** spermathecae; **G:** tergite 9 of male, dorsal view.

not reaching wing margin; pattern of sensory pores and macrotricia on veins as usual in *Neurolyga* except rs-pore shifted to R5 proximally sometimes.

Abdomen: segment 1 non-setose; tergites 2-(4-)5 long with setae concentrated along lateral and posterior margins, tergites (5-)6-8 short; sternites with long setae. Pattern of tergal plaques: 0 / 2 / 2 / 2 / 1-2 / 0-1 / 0 / 0; pleural plaques present.

Terminalia: gonocoxites (Fig. 9A) ventrally covered with setae except for membranous medial line and extended basis; distal margin with broadly U-shaped emargination; dorsal bridge of gonocoxites long, its proximal margin variable in shape. Gonostyli (Figs. 9A and B) broadest in distal third, with broadly rounded apex, with long setae outside, inside very densely covered with weaker setae and long hairs and with 3 long spines in distal half. Genital rod (Fig. 9E) markedly longer than tegmen, fully sclerotized, with distinct mouth of sperm ducts leading into apical portion. Tegmen (Fig. 9E) membranous except parameral apodemes, somewhat tapering to tip, with straight distal margin. Tergite 9 (Fig. 9G) covered with setae of various length, approximately trapezoid with rounded lateral margins, distal margin distinctly emarginated medially. Tergite 10 and sternite 10 membranous, slightly bilobed, pubescent.

Description of females:

Body size: 2.0-2.3 mm.

Head: antennae with 9 flagellomeres; flagellomere 1 with small sensory pockets basally; flagellomere 4 (Fig. 9D) with very short neck, node with 1 irregular whorl of long setae basally and numerous sensory hairs of various length in distal 2/3.

Thorax: T5 of legs with sole of short spines. Wing: R1 = up to 4 rs.

Abdomen: setae on tergites and sternites shorter and more sparse than in males. Spermathecae 2 (Fig. 9F), sclerotized, egg-shaped with short appendix at transition to membranous duct, with numerous small pores around appendix.

***Peromyia subborealis* JASCHHOF, 1997**

Eight of nine males studied have the antennal flagellomeres with two whorls of sensory hairs (corresponding to the variety described in JASCHHOF 1997, 1998a), one specimen has the flagellomeres with the one whorl of sensory hairs described as typical. The latter specimen belongs to a series of eight in total, all collected simultaneously. In the JASCHHOF collection, three series of specimens exist with the both varieties collected simultaneously. The females of *subborealis*, described here for the first time, have nine antennal flagellomeres and two spermathecae poorly sclerotized, rounded and flattened. These females lack species-specific characters which might allow their identification.

2.3 Description of new species

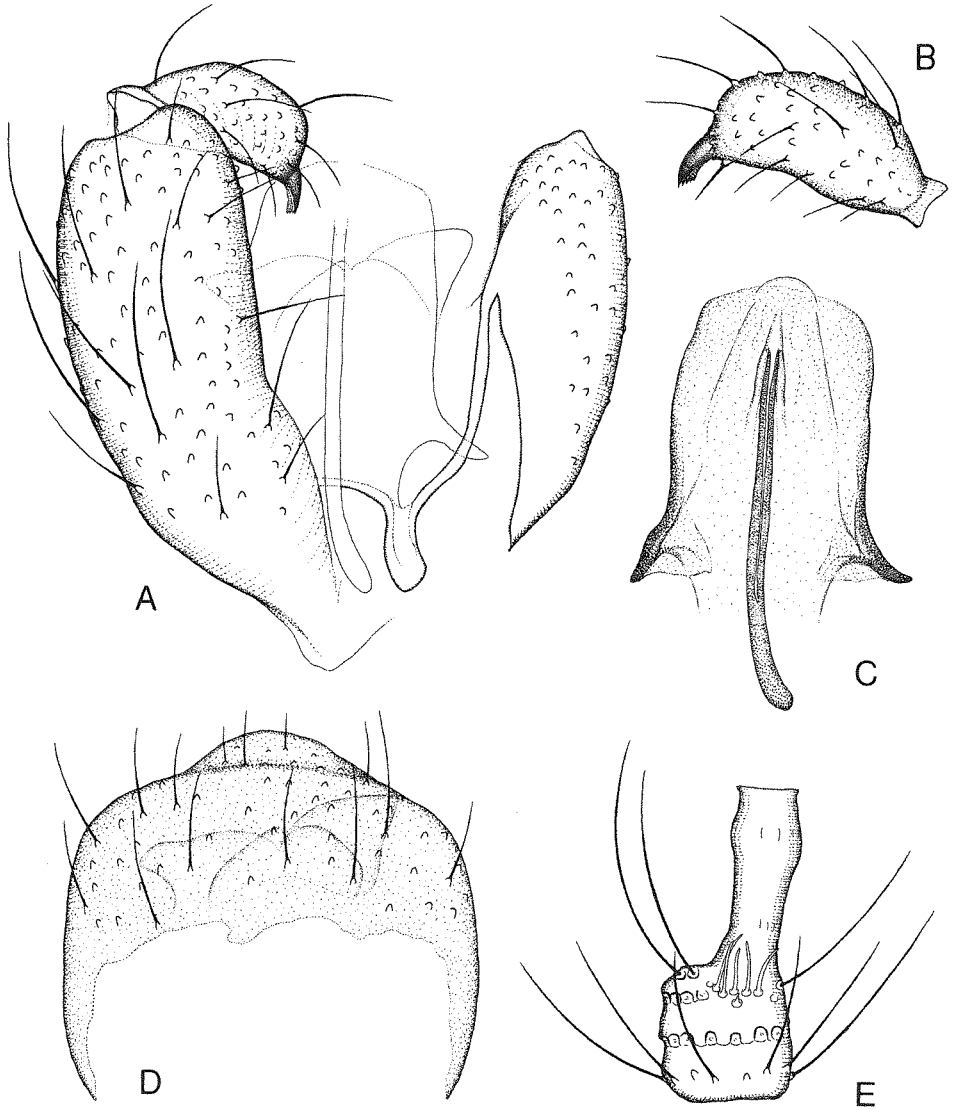
***Groveriella baltica* sp. n.**

(Figs 10A-E)

Description

Male. Body size: 2.2-3.0 mm.

Head: clypeus small, with long setae. Postfrons very slightly prominent, with few setae. Postcranium covered with long setae; postocellar bristles lacking; with 3 postocular bristles. Ocelli 3. Eye bridge 3-4 facets long. Scapus little larger than pedicel, both with setae ventrally. Antennae with 22-25 flagellomeres. Neck of flagellomere 4 (Fig. 10E) longer than node; node with 1 basal whorl of long setae, medially with 1 complete and 2 incomplete crenulate whorls of long setae, longest setae of the complete whorl extending beyond neck of the following segment, distally with many sensory hairs and few sensory spines; microtrichia restricted to the basis of node except for the first 3-4 flagellomeres. Palpus 4-segmented; segments gradually increasing in length; first segment with many, other segments with few short sensory hairs ventrally; all segments with setae of various length.



Figs 10A-E: *GroverIELla baltica* sp. n., male; **A:** genitalia, tergite 9 omitted, left part: ventral view, right part: dorsal view; **B:** gonostylus, dorsal view; **C:** tegmen and genital rod, ventral view; **D:** tergite 9, dorsal view; **E:** flagellomere 4, lateral view.

Thorax: scutum with long setae laterally and along parapsidal sutures. Legs densely covered with setae of various length, tarsi additionally with very narrow scales. Claws arched in right angle with distal side twice as long as proximal, with 3 fine teeth at basis of distal side. Empodia reduced to few hairs. Halteres longish-clubshaped; knobs and stems covered with setae. Wings: C with break beyond wing apex; Sc extending beyond level of rs; R1 = 6-7 rs; r-m = 2 rs; M1+2 simple, obsolete distally; M3+4 proximally free; CuP and A very short;

membrane entirely covered with macrotrichia; macrotrichia dorsally on Sc (proximally), R, R1, r-m, R5 and CuA; pattern of sensory pores: R1 4-6, rs 1, R5 3-4 medially / distally; anal area with slightly convex margin.

Abdomen: all tergites and sternites with long setae occasionally except sternite 1. Anterior margins of tergites 7 and 8 with crenulate sclerotization. Pattern of tergal plaques: 0-1 / 2 / 2 / 2 / 2 / 2 / 1 / 0-1. Pleural plaques lacking.

Terminalia: gonocoxites (Fig. 10A) long, ventrally fused just in proximal fifth by membranous link, covered with long setae except proximally; gonocoxal apodemes long. Gonostyli (Fig. 10B) nearly parallel-sided, very slightly arched inwards, densely covered with setae; with terminal tooth inserting somewhat subapically, tooth fingernail-like and multi-pointed; additionally with, at least, 1 weak subapical spine inside. Tegmen (Fig. 10C) weakly sclerotized, nearly parallel-sided with distal margin hardly visible but more or less cut. Genital rod (Fig. 10C) well sclerotized, with large membranous cap apically and conspicuous mouth of sperm ducts leading into apex. Tergite 9 (Fig. 10D) long with broadly rounded distal margin, irregularly covered with long setae. Tergite 10 free, bilobed, covered with setae. Sternite 10 slightly bilobed, without setae, pubescent.

Female: unknown.

Types. Holotype: male, series no. E77-1a, Estonia, Puurmani, 07.09.1987, in mixed spruce/birch forest, leg. SPUNGIS (in FBUL). Paratypes: 2 males, same data as holotype; 1 male, series no. 582-5, Latvia, Milzkalne, 09.09.1980, in spruce forest; 1 male, series no. 752-6, Latvia, Mazsalaca, 18.09.1990, in mixed forest, all leg. SPUNGIS (in FBUL).

Discussion

The new species is similar to *G. carpathica* but differs at least by the following characters (in parenthesis: *G. carpathica*, according to the original description by MAMAEV): antennae with 22-25 flagellomeres (18); neck of flagellomere 4 or of medium flagellomere, respectively, longer than node (as long as node); basal segment of palpus with sensory hairs (without); empodia reduced to few hairs (described as rudimentary and illustrated as half as long as claws); tergite 9 with broadly rounded distal and proximal margins (straight margins). The illustration of the genitalia of *G. carpathica* (MAMAEV 1977: 3, Fig. 5) suggests additional differences compared with *G. baltica* (for example, shorter gonocoxites, gonostyli tapered to tip and with smaller and simple apical tooth), but those details can be evaluated only by study of the type specimen. The presence of true scales on the legs of *G. baltica* is remarkable, since this character was supposed to be restricted to the Micromyidi within the Lestremiinae.

Etymology

The name *baltica* refers to Baltic Sea region where the type-material was collected.

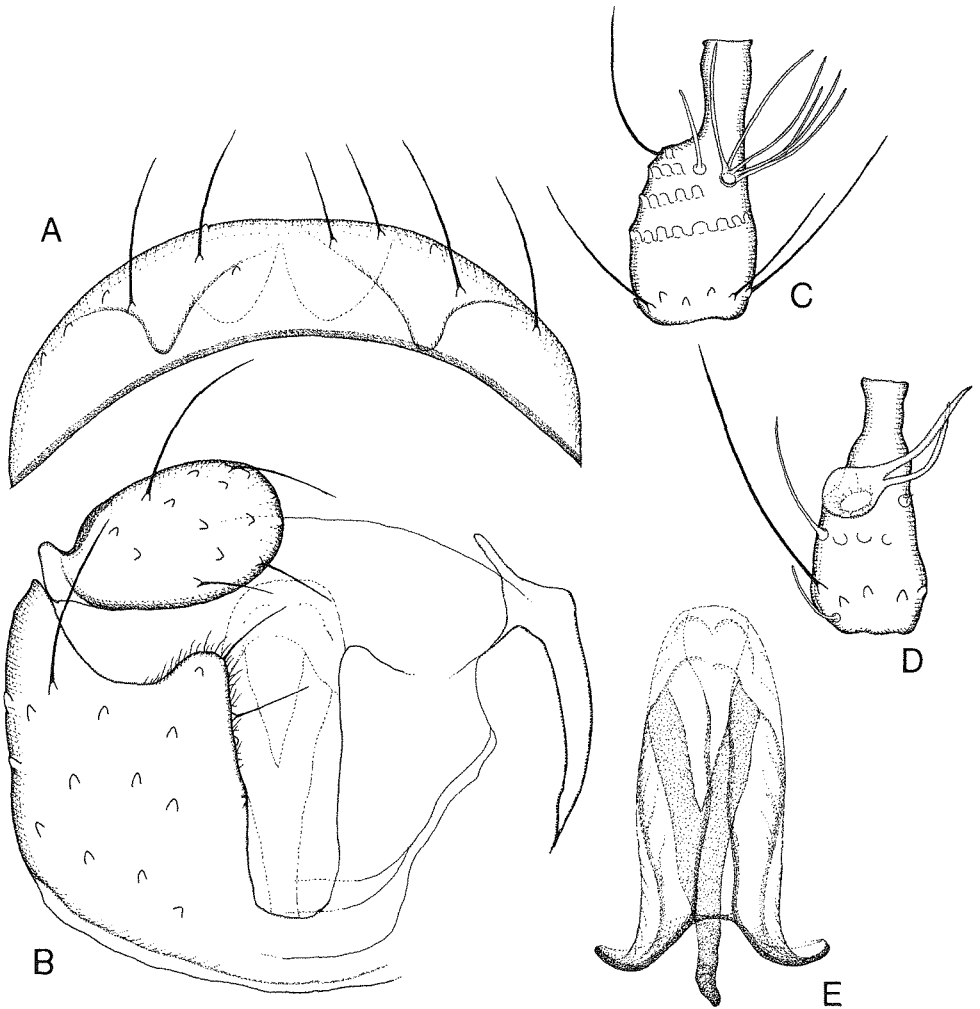
Heterogenella multifurcata sp. n.

(Figs 11A-E)

Description

Male. Body size: 0.9-1.1 mm.

Head: postfrons non-setose. Occiput posteriorly and postgenae entirely covered with setae and scales. With 1 row of postocular bristles. Eye bridge 2-3 facets long. Neck of flagellomere 4 (Fig. 11C) shorter than node; node basally with 1 whorl of setae, with 1 complete and 3 incomplete crenulate whorls of long setae, and distally with 2 five- to seven-furcated sensillae and occasionally with additional simple sensory hairs and sensory spines. Palpus 4-segmented; 3 distal segments of approximately same length or terminal segment slightly longest; segment 1 with sensory hairs ventrally; all segments with setae and scales.



Figs 11A-E: *Heterogenella multifurcata* sp. n.; **A:** tergite 9 of male, dorsal view; **B:** male genitalia, left part: ventral view, right part: dorsal view; **C:** flagellomere 4 of male, lateral view; **D:** flagellomere 4 of female, lateral view; **E:** tegmen and genital rod, ventral view.

Thorax: scutum with long setae laterally and along parapsidal sutures. Claws crescent-shaped, with 1-2 minute teeth at midlength. Empodia as long as claws. Halteres densely covered with scales. Wings: R1 = 2 1/2 -3 rs; CuA-fork very acute; with macrotrichia in proximal half of R5 and elsewhere as usual in *Heterogenella*.

Abdomen: segment 1 non-setose. Tergites 2-4 very poorly sclerotized, tergites 5-8 visible as narrow, sclerotized ribs along anterior margins, setae of tergites few in number and concentrated laterally. Sternites 2-8 covered with setae and scales. Pattern of tergal plaques: 0 / 2 / 2 / 2 / 1 / 1? / 0 / 0; pleural plaques present in 2 rows.

Terminalia: gonocoxites (Fig. 11B) fused ventrally in proximal fourth; distal margin with very deep U-shaped neckline, with distinct projections on both sides of neck. Gonostyli (Fig. 11B)

flattened; ovoid and broadest at midlength when seen from above, with long setae outside and weaker setae and long hairs inside. Tegmen (Fig. 11E) membranous and consequently not stable in shape, parallel-sided, with broadly rounded distal margin. Genital rod (Fig. 11E) shaped like broad Y, slightly sclerotized and rather distinct compared with congeners. Tergite 9 (Fig. 11A) short, covered with setae, distolaterally with 2 pointed, pubescent lobes directed inwards; anterior margin with sclerotized rib. Tergite 10 bilobed, pubescent. Sternite 10 bilobed, large, with stiff hairs.

Female. Body size: 1.8 mm.

Head: antennae with 8 flagellomeres; terminal flagellomere constricted in middle and with small second node. Flagellomere 4 (Fig. 11D) pear-shaped and with short neck; node basally with 1 sparse whorl of short sensory hairs, with 1 whorl of long setae in proximal third, medially with 1 row of long sensory hairs and distally with 2 bifurcated sensillae with wide basal half, sensillae of other flagellomeres sometimes irregularly 3- to 4-furcated.

Abdomen: spermathecae 2, poorly sclerotized, rounded and somewhat flattened.

Types. Holotype: male, series no. E15-1f, Estonia, Valga, 12.07.1987, in mixed forest, leg. SPUNGIS (in FBUL). Paratypes: 1 male, series no. E19-4d, Estonia, Sultsi, 17.07.1987, in poplar forest; 1 male, series no. E22-4j, Estonia, Kaansoo, 18.07.1987, in poplar forest; 1 male, series no. E27-1e, Estonia, Urge, 19.07.1987, in poplar forest, all leg. SPUNGIS (all in FBUL).

Additional material studied: 5 males and 1 female, Germany, Mecklenburg-Vorpommern, Karbow 15 km SE Greifswald, in mixed deciduous forest, 15.08.1993; 1 male, same locality, but 14.08.1993, on log of *Fagus sylvatica*, all leg. JASCHHOF (all in ZIMG).

Discussion

None of the *Heterogenella* species described previously has the male antennal sensillae five- to seven-furcated except for *transgressoris*, but latter is easily distinguished by its flagellomeres with subglobular nodes lacking true crenulate whorls of setae. Sensillae on the flagellomeres of *Heterogenella* females known to date (*bigibbata*, *californica*), lack a wide, flattened basis (specific for *multifurcata*) and are regularly up to five-furcated. The type of antennal sensillae in *multifurcata* females, as well as the entire structure of antennae, corresponds widely with females in *Bryomyia* (cf. *bergrothi*, *helmuti*, *producta*) except that the flattened basis of the sensillum runs into one (not two) process(es) in *Bryomyia*.

Etymology

The name *multifurcata* refers to the flagellomeres of males with up to seven-furcated sensillae.

Strobliella brachycornis sp. n.

(Figs 12A-C)

Description

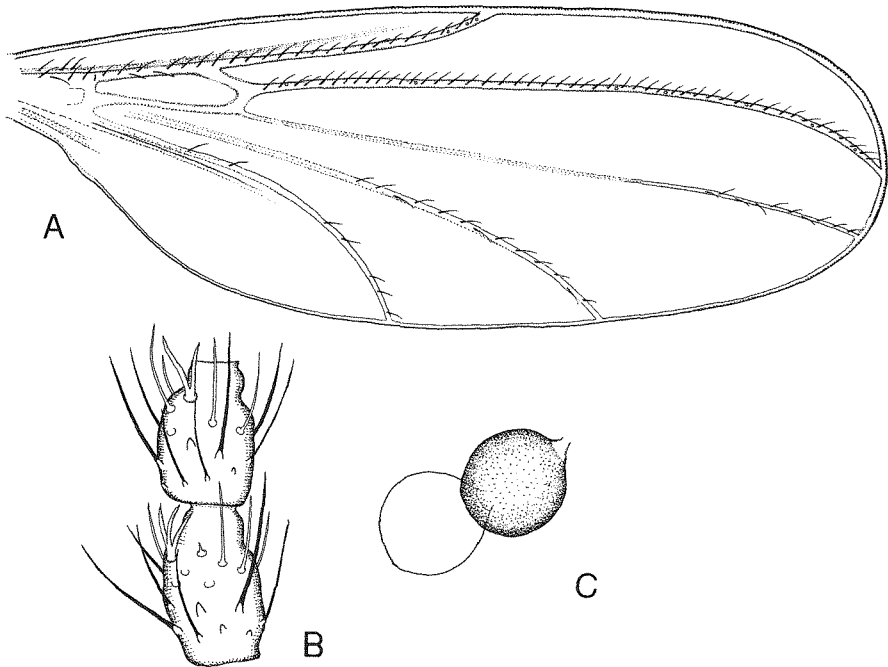
Male: unknown.

Female. Body size: 2.0-3.0 mm.

Head: postfrons without setae. Postcranium covered with setae of various length; postocellar and postocular bristles lacking. Ocelli 3. Eye bridge short, strongly constricted and 2 facets long at vertex. Scapus little larger than pedicel; scapus with and pedicel without setae. Antennae with 8 flagellomeres, last flagellomere simple. Flagellomere 4 (Fig. 12B) cylindrical, with short neck; node with setae of various length with some very strong, in distal half with rather long, scattered sensory hairs, few sensory spines and 3-4 forked, or tree-like, sensillae each with 2-5 branches; microtrichia restricted to basis of node. Palpus 4-segmented; segments

increasingly longer distally; first and second segment with many, third with single sensory hairs ventrally; all segments with setae and spine-like setae.

Thorax: scutum with 2 lateral and 2 dorsocentral rows of strong setae. Legs comparatively short and strong; covered with rather short setae, scales lacking; tarsomeres of forelegs densely covered with short, spine-like setae on ventral surface; tarsomeres 1-4 decreasing in length and tarsomere 5 little longer than 4. Claws crescent-shaped, without teeth. Empodia as long as claws. Halteres longish-clubshaped, covered with setae. Wings (Fig. 12A): long and narrow; C without break near wing apex; Sc extending far beyond level of rs; rs very faint, little longer than r-m; R1 = 8 rs; M1+2 simple, faint in medium portion; M3+4 free and faint proximally; CuP extending to half length of CuA; A very short; pattern of sensory pores: R1 2-3, R5 2 rather proximally, 4-5 medially / distally; membrane marginally with macrotrichia; macrotrichia dorsally on Sc (proximally), R, R1, R5, M1+2 (distally), M3+4, CuA, and ventrally on R5; anal area slightly convex.



Figs 12A-C: *Strobliella brachycornis* sp. n., female; **A:** wing, dorsal view; **B:** flagellomeres 4 and 5, lateral view; **C:** spermathecae.

Abdomen: tergites and sternites with rather short setae; pleural membrane with patch of few setae. Pattern of tergal plaques: 0 / 2 / 2 / 2 / 2 / 2 / 0 / 0; pleural plaques in 2 rows with each laterally of tergites and sternites.

Terminalia: cerci with proximal and distal segments of about same length; distal segments rounded. Spermathecae (Fig. 12C) 2, globular, well sclerotized, without pores.

Types. Holotype: female, series no. 647-1a, Latvia, Jumprava, 17.05.1983, in meadow, leg. SPUNGIS (in FBUL). Paratypes: 2 females, Germany, Bayern, Berchtesgadener Land (National Park), Sommerbichel, at source of stream N Herrenroint, 1100-1250 m, 31.05. and 07.06.1996, leg. SCHRANKEL (in ZIMG).

Discussion

Strobliella brachycornis is distinguished from the single additional congener, *Strobliella intermedia*, by its shortened antennae with only 8 flagellomeres (*intermedia*: more than 23 flagellomeres). Additionally, flagellomeres in *brachycornis* lack a whorl-like arrangement of setae or sensilla with some of the latter branched (*intermedia*: setae arranged in whorls, sensory hairs always simple). *S. brachycornis* is provisionally placed in the same genus together with *S. intermedia*, because we hesitate to establish a new genus based only on characters of the females. Both species share the corresponding pattern of wing veins with simple M1+2 and free M3+4, and C lacking a break near wing apex.

Generally in Lestremiinae, species descriptions based only on female characters are considered less helpful since females only rarely provide species-specific features. The exception we make here is explained by the phylogenetic significance of the Strobliellini which are poor in species and very sparsely represented in collections.

Etymology

The name *brachycornis* means "with short horns" referring to the short antennae.

Acknowledgements

Dr Z. L. BEREST, Kiev, and Dr B. M. MAMAEV, Pushkino, in previous years have commented on the identity of several specimens from the material studied here. In particular, they confirmed the identification of those species described by themselves. We thank Mrs ISABEL SCHRANKEL, Saarbrücken, who kindly provided two specimens of *Strobliella brachycornis*. We are indebted to Dr RAYMOND J. GAGNÉ, Washington, who has read and commented on the manuscript.

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