

Palearctic species of the *Boletina nitida*-group (Diptera: Mycetophilidae) including the description of a new species

[Die paläarktischen Arten der *Boletina nitida*-Gruppe (Diptera: Mycetophilidae) nebst
der Beschreibung einer neuen Art]

by

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Abstract A review of the Palearctic species belonging to the *Boletina nitida*-group is given. A new species, *Boletina insulana* **spec. nov.** from the Russian Far East, is described. Descriptions and illustrations of the male genitalia of five species (*B. bidenticulata* SASAKAWA & KIMURA, *B. dispecta* DZIEDZICKI, *B. gusakovae* ZAITZEV, *B. nitida* GRZEGORZEK and *B. rejecta* EDWARDS) are given. An identification key for the nine species of the *Boletina nitida*-group currently known from the Palearctic region, based mainly on the male genitalia and new distribution data are provided.

Key words Mycetophilidae, *Boletina*, Palearctic, Russia, Finland, new species

Zusammenfassung Es wird ein Überblick über die paläarktischen Arten der *Boletina nitida*-Gruppe gegeben. Neun Spezies sind nunmehr aus dieser Region bekannt. *Boletina insulana* **spec. nov.** wird als neu für die Wissenschaft beschrieben. Es werden die Beschreibungen und Illustrationen der Genitalien der Männchen von fünf Arten (*B. bidenticulata* SASAKAWA & KIMURA, *B. dispecta* DZIEDZICKI, *B. gusakovae* ZAITZEV, *B. nitida* GRZEGORZEK und *B. rejecta* EDWARDS) aufgeführt. Ein Bestimmungsschlüssel, der vornehmlich auf der Struktur der männlichen Genitalien basiert, wurde erarbeitet.

Stichwörter Mycetophilidae, *Boletina*, Paläarktis, Russland, Finnland, neue Arten

Introduction

Boletina STAEGER 1840 is one of the largest genera of Mycetophilidae. The Catalogue of Palearctic Diptera (HACKMAN et al., 1988) includes 63 species. After that publication a number of new species has been described in Europe (PLASSMANN 1986, CHANDLER 1992, 1995, CHANDLER & BLASCO-ZUMIETA 2001, CHANDLER & RIBEIRO 1995, ZAITZEV & POLEVOI 1995, 2001, POLEVOI & HEDMARK 2004). According to the latest data (CHANDLER 2004) *Boletina* includes 69 European species being the third largest genus after *Mycetophila* (131 species) and *Mycomya* (89 species).

Boletina is also one of the most abundant groups of fungus gnats in forest fauna. Results of quantitative trapping in England (RUSSEL-SMITH 1979) indicated *B. gripha* DZIEDZICKI as the most abundant species of fungus gnats. In Russian Karelia (JAKOVLEV 1995) and Eastern Finland (POLEVOI 2001) *B. gripha* and *B. nigricans* DZIEDZICKI, and in Norway (ØKLAND & ZAITZEV 1997) *B. gripha*, *B. nigrofusca* DZIEDZICKI and *B. nigricans* were also reported as the most abundant fungus gnat species in Malaise trap materials.

In spite of the large number of species and abundance of many of them, the genus *Boletina* has not yet received an attention it deserves and the taxonomy within the genus is quite intricate. Revision of recent materials has been clarified the taxonomy within the *Boletina erythrogyga*-group (ZAITZEV & POLEVOI 2001). In this article we continue this work and tackle another group of *Boletina* species – the *Boletina nitida*-group.

Material and methods

The paper is based on materials collected in different parts of Russia and Finland. The majority of recent Finnish material was collected in 2003–2004 in Southern Finland, Evo area (*Ta*: Lammi) in an old-growth spruce-dominated forest stand in Kotinen Nature Reserve (Kotinen, 67944:33964), an old-managed forest stand (Evo-1, 67915:34011), and in the clear-cut area with retention trees burnt in 1997 (Evo-2, 67946:33965). Detailed descriptions of the sample sites will be presented in another paper.

Materials are deposited in the collections of Finnish Museum of Natural History (FMNH), Helsinki, Institute of Ecology and Evolution of Animals of Russian Academy of Sciences (IEE) Moscow, Zoological Institute (ZISP) St. Petersburg and Karelian Forest Research Institute (KFRI) Petrozavodsk.

Revision of the species

The most useful character for distinguishing the species belonging to the *Boletina nitida*-group from other *Boletina* species is the presence of hairs on the laterotergite. Additional characters are: Mesonotum shining, black or dark-brown. C extending beyond tip of R5 to approximately 1/3 distance from R5 to medial fork. Sc entering C above, slightly beyond or slightly before base of Rs; Sc2 present. Sternal appendages of gonocoxites moderately long, slightly exceed bases of the gonostyles. Gonostylus with finger-like processus armed with strong apical spines.

Eight species belonging to the *Boletina nitida* group have been described from the Palaearctic region so far. Of these six species: *Boletina dispecta* DZIEDZICKI, 1885; *Boletina falcata* POLEVOI & HEDMARK, 2004; *Boletina gusakovae* ZAITZEV, 1994; *Boletina hedstroemi* POLEVOI & HEDMARK, 2004; *Boletina nitida* GRZEGORZEK, 1885; *Boletina rejecta* EDWARDS, 1941 have been recorded from Europe whereas two species – *Boletina bidenticulata* SASAKAWA & KIMURA, 1974, and *Boletina prolata* SASAKAWA & KIMURA 1974 were known only from Japan and Russian Far East.

The so far most complete identification key for *Boletina* (ZAITZEV 1994) includes 82 Palaearctic species with figures of the genitalia for 49 of them. It incorporates the following confusions of the taxonomic interpretation of three species in the *Boletina nitida*-group:

1. Following the figures given in EDWARDS (1941) and HUTSON et al. (1980) the specimens with two dark spines on the tip of the finger-like processus on the gonostylus have been figured in ZAITZEV (1994) under the name *Boletina dispecta* DZIEDZICKI (sensu EDWARDS, 1941). However, detailed study of these specimens and additional material from Finland have shown that they totally agree in genital structure with *Boletina bidenticulata* SASAKAWA & KIMURA, 1974.
2. The specimens from Altay and Kuril Islands figured in ZAITZEV (1994) as *B. rejecta* EDWARDS are in fact the true *Boletina dispecta* DZIEDZICKI (sensu DZIEDZICKI, 1885).
3. The specimens from Russian Far East figured in ZAITZEV (1994) as *Boletina prolata* SASAKAWA & KIMURA are in fact another, still undescribed species which evidently differs from *B. prolata* in genital morphology (see below a description of *Boletina insulana* spec. nov.).

***Boletina bidenticulata* SASAKAWA & KIMURA, 1974**

(Figs 1, 4, 6, 10)

bidenticulata SASAKAWA & KIMURA, 1974: 63 (*Boletina*)– as *Boletina dispecta* DZIEDZICKI: EDWARDS (1941: Fig. 5c.)– as *Boletina dispecta* DZIEDZICKI: HUTSON et al. (1980: Fig. 246)– as *Boletina dispecta* DZIEDZICKI: ZAITZEV (1994: Figs 70, 2, 4)

Material examined: FINLAND: 1 ♂, Sotkamo, 12.–25.VIII.1997, KUUSSAARI leg., (KFRI); over 200 ♂♂ from Evo-1 and Kotinen, 19.V.–15.X.2003, JAKOVLEV leg.; 8 ♂♂, Evo-2, 22.VII–12.VIII.2004, JAKOVLEV leg. (FMNH). RUSSIA: 6 ♂♂, Karelia, Kivach, 12.–27.VII.1991, 5.VII.2001, POLEVOI leg.; 79 ♂♂, Karelia, Tolvajärvi, 11.VII.–11.IX.1998, TIETÄVÄINEN leg.; 1 ♂, Karelia, Syrovatka, 16.–21.VII.2003, POLEVOI leg. (KFRI); 1 ♂, Leningrad Province, Tolmachevo, 20.VI.1938, STACKELBERG leg. (ZISP); 1 ♂, Moscow Province, Pavlovskaya Sloboda, VI.1962, MAMAEV leg.; 1 ♂, Primorye, Ussuriysky Reserve, 30.IX.1964, MAMAEV leg.; 1 ♂, Primorye, Kedrovaya Pad Reserve, 16.IX.1960, MAMAEV leg.; 1 ♂, Primorye, Kamenushka, 30.VI.2001, SIDORENKO leg. (IEE).

Male. Head: Dark brown, mouth parts and palps yellow, clypeus dark brown. Antennae dark brown, base of first flagellomere yellow, sixth flagellomere 2 times as long as wide.

Thorax: Mesonotum shining dark brown, pleurae brown, laterotergite hairy. **Legs:** Coxae and femora yellow, trochanters dark brown, tibiae and tarsi brownish. Leg ratios: t1:bt1=1.1; t2:bt2=1.8; t3:bt3=1.9.

Wings: Wing length 3.4–3.6 mm. Wings hyaline, Sc2 present. C extending well beyond the tip R4+5, stem of M-fork 1.3 times as long as rm. Halteres yellow.

Abdomen: dark brown, tergites II and III with small lateral yellow spots. Male genitalia dark brown. Gonostylus with two apical spines and two strong bristles, medial processes of gonocoxites broad with parallel sides. Distal margin of tergite IX with triangular depression, cerci with two combs of spines.

Female. Unknown.

***Boletina dispecta* DZIEDZICKI, 1885**

(Figs 2, 3, 5)

dispecta DZIEDZICKI, 1885: 171 (*Boletina*)– as *Boletina rejecta* EDWARDS: ZAITZEV (1994: Figs. 75, 2, 7,).

Material examined: FINLAND: 2 ♂♂, Kuhmo, 12.VIII.–6.X.1997, KUUSSAARI leg. (KFRI); 11 ♂♂, Kotinen, 10.IX.–3.X.2003, JAKOVLEV leg.; 14 ♂♂, Evo-1, 4.VIII.–10.IX.2003, JAKOVLEV leg. (FMNH). RUSSIA: 30 ♂♂, Karelia, Kivach, 26.IX.–2.X.1990, 19.VI.–27.VIII.1991 POLEVOI leg.; 1 ♂, Karelia, Ladvozero, 10.–15.VII.1996, POLEVOI leg.; 5 ♂♂, Karelia, Kartesh, 20.–22.VII.1996, POLEVOI leg. (KFRI); 1 ♂, Altai, Teletskoe lake, Artybash, 29.V.1981, ZAITZEV leg.; 1 ♂, Kuril Is., Kunashir I., 1.VII.1979, ZAITZEV leg. (IEE).

Male. Head: dark brown, mouth parts brownish, palps yellow, two basal segments brownish, clypeus dark brown. Antennae dark brown, sixth flagellomere 2.5 times as long as wide.

Thorax: Mesonotum shining dark brown, pleurae dark brown, laterotergite hairy. **Legs:** Coxae and femora yellow, trochanters dark brown, tibiae and tarsi brownish. Leg ratios: t1:bt1=1.4; t2:bt2=1.7; t3:bt3=1.9. **Wings:** Wing length 3.7 mm. Wings hyaline, Sc2 present. C extending well beyond the tip R4+5, stem of M-fork 1.7 times as long as rm. Halteres yellow.

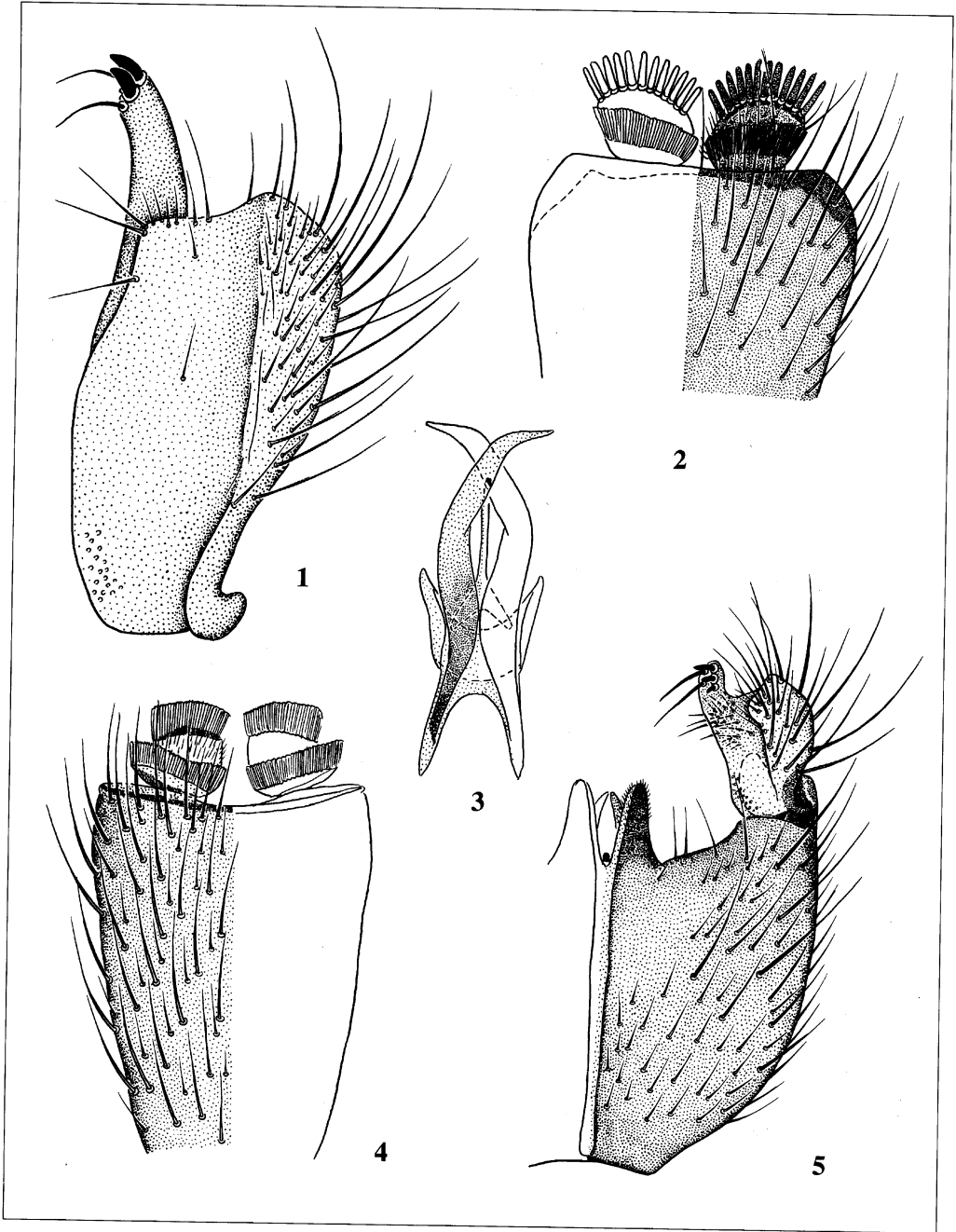
Abdomen: dark brown, tergites II and III with lateral yellow spots near posterior margins. Male genitalia dark brown. Gonostylus with three apical spines and two strong bristles, medial processes of gonocoxites relatively broad with parallel sides. Distal margin of tergite IX without depression, cerci with two combs of spines.

Female. Unknown.

Remarks. Figure of *Boletina dispecta* by SASAKAWA & KIMURA (1974) probably represents another undescribed species.

Boletina falcata* POLEVOI & HEDMARK, 2004falcata* POLEVOI & HEDMARK, 2004 – POLEVOI & HEDMARK (2004: 24, Fig. 2).

The species was recently described from Finland, Sweden and Russian Karelia (POLEVOI & HEDMARK 2004).



Figs 1–5: *Boletina* STAEGER, male genitalia. – 1: Gonostylus of *B. bidenticulata* SASAKAWA & KIMURA; – 2: Tergite IX of *B. dispecta* DZIEDZICKI; – 3: Aedeagus of *B. dispecta*; – 4: Tergite IX of *B. bidenticulata*; – 5: Male genitalia (ventral) of *B. dispecta*.

***Boletina gusakovae* ZAITZEV, 1994**

(Figs 7–9)

gusakovae ZAITZEV, 1994 – ZAITZEV (1994: 214, Figs. 70, 11; 71, 1)

Material examined: FINLAND: 1 ♂, Kuhmo, 26.VIII.–15.IX.1997, KUUSSAARI leg.; 1 ♂, Lammi, 4.–17.VIII.1998, KUUSSAARI leg. (KFRI) over 100 ♂♂ from Evo-1 and Kotinen, 19.V.–15.X.2003, JAKOVLEV leg.; 7 ♂♂, Evo-2, 1.IX.–1.X. JAKOVLEV leg. (FMNH). RUSSIA: 25 ♂♂, Karelia, Kivach, 19.IX.–20.X.1990, 19.VI.–9.X.1991, 3.IX.2002, 31.VII.–2.VIII.2003, POLEVOI leg.; 6 ♂♂, Karelia, Tolvajärvi, 28.VIII.–27.IX.1998, TIETÄVÄINEN leg.; 15 ♂♂, Karelia, Myagostrov, 14.VIII.2002, HUMALA leg.; 3 ♂♂, Karelia, Sheltozero, 24.–25.VIII.2004, POLEVOI leg. (KFRI); 1 ♂, Khabarovsk Region, Gur river, 6.IX.1975, GUSAKOVA leg. (holotype) (IEE); 1 ♂, Khabarovsk Region, Gur river, 17.IX.1975, GUSAKOVA leg. (paratype) (IEE).

Male. Head: Dark brown, mouth parts and palps yellow, basal segment of palps brownish. Antennae dark brown, first flagellomere light brown, sixth flagellomere two times as long as wide.

Thorax: Mesonotum shining dark brown, pleurae dark brown, laterotergite hairy. **Legs:** Coxae and femora yellow, trochanters dark brown, tibiae and tarsi brownish. Leg ratios: t1:bt1=1.0, t2:bt2=1.8, t3:bt3=1.9. **Wings:** Wing length 3.5–3.7 mm. Wings hyaline, Sc2 present. C extending well beyond the type of R4+5, stem of M fork 1.3–2.0 times as long as rm. Halteres yellow.

Abdomen: Dark brown, tergites II and III with yellow lateral spots near posterior margins. Gonostylus with 3 apical spines, two strong bristles and comb of small setae. Medial processes of gonocoxites narrowing towards apex. Distal margin of tergite IX with triangular depression. Cerci with two combs of spines.

Remarks. The figures of the male genitalia of *Boletina dispecta* DZIEDZICKI by BARENDRECHT (1938) and those of *Boletina nitida* sensu STROBL by KIDD & ACKLAND (1970) probably represent the species which has been later described by ZAITZEV (1994) as *Boletina gusakovae* ZAITZEV.

Boletina hedstroemi* POLEVOI & HEDMARK, 2004hedstroemi* POLEVOI & HEDMARK, 2004 – POLEVOI & HEDMARK (2004: 25, Fig. 3).

The species was recently described from Finland, Sweden and Russian Karelia (POLEVOI & HEDMARK 2004).

***Boletina insulana* ZAITZEV spec. nov.**

(Figs 11–15)

– as *Boletina prolata* SASAKAWA & KIMURA: ZAITZEV (1994, Fig. 74, 4, 10).

Holotype: RUSSIA, Sakhalin I., Kuznetsov cape, 14.IX.1986, ZAITZEV leg. (IEE). **Paratype:** RUSSIA, Kuril Is., Kunashir I., 6.VI.1977, ZAITZEV leg. (IEE).

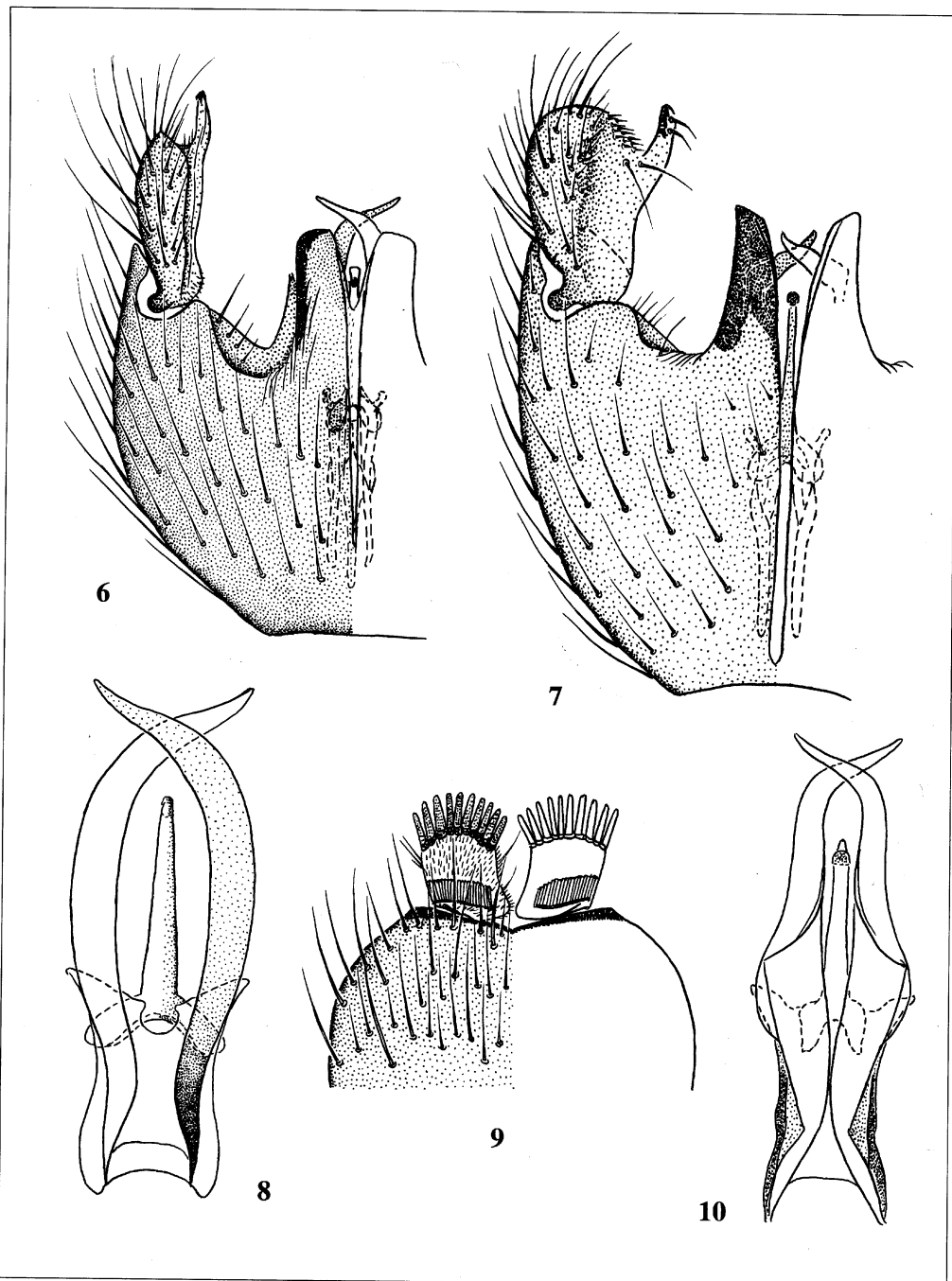
Male. Head: Dark brown, mouth art dark brown, palps yellow, basal segments of palps brownish. Antennae dark brown, first flagellomere yellow, sixth flagellomere 2.5 times as long as wide.

Thorax: Mesonotum and pleurae shining dark brown, laterotergite hairy. **Legs:** Coxae and femora yellow, trochanters dark brown, tibiae and tarsi brownish. Leg ratios: t1 : bt1=1.3; t2 : bt2=1.6; t3 : bt3=2.0. **Wings:** Wing length 3.3 mm. Wings hyaline, Sc2 present. C extending well beyond the tip of R4+5, stem of M fork 1.4 times as long as rm. Halteres yellow.

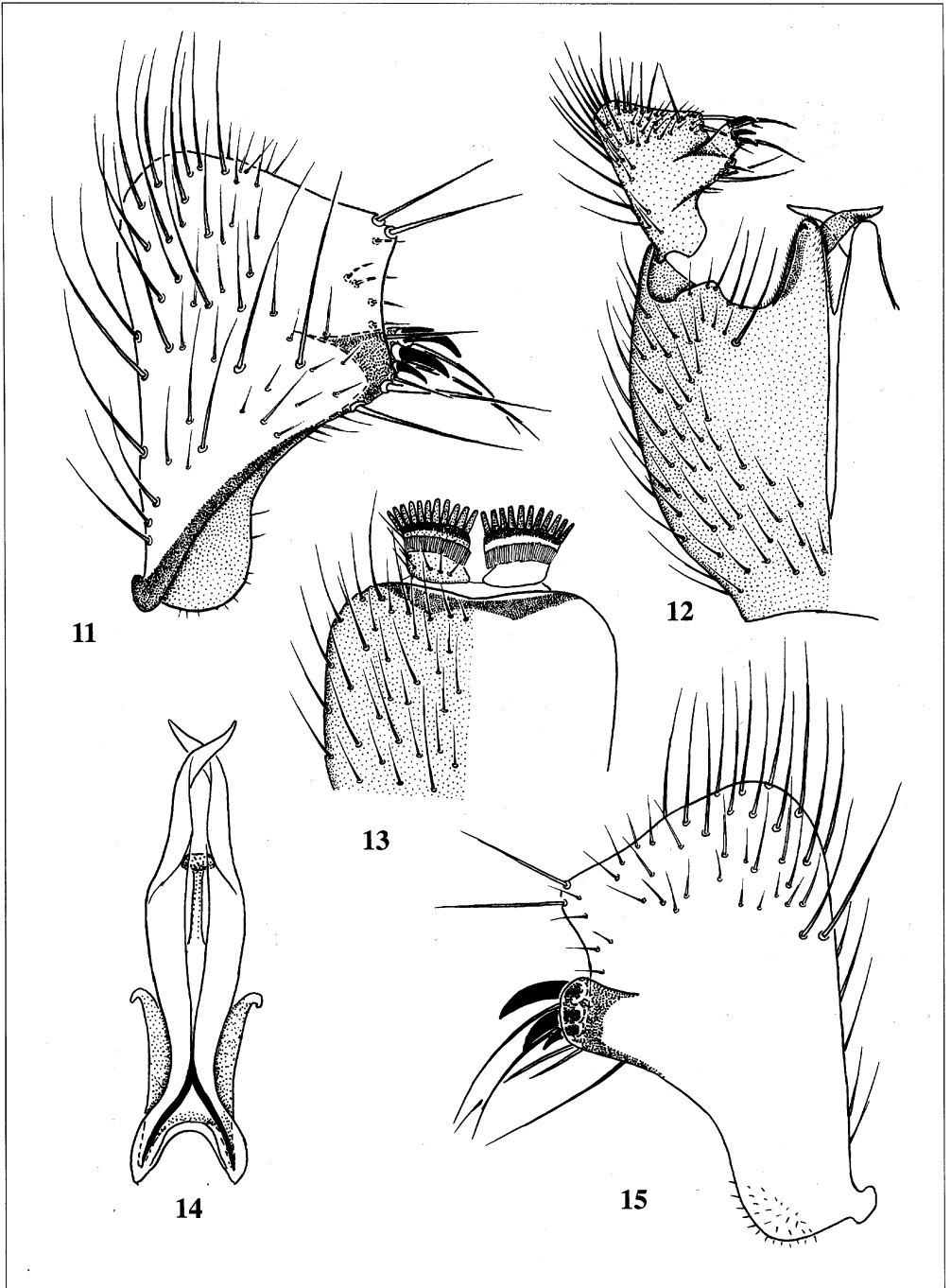
Abdomen: Dark brown, tergites II and III with yellow lateral spots near posterior margins. Genitalia dark brown. Gonostylus with three apical spines and two strong bristles. Medial processes with rounded apical part. Distal part of tergite IX strongly sclerotized, cerci with two combs of spines.

Female. Unknown.

Remarks. Specimens of this species collected in the Sakhalin and Kunashir Islands were wrongly identified and figured in ZAITZEV (1994) as *B. prolata* SASAKAWA & KIMURA. Further detailed examination of these specimens and comparison with other species of the *Boletina nitida*-group has shown that they belong to other species differing from *B. prolata* in the shape of parameres. In *B. insulana* parameres are shorter and tapering to apices whereas in *B. prolata* parameres are clearly longer, widening to apices and bearing a small glow-like process on the tip (SASAKAWA & KIMURA 1974: Figs 17b, 17d).



Figs 6–10: *Boletina* STAEGER, male genitalia. – 6: Male genitalia (ventral) of *B. bidenticulata* SASAKAWA & KIMURA; – 7: Male genitalia (ventral) of *B. gusakovae* ZAITZEV; – 8: Aedeagus of *B. gusakovae*, – 9: Tergite IX of *B. gusakovae*; – 10: Aedeagus of *B. bidenticulata*.



Figs 11–15: *Boletina insulana* ZAITZEV spec. nov., male genitalia. – 11: Gonostylus from external side, – 12: Male genitalia (ventral); – 13: Tergite IX; – 14: Aedeagus; – 15: Gonostylus from internal side.

Boletina nitida GRZEGORZEK, 1885

(Figs 16, 18, 19)

nitida GRZEGORZEK, 1885 – GRZEGORZEK (1885: 204)

Remarks. Figure of *Boletina nitida* by SASAKAWA & KIMURA (1974) probably represents another undescribed species.

Material examined: FINLAND: 1 ♂, Kuhmo, 27.VIII.–14.IX.1997, KUUSAAARI leg. (KFRI); 1 ♂, Evo-1, 18.VIII.–1.IX.2003, JAKOVLEV leg., 1 ♂, Evo-1, 10.IX.–3.X.2003, JAKOVLEV leg., 1 ♂, Evo-2, 10.IX.–3.X.2003, JAKOVLEV leg. (FMNH). RUSSIA: 8 ♂, Karelia, Kivach, 10.VII.–9.X.1990, 5.VII.–29.IX.1991, 31.VII.2003, POLEOVI leg.; 1 ♂, Karelia, Tolvajärvi, 15.–28.VIII.1998, TIETÄVÄINEN leg. (KFRI); 1 ♂, Leningrad Province, Toxovo, 22.IX.1940, STACKELBERG leg. (ZISP).

Male. Head: Dark brown, moth parts brown, palps yellow with two brownish basal segments. Antennae dark brown, sixth flagellomere 2 times as long as wide.

Thorax: Mesonotum and pleurae shining dark brown, laterotergite hairy. **Legs:** Coxae and femora yellow, trochanters dark brown, tibiae and tarsi brownish. Legs ratios: $t1 : bt1 = 1.5-1.7$; $t2 : bt2 = 1.7$; $t3 : bt3 = 2.0$. **Wings:** Wing length 3.7–4.0 mm. Wings hyaline, Sc2 present. C extending well beyond the tip of R4+5, stem of M fork 1.7 times as long as rm. Halteres yellow.

Abdomen: Dark brown, tergites II and III with small yellow lateral spots near posterior margins. Genitalia dark brown. Gonostylus with 3–4 apical spines and two strong bristles. Medial processes of gonocoxites divergent. Parameres relatively short. Distal part of tergite IX without depression, cerci with two combs of spines.

Female. Unknown.

Boletina prolata SASAKAWA & KIMURA, 1974

prolata SASAKAWA & KIMURA, 1974 – SASAKAWA & KIMURA (1974: 63, Fig. 17).

The species is described from Japan (SASAKAWA & KIMURA 1974) and it is the only record known to the authors. The record of *prolata* from Russian Far East given by ZAITZEV (1994) refers to the new species *B. insulana*, described above.

Boletina rejecta EDWARDS, 1941

(Figs 17, 20)

rejecta EDWARDS, 1941 – EDWARDS (1941: 70, Fig. 5d).

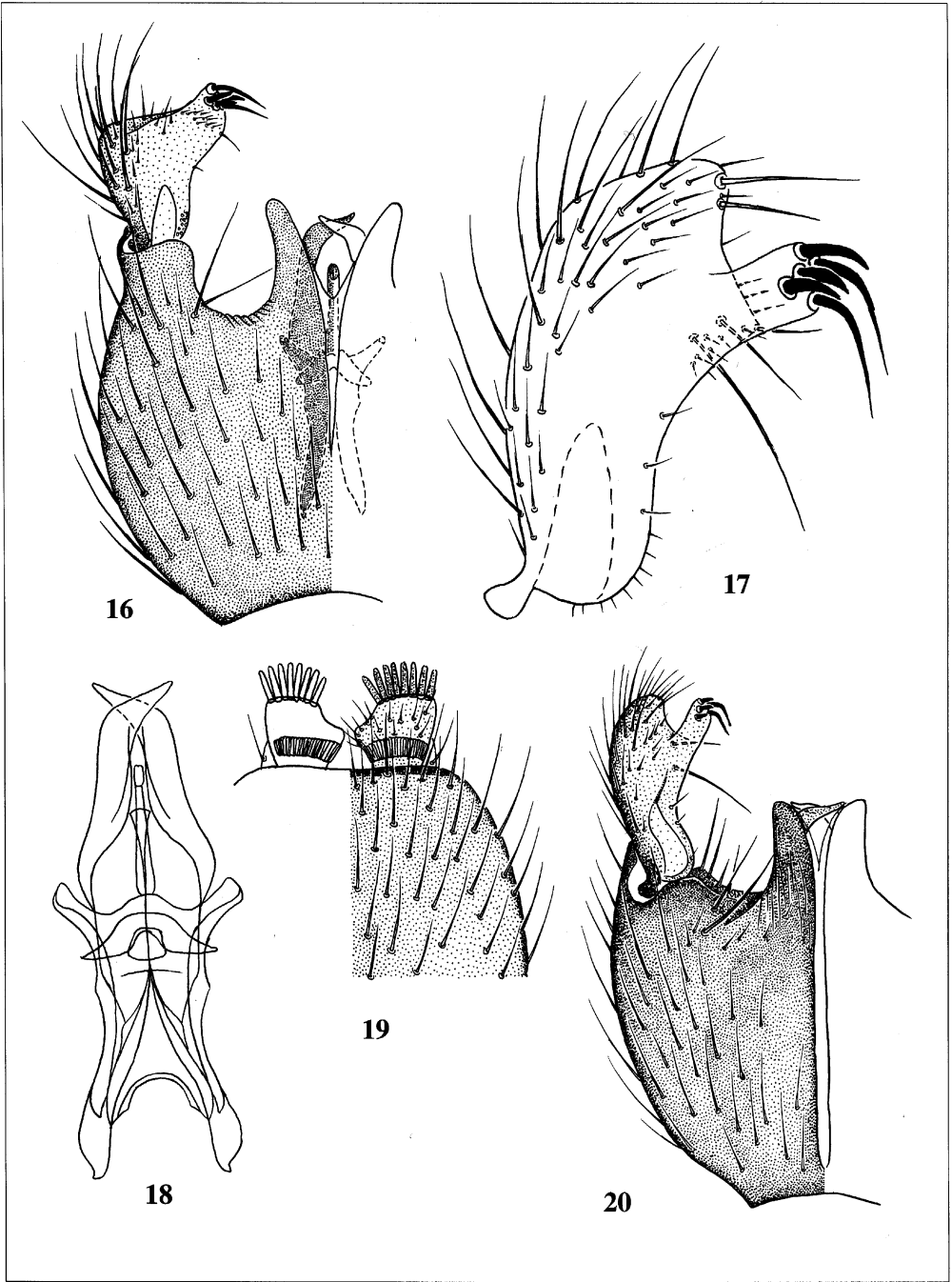
Material examined: FINLAND: 1 ♂, Esbo, Westend, 28.VII.1962, W. HACKMAN leg., 15 ♂, Evo-1.10.IX – 15.X.2003, JAKOVLEV leg.; 4 ♂, Kotinen 1.10.IX–15.X.2003, JAKOVLEV leg., 2 ♂, Evo-1, 28.VI.–22.VII.2004, JAKOVLEV leg. 1 ♂, Evo-2, 22.VII.–12.VIII.2004, JAKOVLEV leg.; (FMNH). RUSSIA: 3 ♂, Karelia, Kostomuksha, 25.–27.VIII.1995, POLEOVI leg. (KFRI).

Male. Head: Dark brown, mouthparts brown, palps yellow, clypeus dark brown. Antennae dark brown, first flagellomere light brown, sixth flagellomere 2 times as long as wide.

Thorax: Mesonotum shining dark brown, pleurae brown, laterotergite hairy. **Legs:** Coxae and femora yellow, trochanters dark brown, tibiae and tarsi brownish. Leg ratios: $t1 : bt1 = 1.2$; $t2 : bt2 = 1.6$; $t3 : bt3 = 1.8$. **Wings:** Wing length 3.3–3.4 mm. Wings hyaline, Sc2 present. C extending well beyond the tip of R4+5. Stem of M fork 1.2 times as long as rm. Halteres yellow.

Abdomen: dark brown, tergites II and III without lateral yellow spots or they are very small. Genitalia dark brown. Gonostylus with 3 spines, two curved strong bristles on apex and two long bristles in middle part.

Female. Unknown.



Figs 16–20: *Boletina* STAEGER, male genitalia. – 16: Male genitalia (ventral) of *B. nitida* GRZEGORZEK; – 17: Gonostylus of *B. rejecta* EDWARDS; – 18: Aedeagus of *B. nitida*; – 19: Tergite IX of *B. nitida*; – 20: Male genitalia (ventral) of *B. rejecta*. Scale bar = 0.2 mm

Key to Palaearctic species of the *Boletina nitida*-group

- 1 Gonostylus with elongated finger-like process, which is 3–4 times as long as wide (Figs 5, 7, 20)..... **2**
- Gonostylus with wide apicolateral process (Figs 11, 15, 16)..... **7**
- 2 Parameres very long, reaching the apices of gonostyli (POLEVOI & HEDMARK 2003; Fig. 2) ***falcata* POLEVOI & HEDMARK**
- Parameres short, slightly or not exceeding the apices of ventral processes of gonocoxites **3**
- 3 Ventral processes of gonocoxites widely rounded apically, almost rectangular (Fig. 6), finger-like process of gonostylus with two spines (Fig. 1) ***bidenticulata* SASAKAWA & KIMURA**
- Ventral processes of gonocoxites narrowing apically (Figs 5, 7), finger-like process of gonostylus with three or five spines (Figs 5, 20) **4**
- 4 Ventral processes of gonocoxites obliquely cut off, gonostylus with numerous spinules near the base of the finger-like process (Fig. 7); tergites 2–4 with yellow markings (rarely abdomen entirely black) ***gusakovae* ZAITZEV**
- Ventral processes of gonocoxites rounded apically, gonostylus without spinules near the base of finger-like process (Figs 5, 20); abdomen black **5**
- 5 Finger-like process arises near the middle of gonostylus (Figs 5, 20) **6**
- Finger-like process arises near the apex of gonostylus, gonocoxites with accessory setose lobe, lateral to ventral processes (POLEVOI & HEDMARK 2003; Fig. 3c) ***hedstroemi* POLEVOI & HEDMARK**
- 6 Gonostylus with numerous long bristles in the base of the finger-like process (Fig.5) .. ***dispecta* DZIEDZICKI**
- Gonostylus with only two long bristles in the base of the finger-like process (Fig. 17) . ***rejecta* EDWARDS**
- 7 Ventral processes of gonocoxites narrow, apicolateral process of gonostylus with a group of bristles near the base (Fig. 16) ***nitida* GRZEGORZEK**
- Ventral processes of gonocoxites wide, apicolateral process of gonostylus without a group of bristles near the base (Fig. 12) **8**
- 8 Parameres long, slightly widened to apices and bearing hook-like processes (SASAKAWA & KIMURA 1974; Figs. 17b, 17d) ***prolata* SASAKAWA & KIMURA**
- Parameres shorter, narrowing to apices (Fig. 14) ***insulana* spec. nov.**

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Fortsetzung des Kurzbeitrages Nr. 8 von S. 242 – Continuation of the “Short note no 8” from p. 242

Der Sammelort bei Itterbeck ist eine von Kiefernwäldern und einzelnen Laubgehölzen umstandene größere Lichtung mit ausgedehnten Sandtrockenrasen, Silbergrasfluren und einem spärlich bewachsenen Teich. Der Fundort bei Wilsum besteht aus mageren Sandstandorten, feuchten bis trockenen Weiden, Gebüsch und älteren Teichanlagen. *P. scutellata* wird in England fast ausschließlich auf sumpfigen Wiesen auf *Juncus effusus* gesammelt. Laut STUBBS (1969) könnte es sich dabei um eine Wirtspflanze dieser Art handeln.

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