Two new Palaearctic species of the genus *Bucculatrix* (Lepidoptera: Bucculatricidae)

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Bucculatrix malivorella sp. n. from Middle Asia and *B. pectinifera* sp. n. from the Far East of Russia are described.

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The type specimens of new species described in this paper are kept at Zoological Institute, St. Petersburg.

Bucculatrix malivorella sp. n.

Holotype. ♂, **Tajikistan**, Kondara, at light, 4.VIII.1996 (V. Kuznetzov).

Paratypes. **Tajikistan**: 66 ♂ and ♀, Kondara, at light, 31.VII-26.VIII.1996 (V. Kuznetzov); 8 ♂ and ♀, same locality, 16-18.VI.1971, ex l. from *Malus domestica* and 24.VI.1971, at light (Scherniyazova); 20 ♂ and ♀, same locality, at light, 28.VI-13.VIII.1986 (Puplesis); 1 ♀, Varzob gorge, 7.VIII.1962, micropreparation no. 17955 (Malyavin); **Uzbekistan**: 1 ♂ (with uniformly greyish fore wings) and 1 ♀, Bukhara, ex l. from apple-tree, 14.VII.1928, micropreparations no. 2402 and no. 2403 (Gerasimov); **Kyrgyzstan**: 1 ♀, Frunze (Bishkek), ex l. from apple-tree, 10.VIII.1932, micropreparation no. 2399 (Egorova); 8 ♂ and ♀, with identical labels, 6, 10.VIII.1931 and 10.VIII.1932; 1 ♀, Osh, ex l., 26.VI.1930, micropreparation no. 2404 (Gerasimov); 1 ♂, 1 ♀, same locality and collector: at light, 27.IV.1930, and ex l., 26.VI.1930; **Kazakhstan**: 1 ♂, 1 ♀, Tyulkubas District, ex l., *Malus*, 13.VIII.1938 (Gerasimov); **Turkmenistan**: 1 specimen, Sandy-Kachi, 2.V.1986 (Puplesis).

Description. Length of fore wing 3.5 mm. Head tuft, thorax, tegulae and eye caps white, occasionally with admixture of scarce brownish scales. Antennae annulate, their segments white basally and brownish apically. Fore wing brightly white, with yellowish shade in several specimens and brownish scales sparsely scattered throughout wing area. Brown spots at middle of costal and dorsal margins and oval plical spot in the center of wing apical third. One paratype referred to the new species owing to its genital characters possesses uniformly greyish fore wings with slight admixture of irregularly scattered, apically brown scales; its head tuft coloured as fore wing (according to the label, this male has been reared from the larva mining a leaf of apple-tree in Bukhara).

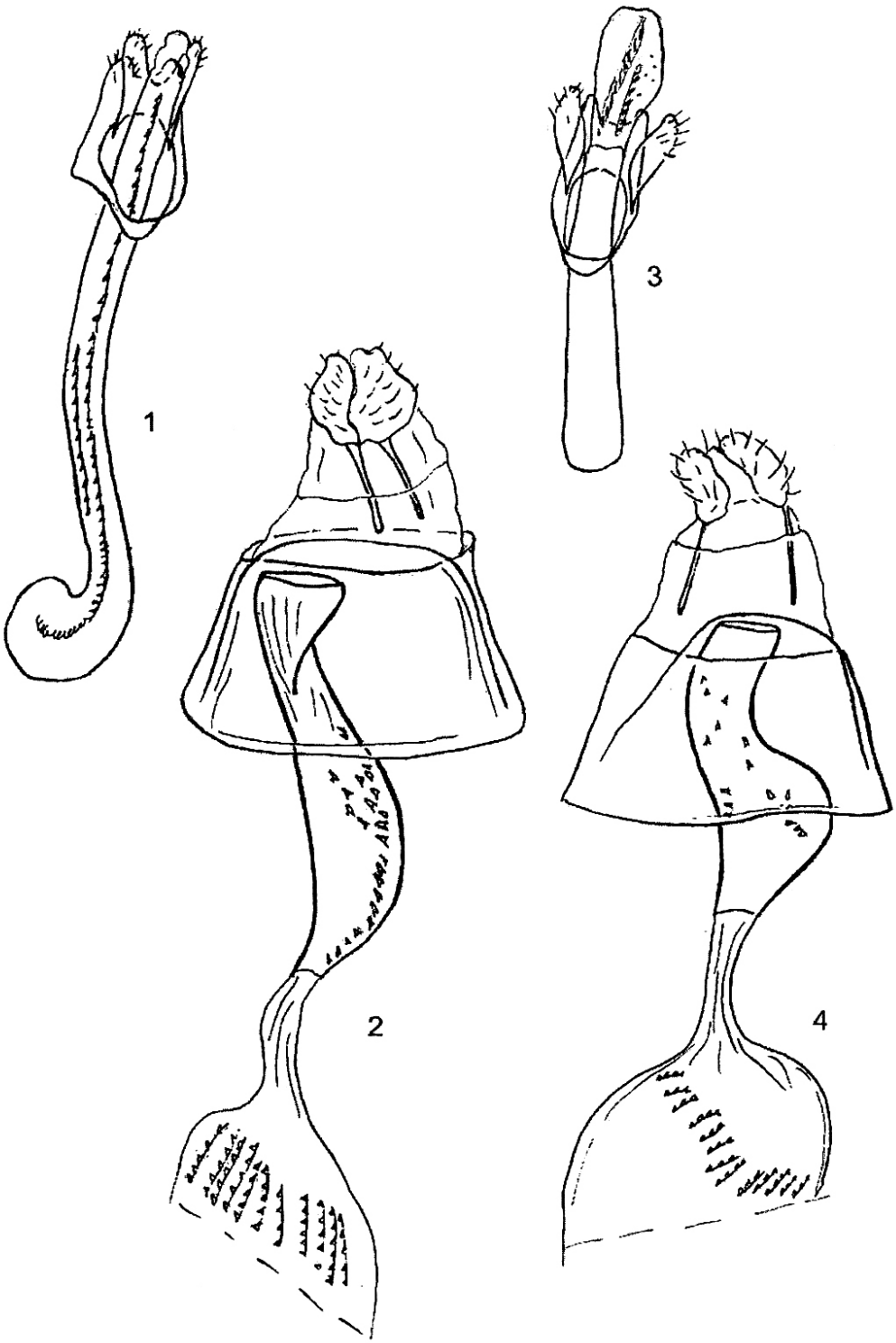
Male genitalia (Fig. 1). Genital ring (annulus) reduced and weakly sclerotized. Tegumen with small, widely spaced, rounded lobes; vinculum narrow, rounded apically. Aedeagus very large, slightly widened and curled basally, 5 times as long as valva, wider than valva, with 2 spirally coiled rows of numerous spine-like cornuti; one row is much longer than the other and stretching almost throughout full length of aedeagus. Valvae narrow, merged with vinculum as well as with each other by their basal halves.

Eversible sac in male abdomen robust and broad, seeming to consist of two lobes.

Female genitalia (Fig. 2). Papillae anales weakly sclerotized; apophyses short and slender. Ostium widely opened in membrane near posterior margin of abdominal sternum VIII and covered with rounded lobe of abdominal sternum VII. Sclerotized portion of ductus bursae comparatively long, twice very smoothly curved and asymmetrically widened in middle part. Inner walls of ductus bursae covered with numerous longitudinally oriented fine spines. Signum rather small.

Biology. Larvae mine leaves of the apple-tree; pupae develop within ribbed cocoon, which is snow-white in the reared specimen from Osh and creamy in the reared specimen from Bukhara.

Comparison. The new species is most similar to *B. bechsteinella* (Bechstein & Scharfenberg, 1805) from Europe and Georgia in the general appearance and genital structures, differing in the markedly longer aedeagus, which is slightly curled and widened basally. Cornuti in the aedeagus of *B. malivorella* sp. n. are more numerous and form considerably more extended rows as compared to those of *B. bechsteinella* (Fig. 3). Valvae of the new species differ from those of the species in comparison, being merged by their basal halves.



Figs 1-4. **1**, **2**, *Bucculatrix malivorella* sp. n.: 1, holotype, male genitalia; 2, paratype (Osh, micropreparation no. 2404), female genitalia; **3**, **4**, *B. bechsteinella*: 3, male from Breslau, micropreparation no. 2400, genitalia; 4, female from Georgia (Lagodekhi), genitalia.

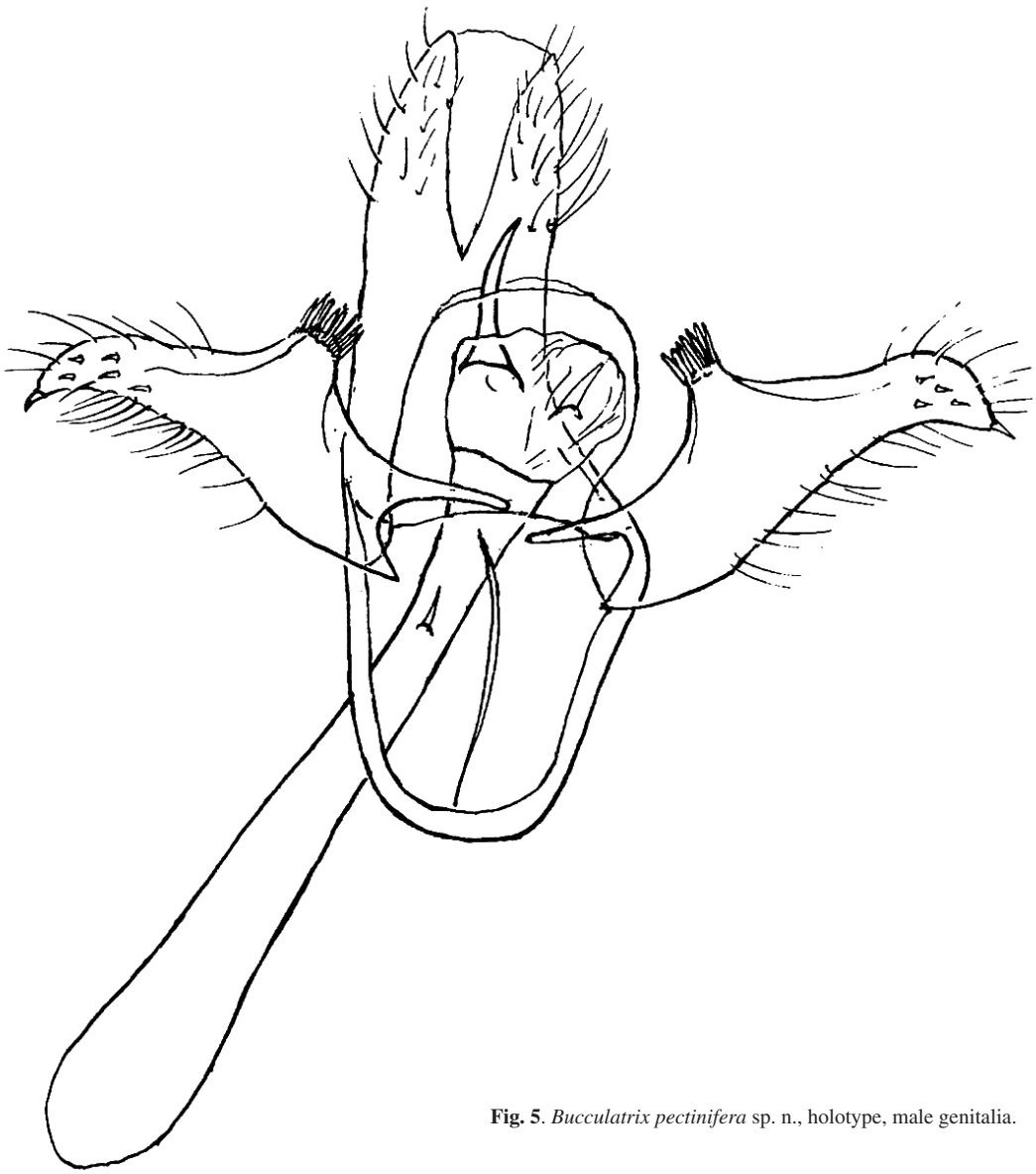


Fig. 5. *Bucculatrix pectinifera* sp. n., holotype, male genitalia.

Females of the new species are well distinguishable from females of *B. bechsteinella* in the noticeably longer sclerotized portion of the ductus bursae, which is curved less sharply than in *B. bechsteinella* and forms smooth arches, instead of right angles in the latter species (Fig. 4). The lobe of the abdominal sternum VII in the females of the new species, unlike this lobe in *B. bechsteinella*, is not narrowed posteriorly. Also the host plants are different: the new species is associated with *Malus*, whereas European specimens of *B. bechsteinella* are reared from *Crataegus* and *Pyrus*.

In the distinctive genital morphology and trophic association with the rosacean plant, *B. malivorella* sp. n. resembles also the Nearctic species *B. pomifoliella* Clemens, 1860 and the East Palaearctic species *B. pyrivorella* Kuroko, 1994; all 4 species forming a taxonomic unit. However, the new species is distinguished from *B. pomifoliella* by the markedly smaller vinculum, non-sharpened aedeagus and 2 rows of cornuti (instead of 1 row) in the males and another shape of the ductus bursae containing spines in the females. *B. pyrivorella* differs from *B. malivorella* sp. n. in

the absence of cornuti in the male genitalia and the larger valva with a prominence on the upper margin, as well as funnel-shaped and deprived of spines caudal portion of the ductus bursae in the female genitalia.

Bucculatrix pectinifera sp. n.

Holotype. ♂, **Russia**, *Jewish Autonomous Province*, Sutarskii range, 40 km S of Birakan, near Bidzhan River, 13-15.VII.2005 (S. Sinev).

Paratypes. **Russia**, *Jewish Autonomous Province*: 2 ♂, Leninskii District, 5 km NE of Leninskoe, 6-7.VII.2005 (S. Sinev).

Description. *Male*. Wing expanse 10 mm. Head tuft, thorax, tegulae and eye caps whitish beige. Antennae whitish, with golden brown semi-annulations on segments. Fore wing whitish, irregularly darkened with brownish scales; its pattern varied. In holotype, wings with small dorsal spots formed by several blackish brown scales and situated slightly above wing dorsal margin; the spot better developed on right wing. In paratypes, fore wings without dorsal spots and with small apical dots consisting of 2-3 scales. Fringes of fore wing whitish. Hind wing and fringe golden grey.

Eversible sac in abdomen bilobed.

Male genitalia (Fig. 5). Tegumen weakly sclerotized; tegminal lobes approximated. Vinculum large and looking like upturned trapezium, with sclerotized edge along its proximal and lateral margins and longitudinal median rib; it is protruded posteriorly and merged with anellus and valvae. Aedeagus nearly twice as long as vinculum or valva; 3 well-defined variously shaped cornuti in vesica. Anellus inflated, cordate. Valva bilobed. Dorsal lobe triangular, with small apical spine. Ventral lobe rather small, three-edged. Apex of this lobe bearing modified scales forming transverse row. Abdominal segment VIII not modified.

Female unknown.

Comparison. The new species resembles the North American *B. gossypiella* Morrill, 1927 in the male genital characters, especially in those of valvae (see: Braun, 1963, Fig. 233); it differs in the shape of the tegminal lobes and markedly shorter aedeagus (as compared to the valva), which is almost not widened in the basal half.

Note. The new Far-Eastern species together with *B. gossypiella* and several other Nearctic and Palaearctic species form a special taxonomic group based on the morphology of the male and female genitalia as well as on the trophic associations with malvaceous plants (Braun, 1993; Seksyaeva, 1994; Baryshnikova, 2002). This group has been hitherto represented in the Palaearctic by 2 well-defined species (*B. lavaterella* Milliere, 1865 and *B. pectinella* Deschka, 1981) distributed in its western part.

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