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SEVEN NEW SPECIES OF THE GENUS *COLEOPHORA* HÜBNER (LEPIDOPTERA: COLEOPHORIDAE) FROM THE VOLGO-URAL REGION

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Seven new species of the family Coleophoridae from the southern Ural Mountains and the Lower Volga region are described: *C. orenburgella* BALDIZZONE et TABELL, sp. n., *C. pokrovkella* BALDIZZONE et TABELL, sp. n., *C. schibendyella* BALDIZZONE et TABELL, sp. n., *C. bogdoensis* BALDIZZONE et TABELL, sp. n., *C. paragallivora* BALDIZZONE et TABELL, sp. n., *C. verbljushkella* BALDIZZONE et TABELL, sp. n. and *C. arkaimella* BALDIZZONE et TABELL, sp. n. Some further specimens from the Altai Mountains and Kazakhstan are also included in the type materials.

Key words: Lepidoptera, Coleophoridae, new species, Russia

INTRODUCTION

During the last few years several articles dealing with the Lepidoptera fauna of the southern Ural region have been published, e.g. the reviews on Scythrididae (NUPPONEN *et al*. 2000), Cochylini (NUPPONEN *et al*. 2001) and Elachistidae (KAILA *et al*. 2003). Those papers are based on recent collecting trips made by Finnish amateur entomologists. The aim of this paper is to continue representing those collecting results, concerning the genus *Coleophora* HÜBNER. The excursions were made during 1996–2005, at first to the southern Ural district exclusively, later to the Lower Volga region, too. Several unknown species were encountered, of which seven new taxa are described as new here. Due to a large amount of collected species and specimens, a systematic list of all observed coleophorids will be published later in a separate paper, as well as more accurate information about the investigation areas and collecting methods.

The genus *Coleophora* comprises over 1300 described species worldwide (BALDIZZONE *et al.* 2006). Usually the adults cannot be reliably identified without genitalic examination and thus in this paper less or no attention is paid to the superficial characters between new and related taxa. In classification of new species we mainly follow the system of TOLL (1953), who divided the genus into 36 different groups, splitting the groups still into several sections and even subsections.

According to ANIKIN (1998) totally 22 species of Coleophoridae have been described from the Volgo-Ural region. Of these taxa 18 originate from the suburb of Volgograd in the Lower Volga region and 4 from the southern Urals (Uralsk district). At the end of last century the coleophorid fauna of these areas has been treated in some papers, e.g. ANIKIN *et al.* (1997, 1999). However, the observations have focused to the Lower Volga district and thus the fauna of the southern Ural Mountains has remained poorly known. Subsequently ANIKIN (2001, 2002, 2005) described 13 new species, of which all are known from the Lower Volga region, but only one from the Urals.

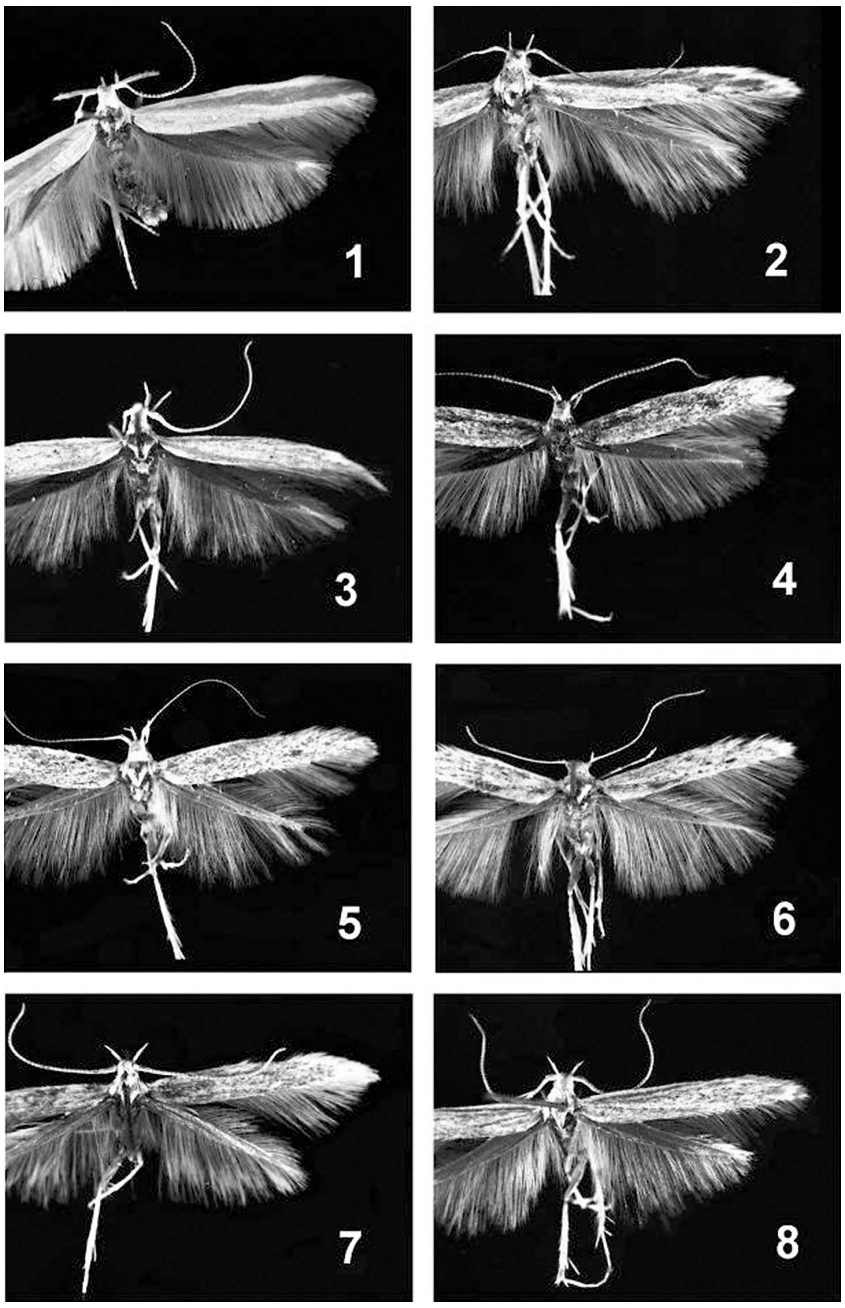
DESCRIPTION OF NEW SPECIES

Coleophora orenburgella sp. n.
(Figs 1, 9–15)

Type material – Holotype ♂ (GP JT 2173) "Russia, S-Ural, Cheliabinsk district, Arkaim reserve near Amurskii village, 16-VI-1996, K. Nupponen, J.-P. Kaitila, J. Junnilainen & M. Ahola leg.", in coll. JUNNILAINEN.

Paratypes (28 ♂♂, 71 ♀♀): 1 ♀ (GP JT 2192) ibidem, 15-VI-1996, in coll. TABELL; 1 ♂ ibidem, 15-VI-1999, T. & K. Nupponen leg., in coll. T. & K. NUPPONEN; 4 ♂♂, 13 ♀♀ (GP Bldz 12531) "Russia, S-Ural, Orenburg's district, Donskoje 6 km W, mnt. Verbljushka, Ural river shore steppe, 30-V-05-VI-1998, J. Junnilainen leg.", in colls JUNNILAINEN, TABELL and BALDIZZONE; 9 ♀♀ ibidem, 10–12-VI-1998, in colls JUNNILAINEN and BALDIZZONE; 4 ♂♂, 1 ♀ (GP JT 3310) "Russia, S-Ural, Orenburg's district, Pokrovka village 20 km S, Schibendy valley, 03–07-VI-1998, J. Junnilainen leg.", in colls JUNNILAINEN and TABELL; 1 ♀ ibidem, 03-VI-1998, T. & K. NUPPONEN leg., in coll. T. & K. NUPPONEN; 1 ♂ ibidem, 07-VI-1998, T. & K. NUPPONEN leg., in coll. TABELL; 2 ♂♂, 4 ♀♀ (GP Bldz 13059) "Russia, S-Ural, Orenburg district, Donskoje village 6 km W, mount Verbljushka, 30-V-1998, T. & K. Nupponen leg.", in colls T. & K. NUPPONEN, TABELL and BALDIZZONE; 1 ♂, 13 ♀♀ ibidem, 31-V-1998, in colls T. & K. NUPPONEN and TABELL; 1 ♂, 1 ♀ ibidem, 01-VI-1998, in coll. T. & K. NUPPONEN; 8 ♂♂, 22 ♀♀ (GP Bldz 13058; GP JT 3047) ibidem, 10-VI-1998, in colls T. & K. NUPPONEN, TABELL and BALDIZZONE; 1 ♀ ibidem, 11-VI-1998, in coll. T. & K. NUPPONEN; 2 ♂♂, 1 ♀ ibidem, 12-VI-1998, in colls T. & K. NUPPONEN and TABELL; 1 ♀ ibidem, 27-VI-2003, K. NUPPONEN leg, in coll. T. & K. NUPPONEN; 1 ♀ "Russia, S-Ural, Orenburg district, Novoiletzk 8 km E, 09-VI-1998, T. & K. Nupponen leg.", in coll. T. & K. NUPPONEN; 2 ♂♂, 1 ♀ Russia, S-Ural, Orenburg district, Kuvandyk 12 km S, 15-VI-1998, T. & K. Nupponen leg.", in colls T. & K. NUPPONEN, TABELL and BALDIZZONE; 1 ♀ ibidem, 16-VI-1998, in coll. TABELL; 1 ♀ (GP Bldz 12534) "Russia, S-Ural, Orenburg's distr., Kuvandyk 12 km S, mountain hilly steppe, 13–15-VI-1998, J. Junnilainen leg.", in coll. BALDIZZONE; 1 ♂ "Russia, S-Ural, Orenburg district, Orsk 40 km W, near Guberlja vill., 26-VI-2003, K. Nupponen leg.", in coll. TABELL; 1 ♂ (GP JT 3410) "Russia, Altai mnts. 50°14–16'N 87°50–55'E, Kuraiskaja step 1500–1700 m, 05-VII-2001, K. Nupponen leg.", in coll. T. & K. NUPPONEN.

Derivation of name – The species name refers to the Orenburg district, where the majority of the type specimens were collected.



Figs 1–8. Adults of *Coleophora* spp.: 1= *C. orenburgella* sp. n., ♂. 2 = *C. pokrovkella* sp. n., ♂. 3 = *C. schibendyella* sp. n., ♂. 4 = *C. bogdoensis* sp. n., ♂. 5 = *C. bogdoensis* sp. n., ♀. 6 = *C. paragallivora* sp. n., ♂. 7 = *C. verbljushkella* sp. n., ♂. 8 = *C. arkaimella* sp. n., ♂.

Diagnosis – *C. orenburgella* belongs to the 18th group of TOLL's (1953) system. The male genitalia are close to those of *C. involucrella* CHRÉTIEN, 1905 but can be separated by shorter cucullus and especially by the presence of cornuti. The female genitalia most resemble those of *C. partitella* ZELLER, 1848, differing by shorter colliculum and by ductus bursae lacking dark spinules. The genitalia of *involucrella* are illustrated by BALDIZZONE (1979), those of *partitella* e.g. by TOLL (1953).

Description – (Fig. 1): Wingspan 15–18 mm. Head and thorax white, tinged with yellowish. Antenna dirty white ringed with pale brown, scape white with yellowish hue, beneath with orange-yellow scales forming a long tuft. Labial palpus white, upper surface brown. Forewing orange-yellow with four streaks and an elongate yellowish brown wedge from 1/6 to apex between costal and discal streaks; costal streak from base to 5/6, slightly angled discal stripe from mid-wing to apex, one streak along fold and on dorsum; inner costal fringes whitish, outer brown, dorsal fringes brownish grey. Hindwing and fringes brownish grey. Abdomen shining pale grey, more yellowish in female.

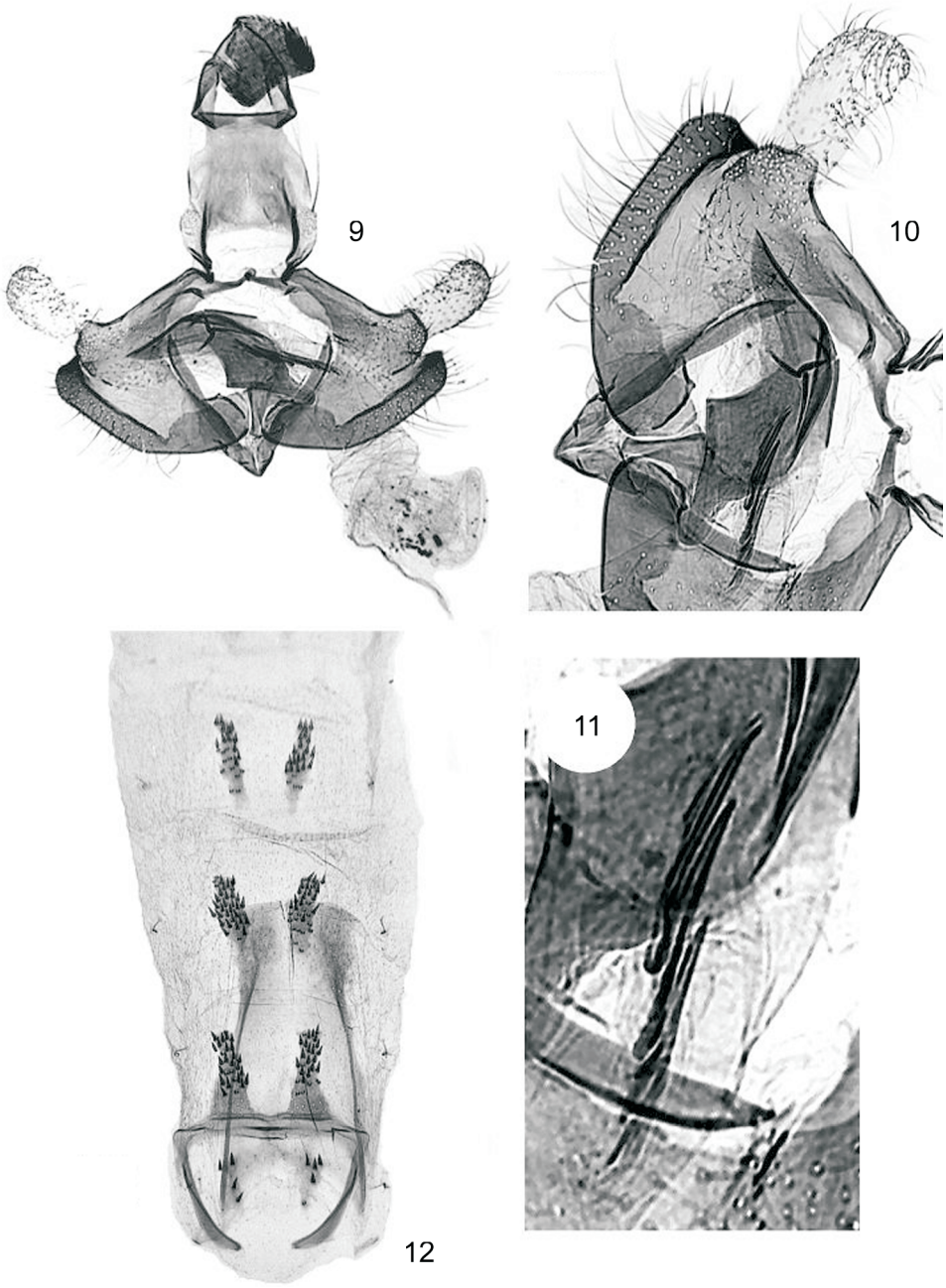
Male genitalia (Figs 9–11): Gnathos knob conical, as broad as arms. Tegumen long, expanded anteriorly, pedunculi short. Transtilla slender, wedge-shaped. Cucullus parallel-sided or slightly tapered at base. Valvula moderately large, outer margin well delineated, rounded. Sacculus narrow, well chitinized, more darkly apically; ventral margin broadly and evenly incurved, covered with several bristles, ending in darkly sclerotized small triangular tooth; posterior margin very short. Phallotheca stout, conical tube, apical half not sclerotized ventrally. In vesica 3–4 robust spiniform cornuti.

Abdomen (Figs 12, 15): No posterior lateral struts. Transverse strut slender, straight, proximal margin narrowly more or less sclerotized, distal margin not chitinized medially. Spine patches (3rd tergite) about 2.5× longer than wide, densely covered with small spines.

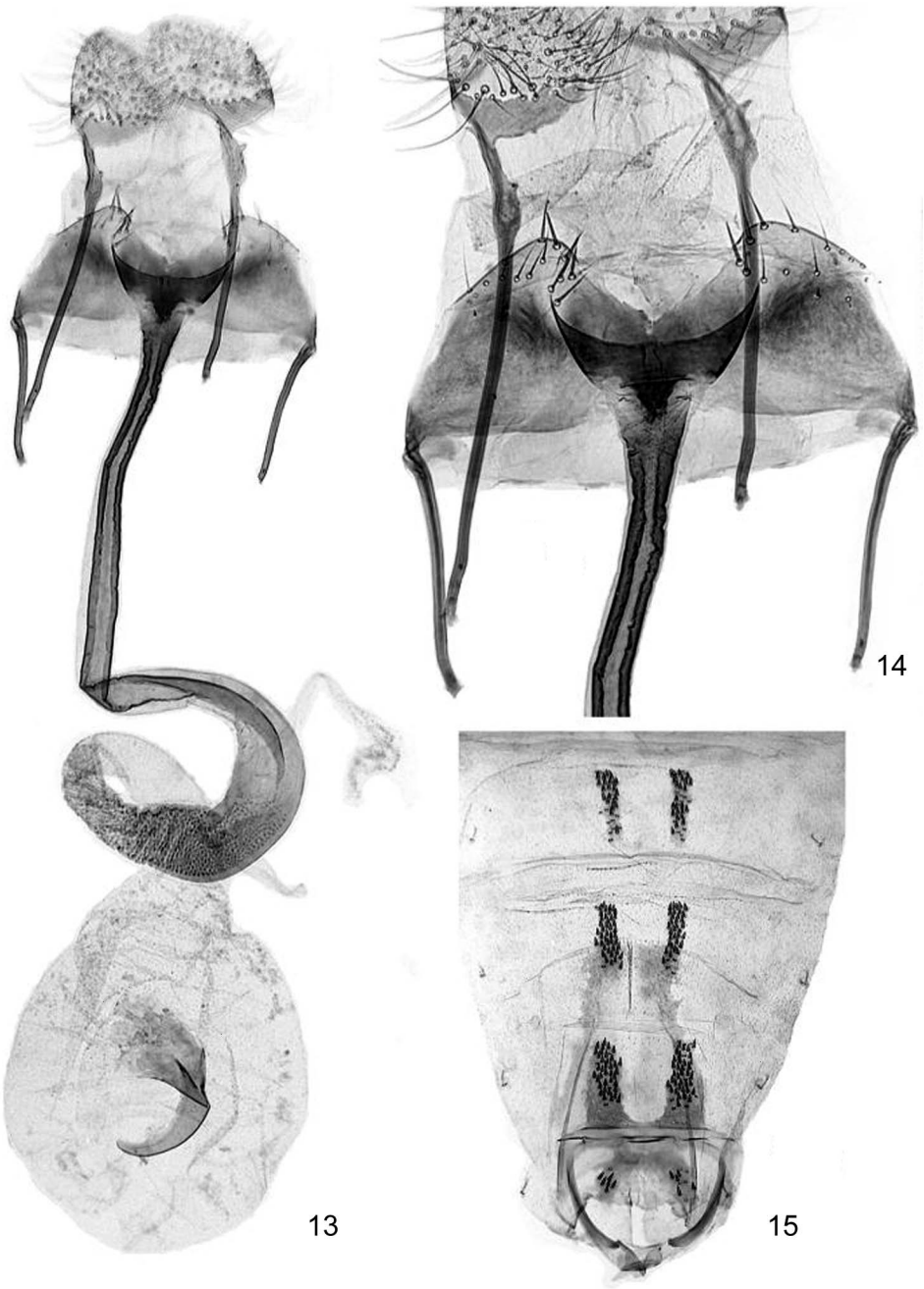
Female genitalia (Figs 13–14): Papillae anales broad. Anterior apophyses short, posterior ones 2× longer. Sterigma subtrapezoid, 2.5× wider than long, proximal margin slightly concave, caudal margin rounded, covered with short bristles, medial excavation broadly V-shaped. Ostium bursae wide, colliculum chaliced, darkly sclerotized. Ductus bursae well sclerotized; posterior section slender, straight, lateral sides with darkly sclerotized bands without dark spinules, with anterior half-twist; anterior end expanded with densely set small spinules. In large, oval corpus bursae one moderately large signum formed of curved spine and roundish base.

Bionomy – Biology unknown. Most specimens were collected during the period from late May to mid-June from steppe habitats.

Distribution – So far known from two distinct Russian areas, the southern Ural Mountains and the Altai Mountains.



Figs 9–12. *Coleophora orenburgella* sp. n.: 9 = male genitalia (GP Bldz 13058), 10 = cucullus, sacculus and phallotheca enlarged, 11 = cornuti enlarged, 12 = abdomen



Figs 13–15. *Coleophora orenburgella* sp. n.: 13 = female genitalia (GP Bldz 13059), 14 = sterigma and colliculum enlarged, 15 = abdomen

Coleophora pokrovkella sp. n.
(Figs 2, 16–22)

Type material – Holotype ♂ (GP JT 3042) "Russia, S-Ural, Orenburg district, Pokrovka village 20 km S, Schibendy valley, 17-VII–1998, K. Nupponen leg.", in coll. T. & K. NUPPONEN.

Paratypes (2 ♀♀): 1 ♀ (GP JT 3312) ibidem, 18-VII-1998, in coll. TABELL; 1 ♀ (GP JT 3822) "Russia, S-Ural, Orenburg district, Orsk 40 km W, near Guberlja vill., 26-VI-2003, K. Nupponen leg.", in coll. T. & K. NUPPONEN.

Derivation of name – The specific name alludes to vicinity of the village Pokrovka, where the holotype to the new taxon was collected.

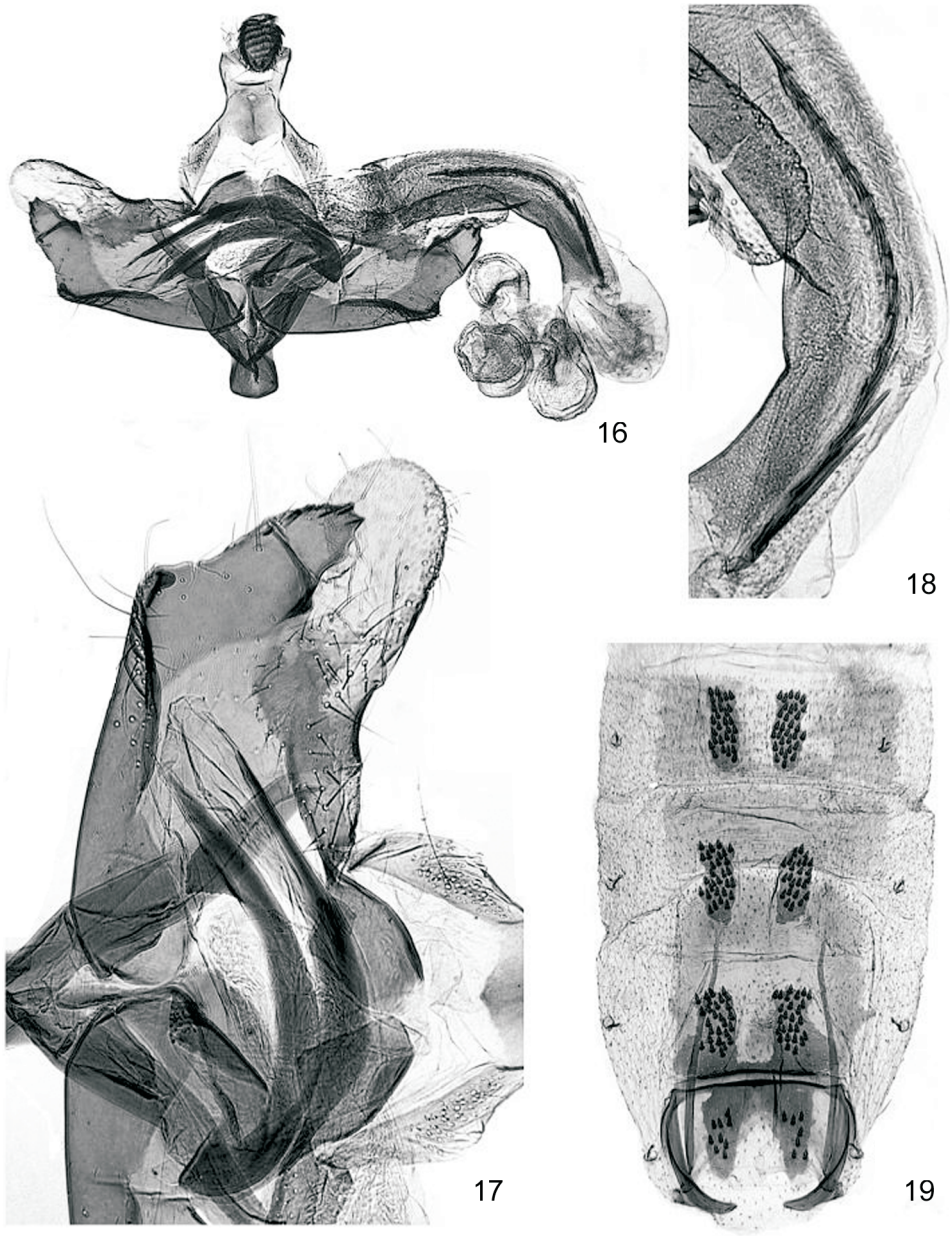
Diagnosis – *C. pokrovkella* belongs to the 30th group of TOLL's (1953) system, to the *attalicella* section. The silvery white longitudinal stripes on yellow or buff forewings combined with dark scales are characteristic for the adults of this section (BALDIZZONE 1990). According to the shape of the male genitalia *pokrovkella* should be placed near *C. psammodes* (FALKOVITSH, 1989), a species known from Kazakhstan (BALDIZZONE *et al*. 2006). Separating details in *pokrovkella* are narrower cucullus, more elongate sacculus, shorter and broader phallotheca rods and the longer formation of cornuti. The female of *psammodes* is still unknown, and the female genitalia of the new taxon don't show close affinity to any other species.

Description – (Fig. 2): Wingspan 14.5–15.5 mm. Head white with pale buff hue, thorax white with light buff dorsal and subdorsal stripes. Labial palpus whitish mixed with light beige. Flagellum and scape white. Forewing buff, in male brown scales forming dots and stripes in apical part; white streaks on costa to 3/5, on fold and on dorsum, discal streak divided by brown scales; fringes white with pale beige tinge. Hindwing light grey, fringes pale beige, towards apex white.

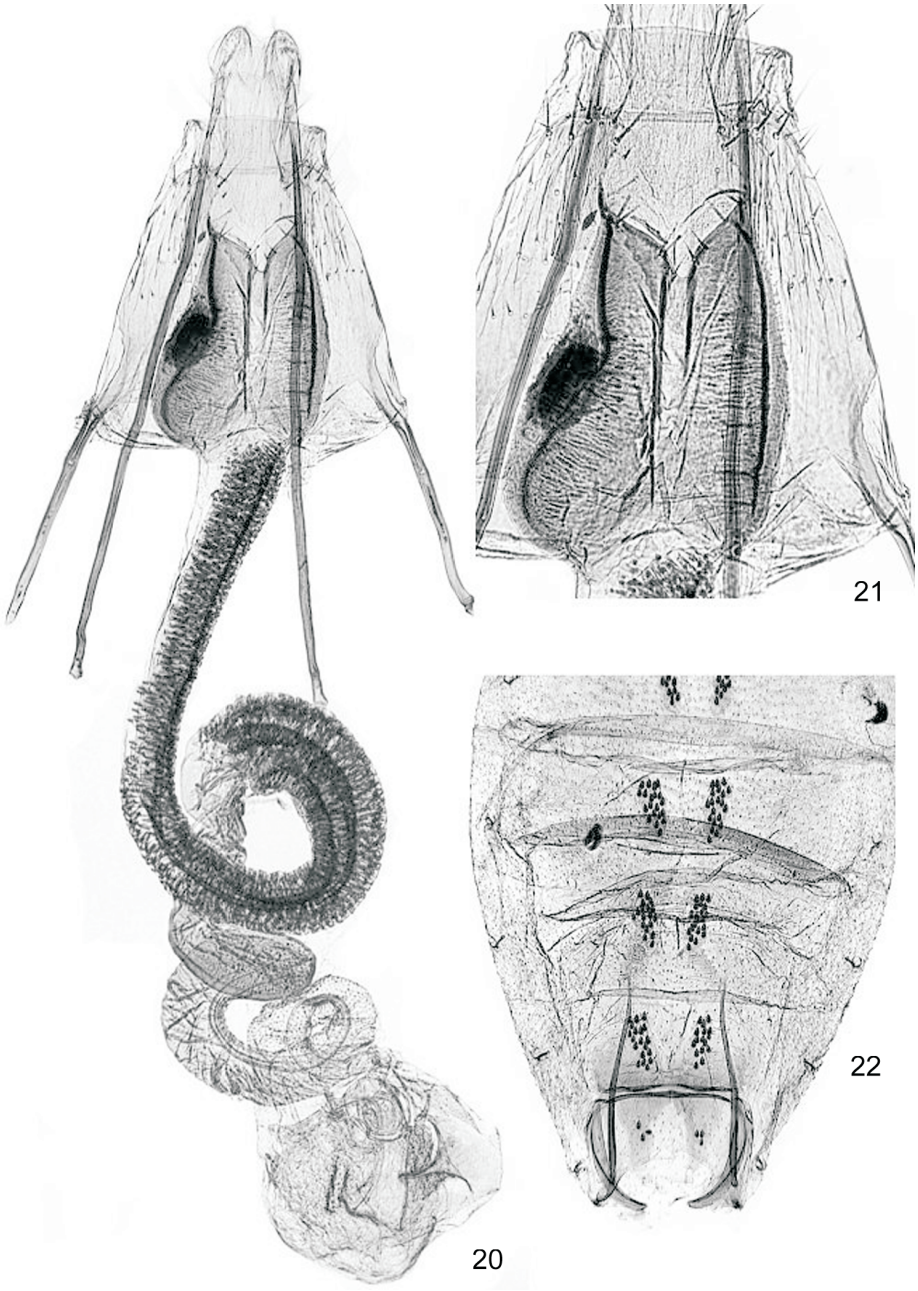
Male genitalia (Figs 16–18): Gnathos knob oval, narrower than arms. Tegumen short, pedunculi slightly bulged. Cucullus club-shaped, basally narrowed, distal portion extended beyond apex of sacculus. Valvula as broad as cucullus, ventral margin widely rounded. Transtilla large, rectangular, well sclerotized. Sacculus elongate, strongly chitinized; anterior margin incurved, covered with sparse bristles at apical part, ending in small tooth; lateral margin undulated, posterior angle with large, outwardly directed process with shallowly toothed outer margin; posterior margin subparallel with costa, ending in small tooth at the base of cucullus. Vinculum expanded anteriorly by subrectangular plate. Phallotheca formed of two arched, darkly sclerotized and apically tapered rods of equal length; upper rod with a low dorsal tooth at apical 2/3, lower rod with a robust ventral subapical triangular tooth, its inner margin serrated. Vesica moderately broad, several cornuti grouped into long, curved chain.

Abdomen (Figs 19, 22): No posterior lateral struts. Transverse strut almost straight, narrow, both margins darkly sclerotized. Spine patches (3rd tergite) 2.5× longer than wide, covered with 20–30 conical spines.

Female genitalia (Figs 20–21): Papillae anales oval, short. Posterior apophyses 3× longer than anterior apophyses and twice as long as sterigma. Sterigma trapezoidal, as long as wide, apically covered with short bristles, medial excavation broad. Ostium bursae funnel-shaped, lined with few setae. Colliculum asymmetrical, extended to proximal margin of sterigma, ornamented by several trans-



Figs 16–19. *Coleophora pokrovkella* sp. n.: 16 = male genitalia (GP JT 3042), 17 = cucullus, sacculus and phallotheca enlarged, 18 = cornuti enlarged, 19 = abdomen



Figs 20–22. *Coleophora pokrovkella* sp. n.: 20 = female genitalia (GP JT 3312), 21 = sterigma and colliculum enlarged, 22 = abdomen

verse stripes, in anterior half large unilateral swelling and above it dark oval structure. Ductus bursae moderately broad; posterior half 2.5× longer than sterigma, coiled once, medial lamina as long as spinulate section, spinules large and dense; anterior half coiled at least twice. Corpus bursae drop-shaped, with one rasplike and one leaflike signum.

Bionomy – Early stages unknown. One of the localities is a chalk steppe and the other a steep, rocky steppe slope. *C. psammodes* lives on *Salsola orientalis* S. G. GMEL. (FALKOVITSH 1989).

Distribution – Known from two localities in the steppes of the southern Ural Mountains.

Coleophora schibendyella sp. n.
(Figs 3, 23–30)

Type material – Holotype ♀ (GP JT 3054) "Russia, S-Ural, Orenburg district, Donskoje village 6 km W, mount Verbljushka, 14-VII-1998, K. NUPPONEN leg.", in coll. T. & K. NUPPONEN.

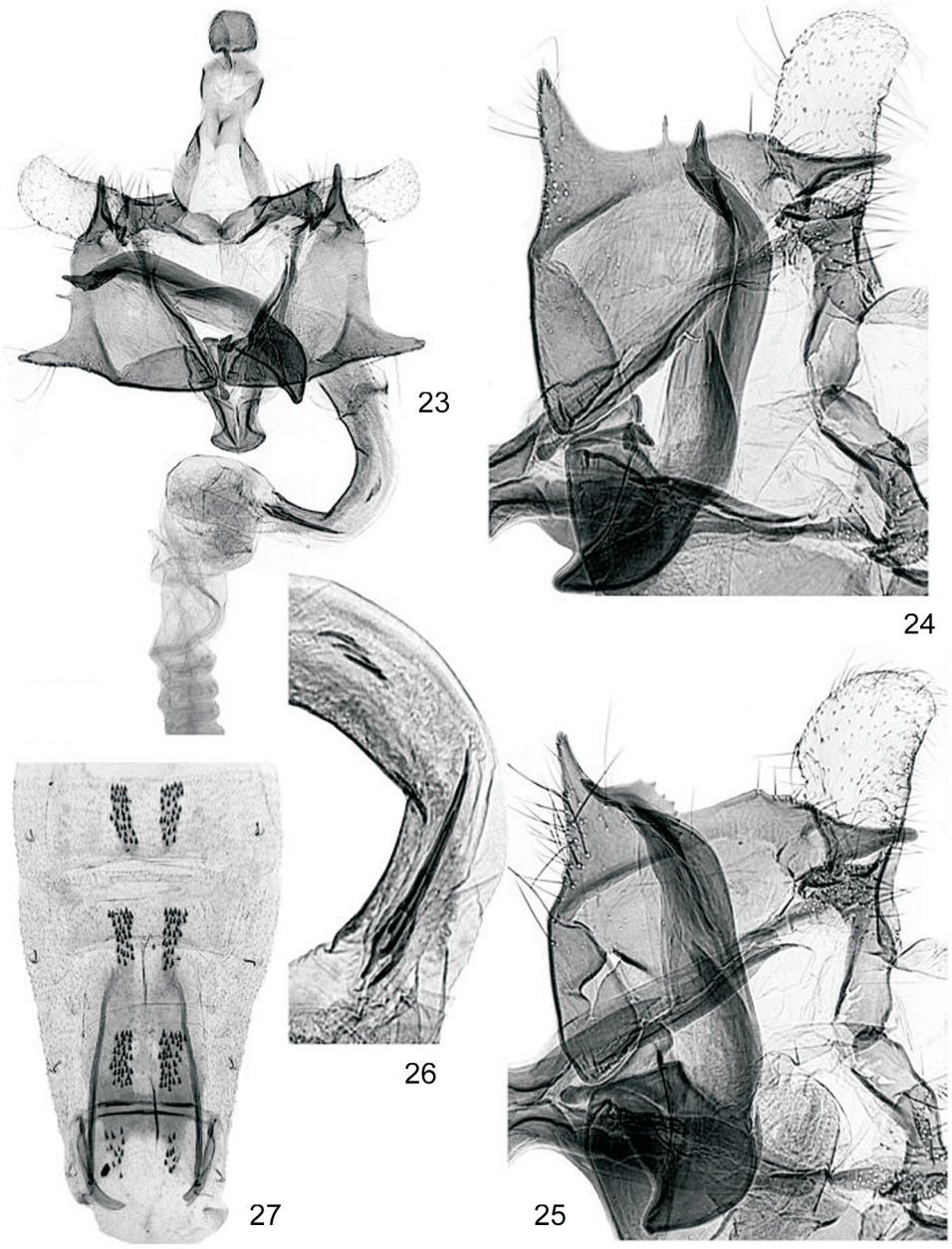
Paratypes (5 ♂♂, 5 ♀♀): 3 ♂♂, 2♀♀ (GP Bldz 13033, 13034, 13035, 13037, 13040) "Russia, S-Ural, Orenburg district, Pokrovka village 20 km S, Schibendy valley, 17-VII–1998, K. NUPPONEN leg.", in colls T. & K. NUPPONEN, TABELL and BALDIZZONE; 2 ♂♂ (GP Bldz 13042; GP JT 3061) ibidem, 18-VII-1998, in coll. T. & K. NUPPONEN; 1 ♀ "Russia, Kalmykia, vil. Troitskoe, 19-VII-2000, O. Saranova leg."; 1 ♀ "Russia, Kalmykia, vil. Ketchenery, 23-VII–2000, J. Saranova leg."; 1 ♀ "Russia, Astrakhan, 02-VIII-2004, on light, S. Nedoshivina leg.". In coll. Zoological Museum of Saratov State University.

Derivation of name – The specific name refers to the Schibendy valley, which is one of the collecting sites of the new taxon.

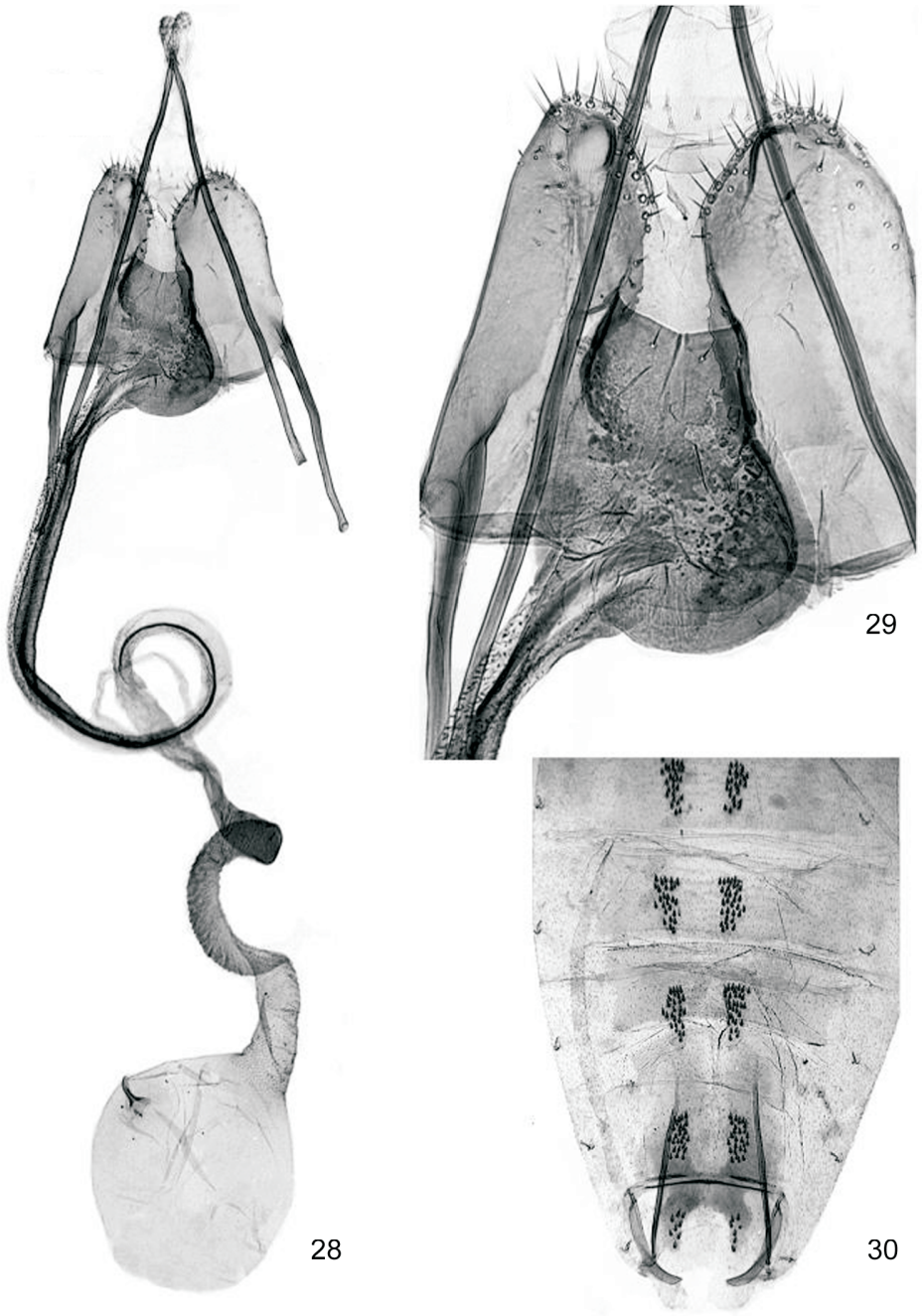
Diagnosis – *C. schibendyella* belongs to the 30th group of TOLL's (1953) system, and judging particularly from the male genitalia resembles *C. salinella* STAINTON, 1859 and *C. tornata* (FALKOVITSH, 1989). In *salinella* the lateral margin of sacculus is more oblique, not exceeding the costa, and the lower phallotheca rod bears a robust dorsal tooth, whereas in *tornata* the protuberance at ventrocaudal angle of sacculus is narrower and phallotheca rods are of equal length and untoothed. The female of *tornata* is still unknown, but in *salinella* the colliculum is funnel-shaped and the medial lamina in ductus bursae considerably shorter. BALDIZZONE and NEL (1994) illustrated the genitalia of *salinella*.

Description – (Fig. 3): Wingspan 12.5–14 mm. Thorax white with light beige hue, head pale beige. Labial palpus whitish mixed with beige, outer side brown. Antenna creamy white, scape mixed with light beige, not tufted. Forewing pale beige, irrorated with light brown and brown scales, longitudinal stripes broad, creamy white; fringes whitish-light beige. Hindwing and fringes light greyish brown.

Male genitalia (Figs 23–26): Gnathos knob roundish, tegumen reinforced by sclerotized "Y", pedunculi arched, relatively wide. Cucullus small, basally broader. Transtilla bifurcate, lower part triangular, upper part with rounded apex. Valvula very small, narrower than cucullus, ventral margin



Figs 23–27. *Coleophora schibendyella* sp. n.: 23 = male genitalia (GP Bldz 13037), 24 = cucullus, sacculus and phallotheca enlarged, 25 = idem (GP Bldz 13040), 26 = cornuti enlarged, 27 = abdomen



Figs 28–30. *Coleophora schibendyella* sp. n.: 28 = female genitalia (GP JT 3054), 29 = sterigma and colliculum enlarged, 30 = abdomen

rounded, outer margin with longitudinal fold. Sacculus very broad, well sclerotized, with prominent triangular apical processes; ventral process directed outwards, dorsal one across cucullus, exceeding costa; lateral margin undulated, long. Cornuti in two separate groups; two robust spiniform combined with elongate base and three small in comblike formation.

Abdomen (Figs 27, 30): No posterior lateral struts. Transverse strut slender, proximal margin edged darkly, distal margin less chitinized medially. Spine patches (3rd tergite) about 2.5× longer than wide, covered with 25–30 conical spines.

Female genitalia (Figs 28–29): Papillae anales short. Anterior apophyses as long as sterigma, posterior apophyses 2x longer. Sterigma slightly shorter than wide, caudal margin broadly rounded with several small bristles on each side of medial excavation and with subapical fold. Ostium bursae wide, situated medially on sterigma. Colliculum bag-shaped, asymmetrical with unilateral swelling speckled with chitin. Ductus bursae slender; medial lamina 3x longer than sterigma, spinules small, anterior section more chitinized with two coils. Corpus bursae spherical, signum small.

Bionomy – Biology unknown. Both known habitats in the southern Urals are chalk steppes. *C. salinella* feeds on different *Atriplex* and *Halimione* species (EMMET 1996), *C. tornata* on *Kochia prostrata* (L.) SCHRAD. (FALKOVITSH 1989).

Distribution – Known from the southern Ural Mountains and the Lower Volga regions.

Coleophora bogdoensis sp. n.
(Figs 4, 5, 31–38)

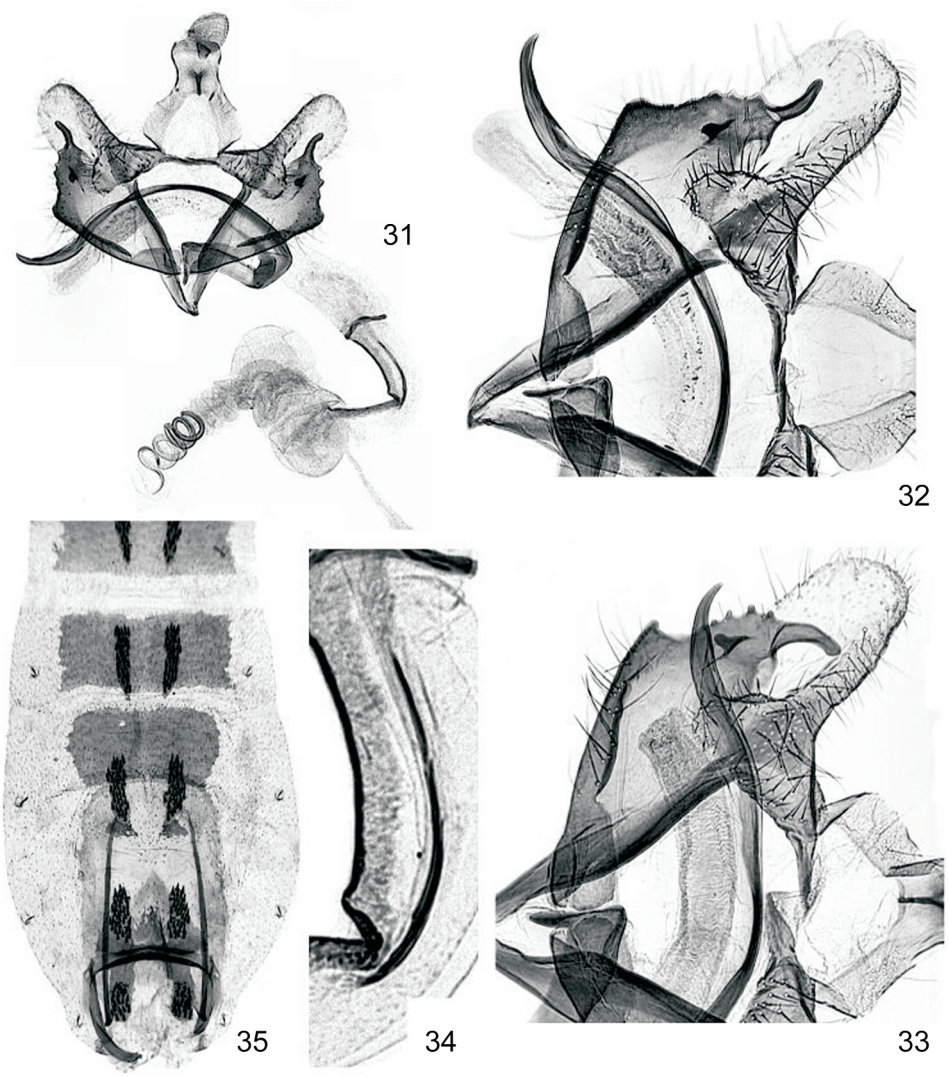
Type material – Holotype ♂ (GP JT 3375) "Russia, Astrahan oblast, near Bogdo village, Baskunzak salt lake, 04-VI-2001, K. NUPPONEN leg.", in coll. T. & K. NUPPONEN.

Paratypes (4 ♂♂, 2 ♀♀): 3 ♂♂, 1 ♀ (GP Bldz 13028, 13029; GP JT 3592) idem, in colls T. & K. NUPPONEN, BALDIZZONE and TABELL; 1 ♂ (GP Wf. 8156) "Kazakstan, Eur. part, sand steppe N, 10 km S Uyaly vill., 25-V-2000, Karalius & Miatlewski leg.", in coll. VAN DER WOLF; 1 ♀ (GP JT 3042) "Russia, S-Ural, Orenburg district, Pokrovka village 20 km S, Schibendy valley, 3-VI-1998, T. & K. NUPPONEN leg.", in coll. T. & K. NUPPONEN.

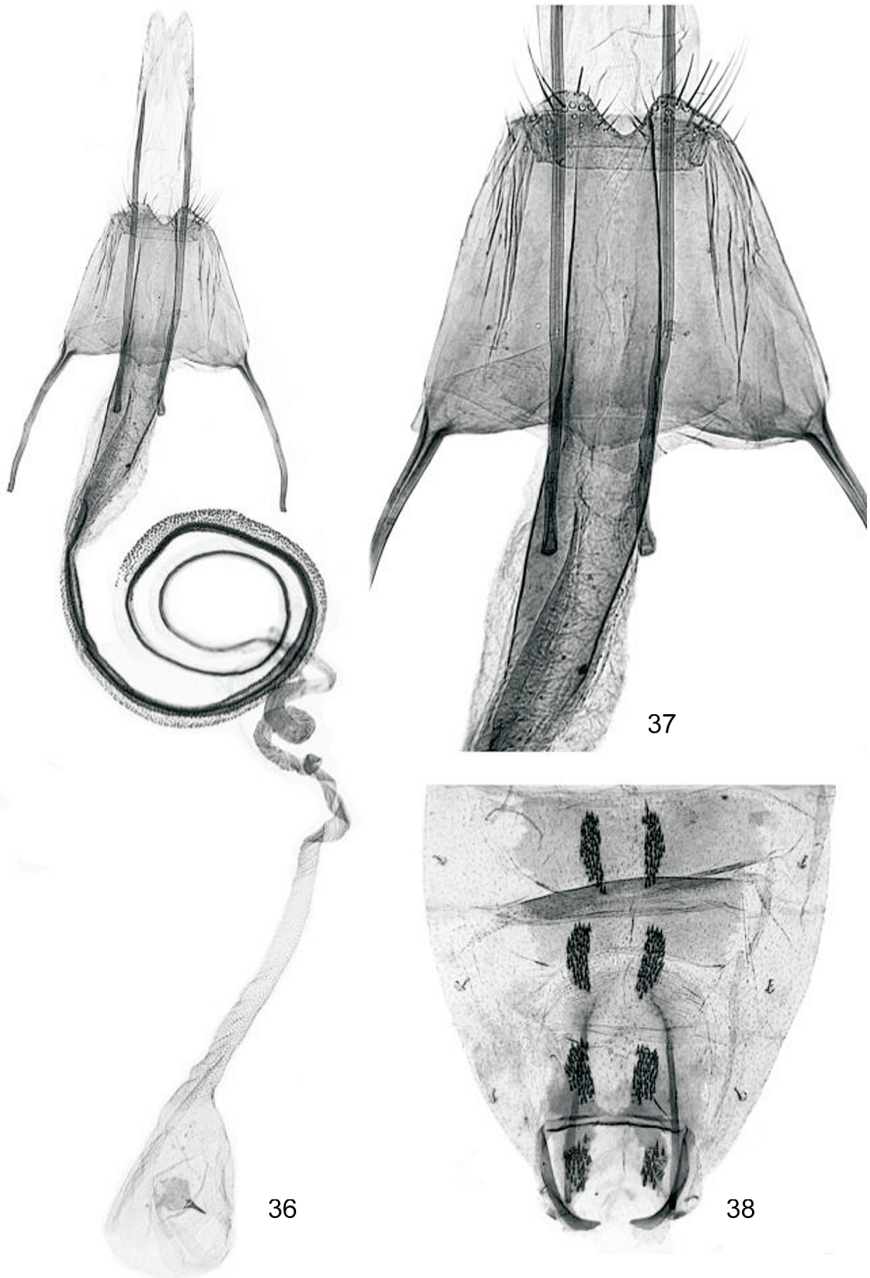
Derivation of name – The specific name refers to the village Bogdo, which is situated close to the place where the majority of the type material was collected.

Diagnosis – Judging from the genitalia structures the new taxon belongs to the 30th group of TOLL's (1953) system, to the *punctulatella* section. Its closest relatives are *C. remizella* BALDIZZONE, 1983 and *C. tringella* BALDIZZONE, 1988. In the male genitalia distinguishing characters can be detected on sacculus and phallotheca; in *bogdoensis* the ventrocaudal angle is more pointed, the robust tooth at dorsal margin missing, and the upper phallotheca rod longer than in *remizella* and *tringella*. In the female genitalia long and twice coiled medial lamina in ductus bursae readily separates it from all allied species.

Description – (Figs 4–5): Wingspan 12,5 mm. Head and thorax light brown mixed with whitish scales; labial palpus dirty white with light brown hue, second segment ventrally brown; antenna annulated with dirty white-light brown and brown, scape not tufted. Forewing creamy white, striped with pale brown, wholly sprayed with brown and blackish brown scales forming a dark spot at apical 2/3; fringes light greyish brown, inner costal ones whitish. Hindwing light greyish brown, fringes of same colour, apically whitish.



Figs 31–35. *Coleophora bogdoensis* sp. n.: 31 = male genitalia (GP Bldz 13028), 32 = cucullus, sacculus and phallotheca enlarged, 33 = idem (GP Bldz 13029), 34 = cornuti enlarged, 35 = abdomen



Figs 36–38. *Coleophora bogdoensis* sp. n.: 36 = female genitalia (GP JT 3122), 37 = sterigma and colliculum enlarged, 38 = abdomen

Male genitalia (Figs 31–34): Gnathos knob suborbicular, as broad as tegumen, tegumen reinforced by sclerotized "Y", pedunculi broad, arched. Costa oblique, slightly concave at the level of valvula. Cucullus oval, basally broader. Transtilla straight, wedge-like. Valvula subtriangular, ventrally rounded, outer margin with narrow longitudinal fold. Sacculus well sclerotized; anterior margin ending in small tooth; lateral margin strongly undulated, bearing four small, blunt teeth and one robust, obtuse sublateral tooth, terminating in long horn-like protuberance partially crossing cucullus. Phallotheca with two rods; upper rod long, well sclerotized, arched, subapically slightly swollen, apex upcurved and tapered; lower rod shorter and broader, totally transparent except for a short sclerotized basal wedge. In vesica five separate needle-like cornuti.

Abdomen (Figs 35, 38): No posterior lateral struts. Transverse strut slender, slightly convex, both margins strongly sclerotized in male, in female distal margin unsclerotized in middle. Spine patches (3rd tergite) 3× longer than wide, covered with several small spines.

Female genitalia (Figs 36–37): Papillae anales narrow, oval. Anterior apophyses as long as sterigma, posterior ones 2× longer. Sterigma trapezoidal, as long as wide, proximal margin slightly concave medially, caudal margin convex, lined with few bristles, medial excavation narrow, V-shaped. Ostium situated at caudal margin of sterigma. Colliculum moderately slender tube, twice as long as sterigma, towards ductus bursae gradually tapered. Ductus bursae long; posterior section with dark medial lamina coiled twice, spinulate part half the length of lamina, spinules small; anterior section narrow with few coils, corpus bursae drop-shaped. One signum formed of tiny spine and roundish base.

Bionomy – Biology unknown. Specimens from Baskunzak salt lake were swept in late evening on *Limonium gmelini* (Willd.) on the shore.

Distribution – Known from two different localities in Russia (Baskunzak salt lake in the Lower Volga region, Schibendy valley in S Ural) and from a single locality in NW Kazakhstan (Uyaly village).

Coleophora paragallivora sp. n.
(Figs 6, 39–46)

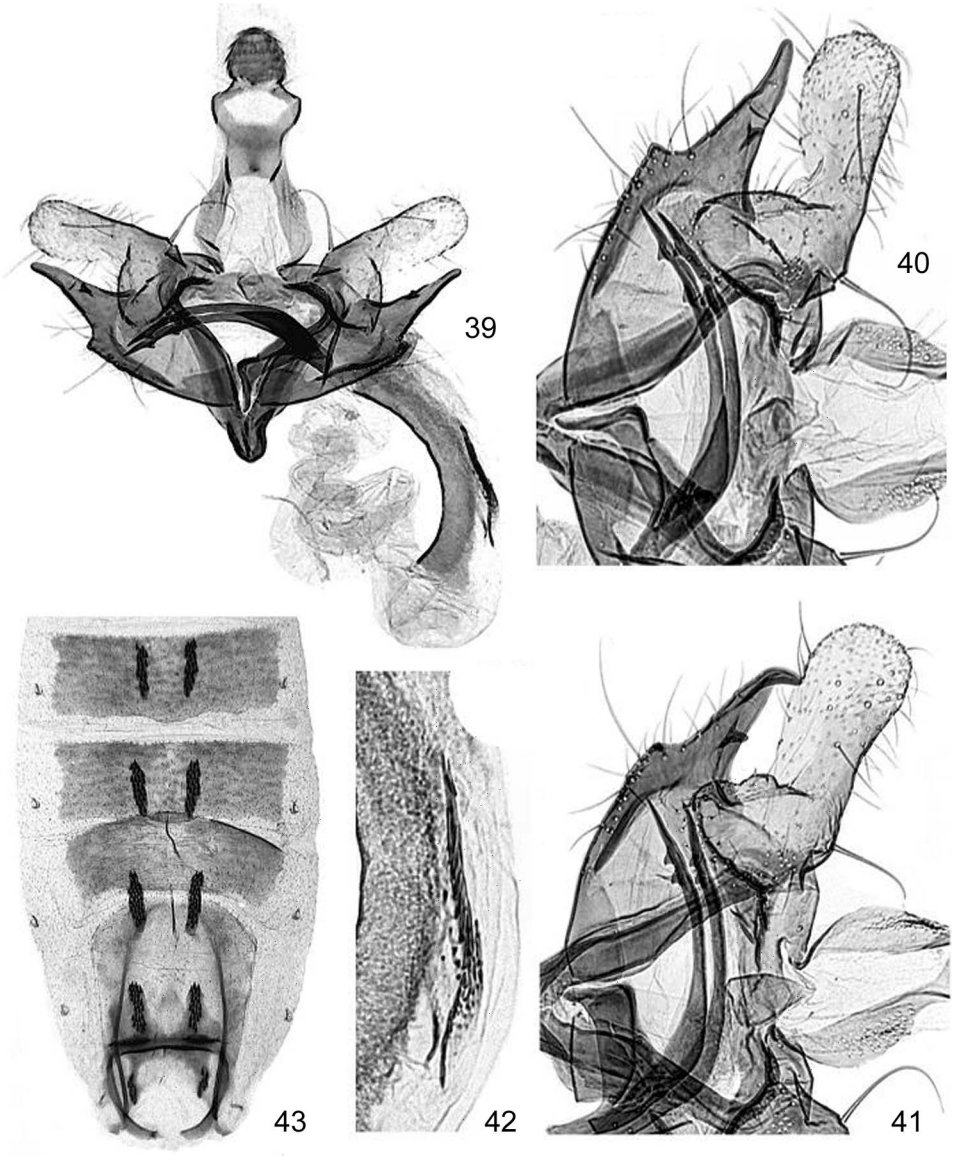
Type material – Holotype ♀ "Russia, S-Ural, Orenburg district, Pokrovka village 20 km S, Schibendy valley, 04-VI-1998, T. & K. NUPPONEN leg., in coll. T. & K. NUPPONEN.

Paratypes (11 ♂♂, 28 ♀♀): 5 ♂♂, 5 ♀♀ (GP Bldz 13049; GP JT 3104, 3105, 3497) idem, in colls T. & K. NUPPONEN, TABELL and BALDIZZONE; 1 ♀ ibidem, 05-VI-1998, in coll. T. & K. NUPPONEN; 5 ♀♀ ibidem, 07-VI–1998, in colls T. & K. NUPPONEN and TABELL; 1 ♂ (GP Bldz 13249) ibidem, 10-VI-2001, in coll. BALDIZZONE; 1 ♀ ibidem, 29-VI-2003, K. NUPPONEN leg.; 1 ♂ ibidem, 28-V-2004, K. NUPPONEN leg., in coll. T. & K. NUPPONEN; 4 ♂♂, 16 ♀♀ (GP Bldz 13048, 13050; GP JT 3012, 3023, 3036, 3495, 3496) ibidem, 03–07-VI-1998, J. Junnilainen leg., in colls JUNNILAINEN, TABELL and BALDIZZONE.

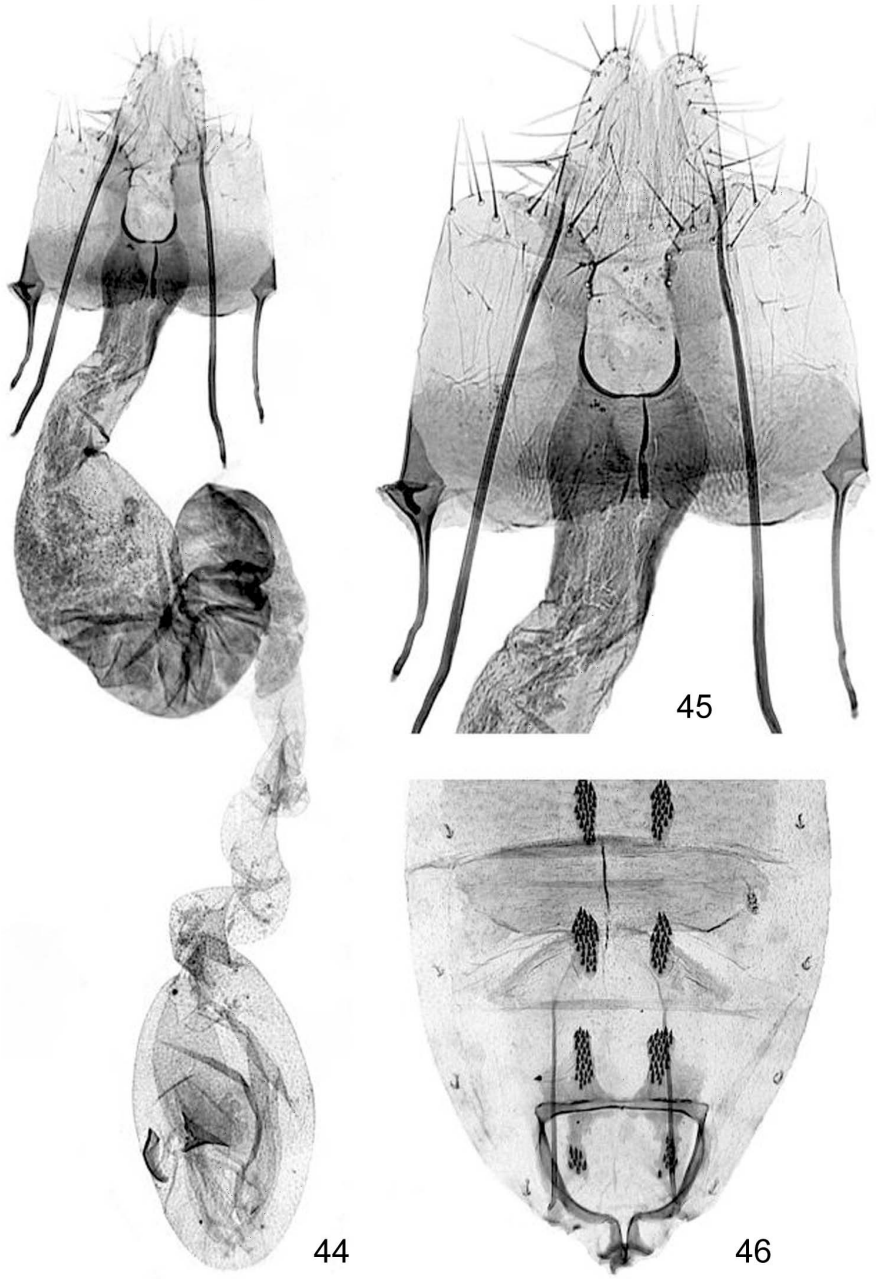
Derivation of name – Lat. *para* = equal, like. The specific name refers to close affinity with *C. gallivora* FALKOVITSH, 1970, especially in the structure of the male genitalia.

Diagnosis – *C. paragallivora* is closely related to *gallivora*, a species known from Turkmenistan and Uzbekistan (BALDIZZONE *et al.* 2006). In the genitalia

structure the main distinguishing features are as follows: robust costal bristle, narrower sacculus, shorter phallotheca rods and longer formation of cornuti in male, and swollen ductus bursae without medial lamina in female.



Figs 39–43. *Coleophora paragallivora* sp. n.: 39 = male genitalia (GP Bldz13050), 40 = cucullus, sacculus and phallotheca enlarged, 41 = idem (GP JT 3105), 42 = cornuti enlarged, 43 = abdomen



Figs 44–46. *Coleophora paragallivora* sp. n.: 44 = female genitalia (GP Bldz 13048), 45 = sterigma and colliculum enlarged, 46 = abdomen

Description – (Fig. 6): Wingspan 11–12,5 mm. Head, thorax and labial palpus whitish with pale beige hue; antenna whitish, distal 2/3 ringed with pale beige, scape not tufted. Forewing white with light yellowish hue, striped with very pale beige streaks and scattered with brown scales, at apical 3/4 dark brown scales forming a small spot; fringes whitish with pale beige hue. Hindwing pale greyish beige, fringes whitish-light beige.

Male genitalia (Figs 39–42): Gnathos knob subconical, as broad as tegumen, pedunculi arched. Costa bulged at the level of valvula, bearing a long and thick seta. Cucullus basally slightly narrowed, with several delicate and two stiff bristles, apical part extended beyond apex of sacculus. Transtilla bifurcated, lower part large, subtriangular or rectangular. Valvula subtriangular, broader than cucullus, outer margin rounded or undulated, lined with short bristles, inner margin concave, darkly sclerotized. Anterior margin of sacculus curved, angle obtuse; lateral margin short, ending in large, elongate, outwardly directed extension parallel with cucullus, bearing one medial tooth. Phallotheca formed of two slender, strongly sclerotized, apically tapered rods of equal length, both armed with two ventral, small, triangular teeth; one more or less subapical, one at apical 3/4, the latter sometimes missing. Several cornuti grouped in tight bundle.

Abdomen (Figs 43, 46): No posterior lateral struts. Transverse strut straight, proximal margin narrowly, distal margin broadly sclerotized, the latter medially broadly unchitinized. Spine patches (3rd tergite) 2.5–3.5× longer than wide, each covered with 25–35 conical spines.

Female genitalia (Figs 44–45): Papillae anales oval. Anterior apophyses short, half the length of sterigma, posterior apophyses 3× longer. Sterigma transversely rectangular, moderately weekly sclerotized, proximal margin slightly undulated, caudal margin rounded and clouthed with several short bristles, medial excavation drop-shaped. Ostium situated medial on sterigma, U-shaped. Colliculum well sclerotized, as long as sterigma, anterior half constricted. Ductus bursae transparent; posterior section strongly swollen, coiled once, covered with several small bulges; anterior section narrower. Corpus bursae oval, containing one leaflike signum.

Bionomy – Biology unknown. The moth is nocturnal and comes to artificial light. All adults except for one female specimen have been captured during a short period between the late May and the beginning of June. The habitat is a chalk steppe. *C. gallivora* feeds on *Haloxylon persicum* BGE., *Salsola richteri* (MOQ.) KAREL ex LITVIN. and *S. arbuscula* PALL. (FALKOVITSH 1973).

Distribution – Russia, S Ural. Only known from the type locality.

Coleophora verbljushkella sp. n.
(Figs 7, 47–51)

Type material – Holotype ♂ "Russia, S-Ural, Orenburg's district, Donskoje 6 km W, mnt. Verbljushka, Ural river shore steppe, 30-V–05-VI-1998, J. Junnilainen leg.", in coll. JUNNILAINEN.

Paratypes (10 ♂♂): 1 ♂ (GP JT 3014) idem, in coll. TABELL; 7 ♂♂ (GP Bldz 13053; GP JT 3112, 3498) "Russia, S-Ural, Orenburg district, Donskoje village 6 km W, mount Verbljushka, 10-VI-1998, T. & K. NUPPONEN leg.", in colls T. & K. NUPPONEN, TABELL and BALDIZZONE; 1 ♂ ibidem, 11-VI-1998, in coll. T. & K. NUPPONEN; 1 ♂ "Russia, S-Ural, Orenburg district, Orsk 40 km W, near Guberlja vill., 26-VI-2003, K. NUPPONEN leg.", in coll. T. & K. NUPPONEN.

Derivation of name – The specific name alludes to the Mount Verbljushka, which is the locality where the new taxon was first discovered.

Diagnosis – Judging from the male genitalia *verbljushkella* belongs to the 30th group of TOLL's (1953) system, and it could be placed near *C. crispella* BALDIZZONE, 1994, a species known from Turkey (BALDIZZONE *et al.* 2006). The combination of several characters, above all short cucullus, the larger extension of sacculus and the shape of phallotheca separates *verbljushkella* from *crispella*.

Description – (Fig. 7): Wingspan 11–11.5 mm. Head beige, thorax white mixed with light beige. Labial palpus ventrally tufted, inner side whitish, outer side brown. Antenna annulated with dirty white and light brown. Forewing pale buff, evenly scattered with brown scales, stripes broad, white. Fringes white with light buff hue. Hindwing light grey, fringes light grey, apically white.

Male genitalia (Figs 47–50): Gnathos knob oval, tegumen moderately broad, pedunculi long. Cucullus basally broader, ventral margin broadly rounded. Transtilla straight, with dorsal apical triangular tooth. Valvula large, subtriangular, both margins concave, outer margin with longitudinal fold, ventral margin rounded. Anterior margin of sacculus oblique, angle rounded, obtuse; lateral margin vertical, shallowly rugged, ending in robust inwards curved protuberance exceeding costa, bearing a small fold at base. Phallotheca rods of different length, simple; upper rod long with apical triangular tooth; lower rod untoothed. In vesica one long curved and 2–3 small spiniform cornuti.

Abdomen (Fig. 51): No posterior lateral struts. Transverse strut convex, both margins broadly sclerotized. Spine patches (3rd tergite) 4× longer than wide, covered with 30 conical spines.

Female genitalia: Female unknown.

Bionomy – Biology unknown. Both known localities are steep, xerothermic steppe slopes.

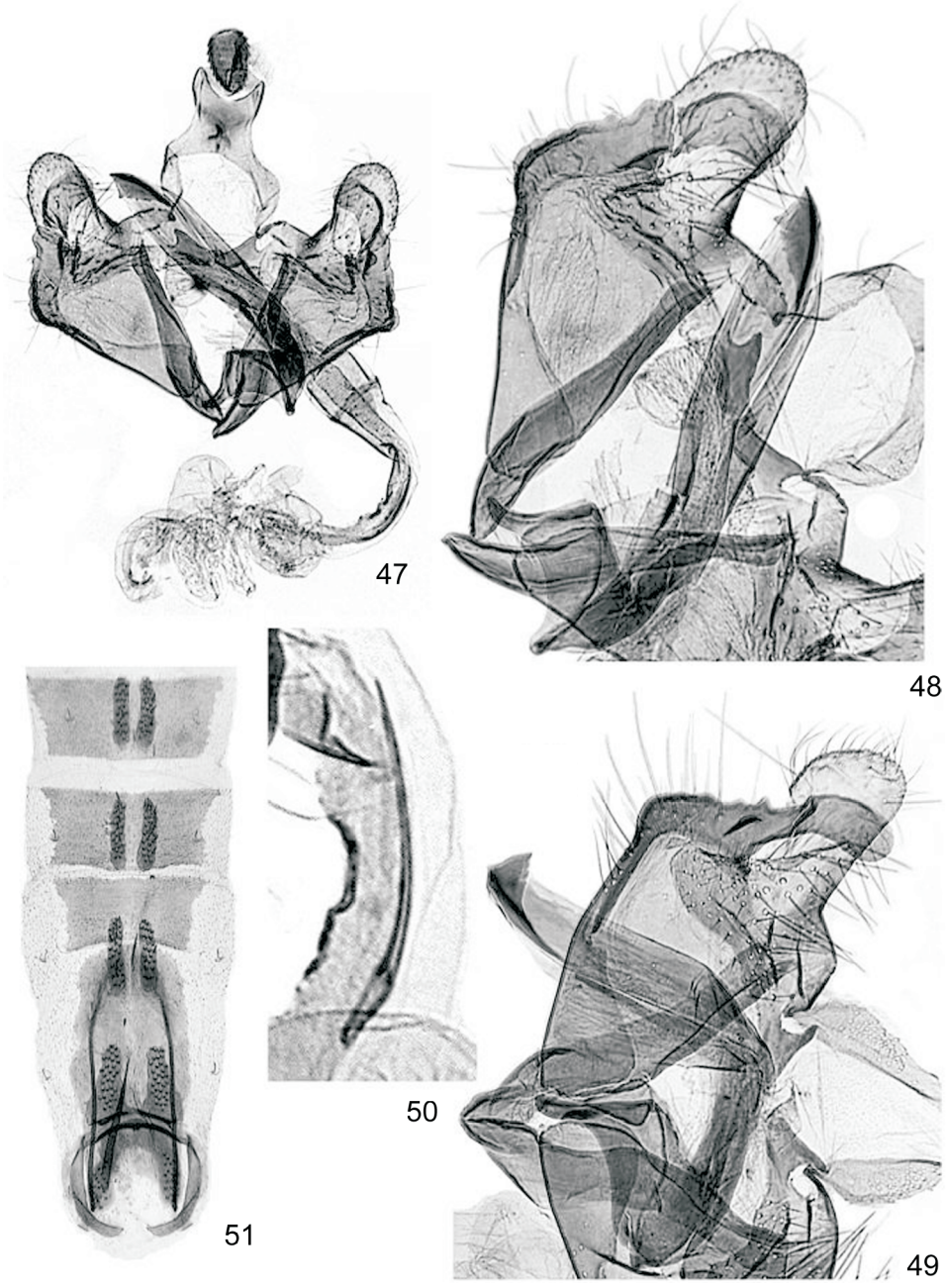
Distribution – Known from two localities in the southern Ural Mountains.

Coleophora arkaimella sp. n.
(Figs 8, 52–58)

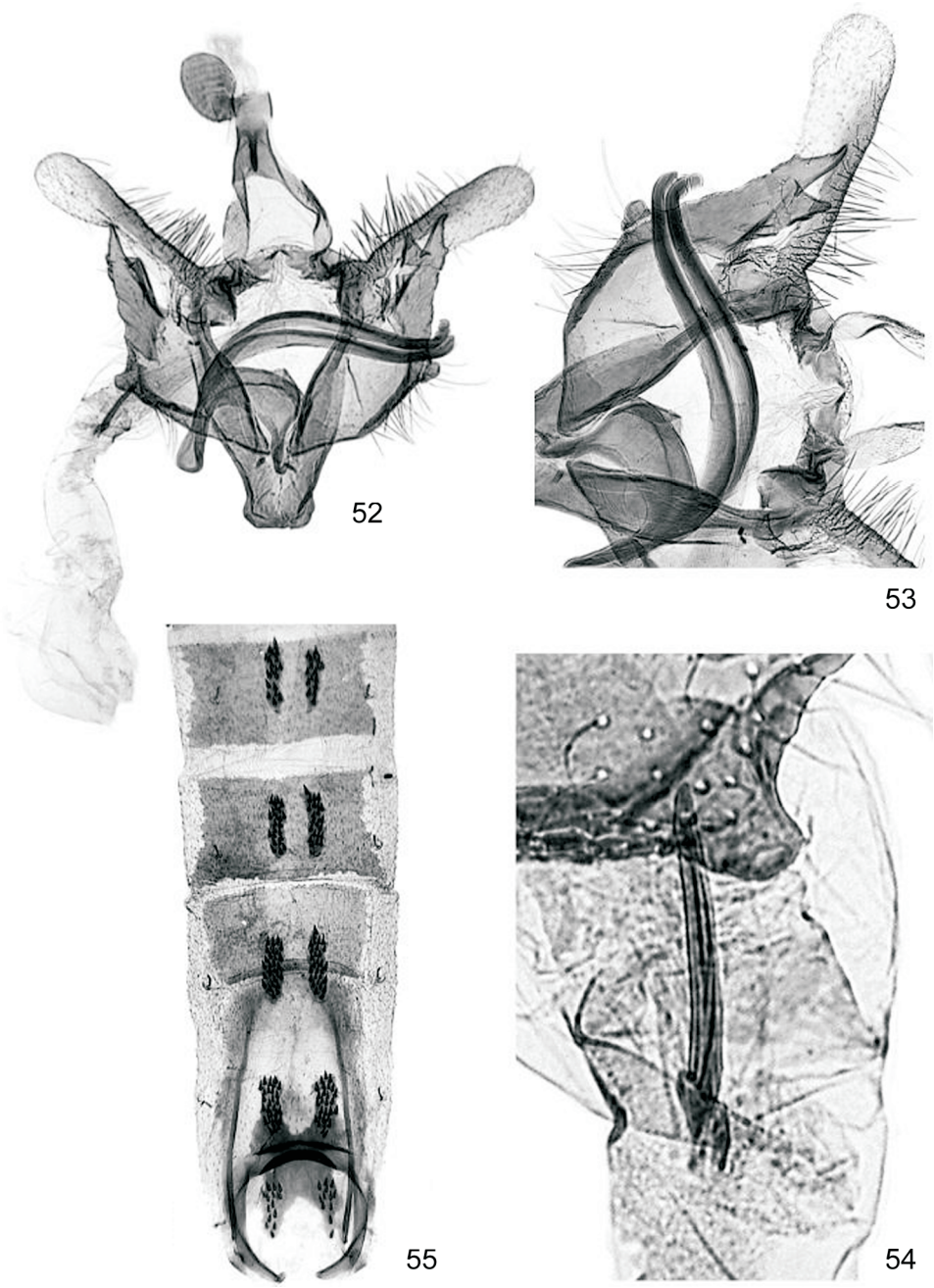
Type material – Holotype ♂ "Russia, S-Ural, Orenburg district, Pokrovka village 20 km S, Schibendy valley, 28-V-2004, K. NUPPONEN leg.", in coll. T. & K. NUPPONEN.

Paratypes (6 ♂♂, 13 ♀♀): 2 ♂♂, 3 ♀♀ (GP JT 3887) idem, in colls T. & K. NUPPONEN and TABELL; 1 ♂♂ ibidem, 26-V-2004, in coll. T. & K. NUPPONEN; 5 ♀♀ "Russia, S-Ural, Cheliabinsk district, Arkaim reserve, near Amurskii village, 15-VI-1996, K. NUPPONEN, J.-P. KAITILA, J. JUNNILAINEN & M. AHOLA leg.", in colls JUNNILAINEN, KAITILA, T. & K. NUPPONEN and TABELL; 1 ♀ ibidem, 17-VI-1996, in coll. JUNNILAINEN; 1 ♂, 2 ♀♀(GP JT 2217, 2234) ibidem, 18-VI-1996, in colls KAITILA, T. & K. NUPPONEN and TABELL; 1 ♂, 1 ♀ ibidem, 19-VI-1996, in colls KAITILA and JUNNILAINEN; 1 ♂ (GP Bldz 13060) ibidem, 15-VI-1999, T. & K. NUPPONEN leg., in coll. BALDIZZONE; 1 ♀ (GP Bldz 13061) "Russia, S-Ural, Orenburg district, Donskoje village 6 km W, mount Verbljushka, Ural river shore steppe, 30-V–05-VI-1998, J. JUNNILAINEN leg.", in coll. BALDIZZONE.

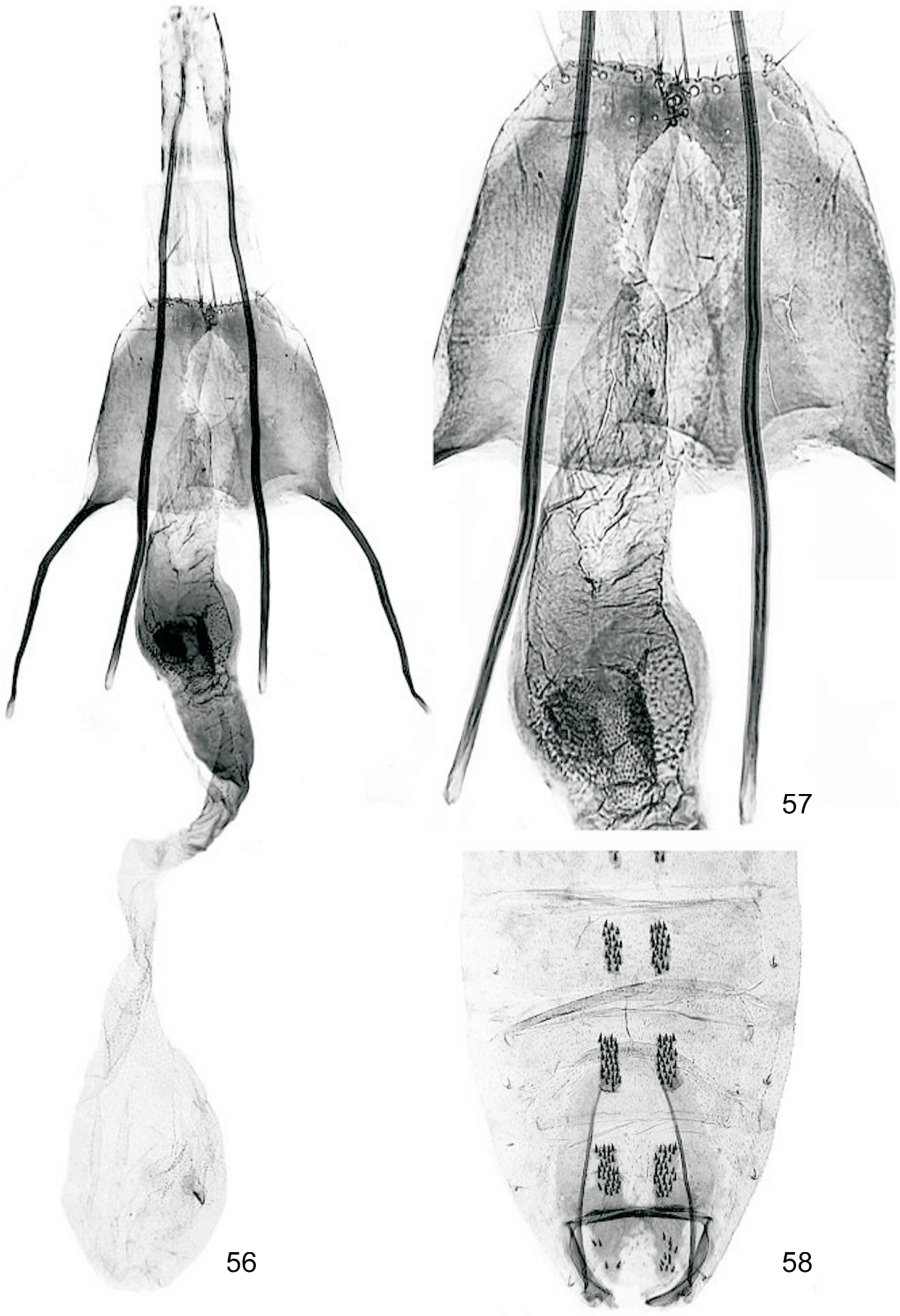
Derivation of name – The name of the new taxon alludes to the Arkaim reserve, where the first specimens were discovered.



Figs 47–51. *Coleophora verbljushkella* sp. n.: 47 = male genitalia (GP JT 3112), 48 = cucullus, sacculus and phallotheca enlarged, 49 = idem (GP Bldz 13053), 50 = cornuti enlarged, 51 = abdomen



Figs 52–55. *Coleophora arkaimella* sp. n.: 52 = male genitalia (GP Bldz 13060), 53 = cucullus, sacculus and phallotheca enlarged, 54 = cornuti enlarged, 55 = abdomen



Figs 56–58. *Coleophora arkaimella* sp. n.: 56 = female genitalia (GP JT 2217), 57 = sterigma and colliculum enlarged, 58 = abdomen

Diagnosis – The systematic position of *arkaimella* is still a little bit obscure. According to the male genitalia it could be placed near *C. villosa* (FALKOVITSH, 1989), a species known from Kazakhstan (BALDIZZONE *et al*. 2006). From that species it can be distinguished by broader sacculus and vinculum, longer cucullus and apically upcurved phallotheca rods. The female of *villosa* is still unknown.

Description – (Fig. 8): Wingspan 14–15.5 mm. Thorax light brown, head light brown, white on sides. Labial palpus ventrally white, outer side brown, inner side white mixed with light brown. Antenna annulated with light brown and dirty white. Forewing beige, suffused with pale buff and dark brown scales, stripes white. Fringes beige. Hindwing and fringes brown.

Male genitalia (Figs 52–54): Gnathos knob oval, tegumen narrow, strengthened by elongate, sclerotized "Y", pedunculi broad. Costa oblique, proximal half densely covered with long hairs. Cucullus elongate, moderately narrow, basally slightly constricted. Transtilla short, apex pointed. Valvula broader than cucullus, inner margin darkly sclerotized, undulated. Sacculus well sclerotized; anterior margin ending in small, blunt protuberance; lateral margin shallowly undulated, extended close to costa; posterior margin with two large, triangular extensions. Phallotheca rods of equal length, slender, extended beyond lateral margin of sacculus, arched, dorsally and apically more sclerotized, apices upcurved, blunt. In vesica one elongate cornutus. Vinculum broad, anterior end slightly expanded.

Abdomen (Figs 55, 58): No posterior lateral struts. Transverse strut convex, broad in male, narrower in female, proximal margin medially darkly sclerotized, distal margin with two shallow distensions. Spine patches (3rd tergite) about 3× longer than wide, with 25–30 conical spines.

Female genitalia (Figs 56–57): Papillae anales elongate. Anterior apophyses as long as sterigma, posterior apophyses 3× longer. Sterigma about as long as wide, distally contracted, caudal margin lined with several bristles, medial excavation oval. Ostium bursae situated medial on sterigma.Colliculum weekly sclerotized elongate tube. Posterior half of ductus bursae strongly sclerotized, spinulate section very short, slightly swollen, with two wedge-like lateral bands, spinules small; anterior half transparent. Oval corpus bursae with tiny signum.

Bionomy – Immature stages unknown. The known habitats are various kinds of steppes.

Distribution – Known from three localities in the southern Ural Mountains.

*

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This paper dedicated to Dr LÁSZLÓ GOZMÁNY on occassion of his 85th birthday and in recognition of his valuable contributions to microlepidopterology.

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