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On the taxonomy of the genera Odontelia Hampson, 1905, and Thargelia Püngeler, 1900 (Lepidoptera, Noctuidae: Hadeninae)

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Abstract – A general survey of the genus *Odontelia* and taxonomic comments on some poorly known species of *Thargelia* are given. Three new species, *O. manfiphogta* sp. n. (Turkmenistan), *O. radiata* sp. n. (Kazakhstan) and *O. lanceolata* (Mongolia) are described. With 41 figures.

INTRODUCTION

Taxonomic problems of the genera mentioned in the title were already discussed in some previous papers (SHTSHETKIN 1965, SUKHAREVA 1970, VARGA & RONKAY 1991). The genus *Thargelia* was erected by PÜNGELER (1900) for *Scotochrosta distincta* CHRISTOPH, 1884, and *Scotochrosta fissilis* CHRISTOPH, 1884, and the former species was designated as the type species, while *"Thargelia" margiana* PÜNGELER, 1901, was selected by HAMPSON (1905) as type species of the genus *Odontelia.*

The formal designation of the lectotype of *"Scotochrosta" distincta* by VARGA & RONKAY (1991), based on the studies of SUKHAREVA (1970), led to the elimination of the confusion between the genera *Thargelia* and *Odontelia*, due to the erroneous designation of *fissilis* as type species of *Thargelia* (BOURSIN 1963).

The genus *Odontelia* HAMPSON, 1905 consists mostly of species being externally very similar, and also the genitalia of both sexes display only slight differences. Some species, recently collected during some Central Asiatic expeditions, remained hitherto undescribed. Their partial sympatry with their already known sibling species and the constancy of the diagnostic features indicate that they are distinct species.

Abbreviations – AKM = Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn; BIN = Biological Institute, Russian Academy of Sciences, Novosibirsk; BMNH = The Natural History Museum (formerly British Museum, Natural History), London; HNHM = Hungarian

Natural History Museum, Budapest; ZIN = Zoological Institute, Russian Academy of Sciences, St. Petersburg; ZMHU = Museum für Naturkunde, Humboldt Universität, Berlin.

The holotypes deposited in coll. G. RONKAY are available for studies through the Hungarian Natural History Museum, Budapest.

TAXONOMIC SURVEY OF THE GENUS ODONTELIA HAMPSON, 1905

Diagnosis. Adult morphology. Body. Medium-sized or large moths (wingspan 32–53 mm). Head rather small, eyes large, rounded, hairy; frons covered with short hairs, with rounded medial prominence and a small, corneous plate below. Palpi short, oblique or porrect, basal joints fringed with long hairs; proboscis reduced (*margiana*-group) or rudimentary. Antennae long, pectination of male antenna variable, strongly bipectinate with long, symmetric pectination (*margiana*-group), strongly biserrate with long fasciculate cilia (*arenicola*-group) or shortly biserrate with more isodiametric joints and shorter fasciculate cilia (*fissilis*-group); female antenna filiform or very slightly biserrate, shortly ciliate. Thorax regularly robust, pubescence dense, long, consisting of scales and hairs, collar and tegulae rather indistinct, metathoracic tuft present. Fore tibia with large, flattened inner claw, distal end without (*margiana*-group) or with a double-peaked outer claw (proximal peak about twice as long than distal one). Abdomen long, most often strong, robust, dorsal crest represented by its basal tuft, lateral ridges long; anal tuft of male relatively large, caudal end of female regularly rounded, shortly hairy.

Forewings elongated, often narrow or lanceolate, with apex acute or pointed, outer margin evenly arcuate. Ground colour pale grey or greyish, regular wing pattern consisting of usually diffuse crosslines and more or less sharply defined stigmata. Orbicular long or very long, flattened, reniform often with dentated lower third, sometimes with very long projections, claviform elongated; all stigmata encircled with blackish, filled with white(ish).

Male genitalia (Figs 9–33). Genital capsula basically display the plesiomorphic symmetry of valvae with only incipient dyssymmetrisation of harpe and saccular processes. Cucullus and corona well developed with a broad neck, dorsal costal part of valvae very strongly sclerotized, harpe flattened, extension of sacculus short, only moderately dyssymmetric, acute, not elongate or otherwise specialised. Uncus strong, broad, more or less spatulate. Fultura inferior with a strongly sclerotised dorsal crest. This feature shows a great similarity with the structures of *Cardiestra*, and does not display the specialisations and dyssymmetrisation which are typical of *Hadula* and *Thargelia*. Aedeagus simple, moderately arcuate with strongly sclerotized dorsal plate of carina. Body of vesica shortened, with only one very long diverticulum, terminated often in a fine cornutus; ductus ejaculatorius originating near carina.

Female genitalia (Figs 36–41). Highly uniform within the genus, generally weakly sclerotized, ovipositor broad, weak, ostium bursae membranous, lamina antevaginalis narrow, belt-like, ductus bursae flattened, short or medium-long, sclerotized, lateral margins often stronger, partly folded, cervix bursae small, conical, sometimes finely ribbed, corpus bursae elongate, hyaline, without signa.

Bionomics. Morphology of larvae and pupa is known only in a few species. Known larvae are endophagous in some larger desert plants (*Haloxylon, Salsola arbusculoides, Tamarix* etc.).

They seem to be mostly univoltine, only *O. arenicola* is known to produce a partial second generation in September. Adults are on wing at the earliest spring time, in some places even in January.

O. margiana-group

Characterization. Medium-sized or large species (wingspan 34–53 mm) with robust, *Thargelia*-like body. Antennae of male strongly bipectinate, sometimes with long branches towards near to apex. Forewing broad, strong, with apex pointed or acute and with rather sharp, *Thargelia*-like forewing pattern or with less distinct crosslines and sharper stigmata; hindwing smaller, rounded. Male genitalia (Figs 9–16) regularly large (except in *O. sitiens*), sclerotized, uncus relatively long, lanceolate or spatulate, fultura inferior roughly deltoidal, symmetric or slightly asymmetric, sacculus with variably long, sclerotized, slightly asymmetric extensions, vesica globular or saccate, with a short, broad apical diverticulum, armed with a variably large, acute, bulbed cornutus. Female genitalia (Figs 36, 37): lamina antevaginalis relatively stong, cervical part of bursa copulatrix finely ribbed, corpus bursae relatively short, narrow.

The male genitalia are illustrated by VARGA & RONKAY (1991, Figs 16–17: *O. regina*, holotype; Figs 18–19: *O. sitiens*, holotype).

Odontelia regina VARGA et RONKAY, 1991

Type material examined. Holotype male, paratype male, S Afghanistan, Prov. Helmand, Registan, 50 km S Dishu, 1000 m, 18.I.1971, leg. C. NAUMANN (AKM Bonn). Slide No. VZ 4674 (male).

Diagnosis. A detailed comparison of *O. regina* with *O. margiana* and *O. sitiens* is given by VARGA & RONKAY (1991).

Distribution. S.W. Afghanistan, desert regions of Registan.

Odontelia margiana (PÜNGELER, 1901)
(Figs 11–12, 15–16, 36)

Type material examined. Holotype male, paratype male, Turkmenistan, Merv [= Mari]. (ZMHU Berlin).

Additional material examined. Turkmenistan: a large series of both sexes, 50 km N of Ashkhabad, 100 m, 58°33'E, 38°22'N, Nos L78, L81, 27.III, 31.III.1993, leg. M. HREBLAY, GY. M. LÁSZLÓ & A. PODLUSSÁNY; 12 specimens, Repetek and Imam-baba; 1 male, Badhyz, Kiziladissar,

6.II.1986, leg. PECHENJ (coll. HNHM, ZIN, St. Petersburg, FÁBIÁN, GYULAI, HERCZIG, HREBLAY, G. RONKAY & VARGA). Slide Nos: RL4024, RL4603, RL4606 (males), RL4607 (female).

Diagnosis. Compared with *O. manfiphogta* under the newly described species.

Distribution. Deserts of Turkmenistan, near Merv (type locality), Repetek and the Kara-Kum desert near Ashkhabad.

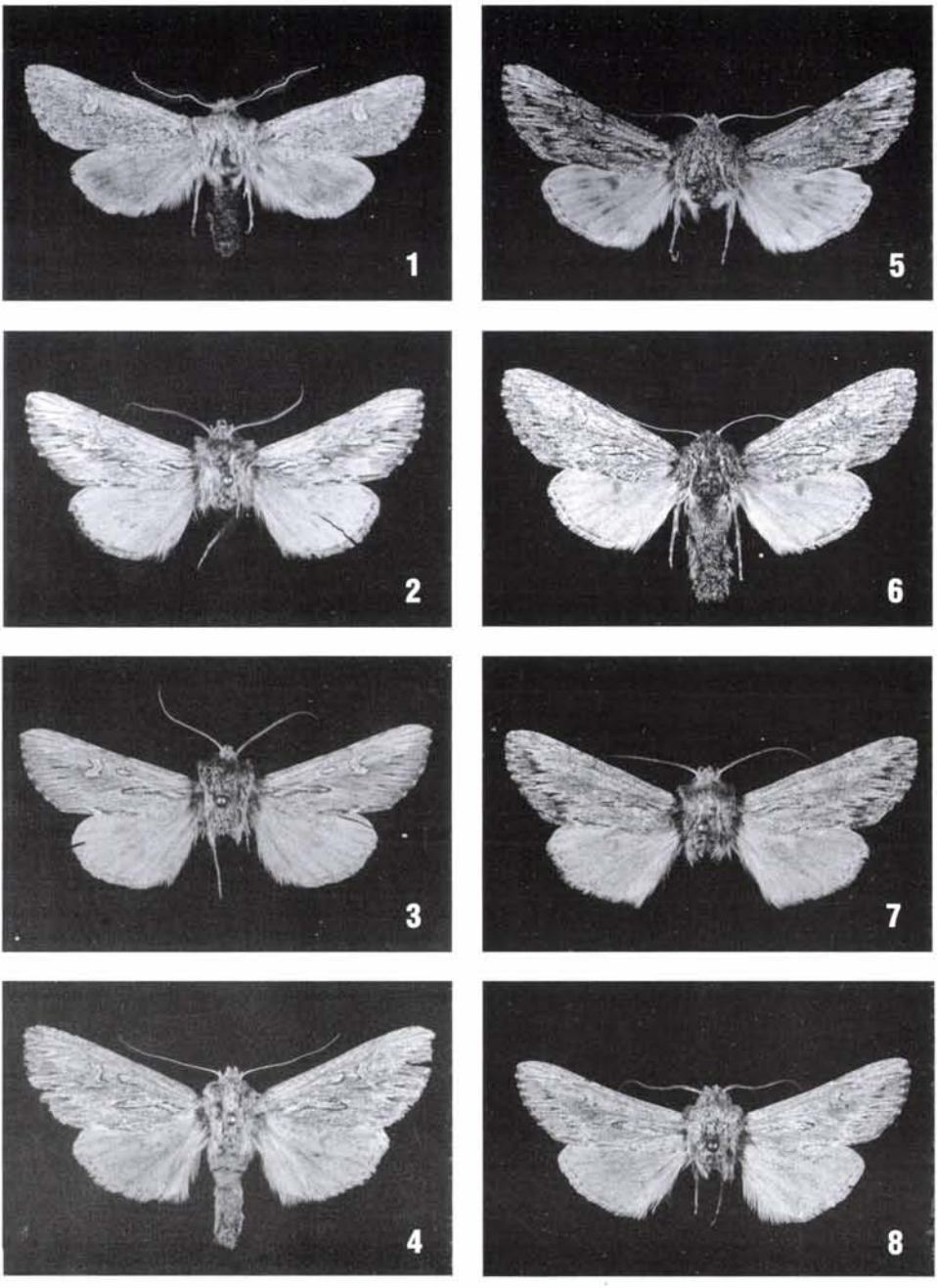
Odontelia manfiphogta sp. n.
(Figs 1, 9–10, 13–14, 37)

Type material. Holotype, male, Turkmenistan, 50 km N of Ashkhabad, 100 m, 58°33'E, 38°22'N, 27.III.1993, No. L78, leg. M. HREBLAY, GY. M. LÁSZLÓ & A. PODLUSSÁNY. Slide No. RL4609 (coll. G. RONKAY). Paratypes: 1 male, 1 female, with the same data as the holotype, coll. HNHM & P. GYULAI (Miskolc). Slide Nos RL4604 (male), RL4608 (female).

Diagnosis. A close relative of *O. margiana* PÜNGELER, 1900, but much smaller, narrow-winged, the forewing pattern is much more indistinct, especially the crosslines, the reniform stigma is smaller, its shape is regularly elliptical, without stronger angles, the claviform is completely missing. The most conspicuous difference in the male genitalia is the significantly smaller cornutus of the vesica in *O. manfiphogta*, the bulb of the cornutus is smaller, narrower. Moreover, the new species has narrower, smaller uncus, narrower, smaller cucullus and longer, narrower vesica. The female genitalia of *O. manfiphogta* have broader ostium and broader, shorter ductus bursae than those of *O. margiana*.

Description. Wingspan 34 mm, length of forewing 15 mm. Male. Head and thorax ashy grey mixed with some brownish, palpi laterally blackish, base of collar and edges of tegulae slightly marked with darker grey-brown; metathoracic tuft large. Antenna of male long bipectinated, that of female filiform. Abdomen somewhat paler greyish. Forewing narrow, elongated with apex acute, ground colour shining, pale ash-grey, irrorated with red-brownish and some darker grey, especially in basal area. Crosslines obsolescent, subbasal and antemedial lines double, strongly sinuous, poorly visible, postmedial missing, subterminal a hardly recognizable, sinuous, red-brownish shadow. Orbicular stigma a small, obsolete ring, claviform absent. Reniform situated rather apically, sharply defined, small, elliptical, encircled with dark grey-brown, filled with whitish, its centre greyish. Veins finely covered with darker greyish brown, terminal line grey-brown, cilia whitish, striolate with brown. Hindwing small, narrow, whitish, veins and marginal area covered with pale greyish brown. Terminal line fine, brownish, cilia pure white. Underside of wings greyish white, irrorated with brownish grey, inner area of forewing finely suffused with brownish. Discal spot of forewing rather sharply defined, lunulate, that of hindwing much diffuse, small, shadow-like. Female: similar to male but with somewhat broader forewings with less acute apex and stronger whitish irroration in and under inner part of cell, along costa and outer margin, shadow of subterminal also finely marked with whitish. Orbicular stigma partly defined with whitish, reniform with fine streaks at inner extremity.

Male genitalia (Figs 9–10, 13–14). Uncus moderately long, flattened, lanceolate, relatively narrow, with apex rounded. Tegumen broad, penicular lobes narrow, fultura inferior subdeltoidal with stronger medial sclerotization, vinculum strong, short, more or less V-shaped. Valva elong-



Figs 1–8. 1 = *Odontelia manfiphogta* sp. n., holotype, 2 = *O. radiata* sp. n., holotype, 3 = *O. radiata*, paratype male, Aksu, 4 = *O. radiata* sp. n., paratype female, Ili, 5 = *O. lanceolata* sp. n., holotype, 6 = *O. lanceolata* sp. n., paratype male, Mongolia, 7 = *O. fissilis* (CHRISTOPH), male, Turkmenistan, 8 = *O. fissilis* (CHRISTOPH), male, Turkmenistan

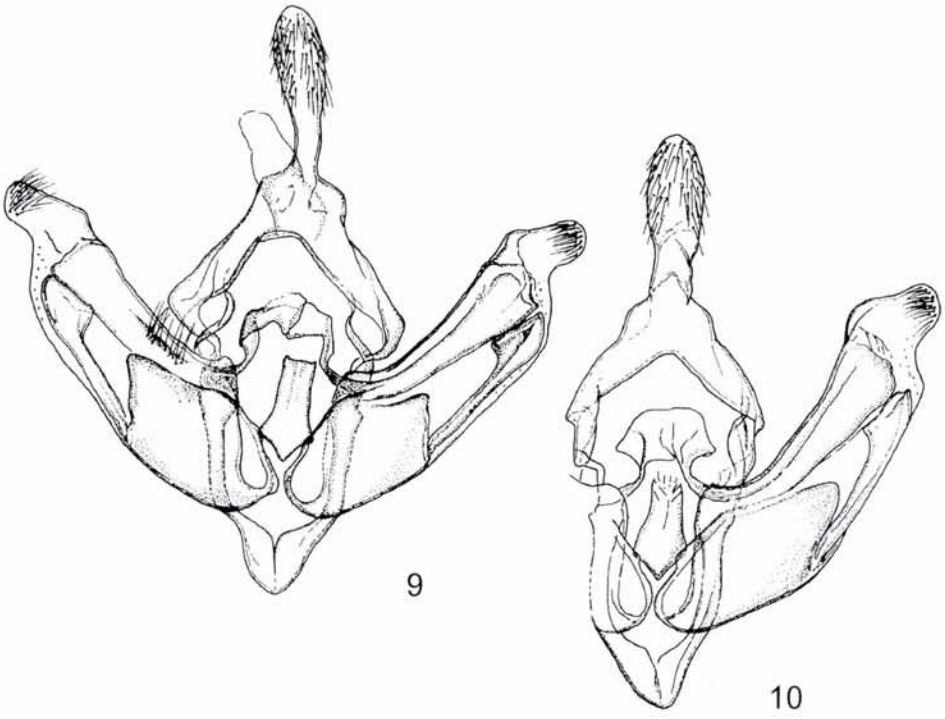
ated, distally slightly tapering, costal lobe small, rounded triangular; cucullus narrow, quadrangular or rounded triangular, corona consisting of strong setae arranged into sparse rows. Sacculus broad, long, clavus a setose surface, harpe broad, flattened, sclerotized, ventral extension of costal plate more or less triangular. Aedeagus cylindrical, relatively thick, finely arcuate, carina with a strong, apically rounded dorsal plate. Vesica medium-long, sacculiform, terminated in a conical, relatively small, bulbed cornutus; ductus ejaculatorius originating at base of vesica, projected ventrally.

Female genitalia (Fig. 37). Ovipositor rather short, conical with angular posterior papillae anales, anterior gonapophyses short. Ostium bursae broad but short, lamina antevaginalis slightly arcuate, narrow, belt-like. Ductus bursae short, flattened, sclerotized, with stronger, almost parallel postero-lateral margins.

Distribution. Sympatric with *O. margiana*, seems to be confined to the deserts of Turkmenistan, but its distribution is obviously incompletely known.

Odontelia arbusculae SUKHAREVA, 1970

Type material examined. Holotype male, Uzbekistan, Ayakguzhumdy, 40 km E Dzhing, 16.I.1970, ex larva, leg. FALKOVICH; slide No. 713 SUKHAREVA (ZIN, St. Petersburg). Paratypes: 3



Figs 9–10. Male genital capsula of *Odontelia manfiphogta* sp. n., 9 = holotype, 10 = paratype

males, 3 females, from the same locality, 15–21.I.1970, leg. FALKOVICH (ZIN, St. Petersburg). Slide No. 714 SUKHAREVA (female).

Diagnosis. O. arbusculae is a close relative of *O. margiana*, differing from the latter by its more acute forewings with more reduced pattern: orbicular stigma reduced, reniform only partly encircled, crosslines obsolete. The male genitalia of *O. arbusculae* differ mostly from those of its sibling species by their narrower, more elongated valvae and the shorter, weaker sacculi. The female genitalia of the two species are almost identical, only the ribs of the cervical part of the bursa are somewhat stronger. The genitalia of both sexes are illustrated by SUKHAREVA (1970).

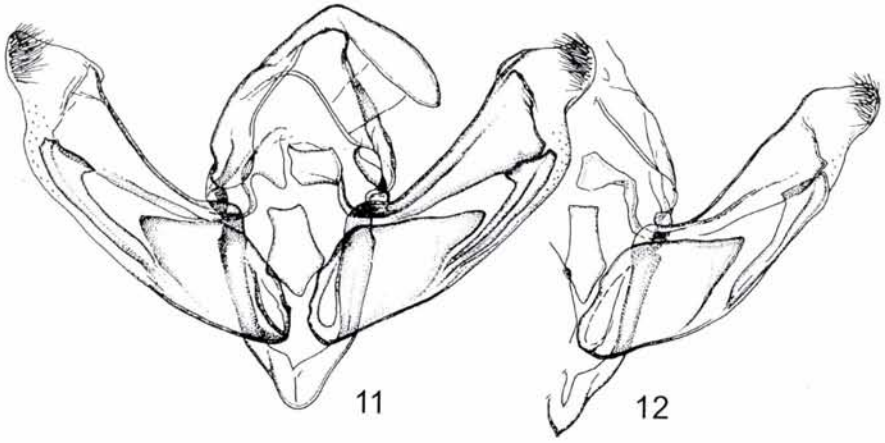
Distribution. Known only from the south-eastern part of the Kizyl-Kum desert.

Odontelia sitiens (PÜNGELER, 1914)

Type material examined. Holotype male, Kazakhstan, Syr-Darya region, Baigacum, 1914 (coll. PÜNGELER, ZMHU, Berlin).

Additional material examined. Kazakhstan: a series of specimens from the same locality (ZIN, St. Petersburg); 2 males, Kzyl-Orda, 170 m, 22.IV.1993, leg. DANILEVSKY (coll. THÖNY, HNHM). Turkmenistan: a series of specimens from Repetek (ZIN, St. Petersburg, HNHM). Slide No. RL3679 (male).

Diagnosis. O. sitiens has the most slender body and the most acute forewings within the species-group, the forewing pattern is regularly reduced to the reniform stigma and some dark arrowheads of the subterminal line, the hindwing is whitish with much weaker dark suffusion than in the other taxa of the *margiana*-group; in addition, the pectination of the male antenna is the longest in the whole genus. The male genitalia are characterizable by the short, rather broad valvae without stronger subapical neck, the fultura inferior



Figs 11–12. Male genital capsula of *Odontelia margiana* (PÜNGELER), Turkmenistan

is low, rather weak, the uncus is very broad, flattened with narrow basal handle and the cornutus of the vesica is small as compared with the other species of the group.

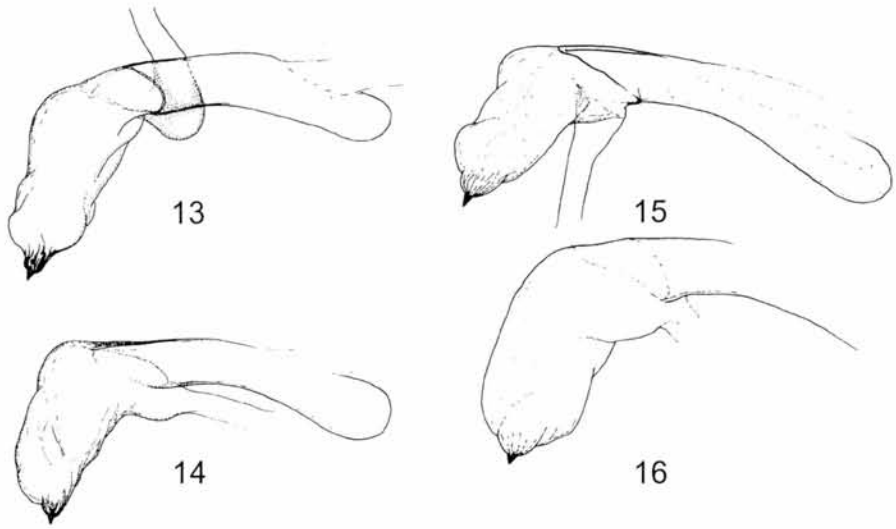
Distribution. Kara-Kum and Kizyl-Kum deserts.

O. arenicola-group

Characterization. Medium-sized or large species (wingspan 29–51 mm) with rather strong, elongated body, narrow, elongated forewings with less distinct crosslines and usually well-marked stigmata. Antennae of male strongly biserrate with long fasciculate cilia. Male genitalia (Figs 17–25). Genital capsula large, sclerotized, uncus relatively long, lanceolate, fultura wide, symmetric or slightly asymmetric, sacculus with short, rather weak extensions, vesica saccate or quadrangular, with a semiglobular subbasal diverticulum, cornutus missing. Female genitalia (Figs 38–40). Lamina antevaginalis broader but weaker, more arcuate or a narrow bar, cervix bursae not or only weakly ribbed, corpus bursae dilated at fundus.

Odontelia arenicola (SHTSHETKIN, 1965)
(Figs 17–20, 23–24, 39–40)

Type material examined. Two male specimens labelled as holotype (!) from Tigrovaia Balka, several paratype males and females from Kazakhstan and Turkmenistan.



Figs 13–16. Aedeagi of *Odontelia* species. 13–14 = *O. manfiphogta* sp. n., 13 = paratype, 14 = holotype, 15–16 = *O. margiana* (PÜNGELER), Turkmenistan

Additional material examined. Turkmenistan: a long series of both sexes, 50 km N of Ashkhabad, 100 m, 58°33'E, 38°22'N, Nos L4, L78, L81, L84, L88, 19.IV.1991, leg. CSORBA, FÁBIÁN, HERCZIG, HREBLAY & G. RONKAY; 27.III, 31.III., 6.IV., 17.IV.1993, leg. M. HREBLAY, GY. M. LÁSZLÓ & A. PODLUSSÁNY (coll. HNHM, FÁBIÁN, GYULAI, HERCZIG, HREBLAY, G. RONKAY, VARGA); 9 males, 3 females, Repetek, 15.IV.1967, 28.III.1970 (leg. DANILEVSKY, coll. THÖNY, HNHM), 27–29.III.1975 (leg. DUBATOLOV, coll. BIN, Novosibirsk). Uzbekistan: 1 male, Ayakguzhumdy, 40 km E Dzhing, 17.IV.1976, coll. THÖNY; 1 male, Distr. Bukhara, Shaphrikan, 31.III. 1978, leg. FALKOVICH. Slide Nos: RL3672, RL3674, RL3677, RL3678, RL3813, RL3814, RL3815 (males), RL3718, RL 3719 (females).

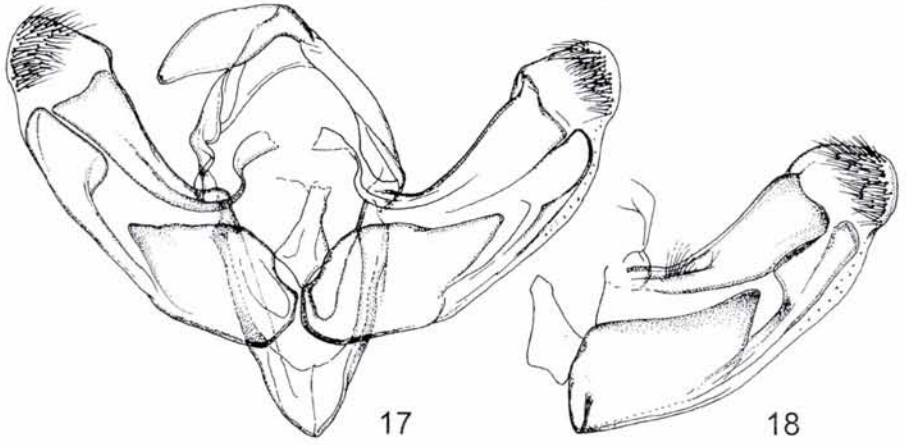
Diagnosis. The detailed comparison is given under *O. radiata* sp. n.

Distribution. The material studied was collected in two different areas: Turkmenistan, Kara-Kum desert and Uzbekistan, Bukhara district. Thus, it seems to be a widely distributed eremic species.

Odontelia radiata sp. n.
(Figs 2–4, 21–22, 25, 38)

Type material. Holotype, male, "Asia centr., Ili-Gebiet, Rückbeil 1897" "5/1898, v. R. Tancre, Püng." (underside), Slide No. RL3809 male, "Odontelia arenicola Stshetk., Falkovitsh det.". Deposited in coll. ZMHU Berlin. Paratypes: 1 female, with the same data as holotype, "Odontelia fissilis Chr., Falkovitsh det." (ZMHU Berlin); 1 male, Aksu, coll. SCHAWERDA (NHM Vienna); 1 male, Ili, Kungess, Rückbeil (ZMHU Berlin). Slide Nos MB 311 BOURSIN, RL3704 (male), RL5921 (female).

Diagnosis. The new species is the sister species of *O. arenicola*, it differs from its sibling by its somewhat smaller size, shorter but broader, less variegated, more unicolor-



Figs 17–18. Male genital capsula of *Odontelia arenicola* (SHTSHETKIN), Turkmenistan

ous forewings with weaker pattern. The male genitalia of *O. radiata* differ from those of *O. arenicola* by its smaller, more elongated, less quadrangular vesica penis and the shorter, apically more rounded uncus, otherwise the genitalia of the two species are very similar with rather wide range of variation, overlapping in several features. The female genitalia of the two species are very close, only the lamina antevaginalis is narrower, bar-like in the new species while much broader, arcuate in *O. arenicola.*

Description. Wingspan 29–38 mm, length of forewing 13–18 mm. Head and thorax pale grey, mixed with whitish and darker grey-brown, lateral sides of palpi, collar, tegulae and thoracic tufts finely marked with dark grey. Antennae of male shortly bipectinate, those of female fine, filiform. Abdomen somewhat paler, more brownish, dorsal crest absent. Forewing of male elongated, rather high triangular, with apex pointed, ground colour pale ashy grey, medial area irrorated with ochreous-brown and darker grey, basal and marginal fields variably strongly suffused with whitish. Scaling finely reticulate, ante- and postmedial crosslines less distinct, interrupted, represented by some short brownish grey streaks and lines, streaks of submedian fold and inner margin fine, long. Stigmata present, orbicular small, flattened, reniform large, with long, double-peaked projection outwards and a shorter, simple inwards, both stigmata finely, partly encircled with dark brownish; claviform small, encircled with blackish. Subterinal obsolescent, strongly sinuous, marked with fine, dark brown arrowheads and a greyish zone at outer side. Veins covered with blackish in marginal area, terminal line fine, rather diffuse, dark grey-brown, cilia whitish, striolate with brown. Hindwing shining, pure white, veins finely ochreous, discal spot small, diffuse, transverse line a row of brownish spots on veins. Terminal line strong, dark brown, cilia white. Underside of both wings chalky white, sparsely irrorated with pale grey, discal spots and remnants of transverse lines diffuse but present on both wings. Female similar, its wings somewhat broader, more uniformly greyish, without whitish suffusion. Claviform longer, more sharply defined, hindwing paler, more transparent.

Male genitalia (Figs 21–22, 25). Uncus relatively short, flattened, lanceolate, with apex rounded, basal part with fine, rounded dorsal hump. Tegumen broad, penicular lobes small, fultura deltoidal, symmetric or slightly asymmetric, vinculum strong, short, more or less V-shaped. Valva elongated medially slightly constricted, with fine, rounded triangular costal lobe; cucullus small, rounded triangular with apex pointed, corona consisting of strong setae arranged into sparse rows. Sacculus broad, long, clavus a finely setose surface. Harpe broad, flattened, sclerotized, ventral extension of costal plate more or less triangular, relatively small. Aedeagus cylindrical, thick, arcuate, carina with a strong, apically rounded dorsal plate. Vesica short, everted ventro-laterally, sacculiform with rounded conical apex and a semiglobular subbasal diverticulum. Cornutus absent; ductus ejaculatorius projected laterally.

Female genitalia (Fig. 38). Ovipositor short, broadly conical with angular posterior papillae anales. Lamina antevaginalis narrow, bar-like, ductus bursae broad, rather short, flattened, sclerotized, anterior part slightly dilated. Cervix bursae small, more or less rounded, smooth, corpus bursae long, narrow, hyaline.

Remarks. The species was illustrated as *O. fissilis* CHRISTOPH by ALPHÉRAKY (1897, plate VIII, Fig. 9.)

Distribution. The distribution of this species is poorly known. We could study only few specimens of old collections from Kazakhstan and from the neighbouring region of Chinese Turkestan.

O. fissilis-group

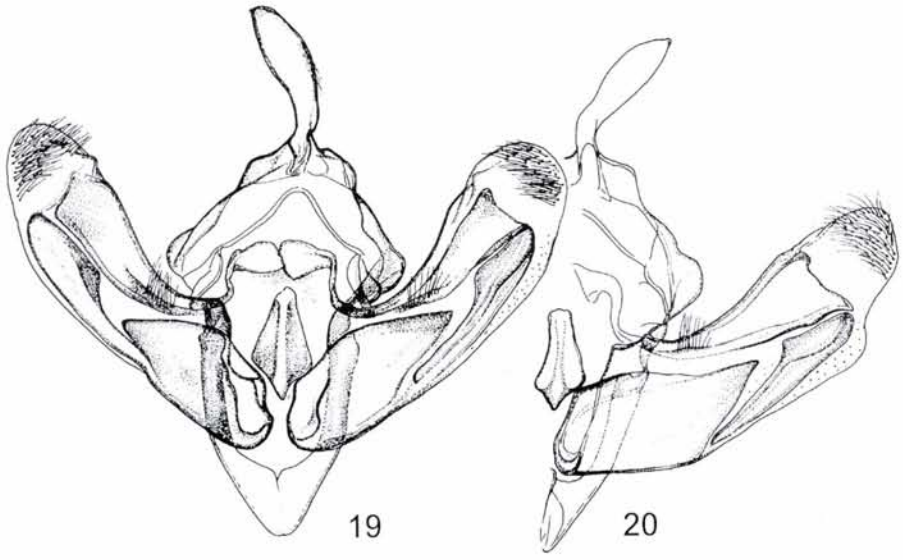
Characterization. Medium-sized species (wingspan 30–38 mm) with long, slender body, narrow, acute forewings with less distinct crosslines and finely marked stigmata. Antennae of male shortly biserrate with rather short fasciculate cilia. Male genitalia (Figs 26–33). Genital capsula large, sclerotized, uncus relatively long, lanceolate, fultura deltoidal, symmetric or slightly asymmetric, saccular extensions less expressed, vesica globular, with a long, tubular apical diverticulum, armed with a small, conical, not bulbed cornutus.

Odontelia fissilis (CHRISTOPH, 1884)
(Figs 7–8, 26–27, 31–33, 41)

Material examined. Turkmenistan: a series of males from the following localities: Repetek, Merv, Tura, Tedjen, Nochur (coll. HNHM, ZIN St. Petersburg, BIN Novosibirsk). Kazakhstan: 1 male, Dzhambul, Chu gorge, Ulanbel, 500 m, 14.V.1991, leg. DANILEVSKY; 2 males, Kzyl-Orda, 170 m, 22.IV., 1.V.1993, leg. DANILEVSKY (coll. THÖNY, HNHM); 1 male, Ili Region, 1897, leg. RÜCKBEIL (coll. PÜNGELER, ZMHU Berlin). China: 1 male, Aksu, ex coll. P. TRUSSEVICH (coll. G. RONKAY). Slide Nos RL3681, RL3682, RL3683, RL3635, RL3811, RL3807, RL3808, RL3810, RL3805, RL3676, RL3675 (males).

Diagnosis. The species is compared with its sister species, *O. lanceolata* sp. n. in the diagnosis of *O. lanceolata*.

Distribution. A species characteristic for the Kara-Kum and Kizyl-Kum deserts.



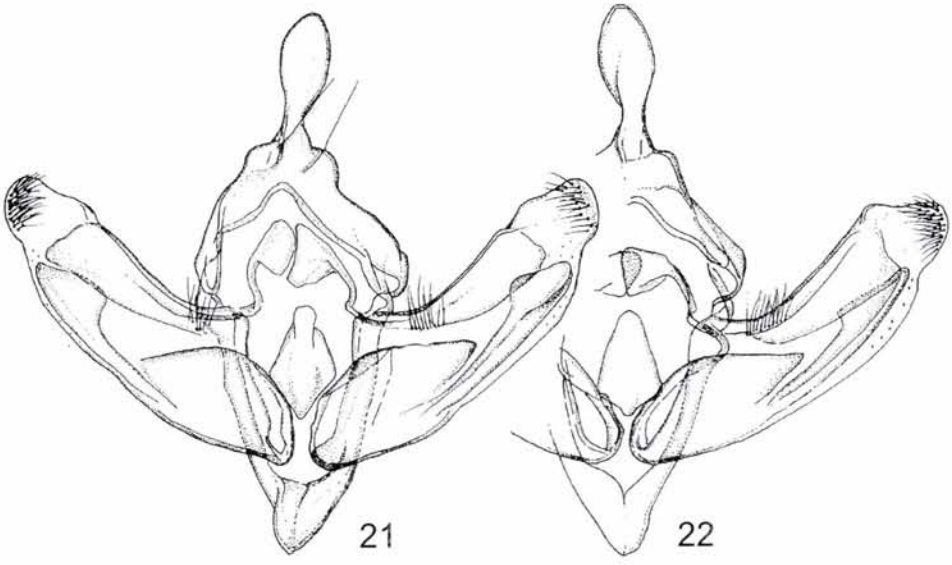
Figs 19–20. Male genital capsula of *Odontelia arenicola* (SHTSHETKIN), Turkmenistan

Odontelia lanceolata sp. n.
(Figs 5–6, 28–30)

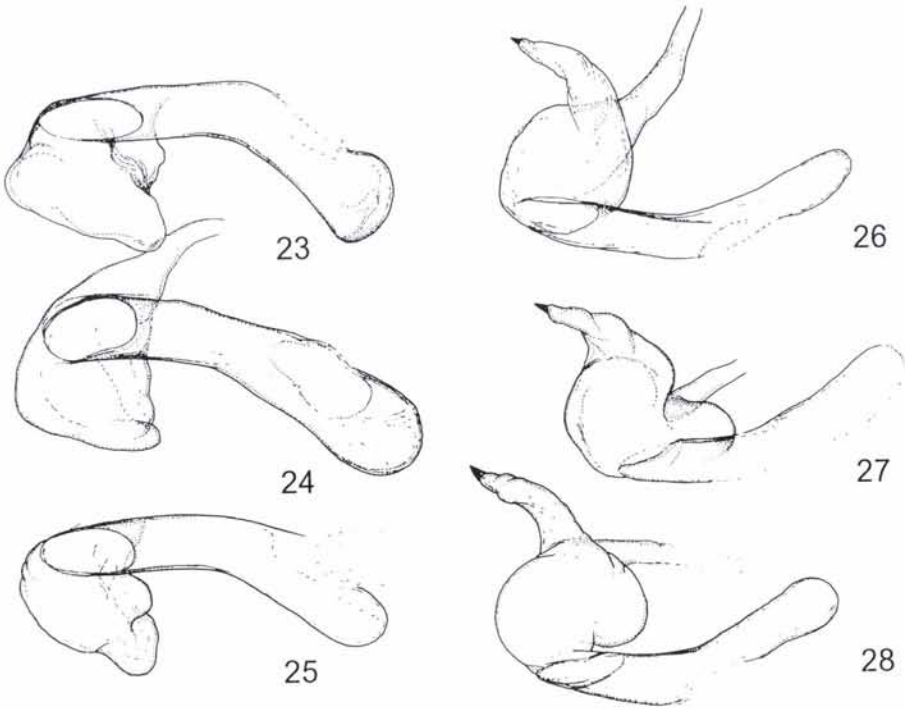
Type material. Holotype, male: "Mongolia, Govi Altay aimak, NW of Mts Adz Bogd, basin of Lake Alag, 1250 m, 94°40'E, 45°18'N, 18.V.1990, No. L78, leg. Gy. Fábián, M. Hreblay, L. Peregovits & G. Ronkay". Slide No. RL3636 (coll. G. RONKAY). Paratypes. Mongolia: 1 male, with the same data as the holotype, 3 males, Ömnögovi aimak, Gurvantös, 1300 m, 101°30'E, 43°24'N, 12–14.V.1990; 2 males, Ömnögovi aimak, Naran Bulag, 1500 m, 99°53'E, 43°47'N, 14.V.1990 leg. Gy. FÁBIÁN, M. HREBLAY, L. PEREGOVITS & G. RONKAY (coll. the collectors, HNHM and P. GYULAI). Slide Nos RL3645, RL3647, RL5920 (males).

Diagnosis. A close relative of *O. fissilis* (CHRISTOPH, 1884), but is larger in size with narrower, more acute forewings, the costa is slightly concave in the male. The wing pattern is more distinct, the stigmata and the subterminal line are more sharply defined, the hindwing is with stronger discal spot and transverse line. The male genitalia of the two species are very similar, the main difference lies in the configuration of the vesica: the new species has longer, narrower diverticulum; in addition, the apical part of the uncus is somewhat broader, more rounded, the cucullus is slightly broader, more quadratic.

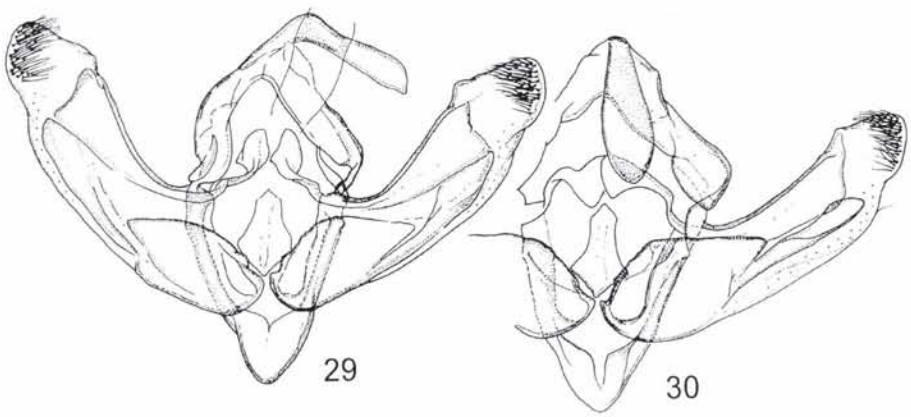
Description. Wingspan 37–38 mm, length of forewing 18 mm. Male. Head and thorax pale grey mixed with brownish and whitish grey, edges of tegulae slightly marked with darker grey-brown; metathoracic tuft relatively small. Antennae shortly biserrate with fasciculate cilia; abdomen somewhat lighter, dorsal crest absent. Forewing very long, narrow, costa finely concave, apex acute, outer margin evenly arcuate. Ground colour ashy grey, irrorated strongly with dark



Figs 21–22. Male genital capsula of *Odontelia radiata* sp. n., 21 = holotype, 22 = paratype



Figs 23–28. Aedeagi of *Odontelia* species. 23–24 = *O. arenicola* (SHTSHETKIN), Turkmenistan, 25 = *O. radiata* sp. n., paratype, 26–27 = *O. fissilis* (CHRISTOPH), Turkmenistan, 28 = *O. lanceolata* sp. n., paratype

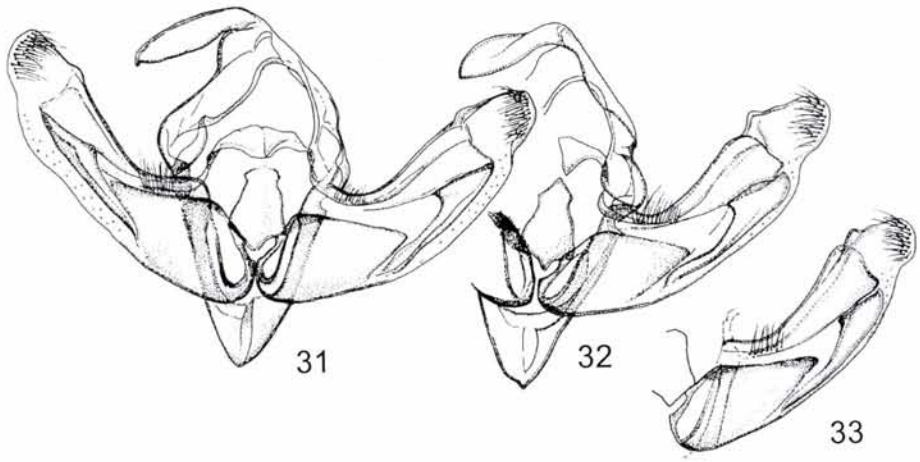


Figs 29–30. Male genital capsula of *Odontelia lanceolata* sp. n. 29 = holotype, 30 = paratype

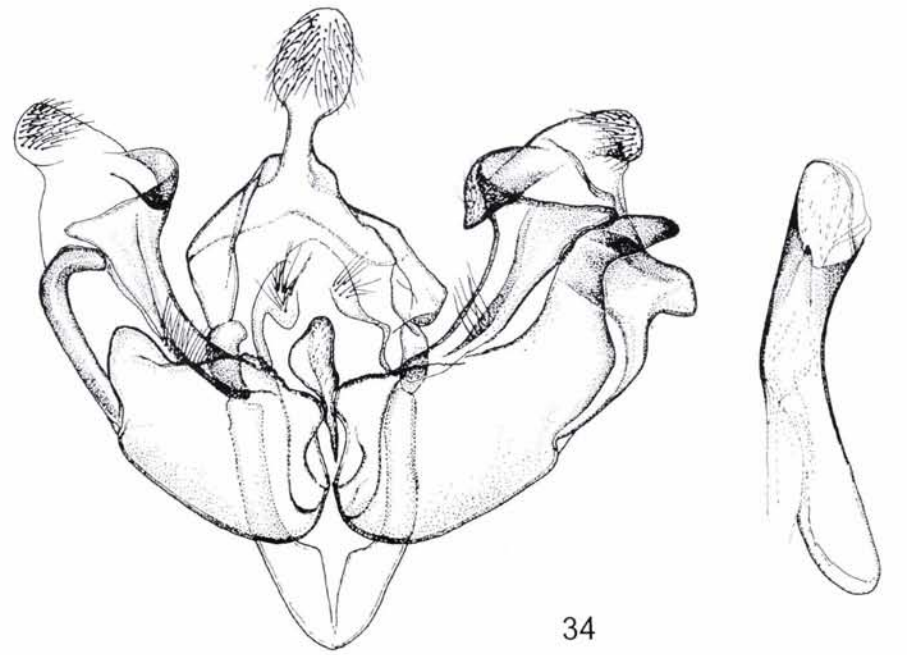
grey-brown, scaling finely reticulate. Ante- and postmedial crosslines obsolete, represented by only a few dark spots on veins, subterminal also obsolescens, pale grey but defined by a row of long, dark brownish arrowheads. Streak of submedian fold fine, rather long, stigmata present, finely encircled with blackish brown, marked with some whitish. Orbicular small, flattened, reniform narrow, high, claviform long, flattened. Veins covered with dark brownish in marginal area, cilia grey, spotted with dark brown. Hindwing slightly transparent, whitish, irrorated scarcely with brown. Veins somewhat darker, discal spot always, remnants of transverse line usually present. Terminal line interrupted, dark brown, cilia whitish, with fine, darker medial line. Underside of wings greyish white, with a few darker scales, discal spot and diffuse, dark brown transverse line present on both wings. Female similar, but antenna filiform, very finely ciliated, forewing somewhat broader, costa straight. Dark forewing pattern less expressed, transverse line of hindwing missing, underside of both wings lighter, transverse line absent. Female unknown.

Male genitalia (Figs 28–30). Uncus moderately long, flattened, lanceolate, with apex rounded, basal part with fine, rounded dorsal hump. Tegumen broad, penicular lobes small, fultura deltoidal, slightly asymmetric, vinculum strong, short, more or less V-shaped. Valva elongated medially slightly constricted, with fine, triangular costal lobe; cucullus narrower, more or less quadratic, corona consisting of strong setae arranged into sparse rows. Sacculus broad, long, clavus a wrinkled, setose surface, harpe broad, flattened, sclerotized, ventral extension of costal plate more or less triangular, relatively small. Aedeagus cylindrical, arcuate, carina with a strong, apically rounded dorsal plate. Vesica short, globular, with a long, tubular apical diverticulum terminated in a small, conical cornutus; ductus ejaculatorius projected ventro-laterally.

Bionomics and distribution. This species is known only from a saline lake basin in the Transaltai Govi desert area from SW Mongolia. It may be the allopatric sister species of the *O. fissilis* from Turkestan. Vicariant Turkestanian-Mongolian species pairs are well-known also in several other groups of eremic moths, e.g. *Thargelia ochrea* WARREN, 1909 – *T. leucostigma* VARGA et RONKAY, 1991, *Th. spinipes* SUKHAREVA, 1970 –



Figs 31–33. Male genital capsula of *Odontelia fissilis* (CHRISTOPH), Turkmenistan



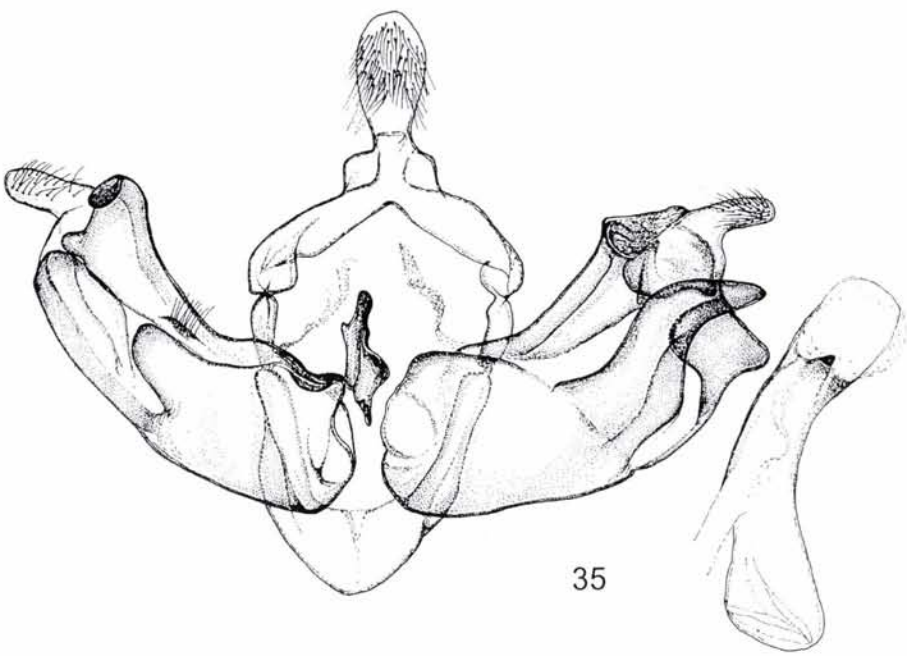
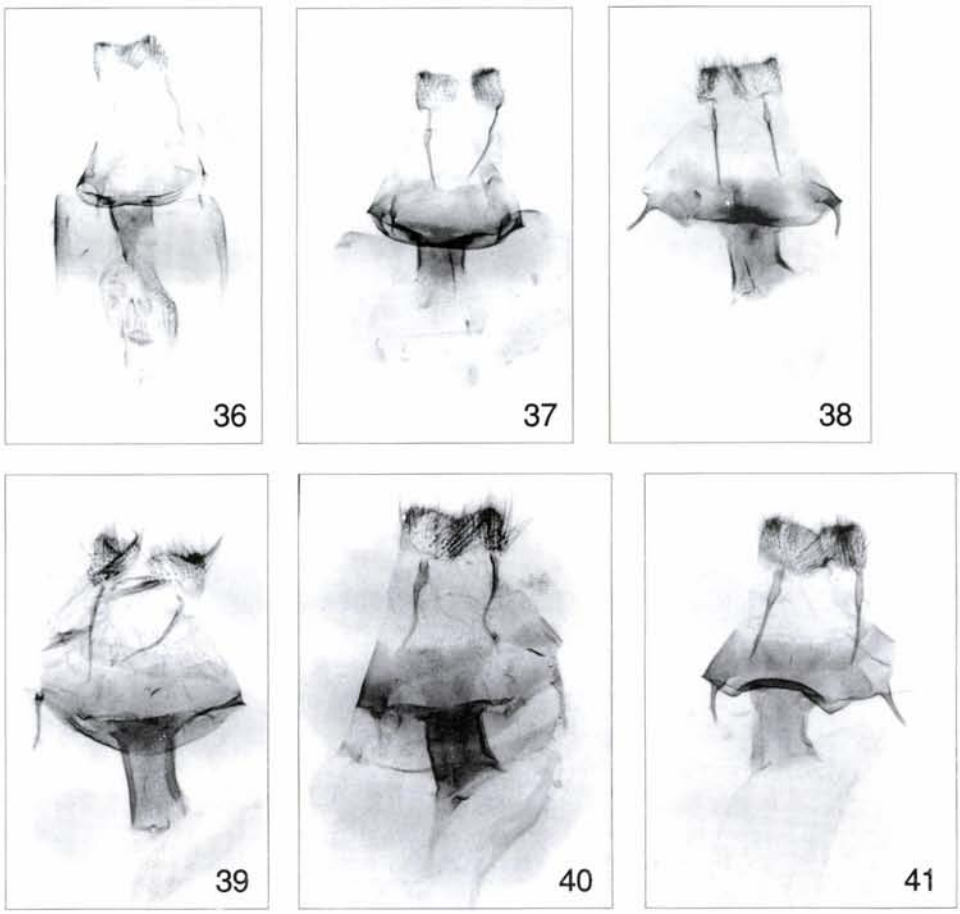


Fig. 34–35. Male genitalia of two *Thargelia* species: 34 = *T. orbona* (BANG-HAAS), holotype, 35 = *T. ochrea* WARREN, holotype

T. haloxyleti VARGA et RONKAY, 1991, *Hadula stoliczkana* (MOORE, 1878) – *H. halodeserti* VARGA, 1973, *Cardiestra eremistis* PÜNGELER, 1904 – *C. gobideserti* VARGA, 1973.

PHYLOGENY

Taxonomic relationships of the genera *Thargelia* PÜNGELER, 1900 and *Odontelia* HAMPSON, 1905 were discussed by VARGA & RONKAY (1991) and the hitherto described taxa were enumerated. These genera, together with *Cardiestra* BOURSIN, 1963, *Cardepia*



Figs 36–41. Female genitalia of *Odontelia* species. 36 = *O. margiana* (PÜNGELER), Turkmenistan, 37 = *O. manfiphogta* sp. n., paratype, Turkmenistan, 38 = *O. radiata* sp. n., paratype, Ili, 39–40 = *O. arenicola* (SHTSHETKIN), Turkmenistan, 41 = *O. fissilis* (CHRISTOPH), Turkmenistan

HAMPSON, 1905, *Hadula* STAUDINGER, 1888, *Discestra* HÜBNER, 1821 (s. l.) and *Anarta* OCHSENHEIMER, 1816* form a rather homogenous, monophyletic group of genera within the subfamily Hadeninae, characterized by some synapomorphic features of vesica: corpus very short, globular, with a long, tubular diverticulum ended by a short, spine-like cornutus and with ductus ejaculatorius positioned near to the carina. Cucullus and corona have a broad basis and covered by numerous irregular rows of setae in *Cardiestra* (perhaps the most ancestral genus with nearly completely symmetrical genital capsula and with only four species, 3 of them with a rather narrow distribution), *Odontelia* and *Thargelia*. Cucullus and corona have a typical "neck" and with only one or two rows of setae. Sacculus often with conical or acute, sometimes curved, more or less dyssymmetric extensions which are mostly expressed in *Thargelia* and *Hadula*. Some only superficially similar details of dyssymmetric parts of valvae and juxta suggest that they must have evolved independently as convergent features of genital capsula in these genera.

Originally these genera seem to be closely connected to eremic habitats. Larvae of *Odontelia* and *Thargelia* must be endophagous in scrubby and/or succulent plants of deserts and semideserts. The mostly diverse genus *Discestra* (s. l.) displays a wide variety of habitats and geographical ranges: some of its species are inhabitants of orobiomes, other species are holarctically distributed. Only the mostly derived species of *Anarta* (s. l.) could extend into other (cold arboreal and tundral) habitat types.

NOTES ON TWO POORLY KNOWN THARGELIA SPECIES

Thargelia orbona (BANG-HAAS, 1912)
(Fig. 34)

Material examined. Holotype male, Karagai-Tau, slide No. MB205 BOURSIN (coll. ZMHU Berlin).

Taxonomic notes. The species is known by its unique type specimen, collected in the Karagai-Tau Mts. It belongs, in spite of the unusual, *Hadula sabulorum* (ALPHÉRAKY, 1889) – *Hadula insolita* STAUDINGER, 1882 – like appearance, to the *Thargelia ochrea* WARREN, 1909 – *T. tranquilla* SUKHAREVA, 1970 species-group. The male genitalia of *T. orbona* differ from those of *T. ochrea* by their much shorter, rounded cuculli, stronger, more quadratic right harpe and narrower, apically more tapering right saccular extension, from those of *T. tranquilla* by their longer, stronger right harpe and saccular extension, respectively.

The male genitalia of the related species are illustrated by SUKHAREVA (1970) and VARGA & RONKAY 1991; those of *T. orbona* and *T. ochrea* are first illustrated here (Figs 34–35).

* We cannot accept the generic subdivision of *Anarta* given by BECK (e.g. 1991, 1996).

Thargelia ochrea WARREN, 1909
(Fig. 35)

Type material examined. Holotype male, Kuldja, slide No. R.S. 24 BOURSIN, BMNH Noct. 4547 (coll. BMNH, London).

Additional material examined. Kazakhstan: 6 males, 2 females, Prov. Almaty, 22 km N of Masak, 78°27'E, 43°46'N, 16.V.1994, leg. GY. FÁBIÁN & I. RETEZÁR (coll. HNHM, GY. FÁBIÁN, B. HERCZIG, G. RONKAY). Slide Nos RL4827, RL4828, RL4829, RL4830, RL4831, RL4832 (males).

Taxonomic notes. T. ochrea is a close relative of *T. leucostigma* VARGA et RONKAY, 1991, representing a supposedly allopatric species pair. The most conspicuous difference between the male genitalia of *T. ochrea* (Fig. 35) and *T. leucostigma* (see VARGA & RONKAY 1991, Figs 8–9) is the shape and size of the right saccular extension which is considerably broader, somewhat shorter in *T. ochrea*, the cuculli of *T. ochrea* are also somewhat longer, narrower than those of *T. leucostigma*.

* * *

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