

## Carpenter-moths (Lepidoptera, Cossidae) of Mongolia

## Древоточцы (Lepidoptera, Cossidae) Монголии

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**Abstract.** An annotated list of Cossidae of the Republic of Mongolia, which includes 15 species, is given for the first time. A new genus, *Gobibatyr* Yakovlev **gen.n.** (type species: *Cossus colossus* Staudinger, 1887), and two new species, *Gobibatyr ustyuzhanini* Yakovlev, **sp.n.** (type locality: SW Mongolia, Gobi-Altai Aimag, Biger), *Holcocerus beketi* Yakovlev, **sp.n.** (type locality: SW Mongolia, Hovd Aimag, Dzhungarian Gobi) are described. A new combination, *Gobibatyr colossus* (Staudinger, 1887) **comb.n.** is proposed.

**Резюме.** Впервые приводится аннотированный список видов семейства Cossidae Монголии, включающий 15 видов. Уточняется распространение в Монголии большинства видов семейства. Описаны новый род: *Gobibatyr* Yakovlev **gen.n.** (типовой вид *Cossus colossus* Staudinger, 1887), и новые виды: *Gobibatyr ustyuzhanini* Yakovlev, **sp.n.** (типовая местность — ЮЗ Монголия, Гоби-Алтайский аймак, Бигер), *Holcocerus beketi* Yakovlev, **sp.n.** (типовая местность — ЮЗ Монголия, Ховд аймак, Джунгарская Гоби). Установлена новая комбинация — *Gobibatyr colossus* (Staudinger, 1887) **comb.n.**

The first study of carpenter moths (Lepidoptera, Cossidae) of Mongolia by Daniel [1965, 1969, 1970, 1973] was based on the rich materials provided by zoological expeditions undertaken by the well-known Hungarian entomologist S. Kaszab. In these publications he described several new species, namely, *Isoceras kaszabi* Daniel, 1965; *Holcocerus mongoliana* Daniel, 1969; *Cossus cossus deserta* Daniel, 1965; *Lamellocossus gobiata* Daniel, 1970; *L. transaltaica* Daniel, 1970. In total, he reported 13 species of Cossidae for Mongolia. No further data on the carpenter-moths of Mongolia has been published.

Treatment of newly collected materials of the Thomas Witt Museum (Munich, Germany) and of the private author's collection resulted in this annotated list of 15 species of carpenter-moths for Mongolia, including several new taxa which are described below.

**Abbreviations.** MWM — Museum of Thomas Witt (Munich, Germany); MNHB — Museum of Natural

History, Budapest; RYB — collection of R. Yakovlev (Barnaul, Russia); ZISP — Zoological Institute of Russian Academy of Sciences (Saint-Petersburg, Russia).

In the annotated list of species, the labels written in German are mentioned in their original spelling, with quotations.

## FAMILY COSSIDAE LEACH, [1815]

## SUBFAMILY COSSINAE LEACH, [1815]

Genus *Catopta* Staudinger, 1899*Catopta albonubilis* (Graeser, 1888)

Fig. 15.

*Cossus albonubilis* Graeser, 1888: Berliner Ent. Ztschr. Vol.32. S.119;

*Catopta albonubilis* (Graeser, 1888): Daniel, 1969: 98; Daniel, 1973: 169.

**Material.** 1♂, Central Aimag, Tuul valley, Nalaikha, 1600–1800 m, 6–8.7.1984, leg. Čornj (MWM); 1♂, Daladzagat, 11.7.81, lg. A. Weiss (MWM); 2♂♂, Hentiy Aimag, Tsenher Mandal Modoto, 109°05' E, 47°50' N, 12.7.1984, 1700 m, Z. Weidenhoffer (MWM); 4♂♂, Chentai Aimag, Tsenkermantal Modoto, 1600–1800 m, 109°04' E, 47°48' N, 14.4.1984, Černy leg. (MWM); 1♂, Central Aimag, Bogdo ul Mts., Zaisan Ulan Bator, 1400–1600 m, 106°55' E, 47°52' N, 22.7.84, leg. Černy (MWM); 36♂♂, 2♀♀, Omnogovi Aimag, Govi Altay Mts., Gurvan Sayhan, Valley Yulin, 2050 m, 104°03'E, 43°27' N, 25–28.07.1988, G. Szabóky leg. (MWM); 1♂, 1♀, S. Mongolia, Omnogov Aimag, Gurvan-Saikhan Mts., 12 km NW Tzokhor v., 2300 m, 14–15.07.2002, S. Churkin leg. (RYB);

Recorded by Daniel: «Central aimag, SO von Somon Bajanzogt, 1600 m, 27.7.66.» [Daniel, 1969]; «Bajan-Ulgij aimag, im Tal des Flusses Chavcalyn gol, 25 km O von Somon Cagannuur, 1850 m, 3.7.68; Uvs aimag, 4 km O vom Pass Ulaan davaa, zwischen dem See Orog nuur und der Stadt Ulaangom, 1700 m, 6.7.1968; Chovsgol aimag, 8 km W von Somon Burenchaan, am Fluss Delger moron, 1450 m, 16.7.1969; 4 km NW von der Stadt Moron, 1500 m, 19.7.1968» [Daniel, 1973].

Genus *Gobibatyr* Yakovlev, **gen.n.**Type species: *Cossus colossus* Staudinger, 1887

**Description.** Large butterflies, forewing length 30–40 mm in males, 37–45 mm in females. Body stout, densely pubescent by light hairs (grey above, practically white below). On abdomen, first 2–4 segments have a dense bright-black

pubescence above forming a black spot on a light background. Hind tibia spores relatively long. Antennae bipectinate, with branch length at middle part of antenna not less than 18 mm. Forewing upperside greyish-yellow with a complicated reticulate ornament and very conspicuous black lengthwise strokes of variable intensity between veins. Hindwing upperside dark brown with a noticeable lightening at base. Fringe chequered, dark at veins and light between them.

Male genitalia. Uncus wide, triangular. Gnathos arms broad. Gnathos wide, lobe-shaped, composed of two merged halves. Valva elongate, with a small projection on costal margin, their distal parts less sclerotized. Arms of transtilla relatively thin, juxta processes wide; juxta lower margin with an incision. Saccus small rounded. Aedeagus thin and curved; vesica without cornuti.

Female genitalia. Apophyses posteriores fused in ovipositor distal part; ovipositor apex widely rounded. Sternal plate of segment 9 strongly sclerotized and bears a medial keel. Tergal plate of segment 9 bears a zone of longitudinal sclerotization. Papillae anales wedge-like tapering, strongly sclerotized. Lamina postvaginalis trapezoid, lamina antevaginalis bears two transversal folds.

**Systematic notes.** The new genus differs considerably from the closely related *Lamellocossus* Daniel, 1956 by the following characters:

- Noticeably longer male antennal branches (in *Lamellocossus* not longer than 1.3 mm at middle part of antenna).
- A spot of black hairs on first 2–4 abdominal segments.
- A specific wing pattern.
- In venation, a less distance between veins M3 and CuA1 on fore wing.
- In male genitalia, valva not swollen, transtilla processes narrower and much shorter, saccus smaller.
- Hind tibia with two pairs of rather long pointed spores, much longer than in *Lamellocossus terebrus* (Denis et Schiffermüller, [1776]) (Fig. 8).

Two species are included into the new genus: *Gobibatyr colossus* (Staudinger, 1887) comb.n. and *Gobibatyr ustyuzhanini* Yakovlev, sp.n.

**Etymology.** «Gobi» (Mongolian) means a desert + «battyr» (Mongolian) means a hero, warrior. Gender: masculine.

**Distribution and habitats.** The representatives of the genus occur in arid low mountainous regions of Dzhungaria, in the territories of E Kazakhstan, NW and Central China (Xinjiang, Quinhai, Gansu, Ningxia) [Hua et al., 1990] and SW Mongolia. Before investigation of actual specimens, it is impossible to attribute Chinese representatives of the genus to any particular species. Flight period of imago: June–July. All over the range these moth are rare and known only from sporadic finds.

It is useful to provide here a redescription of a rare and little known species *Gobibatyr colossus* (Staudinger, 1887).

*Gobibatyr colossus* (Staudinger, 1887) **comb.n.**

Figs 1–2, 5–7, 16a; Plate III: 1–3.

*Cossus colossus* Staudinger, 1887: Stettin. ent. Ztg. Bd.48. S.86.

**Material.** Holotypus, ♂: «Tien-Schan, Dscharkent, Rückbeil, 1906» (MHUB). Paratypes: 1♂, Kazakhstan, Sharyn Riv., Sartogai, 43°35' N; 79°20' E, 11–13.6.1993., O. Gorbunov (MWM); 1♂, SO Kazakhstan, riv. Charyn, st. Chundzha, 11.6.1992. (MWM); 4♂♂, «Kazakhstan, Alma-Ata Gebiet, Boguty Mts., 1000 m, 14–17.06.1996», Lukhtanov leg. (MWM); 4♂♂, 1♀, «Kazakhstan, Taldy-Kurgan reg., Ili Fluss, Borochudair, 500 m, 16.06.1996», Lukhtanov leg. (MWM); 6♂♂, 1♀, «Kirgizien, Naryn fluss, Ak-Tal Tschat, 1610 m, 10.7.1996», Lukhtanov leg. (MWM).

**Description.** Male. Forewing length 30–37 mm. Forewing light-brown with a complicated pattern of alternating lighter and darker elements, the latter turning to merge, especially in postdiscal area. Hindwing dark brown, lighter at base. Genitalia: see the generic diagnosis; specific characters: arms of transtilla straight with sharply bent ends, juxta processes wide; aedeagus curved slightly.

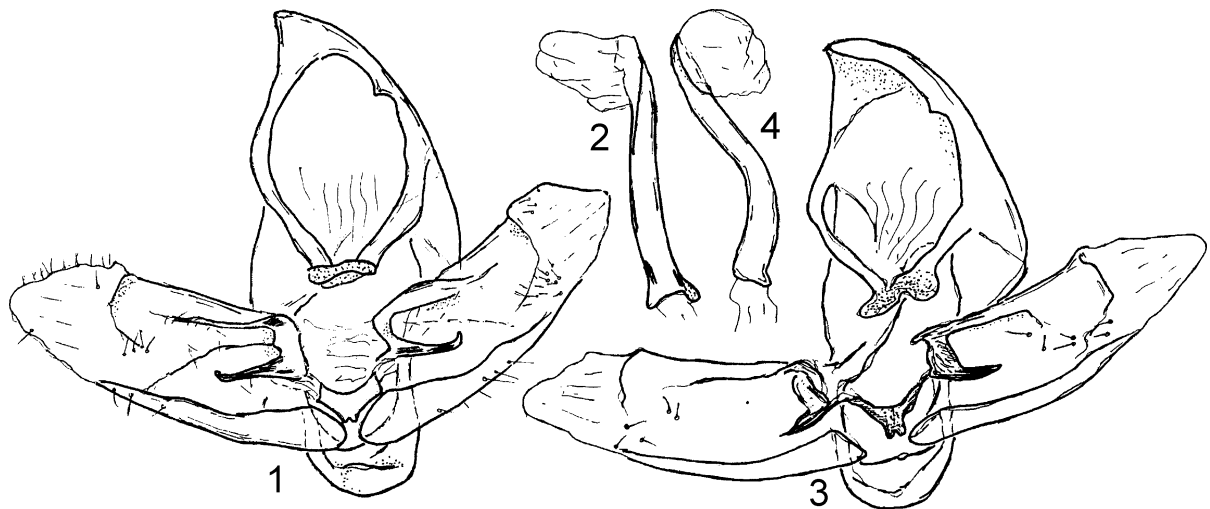
Female. Forewing length 37–40 mm, abdomen very long. Much resembling the male. Genitalia: see the generic diagnosis.

*Gobibatyr ustyuzhanini* Yakovlev, **sp.n.**

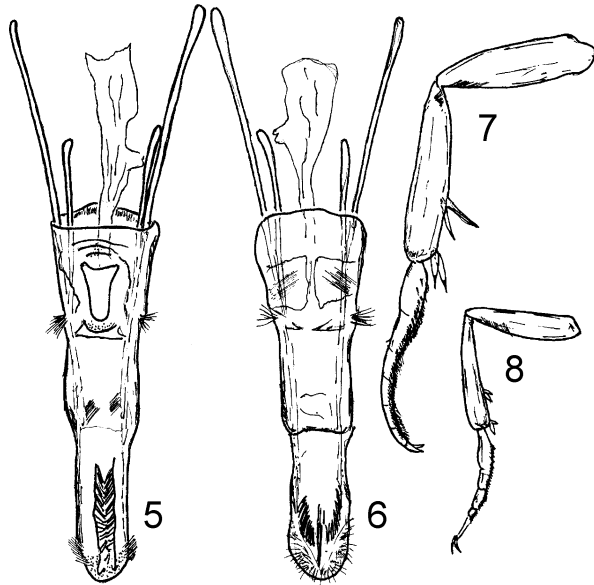
Figs 3–4, 16b; Plate III: 4–5.

*Lamellocossus colossus* (Staud., 1887): Daniel, 1969: 98; Daniel, 1970: 199.

**Material.** Holotypus, ♂: SW MONGOLIA, Gobi-Altai Aimak, 30 km N. Biger, desert, H = 1100 m, 27.06.1999, R.V. Yakovlev (ZISP); paratypes: 3♂♂, the same data,



Figs 1–4. *Gobibatyr* spp., male genitalia, frontal view (1, 3); aedeagus, lateral view (2, 4): 1–2 — *G. colossus*, 3–4 — *G. ustyuzhanini* sp.n.  
Рис. 1–4. *Gobibatyr* spp., гениталии самца — общий вид фронтально (1, 3), эдеагус латерально (2, 4): 1–2 — *G. colossus*, 3–4 — *G. ustyuzhanini* sp.n.



Figs 5–8. Cossidae — genitalia of female (5–6), hind tibia of male (7–8): 5–7 — *Gobibatyr colossus*, 8 — *Lamellocossus terebrus*.

Рис. 5–8. Cossidae — гениталии самки (5–6), задняя голень самца (7–8): 5–7 — *Gobibatyr colossus*, 8 — *Lamellocossus terebrus*.

V. Kovtunovitch, P. Ustyuzhanin, R. Yakovlev (RYB); 1♂, S Gobi Aimak, 70 km SW of Khan-Bogdo Somon, 18.06.1971, Kerzhner (ZISP); 1♂, S Gobi Aimak, 50 km SSE of Noen, 973, G. Medvedev (ZISP); 1♂, «Sudgobi Aimak, Bulgan Somon, Talyn Bulay, 1350 ms., 5.07.1967., exp. Z. Kaszab» (MWM); 4♂♂, 1♀, «Chovd Aimak, Janatin Dolon, 40 km N von Somon Manchan, am SW Ecke des Char us nuur, 1200 ms., 9.7.66., Z. Kaszab» (MWM); 1♂, «Chovd aimak, 10 km SSW Somon Bulgan, 1200 ms., 5.7.66., Z. Kaszab» (MWM); 1♂, «Gobi-Altai aimak, zwischen Beger nuur und somon Beger, 1400 ms., 25.6.66., Z. Kaszab» (MWM); 1♂, «Gobi Altai aimak, Baga nuur urd els, am SO Ecke des Doroo nuur, 1200 ms., 12.7.66. Z. Kaszab» (MWM); 1♂, «Gobi-Altai aimak, Zachuj Gobi, 10 km N Chatan chajrchan Geb., 1750 ms., 27.06.66., Z. Kaszab» (MWM).

**Description.** Male. Forewing length 33–40 mm. Resembles the type species but somewhat lighter. Wing pattern tends to dissolution: in postdiscal area there are lengthwise dark strokes. Genitalia: see generic diagnosis; specific characters: arms of transtilla gradually curved in distal part, juxta processes long; aedeagus strongly curved at its middle part.

**Differential diagnosis.** Differs from the closely related *Gobibatyr colossus* (Staudinger, 1887) by the wing pattern (a relative dissolution of the forewing dark pattern, with more conspicuous and contrasted black strokes between veins), on average a less expressed black spot on the abdomen; by long arms of transtilla, gradually curved in their distal part; the valva noticeably tapering to the apex.

**Etymology.** The species is named after the well-known lepidopterist Dr P.Ya. Ustyuzhanin, a specialist on Pterophoridae, my close friend and a participant in two expeditions to hardly accessible areas of SW Mongolia.

Genus *Lamellocossus* Daniel, 1956.

*Lamellocossus gobiiana* Daniel, 1970

Fig. 17a; Plate III: 6–7.

*Lamellocossus gobiiana* Daniel, 1970: 199–202.

The species is known only by the type material: «Mittelgobi Aimak, 20 km S von Somon Delgerzagt, 1480 m,

9.6.1967» (Holotypus, ♂; allotypus in MBNH; paratypus, 1♀ in MWM) [Daniel, 1970].

*Lamellocossus transaltaica* Daniel, 1970

Fig. 17b; Plate III: 8–9.

*Lamellocossus transaltaica* Daniel, 1970: 203.

The species is known only by the type material: Sudgobi aimak, Gurban Sajchan ul Gebirge, zwischen Somon Churmen und Somon Bajandalaj, 24 km W von Churman, 1550 m, 14.6.1967 (Holotypus, ♂; allotypus in MBNH; 2 paratypes, females in MWM) [Daniel, 1970].

Both mentioned species of *Lamellocossus* somewhat resemble by external characters the complex of the Arabian-Saharan taxa presently attributed to the genus *Arctiocossus* Felder, 1874, in particular *Arctiocossus aries* (Püngeler, 1902) widely distributed throughout the Arabian Peninsula, Egypt and Sudan [Schoorl, 1990].

Genus *Cossus* Fabricius, 1793

*Cossus cossus* (Linnaeus, 1758)

Fig. 9–10, 17c; Plate III: 10.

*Phalaena-Noctua cossus* Linnaeus, 1758: Systema Naturae. S.504; *Cossus cossus* (Linnaeus, 1758): Daniel, 1969: 98–99.

**Material.** 1♂, W Mongolia, Hovd Aimak, Dzhungarian Gobi, 15 km SW of Bulgan, H – 1650 m, 7.07.2003, Yakovlev R.V. (RYB).

In Mongolia, recorded only from the extreme southwestern Hovd Aimak from where the subspecies *Cossus cossus deserta* Daniel, 1969 has been described, differing from the nominotypical subspecies by a lighter coloration and relatively smaller size. The type series is as follows: «10 km SSW von somon Bulgan, 1200 m, 4.7.1966 (Holotypus, ♂, allotypus in MBNH, 2 paratypus, ♂♂ in MWM); am selben Ort, Somon Uench, im Flusstal Uench gol, ca 2 km N vom Dorf, 1450 m, 7.7.1966» (10 paratypes, ♂♂ in MBNH and MWM).

Genus *Holcocerus* Staudinger, 1884

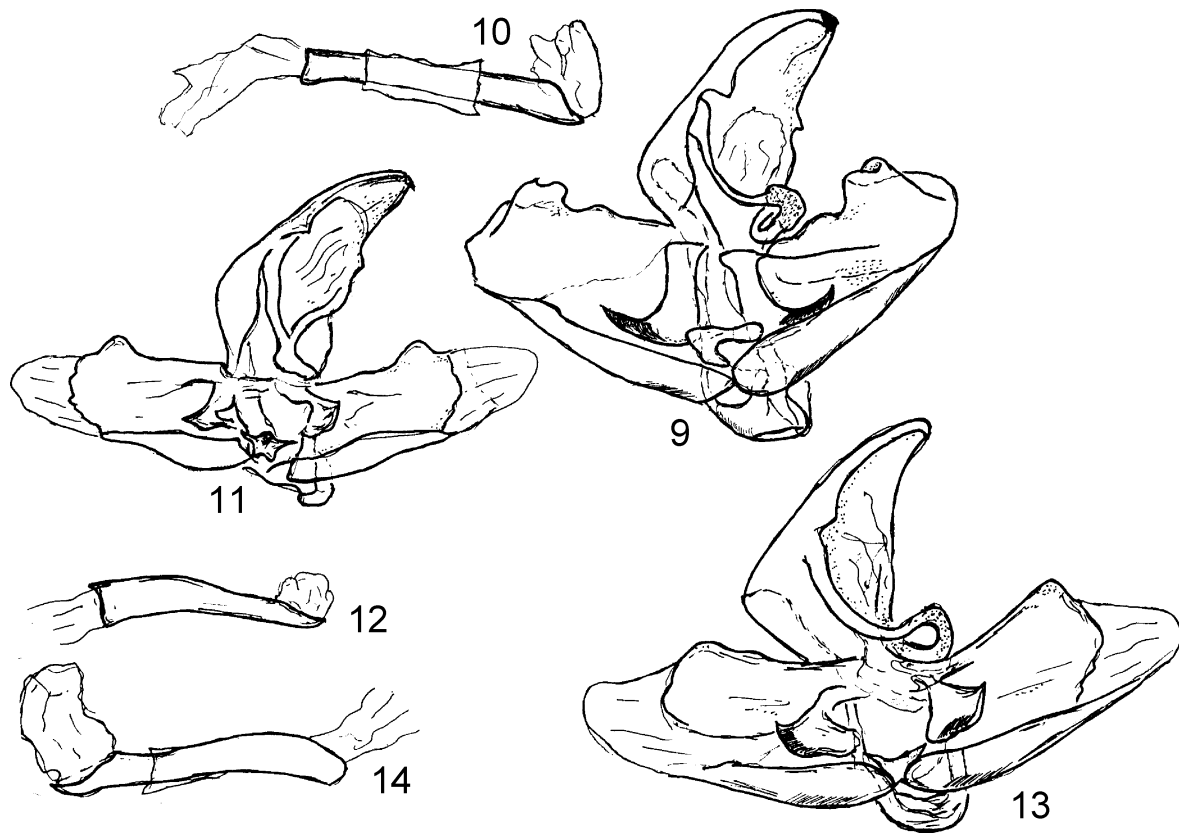
*Holcocerus consobrinus* Püngeler, 1898

Fig. 18; Plate III: 11–12.

*Holcocerus consobrinus* Püngeler, 1898: Soc. ent. Vol.13. P.57; *Holcocerus arenicola* Staud. (auct.): Daniel, 1965: 99; Daniel, 1969: 95; Daniel, 1970: 199; Daniel, 1973: 168.

**Material.** 3♂♂, 2♀♀, «Bajan Horog, Orog Lake env., 23–24.6.2003, H – 1230 m, N 45°05', E 100°34', A. Saldaitis» (MWM); 1♂, «Bajanchongor aimak, 60 km S Bajanchongor, 27–30.06.03., H – 1640 m, N 45°40', E 100°41', A. Saldaitis» (MWM); 14♂♂, 1♀, Gobi Altai Aimak, 30 km N of Biger, desert, 23–27.06.1999. V. Kovtunovitch, P. Ustyuzhanin, R. Yakovlev (RYB); 3♂♂, 1♀, Hovd aimak, Dzhungarian Gobi, 45 km SW of Bulgan, Uvhod-Ula Mt., H – 1350 m, 8–10.07.2003, V. Doroshkin, P. Ustyuzhanin, D. German, R. Yakovlev (RYB); 1♂, Hovd Aimak, Dzhungarian Gobi, 15 km SW of Bulgan, H – 1650 m, 10.07.2003, V. Doroshkin, P. Ustyuzhanin, D. German, R. Yakovlev (RYB); 1♀, Gobi Altai Aimak, Zakhuin Gov', Khatan Khairhan Uul, 1150 m, 26.6.03, S. Churkin leg. (RYB).

Reported by Daniel, as *H. arenicola* (Staudinger, 1879), from: «Ostgobi aimak, 20 km SSO von Zuun-Bajan, 800 ms, 25.6.63» [Daniel, 1965]; «Gobi Altai aimak, zwischen dem See Beger nuur und somon Beger, 1400 m, 25.6.66.; Mongol Els., 10 km SO von Chechmort, 1600 m, 13.7.66; Chovd aimak, Jamatin Dolon, ca. 40 km N von Somon Manchan, an SW Ecke des sees Char us nur, 1200 m, 11.7.66 [Daniel,



Figs 9–14. Cossidae, male genitalia, frontal view (9, 11, 13), aedeagus, lateral view (10, 12, 14): 9–10 — *Cossus cossus deserta*, 11–12 — *Holcocerus mongoliana*, 13–14 — *H. beketi* sp.n.

Рис. 9–14. Cossidae — гениталии самца — общий вид фронтально (9, 11, 13), эдеагус латерально (10, 12, 14): 9–10 — *Cossus cossus deserta*, 11–12 — *Holcocerus mongoliana*, 13–14 — *H. beketi* sp.n.

1969]; Sudgobi aimak, Ostrand vom Zölöön ul Gebirge, 58 km WSW von Somon Bajandalaj, 1500 m., 16.6.67; Nojon Nuruu Gebirge, Grenzposten Ovot Chuural, 1500 m, 20.6.67; somon Bulgan, Quelle talyn Bulag, 1350 m, 5.7.67; abflussloses Becken, 10 km NNO von Dalanzadgad, 1450 m, 7.7.67; Bajanchongor aimak, Grenzposten Caganbulag im Gebirge Cagan Bogd ul, 1550 m, 24.6.67» [Daniel, 1970]; «Uvs aimak, am Flusse Chondlon gol, 32 km NM von der Stadt Ulangom, 1200 m, 8.7.1968» [Daniel, 1973]. Study of Dr Kaszab's material and new specimens has shown that it is *H. consobrinus* which inhabits Mongolia and differs significantly from *H. arenicola* by having dark hind wings.

#### *Holcocerus inspersus* Christoph, 1887

Fig. 19a; Plate III: 13–14.

*Holcocerus inspersus* Christoph, 1887: Stett. Ent. Ztschr. Bd.48. S.163; Daniel, 1965: 99; Daniel, 1969: 95; Daniel, 1970: 199.

**Material.** 3♂♂, 6♀♀, Hovd aimak, Dzhungarien Gobi, 45 km SW of Bulgan, Uvhod-Ulla Mt., H — 1350 m, 8–10.07.2003., V. Doroshkin, P. Ustyuzhanin, D. German, R. Yakovlev (RYB); 5♂♂, 4♀♀, Gobi Altai aimak, Zakhuin Gov', Khatan Khairhan Uul, 1150 m, 26.6.03, S. Churkin leg. (RYB).

Reported by Daniel from: «Sudgobi aimak, 60 km W von Somon Bulgan, 1120 m, 20.6.64; Sudgobi aimak, 25 km N von somon Bulgan, Schovongin chooloi 1030 m, 18.6.64» [Daniel, 1965]; «Gobi Altai aimak, Zachuj Gobi, 10 km von Chatan chairhan Gebirge, 1150 m, 27.6.66; 5 km

S von Pass zwischen Az Bogd ul und Tachijn Schar nuruu, 1600 m, 29.6.66; Chovd aimak, 10 km SSW somon Bulgan, 1200 m, 5.7.66» [Daniel, 1969]; «Sudgobi aimak, SW-Rand des Sees Dund gol, 1300 m, 18.6.67; 100 km W vom Grenzposten Ovot Chuural, 22 km W von Sajryn chudag, 1250 m, 23.6.67; Bajanchongor aimak, Talyn Bilgech bulag, Quelle zwischen Tost ul und Cagan Bogd ul Gebirge, 47 km O vom Grenzposten Caganbulag, 1200 m, 23.6.67; Oase Dzun Mod, ca 100 km S somon Schine zinst, 1300 m, 29.6.67; Uburchangai aimak, am halben Weg zwischen Somon Bajanleg und somon Bulgan, ca. 130 km OSO von Bajanleg, 1150 m, 3.7.67» [Daniel, 1970].

#### *Holcocerus mongoliana* Daniel, 1969

Fig. 11–12, 19b; Plate III: 15–16.

*Holcocerus mongoliana* Daniel, 1969: 95; Daniel, 1970: 199.

**Material.** 1♂, Gobi Altai Aimak, 30 km N of Biger, desert, 23–27.06.1999, V. Kovtunovitch, P. Ustyuzhanin, R. Yakovlev (RYB).

Described by Daniel by a series collected in various localities within Mongolia: «Gobi Altai aimak, am selben Ort, Mongol Els, 10 km SO Chechmort, 1600 m, 13.7.66. (Holotypus, ♂, in MBNH); Gobi Altai aimak, Baga nuuryn nurd els, an der SO-Ecke des Sees Doroo nuur, ca. 1200 m, 12.7.66 (1♂, paratypus in MWM); Ostgobi aimak, Cagan Elis, 30 km OSO von Zuun-Bajan, 800 m, 22.6.63 (Allotypus, ♀ in MB, 2 paratypes, ♂ and ♀ in MWM); Bajanchongor

aimak, SO-Ecke des Sees Orog nur, 1200 m, 23.6.1964 (paratype, ♀ in MWM); Bajanchongor aimak, 5 km S von Somon Bogd, 1200 m, 24.6.64 (paratypus, ♂ in MWM); Sucheator aimak, Ongon Elis, 10 km S von Somon Chongor, 900 m, 3.8.65 (paratypus, ♂ in MWM)» [Daniel, 1969]; «Uburchangai aimak, 130 km OSO von somon Bajannur, 1150 m, 3.7.67» [Daniel, 1970].

Since Daniel's original description is lacking details of the genitalia, there are provided here.

Male genitalia. Valva costal margin with a sharp prominence on costal margin. Arms of transtilla look like narrow triangles. Juxta with an incision in its lower part, rounded above, with two thin, short and straight processes. Aedeagus slightly curved and slightly inflated in its proximal part. Vesica without cornuti.

*Holcocerus beketi* Yakovlev, sp.n.

Figs 13–14, 19c; Plate III: 17.

**Material.** Holotypus, ♂, W Mongolia, Hovd Aimak, Dzhungarian Gobi, 45 km SW of Bulgan, Uvhod-Ula Mt., H – 1350 m, 8–10.07.2003, R. Yakovlev (ZISP); paratypes: 1♂, the same data (MWM); 6♂♂, the same data, V. Doroshkin, P. Ustyuzhanin, D. German, R. Yakovlev (RYB); 1♂, W Mongolia, Hovd Aimak, Dzhungarian Gobi, 15 km SW of Bulgan, H – 1650 m, 10.07.2003, R. Yakovlev (RYB).

**Description.** Male. Thorax and abdomen densely covered with dark grey hairs. Antennae simple, not pectinate; antennal articles appressed. Forewing length 22 mm. Forewing elongate, dark grey with a pattern characteristic for the genus; in postdiscal area there are conspicuous black lengthwise stripes between veins. Fringe chequered, dark at veins and grey between them. Hindwing evenly grey. Wing underside grey.

Male genitalia. Uncus long, curved, triangular, with a small sclerotized patch at apex. Tegumen quite stout. Gnathos arms straight. Gnathos wide, lobe-like. Valva sclerotized but with a membranaceous apex, its dorsal margin with a clear-cut ledge. Arms of transtilla robust, wide at base and with a pointed and upright directed apex. Aedeagus gradually bent in distal part, the distal end having a slight swelling.

Female unknown.

**Differential diagnosis.** Very closely related to *H. pulverulentus* Püngeler, 1898 (occurring in Afghanistan, Iran, Turkmenistan, Uzbekistan, Kirghizia, S Kazakhstan), from which it differs by the configuration of the valva and arms of transtilla and a dark ground colour of the wing both upper-side and underside. In *H. pulverulentus* the hindwing is light. Most probably, the new species replaces *H. pulverulentus* in deserts of eastern Dzhungaria. It is also most probably closely related to a little-known species *Holcocerus pullus* Hua et al., 1990 described from the only male from Barkol, Xinjiang [Hua et al., 1990], from which it differs substantially by the male genitalia structure, in particular, by presence of the ledge on the valva.

Genus *Eogystia* Schoorl, 1990.

*Eogystia sibirica* (Alpheraky, 1895)

Fig. 20a.

*Hypopta sibirica* Alpheraky, 1895: Iris. Vol.VIII. P.185;  
*Eogystia sibirica* (Alpheraky, 1895): Daniel, 1965: 99; Daniel, 1969: 98; Daniel, 1970: 203; Daniel, 1973: 169.

Reported by Daniel from: «Bulgan aimak, 5 km W Somon Daschintshilen, 1140 m, 2.7.64; 26 km O von Somon Lun, 1180 m, 3.7.64» [Daniel, 1965]; «Bulgan aimak, ca 20 km W von Somon Bajannur (220 km W von Ulan-Baator),

1100 m, 17.6.1966» [Daniel, 1969]; «Central aimak, 12 km S von Somon Bajanbaraat, 1380 m, 8.6.67; Mittelgobi aimak, Choot bulag, zwischen Somon Chuld und Somon Delgerchangaj, 38 km ONO von Delgerchangaj, 1480 m, 10.06.1967; Bajanchongor aimak, Zinst ul Gebirge, ca 50 km O von Somon Schine zinst, 2000 m, 30.06.1967» [Daniel, 1970]; «Bulgan aimak, 11 km W von Somon Bajannur, am Sudrande des Sees Bajan nuur, 1000 m, 14.06.1968» [Daniel, 1973].

New material is absent.

Genus *Isoceras* Turati, 1924

*Isoceras kaszabi* Daniel, 1965

Fig. 20b; Plate III: 18.

*Isoceras kaszabi* Daniel, 1965: 100–102.

**Material.** 4♂♂, «Mongolia, Bajanchongor aimak, 60 km S Bajanchongor, 27–30.06.03, H – 1640m, N 45°40' E 100°41', A. Saldaitis» (MWM).

Described by Daniel by 5♂♂ collected in two localities of hte Bayan-Hongor Aimak: «SO Ecke des Sees Orog nur, 1200 m, 23.6.64 (Holotypus in MBNH and 1 paratypus MWM); 8 km von Somon Zinst, 1400 m, 25.6.64 (3 paratypes in MWM)» [Daniel, 1965].

SUBFAMILY ZEUZERINAE BOISDUVAL, [1828]

Genus *Cecryphalus* Schoorl, 1990

*Cecryphallus nubila* (Staudinger, 1895)

Fig. 21a; Plate III: 19.

*Zeuzera nubila* Staudinger, 1895: Iris. Vol.VIII. P.341;  
*Cecryphallus nubila* (Staudinger, 1895): Daniel, 1970: 203.

Reported only by Daniel from: «Sudgobi aimak, 100 km W vom Grenzposten Ovot Chuural, 22 km W von Sajryn chudag, 1250 m, 22.6.1967; Bajanchongor aimak, Grezposten Caganbulag im Gebirge Cagan Bogd ul, 1550 m, 24.06.1967; Oase Echin gol, ca. 90 km NO vom Grenzposten Naganbulag, 950 m, 27–28.6.1967» [Daniel, 1970].

Genus *Phragmataecia* Newman, 1850

*Phragmataecia albida* Erschoff, 1874

Fig. 21b; Plate III: 20.

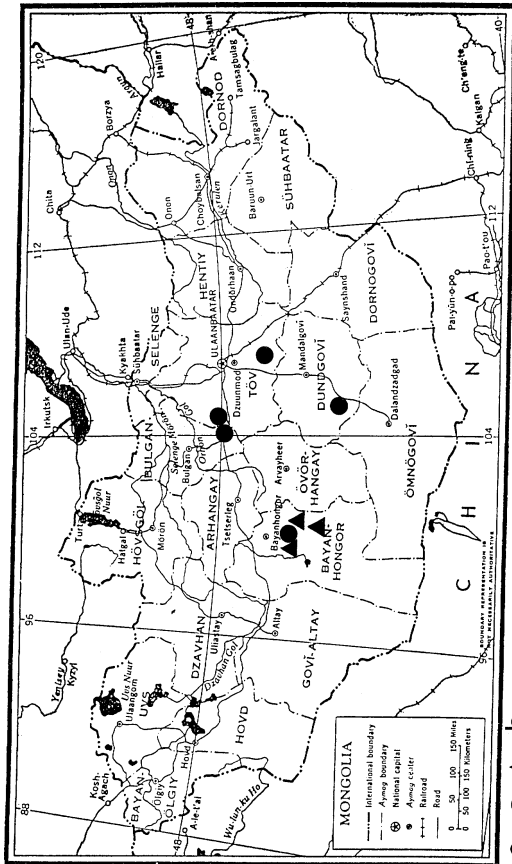
*Phragmataecia castaneae* var. *albida* Erschoff, 1874: Reise Turkestan, Lep. Vol.33. S.234;

*Phragmataecia albida* Erschoff, 1874: F. Bryk, 1942: 152–153;  
*Phragmataecia roborowskii* Alpheraky, 1896: Daniel, 1969: 99; Daniel, 1970: 203.

**Material.** 1♂, Hovd Aimak, 13 km S of Altai Somon centre along the river Bodonch, 1300 m, 92°50' E, 45°57' N, 19.5.1990, G. Fabian, M. Hreblay, I. Peregovits and G. Roncay (MWM).

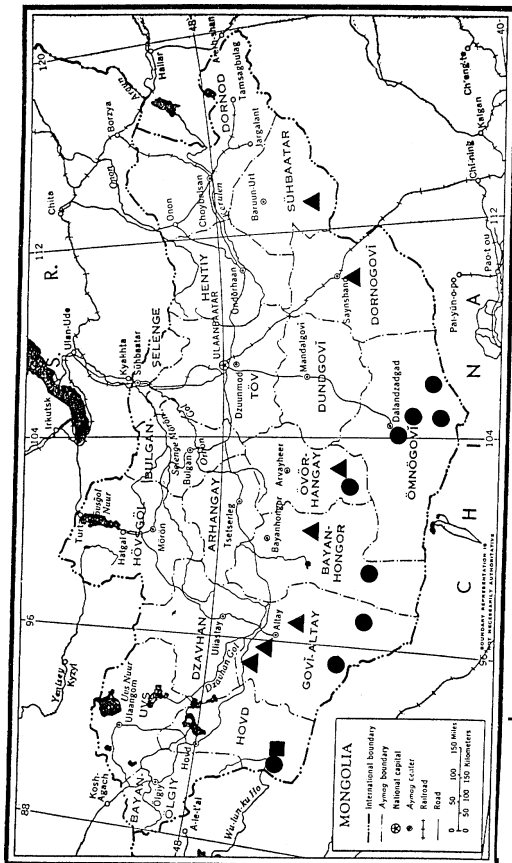
Reported for the first time for SW Mongolia by Felix Bryk [1942] from a collection made by Söderbom on 10.07.1928. Reported by Daniel, as *Phragmataecia roborowskii* Alpheraky, 1896 from: «Chovd aimak, 3 km N von Somon Uench, im Tal des Flusses Uench gol, 1450 m, 3.7.66; 10 km SSW von Somon Bulgan, 1200 m, 4.7.1966; am selben Ort, 5.7.66; Somon Uench, im Flusstal Uench gol, ca 2 km N vom Dorf, 1450 m, 7.7.1966» [Daniel, 1969]; «Uburchangai aimak, Oase Chacar-usni chudag, ca. 100 km OSO von Somon Bajannur, 1200 m, 3.7.1967» [Daniel, 1970]. However, while studying the specimens mentioned by Daniel, now preserved in MWM, it turned out that they belong to *Phragmataecia albida* Erschoff, 1874.





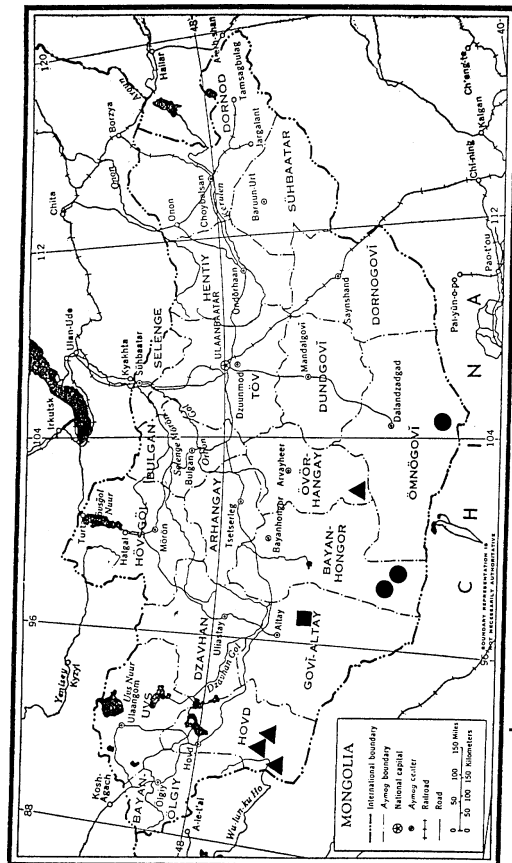
20

● - a, ▲ - b



19

● - a, ▲ - b, ■ - c



21

● - a, ▲ - b, ■ - c

Figs 15-21. Distribution of Carpenter-moths in Mongolia: 15 — *Catopta albomibulus*, 16a — *Gobibatry colossus*, 16b — *G. ussuzhbanii* sp.n., 17a — *Lamellocossus gobiana*, 17b — *L. transaltica*, 17c — *Cossus cossus deserti*, 18 — *Holcocossus consobrinus*, 19a — *H. inspersus*, 19b — *H. mongoliana*, 19c — *H. beketi* sp.n., 20a — *Eogystia sibirica*, 20b — *Isoceras kaszabi*, 21a — *Eceryphallus nubila*, 21b — *Phragmataecia albida*, Ph. *roborowskii*.

Рис. 15-21. Распространение Аревогусцев в Монголии: 15 — *Catopta albomibulus*, 16a — *Gobibatry colossus*, 16b — *G. ussuzhbanii* sp.n.; 17a — *Lamellocossus gobiana*, 17b — *L. transaltica*, 17c — *Cossus cossus deserti*; 18 — *Holcocossus consobrinus*; 19a — *H. inspersus*, 19b — *H. mongoliana*, 19c — *H. beketi* sp.n.; 20a — *Eogystia sibirica*, 20b — *Isoceras kaszabi*; 21a — *Eceryphallus nubila*, 21b — *Phragmataecia albida*, Ph. *roborowskii*.

*Phragmataecia roborowskii* Alpheraky, 1896

Fig. 21c; Plate III: 21.

*Phragmataecia roborowskii* Alpheraky, 1896: Rom. Mem. Lep. T.9. P.235–236.

**Material.** 5♂♂, Mongolia, Gobi-Altai Aimak, 10–30 km N of Biger, 22–23.06.1999, V. Kovtunovich, P. Ustjuzhanin, R. Yakovlev (RYB).

This species differs from the previous one by a yellowish-fulvous coloration of the wing upperside and by narrower wings. No doubt, the actual status of the little known species *P. roborowskii* will be possible only after the study of the type material by S. Alpheraky.

## Discussion

As a consequence of the above work, the known Mongolian fauna of Cossidae includes 15 species, of which 5 species, according to our present-day knowledge, are endemics, namely *Gobiocossus ustyuzhanini* Yakovlev, sp.n., *Lamellocossus gobiana* Daniel, 1970, *Lamellocossus transaltaica* Daniel, 1970, *Holcocerus mongoliana* Daniel, 1969 and *Holcocerus beketi* Yakovlev, sp.n. The fauna of Mongolia appears to be specifically Central Asian, with a high degree of endemism. The study of the Mongolian fauna is still in progress, no doubt the list will be enriched by both known Central Asian and new species, which could be discovered in any part of Mongolia, especially in the south and south-west.

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