

CARPENTER-MOTHS OF TURKMENISTAN (LEPIDOPTERA: COSSIDAE)

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An annotated list of Cossidae of Turkmenistan, which includes 33 species of 17 genera from 3 subfamilies is presented. We present all the available data of all the species distribution on the territory of the region.

Key words: *Lepidoptera*, *Cossidae*, *Turkmenistan*, *deserts*, *fauna*.

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INTRODUCTION

Carpenter moths (Cossidae) are a relatively small family of dytrisian Lepidoptera which includes about 1000 species according to the modern data (Yakovlev, 2015). Cossidae of the Palearctic Asia, especially of the arid regions, are relatively well studied (Yakovlev, 2011; Yakovlev & Dubatolov, 2013), but detailed faunistic data are published only for several countries: Turkey (de Freina, 1994), Lebanon (Saldaitis et al., 2007), Afghanistan (Yakovlev et al., 2015) and Pakistan (Yakovlev & Witt, 2016). There was also no special study on Cossidae of Turkmenistan though some publications give data on their distribution. The territory of Turkmenistan was popular for entomological research at the end of XIX - the beginning of the XX century, as well as in the Soviet and early post-Soviet period. A great number of new Cossidae taxa were described on the collections from Turkmenistan:

N. Erschoff (1874): *Hypoptya gloriosa* Erschoff, 1874 (from 'in monte Karak in parte orientali desertorum Kizil-Kum sito' [Karak Mt., Kizil-Kum desert, Turkmenistan]);

O. Staudinger (1884, 1887): *Cossus (Holcocerus) nobilis* Staudinger, 1884, *C. (H.) holosericeus* Staudinger, 1884, *H. inspersus* Christoph, 1887, *H. mollis* Christoph, 1887, *H. putridus* Christoph, 1887, and *H. gracilis* Christoph, 1887 (from Askhabad and Tekke);

H. Christoph (1884, 1893): *Hypoptya mucosus* Christoph, 1884 (from Nuchur), *Endagria agilis* Christoph, 1884 (from Krasnowodsk), *Endagria clathrata* Christoph, 1884 (from Kyzyl Arvat und Bami), and *Hypoptya turcomanica* Christoph, 1893 (from Askhabad, Pul-i-Hatum, Tekke);

G.E. Grum-Grshimailo (1895, 1902): *Phragmataecia territa transcaspica* Grum-Grshimailo, 1895, and *Zeuzera strix* Grum-Grshimailo, 1895 (from provincia Transcaspica ad urbem Serachs), *Holcocerus sacarum* Grum-Grshimailo, 1902 (from In provincia Transcaspica, in valle fl. Sumbar [Turkmenistan, near Kara-Kala, Sumbar river]), *Stygia abngeri* Grum-Grshimailo, 1902 (from Krasnowodsk (?), prov. Transcaspiae),

J. Austaut (1897): *Holcocerus marmoratus* Austaut, 1897, *H. strigatus* Austaut, 1897 and *H. persicus* Austaut, 1897 (from Bairam Ale);

R. Püngeler (1898, 1899, 1900): *Cossus tapinus* Püngeler, 1898, *Holcocerus pulverulentus* Püngeler, 1898, *H. praeclarus* Püngeler, 1898, *Holcocerus tancrei* Püngeler, 1898, *Phragmatoecia reticulata* Püngeler, 1900, and *Hypoapta asema* Püngeler, 1899 (from Merw [Mary] and Askhabad);

A. Bang-Haas (1906): *H. difficilis* A. Bang-Haas, 1906 (from Kuschk an der Russisch-Afghanischen Grenze);

W. Rothschild (1912): *Holcocerus püngeleri* Rothschild, 1912, and *Dyspessa clathrata albosignata* Rothschild, 1912 (from Transcaspien, Imam-Baba), *Hypoapta sumbannus* Rothschild, 1912 and *H. tekkensis* Rothschild, 1912 (from Transcaspien [Turkmenistan, Sumbar river]);

F. Daniel (1953): *Dyspessa salicicola aschabadensis* Daniel, 1953 (from Asia centr., Aschabad);

R.V. Yakovlev (2007, 2008, 2009): *Semagystia dubatolovi* Yakovlev, 2007 (from Turkmenistan, Kugitang Mts., Airi-Baba Mt.), *Phragmataecia turkmenbashi* Yakovlev, 2008 (from Turkmenistan, Kopetdagh Mts., Valley of Ipay-Kala, 15 km SW of Nochur, 56°55'E; 38°15'N), and *Cossus cossus kopetdaghi* Yakovlev, 2009 (from Kopet-Dagh Mts., Valley Point-Kala and Ipay-Kala rivers, 59°54'E; 37°13'N),

Turkmenistan is a country in southwestern Central Asia, with an area of 488 100 km². The biggest portion of it is occupied by the desert Kara-Kum. In the West it is washed by the Caspian Sea, on the south ridge Kopetdag (altitude up to 2942, city of Rize) and the northern foothills Paropamiz (highlands Badkhyz and Karabil). The climate is sharp continental, dry. The average temperature in January -4°C, July 28°C. The precipitation is from 80 to 300 mm per year. The vegetation is mostly desert, in the mountains above 2,000 m there are archa and nut forests. In the valleys of the rivers there are riparian forests.

MATERIALS AND METHODS

During our study of the Cossidae collection at the Zoological Institute of Science Academy of Russian Federation (ZISP, Sankt-Petersburg, Russia), Zoological Museum of Moscow State University (ZMMU), The Natural History Museum (BMNH, London, G.B.) Museum für Naturkunde der Humboldt-Universität (MHUB, Berlin, Germany), Muséum National d'Histoire Naturelle (MNHN, Paris, France), Deutsche Entomological Institute (DEIM, Müncheberg, Germany), Siberian Zoological Museum (SZMN, Novosibirsk, Russia), Nationaal Natuurhistorisch Museum (RMNH, Leiden, The Netherlands), collection of Manfred Ströhle (MSW, Weiden, Germany), Zoologische Staatssammlung der Bayerischen Staaten (Munich, Germany)/Museum of Thomas Witt (MWM, Munich, Germany) and collection of Roman V. Yakovlev (RYB, Barnaul, Russia) we have made for the first time a full list of Cossidae of the Turkmenistan fauna.

RESULTS

Annotated list

Catopta hyrcanus (Christoph, 1888)

Type locality: Schahrud [Emamshahr, Semnan prov., Iran].

Type material (syntypes) in ZISP (probably lost).

Distribution: Iran, Turkmenistan, Iraq (Yakovlev, 2011).

Material: 4 males, Kopet-Dagh, Mts., 5 km S Chuli, 10.07.1992, 56°01'E; 37°56'N, 800 m, leg. Gy. Fabian, B. Herczig, A. Podlussany & Z. Varga (MWM); 1 male, Kopet-Dagh Mts., valley of Ipay-Kala and Point-Kala, 58°54'E; 38°13'N, 30.06.1992, leg. Gy. Fabian, B. Herczig, A. Podlussany & Z. Varga (MWM); 2 males, Kopet-Dagh Mts., Dushak, 2300 m, 57°54'E, 37°57'N, 06–08.07.1992, leg. Gy. Fabian, B. Herczig, A. Podlussany, Z. Varga (MWM).

Kotchevnik tapinus (Püngeler, 1898)

Type locality: Transcaspien, Merw, Sefir-kuh [Turkmenistan, Mary].

Type material (syntypes) in MHUB.

Distribution: Tadjhikistan, Turkmenistan, Iran, Afghanistan, Pakistan (Yakovlev, 2011).

Material: 1 male, Typus – male, Transcaspien, Merw, Sefir-kuh, 1895 (MHUB); 1 male, Transcaspien, Merw, O. Gatnar (MWM); 5 males, Turkmenien, Kopet-Dag Mts., 800–1500 m, valley of the rivers Ipay-Kala and Point-Kala, 59°5.57' E, 38°13.15'N, 30.06.–04.07.1992, leg. B. Fabian, B. Herczig, A. Podlussany and Z. Varga (MWM); 3 males, 1 female, Turkmenistan, Kopet-Dagh Mts., 1000 m, Sayvana valley, cca 5 km SW of Saivana, 56°50'E/38°17'N, 28.06.1992, leg. B. Fabian, B. Herczig, A. Podlussany and Z. Varga (MWM); 1 male, Turkmenistan, Kopet-Dagh Mts., 10 km S of Aidere, 27.06.1992, 600–1000 m, 56°46'E, 38°14'N, leg. B. Fabian, B. Herczig, A. Podlussany and Z. Varga (MWM); 1 male, Turkmenistan, Kopet-Dagh Mts., 400–600 m, Firjuza, 58°05'E/37°59'N, 25.06.1992, leg. B. Fabian, B. Herczig, A. Podlussany and Z. Varga (MWM); 3 males, Turkmenistan, W. Kopet-Dagh, Kara-Kala, 14–17.06.1993, ex coll. Schintlmeister (MWM); 2 males,

Turkmenistan, Kara-Kum desert, 200–300 m, SE of Tedjen, 38°56'N/60°53'E, 12.05.1991., Leg. Danilevsky (MWM).

***Cossus cossus kopetdaghi* Yakovlev, 2009**

Type locality: Turkmenistan, Kopet-Dagh Mts., Valley Point-Kala and Ipay-Kala rivers, 59°54'E/37°13'N.

Type material (holotype by original designation) in MWM.

Distribution: Turkmenistan, Kopet-Dagh Mts., ? N. Iran.

Material: holotype, Turkmenistan, Kopet-Dagh Mts., Valley Point-Kala and Ipay-Kala rivers, 59°54'E, 37°13'N, 800–1500 m, 30.06.–4.07.1992, leg. Fabian, Herczig, Podlussany and Varga (MWM); paratypes: 2 males, Turkmenistan, Kopet-Dagh Mts., 10 km S Aidere, 27.06.1992, leg. Fabian, Herczig, Podlussany and Varga (MWM); 1 male, 8.6.66. Ashkhabad (MWM); 1 male, Kopetdag, Firyuza, 9.05.91, leg. Danilevsky (MWM); 1 male, Kopetdag Mts., 4 km S Nochur, 26.06.1992, leg. Fabian, Herczig, Podlussany and Varga (MWM).

***Holcocerus nobilis* Staudinger, 1884**

Type locality: Ashkhabad, Tekke [Ashkhabad, Turkmenistan].

Type material (lectotype) in MHUB.

Synonymy:

= *Holcocerus marmoratus* Austaut, 1897

Type locality: Bairam-Ale [Bairam-Ali, Mary Velayat, Turkmenistan].

Type material (holotype) in BMNH.

= *Holcocerus strigatus* Austaut, 1897

Type locality: Bairam Ale, Perse [Bairam-Ali, Mary Velayat, Turkmenistan].

Type material (holotype) in BMNH.

= *Holcocerus difficilis* A. Bang-Haas, 1906

Type locality: Kuschka an der Russisch-Afghanischen Grenze [Kushka, Mary Velayat, Turkmenistan].

Type material (holotype) in MHUB.

Distribution: Kazakhstan, Uzbekistan, Kirgiziya, Tadjikistan, Turkmenistan, China (Xinjiang), Iran, Afghanistan (Daniel, 1969; Yakovlev, 2006a).

Material: male, lectotype, Ashkhabad (MHUB), 3 males, 1 female, paralectotypes, same data (MHUB); 1 male, paralectotype, Margelan (MHUB); 3 males, Bairam-Ali (ZISP); 1 male, Ashkhabad (ZISP); 4 males, Kara-Kum desert, 20 km SW of Repetek, 13.05.1991, leg. Danilevsky (MWM); 3 males, 16.07.62, Aschabad, Sedykh (MWM); 1 male, Imam-Bab, June 1980, Reznik E. leg. (MWM); 4 males, 1 female, 50 km N. Aschabad, 3.08.1992, leg. Hreblay, Laszlo & Ronkay (MWM); 1 male, Khauz-Khan, 300 m, 20.06.1992, M. Danilevsky leg. (MWM); 1 female, Turkmenistan, Bikrava, 10.06.67, M. Danilevsky leg. (MWM); 2 males, Ashkhabad (ZMKU); 1 male, Mary (BMNH); 1 male, Ai-Darle, Syr-Darja, 7.07.1909, V. Koshantschikov leg. (ZISP); 5 males, Dortkuju, west of Merw (BMNH); 2 males, W. of Dinau, Amu-Darja (BMNH).

***Holcocerus tancrei* Püngeler, 1898**

Type locality: Merw [Mary, Turkmenistan].

Type material (holotype by monotypy) in MHUB.

Distribution: Iran, Afghanistan, Turkmenistan, Uzbekistan.

Material: male, holotype, Merw (MHUB); 2 females, Kara-Kum desert, 50 km SE of Tezhen, 36°56' N; 60°53'E, 11.05.1991, leg. Danilevsky M. (MWM); 1 female, Kara-Kum desert, 20 km SW of Repetek, 38°25' N; 83°08'E, 13.05.1991, leg. Danilevsky M. (MWM); 1 male, Merw (BMNH), 1 male, 50 km N. Aschabad, 3.08.1993, 100 m, leg. M. Hreblay, Gy. Laszlo, G. Ronkay (MWM); 1 female, Bairam-Ali, M. Daricheva, 29.05.1959 (DEIM); 2 males, W of Dinau, Amu-Darja (BMNH); 2 males, Dortkuju, west of Merw, 19.05.03 (BMNH).

***Holcocerus gloriosa* (Erschoff, 1874)**

Type locality: „in monte Karak in parte orientali desertorum Kisil-Kum sito“ [Karak Mt., Kizil-Kum desert, Turkmenistan].

Type material (lectotype) in ZMMU.

Synonymy:

= *Holcocerus püngeleri* Rothschild, 1912.

Type locality: Transcaspien, Imam-Baba [Turkmenistan, Mary velayat, village Niyazova].

Type material (holotype by monotypy) in BMNH.

Distribution: N. Afghanistan, N. Iran, Turkmenistan, Uzbekistan, S. Kazakhstan.

Material: Lectotype, females, Kyzyl-Kum (ZMMU); paralectotype (female), same data (ZMMU); 1 male, Transcaspien, Merw (MWM); 1 male, Transcaspien, Repetek, 07.07. (MWM); 1 male, Asia, Turkestan (MWM); 3

males, Transcapia, Imam-Baba (MWM); 1 male, Merw, 914 (MWM); 2 males, Transcaspian, Achal-Tekke (MWM); 6 males, 20 km NE Bairamali, 37°45'N; 62°30'E, 12.05.1991, leg. Danilevsky (MWM); 3 males, 50 km SE Tedjen, 36°56'N; 60°53'E, 11.05.1991, leg. Danilevsky (MWM); 3 males, 20 km SE Repetek, 38°25'N; 63°08'E, 13.05.1991, leg. Danilevsky (MWM); 3 males, Kopet-Dagh Mts., valley of Ipay-Kala, 15 km SW Nokhur, 56°55'E; 38°15'N, 26.06.1992, leg. Gy. Fabian, B. Herczig, A. Podlussany & Z. Varga (MWM); 2 males, Kopet-Dagh, Mts., 5 km S Chuli, 10.07.1992, 56°01'E; 37°56'N, 800 m, leg. Gy. Fabian, B. Herczig, A. Podlussany & Z. Varga (MWM); 3 males, Kopet-Dagh Mts., valley of Sayvana, 8 km E. Sayvana, 56°55'E; 38°22'N, 29.06.1992, 1800 m, leg. Gy. Fabian, B. Herczig, A. Podlussany & Z. Varga (MWM); 3 males, Kopet-Dagh Mts., valley of Ipay-Kala and Point-Kala, 58°54'E; 38°13'N, 30.06.1992, leg. Gy. Fabian, B. Herczig, A. Podlussany & Z. Varga (MWM); 1 male, Kopet-Dagh, Mts., 10 km S. Aidere, 27.06.1992, 56°46'E; 38°14'N, leg. Gy. Fabian, B. Herczig, A. Podlussany & Z. Varga (MWM); 1 female, Kara-Kala, 05.1993, leg. Naglis (MWM); 1 female, Kopet-Dagh Mts., Firjuza, 58°05'E; 37°59'N, 25.06.1992, leg. Gy. Fabian, B. Herczig, A. Podlussany & Z. Varga (MWM); 2 males, Imam-Baba, Zakaspijskaja oblast', 24.4.1912, Koshantchikov (ZISP); 2 males, Bairam-Ali (ZISP); 4 males, Kara-Kala, 27.06.1952, Kuznetsov (ZISP); 6 males, female, Repetek (ZISP); male, Mary (RMNH); 4 males, Dortkuju, W. of Merw, May 03 (BMNH).

***Holcocerus holosericeus* Staudinger, 1884**

Type locality: Ashkhabad [Ashkhabad, Turkmenistan].

Type material (lectotype) in MHUB.

Synonymy:

= *Holcocerus persicus* Austaut, 1897

Type locality: Persien, Baira [Bairam-Ali, Mary velayat, Turkmenistan].

Type material (holotype by original designation) in BMNH.

Distribution: Kazakhstan, Mongolia, Kirgizia, Uzbekistan, Tadjikistan, Turkmenistan, NW China, Afghanistan, Iran.

Material: male, lectotype, Ashkhabad (MHUB); 2 males, 2 females, paralectotypes, same data (MHUB); 1 male, paralectotype, Margelan (MHUB); 3 males, Kushka (ZMKU); 8 males, Aschabad, Turkestan, 16.07.82, leg. Sedych (MWM); 2 males, Kuschk (MWM), 5 males, Merw (MWM); 1 male, Eskhan, 100 m, 27.06.1992, leg. M. Danilevsky (MWM); 1 male, Badchiz, Morgunovka, 27.09.1977, leg. Murzin (MWM); 3 males, Khauz-Khan, 300 m, 20.06.1992, leg. Danilevsky (MWM); 40 males, 8 females, Kara-Kum desert, 50 km N. Ashkhabad, 58°33'E; 38°22'N, 12.07.1992, leg. Gy. Fabian, B. Herczig, A. Podlussany & Z. Varga (MWM); 4 males, Todzin, 500 m, 24.06.1986, coll. Schitlmeister (MWM); 2 males, Kopetdagh, Garrygala env., 11–20.07.1996, leg. Miatleuski & Povilaitis A. (MWM); 5 males, Bairam-Ali (ZISP); 4 males, Takhta-Bazar (ZISP); 2 males, Ashkhabad (ZMMU).

***Deserticossus arenicolus* (Staudinger, 1879)**

Type locality: [Narün, nordöstlich von Astrachan zwischen Wolga- und Ural-Fluß, etwa 15 deutsche Meilen ostwärts von der Wolga] (NW Kazakhstan, european part).

Type material (lectotype) in MHUB.

Distribution: Turkmenistan, Kazakhstan, Uzbekistan, Kirgiziya, N. Afghanistan, NW China (Xinjiang).

Material: 20 males, Repetek, 14.05.1966, Zvetaev (ZSSM); 1 male, Eskhan, 100 m, 27.06.1992, M. Danilevsky (MWM); 14 males, 1 female, Transcaspian, Repetek, 05.1966, A. Tzvetaev (MWM); 2 males, 1 female, Transcaspian, Merw, ex coll. Staudinger (MWM); male, Turkmenistan, Khauz-Khan, 300 m, 20.06.1992, M. Danilevsky leg. (MWM); 11 males, Turkmenistan, Kara-Kum desert, 300 m, 20 km NE Bairamali, 37°45'N; 62°30' E, 12.05.1991, leg. M. Danilevsky (MWM); 4 males, Turkmenistan, Kara-kum, Repetek, 38°25' N, 63°08' E, 13.05.1991, leg. Danilevsky (MWM); 3 males, Turkmenistan, Kara Kum desert, 100 m, 50 km N of Ashkhabad, 38°22' N, 58°33' E, 10.05.1991, leg. Danilevsky M. (MWM); 4 males, Turkmenistan, Kara Kum desert, 200–300 m, 50 km SE of Tedjen, 36°56' N, 60°53' E, 11.05.1991, leg. Danilevsky M. (GenPr MWM – 9820); 3 males, E. Turkmenistan, Chardzhou, 1–4.5.1995 (MWM); 2 males, Turkmenistan, 50 km N Ashkhabad, 58°33'E, 38°22'N, 100 m, 3.08.1992, leg. M. Hreblay, Gy. Laszlo and G. Ronkay (MWM); 12 males, Turkmenistan, Kopet-Dagh Mts., 800 m, valley of Ipay-Kala, 15 km SW Nochur, 56°55'E, 38°15'N, 26.06.1992, leg. Gy. Fabian, B. Herczig, A. Podlussany, Z. Varga (MWM); 2 males, Turkmenistan, Kopet-Dagh Mts., 1800 m, valley of Sayvana, 8 km E. Sayvana, 56°55'E, 38°22'N, 29.06.1992, leg. Gy. Fabian, B. Herczig, A. Podlussany, Z. Varga (MWM); 2 males, Turkmenistan, Kopet-Dagh Mts., Dushak, 2300 m, 57°54'E, 37°57'N, 06–08.07.1992, leg. Gy. Fabian, B. Herczig, A. Podlussany, Z. Varga (MWM); 2 males, Turkmenistan, Kopet-Dagh Mts., 1800 m, valley of Sayvana, 8 km E Sayvana, 56°55'E, 38°22'N, 29.06.1992, leg. Gy. Fabian, B. Herczig, A. Podlussany, Z. Varga (MWM); 1 male, Turkmenistan, Kopetdagh, Barygala Umg., 11–20.07.1996, leg. J. Miatleuski (MWM); 2 males, Turkmenistan, Kopetdagh, Sumbar river Valley, Tersakan, 19–20.07.1996, leg. Miatleuski J., Povilaitis A. (MWM); 2 males, Turkmenistan, Kopetdagh, Garrygala env., 25–31.07.1996, leg. Miatleuski J., Povilaitis A. (MWM); 2 males,

Turkmenistan, Imam-Baba, June 1980, E. Reznik (MWM); 2 males, Imam-Baba (ZISP); 2 males, Turkomania, Ashgabat, 10.07.1954, W. Potopolskij (ZISP); 1 male, Molla-Kora, E Krasnovodsk, 8.09.33., Vlasov (ZISP); 4 males, Bairam-Ali, Turkmenistan, Bogush leg. (ZISP); 3 males, Kara-Kala, 16.06.52, Kuznetsov leg. (ZISP); 2 males, N slope of Sjuit Mt., 25.07.952, Kuznetsov leg. (ZISP); 1 male, Chardzhou [Chardzhou] station, Zarudnyi leg. (ZISP); 2 males, Talta-Bazar, 25.06.932, Bogush leg. (ZISP); 4 males, 1 female, Sumbar, 12.07.1894 (ZISP); 2 males, Termez, 14.07.932, Bogush (ZISP); 5 males, Repetek (ZMMU, ZMKU, BMNH); 3 males, Gary-Galla, 6.95., leg. Miatleuski (AHU); 2 males, Ashkhabad (ZMKU); 2 males, Tedzhen (BMNH).

***Deserticossus pulverulentus* (Püngeler, 1898)**

Type locality: Merw [Mary, Turkmenistan].

Type material (syntypes) in MHUB.

Distribution: Kazakhstan, Kirgizia, Uzbekistan, Turkmenistan, NW China (Xingjian), Israel.

Material: 1 male, lectotype, Merw (MHUB); 3 males, paralectotypes, Merw (MHUB); 15 males, Transcasp., Repetek, 30.04.1966, leg. Tzvetayev A. (MWM); 5 males, female, Repetek, 4.05.1962, Stchetkin leg. (MWM); 7 males, 2 females, Turkmenistan, Kara-kum, 20 km SW Repetek, 38°25' N, 63°08' E, 13.05.1991, leg. Danilevsky (MWM); male, Turkmenistan, Kopet-Dag Mts., Firjuza, 37°54' N, 58°05' E, 4.05.1991, leg. Danilevsky (MWM); 12 males, Repetek (MWM, BMNH, ZMKU); 11 males, 4 females, Chardzhou, 4.05.1995 (MWM); 3 males, Eskhan, 100 m, 27.06.1992, M. Danilevsky (MWM); 2 males, Repetek, 05.5., Grazhdankin (AHU); male, river Amu-Darja, between Chardzhui and Petro-Alexandrovsk, 16–22.05.1913, Veth H. (BMNH).

***Deserticossus praeclarus* (Püngeler, 1898)**

Type locality: Merw [Mary, Turkmenistan].

Type material (holotype) in MHUB.

Distribution: Turkmenistan.

Material: 9 males, Kara-kum desert, Repetek, 6.05.1995 (MWM); female, 20 km SW of Repetek, 38°25'N; 63°08'E, 13.05.1991, leg. Danilevsky M. (MWM); female, Chardzhou, 1.–4.5.1995 (MWM); 4 males, Kara-Kum des., Uzboi valley, Jaskhan, 25.05.1994, leg. Miatleuski (SIS, AHU); male, Chadjiev env., 05.96., V. Perepel (AHU).

***Barchaniella inspersa* (Christoph, 1887)**

Type locality: Ashkhabad [Turkmenistan, Ashkhabad].

Type material (lectotype) in ZISP.

Distribution: Kazakhstan, Uzbekistan, Turkmenistan, SW China (Xinjiang), SW Mongolia.

Material: male, Merw (MWM); 35 males, 4 females, Kara-Kum desert, 30–70 km SW Repetek, 13.05.1991, 200 m, leg. M. Danilevsky (MWM); 23 males, 3 females, Kopet-Dag Mts., Firjuza, 600 m, 4.5.–9.5.1991, leg. Danilevsky M. (MWM); 24 males, 2 females, Kopet-Dag Mts., 5 km S. Chuli, 800 m, 18.05.1991, leg. M. Danilevsky (MWM); 4 males, Kara-Kum, Repetek, 6.05.1995 (MWM); 2 males, Chardzhou, 1.05.1995 (MWM); male, Khauz-Khan, 20.06.1992, Danilevsky (MWM); female, 50 km SE Tedzhen 11.05.1991, leg. Danilevsky (MWM); 2 males, 50 km N. Ashkhabad, 100 m, 3.08.1992, leg. Hreblay, Laszlo, Ronkay (MWM); male, Eskhan, 27.06.1992, M. Danilevsky, GPrMWM 8965 (MWM); 2 males, Kushka (BMNH); 2 males, Repetek (BMNH).

***Barchaniella sacara* (Grum-Grshimailo, 1902)**

Type locality: In provincia Transcaspica, in valle fl. Sumbar [Turkmenistan, near Kara-Kala, Sumbar river].

Type material (cotypes) in ZISP, probably lost.

Synonymy:

= *Hypoptya sumbannus* Rothschild, 1912.

Type locality: Transcaspian [Turkmenistan, Sumbar river].

Type material (syntypes) in BMNH.

= *Hypoptya tekkensis* Rothschild, 1912.

Type locality: Transcaspian [Turkmenistan, Sumbar river].

Type material (holotype) in BMNH.

= *Holococcus sacarum* – Krivokhatskyi, 1985, Insects Repetek: 33.

An incorrect subsequent spelling of *Holococcus sacarum* Grum-Grshimailo, 1902.

Distribution: S. Kazakhstan, Uzbekistan, Turkmenistan (Krivokhatskyi, 1985; Yakovlev, 2006).

Material: male, Kara-Kum desert, 200 m, 20 km SW of Repetek, 38°25'N; 63°08'E, 13.05.1991, leg. Danilevsky (MWM); male, female, Transcaspian, Sumbar, Herz, 1894 (MHUB); male, Kainar-Baba, Kuhitang, 12.05.1996 (MWM).

***Plyustchiella gracilis* (Christoph, 1887)**

Type locality: Ashkhabad [Turkmenistan, Ashkhabad].

Type material (lectotype) in ZISP.

Distribution. Uzbekistan, Turkmenistan.

Material: Lectotype: male, Ashkhabad (ZISP); 3 males (paralectotypes), same data (ZISP); 2 males, Chardzhou on Amu-Darja, 30.04.1912, Samokin (ZISP); 4 males, 2 females, Turcomani, Aschabad circ., 15.07.1914, W. Potopolski (ZISP); 3 males, female, Aschabad, 16.07.62, Sedych leg. (MWM); 5 males, 50 km N. of Ashabad, 38°22'N; 58°33'E, 10.05.1991, leg. Danilevsky (MWM); male, Repetek, 20.05.1970, Grazhdankin leg. (MWM); 8 males, Oase Tedzhen, 5.903, leg. Hauser (BMNH).

***Cossulus intractatus* (Staudinger, 1887)**

Type locality: Provinz Samarkand [Uzbekistan, Samarkand].

Type material (cotypes) in MHUB.

Distribution: Kirgizia, Uzbekistan, Tadzhikistan, Turkmenistan, Afghanistan.

Material: male, Repetek, 1.10.1989 (MWM); male, Badkhyz, Morgunovka, 25.05.1975, V. Murzin (MWM).

***Cossulus turcomanicus* (Christoph, 1893)**

Type locality: Ashkhabad, Pul-i-Hatum, Tekke [Turkmenistan, Ashkhabad].

Type material: lectotype in ZISP.

Distribution: Turkmenistan, N. Afghanistan, NE Iran.

Material: male, lectotype, Ashkhabad (ZISP); 3 males, Kara-Kala, Ikderdzhik, 15.05.952, Kuznetsov (ZISP); male, Kopet-Dagh, Boloso, 5.07.1956, Potopolskij (ZISP); 2 males, 75 km NW Karakala, 8.06.1953, Kuznetsov (ZISP); 2 males, N. slopes of Syuit Mt., 12.05.1953, Kuznetsov (ZISP); 1 male, Uzboi, 23.04.1951, Shtejnberg (ZISP); 23 males, 5 km S of Chuli, 700–800 m, 18.05.1991, Danilevsky (MWM); 4 males, 70 km SW of Repetek, 200 m, 14.05.1991, Danilevsky (MWM); male, Kopet-Dagh, Parkhay, 1.05.1991, Danilevsky (MWM); male, Kara-Kala, 1.6.1992, Antipin (MWM); 3 males, 10 km S. Aidere, 27.06.1992, 1000 m, leg. Fabian et al. (MWM); 3 males, 15 km SE Nochur, 26.06.1992 (MWM); male, 4 km S. Nochur, 26.06.1992, leg. Fabian et al. (MWM); 2 males, Firjuza, 25.06.1992, leg. Fabian et al. (MWM); male, Chuli, 28.06.1992, leg. Gorbunov O. (MWM).

***Cossulus mollis* (Christoph, 1887)**

Type locality: Ashkhabad [Turkmenistan, Ashkhabad].

Type material (lectotype) in ZISP.

Distribution. Turkmenistan, Iraq.

Material: 14 males, Kopetdagh, Dushak Mts., 1500–2400 m, 7.8.1992, leg. Hreblay et al. (MWM); female, 50 km N. Ashkhabad, 3.08.1992, leg. Hreblay et al. (MWM).

***Cossulus mucosus* (Christoph, 1884)**

Type locality: Nuchur [Turkmenistan].

Type material (lectotype) in ZISP.

Distribution. SE Kazakhstan, S. Kirgyziya, Tadzhikistan, Turkmenistan, Iran, Afghanistan.

Material: male, Ai-dere, Eylandt (ZISP); 1 male, Ashkhabad, 05.1978, Lisetzki (MWM); male, Tchuli, 30.05.92, O. Gorbunov (MWM); 6 males, 4 females, Kopetdagh, Dushak, 1800 m, 23.06.1992, Danilevskii (MWM); 12 males, 3 females, Firjuza, 600 m, 16.05.1991, Danilevskii (MWM); 5 males, 5 females, Kopet-Dagh, 8 km E Saivana, Saivana Valley, 29.06.1992, leg. Fabian et al. (MWM); 4 males, 10 km S Ai-Dere, 27.06.1992, leg. Fabian et al. (MWM); 3 males, Kopet-Dagh Mts., valley of Ipay-Kala and Point-Kala, 58°54'E; 38°13'N, 30.06.1992, leg. Gy. Fabian, B. Herczig, A. Podlussany & Z. Varga (MWM); 3 males, Kopet-Dagh Mts., valley of Ipay-Kala, 15 km SW Nokhur, 56°55'E; 38°15'N, 26.06.1992, leg. Gy. Fabian, B. Herczig, A. Podlussany & Z. Varga (MWM);

***Cossulus putridus* (Christoph, 1887)**

Type locality: Aschabad [Turkmenistan, Ashkhabad].

Type material (cotypes) in ZISP.

Distribution: Turkmenistan, Iran, Afghanistan.

Material: male (cotype), Ashkhabad (ZISP); 3 males, Transcaspien, Sumbar, O. Herz, 1894 (ZISP).

***Eremocossus asema* (Püngeler, 1899)**

Type locality: Ashkhabad [Turkmenistan].

Type material (cotypes) in MHUB.

Distribution: Turkmenistan, ? NE Iran.

Material: 6 males, Kara-Kum desert, 50 km SE of Tedjen, 36°56'N; 60°53'E, 11.05.1991, leg. Danilevsky (MWM)

***Vartiania muscula* (Rothschild, 1912)**

Type material: Syr Daria.

Type material (holotype) in BMNH.

Distribution: Turkmenistan, Uzbekistan.

***Dieida ahngerii* (Grum-Grshimailo, 1902)**

Type locality: Krasnowodsk (?), prov. Transcaspiæ [Turkmenistan, Turkmenbashi].

Type material (holotype) in ZISP. Probably lost?

Distribution: Turkmenistan, Uzbekistan, Tadzhikistan.

Material: 1 male, 1 female, Turkmenistan, Syagirim-Dagh, Mangala vic., 24.04.1992, leg. Devyatkin (RYB).

***Semagystia agilis* (Christoph, 1884)**

Type locality: Krasnowodsk [Turkmenistan].

Type material (syntypes) in ZISP.

Distribution: Turkmenistan, Uzbekistan, NW Afghanistan, Iran.

Material: 1 male, W. Kopet-Dagh, Kara-Kala, 28.04.88., P. Ustyuzhanin (RYB); 4 males, Askhabad, Tancre (MWM); 2 males, Merw (MWM); 18 males, 3 females, Kopet-Dagh Mts., 10 km S of Aidere, 27.06.1992, 600-1000 m, 56°46'E, 38°14'N, leg. B. Fabian, B. Herczig, A. Podlussany and Z. Varga (MWM); 22 males, 2 females, Kopet-Dagh Mts., 800 m, valley of Ipay-Kala, 15 km SW Nochur, 56°55'E, 38°15'N, 26.06.1992, leg. Gy. Fabian, B. Herczig, A. Podlussany, Z. Varga (MWM); 37 males, 3 females, Kopet-Dagh, Mts., 5 km S Chuli, 10.07.1992, 56°01'E; 37°56'N, 800 m, leg. Gy. Fabian, B. Herczig, A. Podlussany & Z. Varga (MWM); 25 males, 2 females, Kopet-Dagh Mts., 1000 m, Sayvana valley, cca 5 km SW of Saivana, 56°50'E, 38°17'N, 28.06.1992, leg. B. Fabian, B. Herczig, A. Podlussany and Z. Varga (MWM); 14 males, Kopet-Dagh Mts., valley of Ipay-Kala and Point-Kala, 58°54'E; 38°13'N, 30.06.1992, leg. Gy. Fabian, B. Herczig, A. Podlussany & Z. Varga (MWM); 12 males, 3 females, Kopet-Dagh Mts., Dushak, 2300 m, 57°54'E, 37°57'N, 06-08.07.1992, leg. Gy. Fabian, B. Herczig, A. Podlussany, Z. Varga (MWM); 7 males, Chardzhou, 1.05.1995 (MWM); 22 males, Kopet-Dag Mts., Firjuza, 600 m, 4.5.-9.5.1991, leg. Danilevsky M. (MWM).

***Semagystia dubatolovi* Yakovlev, 2007**

Type locality: Turkmenistan, Kugitang Mts., Airi-Baba Mt.

Type material (holotype) in SZMN.

Distribution: Turkmenistan, Kugitang Mts.

Material: holotype, male, Turkmenistan, Kugitang Mts., Airi-Baba Mt., 2150 ms, 14.7.1991, V. Dubatolov legit. (SZMN), paratypes 33 males, same data (SZMN, RYB, MWM).

***Semagystia clathrata* (Christoph, 1884)**

Type locality: Kyzyl Arvat und Bami [Turkmenistan, Gyzylrabat and Bami].

Type material (cotypes) in ZISP.

Distribution: Turkmenistan, ?Afghanistan.

Material: 13 males, 9 females, Kara-Kum, 50 km N Ashabad, 38°22'N, 58°33'E, 10.05.1991, leg. Danilevsky (MWM); 6 males, 5 females, same locality, 17.04.1993, leg. Hreblay, Laszlo & Podlussany (MWM); 1 male, Kopet-Dagh, Parkhay, 38°22'N, 56°13'E, 26.04.1991, leg. Csorba, Fabian, Herczig, Hreblay & Ronkay (MWM); 1 male, Kara-Kum, Pavlan Kui, 12.06.1972 (MWM).

***Dyspessa albosignata* Rothschild, 1912**

Type locality: Imam-baba, Transcaspiæ [Turkmenistan].

Type material (holotype) in BMNH.

Distribution: Turkmenistan, N. Iran.

Material: 167 males, Kopetdagh, Garygala, Parkhai, 21-30.04.1996, leg. Miatleuski & Povilaitis (MWM); 1 male, 1 female, W. B. Balkan mt., NE Danata-Spring, 300 m, 5-7.05.1996, leg. Miatleuski & Povilaitis (MWM); 5 males, 2 females, Turkmenistan, Kara Kum desert, 100 m, 50 km N of Askhabad, 38°22' N, 58°33' E, 10.05.1991, leg. Danilevsky M. (MWM); 4 males, W. Kopet-Dagh, Kara-Kala, 14-17.06.1993, ex coll. Schintmeister (MWM); 3 males, 10 km S Ai-Dere, 27.06.1992, leg. Fabian et al. (MWM); 25 males, 5 females, Turkmenistan, Kopet-Dag Mts., Firjuza, 37°54' N, 58°05' E, 4.05.1991, leg. Danilevsky (MWM); 2 males, 1 female, Kopet-Dagh Mts., Dushak, 2300 m, 57°54'E, 37°57'N, 06-08.07.1992, leg. Gy. Fabian, B. Herczig, A. Podlussany, Z. Varga (MWM); 12 males, Kopet-Dagh, Mts., 5 km S Chuli, 10.07.1992, 56°01'E; 37°56'N, 800 m, leg. Gy. Fabian, B. Herczig, A. Podlussany

& Z. Varga (MWM); 11 males, Sunt-Hasardag reserve, Shevlan, 450 m, 13.04.1994 (MWM); 1 male, 1 female, Kara-Kala, 14-17.05.1993 (MWM); 13 males, 30 females, 4 km NW Germob, Kurkulab, 750 m, 10.04.1993, 38°84N, 57°50E, leg. Hreblay, Laszlo & Podlussany (MWM); 1 male, Chuli settl., 22.04.1993, leg. Limonov (MWM).

***Dyspessa salicicola aschabadensis* Daniel, 1953**

Type locality: Asia centr., Aschabad.

Type material (holotype) in ZSSM.

Distribution: Daghestan, Turkmenistan.

Material: 2 males (paratypes), Merw, 7.07 (MWM); 3 males (paratypes), Ashkhabad, coll. Tancre (MWM); 2 males (paratypes), Achal-Tekke (MWM); 1 male, Kara-Kala, 14-17.05.1993 (MWM); 5 males, Kopet-Dagh Mts., 10 km S of Aidere, 27.06.1992, 600-1000 m, 56°46E, 38°14N, leg. B. Fabian, B. Herczig, A. Podlussany and Z. Varga (MWM); 7 males, Kopet-Dagh Mts., 1000 m, Sayvana valley, cca 5 km SW of Saivana, 56°50E, 38°17N, 28.06.1992, leg. B. Fabian, B. Herczig, A. Podlussany and Z. Varga (MWM); 1 male, Dushak, 1800 m, 23.06.1992, leg. M. Danilevsky (MWM).

***Phragmacossia ariana* (Grum-Grshimailo, 1899)**

Type locality: in Kara-tjube, haud procul ab urbe Samarkand [Uzbekistan, Samarkand distr.].

Type material (holotype) in ZISP.

Synonymy:

= *Phragmataecia reticulata* Püngeler, 1900.

Type locality: Merw [Turkmenistan, Mary].

Type material (cotypes) in MHUB.

Distribution: Uzbekistan, Tadjikistan, Turkmenistan, Kyrgyzstan, Iran.

Material: 1 male, cotype, Merw (MHUB).

***Phragmacossia territa* (Staudinger, 1879)**

Type locality: Laterne im Kerasdere [Turkey].

Type material (syntypes) in MHUB.

Synonymy:

= *Phragmataecia territa transcaspica* Grum-Grshimailo, 1895.

Type locality: provincia Transcaspica ad urbem Serachs [Turkmenistan, Serags or NE Iran, Sarachs]. Distance between Serags and Sarachas 5 km.

Type material (syntypes) in BMNH.

Distribution: Lebanon, Syria, Israel, Egypt, Iran, Turkey, Turkmenistan, Uzbekistan, Tadjikistan, ? Kirgizia.

Material: 2 males, Kopet-Dagh Mts., Dushak, 2300 m, 57°54'E, 37°57'N, 06-08.07.1992, leg. Gy. Fabian, B. Herczig, A. Podlussany, Z. Varga (MWM); 116 males, 1 female, Kopetdagh, Garygalla, 21-31.07.1996, leg. J. Miatleuski (MWM); 11 males, Amudaria river, Soidi, 7-15 Juni 1997, leg. J. Miatleuski (MWM); 4 males, Kyzyl Dzhar, 1.10.1989 (MWM); 2 males, Repetek, 20.08.1988 (MWM); 2 males, Badhyz, Morgunovka, 27.09.1975, leg. S. Murzin (MWM); 1 male, 1 female, Kopet-Dagh, Mts., 5 km S Chuli, 10.07.1992, 56°01'E; 37°56'N, 800 m, leg. Gy. Fabian, B. Herczig, A. Podlussany & Z. Varga (MWM); 1 male, Kopet-Dagh Mts., valley of Ipay-Kala and Point-Kala, 58°54'E; 38°13'N, 30.06.1992, leg. Gy. Fabian, B. Herczig, A. Podlussany & Z. Varga (MWM); 1 male, Ashabad, 16.07.1962, Sedych leg. (MWM); 3 males, Merw (MWM); 3 males, W. Kopet-Dagh Mts., Kara-Kala, Parkhai vill., 19.07.1996, leg. Ju. Voitenko (MWM).

***Phragmataecia castaneae* (Hübner, 1790)**

Type locality: Europe.

Type material is lost.

Distribution: Central and Southern Europe, S. England, M. East, Caucasus, Transcaucasia, Turkmenistan, Kazakhstan, NW Iran, Iraq, Syria, Lebanon, Turkey, W. China (Xinjang), SW Siberia, Egypt, Tunisia, Morocco.

Material: 1 male, Mary, 1.04.93 (MWM); 4 males, 1 female, Kerki, 20.04.1993, leg. Lazutin (MWM); 1 male, Chardzhou, 1.05.1995 (MWM); 3 males, Kara-Kala, 14.05.1993 (MWM); 1 female, Merw (MWM).

***Phragmataecia turkmenbashi* Yakovlev, 2008**

Type locality: Turkmenistan, Kopetdagh Mts., Valley of Ipay-Kala, 15 km SW of Nochur, 56°55'E; 38°15'N.

Type locality (holotype) in MSW.

Distribution: Turkmenistan, Kopetdagh Mts.

Material: 1 male, holotype (MWM).

***Phragmataecia albida* Erschoff, 1874**

Type locality: Kisil-Kum desert [SW Uzbekistan].

Type material (lectotype) in ZISP.

Distribution: Iran, Turkmenistan, Uzbekistan, Kazakhstan, NW China, Afghanistan, Russia (S. Volga reg.).

Material: 7 males, 2 females, 50 km SE Tedjen, 36°56'N, 60°53'E, 11.05.1991, leg. Danilevsky (MWM); 4 males, Seidy, 200 m, 18.06.1992, leg. Danilevsky (MWM); 3 males, 1 female, Kara-Kum desert, 20 km NE Bairamali, 200-300 m, 37°45'N, 62°30'E, 12.05.1991, leg. Danilevsky (MWM); 3 males, Khauz-Khan, 300 m, 20.06.1992, leg. Danilevsky (MWM); 1 male, 20 km SW Repetek, 38°25'N, 63°08'E, 13.05.1991, leg. Danilevsky (MWM); 2 males, Kopet-Dagh Mts., valley of Ipay-Kala, 15 km SW Nokhur, 56°55'E; 38°15'N, 26.06.1992, leg. Gy. Fabian, B. Herczig, A. Podlussany & Z. Varga (MWM); 2 males, Kopet-Dagh, Mts., 5 km S Chuli, 10.07.1992, 56°01'E; 37°56'N, 800 m, leg. Gy. Fabian, B. Herczig, A. Podlussany & Z. Varga (MWM); 4 males, Badchis, Morgunovka, 27.09.1977, leg. Murzin (MWM).

***Zeuzera pyrina* (Linnaeus, 1761)**

Type locality: Sweden.

Type material (syntypes) in Linnean Society (London).

Distribution: Europe including S. England, N. Africa (Egypt, Tunisia, Morocco, Algeria, Mauritania), Iran, Lebanon, Syria, Turkmenistan, Turkey, Caucasus, Transcaucasia, SW Siberia, N. America (Massachusetts, Connecticut, New York, New Jersey), Central Africa (Ghana).

Material: 3 males, Kopet-Dagh Mts., 800 m, valley of Ipay-Kala, 15 km SW Nochur, 56°55'E, 38°15'N, 26.06.1992, leg. Gy. Fabian, B. Herczig, A. Podlussany, Z. Varga (MWM); 1 male, Kopet-Dagh Mts., 10 km S of Aidere, 27.06.1992, 600-1000 m, 56°46'E, 38°14'N, leg. B. Fabian, B. Herczig, A. Podlussany and Z. Varga (MWM); 2 males, Kopet-Dagh Mts., valley of Ipay-Kala and Point-Kala, 58°54'E; 38°13'N, 30.06.1992, leg. Gy. Fabian, B. Herczig, A. Podlussany & Z. Varga (MWM); 2 males, Kopet-Dagh Mts., 1000 m, Sayvana valley, cca 5 km SW of Saivana, 56°50'E, 38°17'N, 28.06.1992, leg. B. Fabian, B. Herczig, A. Podlussany and Z. Varga (MWM).

***Cecryphalus nubila* (Staudinger, 1895)**

Type locality: Kaschgar [NW China, Tura]

Type material (cotypes) in MHUB.

Synonymy:

= *Zeuzera strix* Grun-Grshimailo, 1895.

Type locality: provincia Transcaspica ad urbem Serachs [Turkmenistan, Serags or NE Iran, Sarachs].

Type material (holotype) in ZISP.

Distribution: S. Kazakhstan, Kirgiziya, S. Mongolia, Uzbekistan, Tadjikistan, Azerbaidzhan, S. Armenia, Turkmenistan, N. Iran, China (Xinjiang) (Staudinger, Rebel, 1901; Daniel, 1969a; Hua et al., 1990; Yakovlev, 2004g).

Material: 1 male, Kara-Kala, 5.93, leg. Naglis (MSW); 2 males, Kopetdagh, Sumbar riv., Tersakan, 19.07.1996, leg. Miatleusky (MSW); 3 males, Kopetdagh, Modzukly Mt., 1000 m., 18.04.1996, leg. Miatleusky (MSW); 2 males, Molla-Kara, near Krasnovodsk (ZISP); 2 males, Aj-Dare, Syr-Darja (ZISP); 1 male, Ashabad (ZISP) 1 male, Termez (ZISP); 1 male, Repetek (MWM).

DISCUSSION

33 species of Cossidae from 17 genera are reported for the fauna of Turkmenistan.

3 species are endemics of Turkmenistan: *Deserticossus praeclarus* (Püngeler, 1898) (Kara-Kum desert), *Semagystia dubatolovi* Yakovlev, 2007 (Kugitang Mts.), *Phragmataecia turkmenbashi* Yakovlev, 2008 (Kopet-Dagh Mts.). 3 species: *Cossus cossus* L., *Zeuzera pyrina* L. and *Phragmataecia castaneae* Hbn. are widespread in the Palaearctic. The majority of the fauna representatives are more or less widespread species of the Palaearctic desert belt.

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