

Cecryphalini Yakovlev et Witt, trib. n. — new tribe of Carpenter-Moths (Lepidoptera: Cossidae: Zeuzerinae)

Cecryphalini Yakovlev et Witt, trib. n. — новая триба древоотщев (Lepidoptera: Cossidae: Zeuzerinae)

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KEYWORDS: Lepidoptera, Cossidae, Cecryphalini, new tribus, new synonym, catalog.

КЛЮЧЕВЫЕ СЛОВА: Lepidoptera, Cossidae, Cecryphalini, новая триба, новый синоним, каталог.

ABSTRACT. A new tribe, Cecryphalini Yakovlev et Witt, **trib.n.**, is proposed to includes two genera, *Cecryphalus* Schoorl, 1990 and *Tarsozeuzera* Schoorl, 1990 and their included species. A new synonymy *Zeuzera strix* Grum-Grshimailo, 1853 = *Zeuzera nubila* Staudinger, 1895, **syn.n.** is established; a redescription of the genus *Tarsozeuzera* is presented. The illustrated catalog of the eight species of the tribe, listing type specimens is provided. The distribution of all the known species is shown on range maps.

РЕЗЮМЕ. В статье приводится описание новой трибы Cecryphalini Yakovlev et Witt, **trib.n.**, включающей два рода: *Cecryphalus* Schoorl, 1990 и *Tarsozeuzera* Schoorl, 1990 и восемь видов. Установлена новая синонимия *Zeuzera strix* Grum-Grshimailo, 1853 = *Zeuzera nubila* Staudinger, 1895, **syn.n.**; переописан род *Tarsozeuzera*. Дан иллюстрированный (в том числе типовыми экземплярами) каталог трибы. Даны карты распространения всех известных видов трибы.

Introduction

Cossidae (Lepidoptera) is a family including over 1000 taxa of the species group [Nieukerken *et al.*, 2011]. The family system is still not sufficiently studied; in particular, tribes have been not erected. At present, taking into account the complete morphological study of the genera, it is possible to begin the work on the supergeneric taxonomy of the family.

I.V. Kozhantshikov in an unpublished 1950 manuscript was the first to place the Palaearctic species

Zeuzera nubila Staudinger, 1895 and *Z. helenae* Le Cerf, 1924 into a single genus. In this manuscript on Cossidae of the USSR (found in the archives of the Lepidopterological Laboratory of the Zoological Institute of the Russian Academy of Science), he suggested the generic name *Semizeuzera* for these two species, which is unavailable (Fig. 1). Also, Kozhantshikov noted a significant external similarity of *Z. nubila* and *Z. helenae* to the tropical species: *Z. kochi* Semper, 1896–1902 and *Duomitus fuscipars* Hampson, 1892.

Schoorl [1990] described two Zeuzerinae genera clearly distinguished from the others: *Cecryphalus* Schoorl, 1990 (type species — *Zeuzera nubila* Staudinger, 1895) and *Tarsozeuzera* Schoorl, 1990 (type species — *Zeuzera kochi* Semper, 1902). Schoorl [1990: 161, fig. 75]

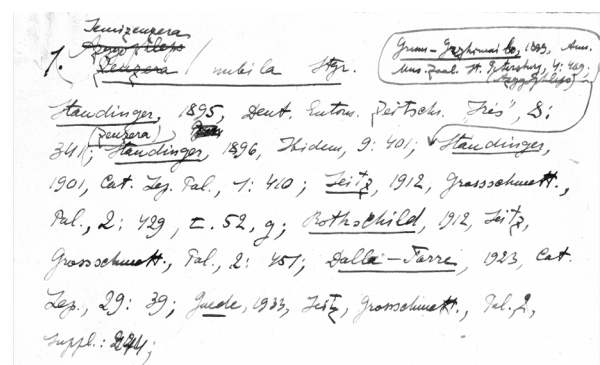


Fig. 1. Fragment of Kozhantshikov's manuscript [from Yakovlev, 2011a].

Рис. 1. Фрагмент рукописи И. Кожанчикова [из Яковлев, 2011а]

noticed the great similarity of these genera and united them to one clade. Unfortunately, he did not provide a diagnosis basing on the genitalic characteristics.

The redescription of *Cecryphalus* was published by Yakovlev [2011a]. Additionally, four new species of the *Tarsozeuzera* from Central and South Africa, Thailand, and New Guinea were described by Yakovlev [2006, 2011b].

The examination of genitalic structures of representatives of all the Zeuzerinae genera of the World fauna, we have determined that the genera *Cecryphalus* and *Tarsozeuzera* should be included in a new tribe.

Material and methods

In the study, the materials from the following collections were examined:

AHU — collection of Armin Hauenstein (Untermünkeim, Germany);

BMNH — Natural History Museum (London, G.B.);

CMNH — Carnegie Museum of Natural History (Pittsburg, USA);

MNHN — Muséum National d'Histoire Naturelle (Paris, France);

MNKB — Museum für Naturkunde, Leibniz Institut für Evolution und Biodiversitätsforschung, (Berlin, Germany);

MRAC — Museum Royal of Central Africa (Tervuren, Belgium);

MSW — collection of Manfred Ströhle (Weiden, Germany);

MWM — Museum of Thomas Witt (Munich, Germany);

RMM — collection of Raymond Murphy (Mzuzu, Malawi);

RYB — collection of Roman Yakovlev (Barnaul, Russia);

ZISP — Zoological Institute of Science Academy of Russian Federation (Sankt-Petersburg, Russia);

ZMKU — Zoological Museum at Kiev State University (Kiev, Ukraina);

ZMMU — Zoological Museum of Moscow University (Moscow, Russia);

ZSM — Zoologische Staatssammlung der Bayerischen Staaten (Munich, Germany).

Genitalia slides were examined with a Zeiss Stemi 2000 C microscope and images were taken with the Olympus XC 50 camera.

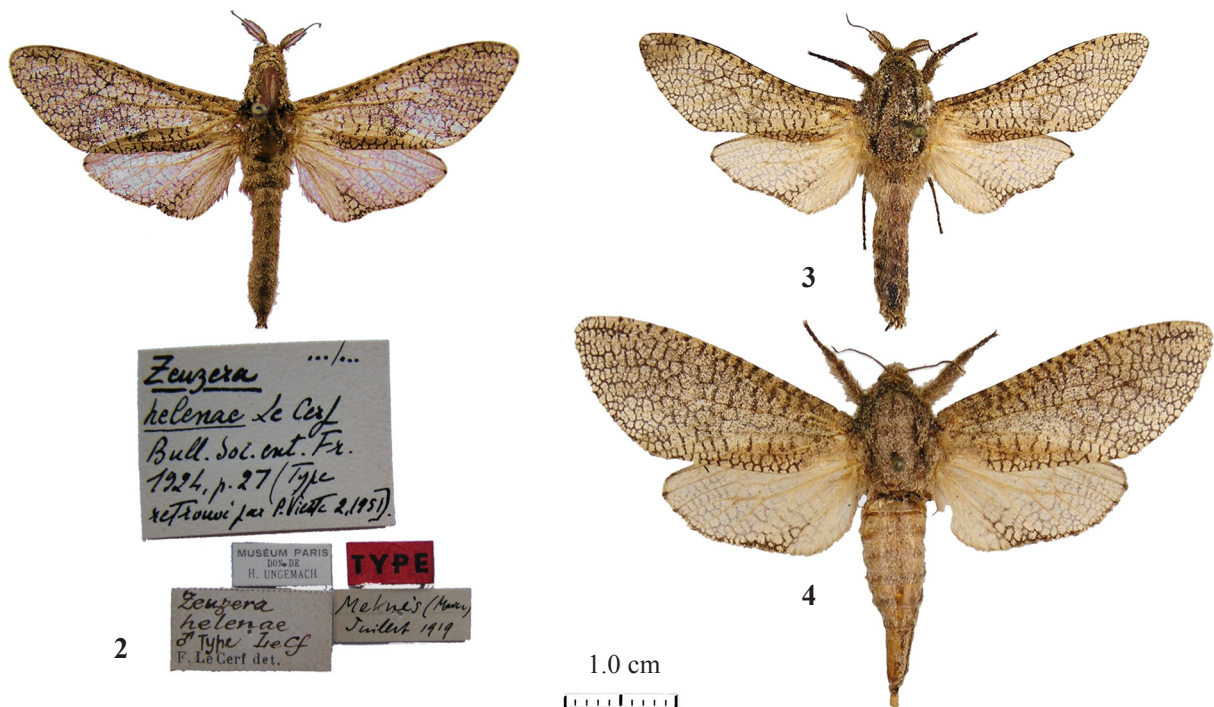
Results

Cecryphalini Yakovlev et Witt, **trib.n.**

TYPE GENUS — *Cecryphalus* Schoorl, 1990.

DIAGNOSIS. Presence of a noticeable notch on the outer edge (at the anal angle) of the male hind wing, the flat apex of the uncus.

DESCRIPTION. **Male.** Medium size. Antenna typical of Zeuzerinae: basally bipectinate, distally simple. Fore wing narrow, long, apex sharp. Hind wing short, apex rounded,



Figs 2–4. *Cecryphalus* (adult specimens): 2 — *C. helenae*, ♂ (holotype of *Zeuzera helenae* Le Cerf, 1924) (MNHN); 3 — *C. helenae*, ♂, Algier, El Mesrane, Predota, 12.7.1931 (MWM); 4 — *C. helenae*, ♀, Algier, El Mesrane, Predota, 12.7.1931 (MWM).

Рис. 2–4. *Cecryphalus* (имаго): 2 — *C. helenae*, ♂ (голотип *Zeuzera helenae* Le Cerf, 1924) (MNHN); 3 — *C. helenae*, ♂, Алжир, Эль Месран, Предота, 12.7.1931 (МВМ); 4 — *C. helenae*, ♀, Алжир, Эль Месран, Предота, 12.7.1931 (МВМ).



Figs 5–12. *Cecryphalus* (adult specimens): 5 — *C. strix*, ♂ (holotype of *Zeuzera strix* Grum-Grshimailo, 1895) (ZISP); 6 — *C. strix*, ♂ (cotype of *Zeuzera nubila* Staudinger, 1895) (MNKB); 7 — *C. strix*, ♂ (holotype of *Zeuzera speyeri* Austaut, 1897) (BMNH); 8 — *C. strix*, ♀ (holotype of *Zeuzera nubila babadzhaniidii* Sheljuzhko, 1913) (ZMKU); 9 — *C. strix*, ♂, Kyrgyzstan, Issyk-Kul Lake, 10 km W of Tazor, 10–11.07.1994, leg. Spatenka (MWM); 10 — *C. strix*, ♂, Kazakhstan, S Balkhash Lake, vil. Topar, 10.07.1986, leg. A. Kondratiev (MWM); 11 — *C. strix*, ♂, [NW China], Shamil, Hami (MNKB); 12 — *C. strix*, ♀, SW Tajikistan, Pjandzh River, Tigrovaja Balka natural reservation, 1.08.2000, leg. V. Perepechaenko (RYB).

Рис. 5–12. *Cecryphalus* (имаго): 5 — *C. strix*, ♂ (голотип *Zeuzera strix* Grum-Grshimailo, 1895) (ZISP); 6 — *C. strix*, ♂ (котип *Zeuzera nubila* Staudinger, 1895) (MNKB); 7 — *C. strix*, ♂ (голотип *Zeuzera speyeri* Austaut, 1897) (BMNH); 8 — *C. strix*, ♀ (голотип *Zeuzera nubila babadzhaniidii* Sheljuzhko, 1913) (ZMKU); 9 — *C. strix*, ♂, Кыргызстан, Иссык-Кульское озеро, 10 км к западу от Тасора, 10–11.07.1994, лг. Спатенка (МВМ); 10 — *C. strix*, ♂, Казахстан, Южное Балхашское озеро, с. Топар, 10.07.1986, лг. А. Кондратьев (МВМ); 11 — *C. strix*, ♂, [Северо-запад Китая], Шамиль, Хами (МНКБ); 12 — *C. strix*, ♀, Юго-запад Таджикистана, река Пяндж, Тигровая Балка природный заказник, 1.08.2000, лг. В. Перепеченко (РВБ).

notch on outer edge (at anal angle). Wings grey, brownish, with fine reticulated pattern.

Male genitalia. Uncus short, apex flat; gnathos arms short, ribbon-like, not fused; valve simple, narrow, apex rounded; juxta saddle-like, with leaf-like lateral processes, directed dorsally; saccus poorly expressed, semi-circular; phallus thick, relatively short, with longitudinal folds, vesica with portions of scabination, cornutus robust, equal to ½ of phallus in length.

Female larger than male. Antenna filiform. Wings slightly wider, hind wing without notch. Wing pattern resembles to that of male.

Female genitalia (described on the unique studied species, *C. nubila*). Ovipositor long. Papilla analis lanceolate, with transverse folds, posterior apophyses longer than anterior ones, ostium small, oval, slightly submerged, ductus of medium diameter, with longitudinal folds, bursa bag-like, with signum on lateral surface, ductus seminalis coming out of bursa in its medium third laterally, small bulla on long thin strand coming out of bursa basally.

Includes two genera: *Cecryphalus* Schoorl, 1990 and *Tarsozeuzera* Schoorl, 1990.

Genus *Tarsozeuzera* Schoorl, 1990

Schoorl, 1990: 157–159.

TYPE SPECIES — *Zeuzera kochi* Semper, 1896–1902 (by original designation).

REDESCRIPTION. **Male**. Medium size. Antenna basally bipectinate, distally simple. Thorax and abdomen densely covered with dark scales, tegula and patagium pale. Fore wing narrow, long, apex sharp. Dark field in discal area, reticulated pattern along hind and outer edges. Hind wing short, apex rounded, notch on outer edge (an anal angle), dark, fine reticulated pattern along outer edge and at anal angle.

Male genitalia. Uncus elongated, apex flat; tegumen of medium size; gnathos arms basally wide, distally narrowing, short, not fused; valve leaf-like, edges practically even, apex rounded; juxta saddle-like, with leaf-like lateral processes, directed dorsally; saccus poorly expressed, semi-circular; phallus thick, short, slightly bent, with longitudinal folds (more expressed in distal half), vesica with portions of scabination, cornutus robust, equal to ½ of phallus in length.

The genus includes 6 species.

DIAGNOSIS. The genus is most similar to *Cecryphalus* Schoorl, 1990 from which it differs by the wide dark field in the discal area of the fore wing and by the more elongated uncus of the male genitalia.

DISTRIBUTION. Tropical regions of the Old World (Hindustan, Indochina, Southern China, Philippines, New Guinea, Africa from Congo to South Africa).

Catalog of *Cecryphalini* Yakovlev et Witt, **trib.n.**

Genus *Cecryphalus* Schoorl, 1990

Schoorl, 1990: 156–157.

TYPE SPECIES — *Zeuzera nubila* Staudinger, 1895 (by original designation).

Cecryphalus helenae (Le Cerf, 1924)

Figs 2–4, 25, 31.

Zeuzera helenae Le Cerf, 1924: 27.

TYPE LOCALITY: ? Marrakech (Morocco).

TYPE MATERIAL (holotype) in MNHN, examined.

DISTRIBUTION: Morocco [Rungs, 1942, 1979; de Freina, Witt, 1990], Algeria.

HOST: *Tamarix* [Rungs, 1979].

MATERIAL EXAMINED: 7 ♂♂, Morocco, Ait-ou-Mribete, 1–14.09.1999, leg. Seibald (MSW, MWM); 1 ♀, Algier, Rophe de Sel, Predota, 4.7.1931 (ZSM); 3 ♂♂, 2 ♀♀, Alg., El Mesrane, 1.7.1931, lg. Predota (ZSM); 3 ♂♂, N. Morocco, Rif Mts., Taouinate Prov., 50 km E Taouinate, 1350 m, N 34°34' / W 04°07', 24.05.2012, leg. P. Romantsov (RYB).

Cecryphalus strix (Grum-Grshimailo, 1895)

Figs 5–12, 26–27, 31.

Zeuzera strix Grum-Grshimailo, 1895: 292.

TYPE LOCALITY: provincia Transcaespica ad urbem Serachs [Turkmenistan, Serags or NE Iran, Sarachs]. Distance between Serags and Sarachas — 5 km.

TYPE MATERIAL (holotype) in ZISP, examined.

SYNONYMY:

= *Zeuzera nubila* Staudinger, 1895: 341.

Type locality: Kaschgar (NW China, Tura)

Type material (syntypes) in MNKB, examined.

= *Zeuzera speyeri* Austaut, 1897: 45.

Type locality: la Perse à Dhisato (? Uzbekistan, Dzhizak)

Type material (holotype) in BMNH, examined.

= *Zeuzera nubila babadzhaniidii* Sheljuzhko, 1913: 21.

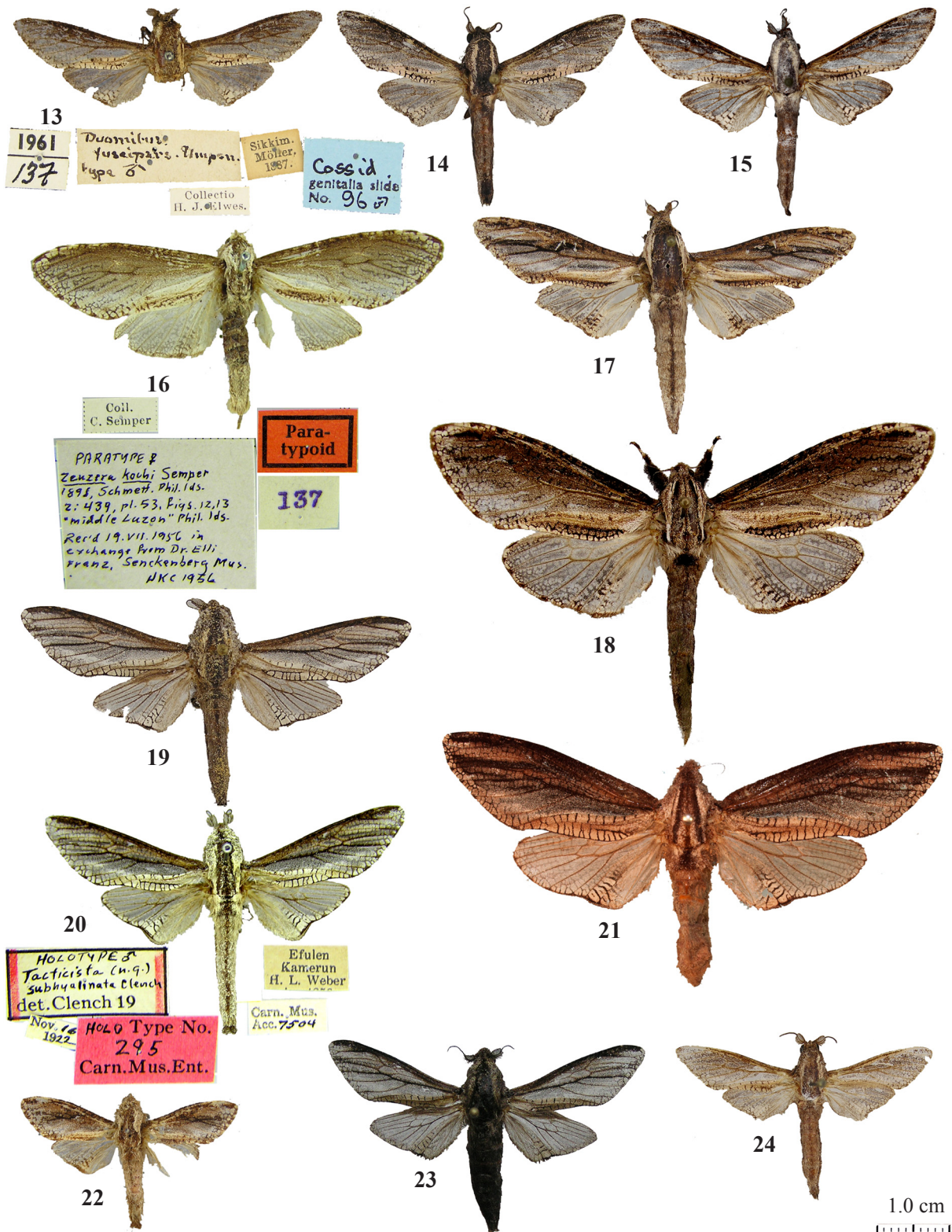
TYPE LOCALITY: Jelisavetpol (Gäncä, Azerbaijan).

TYPE MATERIAL (holotype by monotypy) in ZMKU, examined.

DISTRIBUTION: S. Kazakhstan, Kirgiziya, S. Mongolia, Uzbekistan, Tadzhikistan, Azerbaijan, S. Armenia, Turkmenistan, N. Iran, China (Xinjiang) [Seitz, 1912; Dalla Torre, 1923; Daniel, 1969, 1970; Hua *et al.*, 1990; Yakovlev, 2004a, c, 2015; Yakovlev, Dubatolov, 2013; Yakovlev, Witt, 2016].

MATERIAL EXAMINED: **China**: 2 ♂♂ (syntypes) Kaschgar (MNKB); 1 ♂, Shamil, Hami (MNKB). **Mongolia**: Reported by Daniel for: “Sudgobi aimak, 100 km W vom Grenzposten Ovot Chural, 22 km W von Sajryn chudag, 1250 m, 22.6.1967; Bajan-chongor aimak, Grezposten Caganbulag im Gebirge Cagan Bogd ul, 1550 m, 24.06.1967; Oase Echin gol, ca. 90 km NO vom Grenzposten Caganbulag, 950 m, 27–28.6.1967” [Daniel, 1970]; 2 ♂♂, SW Mongolia, Gobi-Altai aimak, Dzhungarian Gobi, Alag-Nuur lake, 9–10.07.2010, 1300 m, 45°09'N; 94°30'E; R. Yakovlev, E. Gusko-va (RYB). **Kazakhstan**: 2 ♂♂, SE Kazakhstan, near Koktal, 43°57'N; 79°36'E, 506 m, 3.07.2010, leg. S. Korb (RYB); 1 ♂, SE Kazakhstan, Ili Valley, near Panfilov, N43°58'; E79°35', 600 m, 4.07.2010, leg. S. Korb (RYB); 2 ♂♂, Alma-Ata reg., Chundzha, 26–28.06.1990, I. Pljustch (DEIM); 1 ♂, Ili River, Topar vill., 10.07.1986, A. Kondratiev (MSW); 1 ♂, Sharyn riverside, Sarytogaj, on light 43°35'N 79°18'E, 01.07.1994 D. Milko leg. (IBBK); 1 m, Taldy-Kurgan reg., Panfilov distr., Aidarly vill (ZISP); 1 m, Alma-Ata reg., Balkhash distr., Ak-Kol', 7.7.1952 V. Parfent'ev (ZISP); 1 ♂, S Balkhash Lake, Topar vill., 10.07.1986, A. Kondratiev (MWM); 2 ♂♂, 50 km SW Dzharkent, at Ili River, 20.07.1994, leg. Kostjuk (MWM); 3 ♂♂, Almaty prov., 22 km N Masak, 660 m, 43°45'N, 78°27'E, 27.07.1995, leg. Fabian (MWM); 3 ♂♂, Chunja, 8.07.1994, leg. Kostjuk (MWM); 1 ♂, Taldy-Kurgan Reg., Ili, Borokhudshir, 500 m, 19.06.1996, leg. Lukhtanov (MWM); 1 ♂, to S. of Balhash lake, Topar vil., Ili r., 10.07.1986,

Рис. 13–24. *Tarsozeuzera* (имаго): 13 — *T. fuscipars*, ♂ (голотип *Duomitus fuscipars* Hampson, 1892); 14 — *T. fuscipars*, ♂, India, Darjeeling, 5 km N Rambi, 900 m, 20°30.07.1990, leg. W. Thomas (MWM); 15 — *T. fuscipars*, ♂, Thailand, Changwat Nan, 15 km N of Bo Luang, 1000m, 7.04.1998, leg. Csovári & Steger (MWM); 16 — *T. kochi*, ♀ (копип *Zeuzera kochi* Semper, 1896); 17 — *T. kochi*, ♂, Philippines, Negros, Mt. Kanlaon, 03.1997 (MWM); 18 — *T. kochi*, ♀, Philippines, Negros, Mt. Canlaon, W-Route via Mambucal, 600 m, 10.1996 (MWM); 19 — *T. livingstoni*, ♂ (голотип) (MNHN); 20 — *T. livingstoni*, ♂, (голотип (sic) *Tacticista* (n.g.) *subhyalinata* Clench), Cameroon (Efulen) (CMNH); 21 — *T. livingstoni*, ♀, Chimaliro FR, Kasungu distr., C. Malawi, 4200 ft., 31.01.2005, leg. R.J. Murphy (RMM); 22 — *T. miklukhomaklayi* (голотип) (BMNH); 23 — *T. ustjuzhanini* (голотип) (MWM); 24 — *T. vavizola* (голотип) (ZSM).



Figs 13–24. *Tarsozeuera* (adult specimens): 13 — *T. fuscipars*, ♂ (holotype of *Duomitus fuscipars* Hampson, 1892); 14 — *T. fuscipars*, ♂, India, Darjeeling, 5 km N Rambi, 900 m, 20°30.07.1990, leg. W. Thomas (MWM); 15 — *T. fuscipars*, ♂, Thailand, Changwat Nan, 15 km N of Bo Luang, 1000m, 7.04. 1998, leg. Csovári & Steger (MWM); 16 — *T. kochi*, ♀ (cotype of *Zeuzera kochi* Semper, 1896); 17 — *T. kochi*, ♂, Philippinen, Negros, Mt. Kanlaon, 03.1997 (MWM); 18 — *T. kochi*, ♀, Philippinen, Negros, Mt. Canlaon, W-Route via Mambucal, 600 m, 10.1996 (MWM); 19 — *T. livingstoni*, ♂ (holotype) (MNH); 20 — *T. livingstoni*, ♂, (holotype (sic!) of *Tacticista* (n.g.) *subhyalinata* Clench), Cameroon (Efulen) (CMNH); 21 — *T. livingstoni*, ♀, Chimaliro FR, Kasungu distr., C. Malawi, 4200 ft., 31.01.2005, leg. R.J. Murphy (RMM); 22 — *T. miklukhomaklayi* (holotype) (BMNH); 23 — *T. ustjuzhanini* (holotype) (MWM); 24 — *T. vavizola* (holotype) (ZSM).

leg. A. Kondratiev (MWM); 9 ♂♂, Kazakhstan, Almaty Region, Panfilov District, Koktal county near Akzhazyk village, Koybin River, 900 m, 44°10'11"N, 79°31'01"E, 511.07.2015, leg. S. Legotin, S. Didenko, M. Elistratov (RYB); 2 ♂♂, Kazakhstan, Almaty Region, Uyghur District, 1200 m to EES from the bridge across Ili River, turanga forest on the sand barkhans, 505 m, 43°58'06"N, 79°37'27"E, 30.06.17.2016, leg. S. Legotin, S. Didenko, M. Elistratov (RYB); 1 ♂, Kazakhstan, Almaty Region, Panfilov District, Koktal county near Akzhazyk vill., Koybin River, 1,5 km downstream from the intersection with the highway A353, 900 m, 44°10'11"N, 79°31'01"E, 34.07.2016, leg. S. Legotin, S. Didenko, M. Elistratov (RYB); 1 ♂, Almaty Province, 9 km S of Konyrolen, Katutau Mts., 920 m., 44°11' N, 79°22' E, 22.07.2016, leg. P. Gorbunov (RYB); 2 ♂♂, Almaty Province, 12 km SW of Akzhar vill., Ili River Valley, 44°52' N, 75°53' E, 1.07.2017, leg. P. Gorbunov (RYB); 2 ♂♂, Jambul Province, 4 km SW of Zhaster r./w. station, saksaul desert, 45°32' N, 73°25' E, 30.06.2017, leg. P. Gorbunov (RYB); 1 ♂, 1 ♀, Kzyl-Orda reg., Aral Lake, Barsakelmes, 20.07.1979, leg. V. Vasilenko (RYB). **Kyrgyzstan:** Kyrgyzstan, Issyk-Kul Lake, 10 km W of Tasor, 10–11.07.1994, leg. Spatenka (MWM). **Tajikistan:** 4 ♂♂, Tigrovaya Balka (MSW); 2 ♂♂, Ajwadi, 350 m, 15–24.07.1963, leg. Stchetkin (AHU); 1 ♂, 22 km SSE Kulyab, near Pistamazor vill., 1200 m, 28.07.2015, O. Pak (RYB); 6 ♂♂, 1 ♀, SW Tajikistan, Pjandzh River, Tigrovaya Balka natural reservation, 1.08.2000, leg. V. Perepechaenko (RYB); 1 ♂, Tajikistan, Khatlon reg., Shurabad distr., 10 km S Kuljab, near Tugmagi vill., 900 m, 5.08.2008, leg. O. Pak & E. Ivanova (RYB); 3 ♂♂, Tadzhikistan, Karatau Mt., Parchar, 830 m, 17.09.1999, leg. Yu. Stchetkin (RYB); 31 ♂♂, Tigrovaya Balka, 1–5.08.2006, leg. V. Gurko (MWM). **Uzbekistan:** 2 ♂♂, Termez (ZISP); 2 ♂♂, Baigakum, Syr-Dar'ja (ZISP); 1 ♂ (holotype of *Zeuzera speyeri* Austaut, 1897), Dshisato [Dzhizak] (BMNH). **Turkmenistan:** 1 ♂, Kara-Kala, 5.93, leg. Naglis (MSW); 2 ♂♂, Kopetdagh, Sumbar riv., Tersakan, 19.07.1996, leg. Miatleusky (MSW); 3 ♂♂, Kopetdagh, Modzukly Mt., 1000 m., 18.04.1996, leg. Miatleusky (MSW); 1 ♂, Molla-Kara, near Krasnovodsk (ZISP); 12 ♂♂, Aj-Dare, Syr-Dar'ja (ZISP); 2 ♂♂, Ashabad (ZISP). **Azerbaijan:** 1 ♀ (holotype of *Zeuzera nubila babadzhani* Sheljuzhko, 1913), Jelisavetpol, 25.07.1909, leg. Y.D. Babadzhani (ZMKU). **Armenia:** 1 ♂, Vank, 8.06.2010, leg. Yu. Shevni (RYB).

TAXONOMICAL NOTES. The publication date in Horae Soc. Entomol. Ross. 1895, T.29: pages 1302 is April 30, 1895 (with the description of *Zeuzera strix* Grum-Grshimailo, 1895: 292), and the publication date in Deutsche Entomologische Zeitschrift Iris 1895 Bd.8, Hf.2 (S.229387) is January 02, 1896 (with the description of *Zeuzera nubila* Staudinger, [1895]: 341). Thus, *Zeuzera strix* Grum-Grshimailo, 1895 = *Zeuzera nubila* Staudinger, [1895], new junior subjective synonym.

Genus *Tarsozeuzera* Schoorl, 1990

Schoorl, 1990: 157–159.

TYPE SPECIES — *Zeuzera kochi* Semper, 1896 (by original designation).

Tarsozeuzera fuscipars (Hampson, 1892)

Figs 13–15, 28, 32.

Duomitus fuscipars Hampson, 1892: 309.

TYPE LOCALITY: Sikhim (India, Sikkim).

TYPE MATERIAL (holotype by monotypy) in BMNH, examined.

SYNONYMY:

= *Xyleutes xanthitarsus* Hua, Chou, Fang et Chen, 1990: 110–111. Type locality: Manghuai, Yunxian, Yunnan.

Type material (holotype by original designation) in NWAU, not examined.

= *Tarsozeuzera fuscipars* — Yakovlev, 2004b: 342. An incorrect subsequent spelling of *Tarsozeuzera fuscipars* (Hampson, 1892).

DISTRIBUTION: N. India, Myanmar, Laos, Borneo, Vietnam, Thailand, China (Yunnan, Hubei) [Gaede, 1933; Arora, 1976; Barlow, 1982; Yakovlev, 2004b–c; 2014d].

MATERIAL EXAMINED. **China:** 1 ♂, China, Yunnan centr., Ailao Mts., 3500 m [probably sic!], 09.1999, leg. Wang & Li (MWM); 1 ♂, China, Hubei, Dabie Shan, 20 km N Fengshan, 30°58'N / 115°26'E, 12°27 July 2006, 1200 m, leg. Siniaev (MWM). **Myanmar:** 1 ♂, S. Burma, Tenasserim, Khao Yai, 600°1100 m, September 1995, leg. Steinke & Lehman (MWM). **Thailand:** 2 ♂♂, Thailand, Changwat Nan, 15 km N of Bo Luang, 1000m, 7.04.1998, leg. Csovári & Steger (MWM); 1 ♂, Thailand, Changwat Chiang Mai, Mt. Doi Inthanon, NP, 39 km road N of Chom Thong, 1820 m, 1–3.06.1998, leg. Dr. Ronald Brechlin (MWM); 1 ♂, Thailand, Changwat Nan, 22 km N of Bo Luang, 1120m, 29–30.06.1998, leg. Csabo & Soos (MWM); 1 ♂, N. Thailand, Lampang Prov., Mulang Pan distr., Jae Som Sub env., Baon Phaya-Wang., 31.07.20.08.2011, leg. G. Grigoriev (RYB). **India:** 1 ♂, India, Darjeeling, 5 km N Rambi, 900 m, 20°30.07.1990, leg. W. Thomas (MWM); 1 ♂, N. India, Arunachal-Pradesh Prov., Pas-sighat distr., 1516.07.2010, 630 m, 28°08'N / 95°15'E, leg. G. Bretschneider (RYB). **Vietnam:** 1 ♂, Vietnam, Thai Nuygen, Mo Ba, 06.2009 (MWM); 2 ♂♂, Vietnam, Kon Tum prov., Sa Thai distr., Chu Mon Ray N.[ational] P.[ark], Bargok Comm, N14°25'; E 107°43', 20.03.2012, 680 m, leg. V. Zolotuhin (RYB). **Laos:** 1 ♂, Saysomboune prov., Phou Khao Khouay, 18°54'N / 103°08'E, 2529.10.2008, 780 m, Siniaev leg. (RYB).

HOST: *Gliricidia* Kunth. [Barlow, 1982].

Tarsozeuzera kochi (Semper, 1896)

Figs 16–18, 29, 33.

Zeuzera kochi Semper, 1896: 439–440.

TYPE LOCALITY: Mittel Luzon.

TYPE MATERIAL (61 syntypes) in Senckenberg Mus., Frankfurt and CMNH.

DISTRIBUTION: Philippines.

MATERIAL EXAMINED: 1 ♂, Philippinen, Panay, Sibalom, Bontol, 9°11.12.1991, leg. Cerny (MWM); 3 ♂♂, the Philippines, Panay, Aklan, 13 km S Libicao, 100 m, 11°24'N / 122°18'E, June 2009, J.H. Lourens leg. (MWM); 1 ♂, Philippinen, Panay, Mt. Malindog, Aklan, 600°800 m, May 1997 (MWM); 1 ♂, Philippinen, Babuyan (N of Luzon), 19°60'N / 121°95'E, July 2000 (MWM); 1 ♂, Philippinen, Negros, Mt. Kanlaon, 03.1997 (MWM); 2 ♂♂, Philippinen, Palawan, Magcasaw, Mainit Brook's Point, 3°6.11.1996, leg. Bal (MWM); 1 ♂, Philippinen, Palawan, Mt. Cleopatra, 29.11°2.12.2000, leg. D. Mohagan (MWM); 1 ♂, Philippinen, Mindanao, Bukidnon, NW Maramag Mt., 1450 m, 30.12.1991, leg. Cerny (MWM); 1 ♂, Philippinen, Leyte, Mt. Balocau, Mahaplag, 18°29.12.2000 (MWM); 19 ♂♂, 7 ♀♀, Philippinen, Negros, Mt. Canlaon, W-Route via Mambucal, 600 m, 10.1996 (MWM); 1 ♂, the Philippines, NW Leyte, Lake Damao, 650 m, 11°04'N / 124°42'E, 29°30.06.2006, leg. J.H. Lourens (MWM); 1 ♂, the Philippines, E. Luzon, Sirra Madre Mts, 100 m, 5 km N Infanta, 2 April 2004, leg. J.H. Lourens (MWM); 1 ♂, the Philippines, Mindoro, E of Roxas Riverbad, 12°42'N / 121°20'E, 50 m, 7 Jan. 2005, leg. J.H. Lourens (MWM); 25 ♂♂, 3 ♀♀, Ins. Philipp. (MNHS).

HOST: *Gliricidia* Kunth. [Semper, 1896].

NOTES. Specimens from Indonesia, Sulawesi (1 ♂, Dumoga-Bone; 1 ♀, Palu, Mt. Rangkunau in BMNH) reported by Schoorl [1990: 158], probably new species.

Tarsozeuzera livingstoni Yakovlev, 2006

Figs 19–21, 30, 34.

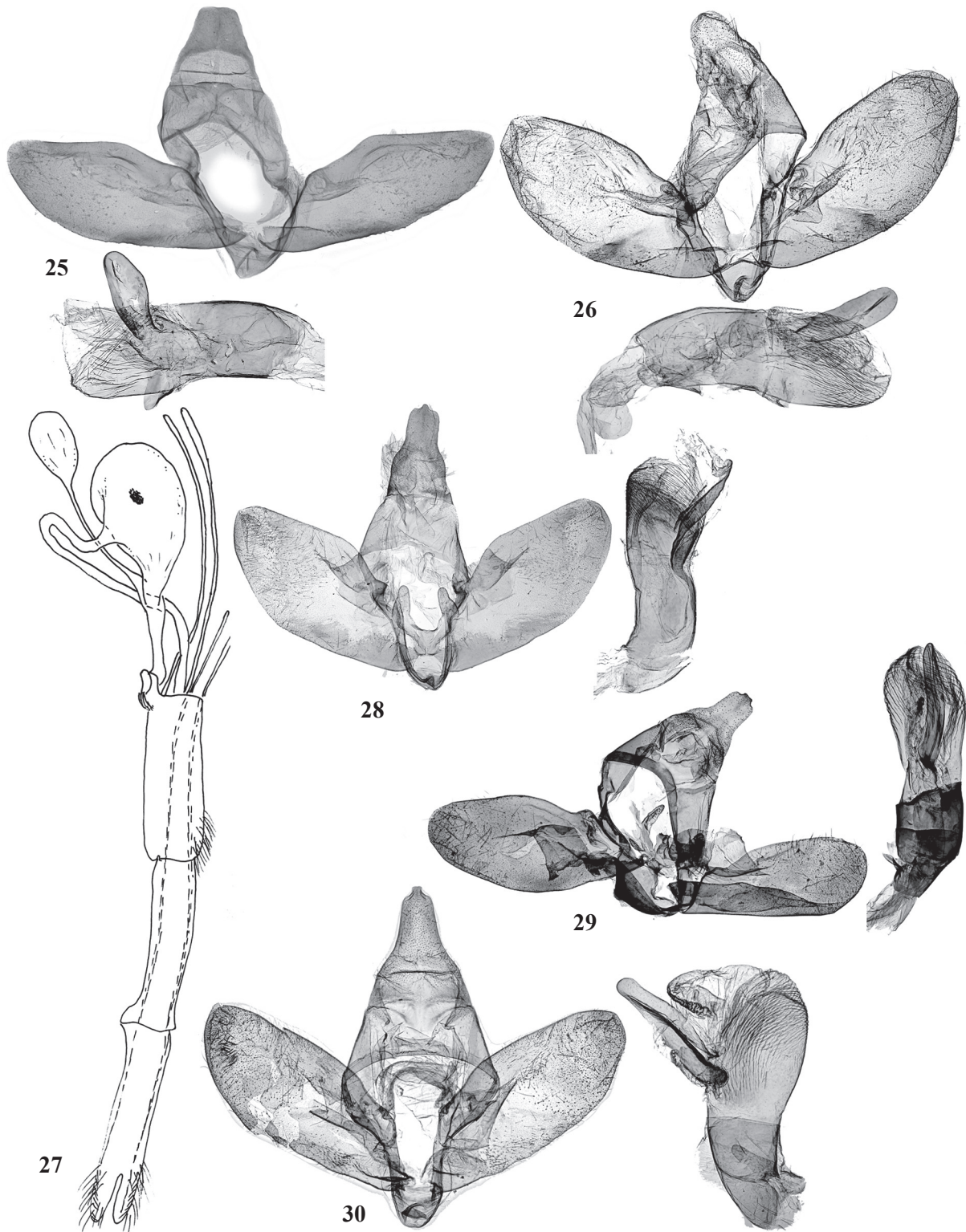
Yakovlev, 2006: 211.

TYPE LOCALITY: Rep. Pop. Congo, Dimonica.

TYPE MATERIAL (holotype) in MNHN, examined.

DISTRIBUTION: Congo, Cameroon, Cote d'Ivoire, Malawi, Kenya, Tanzania, Zimbabwe, Zambia [Yakovlev, 2011; Yakovlev, Murphy, 2013].

MATERIAL EXAMINED: 2 ♂♂, **Zimbabwe**, Bulawayo, Shangani, Naletale, 20.12.2011, leg. Snizek (MWM); 1 ♂, Zimbabwe, S of Harare, Beatrice, Ngezi, 10.12.2011, Snizek leg. (GenPR Heterocera MWM: 32.918); 2 ♂♂, **Zambia**, Kafue National Park, 1210 m, January 2010, R. Beck & R. Wanninger leg. (MWM); 1 ♂,



Figs 25–30. Genitalia of Cecryphalini: 25 — *C. helenae*, ♂, Morocco, Ait-Ou-Mribete (GenPr Heterocera MWM: 32.914); 26 — *C. strix*, ♂, Mongolia, Bayan-Khongor aimak, Oase Echin-Gol (GenPr Heterocera MWM: 32.913); 27 — *C. strix*, ♀, Turkmenistan (figured by Kozhantshikov); 28 — *T. fuscipars*, ♂, Thailand, Changwat Nan, 15 km N of Bo Luang (GenPr Heterocera MWM: 32.916); 29 — *T. kochi*, ♂, Luzon (GenPr Heterocera MWM: 32.915); 30 — *T. livingstoni*, ♂, Zimbabwe (GenPr Heterocera MWM: 32.919).

Рис. 25–30. Гениталии Cecryphalini: 25 — *C. helenae*, ♂, Morocco, Ait-Ou-Mribete (GenPr Heterocera MWM: 32.914); 26 — *C. strix*, ♂, Mongolia, Bayan-Khongor aimak, Oase Echin-Gol (GenPr Heterocera MWM: 32.913); 27 — *C. strix*, ♀, Turkmenistan (рис. И. Кожанчикова); 28 — *T. fuscipars*, ♂, Thailand, Changwat Nan, 15 km N of Bo Luang (GenPr Heterocera MWM: 32.916); 29 — *T. kochi*, ♂, Luzon (GenPr Heterocera MWM: 32.915); 30 — *T. livingstoni*, ♂, Zimbabwe (GenPr Heterocera MWM: 32.919).

Kenya, Strasse Nairobi-Mombasa, Tsavo National Park, Salaga Lodge, 550 m, 7th 04.2009, leg. A. Puchner (GenPR Heterocera MWM: 32.919); 1 ♂, **Elfenbeinkoste**, San Pedro, 1st 12.1977, leg. Politzar (GenPR Heterocera MWM: 32.920); 1 ♂, **Cameroon**, Ebogo, 23rd 11.1992, Th. Bouyer (MRAC); 1 ♂, Cameroon, Efulen, 16 Nov. 1922, H.L. Weber (CMNH); 1 ♂, **Congo**, Sankuru, Katoko-Kombe, 17.12.1951, Dr. Fontaine (MRAC); 2 ♂♂, Uele, Paulis, 31.12.1959, Dr. M. Fontaine (MRAC); 3 ♂♂♂, Leopoldville, 27.08.1953, Dr. M. Fontaine (MRAC); 1 ♂, Sankuru, 14.06.1952, Dr. M. Fontaine (MRAC); 1 ♂, Mwenewisi Forest, Karonga distr., **Malawi**, 2200 ft., 25.02.2001, leg. R.J. Murphy (RMM); 1 ♀, Chimaliro FR, Kasungu Distr., C. Malawi, 4200 ft., 26.02.1998, leg. R.J. Murphy (RMM); 1 ♀, same locality, 29.11.1997, leg. R.J. Murphy (RMM); 1 ♀, same locality, 31.01.1998, leg. R.J. Murphy (RMM); 1 ♀, same locality, 23.02.1998, leg. R.J. Murphy (RMM); 1 ♀, same locality, 6.02.2000, leg. R.J. Murphy (RMM); 1 ♂, **Tanzanie**, Rukwa Reg., Kalambo Forest Reserve, 1577 m,

08°22.241'S / 031°14.573'E, 31.10.2007, leg. Ph. Darge (GenPR Heterocera MWM: 33.175).

TAXONOMICAL NOTES. In CMNH a male specimen of *T. livingstoni* from Cameroon (Efulen), handwritten by H. Clench as the holotype of "*Tacticista* (n.g.) *subhyalinata* Clench". This taxon was not described and is considered a unpublished "manuscript name".

Tarsozeuzera miklukhomaklayi Yakovlev, 2011
Figs 22, 35.

Yakovlev, 2011: 64.

TYPE LOCALITY: Dutch New Guinea, Humboldt Bay Dist., Kroisni.

TYPE MATERIAL (holotype) in BMNH, examined.

MATERIAL EXAMINED: 1 ♂ (holotype), Dutch New Guinea, Humboldt Bay Dist., Kroisni, 12.06.1937. (BMNH).

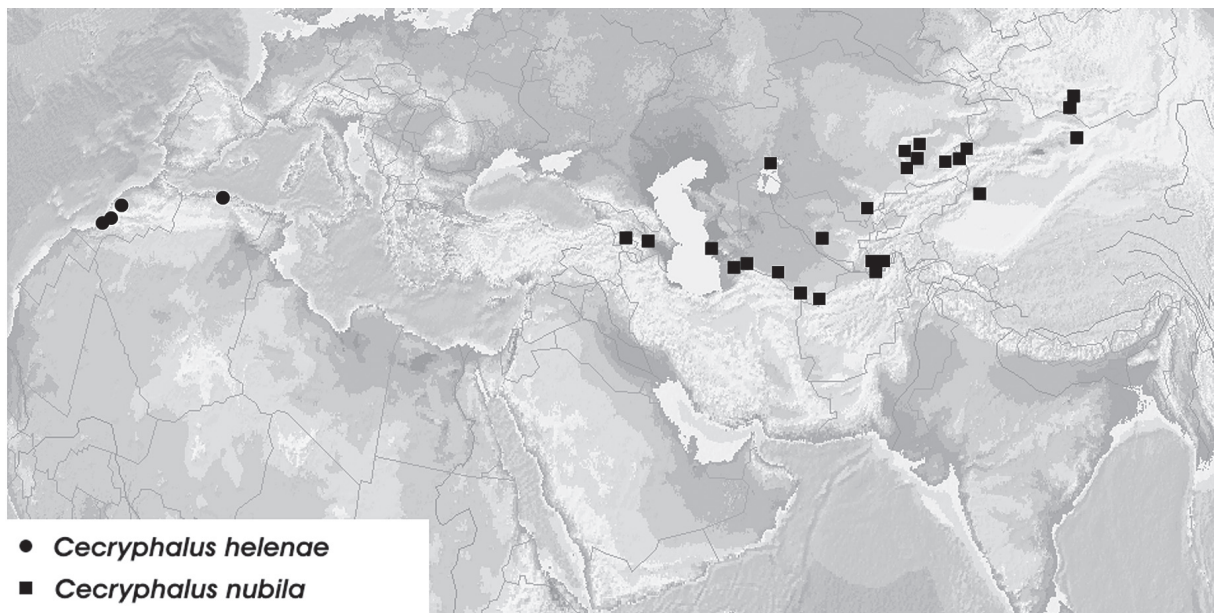
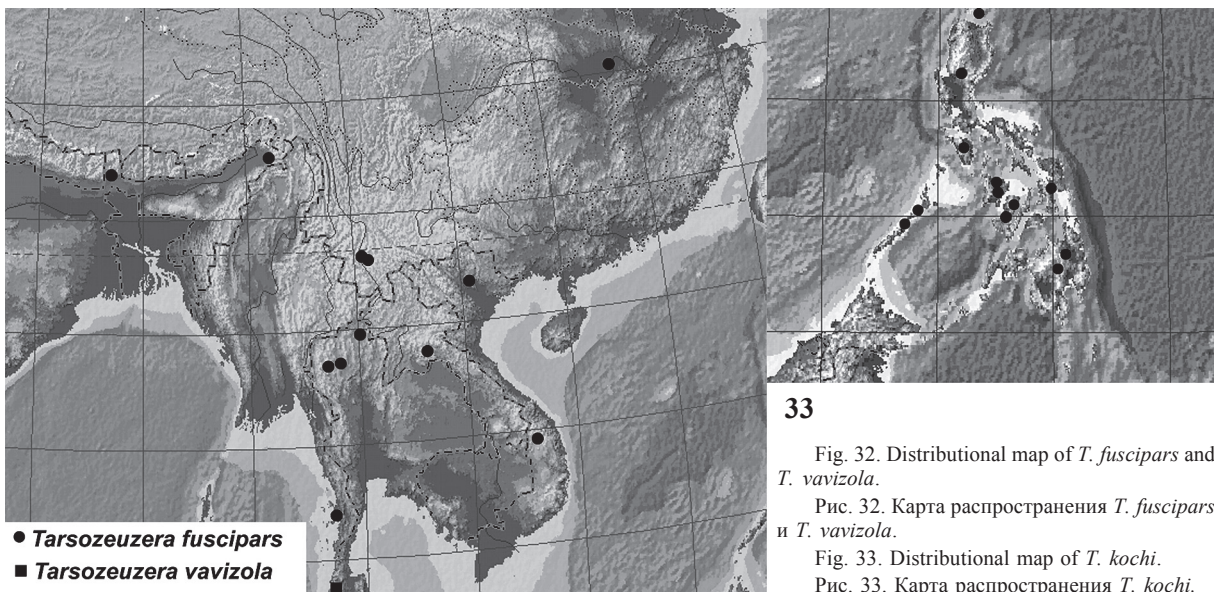


Fig. 31. Distributional map of *Cecryphalus*
Рис. 31. Карта распространения *Cecryphalus*.



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Fig. 32. Distributional map of *T. fuscipars* and *T. vavizola*.
Рис. 32. Карта распространения *T. fuscipars* и *T. vavizola*.

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Fig. 33. Distributional map of *T. kochi*.
Рис. 33. Карта распространения *T. kochi*.

Tarsozeuzera ustjuzhanini Yakovlev, 2011

Figs 23, 34.

Yakovlev, 2011: 64.

TYPE LOCALITY: S. Afrika, Kwazulu Natal, Vernon-Crookes NP, 60 km SW Durban.

TYPE MATERIAL (holotype) in MWM, examined.

DISTRIBUTION: South Africa (Kwa Zulu-Natal Prov.).

MATERIAL EXAMINED: 1 ♂, RSA, EC [Eastern Cape], nr. Port St. Johns, 13.12.2002, leg. Legrain (coll. Legrain).

Tarsozeuzera vavizola Yakovlev, 2006

Figs 24, 32.

Yakovlev, 2006: 211.

TYPE LOCALITY: 20 km O. Krabi, S. Thailand

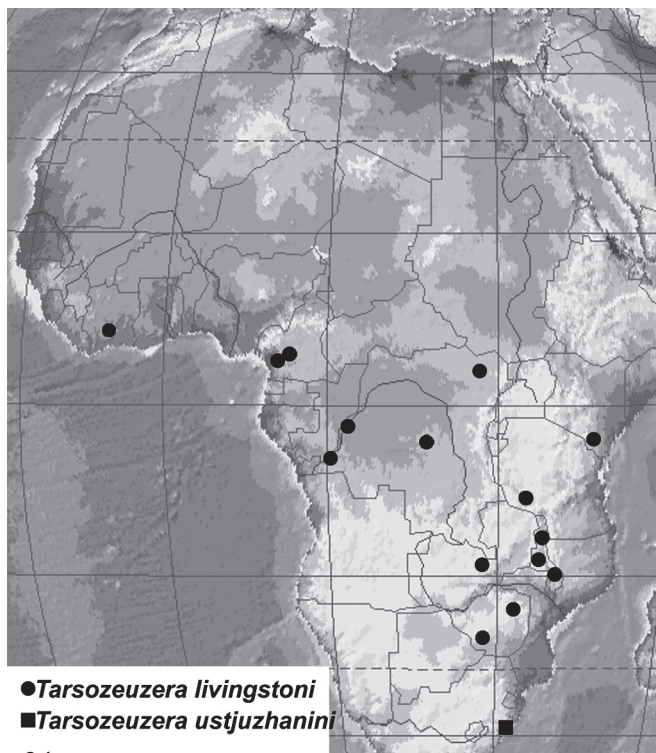
TYPE MATERIAL (holotype) in ZSM, examined.

DISTRIBUTION: S. Thailand.

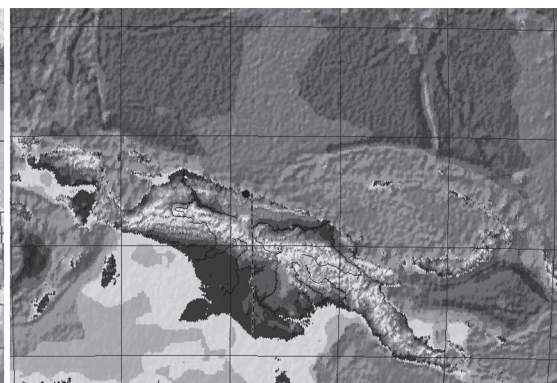
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Fig. 34. Distributional map of *T. livingstoni* and *T. ustjuzhanini*.Рис. 34. Карта распространения *T. livingstoni* и *T. ustjuzhanini*.Fig. 35. Distributional map of *T. miklukhomaklayi*.Рис. 35. Карта распространения *T. miklukhomaklayi*

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