

Solpugids (Arachnida: Solifugae) of Turkmenistan

Сольпуги (Arachnida: Solifugae) Туркменистана

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КЛЮЧЕВЫЕ СЛОВА: Solifugae (сольпуги), фауна, новые виды, Туркменистан.

ABSTRACT: A list of Solifugae of Turkmenistan is given. It includes 28 species from nine genera and five families. Three new species are described: *Karschia* (*Karschia*) *badkhyzica*, K. (K.) *kopetdaghica*, and *Gylippus* (*Hemigylippus*) *krivokhatskyi* sp.n., with studies on their relationships. Further five species are recorded in Turkmenistan for the first time: *Karschia* (*Rhinokarschia*) *kaznakovi* Birula, 1918, *Eusimonia divina* Birula, 1935, *Galeodes bactrianus* Birula, 1937, *G. zarudnyi* Birula, 1937, and *Paragaleodes melanopygus* Birula, 1904. Type material of Turkmenistan Solifugae kept in the collections of the Zoological Museum in Berlin, the Zoological Institute of the Russian Academy of Sciences, St. Petersburg and the Zoological Museum of the Moscow State University, Moscow has been re-examined. The following new synonyms are proposed: *Rhagodes grimmi* Birula, 1905 = *Rh. melanochaetus* Heymons, 1901; *Rhagodes grimmi septentrionalis* Birula, 1938 = *Rh. melanochaetus melanochaetus* Heymons, 1901; *Gnosippus afghanus* Lawrence, 1956 = *Gluviopsis nigrocincta* Birula, 1904.

РЕЗЮМЕ: В статье дан список туркменских сольпуг, включающий 28 видов (9 родов и 5 семейств). Дано описание трех новых видов [*Karschia* (*Karschia*) *badkhyzica*, K. (K.) *kopetdaghica* и *Gylippus* (*Hemigylippus*) *krivokhatskyi* sp.n.], так же как исследованы их родственные связи. Пять видов: *Karschia* (*Rhinokarschia*) *kaznakovi* Birula, 1918, *Eusimonia divina* Birula, 1935, *Galeodes bactrianus* Birula, 1937, *G. zarudnyi* Birula, 1937 и *Paragaleodes melanopygus* Birula, 1904 приводятся для Туркменистана впервые. Просмотрены типовые материалы по туркменским сольпугам, хранящиеся в Зоологическом музее в Берлине, Зоологическом институте РАН (Санкт-Петербург) и Зоологическом музее Московского университета (Москва). Предложены следующие новые синонимы: *Rhagodes grimmi* Birula, 1905 = *Rhagodes melanochaetus* Heymons, 1901; *Rhagodes*

grimmi septentrionalis Birula, 1938 = *Rhagodes melanochaetus melanochaetus* Heymons, 1901; *Gnosippus afghanus* Lawrence, 1956 = *Gluviopsis nigrocincta* Birula, 1904.

Introduction

The solpugid fauna of Turkmenistan, western part of Central Asia, has hitherto been poorly studied. Based on the works of Walter [1889], Heymons [1901], Birula [1890a, 1890b, 1893, 1904, 1906, 1907a, 1907b, 1908, 1918, 1935b, 1936a, 1936b, 1937a, 1937b], Pavlovskiy [1932] and Roewer [1932–1934], Birula [1938] published his treatise on the fauna of Solifugae of the USSR. His list concerning the fauna of Turkmenistan comprised 21 species, nine genera and five families.

In the course of the present work, collections from the following institutions have been restudied: Zoological Museum in Berlin, Zoological Institute, St. Petersburg, Zoological Museum of the Moscow State University, Moscow, and Institute of Animal Systematics and Ecology, Novosibirsk. In addition, solpugid material taken in Turkmenistan during an expedition of the Institute of Zoology and Animal Gene Pool, Almaty in April–May, 1993 has been examined. As a result, the list of Solifugae of Turkmenistan appears to currently comprise the following 28 species belonging to nine genera and five families: *Rhagodes aureus* (Pocock, 1889), *R. eylandti* (Walter, 1889), *R. melanochaetus* Heymons, 1901, *R. melanopygus* (Walter, 1889), *R. plumbescens* (Walter, 1889), *Karschia* (*Karschia*) *badkhyzica* sp.n., K. (K.) *cornifera* Walter, 1889, K. (K.) *koenigi* Birula, 1917, K. (K.) *kopetdaghica* sp.n., K. (*Rhinokarschia*) *kaznakovi* Birula, 1918, K. (?) *demokidovi* Birula, 1935, *Eusimonia divina* Birula, 1935, *Gylippus* (*Hemigylippus*) *krivokhatskyi* sp.n., G. (H.) *lamelliger* Birula, 1906, *Daesia rossica* Birula, 1904, *Gluviopsis nigrocincta* Birula, 1904, *G. microphthalmus* Birula, 1937, *Galeodes bactrianus* Birula, 1937, *G. caspius*

Birula, 1890, *G. fumigatus* Walter, 1889, *G. philippowiczii* Birula, 1937, *G. smirnovi* Birula, 1937, *G. turcomenicus* Birula, 1937, *G. zarudnyi* Birula, 1937, *Galeodopsis bilkiewiczii* (Birula, 1907), *G. strandi* Birula, 1936, *Paragaleodes melanopygus* Birula, 1904, and *P. pallidus* (Birula, 1890).

Solpugids were preserved and studied in 70 % alcohol using a MBS-10 stereoscope. Determination of material was carried out following the basic work of Birula [1938]. All measurements are given in mm.

Abbreviations: AGC — private collection of the author; IASE — Institute of Animal Systematics and Ecology, Novosibirsk, Russia (D.V. Logunov); ZISP — Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia (V.A. Krivokhatsky); ZMB — Zoological Museum in Berlin, Germany (J.A. Dunlop); ZMUM — Zoological Museum of the Moscow State University, Moscow, Russia (K.G. Mikhailov).

Synopsis of species

FAMILY RHAGODIDAE

Genus *Rhagodes* Pocock, 1897

1. *Rhagodes aureus* (Pocock, 1889)

Rhax aurea Pocock, 1889: 118, pl. 13, fig. 6 (Two female syntypes from between Meshed City and Hari Rud Valley, Khorasan Ostan, Iran).

Rhagodes aureus (Pocock) — Kraepelin, 1901: 32, 38; Birula, 1904: 414; 1905: 271; Roewer, 1933: 268, 270; Lawrence, 1956: 116.

Rhagodes subaureus Roewer, 1933: 269, 270 (Male holotype from the environs of Girdi-Chakh Village [Chai-Gerdy Well] (30°23'N, 61°07'E), Sistan Ostan, Iran).

MATERIAL. 1 ♀ (IASE), Turkmenistan, Mary Area, Badkhyz Plateau, Kushka Distr., environs of Morgunovka, dried bed of Kushka River (35°18'N, 62°24'E), 9.04.1993, S.L. Zonstein.

DISTRIBUTION. From SE Turkmenistan (environs of Serakhs and Kushka) to SW Afghanistan (Faisabad, S of Farah Province) and E Iran (Sistan Ostan) [Birula, 1938; Lawrence, 1956].

ECOLOGY. This species seems quite rare, occurring in clay deserts.

2. *Rhagodes eylandti* (Walter, 1889)

Rhax eylandti Walter, 1889: 109, fig. 3 (Male holotype from Dzhuz-Dzhu-Klu Station (37°31'N, 61°02'E), Kara Kum Desert, Turkmenistan, in ZISP, re-examined); Birula, 1890b: 76, 77.

Rhagodes eylandti (Walter) — Kraepelin, 1901: 33, 38; Roewer, 1933: 269, 270; Birula, 1938: 25.

Rhagodes eylandti melanogaster Birula, 1905: 274 (Two male syntypes from the environs of Edemi [Adami] (31°06'N, 61°25'E), Sistan Ostan, Iran); Roewer, 1933: 269, 270 (*Rh. melanogaster*).

Rhagodes birulae Roewer, 1933: 268, 270 (Female holotype from Turkmenistan, in ZISP, re-examined).

Rhagodira transcaspica Roewer, 1933: 280 (Two female syntypes from the environs of Ashkhabad, Turkmenistan).

Rhagodorta melanula Roewer, 1933: 275 (Two male syntypes from Turkmenistan).

DISTRIBUTION. From W Kopet Daghs over S Turkmenistan to E Iran (Sistan Ostan) [Birula, 1938].

ECOLOGY. This species is common in clay and sandy deserts.

3. *Rhagodes melanochaetus* Heymons, 1901

Rhagodes melanus melanochaetus Heymons, 1901: 15 (Three female syntypes from the environs of Krasnovodsk, Turkmenistan).

Rhagodes melanochaetus Heymons — Birula, 1905: 272; 1938: 32; Roewer, 1933: 269, 270; Lawrence, 1956: 116.

Rhagodessa transcaspica Roewer, 1933: 283 (Three male syntypes from the environs of Krasnovodsk, Turkmenistan).

Rhagodes grimmi Birula, 1938: 30 (Female syntypes from the environs of Ashkhabad, Turkmenistan, in ZISP, re-examined), **syn.n.**

Rhagodes grimmi septentrionalis Birula, 1938: 32 (Two female and one juvenile syntype from ?Mangistau [Guberlin] Mt. Range, Kazakhstan, in ZISP, re-examined), **syn.n.**

REMARKS. Birula [1938] diagnosed the species *R. grimmi* and its subspecies *R. g. septentrionalis* from *R. melanochaetus* on the basis of the following characters: body coloration, hair and bristle cover of the propeltidium and the number of lateral spines of the three back legs. However, after a re-examination of the type material of the taxa at hand, as well as other numerous material deposited in the ZISP and the ZMUM, I have come to the conclusion that all the above characters are in fact a matter of a strong variation and cannot be used for separating the discussed species. Therefore, both specific names are to be considered as junior synonyms of *R. melanochaetus*.

DISTRIBUTION. From the Caspian coast of Turkmenistan to NE Iran (Khorasan Ostan) and central Afghanistan (environs of Kajkai [Kadjaki]) [Birula, 1938; Lawrence, 1956]. The record from SW Kazakhstan (Mangistau Mt. Range) is probably erroneous.

ECOLOGY. This species is common in clay deserts, occurring up to 800 m a.s.l.

4. *Rhagodes melanopygus* (Walter, 1889)

Rhax melanopyga Walter, 1889: 111, fig. 4 (Two male syntypes from Kara Kum Desert, N of Ashkhabad, Turkmenistan, in ZISP, re-examined); Birula 1890b: 76.

Rhagodes melanopygus (Walter) — Kraepelin, 1901: 33, 39; Birula, 1938: 34.

Rhagodella melanopyga (Walter) — Roewer, 1933: 287; Lawrence, 1954: 111; 1956: 115 (*Rh. m. melanopyga*).

DISTRIBUTION. From the Caspian coast of Turkmenistan to NE Iran (Khorasan Ostan) and E Afghanistan (environs of Ghazni) [Birula, 1938; Lawrence, 1954, 1956].

ECOLOGY. This species is common in clay deserts.

5. *Rhagodes plumbescens* (Walter, 1889)

Rhax plumbescens Walter, 1889: 108, fig. 2 (Male holotype from the environs of Ashkhabad, Turkmenistan, in ZISP, re-examined); Birula, 1890b: 76.

Rhagodes plumbescens (Walter) — Kraepelin, 1901: 32, 36; Birula, 1938: 35.

DISTRIBUTION. S Turkmenistan (environs of Ashkhabad and Bayram Ali) [Birula, 1938].

ECOLOGY. This species is quite rare, occurring in clay deserts.

FAMILY KARSCHIIDAE

Genus *Karschia* Walter, 1889

6. *Karschia (Karschia) badkhyzica* sp.n.

Fig. 1a–g.

Holotype ♂ (ZMUM, Tc-38), Turkmenistan, Mary Area, Badkhyz Plateau, Kushka Distr., Badkhyz Nature Reserve, Kepe-

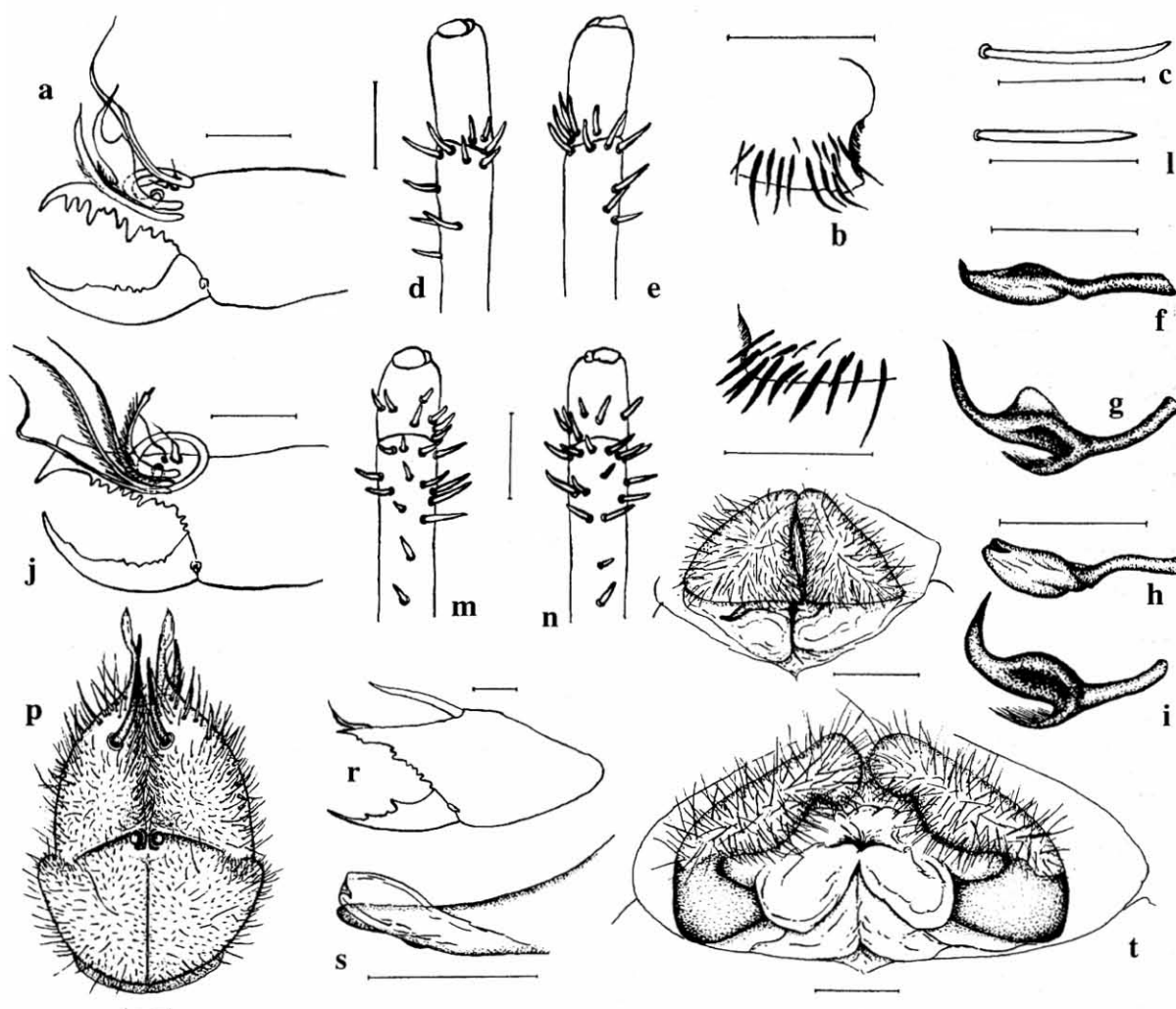


Fig. 1. *Karschia badkhyzica* sp.n., ♂ [holotype] (a–g); *Karschia mangistauensis* Gromov, 1993, ♂ [paratype] (h, i); *Karschia kopetdaghica* sp.n., ♂ [holotype] (j–n), ♀ [paratype] from Kara-Jalcha Mt. Range (o) and *Gylippus* (*Hemigylippus*) *krivokbatskyi* sp.n., ♂ [holotype] (p–s), ♀ [paratype] from the environs of Zhyul'fagar (t): a, j, r — right chelicera, mesal view; b, k — ctenidia on right part of sternite III of abdomen, ventral view; c, l — ctenidia of sternite IV of abdomen, ventral view; d, m — spinulation of right palp, ventral view; e, n — spinulation of left palp, ventral view; f, h — dorsal modified seta of left chelicera, dorsal view; g, i — ditto, ectal view; o, t — genital sternites, ventral view; p — propeltidium with chelicerae, dorsal view; s — flagellum, dorsal view. Scale bar: c, l = 0.5, others = 1.

Рис. 1. *Karschia badkhyzica* sp.n., ♂ [голотип] (a–g); *Karschia mangistauensis* Gromov, 1993, ♂ [паратип] (h, i); *Karschia kopetdaghica* sp.n., ♂ [голотип] (j–n), ♀ [паратип] с хр. Кара-Ялча (o) и *Gylippus* (*Hemigylippus*) *krivokbatskyi* sp.n., ♂ [голотип] (p–s), ♀ [паратип] из окр. с. Зюльфаргар (t): a, j, r — правая хелицера мезально; b, k — ктении на правой части III стернита живота вентрально; c, l — ктении с IV стернита живота вентрально; d, m — шипы на правой пальпе вентрально; e, n — шипы на левой пальпе вентрально; f, h — верхняя модифицированная щетинка с левой хелицеры дорзально; g, i — то же эктально; o, t — генитальные стерниты вентрально; p — пропельтидий с хелицерами дорзально; s — флагеллум дорзально. Масштаб: c, l = 0.5, остальные = 1.

lya Stand (35°48'N, 61°33'E), under *Pistacia* bark 1 m above ground-level, 12.04.1993, A.A. Zyuzin. — Paratype: 1 ♂ (AGC), same locality as holotype, 23–26.04.1978, Kh.I. Atamuradov. Other material: 1 juv. (ZMUM, Tc-100), same locality, 20–23.04.1978, Kh.I. Atamuradov; 1 juv. (ZMUM, Tc-75), same locality, 26.04.1986, S.I. Kalashnik.

DIAGNOSIS. By the presence of modified setae on the chelicerae, *Karschia badkhyzica* sp.n. (Fig. 1a–g) is closely related both to *K. cornifera* Walter, 1889, from Bolshoi Balkhan Mt. Range (W Turkmenistan), and to *K. mangistauensis* Gromov, 1993, from the Mangyshlak and Ustyurt plateaus (SW Kazakhstan). The new species can be separated from *K. mangistauensis* by the darker coloration of the extremities, the longer teeth on its

chelicerae (as in *K. cornifera*), the presence of a keel on the dorsal modified seta [cf. Figs. 1f, g and 1h, i], the number and shape of ctenidia on the third and fourth sternites of the abdomen [cf. Figs. 1c and Gromov, 1993: figs. 6, 10], and by the number of spines on the palps [cf. Figs. 1d, e and Gromov, 1993: fig. 5]. Besides, the new species differs from *K. cornifera* [see Birula, 1938, fig. 21] in having the darker coloration of the body and extremities, the shape of the dorsal modified seta, and by the unswollen tarsus of the palps.

DISTRIBUTION. SE Turkmenistan (Badkhyz Plateau).

ECOLOGY. The species seems to prefer dwelling in clay deserts. Adults probably occur in April and May.

Table 1. Measurements of *Karschia badkhyzica* sp.n.
Таблица 1. Промеры *Karschia badkhyzica* sp.n.

Male holotype	Length			Width		
Total	19.0			—		
Chelicerae	4.5			1.4		
Propeltidium	2.6			3.6		
Extremity	Total (with coxa)	Femur	Tibia	Meta-tarsus	Tarsus	Claw
Palp	18.5	6.0	5.1	4.1	1.6	—
Leg I	14.3	3.8	3.8	2.6	1.3	0.2
Leg II	12.8	2.8	3.0	2.3	0.9	0.8
Leg III	17.0	3.6	4.3	3.2	1.1	1.0
Leg IV	25.5	6.1	6.7	4.7	1.7	1.2

DESCRIPTION. MALE (holotype).

Colour. General background light yellow. Abdomen grey-yellow with yellow tergites. Body parts with brown infuscation as follows: propeltidium anteriorly on each side of a black ocular tubercle; whole palp except for basal half of femur; leg III in apical part of femur and in distal part of tibia; whole femur except its base, and whole tibia IV. Cheliceral fingers, their setae, abdominal ctenidia, some setae and spines on propeltidium, chelicerae and extremities reddish. Maleolae yellow.

Propeltidium. Entire surface covered with dense pubescence of thin, short, anteriorly directed hairs; several long, curved, spiniform setae perpendicular to surface of propeltidium at its anterior, posterior and lateral edges. Remaining surface with sparse, shorter, spiniform setae. Ocular tubercle with several long and numerous smaller and thinner setae. Anterior edge of ocular tubercle with two very long setae.

Chelicerae (Fig. 1a). Cheliceral teeth strong and long. Flagellum represented by a long rolled seta characteristic of *Karschia*. Further dorsally of flagellum, two converged setae on high socles. Dorsal modified seta narrow and long, with a high and short keel on its dorsal surface (Fig. 1f, g). Ventral modified seta sabre-shaped. Chelicerae with numerous short hairs, and with setae of different length. A compact group of latter accompanying modified setae on dorsal cheliceral finger. Long and thick setae of this group gradually diminishing in size and turning into plumose setae near base of finger.

Abdomen. Entire surface covered with almost adpressed hairs, and with numerous, long, curved, bifurcate setae. Third abdominal sternite (Fig. 1b) with long thin bifurcate ctenidia: 15+16 on right and left side, respectively. Fourth abdominal sternite with 14 abruptly pointed ctenidia (Fig. 1c).

Palps. Tarsus not swollen. Spinulation: right metatarsus and tarsus with 4+2+2+2+1 (Fig. 1d), left ones with 3+2+2+2+2 (Fig. 1e). Right tarsus with three, left one with four spines.

Legs. Claws well-developed. Leg I spineless; metatarsi II and III each with a series of three dorsal spines and a pair of apical ones ventrally. Tibiae II and III each with one apical spine dorsally and a pair of apical spines ventrally. Metatarsus IV with two apical spines ventral-

ly. Legs entirely covered with long thick setae and short hairs arranged in rows. Tarsi II–III with dense short setae termed "bacilli", or "ctenidia", in Galcodidae. Distal part of claw long and occupying about 1/5 claw.

Paratype. Total length 15.5. Keel of dorsal modified seta on its dorsal surface with a sharp tooth. Third abdominal sternite with 16+16 ctenidia, fourth one with 13 ctenidia. Spinulation: right palpal metatarsus and tarsus with 5+2+2+4+2, left ones with 6+2+2+4+1. Right palpal tarsus with five, left one with four spines.

FEMALE unknown.

Immature specimens with 13 ctenidia on the fourth abdominal sternite.

ETYMOLOGY. The species is named after the type locality.

7. *Karschia (Karschia) cornifera* Walter, 1889

Karschia cornifera Walter, 1889: 113, fig. 5 (Male holotype from Bolshoi Balkhan Mt. Range, Turkmenistan, lost); Birula, 1917: 199; 1935b: 308, fig. 5C; 1938: 47, figs 21–23; Roewer, 1933: 293, 298, fig. 221D; Gromov, 1993: 527.

REMARKS. This species has hitherto been known from the male holotype only. Birula [1917, 1938] believed that a female and an immature from the type locality (in ZISP, re-examined) belonged to *Karschia cornifera* but, by its genital sternites, this female seems to be referred to the subgenus *Rhinokarschia*. In addition, these two specimens have been found at the end of June and they probably belong to a seasonal vicariant of *K. cornifera*.

DISTRIBUTION. W Turkmenistan (Bolshoi Balkhan Mt. Range) [Birula, 1938].

ECOLOGY. Like other congeners, *K. cornifera* probably prefers to live on clay soil, up to 900 m a.s.l. Adults occur at the end of April and probably the beginning of May.

8. *Karschia (Karschia) koenigi* Birula, 1917

Karschia koenigi Birula, 1917: 199 (Male holotype from Aidere Canyon (38°25'N, 56°45'E), SW Kopet Daghs Mts., Turkmenistan, in ZISP, re-examined); 1938: 53, figs 27–29; Roewer, 1933: 294, 298, figs 221E, 222E.

REMARKS. Birula [1938] seems to have erroneously referred to two immature specimens from Gaudan (37°39'N, 58°24'E), central Kopet Daghs Mts., in ZISP, re-examined, as females of *Karschia koenigi*.

DISTRIBUTION. SW Turkmenistan (SW Kopet Daghs Mts.).

ECOLOGY. This species seems to occur at clay foothills.

9. *Karschia (Karschia) kopetdaghica* sp.n.

Fig. 1j–o.

Holotype ♂ (ZMUM, Tc-184), Turkmenistan, Balkan Area, SW Kopet Daghs Mts., Kara-Kala Distr., Syunt-Khasardagh Nature Reserve, N of Kara-Kala, S slope of Kara-Yalcha Mt. Range, between Parkhai Stand and garden of the All-Union Plant-Growing Institute (38°28'N, 56°16'E), ca. 200 m a.s.l., clay hilly foothills, 20–29.01.1990, T.V. Lukarevskaya. — Paratypes: Balkan Area: 1 ♀ (ZMUM, Tc-109), Gasan-Kuli Distr., S of Bugdaily (38°25'N, 54°25'E), 23.01.1982, K.G. Mikhailov; 1 ♀ (ZMUM, Tc-99), Kizyl-Atrek Distr., middle flow of Sumbar River, environs of Sharlouk (38°13'N, 55°40'E), loessy canyon, 31.01.1981, K.G. Mikhailov; 6 ♂♂ (ZMUM, Tc-104), same data as holotype; 1 ♂ (AGC), same data as holotype; 1 ♂ (ZMUM, Tc-102), 1 ♀ (AGC), same data as holotype.

same locality, 1–12.03.1990, T.V. Lukarevskaya; 1 ♂ 1 ♀ (ZMUM, Tc-103), SW Kopet Daghs Mts., Kara-Kala Distr., Syunt-Khasardagh Nature Reserve, N of Kara-Kala, S slope of Syunt Mt., Kalalegez Canyon (38°30'N, 56°20'E), ca. 400 m a.s.l., steppe, 14–21.01.1990, T.V. Lukarevskaya; 1 ♂ (ZMUM, Tc-62), SW Kopet Daghs Mts., Kara-Kala Distr., Syunt-Khasardagh Nature Reserve, N of Kara-Kala (38°30'N, 56°20'E), ca. 400 m a.s.l., 20.12.1984, T.V. Lukarevskaya; 1 ♂ (ZMUM, Tc-101), SW Kopet Daghs Mts., Kara-Kala Distr., Syunt-Khasardagh Nature Reserve, N of Kara-Kala, 13–19.02.1990, T.V. Lukarevskaya; 1 ♂ (ZMUM, Tc-46), Ashkhabad Area, central Kopet Daghs Mts., Ashkhabad Distr., Bolshoi Karanki Canyon (37°50'N, 58°20'E), 9–16.09.1978, G.T. Kuznetsov; 1 ♂ (ZMUM, Tc-84), Gyaur Distr., Berzengi (37°53'N, 58°23'E), 16.03.1979, G.T. Kuznetsov. Other material: 9 juv. (ZMUM, Tc-104), same data as holotype; 4 juv. (ZMUM, Tc-103), Balkan Area, SW Kopet Daghs Mts., Kara-Kala Distr., Syunt-Khasardagh Nature Reserve, N of Kara-Kala, S slope of Syunt Mt., Kalalegez Canyon (38°30'N, 56°20'E), ca. 400 m a.s.l., steppe, 14–21.01.1990, T.V. Lukarevskaya; 1 juv. (ZMUM, Tc-105), same locality, 2–11.03.1990, T.V. Lukarevskaya.

DIAGNOSIS. *K. kopetdaghica* sp.n. (Figs. 1j–o) is closely related to *K. (s.str.) kiritshenkoi* Birula, 1917 [cf. Birula, 1938, fig. 25; the male holotype re-examined] and *K. (K.) persica* Kraepelin, 1899 [cf. Roewer, 1932, fig. 143D], both from N Iran, but can be distinguished by the more prominent dorsal keel on the dorsal modified finger in the male. This keel is homolog to the horn in the subgenus *Rhinokarschia*. Three modified setae on the chelicerae are characteristic not only of the above trio but also of both *K. (Rhinokarschia) borszczewskii* Birula, 1935 and *K. kaznakovi* Birula, 1918 [cf. Birula, 1938, figs 18 & 24, resp.], from the Hissar-Alai, the types re-examined. Yet *K. kopetdaghica* sp.n. is sympatric with *K. koenigi*.

DISTRIBUTION. SW and S Turkmenistan (SW and central Kopet Daghs Mts.).

ECOLOGY. The new species seems to prefer dwelling at clay-clad foothills. Adults occur in September to March.

DESCRIPTION. MALE (holotype).

Colour. General background light yellow. Abdomen grey-yellow with yellow tergites. Body parts with light brown infuscation as follows: propeltidium dorsally except for medial band occupying about 1/3 propeltidium surface; whole palp except for basal half of femur; legs I and III on dorsal surfaces of femora and tibiae; femur IV except its base, whole tibia IV and basal part of tarsus IV. Cheliceral fingers, their setae, abdominal ctenidia, some setae and spines on propeltidium, chelicerae and extremities reddish. Maleolae yellow.

Table 2. Measurements of *Karschia kopetdaghica* sp.n.
Таблица 2. Промеры *Karschia kopetdaghica* sp.n.

♂ holotype / ♀ paratype	Length			Width		
Total	16.0/17.5			–		
Chelicerae	4.7/5.3			1.5/1.7		
Propeltidium	2.4/2.6			3.5/3.8		
Extremity	Total (with coxa)	Femur	Tibia	Metatarsus	Tarsus	Claw
Palp	16.5/13.3	5.5/4.1	5.3/3.7	3.7/2.9	1.1/0.9	–
Leg I	14.3/11.0	3.8/2.7	3.8/2.7	2.6/2.0	1.3/1.0	0.2/0.1
Leg II	12.9/9.5	2.8/1.8	3.0/2.2	2.3/1.6	1.0/0.7	1.0/0.8
Leg III	17.0/12.5	3.6/2.8	4.3/2.9	3.1/2.3	1.0/0.8	1.1/0.9
Leg IV	23.3/18.5	5.6/4.2	6.1/4.7	4.3/3.2	1.7/1.1	1.4/1.2

Propeltidium. Entire surface covered with dense pubescence of thin, short, anteriorly directed hairs; several long curved spiniform setae perpendicular to surface of propeltidium at its anterior, posterior and lateral edges. Remaining surface with sparse, shorter, spiniform setae. Ocular tubercle with several long and numerous smaller and thinner setae. Anterior edge of ocular tubercle with two very long setae.

Chelicerae (Fig. 1j). Cheliceral teeth strong and short. Dorsal cheliceral finger on its dorsal surface with a high triangular keel. Flagellum represented by a long coiled seta characteristic of *Karschia*. Ventromedial surface of dorsal cheliceral finger with a compact group of plumose setae gradually diminishing in size toward base of finger and located posteriorly of flagellum. Three upper setae modified: thickest applanate and broadened basally, the others two usual, plumose, but longer than dorsal cheliceral finger. Further dorsally of flagellum, two converged setae: one usual, the other on a high socle. Chelicerae with numerous short hairs, and with setae of different length.

Abdomen. Entire surface covered with almost adpressed hairs and numerous, long, curved, bifurcate setae. Third abdominal sternite (Fig. 1k) with long, thin, bifurcate ctenidia: 16+13 (on right and left side, respectively). Fourth abdominal sternite with 15 abruptly pointed ctenidia (Fig. 1l).

Palps. Tarsus not swollen. Spinulation: right palpal metatarsus and tarsus with 2+3+5+5+3+3 (Fig. 1m), left ones with 2+3+5+4+4+3 (Fig. 1n). Right tarsus with seven, left one with six spines.

Legs. Claws well-developed. Leg I spineless; metatarsi II and III each with a series of three dorsal spines and a pair of apical ones ventrally. Tibiae II and III with one apical spine dorsally and a pair of apical spines ventrally. Metatarsus IV with two apical spines ventrally. Legs entirely covered with long thick setae and with short hairs arranged in rows. Distal part of claw short and occupying about 1/7 claw length.

Paratypes. Total length 14.5–19. Third abdominal sternite with (10–19)+(10–17) ctenidia, fourth one with 12–16 ctenidia. Right palpal metatarsus with 8–17, left one with 11–15 spines; right palpal tarsus with 5–7, left one with 5–8 spines.

FEMALE. Total length 14–18. Body coloration in general as in males. Genital sternites triangular and covered with short and medium-sized hairs (Fig. 1o).

Female specimen from the environs of Sharloulk with 15, remaining specimens with 16 ctenidia on fourth abdominal sternite.

Immature specimens with 12–18 ctenidia on the fourth abdominal sternite.

ETYMOLOGY. The species is named after the type locality.

10. *Karschia (Rhinokarschia) kaznakovi* Birula, 1918

Karschia kaznakovi Birula, 1918: 200 (Male holotype from the environs of Akrobat (38°16'N, 66°48'E) and one juvenile paratype from Pass Aman-Kutan (39°17'N, 66°56'E), Uzbekistan, in ZISP, re-examined); 1935: 302, fig. 2; 1938: 49, fig. 24; Roewer, 1933: 295, 299, figs 221I, 222I, 222i; 1941: 110, fig. 4.

MATERIAL. 1 ♂ (IASE), 1 ♂ (AGC), Turkmenistan, Chardzhou Area, Charshanga Distr., W Kuhitangtau Mt. Range (ca. 37°50'N, 66°30'E), 1,800–2,500 m a.s.l., juniper belt, 9–16.05.1991, V.V. Dubatolov.

This species is recorded in Turkmenistan for the first time.

DISTRIBUTION. S Uzbekistan (Zeravshan Mt. Range, SW foothills of Hissar Mt. Range) [Birula, 1938] and SE Turkmenistan (W Kuhitangtau Mt. Range).

ECOLOGY. This species seems to prefer dwelling at clay-clad foothills and in the mountains. Adults probably occur in April–May.

11. *Karschia* (?) *demokidovi* Birula, 1935

Karschia (?) *demokidovi* Birula, 1935b: 305, fig. 3B (Female holotype from environs of Bayram Ali, Turkmenistan, in ZISP, re-examined); 1938: 66, fig. 42; Roewer, 1941: 111, fig. 5.

REMARKS. Since this species has hitherto been known from a single female holotype, its generic position remains obscure, as there are no distinctive features between females of *Karschia* and *Eusimonia*. These two genera differ by males only. The chelicerae of *K. demokidovi* display an unusually large number of teeth. Similarly aberrant specimens have also been found by the author in abundant material of *Galeodes caspius subfuscus* Birula, 1937, from environs of Kapchagay, SE Kazakhstan.

DISTRIBUTION. E Turkmenistan (environs of Bayram Ali) [Birula, 1938].

ECOLOGY unknown.

Genus *Eusimonia* Kraepelin, 1899

12. *Eusimonia divina* Birula, 1935

Eusimonia divina Birula, 1935a: 1217, figs. 1, 2 (One male and one female syntype from environs of Imamshekh [Shakhrud] City, E foothills of Elburs Mts., Iran, in ZISP, re-examined); 1938: 76, figs 49, 50.

Barella divina (Birula) — Roewer, 1941: 112, figs 69–73; 1960: 8, fig. 1.

MATERIAL. 1 ♂ (ZMUM, Tc-74), Turkmenistan, Tashauz Area, Ustyurt Plateau, Kalinin Distr., Kangakyr [Gangalykyr] Height (41°22'N, 58°02'E), 12.05.1983, O.S. Soyunov; 1 ♀ (ZMUM, Tc-63), Kaplankyr Nature Reserve (41°12'N, 57°29'E), 3.05.1985, L.A. Mitroshina; 1 ♂ (ZMUM, Tc-64), same locality and collector, 23.04.1985.

This species is recorded in Turkmenistan for the first time.

DISTRIBUTION. From NW Turkmenistan (Ustyurt Plateau) and N Iran (E foothills of Elburs Mts.) [Birula, 1938] to central Afghanistan (S foothills of Hindu Kush Mts.) [Roewer, 1960].

ECOLOGY. This species probably prefers to live in clay deserts.

FAMILY GYLIPPIDAE

Genus *Gylippus* Simon, 1872

13. *Gylippus* (*Hemigylippus*) *krivokhatskyi* sp.n.

Fig. 1p–t.

Holotype ♂ (ZMUM, Tc-185), Turkmenistan, Mary Area, Badkhyz Plateau, Kushka Distr., Badkhyz Nature Reserve, Kyzylzhazh Stand (35°49'N, 61°51'E), 12.03–2.04.1978, V.A.

Krivokhatsky. — Paratypes: 2 ♂♂ (ZMUM, Tc-41), same locality and collector, 03.1978; 5 ♂♂ 1 ♀ (ZMUM, Tc-48), 1 ♂ (AGC), same data as holotype; 1 ♀ (AGC), Ashkhabad Area, Serakhs Distr., Zylfagar [Gezgyadyk, Pogranichny] Mt. Range, environs of Zylfagar (35°42'N, 61°24'E), 14.04.1993, A.A. Zyuzin. Other material: 1 juv. (ZMUM, Tc-44), Ashkhabad Area, Serakhs Distr., Zylfagar Mt. Range (35°42'N, 61°24'E), 28.03.1978, V.Ya. Fet; 1 juv. (ZMUM, Tc-48), same data as holotype.

DIAGNOSIS. *Gylippus krivokhatskyi* sp.n. is close to *G. lamelliger* Birula, 1906, from which it differs by the lighter body, the shape of the flagellum (cf. Figs. 1p, r, s and Birula, 1938: fig. 56a, b, d), the more anteromedially located mandibular spine in males, as well as by the more strongly modified genital sternites in females (cf. Figs. 1t and Birula, 1938: fig. 57c).

DISTRIBUTION. SE Turkmenistan (Zulfagar Mt. Range and Badkhyz Plateau).

ECOLOGY. The species seems to prefer living in clay deserts. Adults probably occur in March–April.

DESCRIPTION. MALE (holotype).

Colour. General background light yellow. Thorax and abdomen grey-yellow with light brownish tergites. Body parts with light brownish infuscation as follows: propeltidium anteriorly on each side of a blackish-brown ocular tubercle; whole palp except for its basal part occupying about 3/4 femur; leg III on dorsal surface; whole femur except for its base, and basal half of tibia IV. Cheliceral fingers, its setae, some setae and spines on propeltidium, chelicerae and extremities reddish. Maleolae light yellow.

Propeltidium (Fig. 1p). Entire surface covered with dense pubescence of thin, short, anteriorly directed hairs and several long curved spiniform setae both perpendicular to surface of propeltidium and most numerous at its anterior edge. Ocular tubercle glabrous except for its anterior edge carrying two very long setae.

Chelicerae (Fig. 1p, r). Dentation in general as in other *Gylippus* species. Flagellum (Fig. 1s) represented by a wide, horizontal, rather long and pointed lamina curved upwards anteriorly. Mandibular spine of usual shape and length, directed anteriorly and located on dorsal modified finger at anterior-medial edge of its dorsal surface. Lateral surface of finger, distad of mandibular spine, with a group of about 15 long spines; several spiniform setae anteriorly. Interior of chelicerae with several long, plumose setae. Remaining cheliceral surface covered with numerous short hairs mixed with setae of different length. Interior of dorsal modified finger without papillae.

Table 3. Measurements of *Gylippus krivokhatskyi* sp.n.
Таблица 3. Промеры *Gylippus krivokhatskyi* sp.n.

♂ holotype / ♀ paratype	Length			Width		
Total	22.0/31.0			—		
Chelicerae	6.2/8.8			2.4/2.8		
Propeltidium	4.0/4.4			5.4/7.0		
Extremity	Total (with coxa)	Femur	Tibia	Metatarsus	Tarsus	Claw
Palp	16.7/17.0	5.7/5.6	4.5/4.4	3.3/3.7	2.0/1.6	—
Leg I	15.0/15.4	3.7/3.5	3.7/3.8	2.6/2.6	1.8/1.7	0.2/0.2
Leg II	11.0/12.6	2.4/2.5	2.6/2.6	2.1/1.9	1.0/1.1	1.0/1.1
Leg III	15.2/17.4	3.5/3.7	3.6/3.8	2.6/2.5	1.2/1.2	1.3/1.3
Leg IV	21.8/23.5	5.3/5.5	5.5/5.3	3.7/3.7	1.8/1.7	1.6/1.8

Abdomen. Numerous, long, curved, bifurcate setae in addition to background of almost adpressed hairs. Abdominal sternites without ctenidia.

Palps. Metatarsus not swollen. Palps uniformly covered with numerous, short, adpressed hairs and long setae. Mesal surface of femur with four robust, thick, pointed setae longer than diameter of femur.

Legs. Leg I spineless. Claws well-developed. Metatarsi II and III each with a series of 4-5 spines dorsally. Tibiae II, III and IV each with a pair of apical spines ventrally. Legs also covered with rows of long thick setae and short hairs. Distal part of claws long and taking up ca. 2/7 claw.

Paratypes. Total length 19–23.

FEMALE. Total length 25–31. Body somewhat darker than in males. Genital sternites (Fig. 1t) strongly sclerotized; covered anteriorly with rather long setae and forming two crescents surrounding the aperture on both sides. Posterior part of genital sternites without setae.

ETYMOLOGY. The new species is gladly dedicated to its collector, the well-known Russian entomologist V.A. Krivokhatsky (St. Petersburg).

14. *Gylippus (Hemigylippus) lamelliger* Birula, 1906

Gylippus lamelliger Birula, 1906: 24, fig. 1 (Two male syntypes from the environs of Kzyl-Orda, Kazakhstan and from the environs of Serakhs (36°32'N, 61°13'E), Turkmenistan, in ZISP, re-examined); 1907b: 890, fig. 5; 1913: 390, tab. XI, figs 1–9; 1938: 86, figs 56, 57; Gromov, Kopdykbaev, 1994: 21.

Hemigylippus lamelliger (Birula) — Roewer, 1933: 315, figs 231, 232.

DISTRIBUTION. From SW Kazakhstan (Mangyshlak Plateau) across the Kara Kum and Kyzyl Kum deserts to NE Iran (Khorasan Ostan) [Gromov, Kopdykbaev, 1994].

ECOLOGY. This species is common in clay and sandy deserts.

FAMILY DAESIIDAE

Genus *Daesia* Karsch, 1880

15. *Daesia rossica* Birula, 1904

Daesia rossica Birula, 1904: 406 (Male and female syntypes from the environs of Krasnovodsk, Ashkhabad, Kizyl Arvat and Geok-Tepe [Akhal-Teke], Turkmenistan, in ZISP, re-examined); Roewer, 1933: 408, figs 279E, 279F; Birula, 1936b: 1281; 1938: 99, fig. 67; Gromov, Kopdykbaev, 1994: 21.

DISTRIBUTION. From SW Kazakhstan (Ustyurt Plateau) and the Caspian coast of Turkmenistan across the Aral Sea, Kara Kum and Kyzyl Kum deserts to SE Kazakhstan (Ili River) [Gromov, Kopdykbaev, 1994] and S Tajikistan (Vakhsh River) [Birula, 1936b].

ECOLOGY. This species is abundant in sandy deserts but rare in clay deserts.

Genus *Gluiopsis* Kraepelin, 1899

16. *Gluiopsis nigrocinctus* Birula, 1904

Gluiopsis nigrocincta Birula, 1904: 413 (Male holotype from Sere-Chakh [Sarr-Chokh] (32°15'N, 58°53'E), Khorasan Ostan, Iran, in ZISP, re-examined); 1905: 279; 1908: 332, figs

1, 2; 1938: 105, figs 69–72 (*G. nigrocinctus*); Roewer, 1933: 376, 377, figs. 268B1, 268B2; Aliyev, Gadzhiev, 1983: 44 (*G. nigrocinctus*).

Gnosippus afghanus Lawrence, 1956: 126, figs. 1A, 4 (Male holotype from Pirzada, Afghanistan, in Zoological Museum of Copenhagen); Roewer, 1960: 11, **syn.n.**

REMARKS. I have re-examined the holotype of *Gluiopsis nigrocinctus* and other material of this species deposited in ZISP and determined by Birula. Together with the specimens with four segments of tarsus IV (as in the holotype), the same population also contained many samples showing no segmentation of the fourth tarsus. Hence this feature is of no taxonomic value. Described from the male holotype from central Afghanistan, *Gnosippus afghanus* was referred to *Gnosippus* solely on the basis of fused tarsal segments, while all other features remained uncharacteristic of the latter genus. Taking in account the variability of the tarsal structure in the population of *Gluiopsis nigrocinctus* from Turkmenistan, this name is considered as a new subjective senior synonym of *Gnosippus afghanus*.

Unfortunately, the material examined is insufficient to conclude whether this is natural variability known to be particularly characteristic of the peripheral parts of species ranges [Mayr, 1971] or this variation is random, caused by a small sample size only.

DISTRIBUTION. E Transcaucasia, S Turkmenistan, E Iran (Khorasan Ostan), Tajikistan [Aliyev, Gadzhiev, 1983], W and central Afghanistan [Lawrence, 1956; Roewer, 1960].

ECOLOGY. This species quite rarely occurs in clay and sandy deserts.

17. *Gluiopsis microphthalmus* Birula, 1937

Gluiopsis microphthalma Birula, 1937b: 308, 312 (One female syntype from Zinovievka [Skobelevo] (38°05'N, 57°55'E) and one juvenile syntype from Chuli Canyon (38°00'N, 58°00'E), central Kopet Daghs Mts., Turkmenistan, in ZISP, re-examined); 1938: 108, fig. 73 (*G. microphthalmus*).

DISTRIBUTION. This species is only known from type material from S Turkmenistan (central Kopet Daghs Mts.).

ECOLOGY unknown.

FAMILY GALEODIDAE

Genus *Galeodes* Olivier, 1791

18. *Galeodes bactrianus* Birula, 1937

Galeodes bactrianus Birula, 1937a: 565, figs 1,2 (Syntypes: one male and one female from the environs of Kanimekh, one male from the environs of Dzarkurgan, two males and three females from the environs of Termez, and one female from "Shirdzhan", Uzbekistan, in ZISP, re-examined); 1938: 131; Roewer, 1941: 171, fig. 139 (*Galeodellus b.*); Gromov, Kopdykbaev, 1994: 22 (*Galeodes ?b.*).

MATERIAL. 1 ♀ (IASE), Turkmenistan, Chardzhou Area, Charshanga Distr., W foothills of Kuhitangtau Mt. Range, Suv-Doker Canyon, environs of Bazardepe (37°48'N, 66°24'E), 17.05.1991, V.V. Dubatolov.

This is the first record of the species in Turkmenistan.

DISTRIBUTION. S Kazakhstan (NE Kyzyl Kum Desert) [Gromov, Kopdykbaev, 1994], S Uzbekistan [Birula, 1938] and E Turkmenistan (W foothills of Kuhitangtau Mt. Range).

ECOLOGY. This species is common in clay deserts.



Fig. 2. *Galeodes caspius* Birula, 1890, ♀.

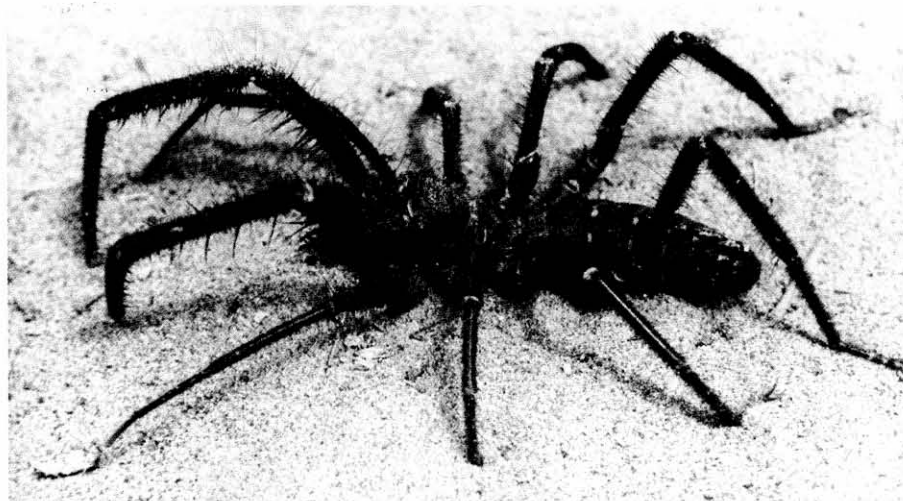


Fig. 3. *Galeodes fumigatus* Walter, 1889, ♂ (Repetek Nature Reserve, E Turkmenistan). Photo: V.L. Kazenas (Almaty).

Рис. 3. *Galeodes fumigatus* Walter, 1889, ♂ (запов. Репетек, В Туркменистан). Фото: В.Л. Казенас (Алматы).

19. *Galeodes caspius* Birula, 1890
Fig. 2.

Galeodes caspius Birula, 1890a: 2 (One male syntype from the environs of Mirzakuduk [Murza-Rabat] (40°31'N, 68°22'E), Uzbekistan and two female syntypes from the environs of "Drulen", in ZMUM, re-examined); 1890b: 68, figs 5–8; 1938: 126, figs. 74C, 79; Roewer, 1934: 538, 541, 542 (*Galeodellus* c.); 1941: 170 (*Galeodellus* c.); Aliyev, Gadzhiev, 1983: 45; Gromov, Kopdykbaev, 1994: 22.

Galeodes lehmani Birula, 1890a: 2 (Three female syntypes from the environs of Fort Shevchenko, Kazakhstan, and two juvenile syntypes from the environs of Krasnovodsk, Turkmenistan, in ZISP, re-examined); Roewer, 1934: 540, 543 (*Galeodellus* l.); Levy, Shulov, 1964: 111 (*Galeodellus* l.).

Galeodes caspius lehmani Birula, 1890b: 69.

DISTRIBUTION. From W Kazakhstan (Ural River), E Transcaucasia and Israel across S Kazakhstan, Uzbekistan, Turkmenistan, Kyrgyzstan, Tajikistan and N Iran to central China (Gobi Desert and Tibet Plateau) [Birula, 1911; Roewer, 1934; Levy, Shulov, 1964; Aliyev, Gadzhiev, 1983; Gromov, Kopdykbaev, 1994].

ECOLOGY. This species is abundant in deserts, at foothills and in the mountains.

20. *Galeodes fumigatus* Walter, 1889
Fig. 3.

Galeodes fumigatus Walter, 1889: 104, fig. 1 (One male and two female syntypes from Kara Kum Desert, N (8 km) of Ashkhabad, Turkmenistan); Roewer, 1934: 539, 541, 544 (*Galeodellus* f.); 1941: 170 (*Galeodellus* f.); Birula, 1938: 129, figs 80, 81.

Galeodes ater Birula, 1890a: 3 (One male and one female syntype from Cheleken Peninsula and one female syntype from the environs of Ashkhabad, Turkmenistan); 1890b: 71.

DISTRIBUTION. Turkmenistan (Kara Kum Desert) [Birula, 1938].

ECOLOGY. This species is common in sandy deserts.

21. *Galeodes philippowiczi* Birula, 1937

Galeodes philippowiczi Birula, 1937b: 306, 310, figs 1–3 (One male and one female syntype from the environs of Gaudan (37°39'N, 58°24'E), central Kopet Daghs Mts., Turkmenistan, in ZISP, re-examined); 1938: 136.

DISTRIBUTION. This species is only known from type material from S Turkmenistan (central Kopet Daghs Mts.).

ECOLOGY unknown.

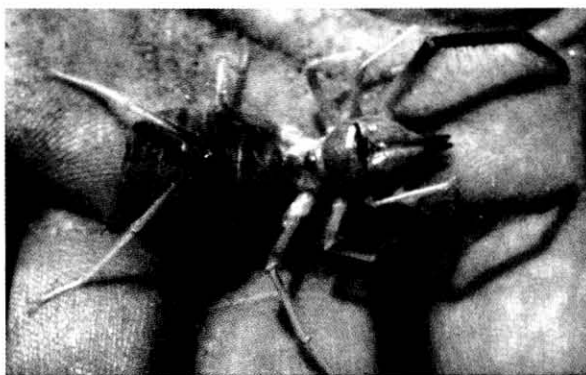


Fig. 4. *Galeodes zarudnyi* Birula, 1937, ♀ (Repetek Nature Reserve, E Turkmenistan). Photo: D.A. Milko (Bishkek).

Рис. 4. *Galeodes zarudnyi* Birula, 1937, ♀ (запов. Репетек, В Туркменистан). Фото: Д.А. Милько (Бишкек).

22. *Galeodes smirnovi* Birula, 1937

Galeodes smirnovi Birula, 1937a: 578, figs 7, 8 (Syntypes: one male from Turkmenistan, one juvenile from Dzhebel Station (39°37'N, 54°13'E), one female from Archman Station (38°36'N, 57°08'E), one juvenile from the bank of Tedzhen River, two females from the environs of Murgab (37°30'N, 61°58'E), one female and seven juveniles from the environs of Bayram Ali, Turkmenistan and two females from Khorasm Area, bank of Amu Darya River, Uzbekistan, in ZISP, re-examined); 1938: 139; Roewer, 1941: 173, fig. 145 (*Galeodellus* s.).

DISTRIBUTION. Turkmenistan (Kara Kum Desert) [Birula, 1938].

ECOLOGY. This species is common in sandy deserts.

23. *Galeodes turkmenicus* Birula, 1937

Galeodes turkmenicus Birula, 1937a: 584, figs 11, 12 (Syntypes: Kazakhstan: one male and one female from Mangyshlak Plateau; Turkmenistan, one male from the environs of Krasnovodsk, one female from Dzhebel Station (39°37'N, 54°13'E), one male, two females and six juveniles from Bolshoi Balkhan Range, one juvenile from the environs of Kara-Kala (38°27'N, 56°17'E), four males and two females from Canyon Aydere (38°25'N, 56°45'E), SW Kopet Dag, one male and one female from Archman Station (38°36'N, 57°08'E), one female from the environs of Ashkhabad, one female from the bank of Tedzhen River, and one female from "Bulumurun", in ZISP, re-examined); 1938: 118; Roewer, 1941: 164, fig. 141.

DISTRIBUTION. SW Kazakhstan, SW and S Turkmenistan [Birula, 1938].

ECOLOGY. This species is common in clay deserts.

24. *Galeodes zarudnyi* Birula, 1937

Fig. 4.

Galeodes zarudnyi Birula, 1937a: 581, figs 9, 10 (Syntypes: one juvenile from between Well Topkuduk (ca. 43°43'N, 67°25'E) and Well Musabay (43°08'N, 67°01'E), one male from 20 km SW of Well Palvankuduk (ca. 43°19'N, 67°12'E), five juveniles from between Well Karasha [Karachaykuduk] and Ruines Pchuk (ca. 43°05'N, 67°30'E), one female from the environs of Well Berkutbay (42°11'N, 66°13'E), NE Kyzyl Kum Desert, Kazakhstan, in ZISP, re-examined); 1938: 140; Roewer, 1941: 174, fig. 146.

MATERIAL. 4 juv. (ZISP), Turkmenistan, Chardzhou Area, Chardzhou Distr., Repetek Nature Reserve (38°33'N, 63°11'E), 06.1925, L. Lozina-Lozinskaya; 1 juv. (AGC), same locality, 23.04.1993, D.A. Milko.

This species is recorded in Turkmenistan for the first time. DISTRIBUTION. S Kazakhstan (NE Kyzyl Kum Desert) [Birula, 1938] and E Turkmenistan (E Kara Kum Desert). ECOLOGY. This species is common in sandy deserts.

Genus *Galeodopsis* Birula, 1903

25. *Galeodopsis bilkiewiczzi* (Birula, 1907)

Galeodes (*Galeodopsis*?) *bilkiewiczzi* Birula, 1907a: 280, figs 1–4 (Female holotype and two female paratypes from Repetek Station (38°33'N, 63°11'E), Kara Kum Desert, Turkmenistan, in ZISP, re-examined).

Galeodopsis bilkiewiczzi (Birula) — Roewer, 1934: 549 (*G. bilkiewiczzi*, sic!); Birula, 1938: 146, figs 82b, 84.

DISTRIBUTION. E Turkmenistan (E Kara Kum Desert) [Birula, 1938].

ECOLOGY. This species is common in sandy deserts. Adults probably occur in September–October.

26. *Galeodopsis strandi* Birula, 1936

Galeodopsis strandi Birula, 1936a: 47, fig. (One male lectotype, designated herewith, and one female paralectotype from the E environs of Kelif Station (ca. 37°22'N, 66°20'E), Turkmenistan, in ZISP, re-examined); 1938: 147, fig. 85; Roewer, 1941: 176.

DISTRIBUTION. This species is only known from type material from E Turkmenistan (S foothills of Kuhitangtau Mt. Range) [Birula, 1938].

ECOLOGY unknown.

Genus *Paragaleodes* Kraepelin, 1899

27. *Paragaleodes melanopygus* Birula, 1904

Paragaleodes melanopygus Birula, 1904: 401 (Two female syntypes from the environs of Gorghhan [Astrabad], Masenderan Ostan, Iran, in ZISP, re-examined); 1938: 154; Aliyev, Gadzhiev, 1983: 45.

Galeodes (*Paragaleodes*) *melanopygus* (Birula) — Birula, 1905: 268; Roewer, 1934: 524, 530.

MATERIAL. 2 ♂♂ 1 ♀ 1 juv. (ZMUM, Tc- 186), 2 ♂♂ (AGC), Turkmenistan, Ashkhabad Area, central Kopet Dag Mts., Geok-Tepe Distr., Dushak [Dushakerekdagh] Mt. (37°57'N, 57°54'E), 1978, G.T. Kuznetsov.

This species is recorded in Turkmenistan for the first time.

DISTRIBUTION. S Azerbaijan (Talysh Mt. Range), N Iran (E foothills of Elburs Mts.) [Aliyev, Gadzhiev, 1983] and S Turkmenistan (central Kopet Dag Mts.).

ECOLOGY. This species seems to prefer dwelling at clay-clad foothills and in the mountains.

28. *Paragaleodes pallidus* (Birula, 1890)

Galeodes pallidus Birula, 1890a: 3 (One female lectotype, designated herewith, from Golodnaya [Murza-Rabat] Steppe (ca. 40°31'N, 68°22'E), Uzbekistan, in ZISP, re-examined; the other female paralectotype is lost); 1890b: 74; 1893: 87, tab. IIIB, fig. 1; Roewer 1934: 523, 527.

Mesogaleodes heliophilus Heymons, 1901: 13 (Four female syntypes from Golodnaya [Murza-Rabat] Steppe (ca. 40°31'N, 68°22'E), Uzbekistan (two females in the Senckenberg Museum (RII/3420/262), Frankfurt am Main, and two females in the ZMB (ZMB-15611, 15613), re-examined), and one female syntype from S coast of Lake Tuzkan (ca. 40°30'N, 67°35'E), Uzbekistan, in the ZMB (ZMB-15612), re-examined).

Galeodes heliophilus (Heymons) — Roewer, 1934: 516, 523, 527.

Paragaleodes heliophilus (Heymons) — Birula, 1938: 151, fig. 86.

Paragaleodes pallidus (Birula) — Birula, 1938: 153; Gromov, Kopydkbaev, 1994: 22.

DISTRIBUTION. From E Turkmenistan (environs of Chardzhou) [Pavlovsky, 1932] across the Kyzyl Kum Desert and NW foothills of Tian Shan Mts. to SE Kazakhstan (Ili River) [Gromov, Kopydkbaev, 1994].

ECOLOGY. This species is common in clay and sandy deserts and in foothill steppes. Solpugids are active during daylight hours. Adults probably occur in July–August.

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