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## NEW SPECIES OF *EMPIS* (S. STR.) (DIPTERA: EMPIDIDAE) FROM THE NORTHWEST CAUCASUS

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### ABSTRACT

Four new species of the genus *Empis* belonging to the nominative subgenus are described from the Northwest Caucasus: *E. (E.) arkhyziensis* sp. nov. (Russia: Karachay-Cherkessia), *E. (E.) cherkessica* sp. nov. (Russia: Karachay-Cherkessia), *E. (E.) temryukiensis* sp. nov. (Russia: Krasnodarskiy Territory), and *E. (E.) xanthopoda* sp. nov. (Russia: Krasnodarskiy Territory). *Empis (E.) albopilosa* de Meijere, 1935 is recorded from the Caucasus for the first time.

**Key words:** Diptera, Empididae, *Empis*, new species, Palearctic, Caucasus, Russia

## НОВЫЕ ВИДЫ *EMPIS* (S. STR.) (DIPTERA: EMPIDIDAE) С СЕВЕРО-ЗАПАДНОГО КАВКАЗА

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### РЕЗЮМЕ

С территории Северо-западного Кавказа описаны 4 новых вида рода *Empis*, относящихся к номинативному подроду: *E. (E.) arkhyziensis* sp. nov. (Россия: Карачаево-Черкессия), *E. (E.) cherkessica* sp. nov. (Россия: Карачаево-Черкессия), *E. (E.) temryukiensis* sp. nov. (Россия: Краснодарский край) и *E. (E.) xanthopoda* sp. nov. (Россия: Краснодарский край). *Empis (E.) albopilosa* de Meijere, 1935 впервые указывается для фауны Кавказа.

**Ключевые слова:** Diptera, Empididae, *Empis*, новые виды, Палеарктика, Кавказ, Россия

## INTRODUCTION

The species of *Empis* (s. str.) Linnaeus, 1758 are an important element of the biota in mountainous and submontane regions where they are especially

diverse occurring mostly from spring to earlier summer. The representatives of this group usually are slender-legged, small to middle-sized, greyish flies that can be immediately recognised by their strikingly long vertical proboscis and by strongly pennate legs (flattened setae) in the females. The adults are

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frequently found on flowers where they feed on nectar (Chvála 1994). In the Palaearctic the subgenus includes 117 species known mostly from Europe and the Mediterranean region (Chvála and Wagner 1989; Syrovátka 2000; Çiftçi et al. 2012). Currently, only nine species of *Empis* s. str. are recorded from the Caucasus including mountains and surrounding lowlands (Shamshev and Kustov 2006). In this paper we described four new species of *Empis* s. str. taken from the Russian part of the region, and one species is recorded for the first time from the Caucasus.

## MATERIAL AND METHODS

This study is based on material deposited in the Kuban State University, Krasnodar, Russia (KSU) and the Zoological Institute of the Russian Academy of Sciences, St. Petersburg, Russia (ZIN). Terms used for adult structures primarily follow those of Cumming and Wood (2009), except for the antenna where the terms of Stuckenberg (1999) are used. Label data for primary types are cited from the top downward, with the data from each label in quotation marks. Labels are cited in full, with original spelling, punctuation, and date, and label lines are delimited by a slash (/). Additional information is included in square [ ] brackets. The repository of each type is given in parentheses. Secondary type data are abridged and listed alphabetically.

## SYSTEMATICS

### *Empis (Empis) albopilosa* de Meijere, 1935

*Empis (Empis) albopilosa* de Meijere, 1935: 126.

**Material examined.** RUSSIA: 15 males, Krasnodar, env. KHBK [Cotton Factory], 21 April 2007, coll. V.V. Gladun; 4 males, 3 females, Krasnodar, Botanical garden of KSU, 6 April 2009, coll. V.V. Gladun; 1 male, same locality, 16 April 2010, coll. V.V. Gladun (KSU).

**Remarks.** *Empis albopilosa* is recorded from the Caucasus for the first time. One of earliest spring species among Empididae of the region, collected only in April.

**Distribution.** Czech Republic, Germany, the Netherlands, Switzerland (Chvála, 1994), Russia (Krasnodarskiy Territory) (present publication).

### *Empis (Empis) arkhyziensis* sp. nov.

(Fig. 1)

**Etymology.** The name of the new species refers to its type locality, Arkhyz.

**Type material.** Holotype – male, RUSSIA: [printed in Cyrillic] “Karachay-Cherkessia/ Republic, okr. pos. [environs of village] Arkhyz/ Sophiyskie Lakes, 2700 m/ 43°27′07″N, 41°14′25″E/ 04.viii.2012, Kustov S.Yu” (ZIN).

**Diagnosis.** Head, thorax and abdomen entirely pale setose; legs entirely black, coxae and trochanters with pale setae; wings whitish, halter pale, anal vein complete; phallus very long, thin, evenly curved.

**Description.** *Male.* Head black, with pale setae. Eyes holoptic, with upper ommatidia enlarged. Frons represented by small, greyish triangular space above antennae. Ocellar tubercle with 1 pair of long thin and several short setae. Face broad, greyish pollinose; clypeus shining. Occiput greyish pollinose; covered with numerous thin setae of different lengths. Antenna black; scape and pedicel with short setae; postpedicel conical, with lower margin slightly concave on apical part, nearly 2.5 times as long as wide; stylus about 2/3 of postpedicel length. Labrum brown, nearly 2 times as long as head is high. Palpus black, covered with scattered, short, thin, pale setae.

Thorax black, with pale setation; mesonotum densely light greyish pollinose; scutum (dorsal view) with indistinct, darker vittae between rows of acrostichals and dorsocentrals, viewed anteriorly uniformly light greyish pollinose; mesopleuron densely light greyish pollinose. Antepronotum with several moderately long thin setae on each side. Postpronotal lobe with 1 long strong and several short hair-like setae. Prosternum bare. Proepisternum with several hair-like setae of different lengths on lower and upper parts. Mesonotum with 1 long presutural supra-alar, 1 shorter presutural intra-alar, 3 long notopleurals, 2 postsutural supra-alars, 1 postalar, 4 scutellars (apical pair long, cruciate; lateral pair somewhat shorter); additionally, several short, hair-like setae present just behind postpronotal lobe and on anterior part of notopleuron, scutellum with 2 setulae; acrostichals arranged in 2 close, irregular rows, long (slightly longer than stylus), hair-like, lacking on prescutellar depression; dorsocentrals irregularly biserial in anterior part, becoming uniserial toward scutellum, somewhat longer than acrostichals, 2 pairs of prescutellars longest. Laterotergite with numerous setae. Anterior and posterior spiracles black.

Legs entirely black; subshining, faintly greyish pollinose (denser on coxae). Coxae and trochanters with ordinary pale setae of different lengths. Fore femur with short, hair-like anteroventral and posteroventral setulae becoming longer and pale near base of femur (longest shorter than width of femur). Fore tibia covered with numerous, rather long, thin anterodorsal and posterodorsal setae (longest ones about 1.5 times as long as width of tibia), bearing circlet of short subapical setae. Fore basitarsus slender, covered with short setulae except short, spinule-like, ventral setae; tarsomeres 1–4 with circlet of short subapical setae. Mid femur with row of moderately long, thin anterodorsal setae longer and pale on about basal half, bearing rows of thin, mostly pale anteroventral and posteroventral setae becoming longer toward base of femur and 2–2.5 times as long as basal width of femur. Mid tibia black setose; with 2 long anterodorsals on middle part and several shorter posterodorsal setae along entire length, bearing several rather short, thin anteroventral and posteroventral setae of different lengths; subapical circlet consisting of subequal, moderately long setae. Mid tarsomeres slender; basitarsus with several spine-like setae ventrally; tarsomeres 1–3 with circlet of short setae. Hind femur slender; with short thin anterodorsal setae (several longest ones about middle of femur only slightly longer than width of femur) black in apical part and pale toward base; bearing some mostly pale thin setae anteriorly and posteriorly near base; covered with ordinary setulae on apical half posteriorly. Hind tibia somewhat evenly thickened towards apex, almost straight; with numerous thin setae dorsally (longest ones only slightly longer than width of tibia at apex). Hind tarsomere 1 (basitarsus) thickened, nearly as wide as hind tibia at apex; with similar dorsal setation to hind tibia, bearing numerous ventral spine-like setae; remaining tarsomeres slender, tarsomeres 2–4 with shorter ventral spinules.

Wing whitish; costal, subcostal and radial veins brownish, other veins pale to pale yellow; 1 long pale yellow costal seta; stigma indistinct, yellowish; anal vein complete; radial fork broad; axillary angle acute, similar to right. Calypter yellow, with pale setae. Halter with yellow knob and brownish stem.

Abdomen black, uniformly densely light grey pollinose; covered with numerous pale hair-like setae longer on tergites laterally; pregenital segments unmodified. Terminalia (Fig. 1) black, with pale

setae; cercus with attenuated subapical part, with denser short setae closer to base; epandrial lamella subtriangular, with several long setae along lower margin; hypandrium short, subtriangular, bare; phallus long, rather thin, almost evenly arcuate, mostly visible in situ.

*Female.* Unknown.

*Length* (mm). Body 4.2, wing 4.6.

**Comparison.** In having largely pale setose thorax and abdomen, the new species could be compared with *E. albidiseta* Becker, 1907; *E. albopilosa* de Meijere, 1935; *E. decora* Meigen, 1822; *E. leucotricha* Collin, 1960 and *E. mediocris* Becker, 1907. Among these species *E. arkhyziensis* sp. nov. is most similar to *E. albopilosa*. However, besides clear differences in the male terminalia, *E. albopilosa* can be readily distinguished from the new species by an incomplete anal vein of the wing (Chvála 1994). *Empis albidiseta* differs from *E. arkhyziensis* sp. nov. by an incomplete anal vein of the wing and two scutellar setae (Syrovátka 1991). *Empis decora* is larger (body 5–6 mm), has black stronger mesonotal setae, faintly brownish wings and very thin phallus in male. *Empis leucotricha* (known from Israel) differs from the new species by black halteres and two scutellar setae (Collin 1960). *Empis arkhyziensis* sp. nov. can be distinguished from *E. mediocris* (known from Algeria) by whitish wings (vs. clear), longer proboscis (about 1.5 times as long as head is high in *E. mediocris*), short setose fore basitarsus and longer phallus in the male. Also, in the male terminalia the new species somewhat resembles *E. staegeri* Collin, 1963. However, the latter has black mesonotal setae and only two scutellars (Chvála 1994).

**Distribution.** Russia (Karachay-Cherkessia).

***Empis (Empis) cherkessica* sp. nov.**

(Figs. 2, 3)

**Etymology.** The specific name refers to the historical name of the territory (Cherkessia) where the new species was collected.

**Type material.** Holotype – male, RUSSIA: [printed in Cyrillic] “Karachay-Cherkessia/ Republic, okr. pos. [environs of village] Arkhyz/ Sophiyskie Lakes, 2700 m/ 43°27′07″N, 41°14′25″E/ 04.viii.2012, Kustov S.Yu.” (ZIN).

**Diagnosis.** Thorax and abdomen entirely pale setose, head mostly with black setae; legs black, coxae and trochanters with pale setae; wings somewhat whitish most distinct toward axillary lobe, halter yel-

low; abdominal tergite 8 without projections; phallus short, stout, with broadened apex.

**Description.** *Male.* Head black, mostly with black setation. Eyes separated by very narrow frons, with upper ommatidia somewhat enlarged. Frons on middle narrower than anterior ocellus, densely greyish pollinose, with scattered minute setulae. Ocellar tubercle with 1 pair of long thin and several short setae. Occiput densely greyish pollinose; covered with rather sparse black setae of different lengths, with pale hair-like setae behind mouth-opening. Antenna black; scape and pedicel with short setae; postpedicel conical, with lower margin slightly concave on apical part, nearly 2.5 times as long as wide; stylus about 2/3 of postpedicel length. Labrum brown, nearly 1.5 times as long as height of head. Palpus black, covered with short black setae.

Thorax black, with pale setation; mesonotum densely brownish grey pollinose; scutum with indistinct, darker vittae between rows of acrostichals and dorsocentrals; mesopleuron densely brownish grey pollinose. Anteppronotum with several short thin setae on each side. Postpronotal lobe with 1 long and several shorter setae. Prosternum bare. Proepisternum with several hair-like setae of different lengths on lower and upper parts. Mesonotum with 1 presutural supra-alar, 1 shorter presutural intra-alar, 3 notopleurals, 2 postsutural supra-alars, 1 postalar, 4 scutellars (apical pair long, cruciate; lateral pair somewhat shorter; one side of scutellum with 2 lateral setae); additionally, rather long, hair-like setae present just behind postpronotal lobe, on anterior part of notopleuron and along supra-alar face; acrostichals arranged in 2 close, irregular rows, long (slightly longer than stylus), hair-like, lacking on prescutellar depression; dorsocentrals arranged in 2–3 irregular rows in anterior part, becoming uniseriate toward scutellum, nearly as long as acrostichals, 3 pairs of prescutellars longest. Laterotergite with numerous setae. Anterior and posterior spiracles black.

Legs entirely black; subshining, faintly greyish pollinose (denser on coxae). Coxae and trochanters with ordinary pale setae of different lengths. Fore femur with minute anteroventral and posteroventral setae. Fore tibia covered with numerous short, thin anterodorsal and posterodorsal setae (longest ones nearly as long as width of tibia), bearing circlet of short subapical setae. Fore basitarsus slender, with similar dorsal setae to fore tibia; tarsomeres 1–4 with circlet of short subapical setae. Mid femur with row

of moderately long, thin, pale (except subapicals) anterodorsal setae, bearing rows of thin, pale anteroventral and posteroventral setae becoming longer toward base of femur. Mid tibia black setose; with 3 moderately long anterodorsals and numerous shorter posterodorsal setae, bearing short anteroventral and posteroventral setae; subapical circlet consisting of short setae. Mid tarsomeres slender; basitarsus with several short spine-like setae ventrally; tarsomeres 1–3 with circlet of short setae. Hind femur slender; with several stronger mostly black outstanding anteroventral setae of different lengths on about apical half (longest ones 1.5 times as long as width of femur); bearing pale thin setae anteriorly and posteriorly near base and dorsally (except subapicals); covered with ordinary setulae on apical half posteriorly. Hind tibia slender; with numerous thin setae dorsally (longest ones only slightly longer than width of tibia at apex). Hind basitarsus somewhat thickened, nearly as wide as hind tibia at apex; with short setae dorsally, bearing numerous short spinulae-like setae ventrally; remaining tarsomeres slender.

Wing somewhat whitish, more distinct toward anal lobe; costa and radial veins brownish, other veins yellowish to brownish yellow; 1 long pale yellow costal seta; stigma indistinct, yellowish; anal vein complete; radial fork broad; axillary angle acute, similar to right. Calypter brownish, with pale setae. Halter with yellow knob and brownish stem.

Abdomen black, uniformly densely dark grey pollinose; covered with numerous pale hair-like setae longer on tergites laterally; pregenital segments unmodified. Terminalia (Figs 2, 3) black, small; cercus narrow, with internal, medial expansion covered with spinules; epandrial lamella subtriangular, with rather sparse longer setae along lower margin; hypandrium large, subtriangular, bare; phallus short, thick, broadened on apex.

*Female.* Unknown.

*Length* (mm). Body 3.7, wing 4.1.

**Comparison.** In having pale setose thorax and abdomen, the new species could be compared with *E. albidiseta* Becker, 1907; *E. albopilosa* de Meijere, 1935; *E. decora* Meigen, 1822; *E. leucotricha* Collin, 1960, *E. mediocris* Becker, 1907 and *E. arkhyziensis* sp. nov. Among these species *E. cherkessica* sp. nov. is most similar to *E. arkhyziensis* sp. nov. but it can be readily distinguished from the latter by black setose head and three anterodorsal setae on the mid tibia (vs. two). Also, in the male terminalia the new

species resembles *E. consobrina* Syrovátka, 1983, *E. tenera* Syrovátka, 1983 and *E. socrus* Syrovátka, 1983 described from the Caucasus (Barták and Syrovátka 1983). However, in the males of *E. consobrina* and *E. tenera* abdominal tergite 8 has a digitiform projection on each side (vs. ordinary in the new species). *Empis socrus* can be readily distinguished from the new species by black setae of the thorax and an incomplete anal vein of the wing.

**Distribution.** Russia (Karachay-Cherkessia).

***Empis (Empis) temryukiensis* sp. nov.**

(Figs. 4–6)

**Etymology.** The name of the new species refers to its type locality, Temryuk.

**Type material.** Holotype – male, RUSSIA: [printed in Cyrillic] “Krasnodarskiy Territory/ Temryukskiy District, shore/ of Akhtanizovskiy liman/ 22.iv.2012, Kustov” (ZIN).

Paratypes: 1 male (ZIN), same data as holotype; 1 male (KSU), Krasnodarskiy Territory, Temryukskiy District, env. Starotitarovskaya, tract Dubovy Rynok, 22 April 2012, coll. S.Yu Kustov.

**Diagnosis.** Densely greyish pollinose species recognised by yellow setae of laterotergite, 4 subequally long scutellars; black legs, coxae and trochanters with yellow setae; wing brownish, with complete anal vein, halter with yellow knob and brownish stem; abdomen covered with yellow setae; phallus dark brown, rather long, sinuate on subapical portion, with narrow, beak-like apex.

**Description.** *Male.* Head black. Eyes holoptic, with upper ommatidia enlarged. Frons represented by small, greyish, triangular space above antennae. Ocellar tubercle with 1 pair of long thin and several short setae. Face broad, greyish pollinose; clypeus shining. Occiput greyish pollinose; covered with numerous thin black setae of different lengths and with numerous yellowish hair-like setae behind mouth-opening. Antenna black; postpedicel conical, with straight margins, nearly 2.5 times as long as wide; stylus about 2/3 of postpedicel length. Labrum brown, nearly 2 times as long as height of head. Palpus black, covered with numerous short, thin black setae.

Thorax black, mostly with black setation, largely densely greyish pollinose; scutum (dorsal view) densely brownish greyish pollinose, with indistinct darker vittae down acrostichals and dorsocentrals, which in anterior view are narrow, more distinct,

brownish; mesopleuron densely greyish pollinose. Antepnotum with several moderately long thin setae on each side. Postpronotal lobe with 1 long, thin seta and numerous intermixed pale and black setulae. Prosternum bare. Proepisternum with several yellow setae of different lengths on lower and upper parts. Mesonotum with 1 long, thin presutural supra-alar, 3 stronger notopleurals, 3 thin postsutural supra-alars (with 1–2 additional setulae), 1 postalar, 4 scutellars (apical pair long, cruciate; lateral pair somewhat shorter); additionally, several short, hair-like pale and black setulae present just behind postpronotal lobe and on anterior part of notopleuron; acrostichals arranged in 2 close irregular rows, rather long, thin, lacking on prescutellar depression; dorsocentrals multiserial in anterior part, becoming uniserial toward scutellum, moderately long, 2–3 pairs of prescutellars long. Laterotergite with numerous yellow setae (in holotype 2–3 dark setae present). Anterior and posterior spiracles black.

Legs entirely black; subshining, faintly greyish pollinose (denser on coxae), mostly with black setation. Coxae and trochanters with ordinary yellowish setae of different lengths (sometimes with single black setae on mid and hind coxae). Fore femur with short, hair-like anteroventral and posteroventral setulae becoming longer and pale near base of femur. Fore tibia covered with numerous rather short dorsal setulae (longest ones slightly longer than width of tibia), densely short pubescent posteriorly, bearing circlet of short subapical setae. Fore basitarsus somewhat thickened but not broader than fore tibia at apex; with similar dorsal setation to fore tibia, only pubescent ventrally; tarsomeres 1–3 with circlet of moderately long, strong subapical setae becoming shorter from tarsomere 1 to tarsomere 3. Mid femur with row of moderately long, thin anterodorsal setae longer on about basal half, bearing rows of anteroventral and posteroventral setae becoming longer toward base of femur and 1.5–2 times as long as wide as femur near base. Mid tibia with 2 long dorsal setae (except subapicals; in paratype 3 dorsal setae present on one leg), bearing strong anteroventral and posteroventral setae of different lengths (2–3 anteroventrals on middle part longest); subapical circlet including 1 very long dorsal and 4–5 short setae. Mid tarsomeres slender; basitarsus with several spine-like ventral setae; tarsomeres 1–3 with circlet of short strong setae. Hind femur slender; with short thin anterodorsal setae (several longest ones about middle

of femur only slightly longer than width of femur); bearing some black, pale thin setae anteriorly and posteriorly near base; covered with numerous erect setulae on apical half posteriorly. Hind tibia mostly thickened, narrowed near base, slightly curved; with numerous long, thin, erect dorsal setae longer than width of tibia. Hind basitarsus somewhat thickened but narrower than hind tibia at apex; with similar dorsal setation to hind tibia, bearing numerous ventral spine-like setae; tarsomeres 2–4 with similar but shorter ventral spinules.

Wing somewhat brownish; veins largely brownish, paler to base; 1 moderately long black costal seta; stigma distinct, brown; anal vein complete; radial fork acute; axillary angle acute. Calypter brownish, with yellow setae. Halter with yellow knob and brownish stem.

Abdomen black, viewed dorsally appearing darker, brownish pollinose, viewed laterally brownish grey pollinose; almost entirely covered with yellowish setae longer on tergites laterally, with some additional black setae on tergites dorsally and on sternite 8; pregenital segments unmodified. Terminalia (Figs 4–6) black, with black setae; cerci fused basally, narrow; epandrial lamella subtriangular, broadly rounded apically, with some longer setae along lower margin; hypandrium subtriangular, bare; phallus dark brown, rather long, curved on subapical portion, with narrow, beak-like apex.

*Female.* Unknown.

*Length* (mm). Body 4.1, wing 4.4.

**Comparison.** The new species is similar to *E. lyneborgi* Chvála, 1981 known from Romania and Spain. However, in *E. lyneborgi* the legs are with pale “knees”, the wings are clear and the male terminalia are quite different in shape of the cerci and phallus (Chvála 1981: 123, fig. 5).

**Distribution.** Russia (Krasnodarskiy Territory).

***Empis (Empis) xanthopoda* sp. nov.**  
(Fig. 7)

**Etymology.** The name of the new species refers to yellow colour of its legs.

**Type material.** Holotype – male, RUSSIA: [printed in Cyrillic] “g. [city] Krasnodar, botsad [Botanical garden]/KubGU [KSU], 20.v.2010/V.V. Gladun” (ZIN).

Paratypes: 4 males, 3 females (ZIN), same data as holotype; 2 males (KSU), same locality as holotype, 14 May 2009, coll. V.V. Gladun; 1 female (KSU), 18 May 2005.

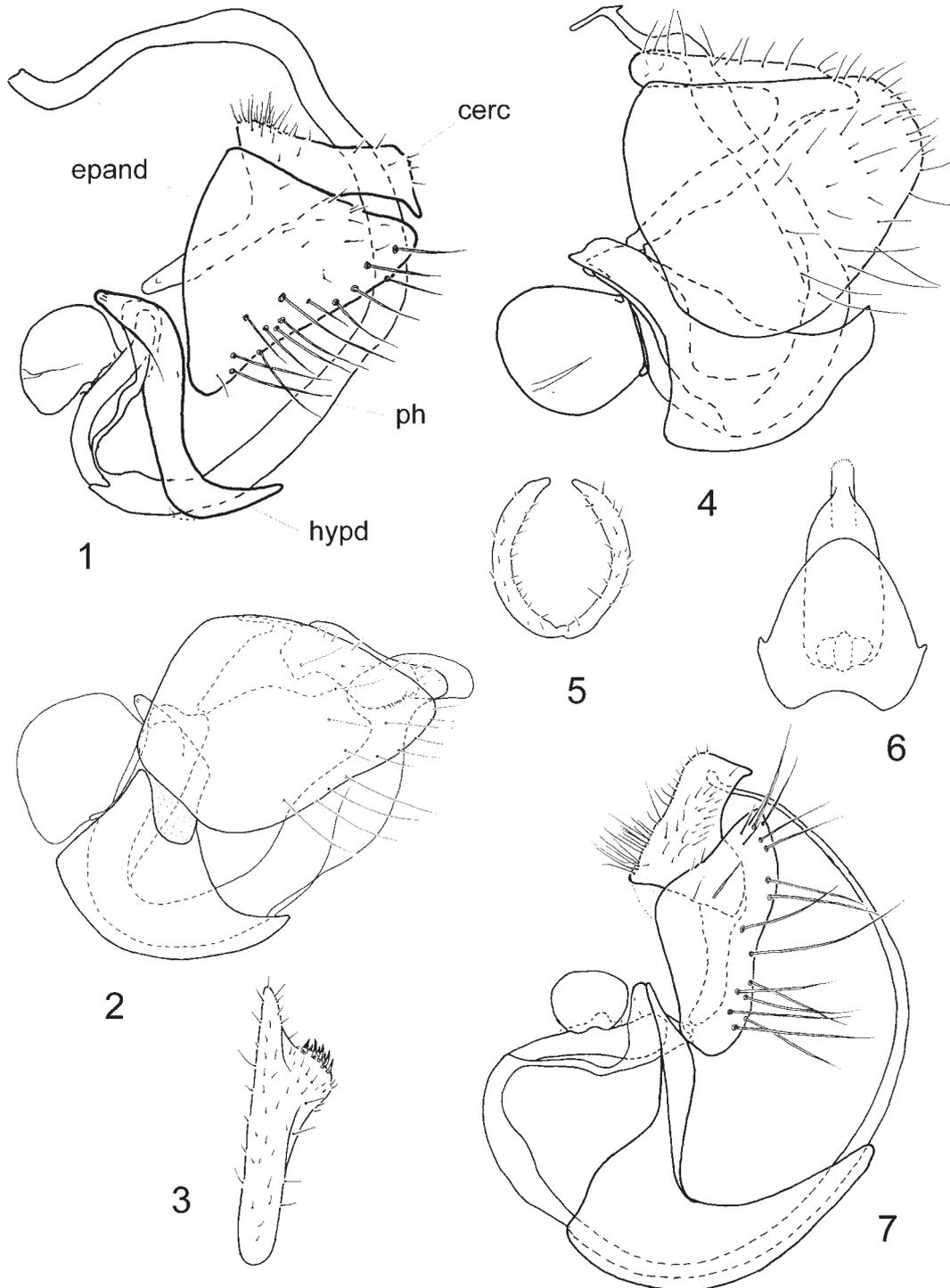
Russia, Krasnodarskiy Territory: 1 male (KSU), Severskiy District, env. Stavropol'skaya, Shebsh ridge, 9 June 2009, coll. V.V. Gladun; 1 male (KSU), Goryacheklyuchevskoy District, env. Oktyabr'skiy, 25 April 2010, coll. S.Yu. Kustov; 1 female (KSU), Anapskiy District, env. Chekon, 1 June 2007, coll. S.Yu. Kustov.

**Diagnosis.** Legs almost entirely yellow and abdominal segments broadly yellow; antenna with scape and pedicel somewhat paler than postpedicel. Male: fore tibia with short dorsal setae, mid tibia with 4 long dorsal setae; hypandrium bare. Female: legs with some slightly flattened short setae.

**Description.** *Male.* Head black. Eyes holoptic, with upper ommatidia enlarged. Frons represented by small, greyish triangular space above antennae. Ocellar tubercle with 1 pair of long and several short thin setae. Face broad, greyish pollinose; clypeus shining. Occiput greyish pollinose; covered with numerous thin black setae of different lengths, with some pale hair-like setae behind mouth-opening. Antenna with scape and pedicel yellowish brown to brown, postpedicel and stylus black; scape and pedicel with short setae; postpedicel conical, with straight margins, nearly 3 times as long as wide; stylus about 2 times shorter than postpedicel. Labrum brown, nearly 1.5 times as long as height of head. Palpus black, covered with sparse short, black setae.

Thorax black, with black setation; scutum (dorsal view) densely greyish pollinose, with indistinct, darker vittae down acrostichals and dorsocentrals, narrow in anterior view, more distinct, brownish. Anteprenotum with several long setae on each side. Postpronotal lobe with 1 long strong and 6–7 short, thin setae. Prosternum bare. Proepisternum with 4–5 setae of different lengths on lower part and 2 thin setae on upper part. Mesonotum with 1 long presutural supra-alar, 1 presutural intra-alar, 3 strong notopleurals, 2 postsutural supra-alars (in some specimens with 1–2 additional thin setulae), 1 postalar, 4 scutellars (apical pair long, lateral pair short); additionally, several short, hair-like setae present on anterior part of notopleuron; acrostichals arranged in 2 close, irregular rows, short, lacking on prescutellar depression; dorsocentrals somewhat longer than acrostichals, biserial in anterior part and uniserial posteriorly, 2–3 pairs of prescutellars long. Laterotergite with numerous black setae. Anterior and posterior spiracles yellowish.

Legs almost entirely yellow, only tibiae at apex and tarsi brownish yellow to brownish; shining, with



**Figs 1–7.** Male terminalia: 1 – *Empis (Empis) arkhyziensis* sp. nov., lateral view; 2, 3 – *E. (E.) cherkessica* sp. nov., lateral view (2); left cercus, dorsal view (3); 4–6 – *E. (E.) temryukiensis* sp. nov., lateral view (4); cerci, dorsal view (5); hypandrium, ventral view (6); 7 – *E. (E.) xanthopoda* sp. nov., lateral view. *Abbreviations:* cerc – cercus; epand – epandrium; hypd – hypandrium; ph – phallus.

black setation. Coxae and trochanters with ordinary setae of different lengths. Fore femur with minute anteroventral and posteroventral setulae. Fore tibia covered with short setulae (dorsals no longer than width of tibia); bearing cirlet of short subapical setae. Fore basitarsus somewhat thickened but no broader than fore tibia at apex; bearing rather short, thin dorsal and several spine-like ventral setae; with cirlet of short subapical setae. Mid femur with several anterodorsal setae longer near base of femur, bearing strong anteroventral and posteroventral setae becoming longer toward base of femur and 1.5–2 times as long as width of femur near base. Mid tibia with 5 long dorsal setae, including 1 subapical, bearing rather long anteroventral and posteroventral setae. Mid tarsomeres slender; basitarsus with several spine-like ventral setae. Hind femur somewhat stouter on apical half and curved; bearing several long anterodorsal setae on basal part, with dense erect spinules closer to apex posteriorly. Hind tibia slightly thickened and arched; with numerous long dorsal setae (longest ones 1.5–2 times as long as width of tibia). Hind basitarsus somewhat thickened but no broader than hind tibia at apex; bearing several rather numerous long, thin, dorsal and spine-like ventral setae.

Wing hyaline; veins largely brownish yellow, on basal part yellow; 1 moderately long black costal seta; stigma indistinct, brownish yellow; anal vein complete; axillary angle acute. Calypter yellow, with black setae. Halter yellow.

Abdomen with tergites 1–5 yellow laterally and along posterior margin, otherwise brownish, sternites yellow; shining; covered with short black setae longer on tergites 1–3 and sternite 8; pregenital segments unmodified. Terminalia (Fig. 7) with cercus yellowish, rather subrectangular on apical part (lateral view), apex pointed and curved inward, covered with short black setulae; epandrial lobe subtriangular, brownish yellow, covered with black setae of different lengths; hypandrium large, yellow, subtriangular, bare; phallus yellow, thin, evenly arcuate.

*Female.* Frons broad, densely greyish pollinose, bearing several marginal setulae; ommatidia of equal size; occiput and ocellar tubercle with stronger setae than in male. Acrostichals and dorsocentrals somewhat shorter than in male. Fore legs (including coxae) with ordinary setation; mid femur with row of short, slightly flattened dorsal setae and several similar anteroventral setae on apical third; mid tibiae covered with short ordinary setae; hind femur uniformly

thickened, with dense dorsal fringe of flattened setae, bearing short flattened anteroventral setae on apical half; hind tibia slender, with intermixed moderately long flattened and ordinary setae. Abdominal segments 1–5 subshining, faintly greyish pollinose, segments 6–8 denser pollinose. Cercus black, long, narrow, covered with short setulae.

*Length* (mm). Body 4.5–4.7, wing 4.8–5.1.

**Comparison.** Among species of *Empis* s. str. sharing black setose thorax and abdomen, yellow halteres and complete anal vein of the wing, *E. xanthopoda* sp. nov. could be compared with *E. pexata* Collin, 1960 and, especially, with *E. eupeza* Loew, 1874. Both these species, like the new one, possess largely yellow legs. However, in *E. eupeza* (described from Iran) the legs are darker (tibiae largely black), the fore tibiae with long dorsal setae in the male and the legs (including the fore pair) are broadly pinnate in the female (Loew 1874). The male of *E. pexata* (known from Israel and Turkey) has only three long dorsal setae on the mid tibiae (vs. 4) and pubescent hypandrium; the female possesses broadly pennate mid and hind legs.

**Distribution.** Russia (Krasnodarskiy Territory).

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