

Two new species of dance flies of the *Empis* Linnaeus, 1758 subgenus *Anacrostichus* Bezzi, 1909 (Diptera: Empididae) from the Eastern Siberia and Far East of Russia

Два новых вида мух-толкунчиков подрода *Anacrostichus* Bezzi, 1909 рода *Empis* Linnaeus, 1758 (Diptera: Empididae) из Восточной Сибири и Дальнего Востока России

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КЛЮЧЕВЫЕ СЛОВА. Diptera, Empididae, *Empis*, новые виды, Far East, Россия.

ABSTRACT. Two new species of the subgenus *Anacrostichus* Bezzi, 1909 of the genus *Empis* Linnaeus, 1758 are described from the Eastern Siberia and Far East of Russia: *E. (A.) schrencki* Shamshev, **sp.n.** (Russia (Amurskaya and Irkutskaya Provinces, Khabarovskiy Territory)); *E. (A.) sublucida* Shamshev, **sp.n.** (Russia (Far East)). A key to species of *Empis (Anacrostichus)* from the Palaearctic is provided.

РЕЗЮМЕ. Два новых вида подрода *Anacrostichus* Bezzi, 1909 рода *Empis* Linnaeus, 1758 описываются из Восточной Сибири и Дальнего Востока России: *E. (A.) schrencki* Шамшев, **sp.n.** (Россия (Амурская и Иркутская области, Хабаровский край)); *E. (A.) sublucida* Шамшев, **sp.n.** (Россия (Дальний Восток)). Подготовлена определительная таблица всех видов *Empis (Anacrostichus)* Палеарктики.

Introduction

The subgenus *Anacrostichus* Bezzi, 1909 is a relatively small group of species of the genus *Empis* Linnaeus, 1758. Currently, 20 species of *Empis (Anacrostichus)* are known from the Holarctic only (Eurasia — 10, North America — 10) [Shamshev, 2016, 2017, 2023]. Species from North America were recently revised [Shamshev, 2023]. In Eurasia, *Anacrostichus* is relatively well documented from Europe, including four endemic and two broadly distributed species [Chvála, 1994; Shamshev, 2017]. Four species of *Anacrostichus*

are also known from Asia only. However, the Asiatic fauna of the subgenus is probably more diverse. The present paper includes the descriptions of two new species of *Empis (Anacrostichus)*, which were collected from the Far East and Eastern Siberia of Russia. In addition, a key to species of *Empis (Anacrostichus)* from the Palaearctic is provided herein. Therefore, now *Empis (Anacrostichus)* comprises 22 species (Eurasia — 12, North America — 10).

Material and Methods

This study is based on material deposited in the Naturhistorisches Museum, Wien, Austria (NMW), Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia (ZISP) and Zoological Museum of Moscow University, Moscow, Russia (ZMMU). The photographs were taken using a Canon EOS 11 40D camera using a Canon MP-E 65 mm objective, with multiple layers combined using the Helicon Focus 5.3.14 software. To facilitate observations, the terminalia were macerated in cold 10% KOH, then immersed for a short period in 85% lactic acid and viewed in glycerine. Terms used for adult structures follow those of Cumming, Wood [2017]. Label data for primary types are cited in full with original spelling, punctuation, and date. Label lines are delimited by a slash (/) and the data from each label are separated by two slashes (//). Additional information to label data (e.g., current name of an old place name, affiliation to a present-day country, geographical coordinates, English translations, etc.) is included in square [] brackets. Secondary type data are abridged. Male body length was measured from antennal base to the tip of genitalia and female body length from base of antennae to the

tip of cerci. Thoracic setae are counted on one side of the body (except scutellars).

Taxonomic account

Class Insecta Linnaeus, 1758
 Order Diptera Linnaeus, 1758
 Suborder Brachycera Macquart, 1834
 Superfamily Empidoidea Latreille, 1804
 Family Empididae Latreille, 1804
 Genus *Empis* Linnaeus, 1758
 Subgenus *Anacrostichus* Bezzi, 1909

Empis (Anacrostichus) schrencki Shamshev, **sp.n.**
 Figs 1–7.

TYPE MATERIAL. Holotype, ♂, labelled: RUS [=Russia], Khabarovsk reg./ Vanino, 49.11N 140.31E/ 9.VI.2014, N. Vikhrev (ZMMU).

Paratypes. **RUSSIA, Khabarovskiy Terr.:** same data as holotype (1 ♂, ZMMU); Khicha River, 690 m, 49.05N 138.43E, 10.vi.2014, N. Vikhrev (1 ♂, ZMMU); Lososina, 49.01N 140.33E, 11–13.vi.2022, N. Vikhrev (1 ♂, ZMMU); Ikcha River, 350 m, 49.11N 139.27E, 14.vi.2014, N. Vikhrev (1 ♂, 1 ♀, ZMMU); Solnechny env., 50.72N 136.67E, 17–19.vi.2022, N. Vikhrev (1 ♂, ZISP); Amut Lake, 50.81N 136.40E, 1–9.vii.2019, Mutin & Kuberskaya (1 ♂, ZISP). **Amurskaya Prov.:** Zeya, A. Ozerov, 29.vi.1982 (1 ♂, 1 ♀, ZISP). **Irkutskaya Prov.:** Padun, 8.vii.1956, Monchadsky (1 ♀, ZISP); Moskovskoe, Akhiny, Ekhirit-Bulaganskiy Ditsrict, 24.vi.1964, A. Pleshanov // *Empis monticola* Lw. Gorodkov det. 65 (1 ♂, 1 ♀, ZISP; on one pin and with a male of Muscidae). **Unclear region:** Amurgebiet, Schrenk [probably Khabarovskiy Terr., 1855] (1 ♂, NMW).

DIAGNOSIS. Mid-sized species (body 5.5–6 mm); mesoscutum extensively shiny, with hardly distinguishable vittae of pruinosity between acrostichal, dorsocentral and supra-alar setae, subtriangular spot of dense pruinosity on prescutellar depression; legs extensively yellowish to brownish yellow; abdominal tergites 1–5 with short, hair-like, pale setae only. Male: eyes dichoptic, separated by broad frons; hind femur thickened, hind tibia slender.

DESCRIPTION. Body length 5.5–6 mm, wing 4.9–5.2 (holotype 5.1) mm. **Male** (Fig. 1). Head with frons, face (except upper part laterally) and clypeus shiny; ocellar triangle, occiput, postgena and gena faintly greyish pruinose. Eyes dichoptic, with ommatidia equally small. Frons (Fig. 2) broad, below ocellar triangle slightly broader than distance between outer margins of posterior ocelli, almost parallel-sided; with marginal setulae. Face broader than frons above antennae, bare. Ocellar triangle with 2 black, moderately long, thin, laterocline and several slightly shorter setae. Occiput with numerous long black setae (including postoculars); postgena with long, pale, hair-like setae. Antenna brown; scape rather tubular, nearly 2X longer than subglobular pedicel, both with short setulae; postpedicel elongate, with straight margins and narrow base, nearly 4X as long as basal width; stylus very short, slightly shorter than postpedicel basal width. Proboscis with labrum brownish (darker closer to base), nearly 2X longer than eye height (1.8X in holotype); palpus short, yellowish (somewhat darker close to base); with some dark and pale, scattered setulae.

Thorax black in ground-colour; mesoscutum (Fig. 2) extensively shiny, narrowly densely pruinose along lateral margins (including notopleuron and postalar tubercle),

with subtriangular spot of similar pruinosity on prescutellar depression; with hardly distinguishable vittae of faint pruinosity between acrostichal, dorsocentral and supra-alar setae; prothoracic sclerites, scutellum and entire mesopleuron densely greyish pruinose. Antepnotum with numerous strong black setae and 2–3 additional pale, hair-like setae laterally. Postpronotal lobe with several short, black, strong setae and pale setulae; postpronotal seta undistinguishable. Prosternum bare. Proepisternum with tuft of pale, hair-like setae on lower part only. Mesonotal setae: mostly black, acrostichals and presutural dorsocentrals pale to pale yellow; in addition, similar pale setae present just behind postpronotal lobe and on notopleural depression; acrostichals short, thin, arranged in 2 close, irregular rows, lacking on prescutellar depression; presutural dorsocentral setae similar to acrostichals, arranged in 2–3 irregular rows, postsuturals 1–2-serial, becoming gradually longer, 1 pair of prescutellars longest; 0 presutural intra-alar and presutural supra-alar, 3 long notopleurals, 1 postsutural supra-alar, 1 long and 1 minute postalar, 6 scutellars. Laterotergite with numerous, mostly yellow setae, 3–5 dark setae anteriorly. Anterior and posterior spiracles brownish.

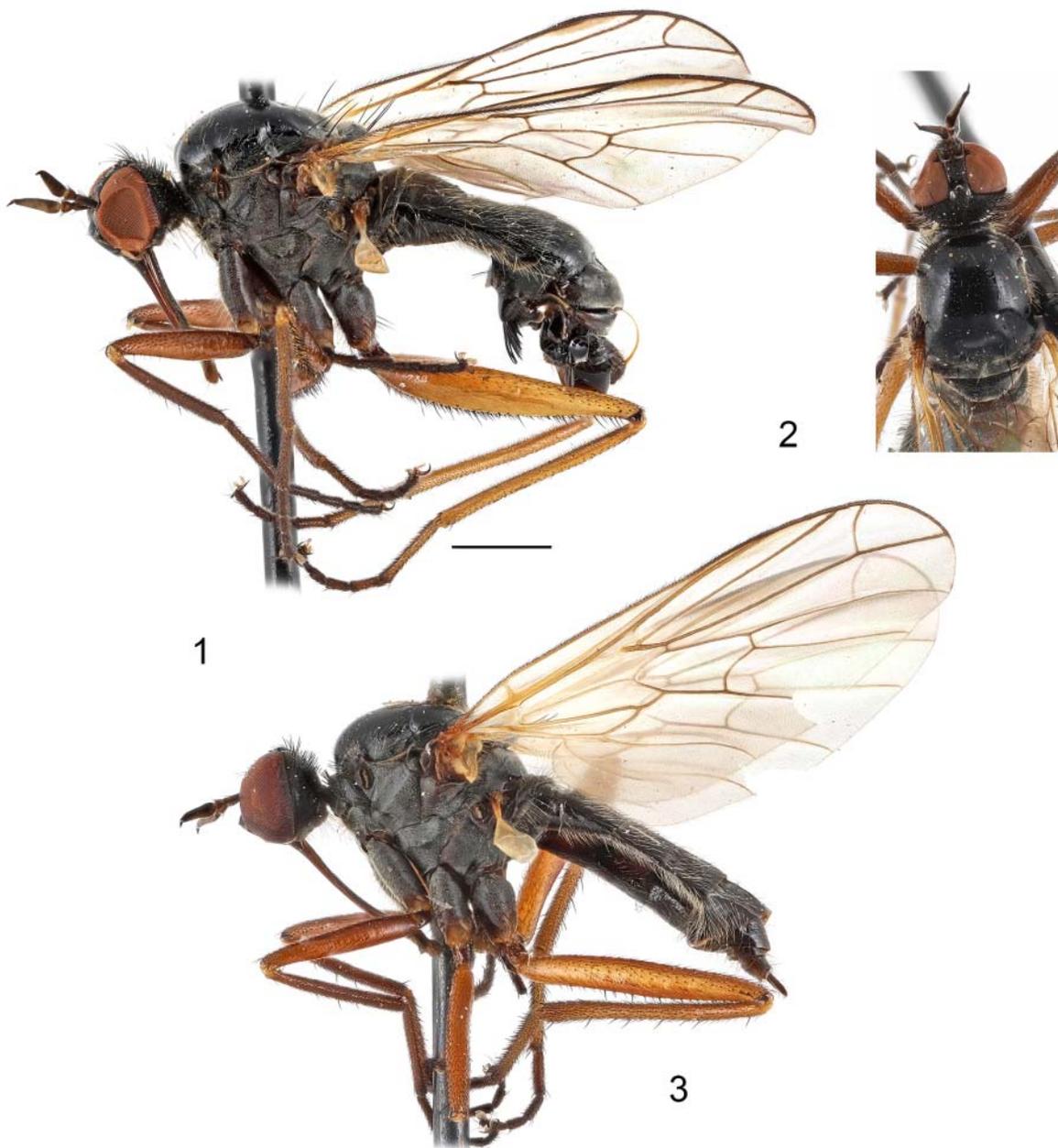
Legs with coxae greyish pruinose, remaining podomeres subshiny; black setose. Leg colour: coxae and trochanters brown; femora yellowish to brownish yellow (fore femur usually slightly darker); fore tibia brownish, mid and hind tibiae yellowish to brownish yellow; tarsi mostly brownish, mid and hind basitarsi yellowish to brownish yellow (except extreme apex). Coxae and trochanters with simple setae. Fore femur polished ventrally; anteroventral and posteroventral setae mostly minute (except some subapicals). Fore tibia with 1–2 (usually 2) short anterodorsal setae on about apical half (besides circlet of short subapicals), covered with simple setulae ventrally. Mid femur with complete rows of short, spine-like anteroventral and longer posteroventral setae (longest anteroventral setae slightly shorter than femur width near its extreme apex; longest posteroventral setae nearly half as long as femur width at middle; setae of both rows becoming slightly shorter near base), with some additional ventral, spinule-like setae. Mid tibia with 1–2 anterodorsal and 2–3 posterodorsal, short setae; covered with dense, fine, erect setulae ventrally. Hind femur broadened on about basal half and gently narrowed on apical half; with only simple setulae dorsally, bare on about lower half anteriorly, covered with spinule-like setae ventrally, with short spine-like setae anteroventrally and posteroventrally, 1 subapical anterior seta. Hind tibia non-geniculate, slender, nearly as wide as fore and mid tibiae; without outstanding setae; covered with dense, fine, erect setulae ventrally; no seta in posteroapical comb. All tarsomeres slender, covered with short setae, basitarsi with some spinule-like setae ventrally; tarsomere 3 nearly 1.5X longer than tarsomere 4, tarsomeres 3 and 4 combined nearly 1.5X longer than tarsomere 5; claw and pulvillus moderately long.

Wing membrane almost hyaline, very faintly brownish infuscate; entirely covered with microtrichia; veins mostly brownish, brownish yellow near base. Veins R_3 and M_1 slightly divergent towards wing margin; $CuA+CuP$ complete, well-sclerotised. Cell dm moderately long, with strongly elongate apex; apical portion of M_4 1.5–1.6X longer than its middle portion. Pterostigma brownish, narrow. Basal costal seta hardly distinguishable or absent. Anal lobe well-developed; axillary incision very acute. Squama yellow, pale fringed. Halter yellow.

Abdomen black. Pruinescence: almost entirely shiny; tergite 1 and tergite 2 narrowly anteriorly faintly greyish

pruinose; tergites 6 (except anterior margin) and 7 densely light grey tomentose. Chaetotaxy: tergites 1–5 covered with short (slightly longer on tergites 1–2), pale to pale yellow, fine setae (some darker setae sometimes present on tergite 1), no stronger posteromarginal setae; sternite 1 bare, sternites 2–4 with scattered, short, pale, hair-like setae, sternite 8 with similar setae (slightly longer posteriorly). Segments 5–8 modified (Fig. 4). Tergite 6 and segment 7 bent downwards, accordingly segment 8 and hypopygium shifted to ventral position relative to body plane. Tergite 5 with somewhat concave lateral

margin posteriorly, posterior corners slightly produced and turned inwards. Sternite 5 subrectangular, with large postero-medial tubercle bearing numerous, long, strong, black setae and two short, digitiform posterior projections. Tergite 6 slightly asymmetrical; somewhat narrower than tergite 5; slightly concave mid-laterally with somewhat produced and convex anterior corners. Sternite 6 invisible in situ, strongly reduced, represented by relatively small, weakly sclerotised, bare sclerite, mostly retracted into sternite 5. Tergite 7 slightly asymmetrical; narrower and 2.5–3X shorter than tergite 6;



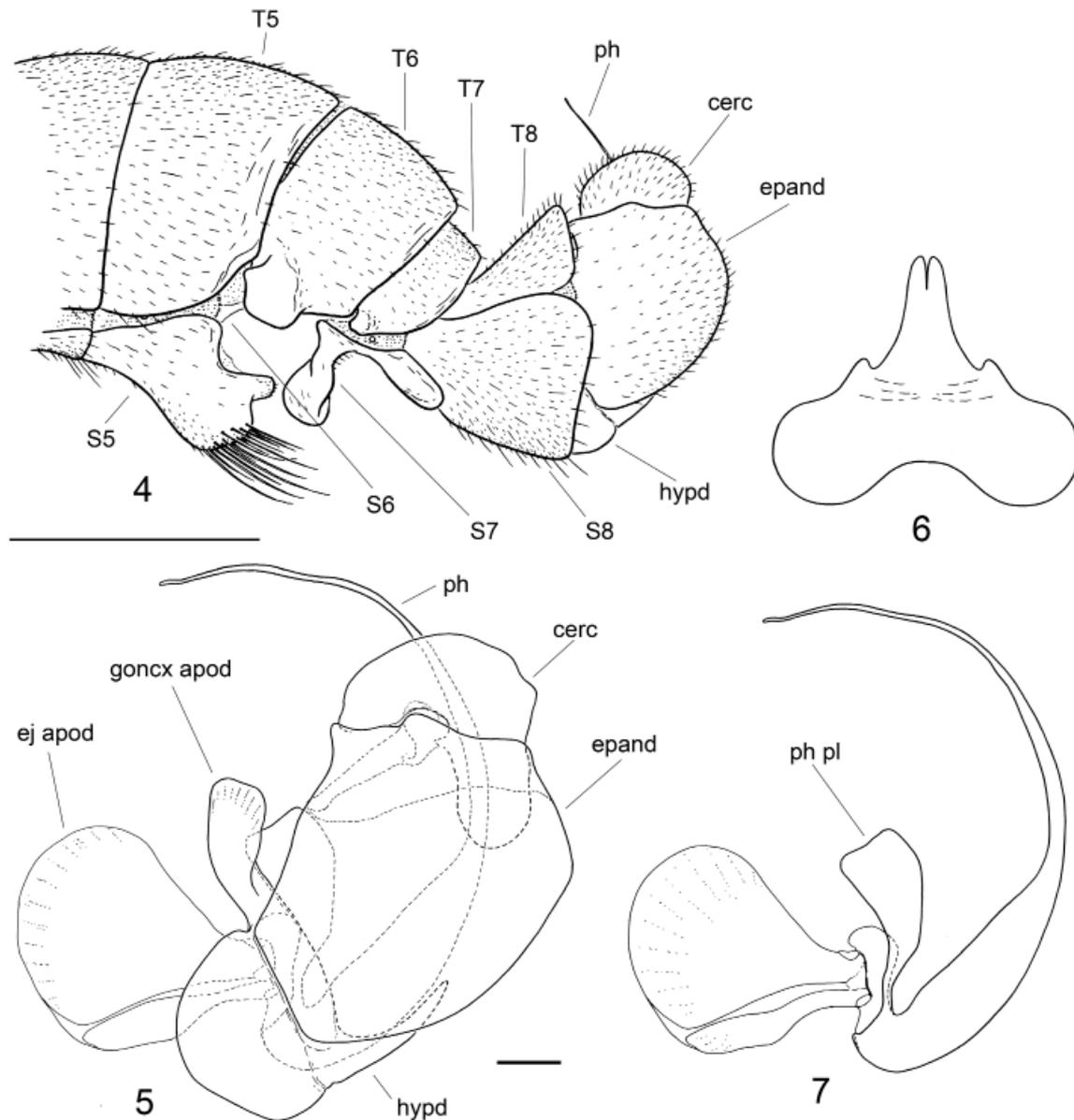
Figs 1–3. *Empis (Anacrostichus) schrencki* Shamshev, **sp.n.**: 1 — male, holotype, lateral view; 2 — male, holotype, head and thorax, lateral view; 3 — female, habitus, lateral view. Scale bar is 1 mm.

Рис. 1–3. *Empis (Anacrostichus) schrencki* Shamshev, **sp.n.**: 1 — самец, голотип, вид сбоку; 2 — самец, голотип, голова и грудь, вид сбоку; 3 — самка, габитус, вид сбоку. Масштаб 1 мм.

with slightly produced anterior corners and slightly concave antero-laterally. Sternite 7 of complicate structure, rather large, somewhat asymmetrical; deeply concave laterally; in ventral view more or less divided into two portions, anterior portion (mostly invisible in situ) rather subrectangular, with two nearly elongate oval, flattened, lateral projections of slightly different size and shape as well as with median, short, subtriangular projection deflected posteriorly, posterior portion represented by two subglobular sclerites separated by

median, membranous space. Segment 8 funnel-like, narrow anteriorly, with entirely separated tergite and sternite; tergite 8 long, slightly longer than tergite 7, undivided; sternite 8 subtriangular in lateral view, somewhat longer than tergite 8, with simple structure and vestiture.

Hypopygium (Figs 5–7) moderately large, concolorous with abdomen (except phallus), shiny; cerci and epandrium with scattered pale setulae. Epandrium entirely divided (epandrial bridge absent); epandrial lamella rather subrectangular (Fig.



Figs 4–7. *Empis (Anacrostichus) schrencki* Shamshev, sp.n., male: 4 — postabdomen, lateral view; 5 — hypopygium, lateral view (setation omitted); 6 — hypandrium, ventral view; 7 — phallus, lateral view. Abbreviations: cerc — cercus; ej apod — ejaculatory apodeme; epand — epandrium; goncx apod — gonocoxal apodeme; hypd — hypandrium; ph — phallus; ph pl — phallic plate; T — tergite; S — sternite. Scale bar is 0.1 mm.
Рис. 4–7. *Empis (Anacrostichus) schrencki* Shamshev, sp.n., самец: 4 — постабдомен, вид сбоку; 5 — гипопигий, вид сбоку (щетинки не указаны); 6 — гипандрий, вид снизу; 7 — фаллус, вид сбоку. Сокращения: cerc — церк; ej apod — эякуляторная аподема; epand — эпандрий; goncx apod — гоноксальная аподема; hypd — гипандрий; ph — фаллус; ph pl — пластина фаллуса; T — тергит; S — стернит. Масштаб 0,1 мм.

5). Hypandrium (Fig. 6) broadly attached to epandrial lamella; entirely sclerotised; broad, with postero-median, subtriangular prolongation slightly divided into two lobes at apex; bare. gonocoxal apodeme moderately large. Subepandrial sclerite undivided. Cerci separated with each other and from epandrium; cercus small, rather subrectangular (lateral view), produced downwards posteriorly, posterior margin extending nearly to apex of epandrial lamella; undivided, with smoothed inner margin. Hypoproct membranous, bare. Phallus (Fig. 7) mostly hidden, only short apical portion extending beyond cerci; gently arched; nearly basal half thick (lateral view), apical half slender. Ejaculatory apodeme large, extended far beyond basal curvature of phallus, with small lateral wings.

Female (Fig. 3). Similar to male except as follows. Acrostichal and presutural dorsocentral setae shorter, minute. Mid femur bare ventrally; setae of anteroventral and posteroventral rows minute on about basal 1/3, spinule-like towards apex. Hind femur slender, almost bare ventrally (some setulae close to apex), anteroventral row of short, spine-like setae on about apical 2/3, posteroventral row of similar setae on about apical 1/3. Hind tibia with 2–3 anterodorsal and 3–4 posterodorsal short setae (besides circlet of subapicals). Abdomen with tergites 6 and 7 shiny. Cercus long, slender, with simple setulae.

DISTRIBUTION. Russia (Amurskaya and Irkutskaya Provinces, Khabarovskiy Territory).

ETYMOLOGY. The specific name is a patronym in honour of Leopold Ivanovich von Schrenck (Peter Leopold von Schrenck, 1826–1894), a renowned zoologist, geographer and ethnographer worked in Russia in the second half of the 19th century, who first collected this species.

REMARKS. The new species is close to *Empis* (*Anacrostichus*) *longipennis* Loew, 1868 known from East Siberia and Mongolia. Both species have extensively shiny frons and mesoscutum as well as similar structure of the abdominal tergite 5 of the male. *Empis* (*A.*) *schrencki* sp.n. differs from *E.* (*A.*) *longipennis* primarily by thickened hind femur of the male, brownish yellow to yellowish legs (uniformly dark brown in *E.* (*A.*) *longipennis*), yellow palpus and pale setose abdomen. In addition, in the male of *E.* (*A.*) *longipennis* the tergite 6 is subshiny (densely light grey tomentose in the new species).

Engel [1943: 298, Taf. 24, Fig. 192] mistakenly redescribed and illustrated this species as *E.* (*A.*) *monticola* Loew, 1868 (known only from Alps). I have examined a male specimen that Engel used for his redescription (Amurgebiet, Schrenk; NMW).

Empis (*Anacrostichus*) *sublucida* Shamshev, sp.n.

Figs 8–13.

TYPE MATERIAL. Holotype, ♂, labelled [in Cyrillic, Russian]: [Russia: Khabarovskiy Terr.] bay of river Naleo, estuary of Amur, Soldatov, 14.5.[1]908 (ZISP).

Paratypes. **RUSSIA, Khabarovskiy Terr.:** same data as holotype (1 ♀, ZISP); estuary of Amur, 15.iv.1915, Chernavin (1 ♂, ZISP); Khabarovsk reg., Kirpichny R., 49.26N 140.33E 11.vi.2014, N. Vikhrev (1 ♂, ZMMU). **Magadanskaya Prov.:** Ust-Omchug, 1.vii.1971, Gorodkov (1 ♂, ZISP).

DIAGNOSIS. Mid-sized species (body about 5.5 mm); palpus brown; mesoscutum densely greyish pruinose, with 4 shiny vittae; legs almost entirely brown, only “knees” yellow; abdomen black and pale setose. Male: eyes holoptic; hind tarsomeres slightly thickened.

DESCRIPTION. Body length about 5.5 mm, wing 5.7–5.9 mm. **Male** (Fig. 8). Head capsule regions mostly densely

greyish pruinose (face on lower margin and entire clypeus shiny); black setose, only postgena with pale setae. Eyes holoptic, almost touching on frons, upper ommatidia enlarged. Frons represented by very small space below ocellar triangle and larger space above antennae; with marginal setulae. Face broader than frons above antennae, bare. Ocellar triangle with several moderately long, thin setae, 2 setae slightly longer. Occiput with numerous long, fine setae (including postoculars); postgena with long, hair-like setae. Antenna with scape and pedicel dark brown, postpedicel and stylus black; scape rather tubular, nearly 2X longer than subglobular pedicel, both with short setulae; postpedicel somewhat elongate, with straight margins, nearly 4X as long as basal width; stylus very short, nearly as long as postpedicel basal width. Proboscis with labrum yellowish brown (darker close to base), nearly 1.5X longer than eye height; palpus short, brown (slightly paler at tip); with numerous short, black setae.

Thorax black in ground-colour, black setose (except noted), greyish pruinose (except noted); mesoscutum densely greyish pruinose, with 4 contrast, shiny vittae. Antepronotum with numerous, mostly fine setae (some dorsal setae usually slightly stronger; lateral setae brownish yellow to pale). Postpronotal lobe with numerous fine setae; postpronotal seta undifferentiated. Proepisternum with tuft of fine, yellowish setae on lower part only (sometimes some setae black). Prosternum bare. Mesonotal setae: acrostichals arranged in two irregular rows, lacking on prescutellar depression, rather long, fine, dense; presutural dorsocentral setae irregularly 4-serial, not separated by bare space from presutural supra-alar near posterior corner of postpronotal lobe, similar to acrostichal setae, postsutural dorsocentrals 2-serial, sparser, mostly strong and long; presutural intra-alar undifferentiated, 1–2 presutural supra-alar(s) surrounded by finer setae, 3–5 notopleurals, 1–2 postsutural supra-alar(s) (with additional fine setae anteriorly), 1 long and 1 short postalars, 6 scutellars (4 setae usually stronger; often additional fine setae present); in addition, notopleuron with several long, fine setae anteriorly. Laterotergite with numerous pale setae. Anterior and posterior spiracles brownish.

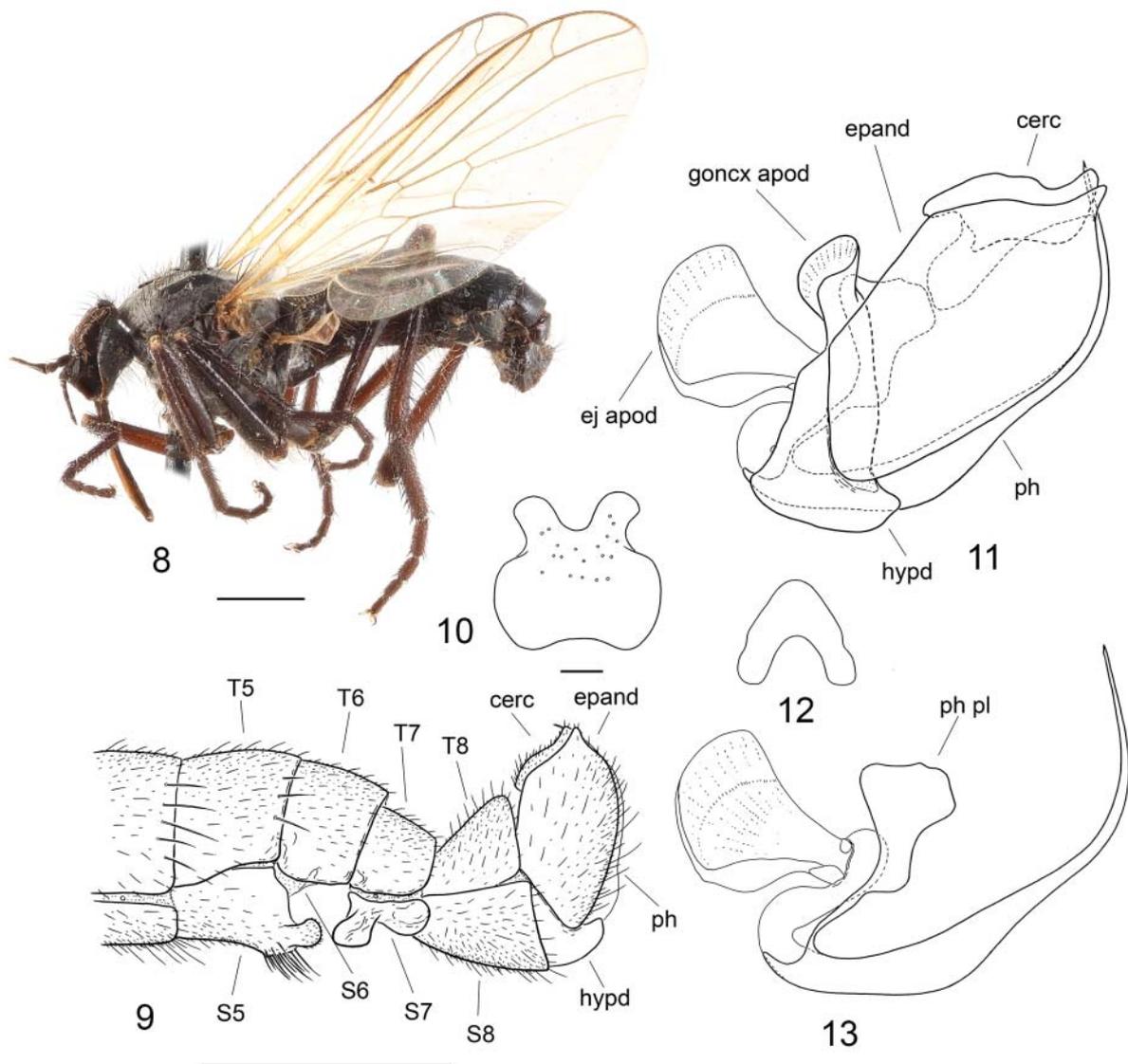
Legs long, slender; almost uniformly brown, “knees” yellow; coxae greyish pruinose, remaining podomeres subshiny; black setose (except noted). Coxae and trochanters with simple setae; fore coxa with intermixed black and pale setae anteriorly. Fore femur polished ventrally; with short, fine anteroventral and posteroventral setae, covered with short setae anteriorly and long setae posteriorly (denser towards apex). Fore tibia with 4–5 short anterodorsal setae (getting shorter and finer towards base). covered with dense, fine, long setae posterodorsally and posteriorly. Fore tarsomere 1 slender, with short, strong anteroventral and posteroventral setae ventrally. Mid femur with moderately long setae anteriorly; bearing complete row of short anteroventral setae (finer close to base); covered with minute, fine setae posteroventrally (somewhat longer and pale near base). Mid tibia with 5–6 long anterodorsal and 4–5 posterodorsal setae (setae of both rows shorter close to base; number, position and length variable); bearing 4–5 short anteroventral and 2–3 posteroventral setae. Mid tarsomere 1 slender, with short, strong anteroventral and posteroventral setae ventrally. Hind femur slender, slightly broadened on about apical 2/3, only slightly broader than mid femur at middle; with 3 long anterodorsal setae close to apex; anteroventral setae mostly fine and minute (pale close to base), 4–5 short, stronger setae on about apical 1/4; covered with dense, hair-like setae posteroventrally (getting longer and pale towards base). Hind tibia non-geniculate, slender at base and getting gently broader towards apex; with rows of

8–9 anterodorsal and 8–9 posterodorsal long setae; covered with simple but slightly longer setulae ventrally; 1 short seta in posteroapical comb. Hind tarsomeres slightly thickened; tarsomeres 1–4 with short, strong setae ventrally; in addition, tarsomere 5 with 4–5 moderately long setae ventrally; tarsomere 3 nearly 1.7X longer than tarsomere 4, tarsomeres 3 and 4 combined nearly 2X as long as tarsomere 5; claw and pulvillus moderately long.

Wing membrane hyaline; entirely covered with microtrichia; veins mostly brownish yellow, yellowish near base. Veins R_5 and M_1 slightly divergent near wing margin;

CuA+CuP complete, well-sclerotised. Cell dm moderately long, with strongly elongate apex; apical portion of M_4 nearly 2.5X longer than its middle portion. Pterostigma brownish yellow, narrow. Basal costal seta absent. Anal lobe well-developed; axillary incision very acute. Squama yellow, pale fringed. Halter yellow.

Abdomen dark brown. Pruinescence: almost entirely shiny; tergite 1 densely greyish pruinose, tergite 6 posteriorly and sternite 5 laterally faintly pruinose, tergite 7 light grey tomentose. Chaetotaxy: tergite 1 with intermixed black and pale setae; tergites 2–5 with sparse, mostly black setulae



Figs 8–13. *Empis (Anacrostichus) sublucida* Shamshev, sp.n., male: 8 — holotype, lateral view; 9 — postabdomen, lateral view; 10 — abdominal sternite 5, ventral view (setation omitted); 11 — hypopygium, lateral view (setation omitted); 12 — hypandrium, ventral view; 13 — phallus, lateral view. Abbreviations: cerc — cercus; ej apod — ejaculatory apodeme; epand — epandrium; goncx apod — gonocoxal apodeme; hypd — hypandrium; ph — phallus; ph pl — phallic plate; T — tergite; S — sternite. Scale bars: 8, 9 — 1 mm, 10–13 — 0.1 mm.

Figs 8–13. *Empis (Anacrostichus) sublucida* Shamshev, sp.n., самец: 8 — голотип, вид сбоку; 9 — постабдомен, вид сбоку; 10 — стернит 5 брюшка, вид снизу (щетинки не показаны); 11 — гипопигий, вид сбоку (щетинки не указаны); 12 — гипандрый, вид снизу; 13 — фаллус, lateral view. Сокращения: cerc — церк; ej apod — эякуляторная аподема; epand — эпандрий; goncx apod — гоноксальная аподема; hypd — гипандрый; ph — фаллус; ph pl — пластина фаллуса; T — тергит; S — стернит. Масштаб: 8, 9 — 1 мм, 10–13 — 0,1 мм.

dorsally and long, fine, pale setae laterally (longest pale setae on tergite 2); in addition, tergites 2–5 bearing long, black posteromarginal setae laterally; tergites 6 and 7 with scattered setulae, tergite 8 covered with long, black, dense setae; sternite 1 bare, remaining sternites mostly with long, pale setae, sternite 8 with additional black setae posteriorly. Segments 5–8 modified (Fig. 9). Tergite 6 and segment 7 bent downwards, accordingly segment 8 and hypopygium shifted to ventral position relative to body plane. Tergite 5 with somewhat concave lateral margin posteriorly, posterior corners slightly produced and turned inwards. Sternite 5 (Fig. 10) moderately large, subrectangular; with postero-medial tubercle bearing tuft of numerous, long, pale setae at apex and two short, broad posterior projections (foot-shaped in ventral view). Tergite 6 slightly asymmetrical; somewhat narrower than tergite 5; slightly concave antero-laterally, with somewhat produced and convex anterior corners. Sternite 6 invisible in situ, strongly reduced, weakly sclerotised, bare, retracted into sternite 5. Tergite 7 slightly asymmetrical; narrower and 2.5–3X shorter than tergite 6; with slightly produced anterior corners and slightly concave antero-laterally. Sternite 7 of complicate structure, rather large, somewhat asymmetrical; deeply concave laterally; in ventral view more or less divided into two portions, anterior portion (mostly invisible in situ) rather subrectangular, with two nearly elongate oval, flattened, lateral projections of slightly different size and shape as well as with median, short, subtriangular projection deflected posteriorly, posterior portion represented by two elongate oval sclerites separated by median, membranous space. Segment 8 funnel-like, narrow anteriorly, with entirely separated tergite and sternite; tergite 8 long, slightly longer than tergite 7, undivided; sternite 8 subtriangular in lateral view, somewhat longer than tergite 8, anterior margin somewhat deflected inwards.

Hypopygium (Figs 11–13) moderately large; epandrium and hypandrium dark brown, cerci slightly paler, phallus yellow; black setose. Epandrium entirely divided (epandrial bridge absent). Epandrial lamella (Fig. 11) rather subtriangular, slightly produced and pointed at apex (lateral view); with numerous long setae close to lower margin. Hypandrium (Fig. 12) broadly attached to epandrial lamella; entirely sclerotised; broad, without postero-medial prolongation, nearly rounded at apex, bare; gonocoxal apodeme moderately large, fused with phallic plate. Subepandrial sclerite undivided. Cerci separated with each other and from epandrium. Cercus small, undivided, rather subrectangular (lateral view), with small internal projection close to base; posterior margin extending nearly to apex of epandrial lamella, dorsal margin slightly concave in about posterior half; covered with fine setulae, bearing 1 short, spine-like seta on lower margin in apical half. Hypoproct membranous, bare. Phallus (Fig. 13) mostly hidden; gently arched; nearly basal 1/2 thick (lateral view), apical 1/2 slender. Ejaculatory apodeme large, extended far beyond basal curvature of phallus, with large lateral wings.

Female. A single available specimen of the female of the new species is somewhat damaged, including the head and missing mid and hind legs. Similar to male except as follows. Eyes dichoptic, ommatidia equally small. Frons broad, parallel-sided, greyish pruinose. Occiput and thorax with shorter setae. Fore femur and tibia covered with short setae. Abdomen light brown, tergites 2–5 narrowly darker along posterior margin; almost entirely shiny, tergite 1 densely pruinose; covered with short setae (including posteromarginals on tergites). Cercus long, slender, with scattered setulae.

REMARKS. In having four shiny mesoscutal vittae the new species resembles *Empis* (*Anacrostichus*) *lucida*

Zetterstedt, 1838 and *E. (A.) verralli* Collin, 1927. *Empis (A.) sublucida* **sp.n.** differs from *E. (A.) verralli* primarily by modified abdominal sternite 5 of the male. Also, in both sexes of *E. (A.) verralli* the wings are distinctly brownish. In addition to the four shiny mesoscutal vittae, the new species and *E. lucida* share similar structure of the pregenital segments of the male. However, *E. (A.) sublucida* **sp.n.** is smaller than *E. (A.) lucida* (body about 5.5 mm versus 6.5–8 mm). In addition, the new species differs from *E. (A.) lucida* by denser pruinose mesoscutum (shiny vittae contrast). The male of *E. (A.) sublucida* **sp.n.** can be distinguished from the male of *E. (A.) lucida* by long, dense setae on the fore tibia, weak ventral armature of the mid femur (complete rows of anteroventral and posteroventral, spine-like setae in *E. lucida*) and some other characters.

ETYMOLOGY. The epithet refers to the similarity of the new species to *E. lucida*.

DISTRIBUTION. Russia (Far East).

KEY TO SPECIES OF *EMPIS* (*ANACROSTICHUS*) FROM THE PALAEARCTIC

1. Acrostichal setae present 2
 - Acrostichal setae absent 7
2. Scutum entirely densely pollinose but with distinct narrow brownish vitta beneath row of dorsocentral setae, disappearing just before prescutellar depression and with some traces of similar vitta beneath row of acrostichal setae ... *E. (A.) kustovi* Shamshev
 - Scutum with more or less distinctly polished vittae between dorsocentral and acrostichal setae or extensively shiny 3
3. Hind femur clothed in short hair-like setae only. ♂: abdominal sternite 5 unmodified, with simple setae
 - *E. (A.) verralli* Collin
 - Hind femur at least with anteroventral, spine-like setae. ♂: abdominal sternite 5 modified, with apical comb of black spine-like setae between two digitiform lateral projections 4
4. Mesoscutum extensively shiny. ♂: eyes separated by broad frons (below ocellar triangle as broad as or slightly broader than distance between outer margins of posterior ocelli) 5
 - Mesoscutum mostly faintly greyish pruinose, with 4 shiny vittae (sometimes coalescent posteriorly). ♂: eyes touching or almost touching on frons 6
5. Legs entirely brown; abdomen black setose. Male: hind femur slender ... *E. (A.) longipennis* Loew
 - Legs extensively yellowish to brownish yellow; abdomen pale setose. Male: hind femur thickened
 - *E. (A.) schrencki* Shamshev, **sp.n.**
6. Mesoscutum subshiny, faintly greyish pruinose, with indistinct shiny vittae; larger, body 6.5–8 mm. Male: fore tibia with short, sparse setae ... *E. (A.) lucida* Zetterstedt
 - Mesoscutum densely pruinose, with contrast shiny vittae; smaller, body about 5.5 mm. Male: fore tibia with long, dense setae *E. (A.) sublucida* Shamshev, **sp.n.**
7. Hind femur at most slightly thicker than fore and mid femora 8
 - Hind femur very thickened, much broader than slender fore and mid femora (hind leg raptorial) 10
8. Abdominal tergites 2–5 metallic bluish (♂) or dark green (♀) *E. (A.) cyaneiventris* Frey
 - Abdominal tergites black in ground colour, extensively greyish pruinose 9
9. Palpus blackish, with brown to yellowish brown tip. ♂: abdominal tergite 6 extensively shiny, pollinose only along

- posterior margin. ♀: hind tibia slender; abdomen shiny .
 *E. (A.) bistortae* Loew
- Palpus yellow. ♂: abdominal tergite 6 entirely greyish
 pollinose. ♀: hind tibia evenly thickened towards apex;
 abdomen extensively brownish grey pollinose, tergites 2–5
 broadly shiny dorsally, tergite 6 narrowly shiny posteriorly,
 tergites 7–8 entirely shiny *E. (A.) monticola* Loew
10. ♂ 11
 – ♀ 13
11. Fore femur yellowish brown, mid and hind femora brown
 to black (except yellow narrow subapical part)
 *E. (A.) nitida* Meigen
- Femora yellow to tawny yellow (sometimes darker towards
 apex dorsally) 12
12. Laterotergite with black setae *E. (A.) pachymorion* Frey
 – Laterotergite with pale setae *E. (A.) claricolor* Frey
13. Mesonotum velvety brown (dorsal view), halter brown,
 wing uniformly brown infusate
 *E. (A.) pachymorion* Frey
- Mesonotum densely greyish pruinose (dorsal view), halter
 yellow, wing at least partly hyaline 14
14. Mesoscutum in dorsal view with 4 brownish vittae (median
 vittae usually more distinct); wing faintly brownish
 infusate on basal part, otherwise hyaline; fore femur
 yellowish brown, mid and hind femora brown to black
 (except yellow narrow subapical part)
 *E. (A.) nitida* Meigen
- Mesoscutum in dorsal view almost uniformly whitish grey;
 wings faintly whitish on about basal half, getting nearly
 hyaline towards apex; femora extensively yellow, only

hind femur with brown patch near apex (somewhat broader
 dorsally) *E. (A.) claricolor* Frey

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