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Review of the *Hydrotaea parva* and *Hydrotaea glabricula* groups (Diptera: Muscidae)

Обзор видов групп *Hydrotaea parva* и *Hydrotaea glabricula* (Diptera: Muscidae)

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KEY WORDS: Diptera, Muscidae, *Hydrotaea parva* group, *Hydrotaea glabricula* group, new species, new synonymies, taxonomy.

КЛЮЧЕВЫЕ СЛОВА: Diptera, Muscidae, группа *Hydrotaea parva*, группа *Hydrotaea glabricula*, новые виды, новые синонимы, систематика.

ABSTRACT. The fauna of the *Hydrotaea parva* group and the here proposed *Hydrotaea glabricula* group is considered. Identification keys for the Eurasian and Afrotropical faunas of the *Hydrotaea glabricula* group and for the Palaearctic and Eurasian faunas of the *Hydrotaea parva* group are given. Five new species *H. semiflava* sp.n. (from Sri Lanka), *H. elephans* sp.n., *H. ozerovi* sp.n., *H. portschinskyi* sp.n. and *H. stackelbergi* sp.n. (all from Thailand) and one subspecies *H. polita kenyana* ssp.n. (from Kenya) are described. Two new synonymies are proposed: *Hydrotaea atrisquama* Ringdahl, 1925 = *Hydrotaea multipilosa* Shinonaga et Kano, 1983, syn.n. and *Hydrotaea parva* Meade, 1889 = *Hydrotaea exigua* Shinonaga et Kano, 1983, syn.n.

РЕЗЮМЕ. Рассмотренна фауна групп видов *Hydrotaea parva* и *Hydrotaea glabricula* (последняя предложена в настоящей работе). Даны определительные ключи для евразийской и афротропической фаун группы *Hydrotaea glabricula* и для палеарктической и евразийской фаун группы *Hydrotaea parva*. Описано 5 новых видов: *H. semiflava* sp.n. (Шри Ланка), *H. elephans* sp.n., *H. ozerovi* sp.n., *H. portschinskyi* sp.n. и *H. stackelbergi* sp.n. (все Таиланд) и 1 подвид: *H. polita kenyana* ssp.n. (Кения). Предложено 2 новых синонима: *Hydrotaea atrisquama* Ringdahl, 1925 = *Hydrotaea multipilosa* Shinonaga et Kano, 1983, syn.n.; *Hydrotaea parva* Meade, 1889 = *Hydrotaea exigua* Shinonaga et Kano, 1983, syn.n.

Introduction

There are about 120 valid species of *Hydrotaea* Robineau-Desvoidy, 1830 s. str. worldwide. As other Azeliini, the genus *Hydrotaea* has the center of biodiversity in the temperate zone of Eurasia. About 70–75 species (almost 2/3 of total amount) are Palaearctic (including several Holarctic species and a rich fauna of *Hydrotaea* recorded from S China, N India, N Myanmar, N Vietnam). In the Afrotropical and Oriental regions 15–20 species are known in each; 10–12 species are American (excluding Holarctic ones).

Of the Palaearctic species, there are 3 with body length 4 mm and less: *Hydrotaea parva* Meade, 1889; *H. atrisquama* Ringdahl, 1925 and *H. glabricula* Fallén, 1825, the former 2 species are closely related and form the *Hydrotaea parva* species-group proposed by Ringdahl [1925] and used by Hennig [1962]. *H. glabricula* has no related species in the Palaearctic region but it has several related Paleotropical species, so the *H. glabricula* group is proposed in present work. In the Oriental region, there are also several more species which should be uncluded in the *H. parva* group.

Small size is not a bad diagnostic character to distinguish both considered species-groups from other species of *Hydrotaea*, but in some cases the overlapping takes place. For example, *H. parva* has body length 3.3–4.0 mm, *Hydrotaea armipes* Fallén, 1825 — 3.5–6.0 mm [Gregor et al., 2002]. Fortunately another trait may serve as a good character of the *Hydrotaea parva* and *H. glabricula* groups: *ac* setae rather strong, placed in 2 rows, without any additional hairs between rows. The following key defines the borders of the considered groups and separetes them from the rest of *Hydrotaea*:

1. *ac* setae rather strong, in 2 rows and without any additional hairs between rows. Body length less than 4 mm. (Either *t2* with *ad* or body length less than 3 mm.) 2
– *ac* setae or setulae in 3 or more rows. Body length more than 4 mm ..... other species of *Hydrotaea*

2. *t2* without *ad*. Body length less than 3 mm, glossy black. ♀: frontal triangle glossy and remarkably wide, with convex sides, so interfrontalia are almost reduced; interfrontal setae situated on outer margines of frontal triangle and widely separated as shown on Fig. 1. Attracted to animal or human body ..... *H. glabricula* group
– *t2* with 1 *ad*. Body length 3–4 mm, with dictinct, though usually tint dusting. ♀: frontal triangle at least partly math, not widened, interfrontalia are not reduced, interfrontal setae not widely separated (Fig. 2). Attracted to herbivorous dung ..... *H. parva* group

These groups of *Hydrotaea* are unknown from Australia and from the New World as well, so the present paper deals with the entire presently known world fauna of the *H. parva* and *H. glabricula* groups. To make the identification keys easier to use, the paper is divided onto 4 Parts: Eurasian *H. glabricula* groups (1.1); Afrotropical *H. glabricula* groups (1.2); Palaearctic *H. parva* group (2.1) and Eurasian *H. parva* group (2.2).

Material and methods

The majority of the specimens studied are in the Zoological Museum of Moscow University, Russia (ZMUM), in this case specimen attribution is not indicated in text. Holotypes of all species described in present paper are in the ZMUM. Collection of Museum für Naturkunde, Humboldt-Universität zu Berlin, Germany is abbreviated as ZMHU.

Localities (where possible) are given as follows: country, region, locality, geographical coordinates (in the Decimal Degrees format).

The following abbreviations for morphological structures are used: *f1*, *t1*, *f2*, *t2*, *f3*, *t3* = fore–, mid–, hind– femur or tibia; *ac* = acrostichal setae; *dc* = dorsocentral setae; *a*, *p*, *d*, *v* = anterior, posterior, dorsal, ventral seta(e); *prst* — presutural, *post* — postsutural. The abbreviation for the tarsi as *tar* followed by a pair of digits separated by a hyphen was proposed by Vikhrev [2011]: the first digit (1 to 3) gives the leg number and the second digit (1 to 5) the number of the tarsal segment. For example, *tar2–4* = 4th segment of mid tarsus; *tar3–1* = hind basitarsus.

The illustrations are original unless otherwise indicated.

Taxonomy

1. *Hydrotaea glabricula* species–group

Species of the *H. glabricula* group have remarkably small body size 2.5–3.0 mm. Females are easily distinguished by the frontal triangle glossy and remarkably wide, with convex sides, so the interfrontalia are reduced to a pair of anteriorly converging narrow strips; interfrontal setae are situated on outer margines of the frontal triangle and are widely separated as shown on Fig. 1. Males: eyes bare, contiguous. Fronto-orbital plates glossy, narrow. Antenna short, arista almost bare. Thorax shining black or with a very slight grey dusting, *ac* rather strong in 2 rows, 2+4 *dc*, meron, katepimeron and notopleuron bare. Legs: *f1* with two typical ventral hooks at apex; *t1* without setae; *f2* with a complete row of *p* setulae and 2 *pd* preapicals, *v* surface with 2–3 spines at basal third; *t3* with 1–2 *av* and 1 *ad* below middle, *pd* absent or shorter than half width of tibia; tarsi not modified.

According to Gregor et al. [2002] adults of *H. glabricula* are attracted by decaying meat. I had never seen any species of the *H. glabricula* group on carrion, but always observed both sexes were attracted by human body, especially legs.

1.1. Eurasian fauna of the *H. glabricula* group

Three species are known from Eurasia and considered below. *Hydrotaea polita* Emden, 1943, described from the Afrotropical region, was listed by Pont [1991] for Saudi Arabia based on a female specimen. Formally it is a Palaearctic record but I do not consider *H. polita* here because in Emden's description I had not found any difference of *H. polita* from *H. glabricula* in the female sex.

Hydrotaea glabricula Fallén, 1825

Hydrotaea glabricula Fallén, 1825. Type locality: presumably Skane, Sweden [Pont, 1986].

Hydrotaea nitida Robineau-Desvoidy, 1830. Type locality: France [Pont, 1986].

Hydrotaea atrata Robineau-Desvoidy, 1830. Type locality: France [Pont, 1986].

Hydrotaea minima Rondani, 1871. Type locality: "Alp forest" [Pont, 1986].

MATERIAL EXAMINED. RUSSIA: ***Bashkortostan*** reg., Abzakovo env., 53.8°N 58.6°E, 5–8.VIII.2008, K. Tomkovich, 1 ♀; ***Khakassia*** reg., Shira distr., Maloe Spirinskoe Lake (freshwater), 54.422°N 90.147°E, 26.VI.2011, K. Tomkovich, 4 ♀♀; TURKEY: ***Konya*** prov., Kurucay, [37.22°N 32.01°E], 1700 m asl, 27.IX.2007, N. Vikhrev, 1 ♂; ***Antalya*** prov., Side, sand dune, 36.77°N 31.40°E, 2.IV.2008, A. Ozerov, 1 ♂.

DISTRIBUTION. The warm and temperate zones of the Palaearctic from W Europe to Japan [Pont, 1986]; in China: Liaoning, Shaanxi and Shanxi provinces [Xue & Chao, 1998].

Hydrotaea nigrirensis Shinonaga et Tewari, 2008

Hydrotaea nigrirensis Shinonaga et Tewari, 2008. Type locality: India: Kerala and Tamil Nadu states

MATERIAL EXAMINED. CAMBODIA: ***Kep*** prov., Kep, 10.5°N 104.3°E, attracted by human body, 5–7.12.2010, N. Vikhrev, 24 ♂♂, 15 ♀♀; INDIA, ***Orissa*** st., Daspalla env., 20.38°N 84.77°E, 17–25.I.2014, K. Tomkovich, 1 ♀; THAILAND: ***Chiang Mai*** prov., 19.28°N 98.61°E. 1350 m asl, attracted on human body, 15–18.XI.2010, N. Vikhrev, 2 ♂♂, 8 ♀♀.

DISTRIBUTION. Oriental: India: Kerala, Tamil Nadu and Orissa states; Thailand, Chiang Mai prov.; Cambodia, Kep prov.

REMARKS. In their diagnosis ("remarks") Shinonaga and Tewari [2008] had not compared *H. nigrirensis* with a closely related *H. glabricula*, but compared it with *H. atrisquama* (and because of the synonymy of

H. multipilosa Shinonaga et Kano, 1983 to *H. atrisquama* proposed in this paper, it is unclear what Shinonaga actually implied under *H. atrisquama*). In the original description of *H. nigrirensis* there are several points which contradict to my material: "notopleura hairy" and "*f2* with a row of long bristles on anterodorsal and anteroventral surfaces". Nevertheless I believe that the series from Cambodia and Thailand are conspecific to *H. nigrirensis* and regard the mentioned characters as description errors, actually notopleuron is bare in all other species of the *H. glabricula* group and *f2* has a complete *p*-row, *a*-row and 2 sharp ventral spines in basal half.

Undescribed females of *H. nigrirensis* were collected with males in Cambodia and Thailand, but I did not found in them any reliable differences from females of *H. glabricula*.

Hydrotaea semiflava **sp.n.**
Figs 3–4.

MATERIAL. Holotype ♂, SRI LANKA: Maravilla, 7.44°N 79.81°E, 26–31.12.2012, N. Vikhrev. Paratypes: 1 ♂, 4 ♀♀, the same label.

DESCRIPTION. MALE. A dark glossy species with mostly yellow abdomen, body length: 2.5–2.9 mm.

Head. Eyes bare, upper facets strongly enlarged. Fronto-orbital plates touch, distance between eyes equal to diameter of anterior ocellus. Fronto-orbital plates glossy, narrow; parafacials glossy, linear. Fronto-orbital plates with 2 pairs of inclinate setae near lunula. Gena and occiput matt black. Antenna short, pedicel yellowish, postpedicel black, arista almost bare, basal part of arista whitish. Palpi black.

Thorax shining black with a very slight grey dusting, ground setulae on scutum reduced. Chaetotaxy: *ac* rather strong in 2 rows, 3+4 pairs, without any additional hairs between rows; 2+4 *dc*; katepisternal 1+1, meron, katepimeron and notopleuron bare. Wing clear, calypters yellow, haltere yellow.

Legs black (looks yellowish in collected material). *f1* with two typical ventral hooks at apex. *t1* without setae. *f2*: *p* surface with a complete row of setulae, *a* surface with a row of 4–5 setae in basal half, *v* surface with 3 spines (almost 1.5x as long as femur width) in basal third (the first spine the shorter, the last one the stonger). *t2* with 2 strong *p* setae. *f3* ventrally with 3–4 *av* near apex. *t3* with 1 submedian *ad*, 1 *av* below middle and 1 fine *d* seta near apex, *pd* absent or shorter than half width of tibia. Tarsi not modified.

Abdomen (Fig. 3) yellow, but tergite 4 dorsally with black triangular mark widened posteriorly, tergite 5 and sternite 5 entirely black.

FEMALE differs from male as follows: frons wide with glossy-black frontal triangle which is remarkably wide, so it is almost contiguous to fronto-orbital plates; interfrontal setae are widely spaced being placed almost at outer margins of frontal triangle; *f1* unmodified; *f2* without *pd* row and without ventral spines; abdomen glossy black with only base yellow (Fig. 4).

ETYMOLOGY. The name refers to the partly yellow colour of body (Latin: semi = half, flava = yellow).

DIAGNOSIS. *H. semiflava* sp.n. may be reliably separated in both sexes from related species as indicated in the key below.

IDENTIFICATION KEY FOR THE *HYDROTAEA GLABRICULA* GROUP FOR THE PALAEARCTIC AND ORIENTAL REGIONS (♂♂ AND ♀♀)

1. Abdomen mainly (♂, Fig. 3) or at least basally (♀, Fig. 4) yellow. Pedicel yellow(ish). Haltere yellow. ♂: Calypters whitish; *f2* with 3 longer ventral spines. *t3* with fine *d* seta near apex and with only 1 *av*. Sri Lanka .... *semiflava* sp.n.
– Abdomen black. Pedicel black. Haltere dark. ♂: *f2* with 2 shorter ventral spines. *t3* without fine *d* seta near apex and with 2 or more *av* 2
2. ♂: Calypters whitish. Scutum and abdomen glossy. *t3* with a row of 3–5 fine *pv* setulae in apical third. Palaearctic. .... *glabricula* Fallén
– ♂: Calypters dark. Scutum with slight dusting, abdomen with slight dusting and with dark median vitta on tergites 1+2 to 4. *t3* without a row of *pv* setulae. Oriental. . ..... *nigrirensis* Shinonaga et Tewari

1.2. African fauna of the *H. glabricula* group

Hydrotaea latitarsis Emden, 1943
Fig. 5.

Hydrotaea latitarsis Emden, 1943. Type locality: Uganda.
MATERIAL. No material seen.
DISTRIBUTION. Uganda.

REMARKS. *H. latitarsis* was first mentioned in the key for Afrotropical *Hydrotaea* by [Emden, 1943: 83], the detailed description of this species was given in his later work [Emden, 1951: 667].

Hydrotaea polita polita Emden, 1943

Hydrotaea polita Emden, 1943. Type locality: Uganda, Kampala env and Tanganyika, Kilossa [Tanzania, Kilosa, H" 6.8S 37.0E]
MATERIAL. No material seen.
DISTRIBUTION. Uganda and Tanzania.

Hydrotaea polita kenyana Vikhrev **ssp.n.**

MATERIAL. Holotype ♂, KENYA: ***Laikipia*** county, Thomson Falls env., 0.05°N 36.38°E, 2350 m asl, 21–30.XII.2013, N. Vikhrev. Paratypes 1 ♂ and 1 ♀, the same label as holotype.

DESCRIPTION. MALE. A dark glossy species, body length: 3.1–3.5 mm.

Head. Eyes bare, upper facets strongly enlarged. Fronto-orbital plates touching, distance between eyes equal to diameter of anterior ocellus. Fronto-orbital plates glossy, narrow; parafacials glossy, linear. Fronto-orbital plates with 2 pairs of inclinate setae near lunula. Gena and occiput subshining black. Antenna short, black, arista almost bare. Palpi black.

Thorax glossy black. Chaetotaxy: *ac* rather strong in 2 rows, 3+4 pairs, without any additional hairs be-

Figs 1–5. *Hydrotaea glabricula* group.

1–2 — female frons: 1 — *H. glabricula* group; 2 — *H. parva* group; 3–4 — *H. semiflava* sp.n.: 3 — male holotype; 2 — female paratype; 5 — *H. latitarsis* Emden, 1943, male mid leg (by Emden, 1951).

Рис 1–5. Группа видов *Hydrotaea glabricula*.

1–2 — лоб самки: 1 — группа *H. glabricula*; 2 — группа *H. parva*; 3–4 — *H. semiflava* sp.n.: 3 — самец (голотип); 2 — самка (паратип); 5 — *H. latitarsis* Emden, 1943, средняя нога самца (по Emden, 1951).

tween rows; 2+4 *dc*; katepisternal 1+1, meron, katepimeron and notopleuron bare. Wing clear, calypters and haltere dark brown.

Legs black. *f1* with two typical ventral hooks at apex. *t1* without setae. *f2*: *p* surface with a complete row of setulae and 2 *pd* preapicals, *a* surface with a row of 4–5 setae in basal half, *v* surface with 3 spines (1.5–2x as long as femur width) in basal half (the first spine the shorter, the last two stonger). *t2* with 2 strong *p* setae. *f3* ventrally: 3 long *av* near apex; 2 short but strong *v* setae at base and at basal 1/4; 2 long (3x as long as femur width) *pv* setae at 1/3 and 2/3. *t3*: 1 long *ad* setae at middle or slightly above it; 1 shorter *av* slightly above level of *ad* seta; 1 long an fine *pv* at basal 1/3; setulae on *ad* surface distinctly elongated . Tarsi not modified.

Abdomen black; tergites 1+2, 3 and anterior half of tergite 4 with fine dusting and glossy median vitta; posterior half of tergite 4 and tergite 5 glossy.

FEMALE differs from male as follows: frons wide with glossy-black frontal triangle which is remarkably wide and almost contiguous to fronto-orbital plates; interfrontal setae widely spaced, placed almost at outer margins of frontal triangle; *f1* unmodified; *f2* without *pd* row and without ventral spines; *f3* without *pv* setae; *t3* without *pv* seta and elongated *ad* setulae; abdomen entirely glossy black.

ETYMOLOGY. The name indicates Kenyan origin of the type series of the new subspecies.

DIAGNOSIS. *H. polita kenyana* ssp.n. shares with the nominotypical subspecies *H. p. polita f3* with remarkably long sparse *pv* setae and *t3* with 1 *av* and 1 *pv* setae which placed in basal half of tibia above *ad* seta. That is why I do not think that *H. p. kenyana* should be regarded as a valid species. On the other hand *H. p. kenyana* ssp.n. differs from *H. p. polita* in both sexes by dark calypteres and by the hind leg chaetotaxy in males. The distance between type localities of *H. p. polita* and *H. p. kenyana* ssp.n. is less than 500 km, but the height of localities substantially differ, 600–1100 m asl for the first and 2350 m asl for the second one.

IDENTIFICATION KEY FOR THE *HYDROTAEA GLABRICULA* GROUP FOR THE AFROTROPICAL REGION (♂♂ AND ♀♀)

1. ♂: Mid leg modified (Fig. 5): *f2* with 2 remarkably long *v* setae before middle; *t2* covered with dense and long *p* hairs, so the two strong *p* setae are hardly distinguishable; *tar2–1* dilated and flattened, on *v* surface with an excavation before middle, in which a comb of 3 stout, short, recurved setulae is placed. *f3* without very long *pv* setae, *t3* without *pv* in basal 1/3. ♀: cruciate interfrontal setae absent ..... *latitarsis* Emden
– ♂: Mid leg not modified as above. *f3* with 2 very long *pv* setae at 1/3 and 2/3 of femur length from base; *t3* with *pv* in basal 1/3. ♀: cruciate interfrontal setae present .... *polita* Emden 2
2 . Calypters whitish with yellowish border. ♂: *f3* with 3 very long *pv* setae at base, at 1/3 and 2/3 of femur length from base. Tanzania, Uganda ..... *polita polita* Emden
– Calypters dark brown. ♂: *f3* with 2 very long *pv* setae at 1/3 and 2/3 of femur length from base; basal seta absent. Kenya ..... *polita kenyana* ssp.n.

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2. *Hydrotaea parva* species-group

H. parva group is represented in the Palaearctic region by 2 species. Gregor et al. [2002] characterized *H. parva* as “not too common Eurasian species”, *H. atrisquama* was a mysterious species known from Swe-

den and Myanmar [Emden, 1965]. The material listed below shows that both species actually are not rare around horse dung on pastures. Males occasionally visit dunghills, but mostly swarm in 30–100 cm from dung at a height of 20–40 cm, being hardly noticeable against a motley background of grass and soil; females usually visit dung or seat on grass around it. *H. parva* seems to be more common in the western part of Palaearctic, *H. atrisquama* in the eastern parts and is found further northerly than *H. parva*. In the Oriental region there are several described or undescribed species of the *H. parva* group, so I believe more useful first to consider two species of the Palaearctic fauna (probably present in the North of the Oriental region too) and then to consider the entire Eurasian fauna.

2.1. Palaearctic fauna of the *H. parva* group

Hydrotaea atrisquama Ringdahl, 1925
Fig. 6.

Hydrotaea atrisquama Ringdahl, 1925. Type locality: Sweden, Skane, Asljunga.

Hydrotaea multipilosa Shinonaga & Kano, 1983 — **syn.n.** Type locality: Japan.

MATERIAL EXAMINED. RUSSIA: ***Bashkortastan*** reg., Beloretsk env., Nura R., 54.05°N 58.27°E, 6–13.VIII.2012, D. Gavryushin, 1 ♂; ***Khabarovsk*** reg, Bychikha, 48.30°N 134.82°E, 13.VII. 2014, horse dung, N. Vikhrev, 1 ♀; ***Khanty-Mansi*** reg., S-E Khanty-Mansiysk, 7–13.VIII.2010, 60.9°N 68.7°E, K. Tomkovich, 1 ♂; ***Magadan*** reg, Stekolny, 60.06°N 150.75°E, 16–18.VII.2014, N. Vikhrev, 1 ♂; ***Primorsky Kray*** reg.,Ussuri NR, Komsomolskaya polyana, 43.63°N 132.29°E, 5.VIII.2013, I. Gomyranov, 1 ♂; Razdolnoe env., 43.54°N 131.84°E, horse dung, 25.VI.2014, N. Vikhrev, 4 ♂♂, 4♀♀; ***Tver*** reg, Rzhev env, 56.21°N 34.35°E, horse dung, 18.VIII.2014, N. Vikhrev, 1 ♀.

DISTRIBUTION. Sweden (type locality); Russia: European Part, Ural, W Siberia, Far East; Japan (Shinonaga [2003] as *H. multipilosa*): Hokkaido and Shikoku; Myanmar (NE Burma, Kambaiti) [Emden, 1965]. The record from Myanmar looked unexpectable, but with regard to the Far Eastern and Japanese records it is not too surprising. Anyway Emden's [1965] description of modified legs of the Burmese male specimen leaves no doubts in its identification.

SYNONYMY. The description and drawing of the modified hind leg of *H. multipilosa* given in Shinonaga [2003] (Fig. 6) proves that it is conspecific to *H. atrisquama*, so *Hydrotaea atrisquama* Ringdahl, 1925 = *Hydrotaea multipilosa* Shinonaga & Kano, 1983, syn.n.

Hydrotaea parva Meade, 1889

Hydrotaea parva Meade, 1889. Type locality: Great Britain, near Buckingham.

Hydrotaea exigua Shinonaga et Kano, 1983 — **syn.n.** Type locality: Japan.

MATERIAL EXAMINED. POLAND: Trzebiatow, [54.06°N 15.26°E], 7.VIII.1917, P. Stein with Stein's identification label, 1 ♂, 1 ♀ (ZMHU); RUSSIA: ***Bashkortostan*** reg., Abzakovo env., 53.8°N 58.6°E, 2–8.VIII.2008, K. Tomkovich, 1 ♂, 1 ♀; ***Khabarovsk*** reg, Khabarovsk, 48.6°N 135.1°E, 2–6.VI.2014, horse dung, N. Vikhrev, 5 ♂♂; 13.VI.2014, horse dung, N. Vikhrev, 1 ♂; ***Khakassia*** reg., Shira distr., Maloe Spirinskoe freshwater Lake, 54.422°N 90.147°E, 26.VI.2011, K. Tomkovich, 1 ♂; ***Krasnodar reg***.: Veseloe env., 43.39°N 40.00°E, 19–23.X.2007, N. Vikhrev, 6 ♂♂; 27.VI.2008, K. Tomkovich, 10 ♂♂; Guzeripl, 44.004°N 40.134°E, 700 m a.s.l., horse dung, 11–14.VI.2012, N. Vikhrev, 3 ♂♂; Khosta env., 43.52°N 39.87°E, 2.V.2011, N. Vikhrev, 10 ♂♂, 3 ♀♀; Varenikovskaya env., 45.083°N 37.586°E, 27.IV.2014, N. Vikhrev, 1 ♂; ***Moscow*** reg., Sergiev Posad env., 56.331°N 38.040°E, horse dung, 27.VI.2012, N. Vikhrev, 1 ♂, 1 ♀; ***Primorsky Kray*** reg., Khanka Lake, 45.06°N 131.99°E, 15–19.VI.2014, N. Vikhrev, 2 ♂♂; Razdolnoe env., 43.54°N 131.84°E, 25.VI.2014, horse dung, N. Vikhrev, 1 ♂, 1 ♀; ***Stavropol*** reg., Stavropol env., 44.805°N 41.858°E, horse dung, 4.V.2013, N. Vikhrev, 1 ♀; ***Tver*** reg., Rzhev env., 56.21°N 34.36°E, horse dung, 22.VI.2012, N. Vikhrev, 1 ♂, 56.21°N 34.35°E, horse dung, 18.VIII.2014, N. Vikhrev, 6 ♂♂, 2 ♀♀; SERBIA: Crni Vrh env., 43.407°N 22.587°E, 800 m a.s.l., 16–22.IX.2014, N. Vikhrev, 11 ♂♂, 4 ♀♀; Surèin env., 44.78°N 20.25°E, 14.IX.2014, N. Vikhrev, 1 ♀.

DISTRIBUTION. Palaearctic from W Europe to Japan; in China known from Gansu, Inner Mongolia and Xinjiang provinces [Xue, Chao, 1998].

SYNONYMY. According to Shinonaga [2003] *H. parva* has *f2* "with 2 strong erect straight blunt bristles on ventral surface", whereas *H. exigua* has *f2* "with 3 (1 strong, 2 small) erect straight blunt bristles on ventral surface". In Hennig's [1962: 737] opinion, which I agree, *H. parva* has *f2* with 2(3) such bristles, so I see no reason why to regard *H. exigua* as a valid species and propose that *Hydrotaea parva* Meade, 1889 = *Hydrotaea exigua* Shinonaga et Kano, 1983, syn.n.

IDENTIFICATION KEY FOR THE *HYDROTAEA PARVA* GROUP FOR THE PALAEARCTIC REGION

♂♂

– *t3* with 3–4 *av*, 1 *ad*, 1 *pd*, 1 long *pv* in basal 1/3, without long *v* setae. *f3* with 2–3 av near apex, in basal 2/3 simple. Mid tarsus unmodified. *f2* with 2(3) ventral spines at basal 1/4. Calypters whitish ..... *parva* Meade
– *t3* without *av*, *pv* or *pd*, with 1 *ad*, about 4 long downward curved *v* setae around and 2–4 shorter *v* setulae middle (Fig. 6). *f3* with 1 *av* near apex, in basal 2/3 modified as in Fig. 6. *tar2–3* to *tar2–5* dilated and with elongated *v*-hairs. *f2* with 5 widely spaced ventral spines: 3 in basal half and 2 in apical half. Calypters dark .... *atrisquama* Ringdahl

♀♀

– *t3* with 2–3 *av*, *f2* with 2 strong ventral setae at base; fronto-orbital plates glossy, frontal triangle glossy in basal part ..... *parva* Meade
– *t3* with 1 *av*, *f2* without strong ventral spines at base; fronto-orbital plates glossy only at level of lunula, frontal triangle math ..... *atrisquama* Ringdahl

2.2. Eurasian fauna of the *H. parva* group

I remind that the main diagnostic criteria of the *H. parva* group are as follows: presence of 1 *ad* setae on *t2* (1); the small (about 4 mm) body size (2); *ac* setae strong, in 2 rows without fine setulae between rows (3).

Emden [1965] listed a single Oriental species from the *H. parva* group, Palaearctic *H. atrisquama*. It is not easy to give a sufficient review of the afterwards described Oriental species of this group based on available descriptions and keys from Chinese and Japanese authors. For example, if detailed description of acros-

tichal setae/setulae is not given, but indicated that "*ac* 2+5" for small-sized *Hydrotaea*, that probably means that *ac* setae are strong and sparse as should be in the *H. parva* group. I found 4 species fitting mentioned criteria:

Hydrotaea tamirensis Shinonaga et Tewari, 2008, type locality: India, Nilgiri Hills, 700–900 m asl, the border between Kartanaka and Tamil Nadu states.

Hydrotaea longiseta Feng et Feng, 1997, type locality: China, Sichuan prov., Erlangshan [H"29.8N 102.2E]

Hydrotaea muricilies Wu, Fang et Fan, 1988, type locality: China, Shaanxi prov., Huanglong [H"36N 110E]

Hydrotaea rotundentis Shinonaga, 1999, type locality: Vietnam, Lai Chau prov., Fansipan Mt. [22.32N 103.80E]

H. rotundentis was described by asingle male from Fansipan Mt., but I have series of topotypes. *H. rotundentis* is a recognizable species though several important characters are missed in the description, the most important one is the actual presence of *ad* seta on *t2*, although it is short and not very conspicuous on the background of a row of elongated *a* setulae. This and other characters are specified in the "descriptive notes" to *H. rotundentis*.

H. tamirensis has *t2* with 1 *ad* and 2 *p* setae; "*ac* 2+5"; body size 3.8–5.0 mm and I believe it is from the *H. parva* group. Other useful information from the original description is: squamae brown; *f2* with 2 strong spine-like bristles on basal half of ventral surface; *t3* with small *pd*, 1 *ad*, 2 *av*. Description of hind femur is not satisfactory: "*f3* with a row of long bristles on *ad* and *av* surfaces", while the drawing of *f3* shows dense *av* to *pv* setae in basal half and totally bare apical half which does not fit the *f3* description [Shinonaga and Tewari, 2008: 210–211 and Fig. 6] (see Fig. 7 of present paper). In their diagnosis ("remarks") Shinonaga and Tewari [2008] compared *H. tamirensis* with *H. atrisquama*, but it is unclear what they understood under *H. atrisquama* as follows from synonymy to *H. atrisquama* proposed in present paper. The identification key is not given.

In case of *H. longiseta* and *H. muricilies* only identification key [Xue et al., 2007: 279, couplet 34] is available, which is cited below:

"34. Mid femur with 2 *a* setae in distal half, with a row of thick and blunt *av*, and on middle section with a cluster of some 7–8 short spines; hind tibia with an *ad* row, and with 2 *pv* only on middle section, the longer of the two equal to or longer than half the length of the tibia .... *Hydrotaea* (s. str.) *longiseta* Feng & Feng

– Mid femur with a row of some 5–6 irregular spine-like setae; mid tibia with 5 *p*; fore femur with 11–12 strong setae in distal half of ventral surface, and in distal half with a row of thick and blunt *av*; hind tibia with 4 *ad* and 4 *pv* .... *Hydrotaea* (s. str.) *muricilies* Wu, Fang & Fan"

In a monograph on flies of China [Xue, Chao, 1998] *H. longiseta* is not mentioned, but the drawings of femora of *H. muricilies* are given [Xue, Chao, 1998: 899, Figs 2083 E, F, G].

As shown on Figs 7 and 8 of present paper *H. tamirensis*, *H. muricilies* and probably *H. longiseta* (as the differences between *H. longiseta* and *H. muricilies* given in the key by Xue et al. [2007] concern mid leg only) have resembling and unusual chaetotaxy of *f3* with dense ventral setae in basal half and rather bare apical half.

Four species belonging to the *H. parva* group and described below substantially differ from these 3 unclear species. All newly described *Hydrotaea* were collected in South Thailand, Phang Nga province, around Khao Lak, in several sites where elephant riding for tourists is organized. In most cases these sites are secondary forest or abandoned *Hevea* plantations, although the primary forest is also present around Khao Lak. Males of *Hydrotaea* were mostly collected on vegetation along elephant trails with a trend to concentrate close to walking or grazing animals. I found it difficult to attribute the collected females, so only males are included in the type series and only males are considered in the key below.

Hydrotaea rotundentis Shinonaga, 1999
Figs 9–11.

Hydrotaea rotundentis Shinonaga, 1999. Type locality: Vietnam, Fansipan Mt.

MATERIAL EXAMINED. THAILAND: ***Chantaburi*** prov., Khao Khitchakut NP env., 12.82°N 102.13°E, 1–4.XI.2009, N. Vikhrev, 1 ♂; VIETNAM: ***Lai Chau*** prov., Sa Pa env., 22.37°N 103.76°E, 1800 m a.s.l., 25–26.V.2014, A. Ozerov, 2 ♂♂, 22.38°N 103.79°E, 1700 m a.s.l., 25.V.2014, D. Gavryushin, 5 ♂♂.

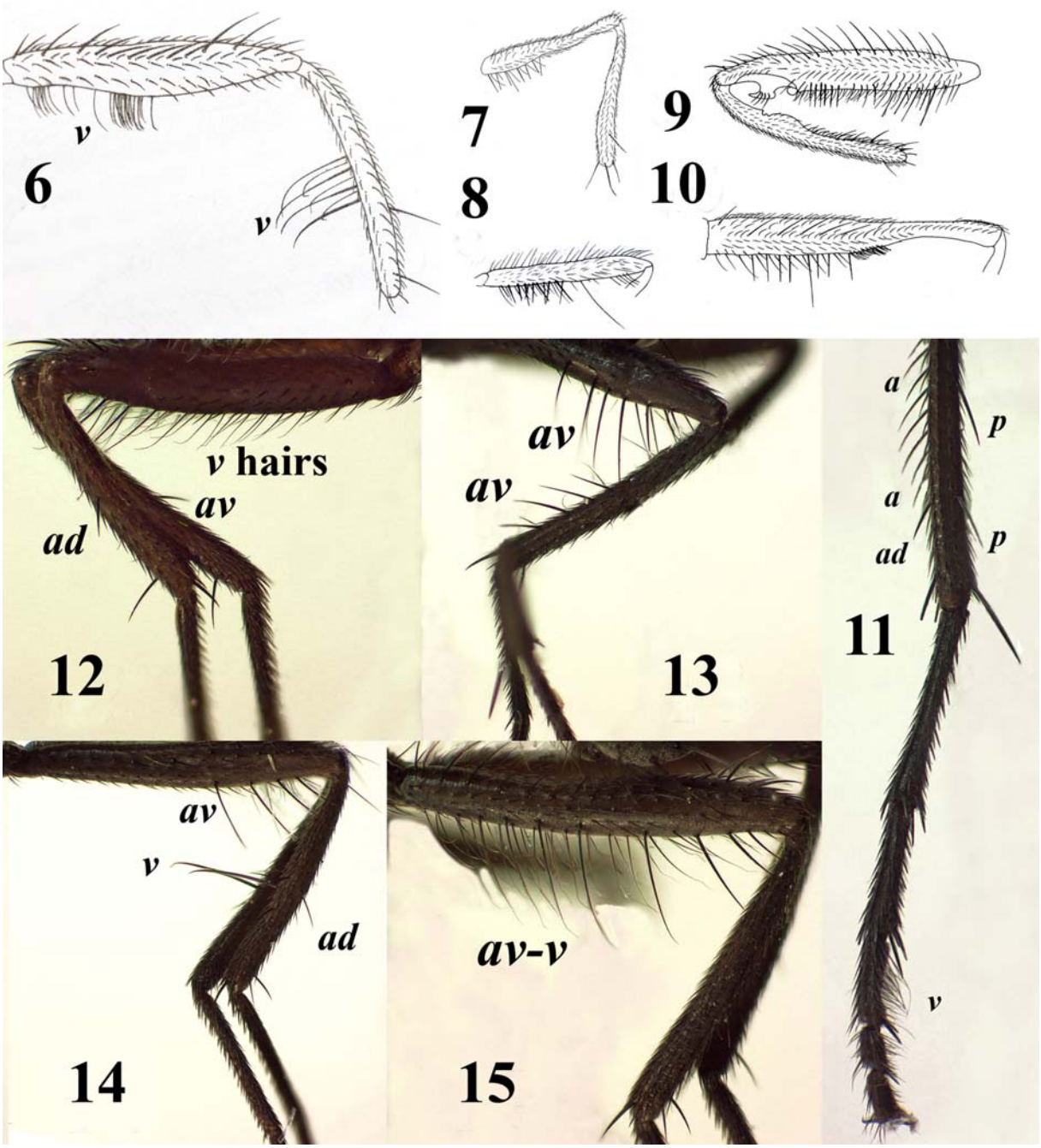
DISTRIBUTION. Vietnam and Thailand.

DESCRIPTIVE NOTES. Male: body length 3.9–4.3 mm. Scutum subshining black, with only trace of brownish dusting on posterior part. *ac* 3+4 rather strong, without additional hairs between rows. Notopleuron bare. Calypters dark brown. *f1* with two typical ventral hooks at apex, but the posterior hook is rounded in posterolateral view, pinhead-shaped (Fig. 9). *f2* with a complete row of fine *p* setae; in basal half with: a row of *a* setae, 2 long *v* spines; a row of about 9 shorter *pv* spines; *f2* becomes thinner in apical 1/3 (Fig. 10). *t2*: 2 *p*; in apical 2/3 with a row of elongated *a* setulae; in apical 1/3 with 1 short *ad* hardly conspicuous on background of of elongated *a* setulae (Fig. 11). *tar2–3* and *tar2–4* with elongated ventral setulae (Fig. 11) and widened. *f3*: with a complete sparse row of 8–10 long (2–3x femur width) *av* setae; 1 long *pv* at 2/3. *t3*: 4 *av* and 5 *pv* in middle part; 1 *ad*; *pd* weak and short.

VARIABILITY. The single male from Central Thailand differs form Vietnamese specimens by having setulae in *a* row on *t2* shorter and less conspicuous and *tar2–3* less distinctly widened.

Hydrotaea elephans **sp.n.**
Fig. 12.

MATERIAL. Holotype ♂, THAILAND: ***Phang Nga*** prov., Khao Lak env., elephant camp, 8.760°N 98.284°E, 16–21.XII.2009, N. Vikhrev. Paratypes: 28 ♂♂ with the same label as holotype; 3 ♂♂: THAILAND: ***Phang Nga*** prov., Khao Lak env., elephant camp, 8.616°N 98.245°E, 14–17.XII.2009, N. Vikhrev; 1 ♂, THAI-



Figs 6–15. *Hydrotaea parva* group.

6 — *H. atrisquama* Ringdahl, 1925, hind leg (by Shinonaga, 2003 as *H. multipilosa*); 7 — *H. tamirensis* Shinonaga et Tewari, 2008 (by Shinonaga & Tewari, 2008); 8 — *H. muricilies* Wu, Fang et Fan, 1988, hind leg (by Xue & Chao, 1998); 9–11 — *H. rotundentis* Shinonaga, 1999: 9 — fore leg; 10 — mid leg (by Shinonaga & Thinh, 1999); 11 — mid leg; 12–15 — male hind leg: 12 — *H. elephans* sp.n.; 13 — *H. ozerovi* sp.n.; 14 — *H. portschinskyi* sp.n.; 15 — *H. stackelbergi* sp.n.

Abbreviations for seta(e) or hairs position: *a* — anterior, *v* — ventral, *p* — posterior, *av* — anteroventral, *ad* — anterodorsal.

Рис 6–15. Группа видов *Hydrotaea parva*.

6 — *H. atrisquama* Ringdahl, 1925, задняя нога (по Shinonaga, 2003 как *H. multipilosa*); 7 — *H. tamirensis* Shinonaga et Tewari, 2008 (по Shinonaga & Tewari, 2008); 8 — *H. muricilies* Wu, Fang et Fan, 1988, задняя нога (по Xue & Chao, 1998); 9–11 — *H. rotundentis* Shinonaga, 1999: 9 — передняя нога; 10 — средняя нога (по Shinonaga & Thinh, 1999); 11 — средняя нога; 12–15 — задняя нога самца: 12 — *H. elephans* sp.n.; 13 — *H. ozerovi* sp.n.; 14 — *H. portschinskyi* sp.n.; 15 — *H. stackelbergi* sp.n.

Сокращения для обозначения положения щетинок или волосков: *a* — передняя, *v* — вентральная, *p* — задняя, *av* — передневентральная, *ad* — переднедорсальная.

LAND: ***Phang Nga*** prov., Khao Sok NP env, 8.84°N 98.284°E, elephant camp, 22.XII.2009, N. Vikhrev.

DESCRIPTION. MALE. A dark species, body length: 3.0–3.3 mm.

Head. Eyes bare, upper facets strongly enlarged. Fronto-orbital plates touching, distance between eyes equal to diameter of anterior ocellus. Fronto-orbital plates glossy, narrow; parafacials glossy, linear. Fronto-orbital plates with 4 pairs of inclinate setae near lunula. Gena and occiput black. Antenna short, black, arista almost bare. Palpi black.

Thorax matt black; scutum slightly grey dusted on posterior part of postsutural area. Chaetotaxy: *ac* rather strong in 2 rows, 3+5 pairs, without any additional hairs between rows; 2+4 *dc*; katepisternal 1+1, meron, katepimeron and notopleuron bare. Wing evenly darkened, calypters and haltere dark brown.

Legs black. *f1* with two typical ventral hooks at apex. *t1* without setae. *f2*: *p* surface with a complete row of setulae; *a* surface with 3 long (2–3x as long as femur width) setae in basal half; *v* surface without spines. *t2* with 2 strong *p* and 1 *ad*. *f3*: *v* surface covered with fine short hairs which become longer (almost as long as femur width) in apical half (Fig. 12); 2–3 *av* and 3–4 fine *pv* near apex. *t3* in submedian area with 1 *ad,* 1 *av* and 1 short *pv*. Tarsi not modified.

Abdomen black; tergites 1+2 and 3 matt black, tergites 4 and 5 slightly grey dusted and with black median vitta.

FEMALE unknown.

ETYMOLOGY. The name indicates connection of *H. elephans* sp.n. with elephant riding sites.

DIAGNOSIS. *H. elephans* sp.n. probably is the species misidentified by Shinonaga and Tewari [2008] as *H. atrisquama*. The most important diagnostic characters of *H. elephans* sp.n. are: *v* surface of *f2* without spines; *f3* with *v* surface covered with fine short hairs which become longer (almost as long as femur width) in apical half (Fig. 12) and with 2–3 *av* and 3–4 fine *pv* near apex; *t3* in submedian area with 1 ad and 1 *av*.

Hydrotaea ozerovi **sp.n.**
Fig. 13.

MATERIAL. Holotype ♂, THAILAND: ***Phang Nga*** prov., Khao Lak env., elephant camp, 8.760°N 98.284°E, 16–21.XII.2009, N. Vikhrev. Paratypes: 2 ♂♂, with the same label as holotype.

DESCRIPTION. MALE. A dark species, body length: 3.2–3.6 mm.

Head. Eyes bare, upper facets enlarged. Fronto-orbital plates touching, distance between eyes equal to diameter of anterior ocellus. Fronto-orbital plates glossy, narrow; parafacials matt grey. Fronto-orbital plates with 4–5 pairs of inclinate setae. Gena and occiput black. Antenna short, black, arista almost bare. Palpi black.

Thorax black; scutum with grey dusting on posterior part of postsutural area and on notopleura and postpronotal lobe. Chaetotaxy: *ac* rather strong in 2 rows, 3 + 5 pairs, without any additional hairs between rows; 2+4 *dc*; katepisternal 1+1, meron, katepimeron and notopleuron bare. Wing slightly darkened, calypters and and haltere dark brown.

Legs black. *f1* with two typical ventral hooks at apex. *t1* without setae. *f2*: *p* surface with a complete row of setulae, *ad* and *av* surfaces in basal half each with 3–4 medium long (1–1.5x as long as femur width) setae; *v* surfaces in basal half with 2 strong spines (1.5x as long as femur width); *pv* surfaces in basal half with 5 weaker spines (as long as femur width); *f2* becomes thiner in apical 1/3. *t2* with 2 strong *p* and 1 *ad*. *f3* with 6 long *av* (2.5–3x as long as femur width) setae in apical half (Fig. 13) and 4 *pv* (1–1.5x as long as femur width) in apical 1/4. *t3* in apical half with 4 *av* (1.5x as long as tibia width, Fig. 13) and 3–4 fine long (2–2.5x as long as tibia width) *pv*; 1 *ad* below middle and 1 short week *pd*. Tarsi not modified.

Abdomen black, thinly brownish-grey dusted, with hardly conspicuous median vitta.

FEMALE unknown.

ETYMOLOGY. *H. ozerovi* sp.n. is named in honour of Russian dipterologist Andrey Ozerov (Андрей Озеров), Russia, Moscow.

DIAGNOSIS. The most important diagnostic characters of *H. ozerovi* sp.n. are as follows: *f3* with 6 long *av* (2.5–3x as long as femur width) setae in apical half (Fig. 13) and 4 *pv* (1–1.5x as long as femur width) in apical 1/4; *t3* in apical half with 4 *av* (1.5x as long as tibia width), 3–4 fine long (2–2.5x as long as tibia width) *pv* and 1 *ad*.

Hydrotaea portschinskyi **sp.n.**
Fig. 14.

MATERIAL. Holotype ♂, THAILAND: ***Phang Nga*** prov., Khao Sok NP env., elephant camp, 8.840°N 98.474°E, 22.XII.2009, N. Vikhrev. Paratype: 1 ♂, THAILAND: ***Phang Nga*** prov., Khao Lak env., elephant camp, 8.616°N 98.245°E, 14–17.XII.2009, N. Vikhrev.

DESCRIPTION. MALE. A dark species, body length: 3.4–4.0 mm.

Head. Eyes bare, upper facets enlarged. Fronto-orbital plates touching, distance between eyes equal to diameter of anterior ocellus. Fronto-orbital plates glossy, narrow; parafacials matt grey. Fronto-orbital plates with 4–5 pairs of inclinate setae. Gena and occiput black. Antenna short, black, arista almost bare. Palpi black.

Thorax black; scutum thinly grey dusted on postsutural area and on notopleura and postpronotal lobe. Chaetotaxy: *ac* rather strong in 2 rows, 2 + 5 pairs, without any additional hairs between rows; 2+4 *dc*; katepisternal 1+1, meron, katepimeron and notopleuron bare. Wing slightly darkened, calypters and haltere dark brown.

Legs black. *f1* with two typical ventral hooks at apex. *t1* without setae. *f2*: *p* surface with a complete row of setulae, *ad* surface in basal half with 3–4 (1.5x as long as femur width) setae; *v* surfaces in basal half with 4 strong spines (1.5x as long as femur width); *pv* surfaces in basal half with 7–8 weaker spines (as long as femur width). *t2* with 2 strong *p* and 1 *ad*. *f3* with 4 *av* (1.5–2x as long as femur width) setae in apical 1/3 (Fig. 14). *t3* in middle with long (3–3.5x as long as tibia width) downcurved at apex ventral seta (Fig.

14); 2–3 submedian *av*, 1 *ad*, 1 distinct *pd*. Tarsi not modified.

Abdomen black, grey dusted, with black median vitta.

FEMALE unknown.

ETYMOLOGY. The new species *H. portschinskyi* sp.n. is named in the memory of Russian entomologist Josef Portschinsky (Иосиф Порчинский) (1848–1916), the author of two species of *Hydrotaea*, *H. pellicens* Portschinsky, 1879 and *H. meridionalis* Portschinsky, 1882.

DIAGNOSIS. The most important diagnostic characters of *H. portschinskyi* sp.n. are as follows: *f3* with 4 *av* (1.5–2x as long as femur width) setae in apical 1/3 (Fig. 14); *t3* in middle with long (3–3.5x as long as tibia width) downcurved at apex ventral seta (Fig. 14), 2–3 submedian *av*, 1 *ad*, 1 distinct *pd*.

Hydrotaea stackelbergi **sp.n.**
Fig. 15.

MATERIAL. Holotype ♂, THAILAND: ***Phang Nga*** prov., Khao Lak env., elephant camp, 8.760°N 98.284°E, 16–21.XII.2009, N. Vikhrev. Paratypes: 2 ♂♂ with the same label as holotype; 3 ♂♂, THAILAND: ***Phang Nga*** prov., Khao Lak env., elephant camp, 8.616°N 98.245°E, 14–17.XII.2009, N. Vikhrev.

DESCRIPTION. MALE. A dark species, body length: 3.6–4.1 mm.

Head. Eyes bare, upper facets enlarged. Fronto-orbital plates touch, distance between eyes equal to diameter of anterior ocellus. Fronto-orbital plates glossy, narrow; parafacials matt grey. Fronto-orbital plates with 8 pairs of inclinate setae. Gena and occiput black. Antenna short, black, arista almost bare. Palpi black.

Thorax black; scutum evenly and rather densely grey dusted. Chaetotaxy: *ac* rather strong in 2 rows, 3 + 5–6 pairs, without any additional hairs between rows; 2+4 *dc*; katepisternal 1+1, meron, katepimeron and notopleuron bare. Wing clear, calypters whitish, haltere with brown knob.

Legs black. *f1* with two typical ventral hooks at apex. *t1* without setae. *f2*: *p* surface with a complete row of setulae; *ad* and *av* surfaces in basal half each with 4–6 medium long (about as long as femur width) setae; *v* and *pv* surfaces in basal half with about 7 spines arranged in 2 irregular rows. *t2* with 2 strong *p* and 1 *ad*. *f3* with a complete row of 12–15 long (2x as long as femur width) *av* setae and with a complete row of about 15 long fine setulae on *v-pv* surfaces (Fig. 15). *t3* in submedian area with 1 *ad,* 1 *av* and 1 short *pv*. Tarsi not modified.

Abdomen black, distinctly grey dusted, with median vitta.

FEMALE unknown.

ETYMOLOGY. *H. stackelbergi* sp.n. is named in the memory of Russian dipterologist Alexander Stackelberg (Александр Штакельберг) (1897–1975).

DIAGNOSIS. The most important diagnostic characters of *H. stackelbergi* sp.n. are as follows: thorax evenly and rather densely grey dusted; calypteres whitish; *f3* with a complete row of 12–15 long (2x as long as femur width) *av* setae and with a complete row of about 15 long fine setulae on *v-pv* surfaces (Fig. 15); *t3* in submedian area with 1 *ad* and 1 *av*.

Identification key for the Eurasian species of the *Hydrotaea parva* group (♂♂)

1. *f3* with a complete sparse row of 8–15 long (at least 2x as long as femur width) *av* setae 2
– *f3* with 6 or less long *av* setae confined to apical part of femur 3
2. *f3* with a complete row of 12–15 long (2x as long as femur width) *av* setae and with a complete row of about 15 long fine setulae on *v-pv* surfaces (Fig. 15). *t2* without elongated *a* setulae; *ad* seta long and distinct. Mid tarsus not modified. *t3* with 1 *av* and 1 *ad*. *f1* with posterior hook not rounded, tooth-like. Calypters whitish. Scutum evenly and rather densely grey dusted .... *stackelbergi* sp.n.
– *f3*: with a complete sparse row of 8–10 long (2–3x femur width) *av* setae; 1 long *pv* at 2/3. *t2* in apical 2/3 with a row of elongated *a* setulae; *ad* seta shortened and not very conspicuous on background of of elongated *a* setulae (Fig. 11). *tar2–3* and *tar2–4* with elongated ventral setulae (Fig. 11) and widened. *t3* with 4 *av*, 1*ad* and 5 fine *pv*. *f1* with posterior hook rounded in posterolateral view, pinhead-shaped (Fig. 9). Calypters dark brown. Scutum black, with only trace of a brownish dusting on posterior part ..... *rotundentis* Shinonaga
3. *t3* with long (at least 3x as long as tibia width) downcurved at apex ventral seta(e), either 1 strong or several fine setae 4
– *t3* without long downcurved at apex seta(e) in ventral position 5
4. *t3* without *av*, *pv* or *pd*, with 1 *ad* and with about 4 long downward curved *v* setae around middle and 2–4 shorter *v* setulae (Fig. 6). *f3* with 1 *av* near apex, in basal 2/3 modified as in Fig. 6. *tar2–3* to *tar2–5* dilated and with elongated *v*-hairs. *f2* with 5 widely spaced ventral spines: 3 in basal half and 2 in apical half .... *atrisquama* Ringdahl
– *t3* in middle with 1 long and strong downcurved at apex ventral seta (Fig. 14); 2–3 submedian *av*, 1 *ad*, 1 distinct *pd*. *f3* with 4–5 *av* setae in apical 1/3 (Fig. 14). Tarsi not modified. *f2* in basal half with 4 strong *v* spines and 7–8 weaker *pv* spines ..... *portschinskyi* sp.n.
5. *t3* with 2–4 *av* setae and 1 or 3–4 *pv*. *f2* with 2 or 6–7 strong ventral spines in basal half. *f3* in basal 2/3 without a row of *v* hairs 6
– *t3* with only 1 *av* and without *pv*. *f2* without strong ventral spines. *f3* in basal 2/3 covered with fine *v* hairs (Fig. 12) ..... *elephans* sp.n.
6. *t3* in apical half with 3–4 fine *pv*. *f3* near apex apical half with 6 remarkably long *av* (Fig. 13). *f2* in basal half with 2 strong *v* spines and 5 weaker *pv* spines. Calypters dark ..... *ozerovi* sp.n.
– *t3* with 1 *pv* in basal 1/3. *f3* near apex with 2(3) *av*. *f2* in basal half with 2(3) strong ventral spines. Calypters whitish ..... *parva* Meade

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