

SHORT COMMUNICATION

A new species and two new synonyms of Mongolian *Nemotelus* (Diptera: Stratiomyidae)

Rudolf ROZKOŠNÝ & Jaromír VAŇHARA

Department of Botany and Zoology, Faculty of Science, Masaryk University, Kotlářská 2, CZ-611 37 Brno, Czech Republic;
e-mail: rozk@sci.muni.cz, vanhara@sci.muni.cz

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Abstract. *Nemotelus nartshukae* sp. nov. is described from Mongolia and its relationships are discussed. *Nemotelus kaszabi* Lindner, 1973 is proposed as a new synonym of *Nemotelus ilensis* Pleske, 1937 based on the examination of Lindner's paratype. *Nemotelus ventiflavus* Cui, Zhang & Yang, 2009 (= *N. ventriflavus* according to the present emendation) is apparently also conspecific with *N. ilensis* based on all the external characters as well as the male terminalia as defined and illustrated in the original description.

Key words. Diptera, Stratiomyidae, Nemotelinae, soldier flies, new species, new synonyms, Mongolia, Palearctic Region

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Introduction

The species of *Nemotelus* Geoffroy, 1762 are known from the Palearctic (80), Afrotropical (33), Nearctic (40), and Neotropical (45) Regions (WOODLEY 2001, 2011). Mongolian records are included in studies by Pleske in LINDNER (1937), BANKOWSKA (1968), NARTSHUK (1972, 1976), and LINDNER (1973). Nartshuk (in NARTSHUK & KANDYBINA 1984) designated lectotypes for Pleske's species deposited in the Zoological Institute of the Russian Academy of Sciences in St. Petersburg. Many problematic species were revised by NARTSHUK (1972, 1976) who revised the following diagnostic characters: the length and the shape of antennae, the rostrum of the head, the colour pattern of body parts, and (for the first time) structures of the male terminalia. Her studies enabled the description of a new species and a proposal of two new synonyms presented here.

Material and methods

The type material of the newly described species is deposited in the Department of Entomology in The Academy of Natural Sciences, Philadelphia (ANSP). It was collected during the project Mongolian Aquatic Insect Survey – MAIS (Principal Investigator and Director of MAIS: Jon K. Gelhaus) to document Mongolian aquatic

invertebrate diversity with respect to evolution, ecology and water quality (cf. ANONYMOUS 2018).

Two new synonyms of *Nemotelus ilensis* Pleske, 1937 in LINDNER (1937) are based on an examination of a male paratype of *N. kaszabi* Lindner, 1973 deposited in the Hungarian Natural History Museum in Budapest (HNHM) and its careful comparison with a recently described Chinese species *N. ventriflavus* Cui, Zhang & Yang, 2009.

The terminalia of the examined specimens were macerated in 10% KOH, rinsed with water and then preserved in glycerine and placed in a microvial on the specimen pin. Illustrations were made with an Olympus stereomicroscope and then imported into the Adobe Photoshop CS 4. Morphological terminology follows that of McALPINE (1981) as modified by CUMMING & WOOD (2009). Body lengths are given exclusive antennae.

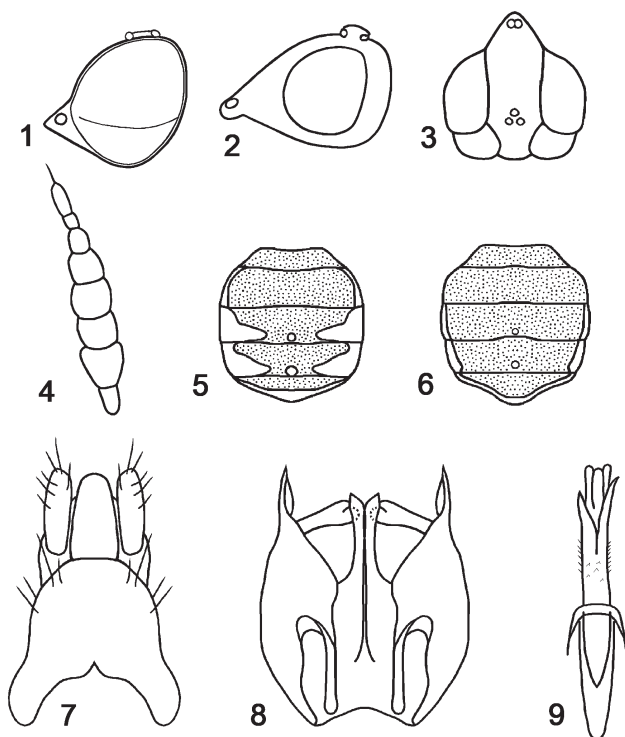
Taxonomy

Nemotelus nartshukae sp. nov.

(Figs 1–9, 17–20)

Type material. HOLOTYPE: ♂, Mongolia: Dalbay, 51°01'40.5"N, 100°45'60.0"E, 1670 m, 22.vii.2007, D. Song (ID 263), in ANSP. PARATYPES: 1 ♂ 1 ♀, Mongolia: Hovd Aimag, Tsookhar Nuur (salt lake), 10 km S Bulgan, N 46.03004°, E 091.62901°, elev. 1155 m, 12.vii.2009, J. Gelhaus 1234, Mongolia aquatic Insects Survey. MAIS 2009071201, both in ANSP.





Figs 1–9. *Nemotelus nartshukae* sp. nov. 1 – male head, lateral view; 2 – female head, lateral view; 3 – female head, dorsal view; 4 – antenna; 5 – male abdomen, dorsal view; 6 – female abdomen, dorsal view; 7 – dorsal part of male terminalia; 8 – ventral part of terminalia, with aedeagal complex, dorsal view; 9 – aedeagal complex, ventral view.

Diagnosis. Related to *N. pantherinus* (Linnaeus, 1758) but the male head without pale spot on the frons, different abdominal pattern in both sexes, and distinct male terminalia with two long, asymmetrical ventral spines on the aedeagal complex.

Description. Male. Head almost globular in profile, subtriangular rostrum about as long as eye length (Figs 1, 19). Eyes bare, distinctly touching before middle of frons in dorsal view. Upper facets larger and conspicuously separated from smaller lower facets in line, unusually, with middle longitudinal line of rostrum in profile. Head entirely black, without pale frontal spots. Antenna black, with spindle shaped and relatively slender flagellum. Last flagellomere relatively short, barely as long as two preceding flagellomeres combined (Fig. 4). Head pile white, predominantly short and fine, covering upper frons, rostrum and gena, also distinct in front of ocellar triangle, longest on lower gena.

Thorax black, only postpronotal lobe with small yellow spot, very narrow upper anepisternal margin brownish yellow and posterior margin of anepisternum narrowly shining yellow. Scutum, scutellum and postalar callus completely black. Wing hyaline including veins, vein R_4 present. Calypter white with whitish hairs, halter with darkened stem and whitish knob. Legs yellow with dark pattern: coxae black, trochanters brownish, femora yellow with blackish medial third, tibiae brownish yellow, fore and hind tibia each with narrow brown medial ring. Ring on hind tibia usually broader and almost black. All tar-

Tab. 1. Distinguishing characters of *Nemotelus nartshukae* sp. nov. and *N. pantherinus* (Linnaeus, 1758).

	<i>N. nartshukae</i> sp. nov.	<i>N. pantherinus</i>
Yellow frontal spot	absent	present
Dorsal part of male abdomen	black with limited yellow pattern	at least tergites 2 and 3 entirely yellow
Dorsal part of female abdomen	yellow lateral margin extended along posterior margin of tergites	yellow lateral margin not extended along posterior margin of tergites
Male aedeagal complex	with two asymmetrical elongate spines	only with small dense spines

someres whitish. Thoracic pile mostly whitish, hairs on prescutellar area reaching length of two basal antennal segments combined.

Abdomen shining black dorsally, with bright yellow margin beginning at posterior corners of tergite 2 and merging with yellow lateral spots on tergites 3 and 4 (Fig. 5). Small yellow, rounded or subtriangular medial spots present on tergites 2–4. Tergite 5 with broad yellow margin. Yellow margin on venter beginning at posterior corners of sternite 1 and gradually dilated to sternite 5 which is almost completely yellow. Also, very narrow anterior margin and extensive median parts of sternites 2–4 yellowish. Abdominal pile inconspicuous, mostly yellowish but partly black on dorsal black areas.

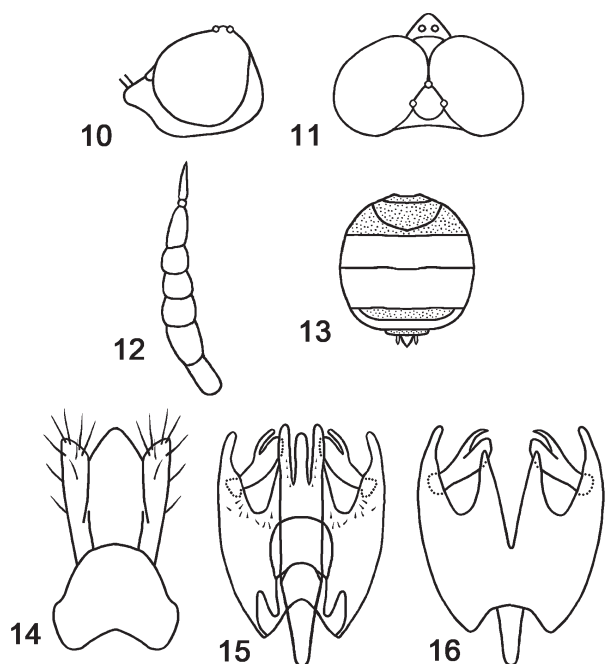
Terminalia. Male terminalia brownish to black with yellow cerci. Proctiger relatively narrow, slightly shorter than cerci, epandrium subtriangular, rounded posteriorly and distinctly emarginate anteriorly. Medial process of genital capsule bipartite, both parts relatively narrow, somewhat hook like and pointed distally, separated by unusually deep and narrow middle incision. Gonocoxites with long, pointed outer distal process as found in many other species of *Nemotelus*. Tripartite aedeagal complex slender and long, both lateral parts appressed to central tube, with small and dense marginal spines, two asymmetrical ventral spines unusually long.

Length. Body 6.5–6.7 mm, wing 5.7–5.8 mm.

Female. Head without pale frontal spots and with broad, almost parallel-sided frons. Rostrum slightly shorter than horizontal diameter of eye (1 : 1.2). Head pile silvery white, small, elongate postpronotal lobe ochre yellow, reddish brown upper margin of anepisternum narrow. Darkening of legs limited to middle third of femora, tibiae ochre yellow but hind tibia with a slight medial ring or completely yellow. Abdomen black with narrow yellow lateral margins, slightly expanded posteriorly on tergite 4, dorsal medial spots barely distinct on tergite 2, brown and reddish brown yellow lateral margin extended along posterior margin of tergites, round on tergite 4. Sternites 2 and 3 with transverse yellowish spots in middle.

Length. Body 6.4 mm, wing 6.5 mm.

Etymology. The species is named in honour of Prof. Emilia P. Nartshuk (Zoological Institute of the Russian Academy of Science, St. Petersburg), who elucidated the identity of many species of *Nemotelus* described by Theodor Pleske



Figs 10–16. *Nemotelus ilensis* Pleske, 1937. 10 – male head, lateral view; 11 – male head, dorsal view; 12 – antenna; 13 – male abdomen, dorsal view; 14 – dorsal part of male terminalia; 15 – ventral part of male terminalia with aedeagal complex, dorsal view; 16 – ventral part of male terminalia, ventral view.

with special attention to the Mongolian species (NARTSHUK 1972, 1976; NARTSHUK & KANDYBINA 1984).

Remarks. This new species is apparently related to the widely distributed *N. pantherinus*, that is well known from Europe, the Palearctic part of Africa and Transcaucasia. Eastwards it was recorded in Tajikistan and in Siberia (near Irkutsk, see ROZKOŠNÝ 1983). Different Palearctic popu-

lations of this species and its variability were examined by ROZKOŠNÝ (1977, 1983, 2000). According to present knowledge the distinguishing characters of this species (especially the male terminalia) are relatively stable and clearly defined (see Tab. 1).

New synonyms

Nemotelus ilensis Pleske, 1937

Nemotelus ilensis Pleske, 1937 in LINDNER (1937)

= *Nemotelus kaszabi* Lindner, 1973, **syn. nov.**

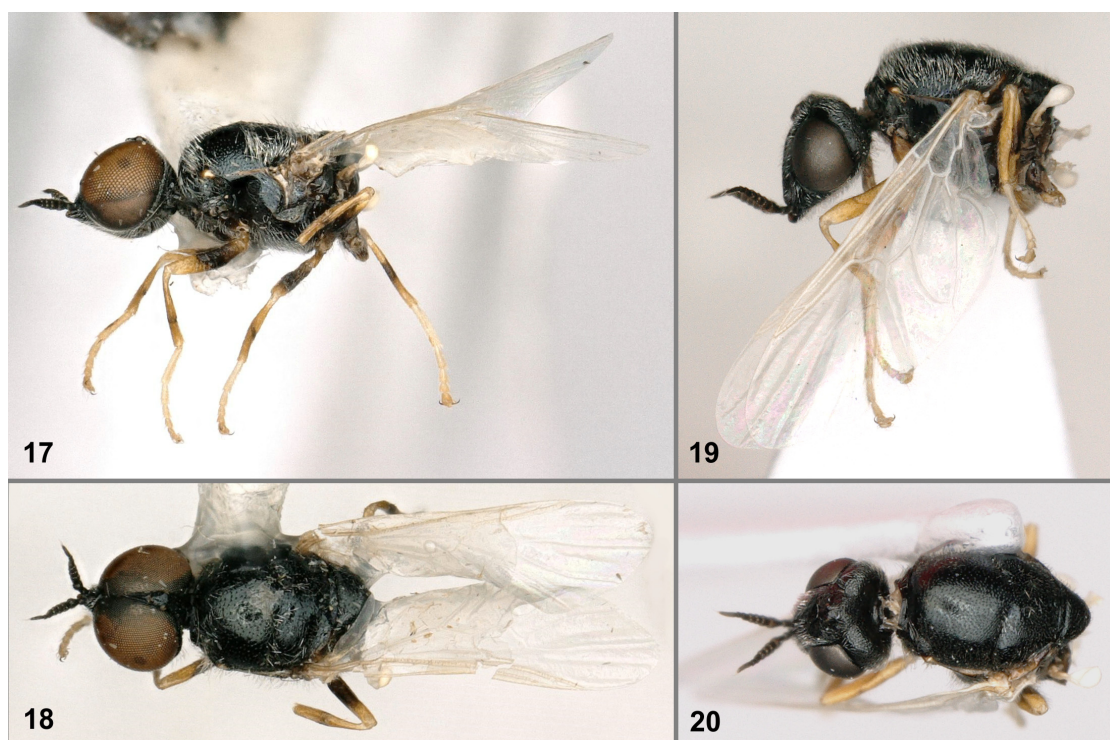
= *Nemotelus ventriflavus* [lapsus calami] = *N. ventriflavus* Cui, Zhang & Yang, 2009, **syn. nov.**

Type material examined. *Nemotelus kaszabi*: PARATYPE: ♂, Mongolia: Chovd Aimak, 10 km SSW von Somon Bulgan, 1200 m, 4–6. vii. 1966, Z. KASZAB (HNHM).

Additional material examined. MONGOLIA: 1 ♂, Bulgan Soum, Bulgan Gol – 4 km N Bulgan, N 46.13457, E 091.54169, elev. 1200 m, 11. vii. 2009, pools in floodplain, J. GELHAUS 1233; Mongolian Aquatic insects Survey. MAIS 2009 07 1003; 14 ♂♂, Hovd Aimag, Tsookhar Nuur (salt lake), 10 km S Bulgan, N 46.03004, E 091.62901, elev. 1155 m, 12. vii. 2009, J. GELHAUS 1234, Mongolia aquatic Insects Survey. MAIS 2009 07 1201, all in ANSP.

Taxonomy. *Nemotelus ilensis* was redescribed and illustrated by NARTSHUK (1972) who designated the lectotype from eastern Kazakhstan. We recently examined a male paratype of *N. kaszabi* Lindner, 1973, and it is conspecific, showing the same body pattern, relatively slender antenna, as well as structures of the male terminalia.

The specific name of CUI et al. (2009), *N. ventriflavus*, is apparently an incorrect original spelling (lapsus calami) of the intended name *N. ventriflavus* because the authors' etymology says: "The specific name refers to the yellow venter of the abdomen". Moreover, specific characters of *N. ventriflavus* are figured on their plate "Figs. 8–15"



Figs 17–20. *Nemotelus nartshukae* sp. nov, paratypes, abdomen detached. 17 – male, lateral view; 18 – male, dorsal view; 19 – female, lateral view; 20 – female, dorsal view. Both specimens without abdomen. Photos by I. Malenovský.

according to the original description but the legend under this plate refers to “*N. xinjianganus* sp. nov.”. Apparently, the legends under plates “Figs 8–15” and “Figs. 16–25” were erroneously changed and were later corrected in YANG et al. (2014). The figures of characters of *N. ventriflavus* clearly indicate that it is a synonym of *N. ilensis*.

The male terminalia indicate a close relationship of this species to *N. angustemarginatus* Pleske, 1937 but the yellow pattern on the male abdomen of the latter species is limited to the narrow lateral margin and small yellow spots in the middle of the tergites.

Distribution. Kazakhstan (WOODLEY 2001), Mongolia (LINDNER 1973, WOODLEY 2001; as *N. kaszabi*), and China (CUI et al. 2009, as *N. ventriflavus*).

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References

- ANONYMOUS 2018: *MAIS – Mongolian Aquatic Insect Survey*. http://clade.ansp.org/entomology/mongolia/mais_aboutProj.html (Accessed Oct. 25th, 2018).
- BAŃKOWSKA R. 1968: Materialien zur Kenntnis der Syrphidae, Conopidae und Stratiomyidae (Diptera) der Mongolei und der angrenzenden Gebiete. *Fragmenta Faunistica* **15**: 33–44.
- CUI W.-N., ZHANG T.-T. & YANG D. 2009: Four new species of *Nemotelus* from China (Diptera, Stratiomyidae). *Acta Zootaxonomica Sinica* **34**: 790–794.
- CUMMING J. M. & WOOD D. M. 2009: Adult morphology and terminology. Pp. 9–50. In: BROWN B. V., BORKENT A., CUMMING J. M., WOOD D. M., WOODLEY N. E. & ZUMBADO M. A. (eds): *Manual of Central American Diptera. Vol. 1*. NRC Research Press, Ottawa, Ontario, Canada, ix + 714 pp.
- LINDNER E. 1937: Stratiomyidae [part]. Lieferung 110. Pp. 97–144. In: LINDNER E. (ed.). *Die Fliegen der palaearktischen Region. Band IV*. E. Schweizerbart'sche Verlagsbuchhandlung (Erwin Nägele), Stuttgart, pp. 1–218.
- LINDNER E. 1973: 243. Stratiomyiden aus der Mongolei. Ergebnisse der Forschungen von Dr. Z. Kaszab in der Mongolei (Diptera). *Reichenbachia* **14**: 223–232.
- McALPINE J. F. 1981: Morphology and terminology – adults. Pp. 9–63. In: McALPINE J. F., PETERSON B. V., SHEWELL G. E., TESKEY H. J., WOOD D. M. (eds): *Manual of Nearctic Diptera, Volume 1*. Monograph No. 27. Research Branch, Agriculture Canada, Ottawa, 674 pp.
- NARTSHUK E. P. 1972: Stratiomyidae (Diptera) from the Mongolian Peoples' Republic. *Nasekomye Mongolii* **1**: 1–56 (in Russian, English title).
- NARTSHUK E. P. 1976: New data on the Stratiomyidae (Diptera) of the Mongolian Peoples' Republic. *Nasekomye Mongolii* **4**: 461–472 (in Russian, English title).
- NARTSHUK E. P. & KANDYBINA M. N. 1984: Family Stratiomyidae. Pp. 9–34. In: KANDYBINA M. N., KRIVOSHEINA N. P., NARTSHUK E. P. & OLSUFJEV N. G.: *Catalog of the type specimens in the collection of the Zoological Institute, Academy of Sciences of the USSR. Insecta, Diptera. No. 2. Families Coenomyiidae, Xylophagidae, Glutopidae, Xylomyidae, Stratiomyidae, Tabanidae*. Akademia Nauk USSR, Leningrad [= St. Petersburg], 56 pp (in Russian).
- ROZKOŠNÝ R. 1977: The West-Palaearctic species of *Nemotelus* Geoffroy (Diptera, Stratiomyidae). *Folia Facultatis Scientiarum Naturalium Universitatis Purkynianae Brunensis, Biologia* **51(3)**: 1–105.
- ROZKOŠNÝ R. 1983: *A biosystematic study of the European Stratiomyidae (Diptera). Vol. 2*. Series Entomologica 25. W. Junk, The Hague, Boston, London, 431 pp.
- ROZKOŠNÝ R. 2000: *Insecta: Diptera: Stratiomyidae. Süßwasserfauna von Mitteleuropa*, Vol. 21/18. Spektrum – Akademischer Verlag, Heidelberg, Berlin, 110 pp.
- WOODLEY N. E. 2001: A World Catalog of the Stratiomyidae (Insecta: Diptera). *Myia* **11**: 1–475.
- WOODLEY N. E. 2011: A World Catalog of the Stratiomyidae (Insecta: Diptera): A supplement with revisionary notes and errata. *Myia* **12**: 379–415.
- YANG D., ZHANG T.-T. & LI Z. 2014: *Stratiomyoidea of China*. China Agricultural University Press, Beijing, 870 pp.