TOMBO, **59**: 74-76. May 30, 2017

Short Communication

Note on *Othetrum melania* (Anisoptera: Libellulidae) from Kunashir Island with a reference to its subspecific status

Akihiko Sasamoto [1], Ryo Futahashi [2], Oleg E. Kosterin [3], Elena I. Malikova [4]

[1] 531-3 Oh, Tawaramoto-cho, Shiki-gun, Nara pref. 636-0345 Japan Email: akssmt@sea.plala.or.jp
[2] National Institute of Advanced Industrial Science and Technology (AIST), Central 6, Tsukuba, Ibaraki 305-8566 Japan Email: ryo-futahashi@aist.go.jp
[3] Institute of Cytology & Genetics SB RAS, Acad. Lavrentyev ave. 10, Novosibirsk, 630090, Russia Email: kosterin@bionet.nsc.ru
[4] Blagoveshchensk State Pedagogical University, Lenina str., 104, Blagoveshchensk, 675000, Russia Email: e_malikova@inbox.ru

Received 2016. Nov. 23/ Revised and accepted 2017. Feb. 20

Orthetrum melania (Selys, 1883) is widely distributed in eastern Asia, i.e. Japanese archipelago, including Kurile and Ryukyu Islands, Korean Peninsula, continental China, Taiwan (Sasamoto & Futahashi, 2013), and Vietnam (Kompier & Futahashi, 2016). This species has distinct geographical variations, therefore five subspecies are recognized based on genetic analyses and morphology (body maculation and range of wing brown patches etc.), i.e. *Orthetrum melania melania* (Selys, 1883) from Japanese archipelago, excluding Ryukyu islands, *O. m. ryukyuense* Sasamoto & Futahashi, 2013 from middle Ryukyu Islands, *O. m. yaeyamense* Sasamoto & Futahashi, 2013 from Yayeyama Islands, *O. m. continentale* Sasamoto & Futahashi, 2013 from Taiwan, continental China and Korea and *O. m. superbum* Kompier & Futahashi, 2016 from northern Vietnam.

The most northeastern population of this species is considered as that in Kunashir Island, southern Kurile Islands, located to east of Hokkaido Island. The population of eastern Hokkaido is known to inhabit around hot springs (Hirose & Ito, 1993; Kano & Hirose, 1999). Similarly, this species was repeatedly recorded at hot springs from Kunahir Islands in the faunal reports (Belyshev, 1965; Belyshev *et al*., 1976; Paulson *et al*., 1998). However, the specimens from Kunashir Island have never been figured, therefore it has not been clear which subspecies they are belong to, although it is geographically supposed as the nominotypical *melania*.

The third author, O. Kosterin took photographs of ten male specimens of this species in the collection of the Institute of Systematics and Ecology of Animals (Novosibirsk, Russia) (Figs. 1 & 2). These specimens were labelled as "Coll. B. Belyshev, Kurily, Kunashir, 11 VIII 68, Zolotarenko" (Fig. 2a), which shows a small discrepancy of data from "Kunashir, Alekhino, 5/VIII. 1968" in Belyshev *et al.* (1976), but is probably considered as the corresponding materials in the paper.

The fourth author, E. Malikova, observed, took photos and got specimens of both sexes in Kunashir Island during the field survey in the summer 2016. The detail results of this survey will be published in the near future.

Specimens examined and observation records (all from Kunashir Island, the specimens are in the collection of E. Malicova, except for the annotation)

10 ♂, "Kurily, Kunashir" [Alekhino (= Kotankeshi)], 11-VIII-1968, Zolotarenko leg. (originally in the collection of Belyshev, now in the collection of the Institute of Systematics and Ecology of Animals (Novosibirsk, Russia))

1 ♂ (photo), hot springs, Alekhino, 7-VII-2015, L. Sundukova; 1 ♀ (photo), the same, 23-VII-2015, L. Sundukova; 2♂ (Fig. 3), 1 ♀(photo), Valentina's spring, Tretjakovo [= Chibukaribetsu] (43° 59' 9.35" N, 145° 39' 16.95" E), 30-VII-2016, Malikova leg.; 1 ♂ (photo), warm spring, south of Cape Stolbchaty (44° 0′ 26″ N, 145° 40′ 60″ E), 31-VII-2016, M. Ivanchikova; 1 ♂1 ♀ (Fig. 4), hot springs, Goriachy Pliazh [= Seseki] (44° 00' 6.75" N, 145° 47' 29.1" E), 2-VIII-2016, Malikova leg.

The markings of wing of male in Kunashir population clearly indicate the characters of nominotypical *melania* subspecies, i.e. the range of basal black marking on hindwing comparatively developed, extending to between third and fourth antenodal veins, almost wholly covered the median space, and blue tints on veins narrower (Figs. 2b & 3)

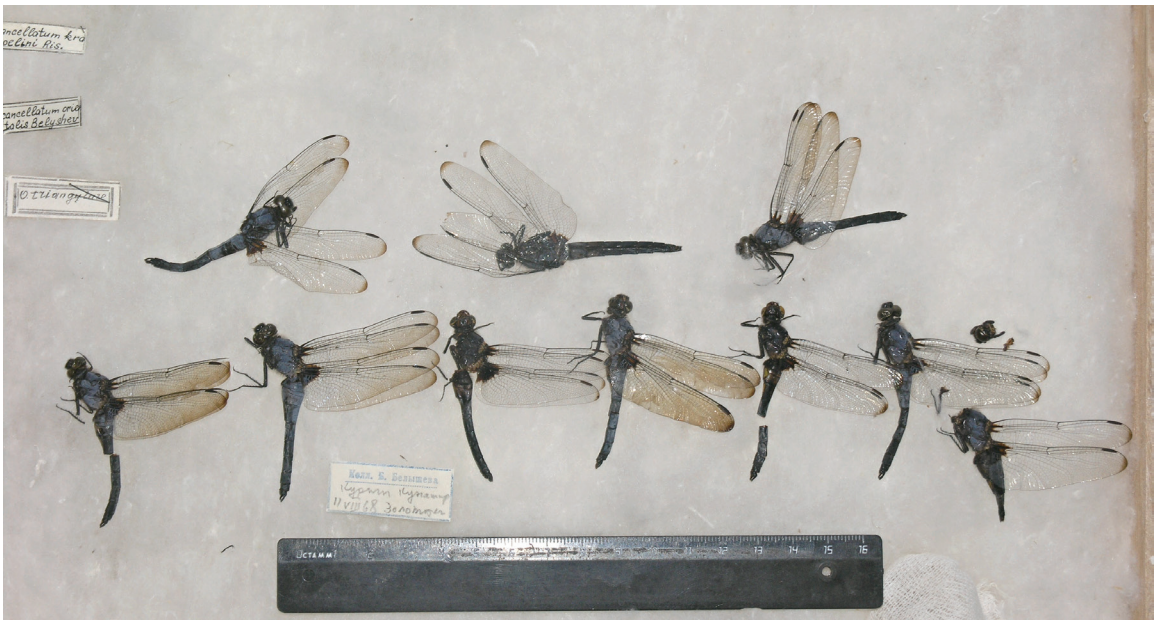

Fig. 1. The collection of ten *Orthetrum melania* male specimens from Kunashir Island, southern Kurile Islands, deposited in the Institute of Systematics and Ecology of Animals (Novosibirsk, Russia).

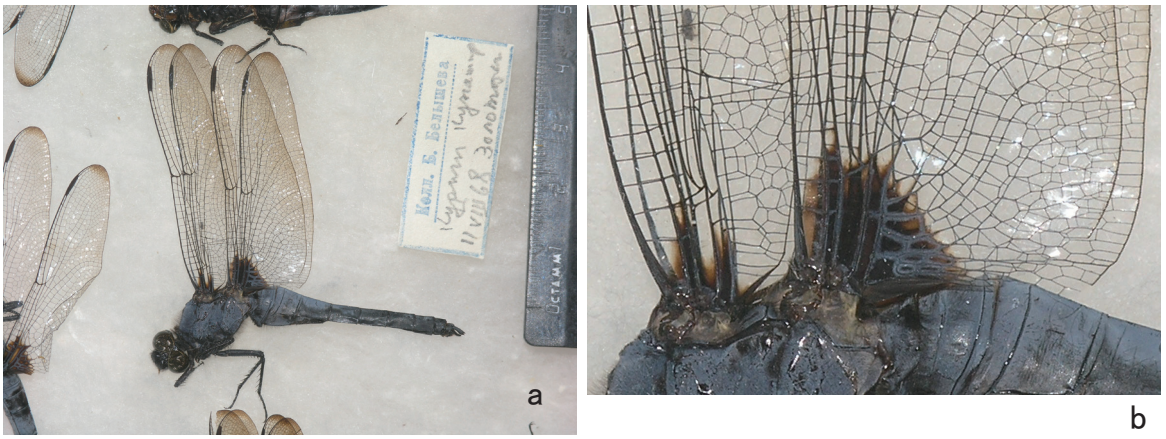

Fig. 2. A male specimen of the collection. a. whole body with the data label; b. the enlargement of wing, note that the range of basal black marking in hindwing and narrower blue tints on veins.

(Sasamoto & Futahashi, 2013). The female (Fig. 4) implies also well the characteristics of nominotypical *melania*, i.e. the thorax occupied with broadly black markings and the basal marking of hindwing blackish brown. Therefore, we can identify the Kunashir population as *Othetrum melania melania*.

Moreover, here we point out that the record of "*Pseudothemis zonata* (Burmeister, 1839)" from Kunashir Island by Paulson *et al.* (1998) was misidentified with *Orthetrum melania* (Paulson & Ubukata, *pers. comm.*).

We are sincerely thankful to Dr Dennis Paulson and Dr Hidenori Ubukata for supplying useful information and advices, and to Ms. Larisa Sundukova and Marina Ivanchikova for their records and photos of *Orthetrum melania* from Kunashir Island.

Fig. 3. A male specimen in the field, taken by E. Malikova (Valentina's spring, Tretjakovo, 30-VII-2016).

Fig. 4. A female specimen in the field, taken by E. Malikova (Goriachy Pliazh, Kunashir, 2-VIII-2016).

References

Belyshev, B.F., 1965. Novye dlya fauny SSSR rody i vidy strekoz (Odonata, Insecta) s Dal'nego Vostoka [New for the USSR fauna species of dragonflies (Odonata, Insecta) from the Far East]. *Zoologicheskiy Zhurnal*, **44** (4): 611–613.

Belyshev, B.F., G.S. Zolotarenko, & A.G. Velizhanin, 1976. Odonatofauna Yuzhnykh Kuril'skikh ostrovov i nekotorye voprosy ee struktury i formirovaniya. *Trudȳ Biologicheskogo Instituta, Sibirskoe Otdelenie, Akademiya Nauk SSSR, Novosibirsk Nauk SSSR*, **18**: 165–174. [In Russia]

Hirose, Y. & S. Ito, 1993. *A Guide to the Dragonflies of Hokkaido*. 187 pp., Abashiri.

Kano, K. & Y. Hirose, 1999. [*Orthetrum triangulare melania* dependent on hot springs in cold area]. *Gekkan-Mushi*, (341): 16–17 [In Japanese]

Kompier, T. & R. Futahashi, 2016. A new subspecies of *Orthetrum melania* from Vietnam (Odonata: Libellulidae). *Tombo*, **58**: 27–33.

Paulson, D.R., N. Minkawa & R.I. Gara, 1998. Recent collections of Odonata from the Kuril Islands. *Species Diversity*, **3**: 75–80.

Sasamoto, A. & R. Futahashi, 2013. Taxonomic revision of the status of *Orthetrum triangulare* and *melania* group (Anisoptera: Libellulidae) based on molecular phylogenetic analyses and morphological comparisons, with a description of three new subspecies of *melania*. *Tombo*, **55**: 57–82.

摘要：笹本彰彦・二橋 亮・Oleg E. Kosterin・Elena I. Malikova：国後島におけるオオシオカラトンボの記録とその亜種についての言及 ― 千島列島国後島産のオオシオカラトンボ *Orthetrum melania* を図示し，その形態的特徴から原亜種の *melania* であると同定した。国後島の個体群は種オオシオカラトンボの東北限に当たる個体群である。あわせて同島から過去に記録のあったコシアキトンボ *Pseudothemis zonata* はオオシオカラトンボの誤同定であることを指摘した。