

SHORT COMMUNICATIONS

ON THE NATURE OF
ISCHNURA ARALENSIS HARITONOV, 1979
(ZYGOPTERA: COENAGRIONIDAE)

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The original description is revised. Both sexes are best characterized by the presence of a peculiar leaf-like structure on the hind ridge of the laminae mesostigmatales. A recent record of 2 ♀ from lake Balkhash, presumably based on a defective figure in the original description, is rejected. The sp. is only remotely allied to other regional *Ischnura*, and might be a Pliocene relict.

INTRODUCTION

In a recent note, REINHARDT (1995) gives an overview of the few existing records for the damselfly *Ischnura aralensis* Haritonov, 1979, and reports two females from Lake Balkhash in Kazakhstan. Unfortunately, this record is a misidentification, as can be seen from the photographs used in substantiation of the claim. The animals shown are really females of either *I. fountaineae* Morton or *I. evansi* Morton, with a high probability for the former. However, the error is also quite understandable, as will be explained hereafter. The objective of the present note is to precisely clarify the status of *I. aralensis*, by providing new illustrations that will hopefully make a correct identification possible in the event of future records.

HARITONOV's DESCRIPTIONS

When A. Yu. HARITONOV [=Charitonov] (1979) described *I. aralensis* as a new species, he had only a single female before him, collected at Lake Karasevo, in the Kizil-Orda district, middle Syrdarya valley (collection date: 8-VI-1976). His description is fair, but the illustrations fail to show the most characteristic feature of the species, i.e. the structure of the lamina mesostigmatales (which, admittedly,

because of its strong relief, is somewhat hard to represent in three dimensions). His figs 2-3 (loc. cit., p. 6) suggest the characteristic elevation at mid-point of the hind ridge of the pronotum, but this, in itself, is not sufficient to identify the species beyond doubt. The lamina mesostigmalis is depicted as simply triangular. This is both erroneous and misleading (see further), and explains the faulty identification of REINHARDT (1995). In 1988, HARITONOV returned to this (and other) *Ischnura* species, now giving a good illustration of the male terminalia, as well as an extensive list of the material then in his custody. The male terminalia are sufficiently distinctive to exclude confusion with congeners. However, although the existence of a heterochromatic female is now revealed, no new figures are given for this sex, such that its identification, using available illustration, remains problematic.

I will hereafter attempt to fill this lacuna, based on a couple of specimens kindly donated to me by Dr A. Yu. Haritonov at the occasion of my visit to his laboratory in Novosibirsk in July 1992.

ADDITIONS TO ORIGINAL DESCRIPTIONS

FEMALE. – Aralskoe more [Lake Aral], Moujnak, 1-VIII-1976. – This locality is situated in the delta of the Amudarya river, at the point where it discharges to the Lake Aral. It is the westernmost locality shown on REINHARDT's (1995) distribution map.

In habitus, this female agrees tolerably well with the original description, except that the tergum of the 8th abdominal segment is fully blue, not half dark. The vulvar spine is large. The rhomboidal pterostigma is of similar size in both pairs of wings and unicolorous. The dorsum of the head is largely black, with two small, blue postocular spots. The dorsum of the pronotum too is largely black, as well as the dorsum of the synthorax, which shows two blue-green antehumerals, springing at the base of the laminae mesostigmales, but almost immediately constricting, and fully obliterated after ca 1/5 of the length of the synthorax. Flanks of synthorax fully greenish blue, with only a finest black stripe on the dorsal third of the second suture.

Hind ridge of pronotum almost straight, with a tubercle in the middle (Fig. 1). Lamina mesostigmalis narrowly triangular, with 4/5 of its caudal rim expanded into an erected, leaflike structure, conspicuously blue coloured in hind sight. Carinal fork almost non-existent (Figs 1-3).

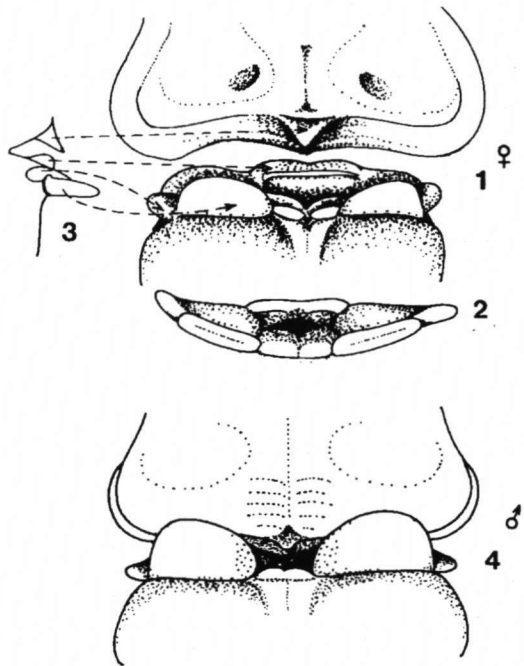
MALE. – Lake Beskoul, Talde-Kurgan district, 8-VI-1979.

Dorsum of head black, save for two small, blue postocular spots. Dorsum of pronotum largely black. Hind ridge of pronotum with a small tubercle in the middle, distinctly weaker in development than in the female, but in exactly the same position (Fig. 4). Lamina mesostigmalis as in the female, with the upright leaflets possibly even more strongly expressed (Fig. 4), their blue colour conspicuous in

hind view and contrasting with the pterothorax which is fully black dorsally (no antehumerals present). Flanks of pterothorax live blue. Abdomen black dorsally, save segment 8, which is blue. Terminalia as in HARITONOV (1988; p. 34), i.e. app. sup. and app. inf. relatively short; app. sup. sending a sharp tooth mediad from its midventral corner, and app. inf. block-shaped with smallish tooth at their upper outer angle, directed mediad. Pterostigma as in female, i.e. not bicolorous.

DISTINCTIVENESS AND STATUS

It will be clear that the outstanding discriminating character of this taxon is the structure of the lamina mesostigmalis, a character which is strongly expressed in both sexes, and found in no other palaeartic or oriental *Ischnura* known to the present author. The distinctiveness of this character, linked to the nature of the pterostigma is such that it gives *aralensis* by itself the status of a "group" within *Ischnura*. The male appendages show a vague resemblance to those of *I. fountaineae*, but in all other respects, both are so different that they can be only remotely related.



Figs 1-4. *Ischnura aralensis*: (1) female, hind ridge of pronotum and lamina mesostigmalis, seen obliquely from behind (the two slight, oval-shaped depressions on the median lobes might represent copulation marks); - (2) the same, from above; - (3) the same, schematic representation of a lateral view, to illustrate the relief; - (4) male, pronotum and lamina mesostigmalis, seen obliquely from behind.

RANGE

The geographic range indicated by REINHARDT (1995) is correct, save for his own Lake Balkhash record (although I consider it not to be impossible that the species really occurs there), but our knowledge of the distribution of this species, which, by its occurrence in the Ural is potentially part of the fauna of Europe, would certainly benefit from more field work. It seems clear that the Aral Lake has played a major role in the genesis of its range, and its extension to the Ural probably resulted from dispersal along the relatively wet corridor of the Tungajsk de-

pression in the North. In the South and East, it were evidently the rivers Amudarya and Syrdarya that served as pathways.

ATAMURADOV (1994), in discussing the geology of Turkmenistan, depicts the progressive aridisation of the range now inhabited by *I. aralensis* across the Tertiary, as the Himalayan and central Asian mountain chains uplifted. He stresses that the Aral Lake is part of Middle Asia (as opposed to Central Asia which, in the terminology of the Russian workers, refers to an area East of Middle Asia, i.e. roughly, arid western China), and displays a level of endemism that reaches the generic level in many groups of animals. By their vagility, few dragonflies have narrow ranges, and endemism to biogeographic provinces at the genus level is extremely uncommon (the genus *Ischnura*, in the present case, is in fact nearly cosmopolitan). Therefore, the fact that a species like *I. aralensis* shows a combination of such a well defined range and morphology is indicative of an origin in situ that might well go back to the Pliocene. STAROBOGATOV (1994) includes the Amudarya fauna in a specific zoogeographic superprovince, the Sogdian-Tibetan, characterized by the endemic status of its biota, e.g. the molluscs. This is where also *I. aralensis* seems to belong. Typical of this territory, bounded to the West by a chain of deserts, of which the Karakum is most northerly situated, is a faunal break, with many related but different species appearing West of it. With *I. aralensis* co-occurs *I. forcipata* Morton, for example, but in the Kopet Dag, on the western side of the Karakum, it is replaced by *I. intermedia* Dumont (DUMONT & BORISOV, 1995).

REFERENCES

- ATAMURADOV, K.I., 1994. Paleogeography of Turkmenistan. In: V. Fet & K.I. Atamuradov, [Eds], Biogeography and ecology of Turkmenistan. *Monogr. biol.* 72: 49-64.
- [CHARITONOV, A. Yu., see Haritonov, A. Yu.]
- DUMONT, H.J. & S.N. BORISOV, 1995. Status and range of the species-pair *Ischnura forcipata* Morton, 1907 and *Ischnura intermedia* Dumont, 1974 (Insecta: Odonata: Coenagrionidae). *Biol. Jaarb. Dodonaea* 62: 157-163.
- HARITONOV, A. Yu., 1979. Noviy vid strekozy roda *Ischnura* Charp. (Odonata, Coenagrionidae) iz yuzhnogo Kasahstana. [A new species of the genus *Ischnura* (Charp.) from southern Kazakhstan (Odonata, Coenagrionidae)]. *Trudy vsesoyuz. Obshch. ent.* 61: 5-7. – [Russ.].
- HARITONOV, A. Yu., 1988. Strekozy roda *Ischnura* Charp. (Insecta: Odonata) fauny SSSR. [Dragonflies of the genus *Ischnura* in the fauna of the USSR]. In: G.S. Zalotareno, [Ed.], *Taksonomiya zhivotnyh Sibiri*, pp. 32-46. Akad. Nauk SSSR, Novosibirsk. – [Russ.].
- REINHARDT, K., 1995. Dragonfly records from Lake Balkhash, Kazakhstan. *Notul. odonatol.* 4: 82-85.
- STAROBOGATOV, Y.I., 1994. Fauna and zoogeography of molluscs of Turkmenistan. In: V. Fet & K.I. Atamurodov, [Eds], Biogeography and ecology of Turkmenistan. *Monografii Biol.* 72: 535-543.