

**THE FIRST RECORD OF *ANAX* ON THE WEST SIBERIAN PLAIN: *A. P. PARTHENOPE* SELYS IN OMSK (ANISOPTERA: AESHNIDAE)**

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**Abstract** – A freshly emerged ♀ was collected in the city of Omsk (55°57'N, 73°22'E) on 8-VI-2007 at an oxbow of the Irtysh R. influenced by sinks of a deep ground mineral water. This is the northernmost *A. parthenope* record in Siberia and the first record in the West Siberian Plain. Perhaps presently the sp. is colonizing Siberia from the South. At the same locality, *Cordulia aenea* was also recorded, which was previously reported for Omsk by S.D. LAVROV (1927, *Proc. sib. Inst. Agric. Forestry* 8/3: 51-100), but it was not found there in the 1970-80s by O.E. KOSTERIN (1996, *Acta hydroent. latvica* 3: 10-21).

**Introduction**

In his famous monograph, *Dragonflies of Siberia*, BELYSHEV (1973) reported the first record of *Anax parthenope* Sel. for Siberia in its narrow sense, without the Far Eastern regions, which was based on his sighting at Lake Gusinoe in Buryatia, Transbaikalia. Subsequently the Siberian records started to accumulate: BELYSHEV & BELYSHEV (1976) reported a young female collected by A.M. Maloletko as it emerged from Lake Aya in North Altai on 8 July 1971, DRONZIKOVA (2000) found

the species in 1994 and 1997 within the city of Novokuznetsk and in 1998 at the town of Tashtagol, Kemerovo province, KOSTERIN (2004) reported the species for Transbaikalia: Lake Nizhnii Mukei at the Mongolian border in Onon district of Chita province (found in 1995) and the Alkhanai Mt in the Aginskii Buryat National Region (found in 1996). There exist several records from Tyva Republic ('Tuva' in the traditional Russian spelling) in southern Central Siberia: a female collected in 1970 by I.B. Knor at Lake Ubsu-Nur and a number of specimens observed and collected in the Central Tuvian Hollow at Lake Khadyn, in Kyzyl and at the Khayyrakaan Mt in 2004 by O.E. Kosterin (unpublished). The Transbaikalian records concern *A. parthenope julius* Brauer, the Central and West Siberian records concern the nominotypical subspecies. All these records were made in the low mountains or intermontane hollows of southern Siberia. At the borders of Siberia, the species was recorded in the Ural Mts from several localities between Magnitogorsk and at Sverdlovsk (presently Ekaterinburg), that is within 53°22'-56°51'N (BELYSHEV, 1973; YANYBAEVA et al., 2006) and in E Kazakhstan, at Lake Zaisan (BELYSHEV,

1973). Here I report the first record of this species in the centre of the West Siberian Plain, in Omsk.

In addition, a recent record of *Cordulia aenea* (L.) from Omsk is also stated. The species was reported for Omsk by LAVROV (1927) but it was not encountered there by me in the 1970-80s.

#### The records

A young *A. p. parthenope* female (Fig. 1) was taken on 8 June 2007 on the territory of the 30<sup>th</sup> Anniversary of Victory Park within the city of Omsk (55°57'N, 73°22'E; 77 m a.s.l.). This park occupies a large and slightly disturbed portion of the Irtysh river left floodplain (presently not inundated). On this plain, within 150-600 m from the left Irtysh arm (400 m at the collecting point), there is an 1.3 km long section of a former oxbow, called Zamaraika, which is now fragmented and impounded by a road embankment. Further in the text the name Zamaraika will be conventionally used for the very oxbow section where the discussed record was made. It is 20-30 m wide, has a slightly brackish and somewhat turbid water but, according to local fishermen, it is inhabited by fish: *Carassius carassius* (L.) and *Rutilus rutilus lacustris* (Pall.). Both banks are overgrown with a stripe of reed, in the water grows a *Potamogeton* species with filiform leaves (Fig. 2). At the southern end of Zamaraika there is a local 'Mechta' spa which utilises a hot (37.9°C) mineral water of a chloride-bromide-potassium type, with a salinity of 5.0-5.4 g/l and pH = 7.65, from a 1540 m deep bore-well (kindly communicated by Mr V.B. Grankin, the spa chemist). This water sinks into Zamaraika, which does not freeze in winter for several dozens of metres around the pipe. However, the dragonfly was encountered about 700 m North along Zamaraika, where the sink may influence salinity but hardly the temperature. Between the spa and the record site there is a brook, in a (most probably artificial) ravine, being an outflow of Zamaraika into the Irtysh.

June 8 was the first relatively warm (ca +17°C) and sunny day, although windy, after a three week period of cold and rainy weather which delayed general phenology (although in April and early May it went quite ahead of schedule). The female, still dull coloured and

with glistening wings, was startled, at about 6 p.m., from the grass at the bank, flew several metres and sat, then again was startled and flew several metres and sat onto grass, where it was photographed and collected. Its young condition left no doubt it had emerged from the very oxbow. The specimen is presently kept in the author's collection.

Remarkably, on 8 July 2006, I observed (for ca 15 min) a fulvous-yellow aeshnid, of the size and habitus fit to *A. parthenope*, patrolling at a crossroad in the centre of Omsk, 3-5 m above the ground (and traffic).

Simultaneously with the above *A. parthenope* female, the Zamaraika banks were frequented by *Sympecma paedisca* (Br.) (moderately abundant, mature), *Ischnura elegans* (vander L.) (scarce, very young and teneral, in grass), *Libellula quadrimaculata* L. (scarce, in reeds) and scarce individuals of *Coenagrion armatum* (Charp.), *C. lunulatum* (Charp.), *C. pulchellum* (vander L.) (one young ♂), *Enallagma cyathigerum risi* Schmidt, and *Erythromma n. najas* (Hans.). At the nearby edges of the wood, there occurred *Leucorrhinia rubicunda* (L.) (scarce, mature) and *Orthetrum cancellatum orientale* Belyshev (abundant, young). The other species, recorded on Zamaraika in the previous years later in the season (cf. KOSTERIN, 1996) were: [few] *Lestes barbarus* (Fabr.), *L. dryas* Kirby, *L. macrostigma* Eversm., *Aeshna affinis* (Vander L.) *A. viridis* Eversm., *Sympetrum sanguineum* (Müll.) and [numerous] *Lestes sponsa* (Hans.), *Aeshna grandis* (L.), *A. mixta* Latr., *Somatochlora metallica* (vander L.), *Sympetrum danae* (Sulz.), *S. flaveolum* (L.) and *S. vulgatum* (L.).

Another interesting record was made on 10 June, 2007. Among bushes about 50 m from Zamaraika I encountered a sitting *Cordulia a. aenea* (L.) female, while the male of the same species was observed patrolling a sunny gap between tree groves between Zamaraika and the Irtysh. Both specimens were collected.

#### Discussion

With the present record, Omsk becomes the northernmost known locality of *A. parthenope* in Siberia. Interestingly, the species was not recorded at two, more southerly situated localities in the West Siberian Plain, though their odo-

nate fauna was thoroughly investigated, viz. (1) at the Biological Station of Karasuk, southern Novosibirsk province (ca 53°30'N), extensively monitored in the 1970s by V.V. Zaika and since the 1990s by S.N. Borisov; and (2) at Nezhinka village, Kokchetav province, N Kazakhstan (ca 52°45'N), investigated in 1982-1983 by A.Yu. Haritonov, G.S. Sukacheva and myself.

Since the early 1970s, I am regularly visiting Zamaraika (several times a year) and hardly any novelties were discovered after the publication of the checklist of Omsk (KOSTERIN, 1996). The sole noteworthy supplementary addition to the latter concerns *Calopteryx splendens* (in that paper erroneously referred to as "*Calopteryx* sp."). On the left arm of the Irtysh, in the 30th Anniversary of Victory Park, the scarce androchromous females of this species were found on 19 August 2005 (1 individual) and during 28-30 June 2006 (3 individuals). Of these, 3 specimens have all wings coloured to the tip, while 1 specimen is referable to *f. faivreii*, having the forewings gradually lightening to the tips.

No doubt, (1) in the 1970-80s, *A. parthenope* did not occur at Zamaraika, and (2) the female brought on record here was autochthonous at the locality. Consequently, we are faced either with a case of temporary breeding, or with a recently established population. The species is well known for its dispersal ability and it may easily colonise new adequate habitats. Although some of the recent Siberian findings of this species (BELYSHEV & BELYSHEV, 1976; DRONZIKOVA, 2000; KOSTERIN, 2004) may refer to occasional breedings, they do obviously indicate that *A. parthenope* is now colonising southern Siberia, the climate of which may have become milder in the recent decades, due to the Global Warming. The consequences of the latter are being addressed by numerous authors (e.g. PARMESAN et al., 1999: Lepidoptera; PAULSON, 2001: Odonata). In the immediate vicinity of Omsk, a temporary and quite large population of the butterfly *Zegris epheme* (Esper) was discovered in 2001 (KOSTERIN & PONOMAREV, 2002), that is 500 km N of the previously known records of this species, but apparently, it seems to have become extinct by now. In the northern Omsk province were recently also found the previously unre-

corded butterflies *Apatura iris* (L.), *Maniola jurtina* (L.) (KNYAZEV & KOSTERIN, 2003) and *Argyronome laodice* (KOSTERIN et al., in press). Thus, at least in butterflies, some probable cases were recorded of recent colonisation of Omsk province by species preferring a mild climate.

It is worthwhile to note that our *A. parthenope* female was found in Omsk after an exceptionally warm winter (2006/2007), and on an oxbow with some influx of hot deep-ground water.

Provided the above outlined trends are to continue, it is likely *A. parthenope* will become established in the Omsk region and the discovery of some other southern species is to be expected.

*Cordulia aenea* has not been found by me in Omsk previously, therefore it was not included in my checklist (KOSTERIN, 1996), although it was expected. LAVROV (1927) reported from Omsk both *C. aenea* and *Somatochlora metallica*, noting that the former was rare. I suppose, it is so much inferior in abundance to the habitually similar *S. metallica* that it originally escaped my notice. Recently I managed to find the phenologically earlier *C. aenea* before the emergency of *S. metallica*.

**References** — BELYSHEV, B.F., 1973, *Dragonflies of Siberia*, Nauka, Novosibirsk (in Russian); — BELYSHEV, B.F. & N.B. BELYSHEV, 1976, *Voprosy entomologii Sibiri* 9: 151 (in Russian); — DRONZIKOVA, M.V., 2000, *Strekozy basseina reki Tom' (fauna i raspreделение, ekologicheskie i etologicheskie osobennosti vidov)*. Diss. Cand. Biol. Sci., Inst. Anim. Syst. Ecol., Novosibirsk (in Russian); — KNYAZEV, S.A. & O.E. KOSTERIN, 2003, *Euroasian ent. J.* 2: 193-194; — KOSTERIN, O.E., 1996, *Acta hydroent. latvica* 3: 10-21; — KOSTERIN, O.E., 2004, *Odonatologica* 33: 41-73; — KOSTERIN, O.E., S.A. KNYAZEV, A.A. POTEIKO, K.B. PONOMAREV & T.F. KOSHELEVA, [in press] *Euroasian ent. J.* (in Russian); — KOSTERIN, O.E. & K.B. PONOMAREV, 2002, *Euroasian ent. J.* 1: 111-114; — LAVROV, S.D., 1927, *Proc. sib. Agric. Forestry* 8(3): 51-100 (in Russian); — PARMESAN, C.P., N. RYRHOLM, C. STEFANESCU, J.K. HILL, C.D. THOMAS, H. DESCIMON, B. HUNTLEY, L. KAILA, J. KULLBERG, T. TAM-

MARU, W.J. TENNENT, J.A. THOMAS & M. WARREN, 1999, *Nature, Lond.* 399: 579-583; – PAULSON, D.R., 2001, *Int. J. Odonatol.* 4: 57-69; – YANYBAEVA, V.A., H.J. DU-

MONT, A.Yu. HARITONOV & O.N. POPOVA, 2006, *Odonatologica* 35: 167-185.

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