Lesser Emperor *Anax parthenope* (SELYS, 1839) (Odonata: Aeshnidae) – a New Dragonfly Species in Latvia

MĀRTIŅŠ KALNIŅŠ

Nature Protection Agency, Baznīcas iela 7, LV-2150, Sigulda, Latvia; e-mail: martins.kalnins@daba.gov.lv

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Abstract: In 2008 and 2009, Lesser Emperor *Anax parthenope* has been found at five localities in Latvia. The dragonfly is a new species for Latvian fauna. 59 dragonfly species of nine families have been recorded in Latvia so far, inter alia two or three temporary immigrants and one species with unclear status.

Key words: Odonata, Aeshnidae, *Anax parthenope*, fauna, distribution, Latvia.

Introduction

A. parthenope is widespread over most of Europe, from the Iberian Peninsula to Russia, and from southernmost islands to Lithuania. Its range extends also through Asia and Africa reaching Japan, China, and Sahara (Askew 1998, Kalkman 2006, Fauna Europaea 2008).

Till now 58 species of nine families of dragonflies have been recorded in Latvia, including two temporary immigrants – *Anax ephippiger* (BURMEISTER, 1839) and *Sympetrum fonscolombii* (SELYS, 1840), and one species with unclear status – *Aeshna caerulea* (STRÖM, 1783) (Spuris 1993, Rintelen 1997, Kalniņš 2002, Bernard 2003). It seems also that *Orthetrum brunneum* (FONSCOLOMBE, 1837) found in 2005 (Kalniņš 2007) was only temporary found in Latvia.

The current publication is summarizing all data on Lesser Emperor *Anax parthenope* (SELYS, 1839) findings in Latvia.

Methods

The first search focused on *A. parthenope* in Latvia was made in 2005, when Dr. Rafal Bernard (Adam Mickiewicz University, Poznań, Poland), together with the author were inspecting Lake Riču in extreme SE part of Latvia. Unsuccessful search for exuviae and adults was made in NE part of the lake in August.

Since 2005, in all cases when *Anax* individuals were observed or its exuviae collected, the author has tried to recognize a species more accurately. For field observations of adults (without catching them) binoculars with magnification 10x42 have been used. Additionally, all *Anax* specimens, deposited in the author's collection and in the collection of the Natural History Museum of Latvia, were verified.

In 2008 and 2009, adults of *A. parthenope* were collected by the use of entomological net, or recorded in the field by direct observations. All data are included in the database of distribution of invertebrates of Latvia, made by author (about *Anax* together with literature data – totally 91 records).

Results

In the collection of the Natural History Museum of Latvia, 3 specimens of *Anax imperator* have been found, and in the author's collection – two additional specimens of this species. Between 2006 and 2008 the author observed (or identified on photographs) *Anax* adults from 9 localities (17 individuals) and collected 8 exuviae from 4 localities. Only *A. imperator* was represented in these data.

However, in 2008, also *A. parthenope* was recorded in Latvia by the author. On 5 June 2008, during the dragonfly studies in Aizkraukle district**,** Koknese environs, in Rīteri dolomite

quarry (GCS_LKS_1992 TM: x591818 y6275811), one or two patrolling males of *A. parthenope* were observed.

During the accidental visit of Lake Mazais Baltezers near Baltezers village (GCS_LKS_1992 TM: x519428 y6322650), one or two patrolling males and probably one female of *A. parthenope* were observed in July 14, 2008. To confirm this observation the locality was visited again in July 19, 2008. Then male and female of *A. parthenope* were observed again. The male was caught and identified.

Another specimens were identified during the analysis of photographs taken near Mežvidi 3 house (Daugavpils district**,** Laucese parish, GCS_LKS_1992 TM: x656508 y6186630). One freshly emerged male was photographed in June 28, 2008 (Figure 1, photo by V.Vankov, det. M.Kalniņš and R.Bernard). Photography was taken in the afternoon and the male was observed once (V.Vankov pers. comm.).

A. parthenope was recorded in Latvia also in 2009. V.Spuņģis during the insect studies in Tukums district**,** Bērzciems environs, at the E bank of the Lake Engure (GCS_LKS_1992 TM: x447777 y6346653), three patrolling males of *A. parthenope* were observed in June 28, 2009. Another specimen was identified during the analysis of photographs taken near Muižnieki house, near Lake Usma (Kuldīga district**,** Renda parish (GCS_LKS_1992 TM: x390995 y6335404). One male was photographed in July 5, 2009 (photo by A.Klepers, det. M.Kalniņš).

Discussion

The flight season of the *A. parthenope* in the Mediterranean lasts from March to November, but in the northern regions – mostly from June to August (Kalkman 2006). The record made in June 5, 2008 in Latvia can be considered as early flight in this northernmost location. Although Schiemenz (1953) mentioned, that this species in Germany can fly in the spring also.

The *A. parthenope* in the Mediterranean countries is common, and becomes scarcer northwards, although can be abundant locally. It has expanded its range since the 1990s and northwards vagrancy is more often observed (Kalkman 2006). *A. parthenope* is a frequently migrating species, sometimes making mass migrations including a high proportion of immature individuals (Gambles 1960, Corbet 2004).

The species inhabits stagnant water bodies, such as ponds and lakes (Askew 1998, Kalkman 2006).

The species occurs in southern and eastern Lithuania where it was observed close to the Latvian border (Aidukaitė 2007, R.Bernard pers. comm.).

The locality in Rīteri is a part of old dolomite quarry. The dolomite quarry is located in a relative open landscape. At present, the coasts are partly overgrown by birch *Betula* sp., pine *Pinus sylvestris* and willows *Salix* sp. The water depth in the observation place (Figure 2) exceeds 2 m, and a zone of vegetation is 1-3 m, in some places up to 5 m wide. *Carex* sp., *Phragmites australis*, *Typha angustifolia* and *Potamogeton* sp. are dominating plant species. The bottom deposits consist of sand, dolomite gravel and a thin brown mud layer.

Lake Mazais Baltezers is 198 ha in area. The lake is surrounded by woodland with living houses. The average depth of the lake is 4.6 m (Ezeri.lv 2008). The lake shores are flat, bottom in the observation place (Figure 3) is sandy with brown or black mud and a detritus layer in some places. The littoral zone is overgrown with mosaic vegetation. *Carex* sp., *Phragmites australis*, *Typha angustifolia, Scirpus lacustris* and *Nuphar lutea* dominate. In 2008 as well as in some previous years, an outbreak of blue-green algae was observed.

Photography of the dragonfly in Laucese, was taken in meadows far from any water bodies, however, in the region is rich of water bodies.

Lake Engure is 4130 ha in area. The lake is surrounded by woodland. The average depth is 0.4 m (Ezeri.lv 2008). The shores are flat; bottom in the observation place is sandy with brown mud and a detritus layer in some places. The littoral zone has mosaic vegetation formed of *Chara* spp., *Carex* spp., *Phragmites australis*, *Typha angustifolia.*

Lake Usma is 3469 ha in area. The lake is surrounded by woodland and settlements. The

average depth is 5.4 m (Ezeri.lv 2008). The shores are flat. The littoral zone has mosaic vegetation formed of *Phragmites australis* and *Carex* spp.

Buchwald (1995) described distribution of patrolling areas for *A. parthenope* and mentioned that this species patrolled mainly along the inner margin of the reeds. The observed male at the locality Rīteri was mostly patrolling above the water surface along the reed margin, approximately between 2 and 5 m behind emergent vegetation from a bank. Sometimes it made short flights over open water or over land (over trees). The size of the patrolled area was more than 100 m. The observed specimen at the locality Mazais Baltezers was mostly patrolling along the reed margin, approximately 1 to 7 m behind reeds or from a bank. Sometimes it made short flights over a *Nuphar lutea* zone, approximately 20-30 m far from the bank. Rarely this male flied between sparse growths of *Typha angustifolia*. The length of patrolling route exceeded 100 m. The flight height in both cases ranged between 0.5 and 1 m over the water table and ca 0.3 m over *Nuphar lutea* leaves.

At present, 59 confirmed dragonfly species are known from Latvia, including newly recorded *A. parthenope*. For all the dragonfly species common names are given in Latvian. However, *A. parthenope* has not been named so far. To use some similarity in names derivation in other languages (Kleine Königslibelle – in German, Lesser Emperor – in English, L'Anax parthénopéen or L'Anax napolitain – in French), as well as euphony in Latvian and conformity to the species appearance, "Partenopes dižspāre" is proposed as the common name.

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Figure 1. Male of *Anax parthenope* in Laucese parish, Mežvidi (photo V.Vankov) left, male in Lake Mazais Baltezers (photo M.Kalniņš) right.

Figure 2. Habitat of *Anax parthenope* in Rīteri dolomite quarry (photo M.Kalniņš).

Figure 3. Habitat of *Anax parthenope* in Lake Mazais Baltezers (photo M.Kalniņš).