AESHNA CRENATA HAG., A NEW SPECIES FOR THE FAUNA OF LATVIA (ANISOPTERA: AESHNIDAE)

In 2001 *A. crenata* was discovered in a small area in NE Lithuania (R. BERNARD, 2002, *Opusc. zool. flumin.* 202: 1-21). In order to solve the puzzle of its range in this part of Europe, intensive searches were carried out in July 2002 in SE Estonia, SE Latvia and NE Lithuania (northward of the known localities). Only 1 locality of *A. crenata* was found, in the Rēzekne district in Latvia: 2 small forest lakes (A, B), 400 m distant, 4.8-5.1 km NW of Andrupene, 2.15-2.65 km W of western shores of S part of Viraudas Lake, 56°13'10" N, 27°20'25--50" E (Fig. 1).

(A) 140×80 m; surrounded by pine forest (with

addition of spruce and birch); the water table bounded by narrow *Sphagnum* mats (0.5-3 m broad, only locally up to 5-7 m) with: *Carex limosa*, *C. rostrata*, *C. nigra*, *C. elata*, *Scheuchzeria palustris*, *Menyanthes trifoliata*, *Calla palustris*, *Eriophorum angustifolium*, *E. vaginatum*, *Potentilla palustris*, *Oxycoccus palustris*; along one shore *Sphagnum* mats form peninsulas and bays, with *Carex elata* at the edge of mats and in shallow water next to them (accompanied there locally by *Calla palustris*); rare *Nymphaea* sp.; water clear with the transparency minimum 2 m (measured with the use of Secchi disc). 9 July. *A. crenata* 11 exuviae (3 ♂, 8 ♀). – Other aeshnids: imagines: rare *Aeshna grandis* (L.); – exuviae: *A. juncea* (L.) 31, *A. subarctica elisabethae* Djak. 3, *A. cyanea* (O.F. Müll.) 4, *A. grandis* 4. – Other species: *Lestes sponsa* (Hans.), *Coenagrion puella* (L.), *C. hastulatum* (Charp.), *Enallagma cyathigerum* (Charp.), *Cordulia aenea* (L.), *Libellula quadrimaculata* L., *Leucorrhinia dubia* (Vander L.).

(B) 100×60 m; surrounded by pine forest with spruce addition and a belt of partly dried pine peaty forest with birch; the water table bounded by *Sphagnum* mats (2-7 m broad) with *Scheuchzeria palustris*, *Rhynchospora alba*, *Andromeda polifolia*; along the edges of mats, in shallow (up to 40 cm) water, a 'collar' of *Carex limosa* (0.3-2 m broad) locally with floating *Sphagnum*; water brownish. 9 July. *A. crenata* 1 territorial ♂. – Other aeshnids: *A. juncea* 2 exuviae, *A. subarctica elisabethae* 1 exuviae with a teneral ♀. – Other species: *L. sponsa*, *C. puella*, *Nehalennia speciosa* (Charp.) (only 1 individual).

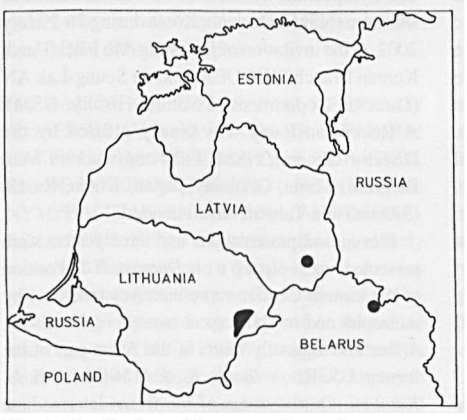

Fig. 1. Distribution of *A. crenata* in southwesternmost areas of the species range.

With the discovery of *A. crenata*, the number of odonate species recorded in Latvia increased to 56 (previously 55: Z. SPURIS, 1996, *Acta hydroent. latv.* 3: 30-36; – T. VON RINTELEN, 1997, *Libellula* 16(1/2): 61-64). The single known locality of *crenata* in Latvia, situated ca 125 km NE of the nearest Lithuanian locality of the species (R. BERNARD, 2002, *Opusc. zool. flumin.* 202: 1-21) and ca 142 km NW of the locality in Belarus (R.G. MAUERSBERGER, 2000, *Notul. odonatol.* 5(5): 56-57) (Fig. 1), is the next argument for the author's opinion (R. BERNARD, 2002, *ibid.*) that the *crenata* range in Europe is much larger than previously assumed (cf. e.g. R.R. ASKEW, 1988, *The dragonflies of Europe*, Harley, Colchester), containing a broad belt possibly between ca 55 and 64° N. However, the unsuccessful searches in SE Estonia, the only single locality found in Latvia and very limited area of occurrence in Lithuania indicate that southwesternmost areas of the *crenata* range consist only of small and very dispersed 'islands' inhabited by the species (Fig. 1). Moreover, in Lithuania, *crenata* was not recorded at some waterbodies situated northward of known localities, although they seem to be appropriate for it. In the author's opinion, these facts indicate the relict nature of the *crenata* range in this part of Europe.

The habitat of *crenata* in Latvia – small forest lakes, poor in nutrients and bounded by *Sphagnum* – is typical of the westernmost parts of the species range (cf. data from Lithuania, Belarus and Finland: R. BERNARD, 2002, *Opusc. zool. flumin.* 202: 1-21; – R.G. MAUERSBERGER, 2000, *Notul. odonatol.* 5(5): 56-57; – G. PETERS, 1988, *Opusc. zool. flumin.* 21: 1-16; – P. VALTONEN, 1988, *Notul. odonatol.* 3(2): 28-31, – 1998, *Diamina* 7: 11-18) and confirms the strong stenotopy of *crenata* there.

Concentration of this species at lake A and its only very rare (allochthonous?) presence at lake B is probably a result of some differences in habitat. The lake A, with water not brownish and the distinguishing presence of *Carex elata* clumps, is exactly in the type of some of the Lithuanian localities of *crenata* (R. BERNARD, 2002, *ibid.*). This fact suggests some preferences of *crenata* to waterbodies with *elata* in southwestern borderland of the

species range. The further confirmation of these preferences is the localization of exuviae. In Lithuania, big clumps of *elata* were especially preferred for emergence (R. BERNARD, 2002, *ibid.*). At Latvian locality 9 out of 11 exuviae were found in clumps of *elata* (growing in shallow water at the border of water table) or in their nearest neighbourhood. Another exuviae was placed on a plant growing in a very small (1.2×0.8 m) depression in *Sphagnum* mats, filled with very shallow water, overgrown by *C. rostrata* and *M. trifoliata* and ca 3 metres far from the water table. The development of this larva must have been completed there despite such extreme conditions.

The presence of the first territorial *crenata* male on 9 July indicates that the species emergence probably began in the last pentade of June. This does not significantly differ from the data from other parts of the range (BERNARD, 2002, *ibid.*).

The presence of four congeners, dominating *A. juncea* and rare *A. subarctica*, *A. cyanea*, *A. grandis*, resembles (or is even the same as) the picture observed at some of the Lithuanian localities (cf. BERNARD, 2002, *ibid.*).

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