

SOMATOCHLORA ARCTICA (ZETT.) IN THE JANOWSKIE FORESTS (LASY JANOWSKIE), SE POLAND (ANISOPTERA: CORDULIIDAE)
S. arctica is a northern species. In the southern part of its range it occurs only in the mountains and in the lowland peatbogs (R.R. ASKEW, 1988, *The dragonflies of Europe*. Harley, Colchester). In Poland it is one of the rarest dragonflies; so far it has been found in the Carpathians, in the Sudeten Mountains, in Silesia, and in the Wolin Island (J. MUSIAŁ, 1979, *Notul. odonatol.* 1: 42-44).

The Janowskie Forests is a big sylvan area at the border of the Lubelska Uplands, Roztocze and the Sandomierska Basin, 170-230 m a.s.l. The region is rich on small, inter-sylvan sphagnum peatbogs, where acid, weakly mineralised water reservoirs occur (pH 3.39-5.89, conductivity 31-156 S/cm). As it appears, these are greatly advantageous to *S. arctica*; out of the 7 peatbogs examined during 1995-1997, I found the species on 4 of them, i.e. in Gwizdów (UTM: EB81; 22°14'E, 50°40'N), Dębowiec (EB81; 22°15'E 50°39'N), Boreczki (FB10; 22°37'E, 50°38'N) and at Kolonia Sokołówka (FB10; 22°40'E, 50°38'N). The nearest known site of *S. arctica* is some 220 km to the

W (E. SCHOLZ, 1910, *Jh. Ver. schles. Insekten.* 3: IX) and 230 km to the SW (J. ZACWILICHOWSKI, 1932, *Spraw. Kom. fizjograf.*, Kraków 66: 77-80).

At 3 sites I caught only single adults (Gwizdów: 17-VI-1995, 1 ♀; 5-VIII-1997, 2 territorial ♂; Dębowiec: 7-VII-1996, 1 ♂; Kolonia Sokołówka: 18-VII-1997, 1 ♀. Despite strenuous search, I did not find any larvae, therefore a detailed analysis of its local microhabitat requirements is not possible.

In Boreczki, I caught *S. arctica* larvae at a peatbog in an old, stagnant drainage ditch (width 1.0-1.5 m; depth 0.5 m; slightly silted bottom; pH 3.39-4.18, mean 3.88; conductivity 63-90, mean 70). It is completely overgrown with *Sphagnum* sp., only here and there *Juncus bifonius* L. emerges from the peatbog. A part is shaded by birches and pines, the rest is open. The larvae occurred 10-20 cm deep, only in the shaded parts of the ditch, the adults were not seen. On 7 dates I caught 12 larvae, 10 of which were released in order to prevent a possible damage to the population. The dates of the catches (16-IX-1996, 16-X-1996, 13-III-1997, 15-V-1997, 6-VIII-1997, 17-IX-1997, 17-X-1997) reveal that in this peatbog the development lasts 10 months, from August till May. This is important, because already in June the ditch usually dries up, and *S. arctica* is the only dragonfly inhabiting it. In the hydrologically untypical 1997, when water remained throughout the whole year, the larvae of other species begun appearing gradually from June onwards: *Coenagrion hastulatum* (Charp.), *C. lunulatum* (Charp.), *C. puella* (L.), *Aeshna cyanea* (Müll.), *Libellula quadrimaculata* L., *Sympetrum danae* (Sulz.) and *Leucorrhinia rubicunda* (L.). However, they preferred the sunny unshadowed part of the ditch. In the overshadowed section, along with *S. arctica*, I only caught *L. quadrimaculata* larvae, and in small numbers, *C. lunulatum*.

After Pniowiec in Silesia (L. SAWKIEWICZ & M. ŻAK, 1966, *Roczn. Muz. górnośląsk.* [Przyr.] 3: 73-132), the site in Boreczki is the second confirmed Polish lowland breeding locality of *Somatochlora arctica*. In both cases the species breeds in small, acid and overshadowed basins on high peatbogs. These environments are particularly sensitive, therefore the present distribution of this species in the lowlands of central Europe may be

significantly different than that in the past. Prior to the large-scale peatbog drainages in some regions of central Europe, *S. arctica* probably occurred much more frequently than nowadays. This is indicated also by the work of SAWKIEWICZ & ŻAK (ibid.) in Silesia.

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