Helophorus laticollis rediscovered in The Netherlands (Coleoptera: Helophoridae)

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Abstract: *Helophorus laticollis*, last recorded in The Netherlands in 1927, was rediscovered at the Brecklenkampse Veld in the municipality of Denekamp, province of Overijssel. The habitat of the species is described, and its status on a Red Data List is discussed.

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Introduction

The genus *Helophorus* comprises 24 species in The Netherlands three of which are only recorded prior to 1950 and, therefore, are considered extinct: *Helophorus dorsalis* (Marsham), *H. longitarsus* Wollaston and *H. laticollis* Thomson (Cuppen, 1992). A survey of the Dutch records of *H. laticollis* was presented by Drost (1988). He recorded the species from Bergen op Zoom (prior to 1900), Eerbeek (1921) and Plasmolen (1927). On the basis of the last record the species was placed on the Dutch list by Reclaire & Van der Wiel (1934). Together the material consists of four specimens deposited in the collections of the Zoological Museum (Amsterdam) and Naturalis (Leiden).

On 23 May 1992 10 specimens of *Helophorus laticollis* were collected on two sites in the nature reserve Brecklenkampse Veld near Lattrop (municipality of Denekamp, province of Overijssel).

The lack of information about the Dutch habitat of *H. laticollis* and its rarity in the surrounding countries are the main reasons to pay some attention to this species.

Habitat

The Brecklenkampse Veld, a reserve of 81 ha, managed by Het Overijssels Landschap, forms one of the last remnants in The Netherlands of oligo/mesotrophic vegetations on loamy sand with the water table above ground level in winter and a water level just below ground level in summer. Flooded parts in winter and spring form more or less connected shallow pools of different and variable sizes with a maximum depth of about 50 cm. In early summer all surface water sinks or evaporates except in one newly created, permanent pond. The vegetation on these wet places consists of Littorellion-, Erico-Sphagnion-, Caricion curto-nigrae- and Caricion davallianae-elements, while on dryer places *Calluna* heathlands and birch/oak forests dominate.

The first site concerns one of these temporary pools with a maximum depth of 25 cm. The water in this pool (pH: 5.2; electrical conductivity: 102 µS/cm; Cl^-: 16.7 mg/l; °D: 2) with a low alkalinity was brown coloured by humic acids. The soil consisted of humic, brown, slightly loamy sand. The vegetation was dominated by *Carex* cf *rostrata* Stokes, *Ranunculus flammula* L. and aquatic mosses (cf *Drepanocladus*), while *Glyceria fluitans* (L.) R. Br., *Eleocharis palustris* (L.) Roemer & Schultes, *Carex nigra* (L.) Reichard, *Calamagrostis canescens* (Weber) Roth and *Galium palustre* L. were common. The pool was unshaded except for the northern margin where some *Salix cinerea* L. bordered the pool; with higher water levels in winter all margins are shaded. About two weeks later, on 9 June 1992, the pool was dried up completely.

Two males and seven females of *Helophorus laticollis* were collected here together with one female of *H. aequalis* Thomson, one male of *H. obscurus* Mulsant and four males and two females of *H. strigifrons* Thomson. The latter species is a typical winter- and spring-breeder in temporary pools (Angus, 1992). The chrysomelid *Chaetocnema aerosa* (Letzner) was reported from this pool for the first time from The Netherlands (Beenen & Winkelman, 1997).

The second site is a small pool with a size of 35 m^2 and a depth of 25 cm. The water in this pool (pH: 4.1; electrical conductivity: 33 µS/cm; Cl^-: 6.0 mg/l; °D: 1; alkalinity: 0) was slightly brown coloured by humic acids. The soil consisted of peat in the upper 3 cm and sandy peat below. The vegetation was dominated by *Molinia caerulea* (L.) Moench, *Juncus bulbosus* L., *Sphagnum cuspidatum* Hoffm. and flab, while *Agrostis canina* L. and *Eriophorum angustifolium* Honckeny were present with a low abundance. The pool was unshaded, and was surrounded by *Erica* heathland with shoots of *Pinus sylvestris* L. and *Betula* sp. One female of *H. laticollis* was found here together with five specimens of *H. aequalis* and one female of *H. obscurus*.

A third site (resembling the first) described in Cuppen & Heijerman (1996) because of the presence of the rare curculionid *Bagous brevis* Gyllenhal, did not reveal specimens of *Helophorus laticolis*.

Angus (1992) mentions shallow grassy pools as habitat for *H. laticollis*. Hansen (1987) gives stagnant fresh water, mainly in shallow, acid and normally oligotrophic, temporary pools with sparse vegetation as habitat. Hebauer (1980) describes the habitat as "überschwemmter Wiese" und "Wiesenmoor mit *Scirpus* und *Carex*". The above described Dutch pools agree with this general description of the habitat but are not grassy and have a more dense vegetation.

Distribution

Helophorus laticollis is a northern species, distributed mainly in Iceland, Scandinavia, the Baltic states, and the northern part of European Russia, east to about Moscow (Angus, 1992). The species is widely distributed and apparently not very rare in Finland, Sweden and southern Norway. In Denmark *H. laticollis* is very rare (Hansen, 1987) with only six records (Hansen, 1983). In Germany *H. laticollis* is mainly known from the northern and northwestern part of the country (Köhler & Klausnitzer, 1998). Poland and former Czechoslovakia are mentioned by Hebauer (1980) and Hansen (1983), but not by Angus (1992). Apart from this more or less contagious distribution there are isolated records from mountainous areas in central France (Angus, 1992) and southern Germany (Hebauer, 1980), and lowland records from The Netherlands (Drost, 1988) and England (Surrey and New Forest: Angus, 1971, 1992). Angus (1971) refers to the English populations as possible relicts of late glacial times. The Surrey population is probably extinct (last record in the 19th century) and the last record from the New Forest dates from 1967 (Foster, 1987). At the 1999 Balfour-Browne Club Meeting the present occurrence of *H. laticollis* in the New Forest will be investigated!

Discussion

From the two sites described above the first one is considered to represent the true habitat of *Helophorus laticollis*, as the largest number of specimens were collected here. More or less mesotrophic, temporary pools with a low alkalinity on loamy sand are rare habitats in The Netherlands, and this may explain the rarity of *H. laticollis* in The Netherlands, at least partly. It is also quite usual that on the boundaries of a distribution area populations are more isolated and generally are more stenotopic. The occurrence of *H. laticollis* at the second site is considered as accidentally, as stray specimens are often found in waters in the close vicinity of the main habitat. This water type, acid pools with peaty soils, is quite common in the eastern, central and southern part of The Netherlands. *Helophorus laticollis* would be much commoner in The Netherlands if this

kind of habitat would be the most preferred one.

For those involved with Red Data Lists, *Helophorus laticollis* is probably a good candidate as it fulfils two of the three criteria: the number of populations declines (t-criterium; from four populations to one, though at any moment never more than one population was known) and the species is rare (z-criterium; only one population known at present). The third criterium (i-) is not fulfilled as the West-European distribution area of *H. laticollis*, a central species, is less than 10% of the total species area. Moreover, the species is rare (and declining) in all surrounding countries and placed on several Red Data Lists (e.g. Blab et al., 1984; Hyman, 1992). Though *H. laticollis* was found in a nature reserve, this does not mean that the species and its habitat are not threatened. The small reserve is seriously threatened by air-born acidification and, to a lesser extent, eutrophication and lowering of (ground) water levels. Intake of eutrophic water to raise water levels should be prevented, as well as lowering of water levels in agricultural areas surrounding the reserve. Hopefully, Het Overijssels Landschap is able to manage the environmental variables in such a way that this population of *H. laticollis* in The Netherlands will survive.

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