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NOTES ON *CHIONEA* (*SPHAECONOPHILUS*) SPECIES IN CENTRAL EUROPE (DIPTERA; LIMONIIDAE)

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Summary

New data about unstudied material of *Chionea* (*Sphaeconophilus*) *belgica* (Becker, 1912) and *C. (S.) lutescens lutescens* Lundström, 1907, collected in Germany and Switzerland are reported, and material from Denmark is revised. For the first time there is evidence for *C. belgica* from Denmark, Bavaria and Thuringia (Germany) and Switzerland. New discoveries are known from altitudes (above sealevel) between 10 m (Copenhagen) und 835 m (Milseburg/Rhön, Hestia). Until these were made, no specimens had been found above 500 m.

C. lutescens has to be removed from the Danish fauna, because this species had been mistaken for *C. belgica*, whereas *C. lutescens* has to be added to the fauna of the northern German lowlands (alt. below 100 m; formerly none had been found below 340 m) and to the mountains of the "Harz" and the "Thüringer Wald".

INTRODUCTION

In Central Europe 10 species of the genus *Chionea* Dalman, 1816, are known (SAVCHENKO *et al.*, 1992). These can be distinguished using the keys written by KRZEMIŃSKI (1982) and GROOTAERT (1984). Until GROOTAERT (1984) redescrined *C. (Sphaeconophilus) belgica* (Becker, 1912), *C. (S.) belgica* and *C. (S.) lutescens lutescens* Lundström, 1907, had been confused. So older material has to be revised to obtain a survey of the actual spreading of both species (MENDL & REUSCH, 1989; REUSCH, 1988).

The following data are the result of the revision of old collections as well as of the study of newly dealt with material from Central Europe.

RESULTS AND DISCUSSION

Chionea (Sphaeconophilus) belgica (Becker, 1912)

Denmark

For Denmark EDWARDS (1936) reported individuals of "*C. lutescens*", which had been found by G. P. KRYGER during the winter of 1934-35, in Gentofte near Copenhagen (alt. 10 m) and sent to the "British Museum (Natural History)" at London for identification (see also NIELSEN, 1941). This occurred again in Nov. 1935 when KRYGER found several pupae and adults just as the year before while digging his carrots as well as another collector Mr KLÖCKER.

Revising the material of the British Museum, REUSCH realized that these ani-

mals were actually *C. belgica*, formerly unknown in Denmark. This discovery was only reported to the authors of the "Catalogue of Palaearctic Diptera" (SAVCHENKO *et al.*, 1992).

The pupae of the *Chionea*-species were unknown when EDWARDS (1936) gave a rough description of what was really *C. belgica*. BYERS (1961, 1983) detailed these descriptions using the same animals which he had been borrowed from the British Museum as "*C. lutescens*".

On demand for *Chionea*-material at the "Zoologisk Museum" at Copenhagen REUSCH received individuals which were labeled "*C. lutescens*" from the NIELSEN-collection (1 ♂, 2 ♀♀, "18.11.34, det. PEDER NIELSEN"). These referred to the same material from KRYGER and KLÖCKER and belong to *C. belgica* as well.

Germany

The existence of *C. belgica* has been proved for the first time in the hilly region of southern Lower Saxony and eastern Hesse by REUSCH, 1988 (see also HÖVEMEYER, 1996, WEBER & WEIDEMANN, 1993), and other evidences dating from different periods exist from both regions of the central low mountain range. This species appeared for the first time in ground-traps in North-Rhine-Westphalia during a research project of the "Bundesamt für Naturschutz" (RIECKEN & RIES, 1993a, 1993b). *C. belgica* is also new for Thuringia where REUSCH discovered it on checking several collections.

Until now *C. belgica* was unknown in Bavaria, *C. lutescens* however had been found in the "Allgäu" north of the Alps (MENDL & REUSCH, 1989). Recently BUCK (1997) found several specimens in ground-traps as well as in traps that were baited with carcasses (kidney and dead *Helix pomatia*). Even though the access openings of the traps were closed with gaze (3

x 3 mm), the relatively long-legged midges passed through without problems.

BAUMANN (1977), BYERS (1983) and NABAGŁO (1973) had observed necrophily with other *Chionea*-species, whereas none of this behaviour had been reported about *C. belgica*.

MATERIAL (COLLECTED WITH GROUND-TRAPS, IF NO FURTHER INFORMATION IS GIVEN):

Bavaria: Environs of Senden-Hittistetten, Landkreis Neu-Ulm; alt. 487 m; 14.10.1992 - 13.01.1993; 42 ♂♂ 33 ♀♀; leg. et coll. M. Buck; traps baited with carcasses and ground-traps.

Hessia: Schlitz; 220 - 250 m; 15.11.1969; 4 ♂♂ 5 ♀♀ (traps baited with carcasses); 28.10.1977; 2 ♂♂ 2 ♀♀; leg. et coll. P. Zwick.

Hessia: Milseburg, Rhön; 835 m; 1 ♂; 28.10.1979; leg. et coll. P. Zwick; traps baited with cheese.

Hessia: Obersberg, Bad Hersfeld; 250 m; Nov.-Dec. 1980; 38 ♂♂ 26 ♀♀; leg. V. Puthz, coll. P. Zwick.

Lower Saxony: Steinberg near Bad Salzdetfurth, Landkreis Hildesheim; 160 - 180 m; 25 ♂♂ 34 ♀♀; 7.11. - 22.12.1996; leg. L. Schmidt & P. Sprick, coll. H. Reusch.

North-Rhine-Westphalia: Drachenfelser Ländchen, south of Bonn; 165 - 180 m; 3.-17.12.1992; leg. U. Riecken, coll. H. Reusch.

Thuringia: Ohrdruf, Thüringer Wald; 400 m; Oct. 1889; 1 ♂; leg. Dr. Thomas, coll. Zoologisches Institut, Martin-Luther-Universität Halle/Wittenberg.

Thuringia: Haßlebener Ried, Landkreis Sömmerda; 147 m; 20.12.1983 - 3.01.1984; 2 ♂♂ 1 ♀; leg. H. Grimm, coll. "Museum der Natur" Gotha.

Thuringia: Herrenschwende, Landkreis Sömmerda; 142 m; 8.11.1983 - 17.01.1984; 18 ♂♂ 15 ♀♀; leg. H. Grimm, coll. "Museum der Natur" Gotha.

Thuringia: Leutratal, 8 km south of Jena; 250 - 260 m; 17.01.1989; 5 ♂♂ 1 ♀; leg. et coll. R. Bährmann.

Switzerland

From the Sensetal near Flamatt (alt. 490 - 530 m), south-west of Bern, BANGERTER (1939) reported "*Chionea lutescens* Lundström. 20.XII.37. Selten." The Bangerter-material was revised by MENDL (1979: 353) who confirmed the identification and labeled the accompanying micro-preparation "Nr. 186".

During an inspection of larvae and pupae of the borrowed BANGERTER-collection REUSCH discovered that the previously mentioned preparation belongs to *C. belgica* and not to "*lutescens*". The alcoholic preserved material contains another 2 ♂♂, labeled "*Chionea*. Flamatt XII.37". Therefore BANGERTER (1939) discovered the furthest south population of this species in Europe.

Other than that *C. belgica* is only known to exist in Belgium (GROOTAERT, 1984) and the Netherlands (HEIJERMANN, 1987; the material was revised and confirmed by REUSCH). It will be uncertain if the whole spreading-area has been registered (fig. 1), until *Chionea*-material from other countries has been revised (for distribution-data see SAVCHENKO *et al.*, 1992).

Chionea (Sphaeconophilus) lutescens
lutescens Lundström, 1907

Denmark

There is no proof of the existence of *C. lutescens* because the material mentioned in previous publications (BYERS, 1961, 1983; EDWARDS, 1936; NIELSEN, 1941) belongs to *C. belgica* without exception.

Germany

The evidence of *C. lutescens* could be proved in the northern German lowlands of Lower Saxony for the first time. She was caught with ground-traps near Lehrte, east of Hannover, as well as in the nature reserve "Lüneburger Heide". These places are both situated below 100 m, that is

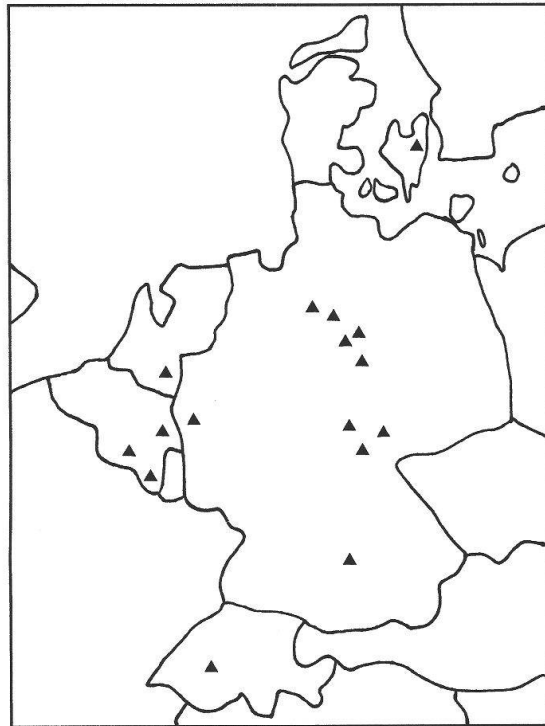


Figure 1: Distribution of *Chionea belgica* according to revised material.

considerably lower than any previous known places where *C. lutescens* was found before (alt. 340 - 1700 m; WEBER & WEIDEMANN, 1993).

Other regions where material was found and where the species was unknown until then (Mendl & Reusch, 1989) are the "Brocken" in the "Nationalpark Hochharz" (Landesamt für Umweltschutz Sachsen-Anhalt, 1994) as well as the "Thüringer Wald".

MATERIAL:

Lower Saxony: Environs of Lehrte, 10 km east of Hannover; alt. 60 m; 15.11.1991 - 15.01.1992; 4 ♂♂ 10 ♀♀; leg. W. Wölkerling, coll. A. Melber.

Lower Saxony: Nature Reserve "Lüneburger Heide" near Oberhaverbeck, north-west of Böhlingen, Landkreis Soltau-Fallingb. 90 m; 11.1994 - 01.1995; 2 ♂♂ 9 ♀♀; leg. L. Schmidt, coll. H. Reusch.

Saxony-Anhalt: Brocken, "Nationalpark Hochharz"; 1020 - 1080 m; 9.05.1996; 95 ♂♂ 88 ♀♀; leg. P. Sacher, coll. H. Reusch. 930 m; 9.05.1996; 2 ♂♂ 3 ♀♀; leg. P. Sacher, coll. R. Bährmann.

Thuringia: Frauengraben, Klein Schmalkalden, Thüringer Wald; 650 m; 12.12.1993; 2 ♂♂; leg. R. Borchering, coll. R. Bellstedt.

Another report exists from the "Odenwald" in western Hesse from BÜRGIS (1992), who proved evidence of this species in knowledge of GROOTAERT's work (1984). The proof of further records from Germany (MENDL & REUSCH, 1989) is uncertain for the time being until the material has been revised.

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