

# Recent Swedish records of *Chlorophorus varius* (Müller, 1766), with notes on the bionomy and distribution (Coleoptera, Cerambycidae)

Ole Mehl & Henning Pedersen

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Two new records of the longhorn beetle *Chlorophorus varius* (Müller) are presented from Närke, Central Sweden. The species was regarded as extinct in Sweden, the most recent record being more than 125 years old. One female was observed on a flower in June 1985. Two adults emerged in August 1993 from a dry branch of *Tilia cordata* collected in the vicinity of Skagarhultsmossen. A map of distribution is presented together with remarks on bionomy.

Ole Mehl, Birkildvej 18, Asp, DK-7600 Struer.  
Henning Pedersen, Mellemvej 15, DK-8800 Viborg.

In June 1985 one of us (H. P.) visited Skagarhultsmossen in Närke and took a picture of a *C. varius* resting on a flower (Fig 1). The beetle was collected together with some other insects. This single specimen was the only one seen on that occasion. Later on, the picture was shown to O.M. who confirmed the beetle to be *C. varius*. At present it is in H.P.s collection. In July 1992 O.M. visited the same area for a confirmation of the find. Despite perfect weather and plenty of flowers the species was not observed. That year, the early summer period was unusually hot, and the flight period had probably been advanced, perhaps so much that the imagines had already ended their flight period. On my way back from the moor a broken *Tilia cordata* branch, still hanging from the tree, attracted my attention. An investigation revealed narrow larval galleries just under the bark. A piece of the branch with galleries was cut off for rearing at home. In August the following year two *C. varius* emerged. Both specimens are in O.M.s collection. An investigation of the branch showed no additional larvae.

## Status in Sweden

Palm (1959) mentions that Thomson (1866) reported *C. varius* from Västergötland (Kinnekulle) but no specimens from that locality are preserved in any collection. In addition to this information three specimens are in the collection of Dr. E. Wirén; all are from Västergötland. Palm (1959) mentions that

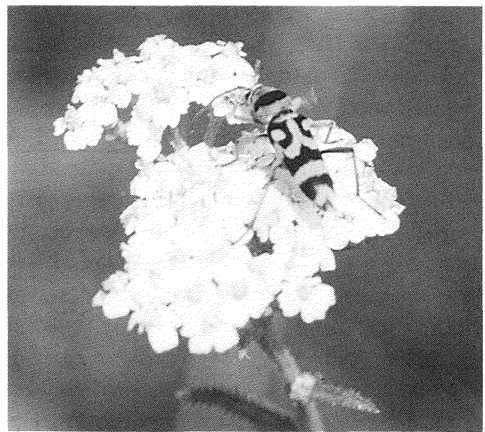


Fig. 1. *Chlorophorus varius* (Müller, 1766), Sweden, Närke, Skagarhultsmossen, 23.vi.1985 (Henning Pedersen phot.).

those specimens originate from a collection of Prof. Juel in Uppsala and were donated to Dr. E. Wirén. Lundberg (1978) repeats this information and reports a fourth specimen collected indoors in Simrishamn, Skåne, but questions the origin and suggests it to be introduced. Ehnström & Waldén (1986) report the above given information and add a doubtful record from Södermanland, without giving any precise locality or date for the record. Palm (1959) as well as Ehnström & Waldén (1986) suppose that *C. varius* has disappeared from the Swedish fauna, but do not doubt its existence in the last century. The here presented finds prove that *C. varius* has survived in a xerothermic habitat in Närke, probably in climatic conditions also present in Västergötland and Södermanland. A thorough investigation of suitable habitats is desirable to get a better picture of its distribution. Its vulnerability is beyond any doubt, and measures should be taken to preserve it by protecting its habitat; probably also collecting should be prohibited.

## Bionomy

*C. varius* is a very polyphagous species. It occurs on deciduous trees but records also exist from herbaceous plants. In C. and S. Europe the larvae feed in dry dead wood of *Acer*, *Alnus*, *Quercus*, *Malus*, *Populus*, *Ulmus*, *Tilia*, *Castanea*, *Ficus*, *Elaeagnus* and *Genista* among others. Svacha & Danilevsky (1988) report infestation in stems and roots of *Salicornia*, *Achillea* and *Spartium*. Mainly two to five cm thick sun-exposed branches are attacked. A successful larval development is dependant on a high average summer temperature together with limited moisture in the attacked wood. These conditions seemingly do not exist in NW Europe. The relict status in Sweden of *C. varius* together with other Cerambycidae, e. g. *Phymatodellus pusillus*, *Exocentrus adspersus*, and *Anastetis testaceae* must be based on the rather high average summer temperature in C. Småland and Närke.

During the warm postglacial *Tilia*-period

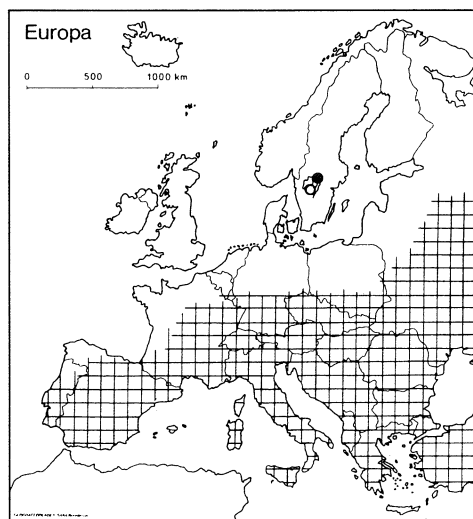


Fig. 1. The distribution of *Chlorophorus varius* (Müller, 1766), in Europe based on information from: Allenspach, 1973; Burakowski et al., 1990; Demelt, 1963, 1967; Heyrovsky, 1955; Horion, 1974; Kaszab, 1971; Klausnitzer, 1981; Muylaert, 1984; Sama, 1988; Villiers, 1978; Vives, 1984; Danilevsky and Nierhuis, in letters. ○ represents the old finds from Västergötland, Kinnekulle. ● represents the recent finds from Närke, Skagarhultsmossen.

some 8,000-5,000 years ago, *C. varius* probably had a greater distribution area in Sweden than today. Its ability to survive the conditions under less favourable climatic periods is probably due to its polyphagousness and is of course also favoured by the presence of limited and scattered areas with favourable climatic conditions.

Living at its uttermost forepost, the species is in danger of extinction due to the above mentioned factors, perhaps also because of limited genetic variation in the population.

The life-cycle lasts two to three years in C. Europe, which is probably also the case in Sweden, despite the lower average summer temperature. The pupal cell is excavated at the end of the larval gallery as a simple curved chamber. The circular exit hole is prepared so that just a thin layer of wood has to be removed. Sometimes the exit hole is fully made but then it is tightly filled with rather coarse wooden fibres.

## Distribution

A very widely distributed species in the Palaearctic region. *Chlorophorus varius varius* (Müller, 1766) is known from the Iberian Peninsula and S. France in the west through S. and C. Europe, the Balkan Peninsula and W. Anatolia to N. and W. Caucasus, Transcaucasia and Southwest Siberia (southern Ural) in the east. The subspecies *Chlorophorus varius damascensis* Chevrolat, 1854 is distributed in E. Anatolia, Lebanon, Israel, Cyprus, S. and C. Syria and Iraq. In China the subspecies *Chlorophorus varius pieli* (Pic, 1900) is widely distributed.

No finds from border areas to Sweden have been reported for the last 75-100 years. Horion (1974) lists some old finds from Germany, mainly from the central and southern parts of the country. In 1992 a record exists as far north as Bonn (Nierhuis, in letter). Burakowski et al. (1990) report finds from the Gdansk area (1879) which is the closest record to the above mentioned from Sweden. Recent finds are known from SE. Poland, the Pieniny Mts. In the Czech Republic rare and only known from xerothermic areas, more common and more widely distributed in Slovakia.

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## Dansk sammendrag

Den i Skandinavien yderst sjældne træbuk *Chlorophorus varius* (Müller) har hidtil kun været kendt i ganske få eksemplarer fra Västergötland i Sverige; fundene er fra forrige århundrede. Et enkelt eksemplar blev i 1985 fundet i Skagarhultsmossen i Närke. I 1992 yderligere to eksemplarer, som begge klækedes af en nylig udgået lindegren.

Der er næppe tvivl om, at de specielt gunstige klimatiske forhold i Västergötland og Närke tilgodeser billens krav til gennemførelse af en succesfuld livscyklus. Den tilbageværende stamme må derfor anses som en reliktforkomst, der har været i stand til at overleve fra den varme Linde-tid for ca. 8000-5000 år siden. På grund af isolation synes truslen om udryddelse at være overhængende og foranstaltninger til beskyttelse af egnede ynglebiotoper bør indgå i en bevarelsesstrategi for arten. *Chlorophorus varius* (Müller) er vidt udbredt i Syd- og Mellem-europa, de nordligste nyere fund herfra er dog beliggende mange hundrede km fra det aktuelle fundområde i Midtsverige. Der kan derfor ikke være tale om spredning af arten fra Syd- eller Mellemeuropa til Sverige. De nærværende fund dokumenterer, at arten stadig tilhører den svenske fauna.

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