

On the presence of *Phyllotreta procera* (REDTENBACHER, 1849) in Belgium (with a description of the male and female genitalia) (Coleoptera : Chrysomelidae : Alticinae)

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Abstract. *Phyllotreta procera* was caught in the nature reserve «de Kuifeend» (prov. Antwerp). This is the fourth and most northern capture of this species in Belgium. The occurrence in Belgium of this very local and rare species is discussed. Figures of the aedeagus and the spermatheca are given.

Samenvatting. Over het voorkomen in België van *Phyllotreta procera* (REDTENBACHER, 1849) (met beschrijving van de mannelijke en vrouwelijke genitalia) (Coleoptera : Chrysomelidae : Alticinae)

Het voorkomen van *Phyllotreta procera* in België wordt besproken. Deze soort werd gevangen in het natuurreservaat «de Kuifeend» (Antwerpen), de meest noordelijke vindplaats in België. Tekeningen van de aedeagus en de spermatheca worden bijgevoegd.

Résumé. Sur la présence en Belgique de *Phyllotreta procera* (REDTENBACHER, 1849) (avec une description des genitalia mâle et femelle) (Coleoptera : Chrysomelidae : Alticinae)

La présence en Belgique de *Phyllotreta obscura* est discutée. L'espèce a été capturée dans la réserve naturelle «de Kuifeend» (prov. d'Anvers), localité la plus septentrionale en Belgique. Des figures de l'édéage et des spermatheques sont ajoutées.

Key words : *Phyllotreta procera*, distribution, aedeagus, spermatheca

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Introduction

The herbivorous Chrysomelidae are well known pests of agricultural and ornamental plants. Many problems are caused by the Colorado potato beetle (*Leptinotarsa decemlineata*) and several *Diabrotica* species (McDONALD et al. 1982, JONES & JONES 1984, HSIAO 1988, KRYSAN et al. 1989). Also flea beetles or Alticinae can cause serious damage to agricultural crops (MAISNER 1974, JONES & JONES 1984). JOURDHEUIL (1963) even writes : « Les Alticinae constituent la sous-famille la plus importante des Chrysomelidae, la plus riche aussi en espèces nuisibles ».

The Alticinae (the largest subfamily of the Chrysomelidae) are an enormous group, containing over 7000 species, represented in about 560 genera (FURTH 1982, JOLIVET 1988). The flea beetles can be easily distinguished from all other Chrysomelids by their enlarged hind femur and their ability to jump.

The genus *Phyllotreta*

The species of the genus *Phyllotreta* are better known as the cruciferous flea beetles, because the group can be harmful to cruciferous crops. All species are mono- to oligophagous herbivores, living on Cruciferae or on the related Resedaceae. Only one species (*Phyllotreta vittula*) is known to be feeding on

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maize. Despite their pest status, the knowledge concerning the ecology and systematics of the European species is still fragmentary. The Belgian fauna is represented by 18 species of which six are rare (DERENNE 1963).

Nature Reserve «de Kuifeend»

During our M.Sc.-study on the Belgian Alticinae (VERDYCK 1990) insects were collected in the nature reserve «de Kuifeend». De Kuifeend is situated near the port of Antwerp (vormingsstation Antwerpen-Noord). The area consists mainly of sandy soils. The vegetation at the sample locality is characterised by plants like *Oenothera parviflora* and *Reseda lutea*. Both pitfalls and a malaise trap were used during a 28 week sampling period (second half of April to first half of November 1989), they were emptied weekly.

Phyllotreta procera (REDTENBACHER, 1849)

As a result of the sampling one male specimen of *Phyllotreta procera* was caught in one of the pitfalls. This species has a distribution restricted to South and Central Europa (HEIKERTINGER & CSIKI 1940, MOHR 1966, LEONARDI 1976).

P. procera is relatively easy distinguishable from other related species. It has a length between 2 and 2.5 mm. The dorsal side has a bronze-brown to green, silky shining, colour. The elytra are parallel-sided, covered with a fine punctuation. The fourth antennal segment is four times as long as the second one. Correct identification is assured by carefully examining the genitalia. The aedeagus (fig. 1a, b, c) is long and slender, parallel-sided, a little narrowed near the apex. The basal foramen is small. In lateral view the aedeagus is slightly curved. The spermatheca (fig. 1d) has a basket-like basal part, with a distinguishable top. The neck is short, and the distal pump has a blunt ending. The spermathecal ductus is short, without loops.

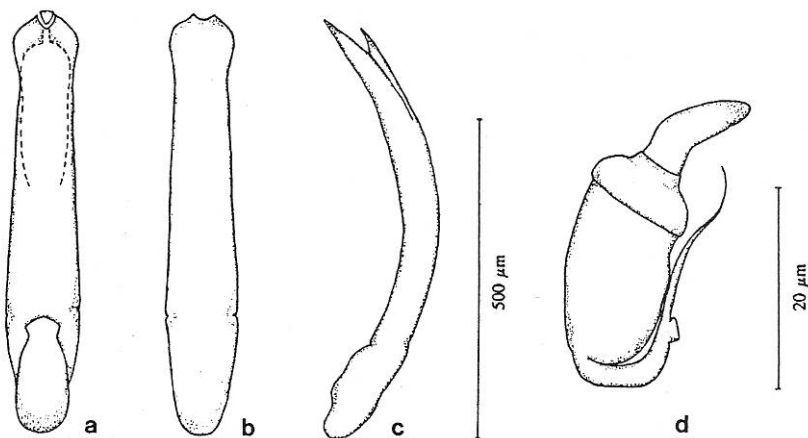


Fig. 1. : *Phyllotreta procera* : a. aedeagus ventral view; b. aedeagus dorsal view; c. aedeagus lateral view; d. spermatheca.

On the ecology of *P. procera* almost nothing is known. The species lives on *Reseda* spp. According to MOHR (1966) adults can be found from April to July. However during our study the specimen from de Kuifeend was caught in September.

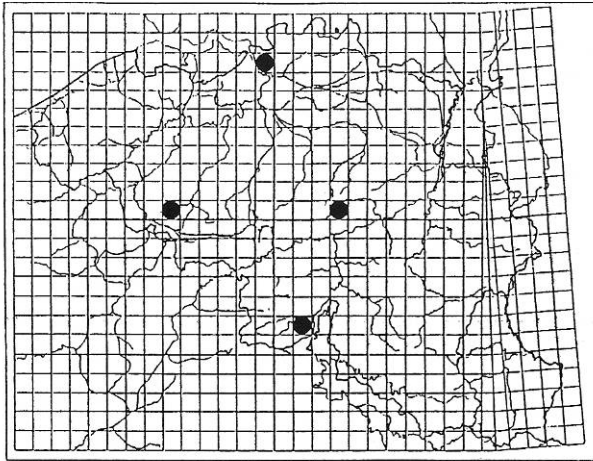


Fig. 2 : Distribution of *Phyllotreta procera* in Belgium.

If we look at the distribution of *P. procera* in Belgium (fig. 2), the species is sparsely distributed. The species is only known from the following records : Vierves (FR14) 1 male + 2 females, 24.VII.1922 leg. F. GUILLAUME; Andenne (Seilles) (FR49) 1 male 6.VI.1949 and 1 male 4.VI.1950 leg. E. DERENNE; Bernissart (ER49) 5 ex. 25.VII.1974 leg. M.G. BOOSTEN; (Antwerpen) (ES97) 1 male 2-9.IX.1989 leg. P. VERDYCK. The operational criterion for a rare species for Belgium is to be caught in less than 16 squares (UTM squares : 10 x 10 km²) (GASPAR et al. 1975). Using this criterion, *P. procera* is considered a rare species. Antwerpen is the most northern point of the known distribution in Belgium. It is only the second time since 1950 this species is caught in Belgium.

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