

Sunken path in Halen. A locality of interest for the genera *Acalles* and *Kyklioacalles* (Coleoptera: Curculionidae, Cryptorhynchinae)

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Abstract. A sieving sample resulted in the combined finding of *Acalles misellus* Boheman, 1844, *Acalles ptinoides* (Marshall, 1802) and *Kyklioacalles (Palaeoacalles) roboris* (Curtis, 1834). The identification of *A. misellus* is the first record of this species for Flemish Limburg. The combined find testifies to a long-term continuity of vegetation for that locality.

Samenvatting. Een holle weg te Halen, een belangrijke vindplaats voor de genera *Acalles* en *Kyklioacalles* (Coleoptera: Curculionidae, Cryptorhynchinae). Een zeefstaal resulteerde in de gecombineerde vondst van *Acalles misellus* Boheman, 1844, *Acalles ptinoides* (Marshall, 1802) en *Kyklioacalles (Palaeoacalles) roboris* (Curtis, 1834). *A. misellus* wordt hierbij voor de eerste maal opgetekend voor Vlaams Limburg. De gemeenschappelijke vondst van deze drie soorten getuigt van een historische continuïteit in vegetatie.

Résumé. Un chemin creux à Halen, une localité importante pour les genres *Acalles* et *Kyklioacalles* (Coleoptera: Curculionidae, Cryptorhynchinae). Un échantillon de substrat a résulté à la découverte d'*Acalles misellus* Boheman, 1844, *Acalles ptinoides* (Marshall, 1802) et *Kyklioacalles (Palaeoacalles) roboris* (Curtis, 1834). *A. misellus* constitue la première découverte de cette espèce pour la province flamande de Limbourg. L'association des trois espèces dans une localité est une indication pour une continuité végétale.

Keywords: Coleoptera – Curculionidae – Cryptorhynchinae – *Acalles* – *Kyklioacalles* – sunken path – small landscape elements – faunistics – Belgium – Flanders – Limburg.
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Geographically, Halen lies at the sandy-lime slopes of the Haspengouw plateau. The landscape undulates slightly and its agricultural image is marked with numerous sunken paths. At the locality of Zelk, most of the remaining sunken paths are not interconnected by vegetation. Each of these small landscape elements are separated from each other by extensively cultivated crop fields. On the 28th of November 2004 a sample of leaf litter was collected from one of these isolated sunken paths.

Isolated sunken path in Halen

The sampled sunken path (FS4647, Halen, Zelk) deeply cuts into the sandy-lime soil and leads slightly meandering towards crop fields at higher level. The holloway is still in use. Regular tractor traffic stimulates soil erosion and this further contributes to its deepening process. To stabilise soil-erosion in the past, the banks of the sunken path were planted with Oak (*Quercus* sp.), Hornbeam (*Carpinus betulus*) and shrubs—Hazel (*Corylus avellana*) and Elderberry (*Sambucus nigra*). Herbaceous undergrowth further completes the soil-anchoring. Recent care of the sunken path is limited to the sporadic cutting of the tree's and shrubs' branches.

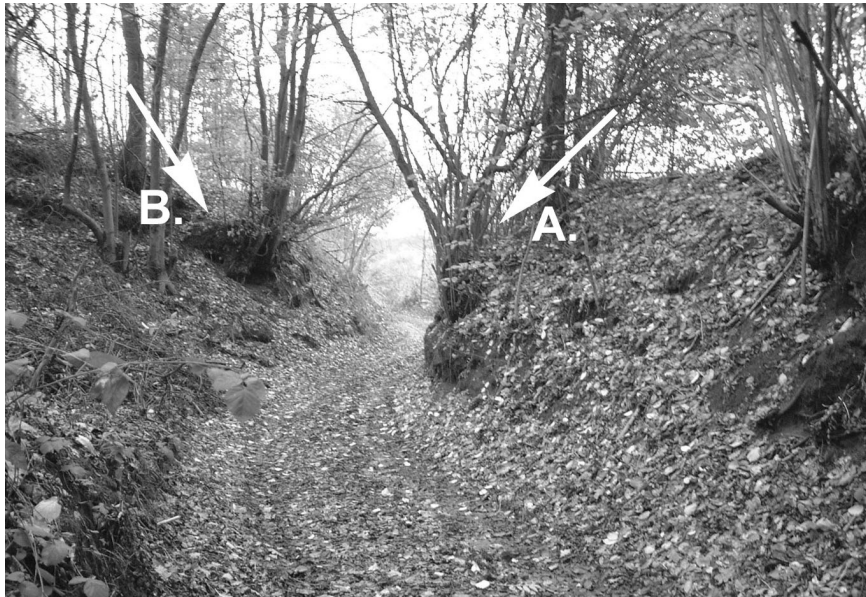


Fig. 1. Halen (Zelk; Belgium, Province of Limburg) – locations of the litter samples from A.– Hazel (*Corylus avellana*) and B.– Hornbeam (*Carpinus betulus*).

The sampling of sunken path is part of a larger initiative, trying to map weevils of the genera *Acalles* and *Kykliaacalles* in the Flemish province of Limburg. The sampling of leaf-litter especially targets for these species. In Zelk, leaf litter was sieved from one Hazel (*Corylus avellana*) and one Hornbeam (*Carpinus betulus*). The Hazel had multiple stems and many shoots, retaining fallen leaves and a thin layer of compost. Due to repeated cutting back, the Hornbeam had developed numerous gnarls with sprouting shoots. Especially, leaf litter retained by these gnarls were sieved. The sample of sieved litter was taken home and processed during two weeks by method of a Berlese funnel type extractor.

A remarkable combination of species

After extraction, 38 specimens of Cryptorhynchinae could be sorted out. Examination of these specimens resulted into 3 species;

- 1× *Acalles ptinoides* (Marsham, 1802)
- 30× *Acalles misellus* Boheman, 1844
- 7× *Kykliaacalles (Palaeoacalles) roboris* (Curtis, 1834)

Acalles ptinoides (Marsham, 1802) is a regular occurring species in samples. It is often present in pitfall traps. Of all *Acalles* species, *ptinoides* is most encountered in Limburg with up to date 25 known localities (UTM km-squares). The finds of this species are associated with Oak (*Quercus robur*, *Quercus petraea*), Beech (*Fagus sylvatica*), Hornbeam (*Carpinus betulus*), Hazel (*Corylus avellana*) and Elderberry (*Sambucus nigra*).

The find of *Acalles misellus* Boheman, 1844 in Halen (Zelk) constitutes the first record of this species for the Flemish province of Limburg. Since, *A. misellus* has been identified from five other localities (UTM km-squares) in Limburg. As with the find in Zelk, these species are found in sunken paths in relation to the sieving of Hornbeam (*Carpinus betulus*), Hazel (*Corylus avellana*) and Beech (*Fagus sylvatica*). *Acalles misellus* has a North-Western distribution in Europe. Its find corresponds geographically to the finds of *Acalles misellus* in the neighbouring province of Dutch Limburg (Heijerman 2004).

Peter Stüben described the genus *Kyklioacalles* Stüben, 1999 and during a revision in 2003 by P. Stüben, *Acalles roboris* (Curtis, 1834) was rearranged under the genus *Kyklioacalles* and its subgenus *Palaeoacalles*. This revision is considered valid and is followed in the literature (Heijerman 2004) and in taxonomy (Alonso-Zarazaga 2005). The find in Halen (Zelk) of *Kyklioacalles (Palaeoacalles) roboris* (Curtis, 1834) was the second find of this species for Limburg. Meanwhile, four other localities (UTM km-squares) have been identified for this species. All finds correlate strongly with sunken paths or wooded banks and the presence within of Hornbeam (*Carpinus betulus*) and/or Hazel (*Corylus avellana*).

Conclusion

The sieved sample of leaf litter in Halen (Zelk) resulted in a concentrated find of three closely related species of Cryptorhynchinae (*Acalles*, *Kyklioacalles*) on a tiny surface. *Acalles misellus* is recorded for the first time from Limburg and probably also for Flanders. Especially remarkable is the presence of this species in combination with *Acalles ptinoides* and *Kyklioacalles (Palaeoacalles) roboris*. All three species of weevils are wingless (aptere). This wingless character limits the species' dispersal and its capacity to adapt to changes. The identification of several species of *Acalles* and *Kyklioacalles* at an isolated location, of limited size, indicates a long-term continuity of its vegetation (Stüben 2005: 8). Within a relict landscape element, the retrieved combination of species represents another relict of a past biodiversity. The isolated location of the sampled sunken path further complicates these species' dispersal capacities and makes the population vulnerable. Without adapted measures of protection, the viability of this diverse population can be put to question.

Literature

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