

# The genus *Anommatus* Wesmael, 1835 (Coleoptera, Bothrididae) in Norway

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Sieving samples from two locations alongside the walls of “Akershus festning”, the old castle in Oslo, Norway, contained remnants of three specimens of *Anommatus diecki* Reiter, 1875 and one specimen of *Anommatus duodecimstriatus* (Müller, 1821). These finds are the first records of the genus *Anommatus* in Norway.

Key words: *Anommatus diecki*, *Anommatus duodecimstriatus*, Bothrididae, Coleoptera, Norway.

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## Introduction

The genus *Anommatus* Westmael, 1835 is represented with 68 species worldwide and belongs to the family Bothrididae. The two species *Anommatus duodecimstriatus* (Müller, 1821) and *Anommatus diecki* Reiter, 1875 are so far the only recorded species in northern Europe. Both species have been recorded in both Sweden and in Denmark (Lundberg and Ehnström 1968, Mahler 1987, Hansen et al. 1997), but none of them are hitherto known to occur in Finland or Norway. Bothrididae is a species poor family, containing five species in Sweden, and with the wood living *Bothrideres contractus* (Geoffroy, 1785) as the sole species recorded from Norway.

## Material and methods

During an investigation of the distribution of the snail *Truncatellina cylindrica* (Férussac, 1807) on suitable localities in Oslo (Olsen 2008), several sieving samples from the old castle “Akershus festning” were collected and sorted. The remains of *Anommatus* specimens were produced from two subsamples; two *A. diecki* and one *A. duodecimstriatus* from the southernmost part of

the wall (UTM 32VNM97084226) and one *A. diecki* from the outside of the northern tunnel (UTM 32VNM97054240). The calcareous rocky wall of the castle is almost vertical (about 8–10m high) for most of its length (about 300m), but with a narrow plateau along the top and minor shelves and crevices further down, where the sieved and sampled soil and litter accumulate. Several plant species grow on the wall, amongst them native *Sedum* and *Artemisia* species. The most dominating species, however, has for many years been Common ivy (*Hedera helix*), Climbing hydrangea (*Hydrangea petiolaris*) and Virginia creeper (*Parthenocissus quinquefolia*), but in 2008 the majority of these plants, biomass was, as a recommendation to enhance conditions for *Truncatellina cylindrica*, removed. These actions would probably not affect the populations of the two *Anommatus* species in a profound negative way. On the contrary, removing plant material and relocating some of the soil might just give the two *Anommatus* species a helping hand inhabiting new areas.

## Distribution

*A. duodecimstriatus* (Figure 2) has a wide

distribution in Europe, including the British Isles (Dajoz 1977). It is also known to be established in the Madeiras, the Cape area of South Africa, Tasmania, St Helena, the United States, Chile and New Zealand (Kuschel 1979). *A. dieckii* (Figure 2) is more restricted in its distribution, but is recorded in many South and Central European countries, including France, Italy, Austria, Switzerland, Germany and England, in addition to Sweden and Denmark in the north (Booth & Owen 1998, Schillhammer & Schuh 2004). Both species are believed to have their original distribution in southern Europe, with France, Italy and, for *A. duodecimstriatus*, possibly also the Balkans, as natural localities. Since they are slow movers, lack flight ability and live beneath the ground, the discovery of *A. duodecimstriatus* across the world surely are a result of fast and extended movement of both plants and soil worldwide.

## Ecology

The *Anommatus* species lack flight ability, are blind, are depigmented to some degree and small (1.5–2 mm). The beetles are usually found in the upper 20 cm of organically enriched soil, in which they are associated with various decaying fungi infected plant material (Kuschel 1979). They have been recorded in tulip onions and potatoes in both Denmark and Sweden and they are believed to be predators on various insect larvae (Fägerström 2006). Lundberg and Ehnström (1968) recorded some specimens of *A. duodecimstriatus* inside the basis of a *Coprinus* fungus together with *Grobbernia fimetarii* Herbst, 1793. Some additional specimens, as well as one specimen of *A. diecki*, were found by sieving the surrounding soil. The locality in which the two species were found was a steep roadside in Wennergren in Stockholm city where earth, building material and various trash and garbage had been tipped. This is not exactly pristine and untouched nature, but still a typical location for *Anommatus* species. They are probably spread by human activities which include transportation of soil. These first Swedish records of the genus *Anommatus* show that detecting both species together is not unusual. *A. diecki* seems to be the distinctively rarer one in



Figure 1. *Anommatus diecki*. Photo: Kim Abel, BioFokus



Figure 2. *Anommatus duodecimstriatus*. Photo: Kim Abel, BioFokus

Sweden and has only been found on a couple of occasions (Fägerström 2006).

Because of the *Anommatus* species' small size and hidden life, it is reasonable to expect that both species occur on several locations in and around the larger cities in Norway. Especially fruitful should be locations where garden centers have dumped imported soil and plant remains.

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