

The stag beetle *Lucanus cervus* (Linnaeus, 1758) (Coleoptera, Lucanidae) found in Norway

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A 35 mm long male specimen of the stag beetle *Lucanus cervus* (Linnaeus, 1758) was found at Øynesvann, AAY, in the early 1980ies. The specimen was sitting on the stump of a cut oak tree. The specimen has been kept well preserved in a small insect collection on a farm in the area since it was collected. The species is likely to have been overlooked in Norway. The explanation for this may be the fact that the forest area where the beetle was found is large, sparsely populated and poorly investigated. Another explaining factor is the fact that the biology of the species makes the beetles hard to find even in areas with good populations.

Keywords: Stag beetle, *Lucanus cervus*, Lucanidae, Coleoptera, Norway

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Introduction

Several sources have indicated that the stag beetle *Lucanus cervus* (Linnaeus, 1758) occurs in Norway. Peter Christen Asbjørnsen reported in volume IV of his book series “Naturhistorie for Ungdommen”, published in 1848, that the stag beetle was claimed to be known from “Grevskaberne”, which corresponds approximately to the present county of Vestfold. In his book “Naturhistorie for Børn”, which was published in 1842, he was more explicit, saying that (translated): “In this country it is very rare, but it is occasionally caught in Grevskaberne”. However, no specimen has been preserved to substantiate these statements.

Of somewhat more relevance to the present finding, is the report of Siebke (1875) that the stag beetle was said to have been found by Adjunct

Bugge near Arendal. Since no specimen exists, even this claim has been considered too uncertain to justify the listing of the stag beetle as occurring in Norway.

Halvorsen et al. (1983) reported the presence of an abdomen from a stag beetle in an old private collection of presumably Norwegian insects at Mesterfjellet elementary school in Vestfold. According to Opheim (1983), this collection was established by Dr. Sölsberg, who in his student days collected insects together with his student friend and later prominent entomologist Hans Jacob Sparre Schneider. However, the abdomen was not labelled, and there is no firm basis for claiming that the abdomen is from a beetle of Norwegian origin.

The larvae of the stag beetle develop in hollow



Figure 1. The stag beetle *Lucanus cervus* collected at Øynesvann in Tvedestrand in the early 1980ies. Photo by Marianne Rosseland.

oak trees and decomposing stems and stumps of oak (Hansen 1925, Landin 1970), but they are occasionally also found in decomposing wood of beech, ash, hazel and birch (Ehnström & Axelsson 2002). According to the latter authors the larvae live close to the ground, eating the lower parts of the rotten wood, even roots, which they may consume completely. The presence of the larvae is indicated by large amounts of 5–6 mm long cylindrical faecal pellets. The larval development lasts for 5 years, and pupation takes place in an up to 7 cm long cocoon, situated close to the ground. The adult beetles live for only a few weeks, the females somewhat longer than the males (Ehnström & Axelsson 2002). The swarming takes place in the evening, and the adults are attracted to seeping wood sap. The males are more numerous than the females, and fight vigorously about the females.

The stag beetle has a wide distribution in Southern Sweden. Scattered populations are found on the east coast as far north as in Uppland. It has a more infrequent occurrence on the west coast, but there is an old finding even from Bohuslän (Lindroth et al. 1960, Ehnström & Axelsson 2002). In the past the species was common in Denmark, but is now believed to be extinct (Ehnström & Axelsson 2002).

Material & methods

A live stag beetle, *Lucanus cervus* (Linnaeus, 1758) was caught near Øynesvannet (between Nes Verk and Bøylefoss) in Tvedestrand, Aust-Agder (UTM 32, N58.60206, E8.78696). The finding was made in the early 1980ies, most likely during the years 1982–1984. The beetle was collected by Emil Rosseland, who in his younger days established a small collection of local insects. The specimen is a male with a body length of 35 mm. It was caught sitting on a stump of a cut oak tree. Since it was found the beetle has been kept in the insect collection of the finder, and it was positively identified as *L. cervus* by Göran Nilsson during a visit in the autumn of 2008.

Being a male stag beetle the specimen has

relatively small mandibles, and could be taken for a large specimen of the lesser stag beetle, *Dorcus parallelipedus* (Linnaeus, 1758), which is listed with a question mark for AAY in the coleopter catalogue of Lindroth et al. (1960). Small specimens of male stag beetles are known to have disproportionately small jaws, i.e. the jaw size of the present specimen is within the normal range of stag beetles. This so-called allometric growth pattern among stag beetles is dealt with in detail by Arrow (1951). A more conclusive feature of the present specimen is the fact that its hind tibiae have the three teeth that characterize *L. cervus*, and which distinguish it from *D. parallelipedus*, where the hind tibiae have only one tooth (Hansen 1925). Furthermore, the body size of the present specimen exceeds the maximum size of *D. parallelipedus* by 5 mm. Finally, as can be seen from the photo, the appearance of the specimen is clearly that of a stag beetle. Hence, there is no doubt that the specimen is a *L. cervus*.

Discussion

It may appear unlikely that a large species like the stag beetle, the largest beetle in Europe, has been overlooked in Norway. The failure to observe it may be due to several factors. Due to the long larval stage, it may be that adult individuals are very scarce or even absent in some years. This, in combination with the fact that the adults are active only during a few weeks, makes the species appear rare even in sites where there are good populations (Ehnström & Axelsson 2002). The area where the present beetle was found is part of a wide, sparsely populated and poorly investigated forest area, where oak and other potential host trees of the stag beetle are abundant. A number of rare species such as the red listed beetle *Cucujus cinnaberinus* (Scopoli, 1763) have good populations in the area, but they have been overlooked until recently.

The fact that the finding was made about 25 years ago implies that the material where this specimen developed is probably long gone, and that a search for the species at the same site is likely to be in vain. However, the species may still be present in

the area.

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