

## Coleoptera analysis in a natural spring situated in a cultural landscape

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This paper presents the results from the investigation of subfossil Coleoptera in samples from a natural spring deposit, excavated during archaeological rescue excavations in south central Sweden. This region of Sweden has been heavily affected by isostatic rebound since the last glaciation in Scandinavia, and there is a long cultural tradition of people settling in the newly emerging landscapes as soon as they rise above sea level. The locality studied in this project rose above sea level about 1700 BC and, in line with this, the first human occupation of the site is dated to 1700-1600 BC. The spring was typical of this region of Sweden, coming up through a coarser, permeable lens in till deposits (27 m long and 8 m wide). The groundwater outflow of the spring was by a large boulder and the deposit was dominated by highly organic sediment layers. The spring was located in the northern part of a larger settlement and religious area, where most of the cultural activity was dated primarily within the Late Bronze Age and Pre-Roman Iron Age (1100-300 BC). The area has been used for agriculture until the present day. The spring deposit was framed by a ring of larger boulders and most probably used by the settlement by the Bronze Age, perhaps also for ritual purposes. Fossil insect samples were taken to aid in the interpretation of site usage history. The insect fragments were very well preserved in the moist, organic sediments. <sup>14</sup>C-ages on samples from the lower part of the spring stratigraphy yielded dates of 670-870 AD and 660-810 AD, but the spring was most probably in use by the Bronze Age, and was cleaned out periodically. The Coleoptera assemblage from the samples is dominated by specimens of Carabidae, Elateridae, Scarabaeidae and Curculionidae. Together with other finds, the faunas indicate both open landscape with livestock grazing, as well as forested environments. This is similar to the modern environment at the boundary between arable land and spruce forest. The most striking result is the lack of aquatic and hydrophilic species in the samples. This could indicate that the faunal assemblages represent an interval when the spring had been abandoned. This would mean that the spring had already been abandoned by the late Iron Age (600-800<sup>th</sup> century AD). Two interesting finds were *Heptaulacus villosus* (Scarabaeidae) and *Apalus bimaculatus* (Meloidae). Today, both of these species are in the Swedish red list of species – the former as near threatened and the latter as vulnerable. They are both associated with agricultural landscapes, and have become threatened due to the radical changes that have taken place in this type of environment. *H. villosus* lives in wetlands and *A. bimaculatus* is found in urban environments as well as agricultural landscapes. Both of these habitats are decreasing in the modern Swedish landscape.