

# Archaeometric investigations of eagle-head buckles from Bulgaria

I Kuleff, M Junk and L Vagalinski

*ABSTRACT: Eagle-head buckles (Adlerkopfschnallen) are among the artefacts from the final stage of the Migration Period. Different types of eagle-head buckles were worn during the 5th–7th centuries AD, mainly by east germanic tribes. The elemental composition of eight buckles has been determined using ED-XRF. The results show that buckles were produced from brass (with 12–25% zinc). Two of the analysed objects are characterized by extremely high silver contents (10–15%). Some aspects of the production technology are elucidated on the basis of results of metallographic investigations.*

## Introduction

Eagle-head buckles (*Adlerkopfschnallen*) are among the artefacts from the final stage of the Migration Period. Their name comes from the head of a bird of prey at the end of buckle's plate (see Figs 2–4). Until recently, only a single example was known from Bulgaria (Vagalinski *et al* 2000).

These buckles are classified into three types. The first includes 'standard' eagle-head buckles, found over a vast territory from the northern Black Sea littoral in the east to southern France in the west, and from northern Poland in the north to Spain in the south. Some finds perhaps belonged to late Sarmatian (Alans) women as well. Bulgarian examples date to the 6th century AD. Data for the find sites of the Bulgarian buckles (see Fig 1) support the assumption that their wearers were barbarians settled by the early Byzantine authorities in north-central and north-eastern Bulgaria to strengthen the defence of the region, a matter of strategic importance for the Byzantine capital.

The second type is called *Kaliakra* and is known at present only from NE Bulgaria (Vagalinski *et al* 2000,

cat nos 8–9). Its examples are smaller and far less showy than type 1. They date from the end of the 6th century AD to the middle of the 7th century AD. Most probably these specimens were worn mainly by east germanic men in Byzantine service.

Type 3 covers the smallest (length 40–45mm) and earliest eagle-head buckles, also known as *Vogelkopfschnallen*. These items were popular in the middle Danube area during the 5th century AD and belonged to barbarian warriors, Huns and their east germanic and Sarmatian (Alamannic) vassals (Werner 1956, 72, 82, Taf 18/5; Tejral 1998, 282, Abb 41/3–5, 14, 16, 17; Bona 1991, 283/No 77, Abb 34/C, Abb 77/1, 2). Two examples are published in this paper.

The aim of the present study is to investigate eagle-head buckles from Bulgaria using energy dispersive X-ray fluorescence analysis (ED-XRF). Thus data for the chemical composition of eagle-head buckles has been obtained for the first time and the results have been used for initial interpretation of the technology of production. We hope the present survey will stimulate further research in this area.