Morphological Analysis of the Neanderthal Calotte from Ochtendung, Germany

In 1997 one of the authors (AvB) found three pieces of a calotte of a Neanderthal in a crater depression within the slag-cone volcanic-group called “Wannenköpfe” near the village of Ochtendung in the state of Rhineland-Palatinate, Germany. Three stone tools of the Mousterian culture were directly associated with the hominid fossil. The individual can be securely stratigraphically and absolutely chronologically placed within the early glacial phase of the second last glaciation, the Saale. A comparative-morphological analysis confirms earlier analyses that the remains were those of an adult male. The relatively old age establishes it as another important find of an early Neanderthal in Europe. In absolute years it dates roughly to the transitional time period of the latest European Homo erectus to the earliest Neanderthal. Morphological analysis confirms that the individual is close to a typical Neanderthal with also some additional erectoid characters. This observation supports the most widely accepted view that the Neanderthal of Europe evolved from an autochthonous Homo erectus group.

Introduction

There are only a few well-documented cranial remains of Homo neanderthalensis in Germany. Most of these finds lack information regarding relative or absolute dating. Radiocarbon-AMS-Dating was applied to recently recovered Neanderthal fragments from the famous locality of Neanderthal, near Duesseldorf (Schmitz and Thissen, 1999) and indicates an age of about 40,000 years B.P.. Since these new fragments were uncontaminated, the dating still seems to indicate a fairly reliable absolute date, AMS-dating of older bone fragments usually presents a problem arising from contamination due to former preparation. It leads in nine out of ten samples to more recent dates that are thus incorrect (Berger, 1979; Protsch von Zieten et al., 2002). There were a number of other finds listed and published from Germany (see Oakley et al., 1971; Orschied, 2000). These are for example the fragmentary occipital, parietal, as well as two femoral fragments from the area near Salzgitter-Lebenstedt. The latter are included within the German Neanderthal
group (Kleinschmidt, 1965; Hublin, 1984). The age of these fragments is estimated to be approximately 55,000 years B.P. (Vogel and Zagwijn, 1967). Further extensive excavations and some additional archaeological finds (Pastoors, 1999) seems to support the diagnosis that the osteological fragments could indeed be included into the Neanderthal group of Germany. Next to the aforementioned sites a number of extremely fragmentary finds were recently published. Those are from Hunas, Taubach and other quite doubtful Neanderthal sites. Beside these another example of a questionable Neanderthal find is the parietal fragment from Warendorf-Neuwarendorf (Czarnetzki and Trellisó Carreño, 1999) that was retrieved from a lake during dredge excavations. The so-called Neanderthal fragments from Wildscheuer, near Steeden (Knussmann, 1967) were recently diagnosed as remains of *Ursus spaelaeus* (Turner et al., 2000).

The new find of the Neanderthal calotte described here (fig. 1 and 2) was excavated in 1997 from a small crater depression within a volcanic-group near the village of Ochtendung. It is probably one of the most important Neanderthal fossils in Germany. Its morphology assigns this hominid an important position in the evolution of central Europe. It is one of the few Neanderthal discoveries in Germany that is stratigraphically clearly documented. Based on absolute dating (Amino-Acid-Isoleucine) in combination with geological dating it can be securely placed into the early stage of the second last Ice Age, the Saale-Glaciation, at about 160,000 to 170,000 years B.P. The relatively old age of the hominid find, when compared to other European Neanderthals, is of utmost importance and unique. The European fossil record shows so far quite a substantial hiatus between the "Classical Neanderthal" which dates from about 120,000 to 30,000 years B.P. and an earlier transitional form. The latter is called by some authors *Homo heidelbergensis* and marked as an evolutionary stage "*Homo sapiens Stage 3" (Dean et al., 1994). There is also a partial cranium from Biache-Saint-Vaast (France), dated to 175,000 years B.P. (Huxtable and Aitken, 1988). It could possibly be compared to the new fossil hominid from Ochtendung. Its dating is, however, still controversial (Henke and Rothe, 1998). Fragments of a Neanderthal found at the site of La Chaise (France) could probably be assigned to a similar time horizon (Condemi, 2001). The calotte from Ochtendung bridges with a date of 160,000 years B.P. this particular hiatus. After their discovery in 1997 the three bone fragments were described in some preliminary publications (Berg, 1997a, b; Condemi, 1997) and thereafter in a number of other articles (Berg et al., 2000; Protsch von Zieten et al., 2002). A more detailed morphological analysis and description of the find had so far not been published.