

The Late Upper Palaeolithic human remains from Neuwied-Irlich, Germany. A rare find from the Late Glacial of Central Europe

Die spätpaläolithischen Menschenreste aus Neuwied-Irlich, Deutschland. Ein seltener Fund aus dem Spätglazial Mitteleuropas

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ABSTRACT - Human remains from the Late Upper to Final Palaeolithic of Central Europe are scarce. In 1953, some human bones, covered with red ochre, and associated artefacts were discovered in material taken from a sand pit near the village of Irlich, Central Rhineland (Rhineland-Palatinate, Germany). The finds were stored in a local museum archive. In 2000, the finds were re-discovered and subsequently analyzed with macroscopic, radiologic, and light microscopic techniques. AMS radiocarbon dating of the bones revealed calibrated ages of 14.5 to 13.9 ky BP. The artefacts found with the human remains consist of an antler point, two flint artefacts (backed bladelet, burin spall), and a red deer incisor with ten horizontal grooves on the root and a perforation near the tip of the root. The human bones are assumed to represent four individuals, one young adult and three children of between 6 - 12 months, 4 - 8 years, and 8 - 12 years of age, respectively. An intact femur and a distal ulna of the adult individual exhibit pathological changes to the bone surfaces, probably caused by a chronic vitamin C deficiency. The scanty record of human skeletal remains from the Late Upper and Final Palaeolithic of Central Europe makes even poorly documented and fragmented material an important source of information. The finds from Irlich are assumed to represent intentional burials that took place some time before the Laacher See eruption. Re-investigations at the site are not possible due to mining activities during the last decades.

ZUSAMMENFASSUNG - Bisher liegen aus Mitteleuropa nur sehr wenige menschliche Überreste aus dem späten Jungpaläolithikum und dem Endpaläolithikum vor. 1953 wurden in Material aus einer Sandgrube bei Irlich, Rheinland-Pfalz, einige menschliche Knochen mit Anhaftungen von rotem Ocker, sowie mehrere assoziierte Artefakte gefunden. Die Funde wurden im örtlichen Museumsarchiv (Kreismuseum Neuwied) gelagert und gerieten in Vergessenheit. Im Jahr 2000 wurden sie wiederentdeckt und mittels makroskopischer, radiologischer und lichtmikroskopischer Techniken untersucht. Mehrere AMS-¹⁴C-Datierungen an den Knochen ergaben übereinstimmend ein kalibriertes Alter zwischen 14'500 und 13'900 Jahren BP. Die Artefakte bestanden aus einer Geweihspitze, zwei Flintartefakten (Rückenmesser und Stichellamelle) und einem Rothirschzahn (Inzisivus) mit einer Durchbohrung an der Wurzelspitze und zehn horizontal verlaufenden Rillen an der Wurzel. Auf der Basis der deutlich unterschiedlichen Sterbealter, die an den Knochen geschätzt wurden, wird vermutet, dass die menschlichen Knochen von vier Individuen (Irlich 1 - 4) stammen, einem adulten Individuum und drei Kindern im Alter zwischen 6 und 12 Monaten, 4 und 8 Jahren und 8 und 12 Jahren. An dem intakten Femur und dem distalen Radiusfragment des erwachsenen Individuums (Irlich 1) sind pathologische Veränderungen in Form periostaler Knochenneubildungen vorhanden, die möglicherweise Folgeerscheinungen eines Vitamin C-Mangels darstellen. Wegen der Unvollständigkeit des Skelettes ist eine zuverlässige Diagnose aber nicht möglich. Aufgrund der Seltenheit von Funden menschlicher Überreste aus dem Spätglazial sind selbst fragmentarische Funde wie die vorliegenden wertvolle Informationsquellen. So wird vermutet, dass es sich bei den Funden um die Überreste einer intentionellen Bestattung aus der Zeit kurz vor der Laacher See-Eruption handelt. Eine Nachuntersuchung an der Fundstelle ist wegen des fortgeschrittenen Sandabbaus nicht möglich.

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Introduction

Archaeological finds indicate the presence of humans in the area of the Central Rhineland (Germany) from the Late Lower Palaeolithic onwards. One of the oldest traces of human occupation in the area are the archaeological artefacts from the site Miesenheim 1 that are associated with marine isotope stage (MIS) 15, i.e., date to about 600 ky BP (Turner 2000). The archaeological record also suggests that afterwards the presence of humans in the area was repeatedly interrupted (Baales 2005). Strata from glacial maxima – the most recent of which occurred about 25 ky BP – lack evidence of human presence in the region (Terberger 2013). The most severe impact on the biota of the region was probably the eruption of the Laacher See volcano which occurred around 12'920 calBP at the end of the Allerød-Interstadial (Greenland Interstadial [GI] 1a) (Jöris & Weninger 2000; Baales et al. 2002; Riede 2008; Riede et al. 2011; Sørensen 2010). Two major sites of the Magdalenian, corresponding to the cold period following the last glacial maximum (LGM) and dating to around 15'500 calBP, have been excavated in the Central Rhineland (Gönnersdorf and Andernach-Martinsberg; Street et al. 2012) and provide evidence for a rapid population growth subsequent to the LGM (Baales 2004). Archaeological and palaeontological sites from the subsequent part (Allerød) of the late glacial interstadial (middle to younger phase of the late glacial interstadial complex, GI 1 c-a) in the Central Rhineland are much more frequent. Up to now, five larger settlement areas attributed to the Final Palaeolithic *Federmessergruppen* and several smaller sites have been discovered directly below the widespread Laacher See eruption (LSE) tephra (Baales 2002, 2005, 2006; Gelhausen 2011a, b). A further *Federmessergruppen* site (Bad Breisig) was uncovered above the LSE tephra, dating to the final Allerød interstadial (GI 1a) (Baales & Jöris 2002).

There are only very few human skeletal remains assigned to the Late Upper and Final Palaeolithic of the Central Rhineland, and the dating of these few cases remains largely dubious. An isolated skull from Plaidt-Rauschermühle, found around 1912, was assumed to originate from a Magdalenian context. However, the skull was destroyed during the Second World War and the documentation of the find circumstances is insufficient for an unequivocal archaeological dating (Schröter 1998). Another find of unclear stratigraphic position was made in 1922 at Weißen-thurm. It was described as having originated from below an undisturbed layer of LSE tephra. However,

this find was also lost, and only a single photograph and a drawing of the stratigraphy of the site are preserved (Baales 2002). Based on the available information, therefore, the affiliation of the find to the Palaeolithic has been questioned (Flohr et al. 2004). It must thus be concluded that for the Central Rhineland at present no human skeletal remains are available that can with certainty be assigned to the Magdalenian or the *Federmessergruppen*.

Human skeletal remains of the period immediately before and within the late glacial interstadial complex (GI 1e-a) are generally scarce in Central Europe. There are only some (mostly undated) single finds recorded in relevant archaeological contexts (Street et al. 2006; Orschiedt 2000, 2013). The neonate burial from Wilczyce, Poland (Irish et al. 2008), the secondary burial of the Brillenhöhle on the Swabian Alb, Germany (Orschiedt 1999), the skeletal remains exhibiting cut marks from the Dietfurt cave at the upper Danube, Germany (Gietz 2001) and the double burial from Bonn-Oberkassel, Germany (Verworn et al. 1919), are some of the most important finds from this period in Central Europe.

The Bonn-Oberkassel double burial comprises a female and a male individual who died at an age of about 20 - 25 years and 50 - 60 years, respectively (Bonnet 1919). Skeletal remains of what is considered to be some of the earliest known domestic dogs (Benecke 1986; Thalmann et al. 2013; Janssens et al. 2018) are considered to be part of the burial. The remains were found in 1914 during mining activities at the basalt quarry "Am Stingenberg", east of Bonn-Oberkassel. The human remains had not been documented *in situ* and had already been removed by the workers. However, an excavation at the site two days after the initial discovery recovered several foot bones, and also some red ochre was found *in situ* (Verworn et al. 1919). Based on the observations of the workers, the site was regarded as a double burial (Verworn et al. 1919; Wüller 1999). Several radiocarbon dates assign the double burial of Bonn-Oberkassel to a transitional period from the Magdalenian to the *Federmessergruppen* or early Final Palaeolithic of around 14.2 ky calBP (Baales & Street 1998; Hedges et al. 1998).

Human remains from the Late Upper and Final Palaeolithic (Late Magdalenian, Late Epigravettian, Hamburgian, Azilien, *Federmessergruppen*, and Ahrensburgian) are also relatively rare in other parts of Europe. Thus far, 71 individuals from 17 sites dating between about 16 and 14 ky calBP have been described (Pettitt 2011). However, assignment of some of these 17 sites to the period under discussion is