Some Special Aspects of Final Palaeolithic Silex Economy in the Central Rhineland (Western Germany)

Abstract

During the Final Palaeolithic Federmessergruppen period, a wide range of silex raw materials were used. Beside regional materials, intermediate, and exogenous resources up to 100 km away in the “flint regions” of the Meuse and Saalian glaciation areas, were exploited. At Kettig, two end scrapers of agate-jasper and jasper, originating some 80 km to the southwest, and Muschelkalk chert from Niederbieber, which outcrops are located near Saarbrucken in some 150 km distance to the south-west, represent rare contacts with more southerly regions. In 1998 at Niederbieber, a cache of two large chalcedony flakes from a source c. 40 km away was found, which for some reason were not used by the inhabitants of the site.

While there was enough good quality raw material in the Central Rhineland, the regular use of exogenous raw materials at some sites there demonstrates the necessity of maintaining regular social contacts to other groups in neighbouring regions.

Keywords: Central Rhineland, Federmessergruppen, raw material economy, cache, social network.

Introduction

The outstanding preservation of Final Palaeolithic archaeological and palaeontological sites in the Central Rhineland (eg. Neuwied Basin) is related to the eruption of the Laacher See-Volcano (LST) during the final third of the Allerød warming oscillation some 12.9 ky cal BP ago (Baales et al. 2002). For over more than 100 years and especially during the last two decades, various finds dating to this period have been revealed beneath the so called Laacher See pumice and embedded in ashes of the LST (Baales & Street 1996; Street & Baales 1997; Baales 2002).

The archaeological sites (Fig. 1) are related to the “arched-backed point complex” or Federmessergruppen tradition (Schwabedissen 1954), which is generally dated to the Allerød oscillation. In the Neuwied Basin region of the Central Rhineland, four settlements (Andernach-Martinsberg [upper level]; Urbar, Niederbieber, Kettig) are known which date to this distinct archaeological period.

Recent investigations at Kettig (1993) and, from 1995 to 1999, at Niederbieber, together with contributions to the seasonality of the various settlements (Baales & Street 1998; Baales 2002) have turned out interesting insights into specialised economical aspects as well as the general behaviour of these Final Palaeolithic hunter-gatherer societies in north-western Europe. In this paper, I present some information related to some special aspects of the Federmessergruppen in the Central Rhineland silex economy.

Raw materials used by the Final Palaeolithic Federmessergruppen hunter-gatherers in the Central Rhineland

Generally, one can distinguish three main groups of silex raw materials which were used by the Federmessergruppen in the Central Rhineland: the first can be described as “regional”, the second as “exogenous”, and the last as “intermediate” (Fig. 2).

Regional materials were (or even are) available within short distances of a few kilometres around the settlements, and were perhaps mainly collected while focussing on other activities (hunting, gathering, moving the site etc.). These raw materials are mainly fine grained Tertiary quartzites from primary or secondary (eg. river gravels) contexts and siliceous slate (lydite) from river terrace outcrops and gravels.

Raw materials of the second, exogenous group are those which are only found at distances of more than 80 km away, and comprise mainly cretaceous flints (found in Pleistocene gravels or primary sources) to the north-west and the north in the flint regions of the Meuse river and the moraines of the Saalian glaciation (erratic or Baltic flints).
Fig. 1: Map of the Neuwied Basin with archaeological sites of the *Federmessergruppen*: 1 Kettig; 2 Andernach-Martinsberg; 3 Niederbieber; 4 Urbar; 5 Bassenheim; 6 Kobern; 7 Polch; 8 Ochtendung; 9 Miesenheim 3; 10 Nickenich; 11 Miesenheim 2; 12 Thür; 13 Weißenthum.

Fig. 2: Locations of raw material outcrops for the Neuwied Basin *Federmessergruppen* sites (solid line: verified; dashed line: possible. Modified and supplemented from Floss 1994).
These materials are found regularly (especially those from the Meuse region) at settlements of the Federmessergruppen in the Neuwied Basin.

The last group of intermediate character is mainly composed of one raw material found at a special outcrop named Muffendorf some 40 km to the north of the Neuwied Basin, near Bonn. Muffendorf is the source of a colourful and highly variable Tertiary chalcedony found at almost every Federmessergruppen site in the Northern and Central Rhineland (Floss 1992). Other “intermediate” raw materials include several “local” cretaceous flint types from the upland Eifel-Moselle-Luxembourg region to the west of the Central Rhineland and some small raw material groups from various locations which were occasionally used (Floss 1994; Baales & Street 1996; Baales 2002; 2003).

Special raw material finds

Kettig (Mayen-Koblenz district)

During excavation of the recently discovered Federmessergruppen settlement of Kettig in 1993 two short end scrapers were unearthed made from special raw materials not recognised at Neuwied Basin sites so far. One scraper is made from a mainly reddish material with white opaque xenocrysts (Fig. 3.2), while the other is made from a uniform deep green material with fissures (Fig. 3.1). The red raw material of the first find is a special agate-jasper named “Type Weiselberg” (a location in the Kusel district, Hunsrück upland region), while the green material of the second find could be identified as jasper (both identifications were made by Dr. H. Löhr, Trier, 1994). The sources of these materials are both located some 80 km to the south-west in the so called Saar-Nahe-Basin (cf. 2002, 2003).

The possibility that the nodules used for these tools were transported as pebbles from the Nahe River into the Rhine where they were later collected by people can be excluded, as the two finds from Kettig are relatively large – a chalcedony flake and a fragment from a second chalcedony flake – were found some 15 cm beneath the Allerød surface (which was originally covered by LST), close to an artificially split beam of a reddish jasper and siliceous slate (Baales & Street 1998; Baales 1998; 2003).

In 1998, close to a concentration of Bonn-Muffendorf chalcedony (Fig. 4), a singular situation was discovered. Two remarkably large artefacts – a chalcedony flake and a fragment from a second chalcedony flake – were found some 15 cm beneath the Allerød surface (which was originally covered by LST), close to an artificially split beam of a red deer antler at the same depth, but not associated with any recognisable feature (Fig. 5 and 6). The lithic artefacts can be described as follows:

- complete flake: mainly brown chalcedony
  13 x 13.5 x 5.2 cm; 791 gr. (Fig. 7a)

- flake fragment: mainly violet colour
  11.7 x 9 x 2.1 cm; 305 gr. (Fig. 7b)
Fig. 4: Niederbieber site (excavations 1981-1999) with location of chalcedony cache (triangle) found in 1998 (black dot: hearth; CH, ch: chalcedony; TQ, tq tertiary quartzite; KS, ks siliceous slate; bf baltic [erratic] flint; vt siliceous tuff. – Higher and lower case letters indicate the relative importance for raw materials for each concentration).
Both pieces have a few flaking negatives suggesting that the artefacts had been tested and/or reduced in weight at the location of Bonn-Muffendorf itself. The two finds were later transported to Niederbieber, cached (together with the antler fragment, as red deer antler could be utilised as a raw material for points such as the barbed point from Kettig; cf. Baales 1997) – and forgotten. The reason why the finds were not used, even though the quality of the chalcedony seems to have been useable for flaking (Bonn-Muffendorf chalcedony is sometimes highly variable in quality), is of course unknown and opens a wide range of speculations.

Fig. 5: Niederbieber chalcedony cache in situ (cf. Fig. 6).

Fig. 6: Niederbieber chalcedony cache (map and section; cf. Fig. 5).
Nevertheless, this special find situation at Niederbieber allows us to gain information for the first time about the size of single raw material items transported from Bonn-Muffendorf into the Central Rhineland and, as it appears, this was highly variable.

In connection with this, it is interesting to note that at Anndernach-Martinsberg (upper level) major parts of a gravel flint nodule from the Meuse region could be refitted, showing that the nodule – similar in size to an adults fist – had been transported cf. 100 km into the Neuwied Basin, even though the knapping qualities of this raw material are sometimes not particularly good.

Why are there raw materials from a distance at all?

It is striking that from the early Middle Palaeolithic onwards, exogenous materials, particularly flint from the Meuse region about 100 km away (Floss 1994), were brought to the Central Rhineland. This is especially true for the Upper Palaeolithic Magdalenian and the younger Federmessergruppen which used the same types of exogenous raw materials, but generally with an important difference in the state of the transported items (simplified: Magdalenian – blades / Federmessergruppen – gravel nodules; Baales & Street 1996).

Furthermore, there was good quality raw material available in the Central Rhineland and there was no obvious need to bring in materials from 100 km away. So, why did people move and transport exogenous materials?

According to seasonal indications, Magdalenian as well as Federmessergruppen hunter-gatherers could stay all year round in the Neuwied Basin and its vicinity. The availability at least of animals in this region is shown for both "winter" and "summer" seasons (Baales & Street 1996; 1998; Baales 2002). Nevertheless, perhaps raw materials were collected incidentally during subsistence activities (hunting, fishing) in neighbouring areas?

For me, there is no doubt that the necessity of maintaining regular social contacts, the “inner” need to get in touch with other people, with other groups, was much more important or the main reason (Baales 2001; 2002). Such contacts offer, on the one hand, the possibility to gain knowledge about new technological innovations etc. and, furthermore, these social networks maintained the survival of small hunter-gatherer groups in a more or less “un-inhabitated” area. Estimates show that during the Federmessergruppen period some 0.02-0.03 individuals/km² were inhabiting Central Europe (Zimmermann 1996, 58), only a tenth of a thousand of the recent value.

From this point of view, lithic raw material curation and transportation was only a by-product of movements initiated by highly necessary regular social contacts, linking groups in the Central Rhineland especially with groups in the neighbouring regions of North-western Europe. At least this behaviour, evinced by lithic raw material analy-
ses for the Central Rhineland Federmessergruppen, enabled mankind to survive.

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