10. The colonisation of eastern alpine territories: the Val di Non case study and the ‘Regole’ field camps (Trento, Italy)

Giampaolo Dalmeri, Klaus Kompatscher, Maria Hrozny Kompatscher, Anna Cusinato and Michele Bassetti

Since the 1980s, the process of colonisation of the Alps during the Late Glacial and the Early Holocene has primarily been studied on the basis of the technical and typological characteristics of lithic industries. For the Late Glacial, a pattern for landscape use has been proposed which suggests seasonal movements of human groups between the valley floor and mid-mountain altitudes. New data, such as those gathered from the Riparo Dalmeri site, now allow us to postulate a more detailed mobility pattern. Moreover, a recent project of systematic survey in the Val di Non, in the Western Trentino area, has let us identify a large number of sites attributed to the Late Palaeolithic and the Mesolithic, situated at different altitudes and characterised by different topographical conditions. The first case investigated was the Regole peat bog, at an altitude of 1200 metres above sea level, where three sites were excavated and analysed. These settlements were selected in consideration of their well-preserved archaeological records. Intra-site analysis conducted through refitting has allowed us to interpret these sites as field camps.

Keywords: Late Glacial, Early Holocene, eastern Alps, hunter-gatherers, Regole peat bog, lithic industry, refitting, intra-site analysis, landscape use.

Objectives of the research

The chronological and palaeo-environmental background

Since the 1970s, the process of human colonisation of the Alps has primarily been studied by comparing the technical and typological characteristics of the lithic industries found and the palaeo-environmental data gathered from numerous sites excavated in north-eastern Italy. Research has allowed us to reconstruct the stages of human colonisation during the Late Glacial and the Early Holocene in this region. The most important spread of human groups towards the Alpine environment has been identified as occurring during the Late Glacial (Bolling-Allerød) Interstadial. From the valley floor sites, such as Riparo Soman (Battaglia et al. 1994), between 100 and 150m in altitude, groups of Epigravettian hunter-gatherers moved on towards the mid-mountain environment. During the Bolling, the timberline reached c. 1500m in altitude, or even higher in the inner Italian Alps (Kofler 1994; Schneider 1985). At the end of Bolling the paleobotanical data from the Palughetto basin on the Cansiglio plateau shows that the tree line was well over 1050m asl (Avidigiano et al. 2000). This stage, in which groups frequented the Alpine plateaux, is documented by many open-air sites and a number of rockshelters. Since the 1980s, a pattern for landscape use has been proposed which suggests a seasonal migration of human groups between the valley floor – where large rockshelters existed that were occupied repeatedly during the year – and mid-mountain altitudes, frequented from the spring to autumn (Broglio and Lanzinger 1990). Altitudes above 1500m were frequented only sporadically, as documented by rare open-air sites (Figure 10.1).

Data recently gathered from the mountain settlement of Riparo Dalmeri, radiocarbon dated to the Late Glacial Interstadial, indicate a strategy of using resources from different natural environments. Hunting the ibex (Capra ibex), which populated the Alpine prairies, was supplemented by the exploitation of other ungulates that inhabited the conifer forests, and by fishing (Bassetti et al. 2000; Cassoli et al. 1999; Castelletti and Maspero 1994; Fiore and Tagliacozzo 2005). On this same site, the micro-wear analysis of lithic artefacts has revealed the importance of leatherworking and, in particular, tanning...
activities (Lemorini et al., in press). The data gathered at Riparo Dalmeri are consistent with the proposed pattern for landscape use, but suggest a more complex scenario, with frequent movement between the Alpine plain and the valley floor during a single season. This latter hypothesis is corroborated by the discovery, at Riparo Dalmeri, of fish remains from species that are attributed to fishing activities undertaken in the (then) valley floor of the River

Figure 10.1. Simplified model of human penetration of the mountainous zone of the Adige and Brenta catchment areas, covering a sequence from Late Glacial Interstadial to Preboreal. For the Late Glacial Interstadial, 18 sites have been taken into consideration, for the YD 12 sites and for the Preboreal 51 sites. Modified from Bagolini and Pedrotti 1992, and Dalmeri and Pedrotti 1994.
Brenta, and now at an altitude of 200m asl (Fiore and Tagliajozzo 2005).

The cold and arid climate of the Younger Dryas (YD), interrupted by brief temperate periods, led to the retreat of the timberline (300–500m) (Schneider and Tobolski 1983; Wick 1996), and, probably, to the abandonment of sites frequented during the Allerød Interstadial. Nonetheless, recent radiocarbon dating carried out at Riparo Cogola (Bassetti et al. 2005), and at the Bus de la Lum site (Peresani et al. 2000), indicate, along with other sites dated exclusively by analysing lithic typology, that the mountain areas continued to be frequented between the Younger Dryas (YD).

During the Early Holocene, when the climate stabilised around current values and the timberline reached altitudes of around 2200–2300m (Seiwald 1980; Oeggl and Wahlmüller 1994; Speranza et al. 1996), Mesolithic human groups primarily frequented the rockshelters of the valley floor and at high altitude, penetrating the innermost areas of the Alpine chain. In certain rockshelters of the Val dell’Adige, such as Romagnano III (Broglio and Kozlowski 1983) and Pradestel (Bagolini et al. 1973), evidence has been found of continuous occupation throughout the interval from the Preboreal to the Atlantic. The occupation of rockshelters, which opened up along the rocky slopes, was favoured by the greater stability of the valley floor and the presence of small lakes, which enabled humans to intensify the exploitation of the economic resources offered by fishing and the gathering of molluscs. The majority of Mesolithic mountain Sauveterrian sites are distributed at altitudes between 1800 and 2300m (Dalmeri and Pedrotti 1994; Broglio and Lanzinger 1996) and are primarily related to the exploitation of two different natural environments, namely the mountain prairies and the woodlands, as demonstrated by the Mondeval de Sora site (Fontana and Guerreschi 1998). Many of these are situated on the shores of small lake basins (Figure 10.1). Recent archaeological research has also revealed rare Mesolithic sites at intermediate altitudes, such as Casera Lissandri on the Altopiano del Cansiglio (Peresani et al. 1998), which have been interpreted as intermediate stations along the ascent routes.

The recent mobility pattern (Kompatscher 1996), developed to reconstruct the main routes of Mesolithic human groups along the Alpine prairies, reveals how the morphology of the terrain strongly influences the location of a camp. During the Mesolithic, the most suitable mountain environments for hunting were located exclusively at high altitude, where the hunting grounds were scarce, and were split up and marked by abrupt variations in altitude. Relative to the recent Epigravettian, the reduction in available terrain led to two principal consequences: a greater mobility at high altitude to find new hunting grounds to the north, and a reduction in the size of residential camps, around which many more lookout posts, or hunting bivouacs, sprang up. The idea of contact between the southern and northern slopes of the Alps, as a consequence of progressively deeper penetration northwards, is supported by artefacts found at Ullafelsen (Tyrol, Austria), deriving from raw material that is southern Alpine in origin (Schäfer 1998).

The specific purpose of the project Against this background, the research project under way in the upper Val di Non is targeted at two principal objectives: to gather new data concerning the western Trentino territory, which has been barely explored archaeologically, and to draw the focus of research towards the Upper Palaeolithic-Mesolithic transition period, which is positioned between the end of the YD and the start of the Preboreal. This particular phase was selected for study in an attempt to explore a period of change in both knapping techniques and in settlement patterns. While the majority of authors concur on the fact that the Mesolithic was a period when the Alpine region began to see the appearance of new technologies (Broglio 1973; Guerreschi 1984), which originated in the Upper Palaeolithic, studies on changes in settlement patterns and landscape use have only been made very recently and are not exhaustive (Angelucci 1996). The Val di Non territory has preserved potentially interesting archaeological records that could contribute to this issue. The territory surveyed extends from the Valle dell’Adige valley floor, the mid mountain, where the Epigravettian sites of Laghetto delle Regole were found, and the high mountain, where Mesolithic sites have been identified (between 1800 and 2350m asl).

To date, three sites have been investigated on the shores of the Regole lake basin at 1200m asl, which have been radiocarbon dated between the end of the YD and the start of the Preboreal. These are situated on the shores of an ancient lake basin, whose deposits may serve as a valuable archive for the reconstruction of the environment in this area of the Alps during the transition period between the Pleistocene and the Holocene.

Methods

The study of archaeological material from the Regole lakeshore site has been based on technological and spatial studies, conducted through refitting, to reconstruct the anthropic or natural processes that have led to the formation of the record, and to identify material concentrations and significant associations or relationships between different material categories.

The Laghetto delle Regole basin

In the upper Val di Non (Trentino) around the area of Laghetto delle Regole at 1240m asl, peat has been extracted for agricultural purposes. These activities have led to the identification of three archaeological sites frequented during the final stage of the recent Epigravettian (Dalmeri et al. 2002; Dalmeri et al. 2005; Cattani and Giosetti 2005). These excavations were conducted by the Museo Tridentino di Scienze Naturali in collaboration with the Soprintendenza per i Beni Archeologici of the municipality.
The colonisation of eastern alpine territories of Trento (Figure 10.2). The basin fill documents a sequence that starts with moraine deposits from the Last Glacial Maximum (LGM) and ends with the formation of peaty deposits, reaching a maximum thickness of approximately 2 metres. Human occupation, dated to the YD (site LR1: 10,445±32 BP; 10,650–10,410 cal BC; KIA-14195 and site LR2: 10,373±32 BP; 10,380 cal BC; KIA-14196) and the start of the Preboreal (site LR3: 9737±42 BP; 9220 cal BC; KIA-20343) is concurrent with the regressive phase of the ancient lake (Figure 10.3). During the Preboreal and up to the Atlantic, the ancient shore deposit developed into podzol forest soil. At site LR1, the dating of roots (6280±27 BP; 5316–5148 cal BC; KIA-14194) that were found in their original positions when alive provides a terminus ante quem for the development of the forest. Peat formation began in the Mid-Atlantic, thus providing an ante quem date (5121±24 BP; 3975–3805 cal BC; KIA-14193) relative to ligneous remains found at the base of the peat.

This work is primarily concerned with the results of the study of sites LR2 and LR3, whereas it will only make references to site LR1, where the distribution of stone artefacts has been altered by root system disturbances during the period of colonisation by a forest of Scots pine (Pinus silvestris). At both LR2 and LR3 sites, the archaeological material found consists exclusively of flint artefacts in undisturbed deposits and carbonaceous particles. The analysis of stone material and the characteristics of the soil stratigraphy observed allow us to consider the lithic assemblage of each site as a uniform whole attributable to a single episode of occupation. The formation of peat after the abandonment of the site may have favoured conservation and minimised post-depositional disturbance.

At site LR2, located on the northern shore of the lake basin, an area of 6m² was excavated, yielding 210 stone artefacts that were almost exclusively obtained from flint of the Scaglia Variegata Cretaceous formation, with the majority originating from the same nodule. 34 elements were refitted from 95 artefacts each measuring over 0.5cm. The examination of refitted elements proves the detachment of lamellar flakes and reveals that at least one unshaped nodule was transported to the site, where it has been knapped to obtain standardized supports and a number of retouched tools. Large portions of cortex on the dorsal surface of a number of lamellar flakes indicate that the production of supports was carried out immediately after a rough core preparation process. The microliths (segmented backed bladelets, lunate and triangle) were made from lamellar flakes by backing retouch without the use of microburin techniques. In spite of the scarcity of material, the knapping methods and the production process of microliths found at the site are compatible with the final stage of the recent Epigravettian. From a spatial point of view, the archaeological record is concentrated in two areas separated by a distance of approximately 1 metre. The first of these consists of debitage products and microliths, whereas the second consists of cortical discard flakes. The material found at these two concentrations may be interpreted as the product of a single knapping episode, during which useable tools were selected and separated from waste flakes (Figure 10.4).
Figure 10.4. Laghetto delle Regole. Map of site 2, showing the refitting spatial distribution. (Graphic: K. Kompatscher and M. Hrozny Kompatscher).
Site LR3, situated on the southern shore of the lake basin, yielded 1147 artefacts. The majority of the tools are made from Cretaceous Scaglia Variegata and Scaglia Rossa raw materials, which outcrop locally. The debitage products found consist in blades, bladelets and flakes (Figure 10.5). The lithic artefacts, which fit neatly into the final stage of the recent Epigravettian, are relatively varied: one burin, three end scrapers, one truncation, a retouched blade and retouched flakes. Among microliths, backed points, backed bladelets and one segmented backed bladelet were identified. 135 refits were made in total from the assemblage (135 out of 380, or 35.5%). Two causes for the separation of the elements were identified: knapping and intentional retouching (28%); fracture (22%) and thermal action (50%) (Figure 10.6). This latter factor was interpreted as a natural post-depositional phenomenon, affecting 88% of the artefacts. As with site LR2, the high percentage of refits allowed us to reconstruct the behavioural components underlying the site formation. After a brief occupation by a number of hunter-gatherers, the following activities were conducted at the site: knapping (Figure 10.6.1), manufacture of microliths (Figure 10.6.2) and the manufacture of a burin (Figure 10.6.1). A difference in the spatial distribution of activities can be noted. The microliths, situated at the centre, could indicate re-hafting or retooling activities, whereas the tools, the blades and the large flakes, dispersed over the entire area of the site, are an indication that certain subsistence activities were carried out there (Figure 10.5). The area organisation of site LR3, and in particular the position of the microliths and tools, is substantially consistent with spatial distribution patterns formulated from the 1980s on for the Late Palaeolithic and the Early Mesolithic (Cziesla 1990; Bassetti et al. 2000).

Conclusions
The territory exploited by Epigravettian groups of humans extended from the valley floor to large Alpine plateaux at altitudes between 1000 and 1500m. We have been able to identify two types of mountain site, i.e. seasonal residential camps and field camps. Sites LR2 and LR3 may be ascribed to this latter category, as these were briefly occupied sites on the shores of a small lake basin. At other sites found on the large plains at mid-mountain altitudes, previously interpreted as field camps, the study of stone tools, based primarily on the types of retouched tools, has not allowed us to postulate how different activities carried out at the site were organised in space or time. Conversely, the archaeological record of sites LR2 and LR3 has offered the chance to carry out a thorough intra-site spatial analysis, enabling us to reconstruct some of the behavioural dynamics of the Epigravettian human groups. Site LR2 has preserved the traces of a single knapping episode with the concurrent selection of useable tools, whereas site LR 3 provides evidence of a brief occupation by some hunter-gatherers who carried out a series of spatially organised activities, setting aside a limited area for the manufacture of a number of microliths, probably destined for a hafting system.
Based on radiocarbon dating, the sequence of dates identified at the Regole sites has confirmed that human groups were present in the mountain environment during the YD, providing new data to place chronologically the final Epigravettian cultural stage, during which changes began to arise in the techno-typological features of lithic industries which were to develop fully in the Mesolithic. The Val di Non project intends to extend its research to sites located at high-mountain altitudes, to ascertain their chronology and to investigate possible relations with the sites at the Regole peat bog.

References


Figure 10.6. Laghetto delle Regole. Site 3. Examples of refitting sequences. (Drawing: K. Kompatscher and M. Hrozny Kompatscher; scale 1:1).
The colonisation of eastern alpine territories


