Juho-Antti Junno
ARCHAIC HOMO SAPIENS IN THE NORTHERNMOST REGION

Juho-Antti Junno, Department of Art Studies and Anthropology, P.O.Box 1000, FIN-90014 University of Oulu, Finland, juho-antti.junno@oulu.fi

The occupation of Neanderthals at Susiluola has raised great interest among the general public and also scientists, as Susiluola would be the first Neanderthal site in Fennoscandia. Here I will present some views about the possibility of archaic Homo sapiens occupying the Fennoscandia region in general and Susiluola in particular during the last glacial epoch.

Recent years have brought us with new information about hominid temporal and geographical distribution (e.g., Vekua et al. 2002; Parfitt et al. 2005; Spoor et al. 2007) including the northernmost region (Pavlov et al. 2001; 2004). Especially the recent Neanderthal finds in the arctic north and earliest hominid finds in northern Europe (Roberts et al. 1994; Partiff et al. 2005) increase the possibility that archaic humans could have occupied also Fennoscandia for short periods rather early. Temporary occupations when enabled by environmental conditions seem rather likely in light of earlier hominid expansions (e.g., Dennell 2003). The date of occupation remains open and according to other north European sites (e.g., Pavlov et al. 2001; 2004; Partiff et al. 2005) later date than OIS 5, the result of fieldwork done at Susiluola (Schultz et al. 2002), seems more likely.

Considering Susiluola, I will here refer to first two of the three problematic issues presented by Pettitt and Niskanen (2005). A first problematic issue deals with the presence of Neanderthals this north (62 N) without contemporary finds elsewhere. As Pettitt and Niskanen note, north-Russian Palaeolithic sites (Pavlov et al. 2001; 2004) make Susiluola occupation possible *Sensu lato* and support the dispersal of archaic humans further north than previously thought. It is claimed that the lack of sunlight during winter prevented Neanderthals occupying areas north from 53 N (Krantz 1981). This theory is based on vitamin D deficiency which occurred in the northernmost areas during wintertime. Does this boundary reflect certain amount of sunlight producing enough vitamin D or just the boundary of ice sheet during the last glacial maximum? In the latter case the ice sheet would have demolished Fennoscandian Neanderthal sites around 20 ka. This theory is supported by the fact that north-Russian sites (Pavlov et al. 2001; 2004) have not suffered from glaciation during the last glacial maximum.

Vitamin D deficiency causes rickets, osteomalasia and osteoporosis (e.g., Whyte & Thakker 2005). Vitamin D deficiency and diseases caused, combined with Neanderthal behavioural ecology has been popular explanation for Neanderthals' limited occupation in Europe. It is thought that later humans could have adapted vitamin D richer diet by fishing and drying meat in the sun (e.g., Krantz 1981) – habits not typical for Neanderthals.

For Neanderthals, the main sources of food were medium- to large-sized mammals (Stiner 1994; Richards et al. 2000). Especially woolly rhinoceros and mammoths were favored in some localities (e.g., Bocherens et al. 2005). It seems that Neanderthals were adapted to rather carnivorous subsistence strategy although they were physiologically capable for omnivorous diet. As successful predators Neanderthals would have obtained significant quantities of vitamin D from their nutrition as, in fact, red meat is recognised as an excellent source of vitamin D (e.g., Lee et al. 1995) and fat rich tissues and organs of arctic mammals contain similar amounts of vitamin D as does for example whitefish (Kuhnlein et al. 2006). Meat rich diet would explain how Neanderthals could have obtained enough vitamin D even

when occupying areas characterized with low levels of sunlight.

Second problematic issue presented by Pettitt and Niskanen considers the coastal or even insular habitat at Susiluola. Pettitt and Niskanen point out that coastal Neanderthal sites are rare and question whether island environment could have supported predatory Neanderthals. Coastal site limits greatly the available terrestrial resources and so coastal site must offer some particular benefits (excluding fishing in this case). Mammoths are however found in coastal and insular environments (MacPhee 2007) and hunters have been following this valuable resource 'along the ice margin' (Johnson 2007). Other alternative explanations for coastal settlement could also be presented, such as migratory reindeer and migratory waterfowl seasonally travelling to this region. For example, the Isle of Islay in Scotland is hosting approximately 50,000 geese over winter, as geese from Greenland and Iceland are wintering in Scotland, offering a remarkably concentrated nutritional resource.

As direct evidence about the occupation of archaic humans in Fennoscandia is missing, so are also further conclusions about the Pleistocene occupation of Susiluola without grounds. Future excavations at Susiluola and other sites in northern Europe can however reveal new information about the first occupation of Fennoscandia. The good results for example in England are also due to great efforts that have been put to Pleistocene archaeology as for example through the Ancient Human Occupation of Britain project. Something like that would be needed also in Fennoscandia and Susiluola excavation is a good start for that.