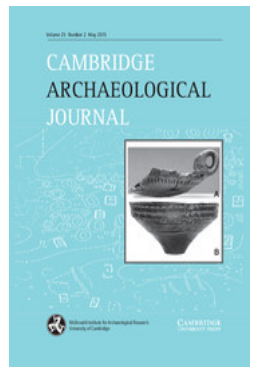

The Shanidar IV 'Flower Burial': a Re-evaluation of Neanderthal Burial Ritual

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Shorter Notes

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Jeffrey D. Sommer

The cognitive abilities of Neanderthals have been the subject of lively debate for decades (Mellars 1996). In the early 1970s it was proposed that Burial IV of Shanidar Cave, an adult Neanderthal from Iraq, might have been laid to rest on a bed of flowers including yarrow, groundsels, grape hyacinth, and St Barnaby's thistle (Solecki 1971; 1975; Leroi-Gourhan 1975). Although challenged by some, the Shanidar IV data have been used to support the notion that Neanderthals felt 'the love of beauty' and 'the full range of human feelings' characteristic of modern humans. In this note zoological data is presented to suggest that *Meriones persicus*, a small rodent native to the Shanidar region, is capable of having introduced enough flower heads into the cave to account for the pollen found near Shanidar IV.

The archaeological data

Shanidar Cave is located in the Zagros Mountains of northern Iraq. It is one of a number of caves and rock shelters in the drainage of the Greater Zab River, a major tributary of the Tigris. Over a series of four field seasons between 1951 and 1960, Shanidar was excavated by Ralph Solecki of Columbia University (Solecki 1963; 1971). The cultural sequence in the cave included Middle Palaeolithic, Upper Palaeolithic, and Pre-Pottery Neolithic occupations. Level D, the lowest stratigraphic unit, produced Mousterian tools and eight skeletons described as 'Neanderthal'. These Neanderthal remains include seven adults and one child. Four of the individuals are thought to have been killed by rock falls in the cave, while the others, including Shanidar skeleton IV, appear to have been deliberately buried (Solecki 1971).

'Routine' soil samples were collected from within and outside of the area of the Shanidar IV skeleton (Solecki 1971, 245). It is not clear that all rodent burrows in the area were detectable, or could be avoided in this sampling. Later analysis of the soil samples revealed that, in general, throughout the cave, pollen was poorly represented (Leroi-Gourhan 1975, 562). Two samples from around the Shanidar IV burial, however, were substantially different. These samples contained a much higher number of pollen grains, many of which were in clusters indicating that complete flowers were deposited (Leroi-Gourhan 1975, 562–3). Of the 28 species of pollen that were identified, only seven occurred in clusters, and these species accounted for the majority of the pollen recovered. In addition to pollen, the soil samples contained numerous fragments of vegetal tissue (Leroi-Gourhan 1975, 563).

The identified pollen consists of, in order of decreasing frequency, Compositae, Chenopods, Gramineae, Caryophylaceae, *Ephedra*, Dispacaceae, *Artemisia*, and several other taxa (Leroi-Gourhan 1975, 564). The seven pollen types that were recovered in clusters interpreted as representing whole flowers include *Achillea* sp. (yarrow), *Senecio* sp. (groundsel), *Centaurea solstitialis* (St Barnaby's thistle), *Muscari* sp. (grape hyacinth), *Ephedra altissima* (woody horse tail), and two unidentified species (Leroi-Gourhan 1975, 564; Solecki 1971, 248–9). At least one of the unidentified species is among the most numerous types recovered (Leroi-Gourhan 1975, 564).

Leroi-Gourhan interprets the pollen evidence as indicating that between May and July, in a year more than 50,000 years ago, the body of Shanidar IV was laid on a bed of woody branches (*Ephedra*) and flowers (the Compositae types, the unidentified types, and *Muscari*). Presumably (although they include some of the most abundant types of pollen in the samples), the Chenopods, Gramineae, Caryophylaceae, Dispacaceae, and *Artemisia* represent background pollen that was naturally incorporated into the burial fill.

The ensuing debate

The discovery of a Neanderthal skeleton in apparent contact with so much flower pollen prompted immediate speculation about the cognitive powers of Middle Palaeolithic humans. As Solecki (1971, 250) put it:

> With the finding of flowers in association with

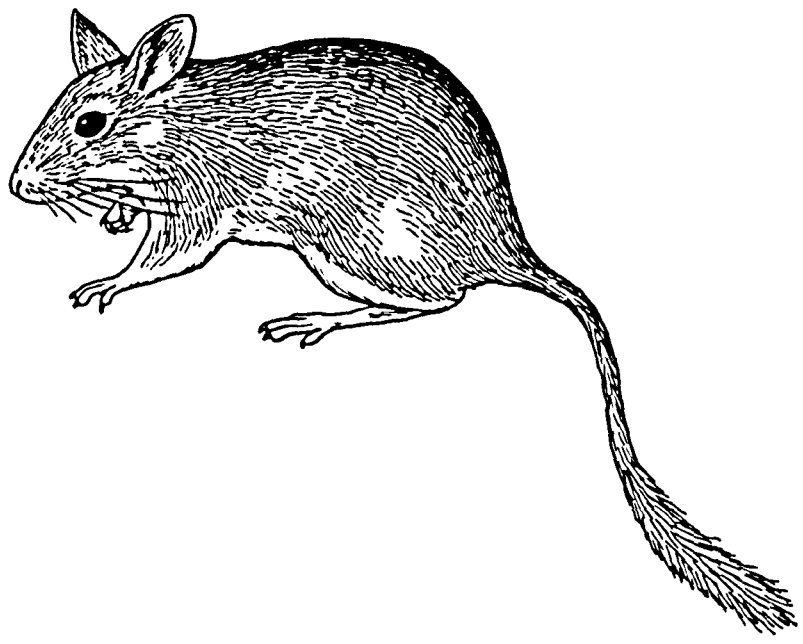

Figure 1. *The Persian jird,* Meriones persicus. *(Redrawn by John Klausmeyer from a watercolour in Harrington 1977, 41.)*

> Neanderthals, we are brought suddenly to the realization that the universality of mankind and the love of beauty go beyond the boundary of our own species. No longer can we deny the early men the full range of human feelings and experience.

To be sure, some researchers questioned the notion that the Shanidar IV had been laid to rest with bouquets, garlands, or a bed of flowers (e.g. Brace 1971; Chase & Dibble 1987; Gargett 1989; Klein 1989; Stringer & Gamble 1993). Other scholars, on the other hand, seem to accept it with little or no reservation (Campbell 1992; Gore 1996; Gould 1988; Leroi-Gourhan 1975; Poirier 1990; Shreeve 1995; Solecki 1971; 1975; Trinkaus & Shipman 1992). While some continue to question the evidence for intentional burials, ritualistic activities, and other human-like qualities of Neanderthals (Chase & Dibble 1987; Dettwyler 1991; Gargett 1989; Stringer & Gamble 1993), consensus on these issues has not yet been reached (Diamond 1989; replies to Gargett 1989, same volume).

Alternative explanations for how the flower pollen became associated with the Shanidar IV skeletons have occasionally been offered, but discussion of mechanisms has been minimal. Gargett (1989, 176) suggests that the most likely agent of deposition for the Shanidar pollen was the wind. Both Gargett (1989, 176) and Chase & Dibble (1987, 275), point out that rodent disturbances were evident around all of the Shanidar burials, suggesting the possibility that rodents were responsible for the pollen. Solecki (1971, 247), on the other hand, has argued that 'Neither birds, nor animals could have carried flowers in such a manner in the first place, and the second, they could not have deposited them with a burial'. Leroi-Gourhan (1975, 563) concurs, stating that 'neither birds, nor rodents, nor the presence of mammalian coprolites can explain the presence of the assemblage of flowers . . .'. New data on Near Eastern rodents of the genus *Meriones*, however, suggest that they do in fact 'carry flowers in such a manner'.

Meriones persicus

Solecki (1971) makes at least eight references to the presence of rodent disturbances around the Shanidar Neanderthal remains, including one particularly revealing paragraph which refers to Shanidar skeletons IV and VI:

> Rodent holes were found very close to the skeletons, leading me to suspect that these animals must have been looking for the flesh of the dead. I remembered that rodent burrows were associated with most of the human skeletal remains we had found. Indeed, one way of determining the possibility of a human skeleton was to plot the number and angle of the rodent holes, because they seemed to me most numerous around human bones, and seemed to zero in on them from different directions. (Solecki 1971, 238)

Despite the frequency of such burrows around the Shanidar skeletons, Trinkaus (1983) makes no specific mention of any rodent gnaw marks on the Shanidar IV remains he studied.

Several zoologists indicate that the rodent involved was *Meriones*, a genus that includes several closely related species. In his analysis of the faunal remains from Shanidar Cave, Perkins (1964, 1565) indicated that bones of *Meriones* sp., were among the large numbers of rodent remains recovered. Richard Redding and Douglas Lay of the University of Michigan have since found that approximately 70 per cent of the rodents in the Shanidar assemblage are *Meriones persicus*, the Persian jird (Redding pers. comm. 1996).

Meriones persicus (Fig. 1) inhabits barren and rocky slopes in the Zagros Mountains and the margins of the Iranian Plateau (Harrison 1972, 564–6; Lay 1967, 175–7). These gerbil-like rodents frequently nest under boulders, in caves, or in cracks in exposed rocks, but will burrow when soft substrate is available (Lay 1967, 176). Persian jirds live in colonies, and store vast amounts of seeds and other vegetal material in and around their burrow (Lay 1967, 177). Lay reports that one jird colony which was observed was subsisting mainly on grass seeds, but with several other plant seeds as well; another colony was observed subsisting mainly on sand burrs

(*Medicago* sp.). Harrison (1972, 566) reports that local Kurds trap this species using raw meat as bait.

Most important from the standpoint of this note is a discovery made in the Zagros Mountains of Iran. In 1971 and 1973, zooarchaeologist Richard Redding (pers. comm. 1996) excavated several burrows of the closely related species *Meriones crassus*, and found *large numbers of flower heads, including members of the Compositae family, stored in the side tunnels of the burrows*. The number of flower heads these rodents had saved was more than enough to account for the pollen found near Shanidar IV. Indeed, the habit of storing nesting material and/or food, including seeds, flower heads, leaves, and other vegetal material in their burrow is common within the genus *Meriones* (Harrison 1972; Lay 1967; Qumsiyeh 1996).

Conclusions

One day we may find that Neanderthals' cognitive skills did include 'the love of beauty' and 'the full range of human feelings'. Unfortunately, the flower pollen found near Shanidar IV cannot be used as convincing proof of such cognition. The majority of the small rodent bones identified from Shanidar Cave belong to a genus known to store flower heads, seeds, sand burrs, and other plant material in the side tunnels of its burrows. Jirds are also known to burrow into areas of soft substrate, such as the archaeological deposits and burial earth in a Zagros Mountain cave. Thus, while the investigation of Neanderthal cognition should continue, the flower pollen recovered near Shanidar IV is more likely to have resulted from the activities of rodents than Neanderthals.

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