

Kapitel 10 Pastoralists in a High Mountain Valley: Summarising Discussion and Synthesis

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The burial cave Mebrak 63 is situated at approximately 3,600 metres above sea level in the Dzong valley (also known as Muktinath valley), Mustang district, in the north of Nepal. It is now located on the seventh floor of a cave system; all cave chambers were, at different times, hewn into the conglomerate rock by the inhabitants of the valley (Kap. 1). The cave chamber Mebrak 63, which was used as a collective grave, lies about 30 metres above the foot of the rock face. Today, it can only be reached by climbing the rock with special climbing gear (**Fig. 10.1**). For nearly five centuries, i. e. from about 500 BC to the Christian era, the deceased persons were repeatedly entombed in this burial cave, lying on brightly patterned bamboo mats in wooden, richly decorated bed-shaped coffins (so-called bed coffins). The unclothed dead were laid down in a crouched

position, their hands and feet being tied with bamboo or textile strips. In addition, they were given clothes, jewellery, tools and food for their life after death. Due to the arid climate in the rain shadow of the Himalayan main range, organic material is perfectly preserved; hence, the buried people were mummified owing to the dryness of the environment.

In the course of time, about 30 people were entombed in the burial cave, earlier burials thereby were moved aside when another deceased was brought to the chamber. During this procedure, it often happened that the corpses fell apart; thus, just a few bodies were found in their proper anatomical order (**Fig. 10.2**). Only in the eastern part of the burial cave, at the furthest point from the entrance hole, three complete crouched burials eposited in and next to the bed coffin have been



Fig. 10.1 The rock of Mebrak in Dzong valley with the cave systems and the terrace settlement.

preserved (Kap. 2, Abb. 2.2; 2.4). These individuals were probably not moved at all, or at least just a little. Moreover, they were also better protected against the weather than those lying closer to the entrance hole of the cave chamber.

After the cave had been abandoned, the chamber served as a nesting place for yellow-billed and red-billed choughs for centuries; the birds deposited nesting material in the cave tomb and „manipulated“ the burials by removing textile pieces, for example (Kap. 1.2). Furthermore, the birds covered the entire chamber with a nearly 50 cm thick layer of droppings, which had to be removed from the partially mummified skeleton parts and grave goods.

During the investigation in 1995, the western part of the cave and the interior space of both the western and the eastern bed coffin were almost completely excavated in eight plana (Kap. 2 and 3). With respect to the population living in the Dzong valley today, the frames of the two remaining bed coffins were left *in situ* (Fig. 10.3). In the areas next to and in front of the eastern bed coffin, only the finds from the discovery level

plane (Planum 1a) were documented and recovered, whereas the areas behind the bed coffins remained untouched (Kap. 1.2).

The design principle of the two bed coffins, which are still largely intact with regard to their construction, is based on tongue and groove fittings, tenon and mortise joints. In fact, the western (youngest) bed coffin reveals a more sophisticated technology than the other one (Kap. 3). At each head end of the two coffin constructions, i. e. the sides facing the entrance to the cave chamber, a hatch is recessed. All side boards, the richly decorated lateral head boards in particular, exhibit ornamental carving and painting (Fig. 10.4). The construction technique of the (oldest) already dismantled bed coffin, whose posts and side boards were found in the western part of the cave, is simpler, and it is based on mortise and tenon joints without tongue and groove fittings.

The posts of the dismantled coffin in the western part of the cave and all undecorated boards recovered in the cave chamber were sampled for a dendrochronological investigation (Kap. 8 and Tab. 3 in the Appendix). Only the skulls, some



Fig. 10.2 The easternmost bed coffin (634) from the west: The complete individual I.21 fixed in a crouched position and the skull of individual I.22, both lying beneath the inner bottom surface.



Fig. 10.3 The bed coffins in the cave from within, the boards worked with an adze and elaborately fit together.



Fig. 10.4 The front of the eastern bed coffin (634) with carved and painted ornaments.

long bones and pelvic bones of the excavated human individuals could be recovered, which were then anthropologically examined (Kap. 5 and Tab. 1 in the Appendix). Radiocarbon dates were obtained from the skeletal parts of fourteen buried individuals (Kap. 8.2 and Tab. 2 in the Appendix).

During the approximately 500 years of occupancy, at least 27 individuals were entombed in the burial cave (Kap. 5.2); considering the unexcavated cave areas, the number of 30 burials is certainly not too high. This leads to the assumption that, roughly every 15 to 20 years, one deceased person was entombed in the community burial chamber. This frequency is also confirmed by the dendrochronologically determined felling dates of the trees from which the (undecorated) coffin elements were made (Kap. 8.2).

A burial sequence could be established by means of radiocarbon and dendrochronological dates as well as stratigraphic features. The oldest ¹⁴C-dated burial is hence situated in front of the bed coffin in the eastern antechamber of the

burial cave. It exhibits a man who died at the age of 40 to 60 years and who was entombed in the fifth century BC. The stratigraphy reveals that the acephalous torsos found in the lower plana in the western cave probably belong to the oldest burials. As they could not be allocated to any of the discovered bed coffin constructions, it may be assumed that they were laid down on boards or in simple coffins. According to the available dendrochronological dates, the oldest bed coffin was built around 327 BC. However, this coffin was later dismantled, and most boards were reused in the two constructions that are still preserved today. The radiocarbon dates obtained from human bones and funerary offerings furnish evidence of a series of burials taking place in the period between 400 BC and the Christian era. According to radiocarbon dates, the last entombment in the burial cave Mebrak 63 took place shortly before the Christian era (Kap. 4).

The results of the anthropological investigations indicate that the people entombed in the

burial cave belonged to a „normal“ village population consisting of men, women, children, and even an infant (Kap. 5.4). At the time of death, about half of the adults had already reached an age of more than 40 years; consequently, the oldest individual lived to be 50 to 70 years old.

Different features of the morphological kinship analysis point to the possibility that at least some of the buried individuals were related to each other. Furthermore, the studies established proof of an overall homogeneous basic population showing a certain differentiation within their ethnicity, as is to be expected for a family lifestyle in relatively isolated population groups (Kap. 5.7). It is therefore possible that an extended group of relatives buried their dead in this place for more than five centuries (Kap. 5.4). Given the fact that the burial cave was used for five centuries, the number of approximately 30 identified burials is certainly quite low.

With regard to population biology, the people buried in the cave tomb of Mebrak 63 can be assigned to a Mongolian rather than a European type, which is indicated by the jugal breadth of the examined skulls (Kap. 5.5). The genome data that the American team obtained from the skulls found at Mebrak 63 also confirm the morphological identification according to which the individuals may have a Central Asian origin. This conclusion is consistent with the body height of the examined individuals. The four measured women

are, on average, only about 148 cm tall. As for the eight measured individuals, the average height of the men is about 161 cm (or 165 cm), with the exception of individual I.7. It is interesting to note that this man, who is roughly 175 cm tall, is not only the oldest ¹⁴C-dated individual in the cave but also the only one out of eight men with an elongated and narrow skull, which leads to the assumption that he might be an „alien“ (Fig. 10.5). The pathological examinations of the mummies yielded some interesting results (Kap. 5.6): Four individuals show signs of tooth wear in the anterior tooth region in particular, i. e. considerable enamel crack-offs and fractures in the incisal edge region, which point to the use of teeth as tools or virtually as a „third hand“. Three individuals exhibit extensions of crowns in the anterior and posterior tooth region beyond the occlusal plane and, therefore, provide indications of tooth loss or misalignment. A woman aged 50 to 70 is the only individual that lost all the teeth during her lifetime. With regard to her age, it is also the oldest burial examined on this site.

Pathological findings were also made in the craniofacial region of two individuals (Kap. 5.6). In one case, there are signs of „sharp force“: A man who may have reached the age of 30 to 40 has a properly healed slash wound in the region of the frontal bone. More precisely, the osteologically visible marks of the injury show an obliquely healed and scarred incision across the frontal



Fig. 10.5 Individual I.7 lying beside the eastern bed coffin.



Fig. 10.6 Skulls of three goats in planum 2b in the western bed coffin (633).

bone. The skull of a young woman, who was between 20 and 30 years old at the time of her death, reveals traces of seemingly „blunt force“, which might have been caused by a bad fall, a rockfall in the mountains or an act of violence involving a blunt object, for example.

There is no doubt that livestock husbandry played a central role for the people buried here (Kap. 7.2). The pastoralists were given their herd animals as companions on their journey to the afterlife; these were mainly goats (Fig. 10.6), a few sheep and, in addition, two horses (Fig. 10.7). No complete carcasses but only parts of them were deposited as funerary offerings. Extremities and parts of the vertebral column may be remains of meat offerings. On the other hand, the now mummified skulls of goats and sheep as well as the deposited horse parts certainly had, as *pars pro toto*, a deeper meaning in the death ritual. In fact, the exclusive occurrence of remains of domestic animals is in contrast to the animal depictions on the wooden side wall of a bed coffin, as only wild animals are shown here: markhor, Himalayan blue sheep and deer. It is, however, remarkable that the markhor, also known as screw horn goat, might have never existed in this part of the Himalayas at any time; it is actually widespread in the Hindu Kush, the Karakorum and Tien Shan mountains.

The clothing given to the deceased also corresponds to their life as pastoralists (Fig. 10.8). The



Fig. 10.7 The skull and the legs of a horse in front of the eastern bed coffin.

dead themselves, buried in a crouched position, were probably tied together and laid down without any clothes on, while their garments were deposited as „grave goods“. Especially the fur clothes, with tunic or caftan, trousers and boots, fit into the scheme of the nomadic horsemen in the steppes of Inner Asia (Kap. 6.2 and 6.3).

Also for textiles made of cotton, there are archaeological parallels in Central Asia, in particular with regard to materials, textile techniques, colours, shapes and functions. The cotton itself, however, rather comes from the south, or more precisely, from the Indian lowlands (Kap. 6.1 and 6.3).

The objects, tools and jewellery belonging to the equipment for the afterlife of the buried individuals in the cave tomb of Mebrak 63 were certainly of great value to the people in the Dzong valley. For the wooden bowls and vessels, there are parallels in Central Asia, namely in Xinjiang. Raw materials, such as bamboo for the woven mats (Fig. 10.9) and baskets as well as the glass, carnelian and pearls, partly originate from lower regions and even from far-off places. The grave goods thus provide an insight not only into daily life but also into the widespread bartering and

trading network of the prehistoric people in this valley of the high Himalayas (Kap. 2.6).

After a thorough source-critical examination of the archaeobotanical findings in the cave tomb of Mebrak 63, the initially obvious image of a population already tilling the ground in the Dzong valley in pre-Christian times cannot be maintained (Kap. 7.1). Above all, the remains of the cereals which are still cultivated in irrigated agriculture in this region today, must be regarded as a secondary import brought in by the birds nesting in the cave.

In contrast, imports of cultivated plants from climatically more favourable areas were undoubtedly deposited in the cave as primary grave goods. Cotton for textiles and bamboo, from which mats, baskets, cups, drinking vessels, spindles and other rods were made, Fabaceae seeds used as jewellery beads as well as spindle whorls, and jewellery beads from the seeds of Job's Tears also come from there. The primary depositions predominantly include the seeds of numerous wild plants collected in the region, which were given to the dead as funerary offerings. The considerable quantities of pine wood, which were transported into the cave for the construction of



Fig. 10.8 The inner bottom surface of the eastern bed coffin with a bamboo mat and the fur trousers.



Fig. 10.9 The bamboo mat with weaving pattern in planum 2b in the western part of the cave (631-632).

the bed coffins, might also stem from this region.

Collections of seeds in grave vessels are identified as primary grave goods. With the exception of the „imported“ plants, they are all collected wild plants. The findings, which also include small bamboo vessels (internodes with pierced node or lids) (Fig. 10.10), lead to the assumption that many of the collected seeds were intended for the production of a special millet beer (Kap. 7.1.2). Even today, this hot millet beer is served in so-called tongbas and consumed by sucking through a small pipe. In fact, there are also decorated bamboo pipes in the archaeological feature. Fermented in beer or as a basis for porridge, wild millet certainly was a carbohydrate-rich basic food for the inhabitants of the Dzong valley in those days.

Apart from plants, the nutrition of the people buried in the cave tomb was mainly based on animal products. This is reflected in the nutritional strategies of humans, which could be detected by the analysis of stable isotopes from bone collagen (Kap. 5.8). The nutritional reconstruction with regard to the individually preferred source of protein shows that the people entombed in the cave chamber had three different nutritional strategies: Eight of the fourteen examined individuals reveal regular consumption of milk and dairy products. It seems likely that the remaining six individuals consumed more meat from domestic animals, three of them showing an influence of C_4 plants due to their carbon isotopes. With their special type of photosynthesis adapted to the semi-arid



Fig. 10.10 A bamboo vessel (tongba) in the western bed coffin, planum 2b.



Fig. 10.11 A herd of goats including some sheep in the Kaligandaki valley near the mouth of the Dzung river.

climate with water scarcity and strong solar radiation, the C_4 plants also include the millet – and also the wild millet, which was available for both humans and animals in this region at that time. The protein supply provided by animal products can explain the low proportion of protein-rich legume crops in the spectrum of funerary offerings.

The general difficulty in interpreting archaeological features is based on the fact that, in prehistoric times, only material evidence can be considered. This also applies to the collective tomb Mebrak 63 presented here. However, the extremely good preservation of organic materials, in particular, provides a wide range of statements. Thus, it is possible to build up a picture of a group of people with a family structure, living as pastoralists in the Dzung valley and burying the deceased in wooden bed coffins in a cave tomb, which they had hewn into the rock, for about half a millennium. In combination with anthropological, archaeozoological and archaeobotanical analyses, archaeology has thrown some light on a number of details concerning living conditions, nutritional strategies and the burial rite.

Nevertheless, questions about the strategic economic infrastructure must remain open, for

example: Did the people live in the Dzung valley all year round or during particular seasons? There is no doubt that they had connections to landscapes and population groups in the north (clothing, tools), in the south (bamboo, rice), in the west (depiction of a markhor on a bed coffin) and in the east (glass beads). This clearly reveals the geographical location of the investigated area: The Kaligandaki valley running from north to south and the Dzung valley leading to the east have always been important traffic and trade routes, i. e. from early history to the present day, and this certainly also applies to prehistoric times. Any details on the kind of relationships can only be speculated upon. As the anthropological investigations showed, the group of pastoralists in the Dzung valley remained relatively isolated, despite the far-reaching contacts visible in the archaeological material.

The cave tomb of Mebrak 63 is still unique because of its excellent preservation. However, collective graves of this type were quite common in those days. In recent years, an American team of researchers has discovered the remains of similar graves in the north of Mustang, about 40 km to the north of the Dzung valley (Kap. 1.3).

The reason why the burial tradition in Mebrak 63 was abandoned just before the Christian era can only be assumed (Kap. 7.1.2). An excessive use of the grazing grounds for goats and sheep was probably not the decisive factor, because in later settlements, as archaeozoological studies revealed, the inhabitants of the Dzung valley kept flocks of sheep and herds of goats (**Fig. 10.11**). In the first centuries AD, tilling might have been integrated into the economic system, but field irrigation was required in this semi-arid area. Unfortunately, there has been no archaeobotanical research on the first centuries AD. It is conceivable that the occurrence of yak/dzo/domestic cattle in the oldest phase of the Khyinga settlement mound (1st to 3rd century AD) is associated with the need for working animals in agriculture. Clear archaeobotanical evidence of barley and buckwheat cultivation in the Dzung valley was only found in the cave systems and terrace settlements from 900 AD onwards.

The pastoralists who lived in the Dzung valley during the first millennium B.C were contemporaneous with the population groups who cultivated fields. There is evidence of mutual relations, which can be proved by „imported plants“ such as rice and peas; they were deposited in the grave as „special offerings“ for the deceased. Tillage was practised in both South and Central Asia since the Neolithic. In the high mountain valleys in the rain shadow of the Annapurna massif, however, the keeping of goat herds (and sheep flocks) obviously offered a sufficient long-term basis for a living; in the highlands of Tibet, the pastoral tradition continues to this day. The archaeological findings in the cave tomb of Mebrak 63 reveal a stable, successful, small-scale and ecologically adaptive subsistence strategy over several generations. In the Dzung valley, this only changes with the establishment of (irrigation) farming in the first millennium AD.