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HÅGA REVISITED

NEW ANALYSES FROM THE BRONZE-AGE HÅGA MEGABARROW (UPPSALA LÄN) IN SWEDEN

The focal point of this article is to present the results of new analyses from the Swedish Bronze Age barrow Håga near Uppsala, excavated in 1902-1903. In a recent project carried out in 2017-2021, chronological and osteological analyses have been undertaken as well as a re-examination of a few objects in the grave. Also, an isotope analysis of the buried, cremated individual has been made. The results provide a basis for an alternative depositional history of some of the finds in the barrow. Moreover, the possible relation to South Scandinavian barrow traditions and ideals are touched upon.

INTRODUCTION

The Danish archaeologist Henrik Thrane who has conducted research on South Scandinavian tumuli categorises some of them as »megamounds«, i. e., barrows exceeding 43 m in diameter and over a height of 6.25 m (2018). They date from ca. 2000 to ca. 500 BC and are found on the continent, in northern Germany and in Scandinavia. In this paper, the barrow at Håga in the Lake Mälaren district will be discussed, being one of the megamounds (**figs 1-2**). This grand mound from the Bronze Age stands alone in South Central Sweden. Dated to 1100-900 BC (Montelius period IV), it is paralleled with funerary monuments like Banie (woj. zachodniopomorskie/PL) and Korshøj (South Funen, Sjælland/DK) and from somewhat later, Montelius period V, 900-700 BC, Lusehøj at Voldtofte (Southwest Funen, Syddanmark/DK), Seddin (Lkr. Prignitz/D) and Albersdorf (Kr. Dithmarschen/D) (Eggers 1936; May/Hauptmann 2012; Thrane 2022).

Despite its importance to Swedish archaeology, very few studies have been made on the find material from Håga since the excavation undertaken by the archaeologist Oscar Almgren. His excellent and detailed documentation ca. 120 years ago, resulted in a publication in 1905, »Kung Björns hög och andra fornlämningar vid Håga« (King Björns barrow and other ancient monuments at Håga). Inspired by the pioneering work of Almgren, a new study was carried out in 2017-2021, revealing up-to-date knowledge of the barrow and its environment. The results have now been published in a Swedish anthology, including new evidence of settlements in the area

Fig. 1 Map of Uppsala/Håga and Lake Mälaren in South-Central Sweden. – (Map Skolbanken, with editions by I. Ullén).

Fig. 2 The Håga barrow in august 2021. From the south-west. – (Photo I. Ullén).

and beyond. Furthermore, the Viking Age rune stones at Håga are discussed as well as the barrow's historical name (King Björn). Also, a previously unpublished excavation from 1998-1999 of a stone-walled construction »Hågakyrkan« (Håga church) is presented as well as a close-up study of a nearby ancient fortification. The publication concludes with an in-depth analysis of settlement and burial sites within the region (Zachrisson/Ullén/Olausson 2022). In this paper, results from the new analyses of the Håga barrow are summarised.

BACKGROUND

The Håga Area

Considered to be one of the richest in Scandinavia during the latter part of the Bronze Age, the Håga barrow outside Uppsala today forms a landmark in a nature conservation area. The grave occupies a small hill overlooking a valley, previously a river (Håga valley). At around 1000 BC the sea reached about 18-19 m above present sea level, and the area was part of an inner archipelago. Apparently, the barrow builders intended to give the grave a strategic location on the peninsula – facing the river (»Hågaån«). The river connected the Lake Mälaren in the south to numerous waterways and the sea in the north and east. Thus, the location was a particularly good spot for controlling trade routes.

The barrow itself measures 43-45 m in diameter and is 6.25-8.75 m high depending on the topography. About 160 m south of the barrow the large rectangular stone-walled construction »Hågakyrkan« is situated, 45 m × 18 m in size. It has been partly excavated and appears to have been a cultic building, possibly a mortuary house close to the barrow (Almgren 1905; Olausson/Göthberg 2022). Nearby another one was excavated in the 1990s (Victor 2002). Similar conspicuous constructions have also been found elsewhere

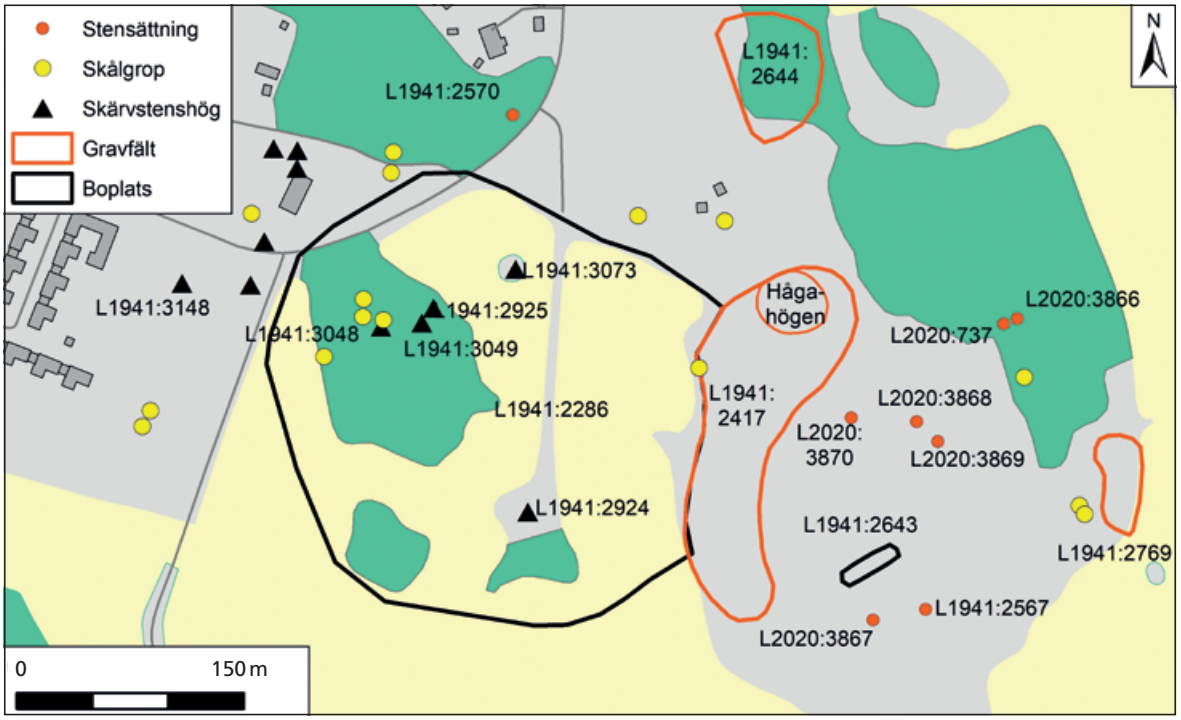

Fig. 3 Map of the Håga barrow's immediate environments. – ● registered Iron Age stone settings. – ● cup marks, predominantly from the Bronze Age. – ▲ heaps of fire-cracked stones, predominantly from the Bronze Age. – The red rectangle (lines) represents Iron Age cemeteries. The Bronze Age Håga barrow (Hågahögen) is included in one of them (L1941:2417). – The black rectangle (line) shows the estimated limits for a settlement from the Bronze-Iron Age. – Also, a rectangular stone-walled construction, possibly traces from a »mortuary house«, L1941:2643 (»Hågakyrkan«), is marked in the lower right corner. – (Map Swedish Heritage National Board, digitised by H. Göthberg, Upplandsmuseet).

in Sweden connected to graves or cemeteries. The idea behind these features needs to be further explored but they indicate that the funeral areas could have visual and symbolic orderings of their own (cf. Fontijn et al. 2013, 9). In addition, single finds from the Late Stone Age and Bronze Age have been found in the Håga area and numerous ancient monuments are registered, e. g., cup-marks, heaps of fire-cracked stones and Late Iron Age graves. The heaps of fire-cracked stones are usually considered to contain refuse from cooking pits or hearths, though a wide range of other explanations have been discussed, e. g., to extract animal body fats for domestic use or being part of ritual practices. Also, trench excavations have recently been undertaken near the barrow, revealing substantial settlement traces from the Bronze and Iron Ages, as well as from later historical periods (**fig. 3**). All in all, the remains of reoccupation repeatedly prove the Håga area to be a complex site, existing from early prehistory into historical times.

The Excavation in 1902-1903

The excavation took place during ca. six weeks in the autumn of 1902 and spring of 1903, with a winter break from the end of November to the end of April in 1903 (Almgren 1905; 1936). The excavator Almgren was later to become the first holder of the Chair of North-European Archaeology in Uppsala. The initiative for the dig came from Prince Gustaf Adolf (later King Gustaf VI Adolf of Sweden) who had conducted several archaeological surveys in the surroundings. He attended Almgren's archaeological course in Uppsala and took part in the excavation.

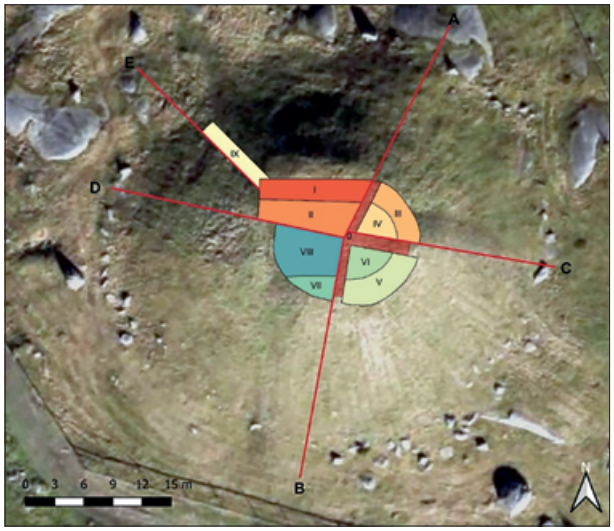

Fig. 4 Projected profiles/sections and excavation shafts (I-IX) 1902-1903 on an aerial photo of the Håga barrow. Note the outer stone kerb. – (After Almgren 1905, ATA; photo © Lantmäteriet, digitised by Th. Eriksson, Swedish National Museum).

Due to practical and economic reasons, only the central part of the barrow was investigated, leaving the outer parts unexcavated, except for a trench (no. IX) leading from the outskirts to the core area. Since it was important to document the barrow from the top to the bottom, the excavation area was divided into shafts (numbered I-VIII), separated by a vertical crossing profile (**figs 4-5**). The upper part of the barrow turned out to be ca. 3 m thick and consisted of cut grass turfs, laid upside down. In the fill, a considerable amount of unburnt human and animal bones were found. Below the grass turf layers a 4-4.5 m high cairn was discovered, devoid of turf and soil. Almgren considered it to have covered the whole bottom area of the barrow to an outer stone kerb. In size and appearance, this cairn resembles Early Bronze Age cairns in South Central Sweden. In the lower part of the Håga cairn, fragments of half-decayed oak logs were found in a major part of the excavation trench. Obviously, the logs had been part of a collapsed chamber construction. This assumption was reinforced by the fact that a shallow depression was visible on the top of the barrow. However, to Almgren it was (and still is today) difficult to figure out what the chamber looked like. It may have been a timber construction covering a hollowed-out tree burial trunk (a coffin), or a burial trunk on a platform built of oak legs (cf. Johnsen/Welinder 1993; Kaliff/Oestigård 2018). The traces of a coffin were reduced to dark stains in the soil together with a few pieces of wood from oak and pine. The state of preservation makes a reliable reconstruction nearly impossible, compared to for example the better-preserved later burial chambers in the Hallstatt *Fürstengräber* (Chytráček et al. 2015; Biel 1985). Moreover, some disturbance had been made in the 1690s, when a shaft was dug in the northern side of the barrow by the county governor Gyllenborg. Luckily, he missed the burial itself.

The finds in the (presumed) coffin were exceptional. Among the wooden pieces, a sword with gold sheet on the handle, gold rivets, a gold knob (part of the sword's pommel), and a bronze brooch decorated with thin gold sheet and gold wire were retrieved[1]. Cremated human bones were also found here, whereas other bones from the cremated individual had fallen through the decayed wooden fragments and empty spaces between stones under the coffin to the bottom of the barrow. Also, most of the smaller finds had fallen onto the original ground surface (in a charcoal layer). Among them were a razor, several gold rivets (from the sword) and gold-thread spirals. Summing up, apart from the sword and the brooch, the burial equipment included 6 bronze buttons (most with gold sheet), 2 razors and 2 pairs of tweezers, several spirals of gold threads, 30 gold rivets and 4 bronze pendants, some of them possibly belonging to the personal toilet equipment together with the razors and tweezers (**fig. 6**). The deposited charcoal layer at the bottom was interpreted by Almgren as the cremation pyre upon which the barrow was subsequently built. This could be verified in 2020 when a sample of the coal layer was found at the Swedish History Museum (SHM). It contained highly fragmented, burnt

Fig. 6 The artefacts in the Håga megamound (SHM 11915). – **1** gold threads. – **2** gold rivets (from the sword). – **3** solid gold button (part of the pommel). – **4** part of the sword. – **5** brooch (gold foil on bronze). – **6** bronze fragments. – **7** two buttons (gold foil on bronze), one with leather fragments. – **8** sharp-edged bronze pendants (?). – **9** razor, the handle entwined with gold thread. – **10** two buttons with long ribs, one of them with preserved gold threads. – **11** two small buttons (gold foil on bronze). – **12** bronze razor (fragmentary). – **13-14** two pairs of bronze tweezers. – (Photos O. Myrin, Swedish History Museum). – Not to scale.

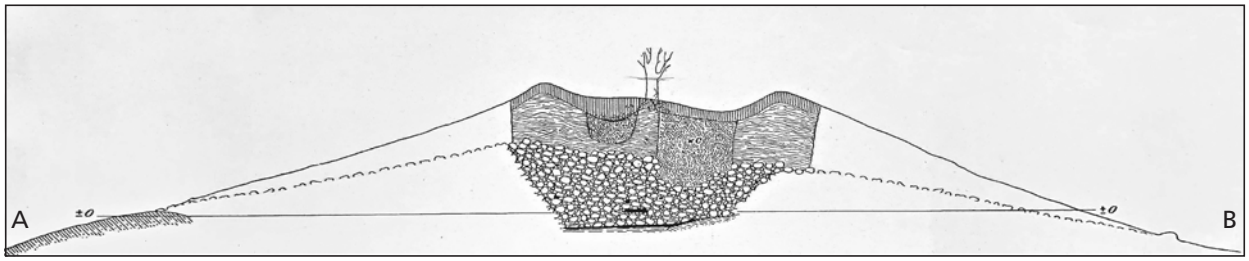

Fig. 5 Section through the barrow (profile A-B). The position of the (cremated) central burial is represented by a short thick black line in the lower part of the cairn. The surrounding wooden logs and fragments are not marked, except for a few isolated carbonised logs (black dots). The line through the cremation/burial level is called the 0-line, used by Almgren for the measurement of some of the finds. The (hatched) large pit was made by county governor Gyllenborg in 1689-1695, demolishing the northern part of the barrow fill as well as part of the cairn. The small pit was made during the 18th-19th century. – (After Almgren 1905, pl. III).

bones that were left in the pyre. A ^{14}C-date of the coal confirms the date of the metal finds to 1100-900 BC, in line with an early ^{14}C-sample dated in 1967 (**tab. 1**; cf. **fig. S8**; cf. Sellstedt/Engstrand/Gejvall 1967).

Aims

Håga is unique and differs totally from the burial tradition in South Central Sweden in its time. The barrow construction and the high-prestige equipment appear to have been part of a South Scandinavian tumulus tradition, practised since the Early Bronze Age. The Håga barrow could have been constructed in the same way as the barrow Skelhøj (Tolhøj, Jutland, Syddanmark/DK). This barrow was excavated 2002-2004 and revealed a complex building sequence. It allowed a reconstruction of the basic organisation of the work including principles of cooperation (Holst/Rasmussen 2013; 2015). Even though Håga is dated from a later period the actual building methods may have been comparable to the one recognised in Skelhøj.
(1) This raises a long-standing question of where the buried individual in Håga was born, presuming an origin from the southern part of Scandinavia. Furthermore, the gender of the deceased was discussed already from the start. The osteologist prof. Edvard Clason pointed out that the cremated bones may represent a female (Clason in Almgren 1905). Almgren argued instead that the archaeological objects were associated with a male burial. In this study, we attempt to clarify the problem, including a new osteological analysis as well as a strontium isotope analysis. Furthermore, to come closer to the social identity of the buried person, a few artefacts have been carefully re-examined.
(2) Secondly, the presence of unburnt human and faunal remains in the barrow is not known from South Scandinavian and North German tumulus tradition, except for the high-status Leubingen grave (Lkr. Sömmerda/D) from ca. 1900 BC (Höfer 1906; Dietler/Herbich 2001). Thus, special practices associated with the handling of the bones seemed to be present at Håga, involving mortuary rituals. The objective for this part of the study was to investigate the depositional history of the human and animal remains in the barrow, based on a survey of the material available at the SHM, i. e., a reassessment of the bones, including taphonomy and new radiocarbon datings.

RESULTS

Objects and the Cremation

An older parallel to Håga, from 1300-1100 BC, can be found at Hvidegård (Northeast Sjælland/DK) (Herbst 1848). This better-preserved burial represents a transition from inhumation to cremation traditions, including burnt bones of the deceased covered in textile and placed in an oak-coffin, together with a sword and other objects. The idea of a whole body remained, though it was cremated and consequently it was treated like an inhumation (cf. Stig Sørensen 2010; Rebay-Salisbury 2012). This idea can be applied to the Håga burial and if so, the position of the sword, brooch and some of the burnt bones indicate that the dead person would face the sunrise and the river below.
Two of the objects show a clear connection to the sea, as new conservation work has uncovered hitherto unknown decorations of ship images on one of the razors and one of the tweezers (**figs 7-8**). The motifs give an insight into the symbolic and ritual importance of travel, both in death, and in the real world – they may represent journeys in both spheres. In life, the ships were necessary for linking wide-ranging regions across Scandinavia (and Europe), as seen from the spread of bronze objects and raw material (e. g.,

sample	Ua-67088 (2020) charcoal	St-2319 (1967) charcoal	St-2304 (1967) charcoal	St-2305 (1967) charcoal
loaction	pine from funeral pyre (bottom)	pine from burial level/cist in the cairn	bark below cist in the cairn	pine from funeral pyre (bottom)
^{14}C age BP	2892 ± 29	2855 ± 100	2840 ± 100	2840 ± 100
calibrated age 68.2 % probability BCE	1117-1015			
calibrated age 95.4 % probability BCE	1202-985	1290-810	1270-810	1270-810

Tab. 1 Cf. **fig. S8**. Radiocarbon dates for charcoal (pine) in the burial area in the cairn and from the cremation pyre in the bottom of the barrow. Calibration U. Strucke 2018. – (Ullén/Drenzel 2022; Sellstedt et al. 1967).

Ling/Earle/Kristiansen 2018; Ling et al. 2019). In mythology, Fleming Kaul (1998; 2004), takes the view that the ship depictions express a basic element in Bronze Age religion in Scandinavia, connected to the movement of the sun through day and night. Thus, in this respect the razor and the tweezers can be attributed to cosmological knowledge and may indicate a powerful position of the dead at Håga, though the decoration is not so elegant as on razors in the high-status burials at Lusehøj (Funen) and Seddin in northern Germany (Thrane 1984, 13-14; May/Hauptmann 2012). From a local perspective the large Bronze Age rock-carving centre at Enköping (close to Håga, Uppsala län/S) numbering ca. 1100 carving sites emphasises the symbolic importance of the motif, since an overwhelming majority of the images represent ships (Kjellén/Hyenstrand 1977).

Prestige weaponry was a major part of the equipment used to display rank in the South Scandinavian Bronze Age society (**fig. 9**). The Håga sword with its lavish gold sheet decoration has a close parallel in the rich grave Korshøj (Funen) in Denmark (Baudou 1960, 9; Thrane 1975, 45). In fact, the whole grave equipment in Håga replicates that of Korshøj and Thrane argues that a close connection must have existed between the two burials, maybe on a personal level (2022). To investigate the warrior status of the cremated Håga individual, a microphotograph of the sword was made in 2017. It showed slight damage to the sword that may come from the production stage or from a display or exhibition match but not serious combat, in contrast to Danish and European swords (cf. Kristiansen 2002; Harding 2007; Mödlinger 2011).

The early osteological analysis of the cremation burial was made in 1905 (Clason in Almgren 1905). The new analysis in 2017 (Drenzel/Karlsson 2018) was more detailed but does not differ much from that of prof. Clason. One individual was identified, though no sex could be determined. The age of the dead person was assessed to 40-60 years old, probably closer to 60 than to 40, according to Per Holck (1987). Bone from the whole body was found and no signs of trauma or physical changes were discernible. The cremation temperature had exceeded 850 °C (cf. Stiner et al. 1995). A ^{14}C-dating of a bone fragment (*ossa longa*) confirmed the death of the individual to 1130-930 BC (95.4 %). Among the bones, a burnt fragment of a *tibia* from cattle (*Bos taurus*), probably a nearly grown-up calf was found. Whether the animal had been deliberately incinerated with the dead person or got there unintentionally remains to be proved, though a food offering seems like a reasonable interpretation.

To identify the geographical origin for the dead person a strontium isotope analysis was conducted in 2017 (Evans 2017, for the method see Harvig et al. 2014; Snoeck et al. 2015). A *pars petrosa* bone was chosen for analyses and the result shows that he (or she) grew up and lived in the region where the barrow is, i. e., in the eastern Mälar Valley (cf. Price et al. 2018). Hence, in this case the close cultural connection to Southern Scandinavia was expressed in the high-prestige objects and in the mound itself but had nothing to do with the geographical origin of the buried individual (**tab. 2**).

Fig. 7 One of the razors from the barrow (**a**) and detail of the newly discovered ship decoration after conservation work (**b**). Length 100 mm (cf. Klockhoff 1994; Ullén/Drenzel 2018). – (Photos O. Myrin, Swedish History Museum).

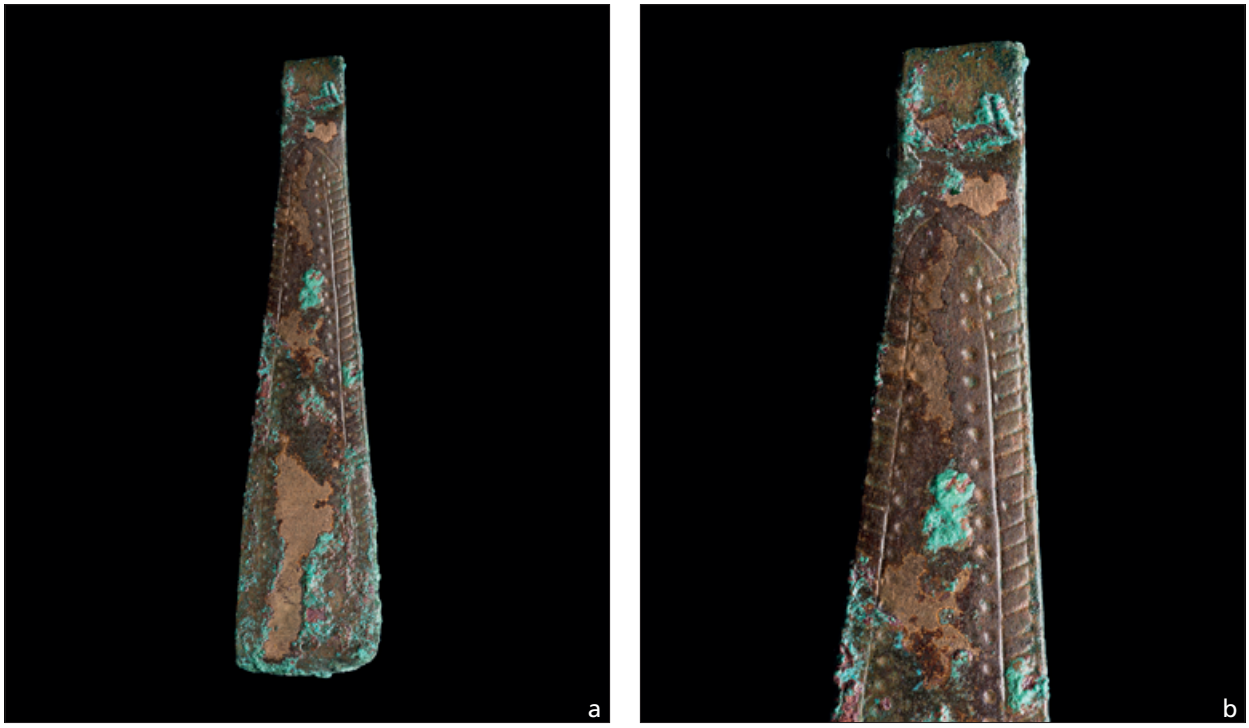

Fig. 8 One of the pair of tweezers from the barrow (**a**) and detail of the newly discovered ship decoration after conservation work (**b**). Length 61 mm (cf. Klockhoff 1994; Ullén/Drenzel 2018). – (Photos O. Myrin, Swedish History Museum).

sample SHM 11915	batch	no.	$^{87}Sr/^{86}Sr$
acetic leach	P811	1	0.72569
bone residue	P811	2	0.72392

Tab. 2 Isotopic values of strontium in the petrous bone from the cremated individual in the Håga barrow. Analysed by Geoscience Laboratory, British Geological Survey, Nottingham. – (Evans 2017).

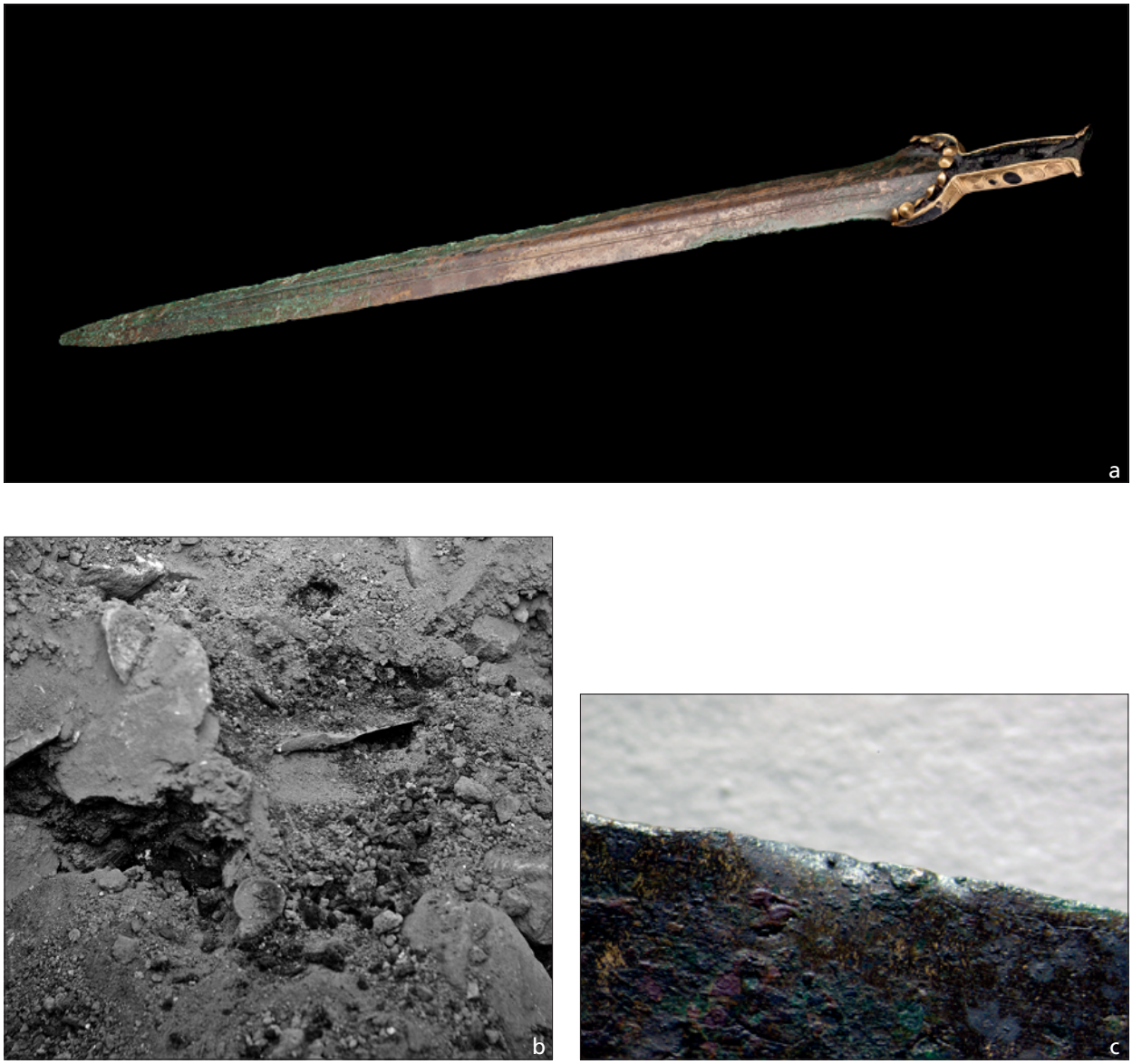

Fig. 9 **a** The sword in the Håga barrow. Length 775 mm. Most of the nails are remounted. – **b** the sword's handle protruding in the middle of the picture. It was found in an airy space between the stones in the cairn (mixed with soil falling from the upper barrow fill). In front of the sword handle, part of the brooch is visible – **c** microphotograph (10x) of the sword with slight signs of damage on the edge. – (a photo O. Myrin, Swedish History Museum; b after Almgren 1905, fig. 16; c photo U. Skans, Swedish History Museum).

Human and Animal Bones in the Barrow Fill

The unburnt human and animal bones were scattered throughout the upper turf fill of the barrow, though a few had slipped down into the cairn fill and to the bottom of the grave. Except for a few recent animals at the bottom, no complete skeleton was found (tab. 3). Almgren (1905, 31-36) gives a description of where the bones from humans and animals were found in the different shafts I-VIII (IX), using measures from the top of the barrow, i. e., 1-1.5 m refer to the depth below the top surface. In some cases, he uses measurements - or +, which refer to the zero-level (0) that corresponds to the burial level in the lower part of the cairn (see fig. 5).

shaft / anato-mical element	I	II	III	III/IV	IV	V	VI	VII	IV/cairn	top layers (unspec.)	specimens total
cranium			2								2
femur		1[d]	2		3	1[a]					7
tibia				1	4[a]		1[e]				6
ossa longa	1										1
humerus					1		1[c]		1[b]		3
radius							1				1
ulna					1						1
vert. thor.						1	1			1	3
clavicula									1		1
dens molaris						1					1
indet.								1			1
total	1	1	4	1	9	3	4	1	2	1	27

Tab. 3 Cf. **figs 3; S9**. Anatomical representation of the human individuals, according to analyses in 1905, 2017 and 2019. At least half of the bones were found in or close to shaft IV, near the central burial (the cremation). Notes: [a] a few uncertain determinations. – [b] below the cist. – [c] possibly shaft IV. – [d] cleaved *femur*. – [e] bottom of Gylllenborg's pit.

Fig. 10 Human *femur* from shaft II (F27), interpreted by the excavator and since then as having undergone ritual (cannibalistic) treatment (Almgren 1905; 1936; Kaliff/Oestigaard 2018; cf. Ullén/Drenzel 2018). – (Photo O. Myrin, Swedish National Museum).

Most of the **human bones** were deposited in the eastern part of the barrow and at least half of them close to the cremation area and the (destroyed) coffin, in shaft no. IV. No complete anatomical representation of the bodies could be observed in the excavated area. The new osteological assessment resulted in a minimum number of three individuals based on the upper parts of the *femora*, in line with prof. Clason's early observations in 1905. But according to modern criteria, no sex determination is possible to ascertain. In addition, a few previously unknown human fragments were discovered in 2019 at the SHM, including two small fragments of *crania*.

Almgren considered the puzzling finds of unburnt parts of human bodies difficult to interpret. Especially a cleaved *femur* raised questions about ritual cannibalism, at the time of excavation (**fig. 10**; Almgren 1905). The bone was found at a depth of 1-1.5 m in the barrow fill. Later authors have included all the human bones in ideas about a major ritual (cannibalistic) ancestral cult – the cleaved bone in a final performance towards the end of the funeral ceremony (Kaliff/Oestigaard 2018, 103).

To get a correct radiocarbon relation between the unburnt human bones, possibly involved in a cannibalistic practice, and the central grave, i. e., the cremated individual buried with the lavish equipment, three bone samples were submitted to the Ångströmlaboratoriet (AMS), Uppsala University in 2018 (**tab. 4**; cf. **figs S8-9**). They originated from three separate individuals and from different parts and depths of the barrow fill. One of them was the cleaved *femur*. The ^{14}C-analysed samples unveiled a much older date than

sample	Ua-55729 *Homo sapiens, femur* (F1a)	Ua-55730 *Homo sapiens, humerus* (F100)	Ua-55048 *Homo sapiens, femur* (F27)	Ua-55731 cremation, *ossa longa*
location	shaft IV, in the fill >2 m below surface	shaft IV, below cist in cairn	cleaved, shaft II, in the fill 1-1.5 m below surface	central (cremated) funeral, shaft IV, in the cairn
^{14}C age BP	3262 ± 28	3156 ± 27	3146 ± 30	2859 ± 28
calibrated age 68.2 % probability BCE	1610 (23.7 %) 1570 1560 (4.1 %) 1550 1540 (4 %) 1490	1490 (2.5 %) 1480 1455 (65.7 %) 1405	1490 (3.6 %) 1480 1455 (64.6 %) 1390	1110 (2 %) 1100 1080 (63.4 %) 970 960 (2.9 %) 940
calibrated age 95.4 % probability BCE	1620-1450	1500-1390	1500 (85 %) 1380 1340 (10.4 %) 1300	1130-930
δ^{13}C ‰ VPDB	-21.2	-20.3	-20.1, -19.9	-21.6
δ^{15}N ‰ AIR			10.9	
C/N			3.4	

Tab. 4 Cf. **fig. S8**. Radiocarbon dates for (unburnt) human remains in the Håga barrow. Observe, at the far right is the cremated long bone sample from the central burial (Ua-55731) (cf. Ullén/Drenzel 2018). Analysed at Ångströmlaboratoriet (AMS), Uppsala University, Uppsala.

the excavator Almgren (and later authors) had anticipated. They fall within the interval of Montelius period I (1700-1500 BC) and II (1500-1300 BC) (95.4 %), i. e., in the Early Bronze Age. Probably all three belong to the earlier part of period II (1500-1400 BC). The stratigraphical sequence was proven to be disturbed, as the oldest bone was found at a depth between the two others.

Thus, the human bodies have had a long depositional history before their final »burial« in the Håga barrow fill. Furthermore, the marks on the *femur* had nothing to do with ritual practices in connection with the cremation around 1100-1000 BC. The dating of the human bones in the barrow fill has enforced a rethink of earlier interpretations and one possible alternative is that they were taken from a nearby older grave, for some reason (see »Discussion«). Late Neolithic and Early Bronze Age stone tombs have been excavated at Dragby (Skuttunge, Uppsala län/S) and at Annelund (Enköping, Uppsala län/S), both within a range of 30 km from Håga (Jaanusson/Silvén 1962; Fagerlund/Hamilton 1995). In these stone-lined cists, collective burials had taken place continuously. The cist at Dragby was covered by a cairn, the one at Annelund by a heap of fire-cracked stones. At the latter site, remains of some of the buried individuals were found in a pit outside the grave. Obviously, they had been moved to the pit to give space for new inhumations in the filled-up stone cist. The last buried individuals at the two sites belong to the same time as the bones of the unburnt humans in Håga, proving the existence of a lingering burial practice during Montelius period II in the region. The bones in the stone cist at Dragby were arranged in groups according to different anatomical parts of the bodies. The bones found at Håga are predominantly long bones which could result from such an ordering. The original site remains to be proved and concrete evidence of a cist grave is yet lacking close to Håga. However, we argue that the human bones were deliberately collected and deposited in the barrow. Circulation and secondary handling of human bones are known from various contexts (burials, settlements, and offerings) during the Bronze Age in Scandinavia and elsewhere in Europe (e. g., Ullén 1995; Brück 1995; 2006; Chapman 2010).

The unburnt **animal bones** were thoroughly examined by candidate Ludvig Hedell in 1905 and only a few updates to today's osteological knowledge were needed. As for humans, no complete bodies were found, apart from some individual cases of water voles and toad frogs that probably sneaked into the barrow af-

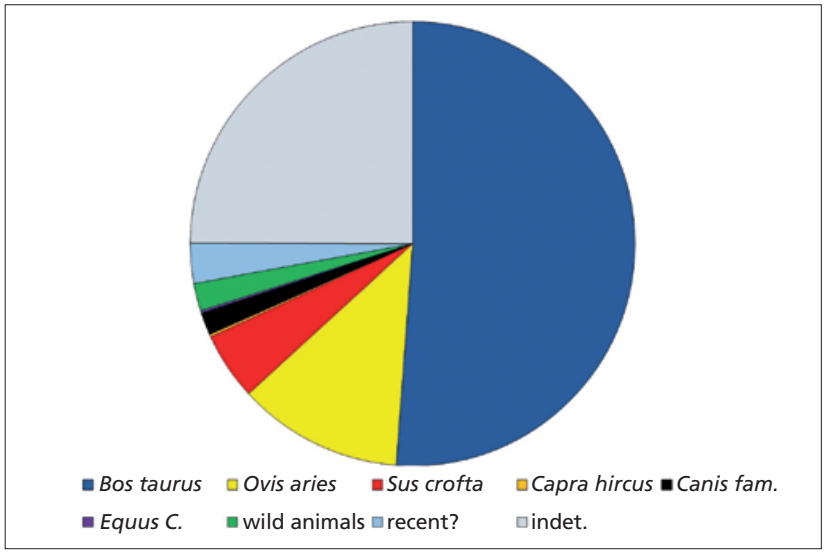

Fig. 11 Diagram of species representation in the Håga barrow (percentage of fragments identified). Goat and horse are too few to be detected in the diagram. – (Diagram I. Ullén, animal bones in the SHM store).

terwards. The assessment 2019-2021 concentrated on a survey of the available material in the SHM's store, including a selection of bones for ^{14}C-dating. Altogether ca. 560 fragments were found (ca. 12 kg). The figures are roughly estimated but give a basic impression of the distribution of anatomical elements of the species in the excavated area (**fig. 11**). Bones from cattle predominate and were present in all layers in the barrow (281 fragments), followed by ovicaprids (66 fragments). Bones from at least four pigs and three dogs could be identified. The remaining species broke down into one or a few isolated elements from horse, roe deer, goat, fox, marten, squirrel, hare (two probably recent individuals with more complete body representation), goose and pike. In total, over 80 % (83) of the bones were found in the turf fill, 8 % on the stone cairn and the rest in the cairn or at the bottom. Probably all were deposited in the turf fill, and later some fell through the stone packing, practically free from soil. The ages of the deposited animal (bones) vary, including both young and older animals (> 2 ½ years). A ca. one-month-old lamb could be identified and a one- to two-month-old calf as well as a piglet, > three months, all found in different parts of the barrow.

In general, the bone material has a high degree of fragmentation. Some bones show evidence of butchering, made in connection with food preparation, some possibly for marrow extraction. Also, weathering of bones (dry bones) could be observed, due to exposure to sun or dry conditions. Other bones had traces of chewing, possibly by dogs. Bones from all parts of the body were identified from cattle, ovicaprids and (possibly) pig, though their representation differs. Bones from both meat cuts and butchering refuse illustrate that the slaughter and handling of the animals took place in the vicinity (**figs 12-13**; cf. Wigh 2008, 375).

How does the representation of animals in Håga tally with the bone material from graves and settlements? While unburnt bones are missing in Swedish Bronze Age graves, cremated animal bones have been recorded in several cases. In Halland (Southwest Sweden), excavations have revealed that 21 % of the barrows included cremated animal bones. In general, only bones from one species are represented, mostly ovicaprids, though other animals occur occasionally, e. g., dogs (Åkermark 2007; cf. Arcini 2007). The main difference from Håga is the rituals in which they have been involved. The animals have been cremated together with humans on funeral pyres, not deposited above the cremated individual as they have been in Håga.

The excavated Bronze Age settlements in the Lake Mälaren area vary in size and degree of preservation but their livestock mirrors indirectly the unburnt animals from the Håga barrow. The largest bone quantity, 850 kg, has been retrieved from the complex site Apalle (Uppsala län/S), ca. 30 km south of Håga (Ullén 1994; 1996; Ericson et al. 1997; 2003). Bones from both domestic livestock and wild animals were found

Fig. 12a-b Examples of gnawing and butchering on animal bones from the Håga barrow. – (Photos I. Ullén).

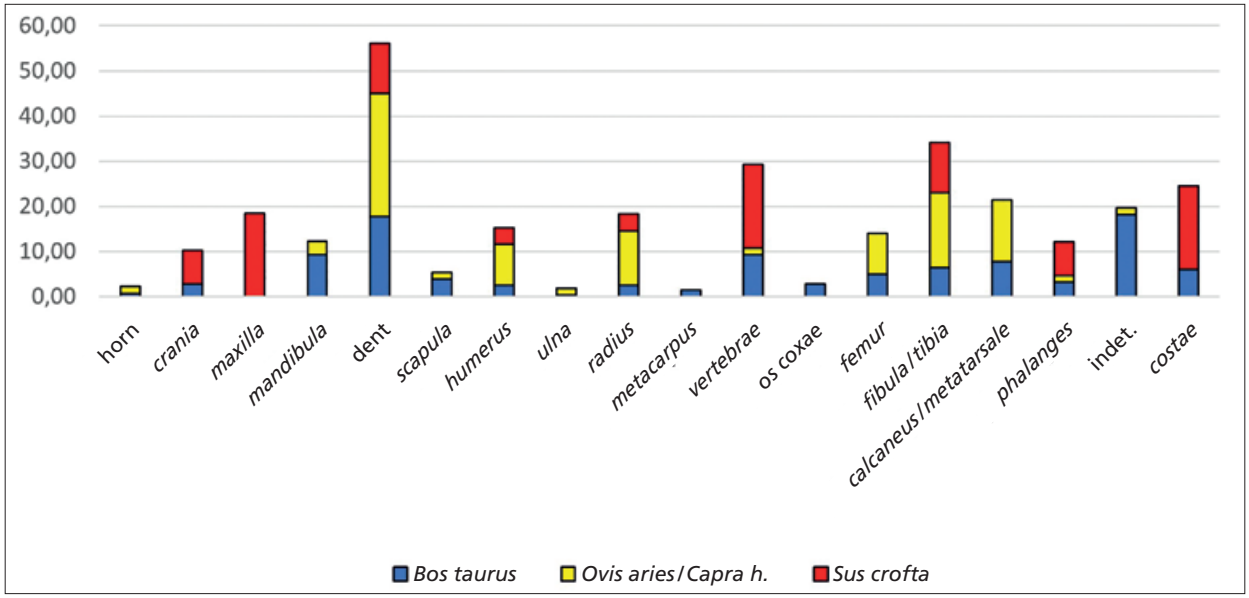

Fig. 13 Anatomic representation for the identified domestic species in the Håga barrow (percentage of fragments identified): cattle (*Bos taurus*), sheep/goat (*Ovies aries/Capra hircus*), and pig (*Sus crofta*). – (Diagram I. Ullén; animal bones in the SHM store, assessments by L. Hedell, L. Drenzel, J. Storå, J. Karlsson).

at the settlement, possible to relate to relatively firm contexts. The representation of species and bone elements at Apalle could be compared to that of Håga, except for beef cattle which clearly dominated in Håga. This predominance though can be found at other excavated settlements in the area. All the wild animals in the Håga barrow are paralleled at the settlements, showing that their presence is not unique. Bones from fish and goose were numerous at Apalle and reindeer bones were found at the famous Bronze Age site Hallunda (Stockholms län/S) on the southern shore of Lake Mälaren as well as at Apalle (Jaanusson/Löfstrand/Vahlne 1975; 1978; Jaanusson 1981).

Bones from dogs were found in different shafts and depths in the Håga barrow, some of them are fragments of the same element that fitted into each other. It confirmed the presence of a disturbed stratigraphy, which could also be observed for other animals as well as for the human remains. In Swedish graves and

sample	Ua-62769 *Bos taurus* (cannon bone)	Ua-62770 *Ovis aris*/ *Capra h* (*mandibula*)	Ua-62771 *Canis fam.* (*mandibula*)	Ua-62772 *Sus crofta* (*cranium*)	Ua-62773 *Equus C.* (*phalangus*)	Ua-62774 *Anser* (*coracoid*)	Ua-67087 *Ovis aris* (lamb) (*humerus*)
location	shaft III between stones in the upper part of the cairn	bottom below the north profile wall	shaft II on the cairn	shaft IV next to the cremation	shaft VII-VIII 1-2.5 m below surface	shaft II on the cairn	shaft IV on the cairn/bottom of Gyllenborg's pit
^{14}C age BP	3012 ± 31	2922 ± 31	2891 ± 31	2984 ± 31	366 ± 31	2970 ± 31	2919 ± 31
calibrated age 68.2 % probability BCE	1370 (4.1 %) 1350 1300 (64.1 %) 1210	1200 (21 %) 1140 1130 (47.2 %) 1050	1115-1015	1270 (50.7 %) 1190 1180 (8.5 %) 1160 1150 (8.9 %) 1120	**AD** 1450 (47 %) 1530 **AD** 1590 (21.2 %) 1620	1230-1120	1192 (9.9 % 1175 1158 (9 %) 1144 1128 (48.6) 1051
calibrated age 95.4 % probability BCE	1220-1010	1210-970	1210-970	1380-1350 (2.0 %) 1300-1110 (93.4 %)	**AD** 1440-1530 (52.7 %) **AD** 1550-1640 (42.7 %)	1280-1050	1212 (89.1 %) 1041 1035 (6.2 %) 1015
δ^{13}C ‰ VPDB	-21.4	-21.4	-19.6	-22.1	-22.9	-22.2	-21.3
δ^{15}N ‰ AIR	5.7	5.6	8	4.5	4.3	5.7	4.8
C/N	3.3	3.2	3.4	3.4	3.3	3.2	3.2

Tab. 5 Cf. **figs S6-7**. Results of the radiocarbon dated samples of animals (unburnt bones) in the Håga barrow. Analysed 2019-2021 at the Ångströmlaboratoriet (AMS), Uppsala University, Uppsala.

at settlements, the dog seems to have been treated with respect, though the representation is meagre. In graves, they mainly accompany adults on the funeral pyre. At the Apalle settlement parts of the dogs (mostly *crania* and jaws) were deposited in pits close to the outermost boundary of the settlement and later during the Bronze Age at the entrances of the individual houses. The dogs in Håga and at Apalle as well as on other settlement sites in the region did not have any cut marks or fractures and no evidence of butchering and cooking exists in South Central Sweden. It must be pointed out though that all dogs during the Late Bronze Age/Pre-Roman Iron Age did not receive the same respectful treatment. At an offering site, Östra Vemmerlöv (Skåne län/S), more complete skeletal remains of 21 dogs were found. Two-thirds of the recovered dogs show evidence of healed traumatic injuries, indicating that they were handled in a harsh manner in encounters with the humans (Storå/Ullén/Drenzel 2020; cf. Scheibner 2013, tab. 1, 5-8).

An earlier radiocarbon analysis of two animal bones from the Håga barrow was made during the late 1960s, together with charcoal from the central burial area and the funeral pyre at the bottom. Due to the state of art in measurement technology in those days, the results fell within a wide time span. Even so, the dates were interpreted to fit into the phase of the central cremation burial (Sellstedt/Engstrand/Gejvall 1967).

For this study, eight samples were submitted to the AMS laboratory, Uppsala University for ^{14}C-analysis in 2019-2020. The ^{14}C-sequence revealed a mixed result (**tab. 5; fig. 14**; cf. **figs S6-7**). They stretch from ca. 1390-970 BC (95.4 %). The dates consistent with the cremated individual are from the bones of dog, lamb (ca. one-month-old), and sheep/goat. The bones from beef cattle, pig and goose were slightly older, ca. 100-200 years. The horse bone (*phalangus*) is from the 15th or 16th century AD. It was the only one found in the barrow and had probably fallen into the pit that was made by governor Gyllenborg during the 17th cen-

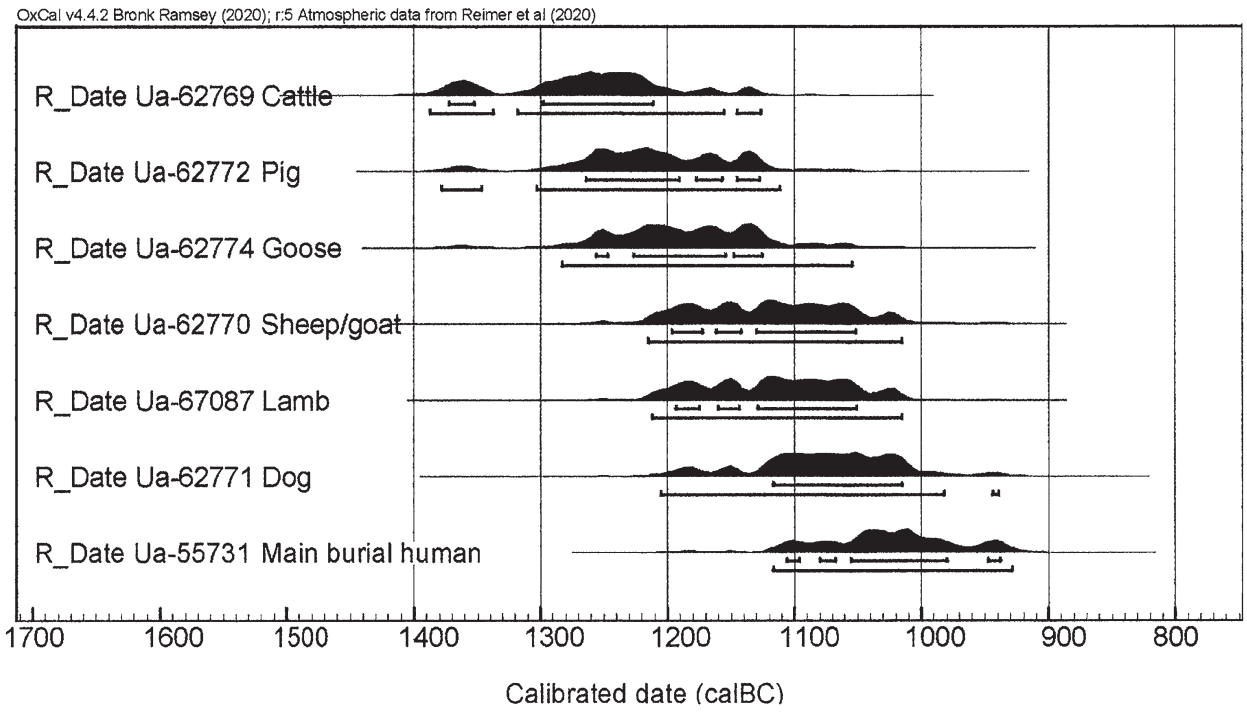

Fig. 14 Calibration of the radiocarbon dates for skeletal remains of animals in the Håga barrow, related to the cremation (main burial human). – (Illustration P. Frölund, Upplandsmuseet).

tury. As Almgren noted in 1905, some of the animals could be recent and those poorly represented with one bone only need to be scrutinised in detail.

If the lamb and the cremation are ritually interconnected, the probable time of the burial would have taken place in late spring or early summer. However, some of the other animal bones were older and need to be explained from another point of view.

DISCUSSION

The performed analysis provides an alternative way to approach some of the find material involved in the construction of the Håga barrow, compared to earlier interpretations. We suggest that (most of) the unburnt bones probably derived from a surrounding settlement area as well as from an older grave in the vicinity. The radiocarbon timeline gives an overview in which the unburnt human remains are the oldest features, basically from Montelius period II. They are followed by unburnt animal bones from at least two ^{14}C-phases. The youngest dates come from the cremation and funeral pyre at the bottom of the barrow (Montelius period IV) – and possibly from a few of the animals. Accordingly, there is no stratigraphical find order that gives clues to the ritual, and it is notable that the horse bone proved to be of recent date, which could also be the case with a few of the other animal bones.

Given the somewhat uncertain circumstances described above, we argue that neither the human nor the animal bones in the fill were included by coincidence. Almgren interpreted the animal bones in a way similar to the treatment of the humans (ritual cannibalism). He considered them to be sacrificial meals during the building and burying process. But at the beginning of the 20th century, the knowledge of settlements was poor, if barely known at all, in South Central Sweden. As indicated above, the animal bones show resemblances with bone material retrieved from domestic activities in the way they were treated, in the

selection of meat cuts and lean parts of the bodies, e. g., butchering refuse, varying ages, chewing marks and weathering bones. Also, the Håga dog bones were treated in a deviant way in relation to Bronze Age burial traditions – in the region dogs were regarded as a non-food animal during the period. As noted, the cremated *tibia* from a nearly grown-up herbivore, probably representing a meat cut, was found together with the cremation and is more consistent with the burial tradition of that time.

Although it cannot be ruled out that a few of the bones belonged to a slaughtering ritual in connection with the cremation, some of the others most probably originate from a settlement adjacent to the barrow. Recent excavations in 2019-2020 have revealed Bronze Age culture layers including unburnt animal bones contemporary with those from the Håga fill. How long the settlement existed and to what extent it had to make place for the funeral area is an important task for future studies (Göthberg/Frölund 2022). Moreover, some fire-cracked stones, soot, charcoal, a few pieces of pottery and burnt clay had been found in the barrow fill in 1902-1903.

The attitude towards the animal species included in the barrow demonstrates no social distance or taboo towards any of them in the (ritual) selection (cf. Weiler 1995). This acceptance of all kinds of animals can be understood in relation to other social regulatory codes, one of them possibly an intentional symbolic integration of an entire community in the barrow. If so, it involved ancient human remains from a nearby Early Bronze Age grave, animal bones and charcoal, clay, soil, and fire-cracked stones from the settlement next to the barrow. The connection to the living community is not unique for Håga. Remains of human bones can be linked to the domestic sphere, but in the opposite direction during the Bronze Age. Both on the continent and in the region of Uppsala, burnt or unburnt human bones have been found at settlements, e. g., in storage pits, and sometimes together with domestic artefacts, among them at the Apalle settlement. These practices are generally interpreted as an existing link between death, birth, and reproduction (Barrett 1989; Bradley 1998, 159; cf. Bloch/Parry 1982; Frölund/Larsson 1997; Ullén 1999; Lucas 2019). Thus, the play between domestic activities and death rituals for afterlife was embedded in Bronze Age society. In addition, it seems like Håga tried to echo the barrow tradition in South Scandinavia, in which several generations rested in the same monument, e. g., at Övraby, Snöstorp, Söndrum and Eldsberga parishes (all in the southern part of Halland län/S) (Lundborg 1972; 2007). The one and only cremated individual in the Håga barrow may have compensated for this by achieving (recreating) a link to past generations. We may also understand the inclusion of »ancestors«, settlement debris and animal waste as part of a wider ritual performance linked to control of people and land locally in the Håga territory as well as a tangible political asset for the descendants who built the barrow and could be connected to the dead.

The cremated individual in Håga was probably a man, though no sex assessment was possible. Subsequently, this question remains open for discussion (cf. Harding 2000, 82; Stig Sørensen 2013, 221). The ship images on the toilet objects were iconic motifs that probably served a ritual purpose, in this case symbolic travels in death but also in life. The dead individual once lived in a region criss-crossed by waterways with further connections to the south, from where the inspiration for the barrow came and from where most of the objects were imported. Besides, the deceased referred to a South Scandinavian male fashion, involving glorification of the warrior role, mostly expressed in death. But somewhat surprisingly, the Håga individual was born and grew up in the eastern part of the Lake Mälaren region, where evidence is scarce for the type of »heroic mortuary ideology« that is discussed for South Scandinavia and Germany (e. g., Kristiansen 2018; Vandkilde 2018; cf. Treherne 1995). The slight edge damage of the Håga sword showed that it was not used in battle. The visual impact and ideals might have been more important to the buried individual in Håga than real experience (cf. Harding 2000, 306). The ceremonial element was probably also expressed in the pictorial language on the rock panels at Enköping, approximately 30 km southwest of Håga. The depicted figures carrying swords are not involved in any serious inter-group aggression, but rather a ritual display (**fig. 15**).

Fig. 15 **a** Scenes from the rock-carvings at Enköping, 30 km southwest of Håga, relating to Bronze Age concepts and myths. – **b** details of humans (some with swords), animals and ships from Rickeby (Boglösa 94:1; Stockholms län/S). – (Photos Swedish Rock Art Research Archive: www.shfa.se [11.5.2022]; a E. Kjellén, Enköpings museum; b P. Skoglund, SFHA).

The present study has contributed to shed some light on the geographical origin of the cremated person in Håga, as well as the age of the deceased. The unburnt bones in the turf fill have proven to be older than the central grave, the cremation. This goes for both the human bones and some of the animal bones, leading to a discussion from where they may have been collected. It has been made clear that ritual cannibalism was not practised in the burial rites at Håga. A few scrutinised artefacts have been associated with both local and South Scandinavian ideals and ritual knowledge, connected to the deceased. Within a wider perspective though, the political or power-related role of Håga in the Lake Mälaren region has not been the issue here. For several parts of South Scandinavia, a transformation of society has been suggested during the Middle-Late Bronze Age to »an archaic decentralised state«, i. e., complex chiefdoms with a chiefly elite, living in elaborate residences from where they controlled the production and distribution of prestige goods and ritual gear (e. g., Kristiansen 2010). This presumption refers among others to the situation on northern Jutland in Denmark. Deforesting and exploitation of soil (grazing land) led to an ecological collapse followed by a regrouping of the political system (Holst et al. 2013; Bech/Valentin Eriksen/Kristiansen 2018). In South Central Sweden natural conditions and demographic pressure was very different and thus we cannot automatically translate the prevailing social system in (parts of) South Scandinavia to South Central Sweden. The knowledge of the social organisation in the Mälaren region is in many respects fragmented. The reconstructions of land-use patterns and landscape organisation, as well as economic factors like husbandry and agriculture, are hypothetical. According to recent excavations, the settlement traces are numerous in the Håga area, but they do not unveil a hierarchical structure. Rather, domestic socially equivalent units seem to have existed, with husbandry as a major part of the rural economy in the area (Frölund/Göthberg 2022). The same can be argued for other settlements nearby. This is not to say that a hierarchical structure was not present. The Bronze Age sites in the Lake Mälaren region must have taken part in a network of exchanges, obligations, and cooperation, linked to economic resources, as well as social and ritual rules. However, to get a more extensive understanding of the conditions pertaining to the social, ideological, and economic/technological system behind, the Håga area needs to be further explored. Future studies with reference to the surrounding environment and settlements are vital to put the Håga barrow more precisely within its specific social and political framework.

SUPPLEMENT

Pictures taken by Oscar Almgren, from the Håga barrow excavation in 1902-1903 and drawings made in 1902 by HKH Prince Gustaf VI Adolf of Sweden (**figs S1-5**). In **figures S6-9** sketches of the location and stratigraphy for human and animal bone samples as well as charcoal samples are presented. **Figure S9** shows the representation of all retrieved unburnt human bones in the barrow.

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Analyses

For this study, eleven bone samples and one charcoal sample were submitted to Accelerator Mass Spectrometry (AMS) for radiocarbon dating by prof. Göran Possnert, Ångströmlaboratoriet, Uppsala University. The radiocarbon values were calibrated by Ph. D. Per Frölund using OxCal 4.4.2 (Bronk Ramsey) r5 Atmospheric data from Reimer et al. 2020. Two bone samples and three charcoal samples were analysed early by Sellstedt et al. 1967, for this study calibrated by senior curator Ulf Srucke, Antraco. A *pars petrosa* from the cremation was submitted for isotope analyses to prof. Jane Evans, Isotope Geosciences Laboratory, British Geological Survey, Nottingham. The microphotograph and analyses of the sword was made by Senior Conservator Ulrik Skans, Swedish History Museum. The osteology in this study were made by Senior Curator Leena Drenzel, Swedish History Museum, and Ph. D. Johnny Karlsson, Stockholm University.

Note

1) The brooch was stolen at the Swedish History Museum in 1986 and a replica was made. The theft and following events are described by Jan Peder Lamm, Inger Zachrisson, Ralf Ohlsson and Finn Martner (Lamm 1989; Zachrisson/Ohlsson/Martner 1989).

Fig. S1 The diggers on top of the barrow in October 1902. – (After Almgren 1905; ATA, RAÄ).

Fig. S2 Part of the crossing profile is documented (the major part had been excavated when the photo was taken). – (After Almgren 1905; ATA, RAÄ).

Fig. S3 Detail of the barrow fill. The turfs are faintly visible as longitudinal lines. – (After Almgren 1905; ATA, RAÄ).

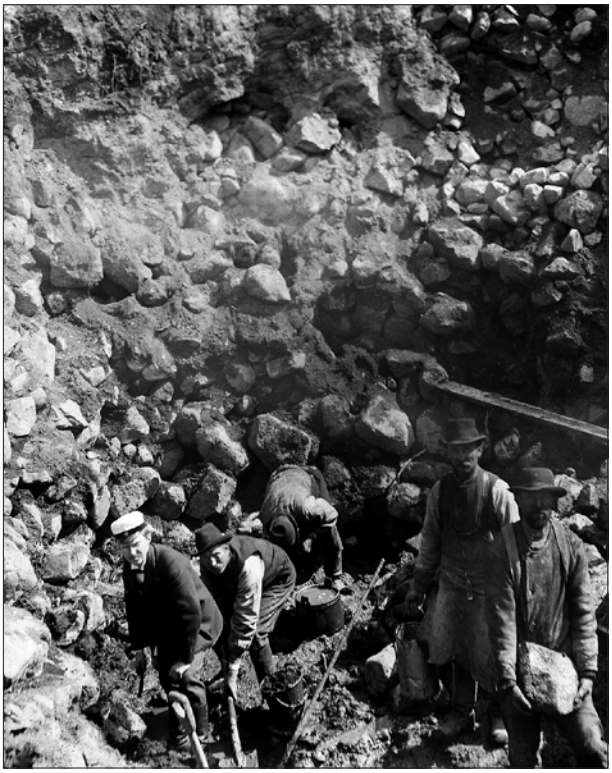
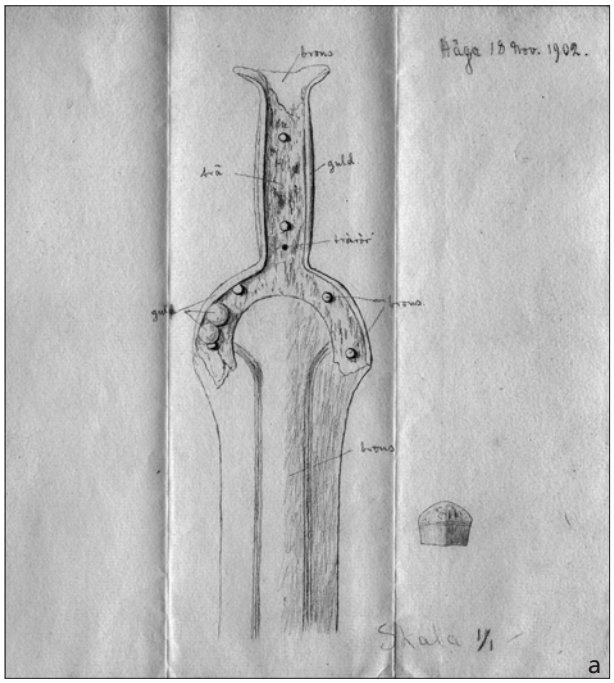


Fig. S4 Workers in the bottom of the cairn in 1903. – (After Almgren 1905; ATA, RAÄ).



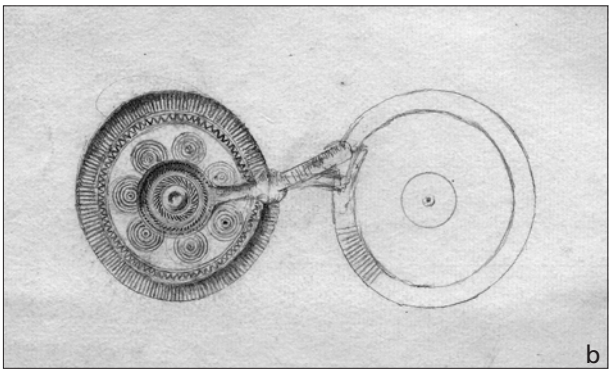


Fig. S5 Recently found drawings, made by Prince Gustaf Adolf, later King Gustaf VI Adolf of Sweden, 18 November 1902. The sword (**a**) and the brooch (**b**) were brought to the prince's apartment in Uppsala the day they were found. In the presence of prof. Oscar Montelius the objects were widely discussed by the excavators and students in archaeology. – (Photos © S. Argus Tirén, Bernadotteska arkivet, BRA GVIA, vol. 157 [cf. Ullén/Drenzel 2018, figs 8-9]).

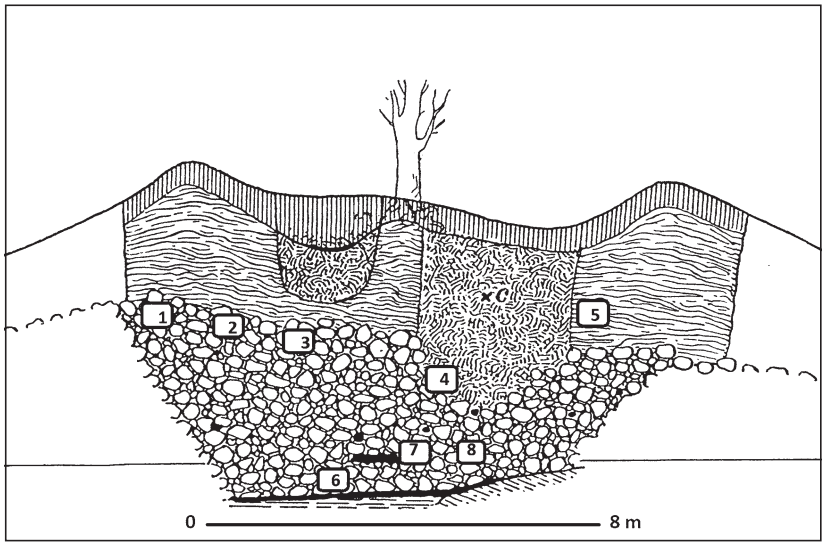


Fig. S6 Cf. **tab. 5**. Sketch of the stratigraphic levels for the unburnt animal bone samples from different shafts, projected into section A-B. Observe, it is an approximate estimation. – **1** Ua-62769 (*Bos taurus*). – **2** Ua-62774 (*Anser*). – **3** Ua-62771 (*Canis fam.*). – **4** Ua-67087 (*Ovis aris*). – **5** Ua-62773 (*Equus C.*). – **6** Ua-62770 (*Ovis aris*/*Capra h*). – **7** Ua-62772 (*Sus crofta*). – **8** St-2909, analysed by Sellstedt et al. 1967. – (Section after Almgren 1905, pl. III with additions by I. Ullén).

Fig. S7 Cf. **tab. 5**. ■ show the location of the animal bone samples in the different shafts. While the depth was more exactly described, the locations within the shafts were with some exceptions more general. – (Cf. **fig. 4**).

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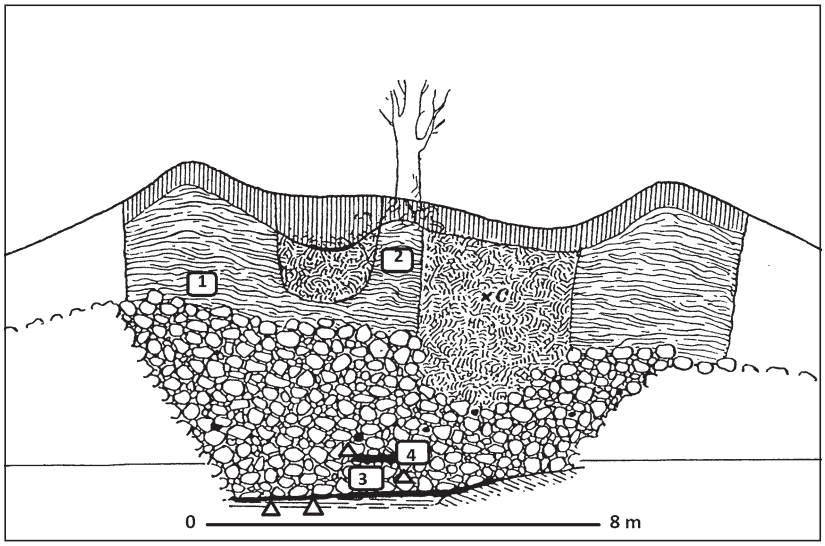

Fig. S8 Cf. **tabs 1. 4; fig. 10**. Sketch of the stratigraphic levels for the unburnt human bone samples and charcoal samples from different shafts, projected into section A-B. Observe, it is an approximate estimation. – **1** Ua-55729 (F1a). – **2** Ua-55048 (F27). – **3** Ua-55730 (F100). – **4** Ua-55731 (cremation/central burial). – △ charcoal samples, two in the central burial area (St-2319, St-2304), both analysed by Sellstedt et al. 1967; two in the funeral pyre (Ua-67088, St-2305), the St-sample analysed by Sellstedt et al. 1967. – (Section after Almgren 1905, pl. III with additions by I. Ullén).

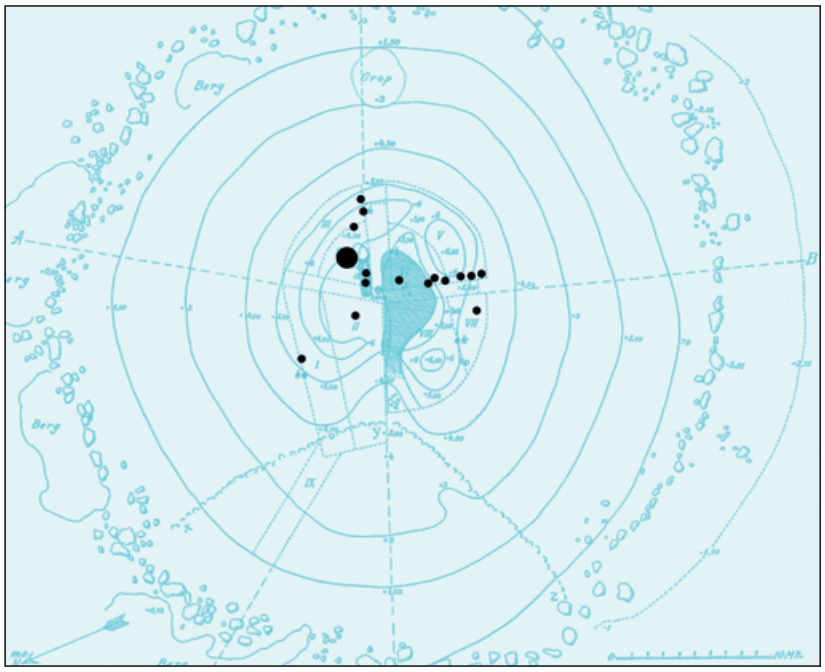

Fig. S9 Cf. **tab 3**. Distribution of all unburnt human bones in the Håga barrow (from all stratigraphical levels). The large dot marks a concentration of human bones in shaft IV near the cremation/central burial. The small dots represent smaller amounts of human bones. Note that they mainly follow the section (profile) lines. The dark area in the middle represents the pit made by county governor Gyllenborg in the 1690's. – (After Almgren 1905, pl. III; Ullén/Drenzel 2018).

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Zusammenfassung / Summary / Résumé

Håga neu interpretiert. Neue Analysen aus dem bronzezeitlichen Großgrabhügel Håga (Uppsala län) in Schweden

Trotz seiner Bedeutung gab es nur sehr wenige Forschungen zu den Funden aus dem Großgrabhügel von Håga bei Uppsala in Schweden seit seiner Ausgrabung 1902-1903 (Almgren 1905). Der Grabhügel mit einem Durchmesser von ca. 45 m und einer Höhe von etwa 7 m enthielt hochrangige Gegenstände aus Gold und Bronze. Die Bestattung stammt aus der Montelius-Periode IV (1100-900 v. Chr.). In einer Studie von 2017-2021 wurden neue Analysen durchgeführt, die hier vorgestellt werden, wobei ein besonderer Schwerpunkt auf der Chronologie und den Praktiken im Zusammenhang mit den menschlichen und tierischen Knochenresten im Grab liegt. Außerdem wurden einige Artefakte erneut untersucht.

Håga Revisited. New Analyses from the Bronze-Age Håga Megabarrow (Uppsala län) in Sweden

Despite its importance, very few studies have been made on the finds from the Håga megamound near Uppsala in Sweden since its excavation in 1902-1903 (Almgren 1905). The barrow, ca. 45 m in diameter and around 7 m high, contained high-prestige objects of gold and bronze. The burial dates from Montelius period IV (1100-900 BC). In a study of 2017-2021, new analyses were undertaken and they are presented here with a special focus on chronology and practices associated with the remains of human and animal bones in the grave. Also, a re-examination of a few artefacts has been carried out.

Håga reconsidéré. De nouvelles analyses du grand tumulus de Håga (Uppsala län) en Suède datant de l'Âge du Bronze

Depuis les fouilles de 1902-1903 (Almgren 1905), très peu d'études furent menées sur les trouvailles faites dans le grand tertre de Håga près d'Uppsala. Le tumulus, d'un diamètre d'environ 45 m et près de 7 m de hauteur, contenait des objets de prestige en or et en bronze. La sépulture date de la période de Montelius IV (1100-900 BC). De nouvelles analyses, entreprises lors d'une étude de 2017-2021, sont présentées ici en mettant l'accent sur la chronologie et les rites associés aux restes d'ossements humains et animaux de la tombe. On y réexamine aussi certains artefacts.

Traduction: Y. Gautier

Schlüsselwörter / Keywords / Mots-clés

Schweden / Uppland / Håga / Bronzezeit / Grabhügel / Bronzefunde / »Fürstengrab« / Krieger / Aristokratie / Brandgrab
Sweden / Uppland / Håga / Bronze Age / barrow / bronzes / high-status burial / warrior / aristocratic / cremation
Suède / Uppland / Håga / Âge du Bronze / tumulus / découverte de bronze / »tombe princière« / guerriers / aristocratie / tombe à crémation

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