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## TARTU ÜLIKOOLI RAAMATUKOGU SUNDEKSEMPLAR

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# SALVAGE EXCAVATIONS AT THE VÕHMA X TARAND-GRAVE AND THE VÕHMA I CORDED WARE CULTURE SETTLEMENT SITE

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In 2002 the salvage excavations at the Võhma X tarand-grave and the Corded Ware Culture (CWC) settlement site that had been uncovered from under it were finished. The antiquity had been mentioned for the first time as a probable grave site in an inventory report by Marta Schmiedehelm in 1948 (Schmiedehelm 1948, 1b); in the spring of 1999 Valter Lang discovered that the stone heap that had been taken under heritage protection as an ancient clearance cairn had been seriously damaged. At closer study human bones (among them scull fragments) were found, so it became obvious that the cairn should indubitably be categorized as a stone grave. In 1999, excavations were launched to identify the precise character and age of this ancient burial place and to rescue its undamaged parts. Already in the course of the first excavation year it appeared that the site was of double interest, as the remains of an earlier settlement site was preserved under the grave. During the first year the excavation was concentrated on the damaged area, later the fragmentary constructions of the tarand-grave and the preservation of the CWC settlement site were brought into focus. All together 169 m² were excavated at Võhma (Ots 1999; 2001; 2003).

## TARAND-GRAVE X OF VÕHMA

Tarand-grave X of Võhma is located in the former Kadrina parish, between the Võhma and Ilumäe villages, on the western side of the Kotkamäe-Uusküla road, 300 m south of the Vatku-Palmse road, on an elevation standing about 1 m above the surrounding meadow. This is a region that is unusually rich in stone-cist- or tarand-graves: 240 m south of the site lies grave IX of Võhma, 150 m ESE the grave II of Ilumäe, 290 m SE the grave III of Ilumäe and 280 m NE the grave I of Ilumäe (Kotkamäe). The Tandemäe grave complex is located about 570 m to WNW from the site (Fig. 1).

The extensive demolition of the grave X had taken place recently: a significant amount of larger stones had been removed from the stone cairn and at places the burial layer had been disturbed by the scoop. Only the lowest stone layers of the walls of two *tarands*, and also of a side wall of a supposed third *tarand* had remained virtually untouched. On a very short section of the grave wall, limestone

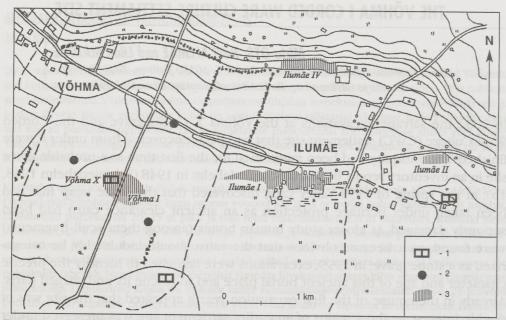


Fig. 1. Antiquities at Ilumäe and eastern part of the Võhma village. 1 - tarand grave, 2 - stone cist grave, 3 - settlement site.

Joon. 1. Muistised Ilumäel ja Võhma küla idaosas. 1- tarandkalme, 2 - kivikirstkalme, 3 - asulakoht.

slabs had been preserved upon the granite stones (Fig. 2: 1, 2). The longitudinal axis of the easternmost tarand was orientated in the NE-SW direction and its southeastern, southwestern and northeastern walls were mostly comprised of two rows of granite stones with a diameter of 30-40 cm. At places – mainly in the NE and SE corners – some limestone slabs had been preserved on top of the granite walls. The eastern wall of the second tarand that was from the northwestern side adjacent to the first tarand had been so entirely broken that its existence could only be guessed. Thus the possibility cannot be ruled out that the complex consists in fact of only one tarand with the dimensions  $3.4 \times 3.7$  m.

Pottery sherds and unburned bone fragments were scattered over the *tarand*. The only metal find was a fragment of a bronze spiral that was found 0.5 m away from the NW wall (Fig. 2: 10). Of later finds, pottery sherds with brown glaze and some pieces of Viking Age and turntable pottery were collected from a coal patch covering the wall constructions.

The most intact wall of the *tarand* II northwest of the main *tarand* was the northeastern one; also fractions of the northwestern and southeastern walls have been

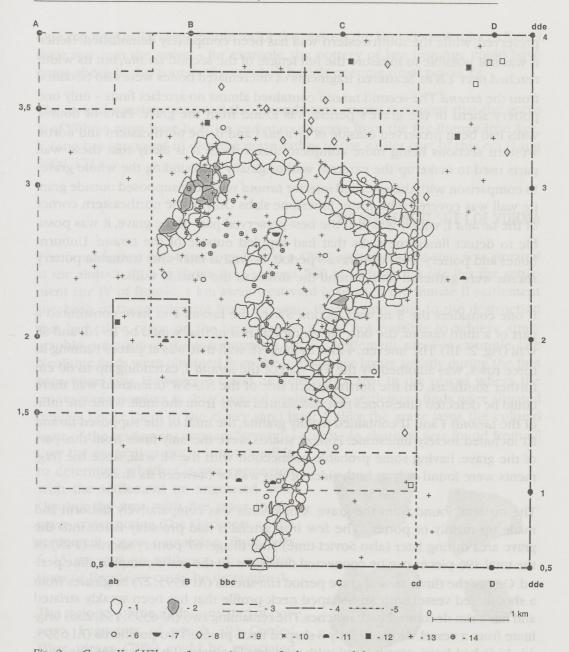


Fig. 2. Grave X of Vöhma. 1 - granite stone; 2 - limestone slab; 3 - excavation plot of 1999; 4 - excavation plot of 2000; 5 - excavation plot of 2001/2002; 6 - pottery of Ilmandu type; 7 - Viking Age pottery; 8 - turntable pottery; 9 - glazed pottery; 10 - bronze spiral; 11 - slag; 12 - iron object; 13 - animal bones; 14 - human bones.

Joon. 2. Võhma X kalme. 1 - raudkivi; 2 - paekivid; 3 - 1999. aasta kaevandi piirid; 4 - 2000. aasta kaevandi piir; 5 - 2001/2002. aasta kaevandi piir; 6 - Ilmandu tüüpi keraamika; 7 - viikingiaegne keraamika; 8 - käsikedra keraamika; 9 - glasuuritud keraamika; 10 - pronksspiraal; 11 - šlakk; 12 - raudese; 13 - loomaluud; 14 - inimluud.

preserved, while the southwestern wall has been completely demolished. Hence it was not possible to measure the full length of the second *tarand*, but its width reached over 1.8 m. Scattered fragments of uncremated bones were also obtained from the *tarand*. The second *tarand* contained almost no artefact finds – only one pottery sherd of the grave's period was found from the grave. Parts of double walls had been preserved outside of *tarands* I and II, the northeastern and northwestern sections being more complete than others. It is likely that these wall parts used to make up the external wall originally surrounding the whole grave. In comparison with the so-called interior *tarand* walls, the supposed outside granite wall was covered with fewer limestone slabs Only in the northeastern corner of the *tarand* I, which was also the best-preserved part of the grave, it was possible to detect limestone slabs that had toppled outside of the *tarand*. Unburnt bones and pottery from the grave's period, as well as later-time turntable pottery sherds were gathered from around the stones of the outside walls.

If one considers the 5 m wall section SW of the *tarand* I to have constituted a part of a third *tarand*, the only surviving remains of that would be its NE and SE wall (Fig. 2: III). The uneven, 4-metres-long NE wall that was at places running in three rows, was adjoined by the SW wall of the *tarand* I, extending up to 80 cm further southeast. On the northwestern side of the NE-SW orientated wall there could be detected limestones that had slanted away from the infill. While the infill of the *tarands* I and II contained mainly granite, the infill of the supposed *tarand* III included merely limestone. Pottery sherds were the only finds from this part of the grave, having some probable connection with the SE wall, since the fragments were found only at both sides of this wall or between its stone.

The material found from the grave X of Võhma was comparatively uniform and made up mainly of pottery. The few iron artefacts had probably fallen into the grave area during later (also Soviet-time) land tillage. 67 pottery sherds (14%) of the total 496 pieces can be connected directly with the grave complex' time period. One of the three *tarand*-grave period rim-sherds (AI 6395: 27) originates from a shouldered vessel with an S-shaped neck profile that has been weakly striated and has a rim decorated with notches. The remaining two (AI 6395: 134, 206) originate from a vessel with a slightly S-shaped neck profile. Two potsherds (AI 6395: 13, 134) had been ornamented with grooves. The type, the ornament, the composition and the surface finish of these matches the so-called Ilmandu type pottery of the Early Pre-Roman Iron Age (Lang 1996, 287). The rest of the potsherds belong to the earlier settlement period (79%) or originate from the Viking Age or later periods when turntable pottery was used (6%). The medieval and moderntime wheel-thrown pottery made up only 1% of the potsherds gathered there.

One can only make assumptions as for the reasons the later ceramic pieces found their way into the grave - for example, the pottery of late Iron Age could have come about in the course of secondary burials or some ritual practices.

The *tarand* constructions and the Ilmandu-type ceramics suggest that the grave X of Võhma must have been an early *tarand*-grave from the Pre-Roman Iron Age. V. Lang has proposed to date the grave rather to the earlier part of this era (Lang 2000, 171).

## CWC SETTLEMENT SITE I OF VÕHMA

The tarand-grave had been founded on a CWC settlement site that was situated at the altitude 62.3 m above the sea level. 700 m SE from the site lies the settlement site IV of Ilumäe, 1 km away westward is situated the Ilumäe II settlement site; both of these originate from the same time period. Due to the destruction that had taken place on the tarand-grave, it was not possible to achieve stratigraphic precision in the investigations on the settlement site. For example, late Neolithic finds were obtained from the upper grave layers already during the first excavation year. However it could be determined that in the places where the stones were standing in their original position, the settlement finds were situated directly under them in the clayey sand layer. Unlike the grave layer, the cultural layer of the settlement appears "greasy", i.e. rich. As charcoal was found from all

over the excavation site, it is not possible to determine whether it was connected with the settlement or originated from clearing the area with fire prior to the grave construction. The thickness of the settlement layer containing finds was 5-15 cm and no evidence of constructions or fireplaces could be determined.

The majority of the finds consisted of pottery fragments, of which 393 Corded Ware pieces (79%) could be associated with the stone age settlement site. Also 2 pieces of flint and 75 pieces of quartz were obtained; among these were found cores and other flaking technique residue. Thus 76.8% of the excavated

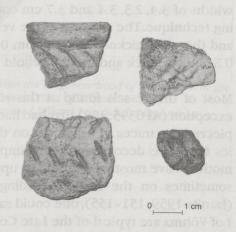


Fig. 3. Sherds of Corded Ware from settlement site I of Võhma (AI 6395: 115, 146, 144, 180).
Joon. 3. Nöörkeraamikat Võhma I asulast.

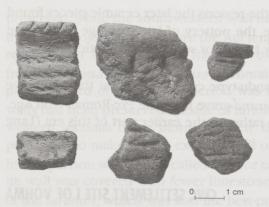


Fig. 4. Sherds of the Corded Ware from the settlement site I of Võhma (AI 6395: 58, 36, 126, 68, 154, 125).

Joon. 4. Nöörkeraamikat Võhma I asulast.

finds belonged to the Stone Age and the finding frequency of Corded Ware was 2.3 pieces per m2. Among the Corded Ware found from the site there could be distinguished fragments of thick-walled household utensils (69%) and those of the thinwalled beakers and other such vessels (fine ceramics 31%) (Fig. 3). Among the ingredients of the beakers' temper there could be distinguished fine sand and organic matter, with the vegetal fibres having left hair-like impressions in the material. The temper of the household utensils usually contained grog and

rubble, at times the temper seems to have contained some organic fibre that had burned out during the baking of the vessels.

It is possible to identify at least 10 Corded Ware vessels by the bottom and rim sherds. The bottom diameter of a fine ceramics' vessel has been 10 cm (AI 6395: 146) and that of a household utensil has been 12-14 cm (AI 6395: 172); judging by the fine ceramics' vessels rim sherd, the approximate orifice diameter of the beaker could have been 22 cm (AI 6395: 36). 4 coil ends of type N with the widths of 3.4, 2.3, 3.4 and 3.7 cm could be determined on the basis of the forming technique. The surfaces of the vessels have been either smoothed or striated and the wall thickness varies from 0.7 to 1.3 cm, with beakers mostly having it 0.8-0.9 cm thick and the household vessels 0.9 to 1.1 cm.

Most of the vessels found at this site have been flat-bottomed with only one exception (AI 6395: 168) that had had a slightly flattened round bottom. 4% of the pieces have traces of ornament on them and these all belong to the fine ceramics type. The decorations (cord impressions, notches, grooves and spruce-twig motive) have mostly been on the upper part of the vessels, usually on the neck, sometimes on the rim. Proceeding from earlier Corded Ware classifications (Jaanits 1959, 151–155), one could say that the pottery finds from the settlement I of Võhma are typical of the Late Corded Ware.

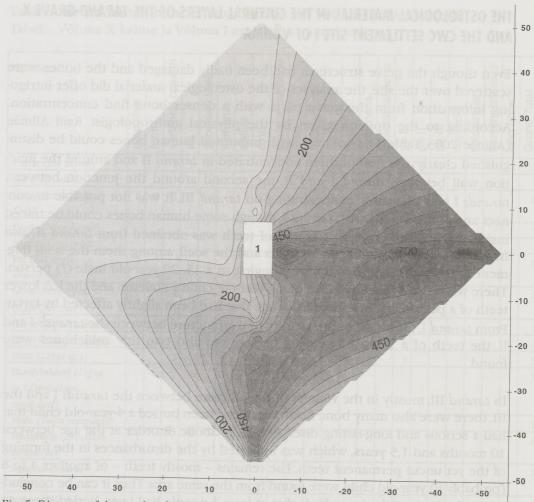


Fig. 5. Diagram of the results of phosphate analyses from the neighbourhood of the settlement site I of  $V\tilde{o}hma$ . I - excavation plot  $(7 \times 12 \text{ m})$  of the settlement site I of  $V\tilde{o}hma$ . I -  $V\tilde{o}hma$  is I -  $V\tilde{o}hma$  if I asulakoha I asulakoha

## THE OSTEOLOGICAL MATERIAL IN THE CULTURAL LAYERS OF THE *TARAND*-GRAVE X AND THE CWC SETTLEMENT SITE I OF VÕHMA

Even though the grave structures had been badly damaged and the bones were scattered over the site, the analyses of the osteological material did offer intriguing information from the grave parts with a denser bone find concentration. According to the opinion given by the physical anthropologist Raili Allmäe (Allmäe 2003, Table 1), two areas with unburned human bones could be distinguished clearly: the first of them concentrated in tarand II and around the junction wall between tarand I and II, the second around the junction between tarands I and III, mainly concentrating on tarand III. It was not possible to connect any of the burials with tarand I, though some human bones could be traced inside it (Fig. 2: 14). A large quantity of teeth was obtained from tarand II, also fragments of the mandible and maxilla and the scull, among them the scull fragment of the right temporal bone belonging to a 15-20-year-old male (?) person. There were also a few fragments of a 7-year-old child's skeleton and the left lower teeth of a person at 17 to 25 years of age that had been slightly affected by tartar. From tarand I, mostly from the vicinity of the juncture between the tarands I and II, the teeth of a 15 to 25 year-old person and also two tiny anklebones were found.

In *tarand* III, mostly in the vicinity of the juncture between the *tarands* I and the III, there were also many bone finds. There had been buried a 4-year-old child that had a serious and long-lasting disease or a metabolic disorder at the age between 10 months and 1,5 years, which was indicated by the disturbances in the forming of the yet uncut permanent teeth. The remains – mostly teeth – of another, 4 to 8 (probably 8) year-old child were found from the same area. Thus it can be concluded on the basis of the bone finds that at least 3 people had been buried there: an adolescent or a young adult and children at the ages of 4 and (approximately) 8.

On the basis of the osteological finds from the grave X of Võhma and the settlement I (see Maldre 2003), it was possible to identify at least 75 animal bones; in the case of 18 fragments it was impossible to identify the species. There were also 31 bird bones (see Table). Due to the destruction of this double antiquity it is not possible to determine whether the bones were from the grave or from the settlement layers. The possibility of the material originating from an intermediary or a later period should not be ruled out as well; among the latter should definitely be classified the bones of a hen, of a hare or a rabbit, of a hedgehog, a squirrel and the majority of the rodent bones.

Table. Animal bones in the Võhma X grave and Võhma I settlement site.

Tabel. Võhma X kalme ja Võhma I asulakoha loomaluud.

Species	mandible	tooth	vertebral column	rib	shoulderblade	humerus	radius	ulna	metacarpal bone	wrist	hucklebone	femur	tibia	calcaneus	metatarsal bone	ph I	ph II	III ya	coracoid	tibiotarsus	tarsometatarsus	long bone	Grand Total
Cattle (Bos taurus)		3	2	3		1		1		100				2		1	1	1	-	7.	10		13
Elk (Alces alces)						Lea I					23,33	76		105	1	Pa YN	4	33 24		14.	32.32	100	1
Goat/sheep (Capra/ Ovis)	N Z	2	1	1		noi ni n	1	o t		T.E.	9.0	1	25 L	81	1171	2	a e	748 778)	ed	DCI I II		oI	8
Goat (Capra hircus)	9088	30	RO		122	2635	361	8 M	00/8	1	et in	The second	Dest	FOR	128	OF SERVICE	TIT	750	10)	uh	un	9%	1
Sheep (Ovis aries)			243		Bir	63		11 3	Sin	d	hi	2		- 93	101		30	Pan	65			T	2
Pig (Sus scrofa domestica)	1	5		IV.		1	33.33			U,		1	006	15.			791		W.E		508		8
Goat/sheep?/pig? (Cap/Ov? Sus?)	300	mo	2	131	25	00	d	ris	10	19	do	no	31	3 3	ud	(0)	ori	l b		OZR	bi		2
Horse (Equus caballus)														1			15	4101			8. KS, K.	14	1
Dog (Canis familiaris)		1																					1
Hare (Lepus sp.)		9.3	2		HII	176	1		TV.	49	1	H	HIE		20	1	10)	34	119		132	7	5
Hare?/rabbit? (Lepus sp.? Oryctolagus cuniculus?)	438 od			on in	1 1	ne om	1) A.(	eve eve		nn oir	1	S S	thi	br dt	io lo	15 271	on.	Si	lisy ste	100	JU(	8	1
Mole (Talpa europaea)			134	No.	0.71	1	Free	1	2 1		-				28.0	1124							1
Hedgehog (Erinaceus europaeus)	1	zi.	The second secon	Oit		10	mi	S C	1 7	TE		573	5		m	300	XX.E	SIS	do	30	TYC	d	1
Squirrel (Sciurus vulgaris)	1	e in		10	HO!		10		96	lA.	OV.	115	in the				10	311	bo	HO		th to	1
Vole (Arvicola terrestris)		1	105 901		eili mi	TES	311		ir	ere de	n l	mi	13/	pion viux	ion ion	101	ne ori		loi loi	dur Lin	er i Sign	iy i	1
Rodents (Rodentia)	1	1	1	20	12	orly	20	33	13()	m	1	1	2	SO	bo	10	10,1	850	ch	000	,ar	13	7
Toad (Bufo bufo)	1 324	108	50	2:36	OF	202	onl	30	des	100	ah	75.48	1	-10.5	200	13.4	erfo	FTS	837.	noi	ton	77	1
Animal		2	1	1539	E ST	3111	92	961	151	1525	1	1030	m	00	1210	viin	Be	13 6	CE I	2016	10	4	8
Animal?			1	3																		6	10
Domestic fowl (Gallus gallus)	inns (23)	V.			100		SE J	1		13 3	Ott				No.	800		hk.		ast.			1
Fowl (Aves)			519		1	8	2	4	1		4 3	1		142		200	123		6	1	4	2	30
Total	4	15	10	7	1	11	4	6	1	1	4	6	3	3	1	4	1	1	6	1	4	12	106

Judging by the location of the animal bones in the cultural layer, there have been no animals placed as grave deposits to the dead. 2 bird bones were acquired from grave I, but these were clearly of later origin. In grave II there were a canine tooth and a hare's bone fragment among the human remains. As both of these finds came from the damaged part of the grave, their association with the burials remains questionable. Grave II, that has been destroyed most, contained some more animal- and bird bones. Some bird bones were obtained from around the grave's northwestern wall; so were also the tooth of a sheep or goat. Some goator sheep-bones were uncovered from the northeastern corner of grave III; from aside the grave wall slightly southward from latter position 2 pig bones and one bird bone was found. Nevertheless one cannot tell whether these remains were left at the grave during the funerary rites or in some other way. The only horse remain (a tooth) was found from the outside of the northeastern wall of grave II. The absence or scarcity of animal bones in Estonian tarand-graves has been noted also elsewhere (Lang 2000, 134). In the tarand-grave II of Tõugu that is situated quite close to grave X of Võhma, animal bones were obtained from all the graves and around them, but the number of the bones in different graves varied a lot (Maldre 2000).

The case is even more complicated with the animal bones found from under the grave walls and around the *tarand*-grave (from the northern, northeastern and southeastern parts of the excavation site). Among the few bones obtained from under the grave walls were the pieces of a *bovine ulna* and a *bovine phalanx*, a fragment of an elk's anklebone and 2 bird bones. Of the mentioned finds, the bovine phalanx seems to date clearly to a later period. It is possible that the partly burnt bovine ulna could originate from the CWC settlement period preceding the founding of the *tarand*-grave. Also the elk bone fragments could be connected with the settlement period as they differ in their colour and degree of preservation from the remaining find material. The animal bones found from the northern, northeastern and southeastern parts of the excavation seem to have no connection with the *tarand*-grave. As most of these bones belong to rodents, they cannot also be definitely connected with the settlement site.

## THE RESULTS OF THE PHOSPHATE ANALYSES FOR THE CWC SETTLEMENT SITE I OF VÕHMA

In order to determine the dimensions of the settlement, phosphate mapping was carried out in an area of  $107 \times 112$  m, where soil samples were taken at every 5

metres from all the four cardinal points (Fig. 5). On the bases of the results it can be presumed that the archaeological excavations had concentrated on the northwestern edge of the CWC settlement and that the settlement in fact extended further south and southeast into areas that had been left out of the phosphate mapping. Although the exact determination of the settlement area would require additional investigations, it can be stated already now that the area must have taken up around  $60 \times 70 \text{ m}$  i.e. ca 0.42 ha. Thus it is apparent that the settlement I of Võhma does not differ essentially in size from the other few known Estonian CWC settlement sites (Ilumäe II and IV) that have been measured.

#### Acknowledgments

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## PÄÄSTEKAEVAMISED VÕHMA X KALMEL JA VÕHMA I NÖÖRKERAAMIKA ASULAKOHAL Mirja OTS, Raili ALLMÄE ja Liina MALDRE

2002. aastal lõpetati neli aastat väldanud päästekaevamised Võhma X tarandkalmel ja selle all avastatud nöörkeraamika kultuuri asulakohal (joon. 1). Esmakordselt mainis arvatavat kalmekohta 1948. aastal Marta Schmiedehelm; 1999. aasta kevadel avastas Valter Lang, et kivikuhjatist, mis oli kaitse alla võetud muistse põllukivihunnikuna, on tugevasti lõhutud. Päästekaevamisi alustati Võhmas 1999. aastal, kokku kaevati nelja aasta vältel läbi 169 m² suurune ala. Kalme lõhkumine oli ulatuslik: kivivarest oli minema veetud arvestataval hulgal suuremaid kive ja kohati oli kopp matmiskihi põhjani segi keeranud. Lõhkumisest olid jäänud puutumata enam-vähem terves ulatuses säilinud kahe tarandi müüri alumised kiviread ja veel ühe arvatava (III) tarandi müüri servaosa (joon. 2). Vaid mõnel lühikesel müürilõigul oli raudkivide peal säilinud paeplaate (joon. 2: 1, 2). Tarandid paiknesid kirde-edela suunas, kusjuures nende müürid moodustusid enamasti kahte ritta laotud 30-40 cm läbimõõduga raudkividest. Esimese tarandiga loode poolt külgneva teise tarandi idamüür oli sedavõrd lõhutud, et tema olemasolu võis vaid aimata (seetõttu ei saa täielikult välistada võimalust, et lõhutud oli algselt hoopis ühetarandiline, 3,4 x 3,7 m suurune kalme). Väljapool I ja II tarandit oli säilinud kaherealisi müürijuppe, millest tervemad olid jälgitavad kirdes ning loodes, lünklikumad kagus ja edelas. Võimalik, et need müürifragmendid moodustasid algselt kogu kalmet ümbritseva välimise müüri. Võrreldes nn. sisemiste tarandimüüridega leiti oletatava välimise raudkividest laotud müüri pealt vähem paekiviplaate. Vaid I tarandi kirdenurgas, mis oli ühtlasi kõige paremini säilinud kalmeosa, võis täheldada selgelt väljapoole vajunud paeplaate. Ka välimiste tarandimüüride kivide vahelt leiti põletamata luid koos kalmeaegse ning hoopis hilisema käsikedrakeraamika kildudega. Juhul, kui pidada esimesest tarandist edela pool säilinud ca 5 m pikkust müürijuppi jäänuseks kolmandast tarandist, siis oli sellest osaliselt säilinud vaid kagu- ja kirdemüür (joon. 2: III). Kui I ja II tarandi sisetäidise moodustasid enamasti raudkivid, siis arvatava III tarandi sees olid vaid paeplaadid.

Võhma X tarandkalme leiumaterjal koosnes peamiselt keraamikast. Ainsa muinasaegse metall-leiuna saadi pronksspiraali katke I tarandist (joon. 2: 10). Ülejäänud vähesed raudesemed olid kalmele sattunud ilmselt hoopis hilisema (kolhoosiaegse) maaharimisega. Kogutud keraamikast (kokku 496 kildu) saab kindlamalt kivikalme perioodiga seostada 67 katket (14%). Nii nõu tüüp, ornament kui ka savikoostis ja pinnaviimistlus sobivad kokku nn. ilmandu-tüüpi keraamikaga vanemast eelrooma rauaajast. Ülejäänud savinõukillud pärinevad kalmest hoopis varasemast nöörkeraamika-aegsest asulast (79%) või on tegemist juba hoopis hilisema, s.o. viikingiaegse ja võimalik, et sellest veelgi hilisema käsikedrakeraamikaga (6%). Kesk- ja uusaegse glasuuritud ja juba treitud keraamika moodustas savinõukildudest vaid 1%. Kalme kasutusajast hilisema keraamika sattumise kohta uuritud alale võime teha vaid oletusi. Näiteks võidi noorema rauaaja keraamika tuua siia seoses järelmatustega või mingite kultustoimingutega. Võhma X kalme tarandikonstruktsioonide ja nn. ilmandu-tüüpi keraamikaleidude põhjal näib, et antud kohal võis olla varane tarandkalme, mis kuulub eelrooma

rauaaega. Tarandkalme oli rajatud nöörkeraamika aegsele asulakohale, mille kõrgus merepinnast on 62,3 m. Kalme ulatusliku lõhkumise tõttu polnud Võhma I asula täpse stratigraafia jälgimine enam võimalik. Leide sisaldava asulakihi paksus oli 5-15 cm ja mingeid ehitiste konstruktsioone või tuletegemisega seotud kohti selles eristada ei õnnestunud. Suurima osa leiumaterjalist moodustas keraamika, millest kiviaegse asulakihiga on võimalik seostada 393 (79%) nöörkeraamilist kildu. Lisaks saadi 2 tulekivikildu ja 75 kvartsileidu, mille hulgas on nukleusi ja teisi töötlemisjääke. Nöörkeraamiliste nõude seas sai eristada paksemaseinaliste nn. majapidamisnõude ja õhemaseinaliste peekrite jt. anumate katkeid (joon. 3). Põhja- ja servatükkide põhjal on võimalik loendada vähemalt 10 erinevat nöörkeraamika kultuuri aegset nõud. Ornamenteeritud on vaid 4% kildudest; esines nöörivajutisi, täkkeid, sooni ning kuuseoksamotiivi. Arvestades varasemaid nöörkeraamika liigitusi (Jaanits 1959, 151-155) on Võhma I asulakoha keraamika iseloomulik hilisele nöörkeraamikale.

Kuigi kalmekonstruktsioonid olid tugevasti lõhutud ja kalmealalt saadud luuleiud paiknesid enamasti hajali, oli kalmes piirkondi, kus luude kontsentratsioon oli tihedam. Antropoloog Raili Allmäe määrangu põhjal joonistus välja kaks selgemat põletamata inimluude fragmentidega piirkonda: neist esimene oli II tarandis ning I ja II tarandi vahemüüri ala ja teine I ja III tarandi vahemüüri läheduses, jäädes seotuks pigem III tarandiga. Luuleidude põhjal võib öelda, et kalmesse oli maetud vähemalt kolm inimest: nooruk või noor täiskasvanu, umbes 8-aastane laps ja 4-aastane laps. Viimatinimetatud matuse puhul võis täheldada vanusevahemikus 10 kuud kuni 1,5 aastat tõsist ja pikaajalist haigust e. kaasasündinud ainevahetushäiret. Sellele osutavad häired veel lõikumata jäävhammaste hambaemaili moodustumises.

Loomaluude määrangu järgi oli Võhma X kalme ja I asulakoha luuaineses võimalik kindlaks teha vähemalt 75 loomaluud; 18 fragmendi puhul ei saadud liiki määrata; linnuluid oli 31 (vt. tabel). Kaheosalise muistise lõhkumise tõttu pole enamiku looma- ja linnuluude hulgas võimalik enam kindlaks teha, kas nad olid seotud kalmega või selle all asunud nöörkeraamika kultuuri asulakohaga.

Asulakoha suuruse väljaselgitamiseks tehti fosfaatkaardistus  $107 \times 112$  m suurusel alal, kus võeti pinnaseproove nelja põhiilmakaare suunas 5 m vahedega (vt. joon. 5). Fosfaatanalüüsi tulemuste põhjal võib oletada, et arheoloogiliste kaevamistega uuriti nöörkeraamika kultuuri aegse asula loodeserva ja see ulatus lõuna ja kagu suunas ka fosfaatkaardistusest välja jäänud piirkonda. Kuigi asulakoha täpse ulatuse kindlakstegemine nõuaks täiendavaid uuringuid, võib juba praeguste andmete põhjal arvata, et selle suurus oli vähemalt  $60 \times 70$  m e. 0,42 ha. Seega võib öelda, et Võhma I asulakoht ei erine oma suuruselt oluliselt Eestis teadaolevatest vähestest nöörkeraamikakultuuri aegsetest asulakohtadest (Ilumäe II ja IV), kus on olnud võimalus mõõta nende ulatust.