Raili Allmäe

SOME REMARKS ON KASEKÜLA STONE-CIST GRAVE, LÄÄNEMAA, ESTONIA.

Abstract
The stone-cist grave of Kaseküla, Läänemaa, Western Estonia, is an intriguing archaeological object regarding human remains. The number of infant burials in the grave is remarkable. The results of osteological analysis and radiocarbon dating (AMS) of human remains of this site are presented in this paper. The phenomenon of numerous infant burials and (re)usage of ancient burial places will be discussed, also what care should be taken regarding the demographic estimations and models based on human remains of ancient burial places.

Keywords: stone-graves, secondary burials, infant burials, reuse of graves

Raili Allmäe, Institute of History, Tallinn University, Rüütli 6, 10130 Tallinn, Estonia.
E-mail: raili.allmae@ai.ee

INTRODUCTION

Stone-cist graves are above-ground structures that have one or several cists in the middle and which are enclosed by one or several circular stone walls, filled with soil and stones and covered with a stone heap (Lang 2007b: 147). Stone-cist graves appear into Estonian landscape with the transition to the Late Bronze Age (1100–500 BC) and are more characteristic to the northern and western coastal areas of Estonia (Lang 2007b). Archaeologist Mati Mandel investigated the Kaseküla stone-cist grave area in western Estonia in 1973 (Figs. 1–2). Inside the central stone-cist commingled unburnt human bones and a fragment of bronze razor were found; outside (north) of the stone encirclement the remains of another human burial were found (Mandel 1973; Mandel 1975: 76). The most numerous artefacts between the central cist and the circular wall were pieces of pottery, also some pieces of iron and a fragment of a iron shepherd's crook pin were found (Mandel 1975: 76). Unfortunately the archaeologists have not yet dated the ceramics found in Kaseküla stone-cist grave, thus its connection to primary or secondary burials is not ascertained. The form of shepherd's crook pins reached Estonia from Ukraine and Belarus during the middle Pre-Roman Age (Lang 2007b: 184); iron shepherd's crook pins are the latest finds in stone-cist graves according to current data (Lang 2007b: 161). Mandel (1975) dated the burial site to the second half of the first millennium BC (Pre-Roman Iron Age); later on, Lang (1996: 297) dated it to the Late Bronze Age (1100–500 BC) and also suggested the possibility of secondary burials in the grave. It is not surprising that only a few artefacts were found in the Kaseküla stone-cist grave. The Estonian stone-cist graves do not contain many grave goods; approximately one in three graves has a cist(s) that contains finds that can be identified and dated, whereas finds are twice as frequent in the burials outside the cist (Lang 2007b: 155).

The osteological material from the site was analysed by Jonathan Kalman at the end the 1990s. The central cist contained the remains of a man aged about 50 years and the remains of at least three infants; within the stone encirclement burials of at least 16 infants and one 3–4 year old child were found; outside (north) of the stone encirclement the remains of at least two more adults lay, although the majority of at least one skeleton was absent (Kalman 2000). In his paper, Kalman (2000) has proposed three explanations why such a remarkable number of infants have been buried there: a special burial place for children, human sacrifice or epidemics.

Fig. 1. Location of Kaseküla stone-cist grave.

The author of the present paper has studied cremated osteological materials of several western Estonian stone-graves of the Middle and Late Iron Age (Allmäe 2003) and has made some demographic estimations on the basis of the osteological materials of stone-grave 2 of Maidla (Allmäe 2006). It was noticed that the cremated remains of infants and children amongst analysed cremations were scant. The results of the osteological study of the Kaseküla stone-cist grave (Kalman 2000) were intriguing and raised a question: do the remains of infants buried there date from the Bronze Age or from later periods? Unfortunately, the placement of infant burials in the stone-cist grave area was not published by Kalman (2000), which made it necessary to analyse the osteological material once again.

The present study offers new analysis of the human remains of the Kaseküla stone-cist grave, the radiocarbon dating of bone material is presented, and some issues concerning the use of stone-graves, burials of infants and the demographic estimations based on ancient burial places are discussed.

OUTLINE OF MATERIAL AND METHODS

The fragmentary and commingled bone material from the Kaseküla stone-cist grave area (Fig. 2) has been gathered by squares (2 x 2m). The number of the collected bone finds is 81, and the material is deposited in the Estonian History Museum. Three pieces of bones were removed from the deposited material for radiocarbon dating in summer 2009: a fragment of the cranial vault of an adult from the central stone-cist (find No 29), a left femoral bone of an infant in the central stone-cist (find No 29) and the petrous part of the left temporal bone of an infant from the encirclement area (find No 40). The author analysed the bone material in summer 2009. Because a discrepancy occurred between the former (Kalman 2000) and the new results of the analysis, the material was analysed once again in autumn 2009. A lot of bone samples were taken by another researcher between these two osteological analysis in 2009.

On the one hand, the commingled osteological material is quite poorly preserved – the bones are fragmented and eroded, on the other hand, the remains of infants are numerous and some bones even measurable. The ossificated thyroid cartilage found in the stone-cist also refers to a good excavation technique and preservation of osteological material. In the 1970s the soil removed from archaeological objects was not sieved before disposal, this explains why most of the (expected) human teeth are absent amongst the deposited material.

The method of recurrent bone fragments was used to determine the minimum number of burials. The sex and age of the deceased was determined according to common osteological standards (Ubelaker 1978; WEA 1980; Brothwell 1981; Buikstra & Ubelaker 1994; Bass 2005; Mays 2006). The maximum lengths of the diaphyses of long bones of infants were measured. The values were compared to the standard correlation between age estimates and maximum lengths of long bone diaphyses of infants (Lovejoy et al. 1990) and to the same correlations compiled on the basis of Italian and Estonian archaeological materials (Allmäe 1998; Facchini & Vesci 2004).

Three samples of human bones were radiocarbon dated in Poznan Radiocarbon Laboratory by AMS method (calibration was made by OxCaL 3.10 software, Bronk Ramsey 2005, atmospheric data from Reimer et al. 2004).

RESULTS OF OSTEOLOGICAL ANALYSIS

The minimum number of individuals (28) was determined on the basis of petrous portions' of the temporal bones in the osteological material collected; of which the vast majority (25, right side) belonged to infants. Four infants were found

in the central stone cist and 21 inside the stone encirclement of the grave (Fig. 2). As expected, other skeletal parts of infants – fragments of long bones, a cranial vault, facial bones, mandibles, ribs, vertebral bodies and arches, and so forth – were found in the stone cist and, also, in larger quantities elsewhere in the stone encirclement area. The diaphyses of long bones (10) were measured to certify that the remains belong to an infant age group. The maximum lengths never exceeded the variation range characteristic to infants under 6 months old according to Lovejoy et al. (1990), but were in some cases below the variation range. At the same time these values were in the range of infants under 6 months old of Italian (Bologna) Modern sample and Estonian archaeological Medieval and Modern series (Allmäe 1998; Facchini & Vesci 2004). The few available measurements of long bones suggest that perinatal deaths were more plausible for infants buried in the Kaseküla

Kalman (2000) has suggested that the remains of three adults have been buried on the site: an adult male in the central cist and two adults outside (north) of the stone encirclement, where Mandel (1975: 76) found the remains of another probable stone-cist. Kalman (2000: 20) distinguished the other skeleton outside of the stone encirclement on the basis of one piece of cranium – the fragment from the nuchal area. Thus, the new analyses indicated the presence of two male skeletons in the grave area too, but the presence of the bones of a third adult was not confirmed. Amongst the bone material three petrous parts (right side) of the temporal bones were found, which may belong to adults or even to children.

According to the results of the new osteological analysis the remains of two adults have been distinguished: the fragments of bones and teeth of a male skeleton were found in the north of the stone encirclement area (squares 4–5/p) where the remains of the second cist were found (Fig. 2, A). The remains of an adult male were found in the central cist and its surroundings, in squares 8–9–10/o–q–p (Fig. 2, B). Both men were of old age, 50 years and older. The burial of a 3–4 year old child was confirmed, the skeletal parts and teeth were found in square 9/q (Fig. 2, C). It deserves to be noted that the teeth of the buried male B were also found outside of the cist, in squares 10/n and 10/o, probably caused by later digging into the cist. The teeth of two other skeletons, A

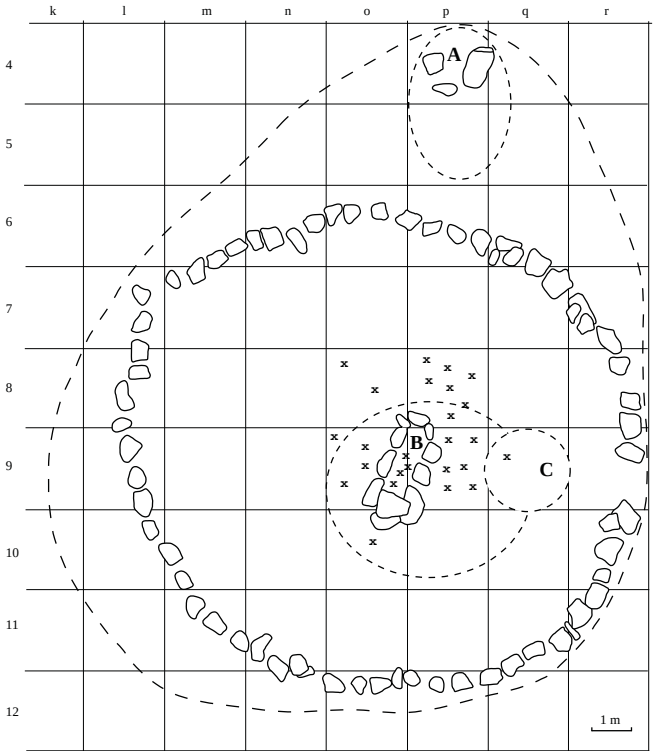

Fig. 2. The distribution of burials in the Kaseküla stone-cist grave area (adapted from Mandel 1973). A: Male aged 50 years or more, B: male aged 50 years or more, C: 3–4 year old child, X: infants, location in square is fictional.

Table 1. Radiocarbon (AMS) dates of Kaseküla bone samples.

Lab. No.	Uncal. BP	Calibrated 1δ/2δ	Context	Material	N/C (%)
Poz-32412	2780±30	980–895/1010–840 BC	Stone cist, find #29	Cranial vault, adult	1.7/6.7
Poz-32413	1195±30	760–900/710–940 AD	Stone cist, find #29	Left femur, infant	3.0/9.2
Poz-32414	920±30	1040–1160/1020–1190 AD	Square 9/q, find #40	Left temporal bone[1], infant	3.2/11.3

[1)] Petrous part

(squares 4–5/p) and C (square 9/q), were probably lying in the area, where the body decomposed (Fig 2). In short, 28 burials we estimated from the grave area, including 25 infants, one child aged 3–4 years and two male adults older than 50 years. In the central stone cist the remains of four infants were buried. The remains of at least 21 infants were found around the central cist in the stone encirclement area. It is noteworthy that all infant burials were more or less related to the central cist (Fig. 2).

RADIOCARBON DATING OF INHUMATED HUMAN REMAINS

The remarkable number of buried infants in the Kaseküla stone-cist grave was intriguing. The examination of the Kaseküla bone material in summer 2009 proved that the skeletal parts of infants were somewhat better preserved in comparison with the adult burial. This intrigued to date the adult burial in the central cist and also some infant bones in grave. Are the remains of infants buried at the same time with the adult in the cist?

Two bone samples were taken from the stone-cist; the third sample was taken from the stone encirclement area (Table 1). The results of radiocarbon analysis date the adult burial in the stone-cist to the Late Bronze Age, as suggested earlier by Lang (1996: 297). Other results of radiocarbon dating were surprising; the infants have been buried to the grave area approximately 2000 years later, including the remains of infants found inside the Late Bronze Age stone-cist (Table 1; Fig. 3). Lang (2007b:154) has pointed out that the number of burials in Estonian stone-cist graves varies from several to tens of burials and is in good correlation with the duration of the use of the graves; the graves often contain grave goods from the Late Bronze Age to Roman Iron Age. The radiocarbon dating of human bones proved that in stone-cist graves the burials may originate from later periods of the Iron Age, in the case of the Kaseküla stone-cist grave from Late Iron Age.

DISCUSSION

Often observations and arguments are presented in literature that in some burial places the number of infants and children is underrepresented. The proposed reasons to explain this phenomenon vary from suggesting that the bones of infants (burnt and unburnt) were too fragile to survive (Walker et al. 1988; Holck 1995), the infants may have been buried elsewhere, or have been lost in cemeteries due to continuous use of cemeteries or false excavation techniques (Molleson 1991; Saunders 1992; Roberts & Manchester 1995; Mays 2006). Stig Welinder (1998: 187) argues that there is no notable lack of children's graves, when all kinds of burials are included in the analysis.

Secondary burials in prehistoric stone graves are known in Estonian archaeology (Jaanits et al. 1982: 150, 178; Lang 2000: 147; Mandel 2003: 140; Lang 2007a: 57– 9, 191–2; Vedru 2009), but

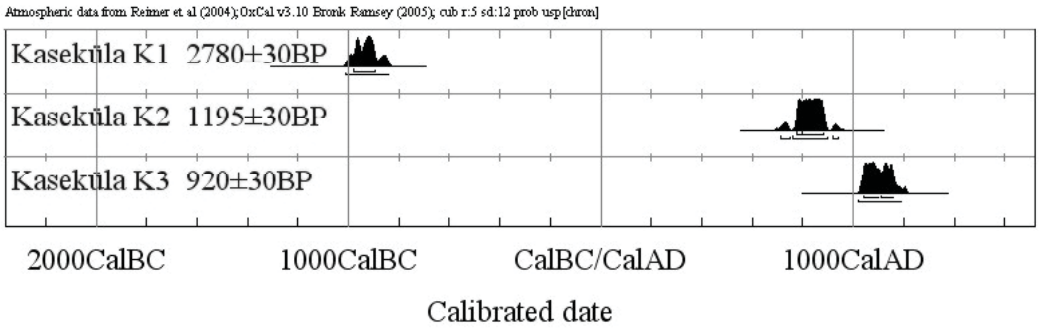

Fig. 3. Calibrated dates of Kaseküla bone samples.

the subject has not been studied comprehensively. Recently Tõnno Jonuks (2009: 175) has discussed the absence of research concerning secondary burials in Estonian prehistoric burial grounds. Jonuks (2009) pointed out that the importance of once established burial places for our ancestors can be connected especially to secondary burials in the graves. There have been discussions (Parker Pearson 1999: 17) that funerary archaeologists concentrate on the period when the cemetery was in use, but give less attention to why it fell out of use or was abandoned, or re-used after some time again – not sufficient attention is paid to important aspects of cemetery dynamics.

The reuse of the Kaseküla stone-cist grave nearly 2000 years later has been proved by radiocarbon dating. The phenomenon to use earlier stone graves is well-known from Sweden (Welinder 1998: 188–9), the similarity to the Kaseküla grave can for example be observed in the Bronze Age cairns in Gotland, where tens of infants have been buried into the cairns, the radiocarbon dating suggest that the cairns were used during the Middle Ages as an alternative to Christian churchyards (Lindqvist 1981).

The grave of Kaseküla had probably acquired a different significance after 2000 years, but we do not know the reason why – unfortunately we can only assume what our ancestors thought at the time. The stone-cists graves are visible in contemporary landscape as round heaps covered with sod that are approximately 10–15 m in diameter and up to 1,5 m in height (Lang 2007b: 148). The significance of monumental graves and the landscapes for our ancestors has been lately discussed by Gurly Vedru (2009), she suggested that the later reuse of burial sites was due to the need to manifest oneself through ancestors and/or place. It is possible that the act of burial also served to physically 'plant' the dead into land, making the remains an inalienable and fixed part of that land (Parker Pearson 1999: 17). The use of megaliths as burial grounds for infants, and for other ambiguous categories of individuals, leads to re-think both the meaning and significance of the original monument (Finley 2000: 420). The infant remains in the Kaseküla stone-cist grave originate from the Late Iron Age, when the prevailing mortuary custom in western Estonia was cremation. For example, the number of child cremations was few in stone-grave 2 of Maidla from the Late Iron Age, whereas the number of child inhumations was rather representative (Allmäe 2003; 2006). The author has also studied cremations of the Culture of Long Barrows from the second half of the first millennium in northern Setumaa (south-east Estonia). There the cremains of infants and children were commonly buried into the family or community graves (Allmäe & Maldre 2005; Allmäe et al. 2007, Allmäe et al. 2008; Aun et al. 2008). The differences in western and south-eastern Estonian cremations are obvious and it leads to another research problem: are the remains of infants and children of Late Iron Age in western Estonia treated differently and/or were buried somewhere else than their family grave? Is it possible that the inhumations of infants in stone-grave 2 of Maidla are from a later period?

Cremation burials into grave 2 in Maidla began during the 10th century (Mandel 2003: 59). Mandel has suggested (2003:176) that the inhumations in grave 2 in Maidla could have been later ones, probably from the end of 12th century or from the first half of 13th century. The radiocarbon dating of one infant inhumation from grave 2 in Maidla (unpublished data of author) referred to an even later period, thus secondary burials in the grave are likely. The occurrence of secondary infant burials in grave 2 of Maidla demonstrated the same pattern - later reuse of the grave, of course the time-span between primary and secondary burials in Kaseküla stone-cist grave is remarkably longer. The secondary infant burials in ancient graves have not been previously distinguished in Estonian archaeology with radiocarbon dating of bones. Radiocarbon dating (AMS) of human bones (cremated as well un-cremated bones) is a good method to distinguish later and/or secondary burials in graves, especially when there is no, few or confusing archaeological artefacts in graves. Unfortunately the radiocarbon dating of inhumated infant burials was not available when the demographic estimations were compiled for stone-grave 2 of Maidla (Allmäe 2006).

The use of old graves for burying the remains of infants and small children is not an uncommon habit in human societies. *Cillinis*, special burial grounds for children are for example well-known from Early Christian Ireland, but also the differential treatment of children's remains in the Neolithic and Bronze Age is known – the reuse of earlier monumental graves like Megalithic tombs to bury infants was practised (Finley 2000). In

Christian societies, un-baptised people, suicide victims and other people who violated Christian practises were not buried into consecrated land around churches and chapels (Purhonen 1998: 119–20). This brought along the necessity to separate burial grounds and different funerary practices for these members of the society. The reasoning why infants were not buried into regular and/or family graves in prehistoric times is complicated, as we do not discern the beliefs, rules and attitudes of ancient people.

Taking into account that remains of infants and children were not cremated and not buried into family graves as a rule, but rather somewhere else, the Kaseküla stone-cist grave area might be an alternative burial place for infants of the Late Iron Age community. It is noteworthy that next to the Kaseküla stone-cist grave there is a Late Iron Age stone-grave (No 14) with cremation burials (Mandel 1975: 76; Mandel 2003: 108), not totally excavated and not yet osteologically investigated.

Per Holck (1995) has proposed that the cremation of newborns was avoided, because it was a time and resource consuming process. Were the remains of infants buried elsewhere to avoid too much trouble with cremation? This is one possibility. Was the Kaseküla stone-cist grave a secret place to bury still-born and unexpectedly died infants or to hide the consequences of infanticide during hundreds of years? The concepts why infants have been treated differentially and were buried into unusual places in prehistoric times has been discussed by many authors; the ideas vary from human sacrifice to hiding the remains of unwanted children – victims of infanticide (Green 1998; Purhonen 1999; Parker Pearson 1999; Mays 2006; Chamberlain 2006; Faerman & Smith 2008). Several causes and reasoning for infanticide have been suggested, including adaptive behaviour under certain conditions, like the need to control fertility and reproduction, control resources, eliminate disabled offspring, manipulate sex ratios, eliminate possible illegitimate offspring and ritual sacrifice (Chamberlain 2006: 171).

Stig Welinder (1998: 189–90) has studied the selection of mortuary practices of children and is suggesting that the burial ritual presumably corresponds to steps in the growing-up process of children. Again, quite a good example of such biased age structure of skeletal sample is demonstrated in the Lastekangrud stone-cist graves in Rebala, northern Estonia. Vello Lõugas (1983) archaeologically excavated the stone-graves of Rebala Lastekangrud in 1982. Osteological analyses determined a comparatively high number of infant burials – 17 inhumations of children and juveniles/young adults amongst 24 burials (Kalman 1999). The stone-cist graves were archaeologically re-investigated in 2000 (Lang et al. 2001). The recent result of osteological analyses is even more surprising; the total number of inhumation burials in graves was 40, and of them 23 were children's burials (up to 14 years) and 7 juveniles/young adults (up to 22 years); the number of infants increased from 6 to 15 (Kalman 1999; Lang et al. 2001: 39–45). Once again, the plausible later burials in the area of stone-cist graves and possible segregation of burial customs according to the age of deceased offer intriguing further studies.

It is vital to continue research of such burial places with noteworthy bias in age structure, especially of these burial grounds where the number of infants and children is over- or under-represented. The radiocarbon dating of human remains is a good method to understand the usage and reusage of prehistoric burial grounds. The results of research may provide us important new data regarding ancient burial customs, and may help us to understand our ancestors' beliefs and attitudes towards life and death.

CONCLUSIONS

The new analysis of osteological material and radiocarbon dating of human bones confirmed the existence of Late Iron Age infant burials in the Kaseküla stone-cist grave of the Late Bronze Age. It also provided new important information concerning the Late Iron Age burial customs in western Estonia. The acquired knowledge also reminds us to stay critical towards material we work with. It is essential to consider all the facts carefully before making palaeo-demographic estimations and reconstructing lifecycles on the basis of single graves of our ancestors. The radiocarbon dating of human bones is a good tool to date graves when there are none, few or confusing artefacts in the grave. It also helps to specify probable later burials, when there is a bias in the age structure of skeletal sample. The mortuary practices and lifecycles of our ancestral communities is a puzzle

that we probably piece together for a long time. The research would be more fruitful if based on a certain region, comprised different burial places and were fairly retrospective. The regional (bio) archaeological studies then enable us to follow the transitions of burial customs, the possible reuse of burial grounds and to get more reliable data for palaeo-demographic estimations.

ACKNOWLEDGMENTS

The author is very grateful to archaeologists Mati Mandel and Jüri Peets for encouraging me to write this paper. The author is also thankful to Jüri Peets and reviewer for constructive critics, to Reet Maldre and Jaana Ratas for preparing the illustrations and to Helle Solnask for revising English. The study was undertaken in the frame of target funded research project of Estonian Government (SF0130012s08) and supported by the research grant from Estonian Science Foundation (N 6899).

REFERENCES

Unpublished sources

Mandel, M. 1973. *Aruanne Kaseküla kivikirstkalme kaevamistest 1973. aastal*. Eesti Ajaloo Muuseumi Arhiiv, Tallinn.

Literature

Allmäe, R. 2003. Läänemaa 5.–13. sajandi kalmete antropoloogiline aines. In M. Mandel (ed.), *Läänemaa 5.–13. sajandi kalmed*: 243–62. Eesti Ajaloomuuseum: töid ajaloo alalt 5. Eesti ajaloomuuseum, Tallinn.

Allmäe, R. 2006. Grave 2 of Maidla: the burial site of a single family. *Estonian Journal of Archaeology* 10(1): 3–23.

Bass, W. 2005. *Human Osteology: A Laboratory and Field Manual.* Missouri Archaeological Society, Missouri.

Brothwell, D.R. 1981. *Digging up Bones*. British Museum (Natural History), London & Oxford.

Buikstra, J.E. & Ubelaker, D. (eds.) 1994. *Standards for Data Collection from Human Skeletal Remains: Proceedings of a Seminar at the Field Museum of Natural History*. Arkansas Archaeological Survey Press, Fayetteville.

Chamberlain, A. 2006. *Demography in Archaeology*. Cambridge University Press, New York.

Facchini, F. & Veschi, S. 2004. Age determination on long bones in a skeletal subadults sample (b-12years). *Collegium Antropologicum* 28(1): 89–98.

Faerman, M. & Smith, P. 2008. Has society changed its attitude to infants and children? Evidence from archaeological sites in the southern Levant. In F.G. Jener, S. Muriel & C. Olaria (eds.), *Nasciturus puerulus vobis mater terra: la ueret en la infancia. Diputació de Castelló: Servei d'Investigacions Arqueològiques i Prehistòriques*: 211–30. Servei d'Investigacions Arqueològiques i Prehistòriques (SIAP), Diputació de Castelló. http://dialnet.unirioja.es/servlet/oaiart?codigo=2796721

Finley, N. 2000. Outside of life: tradition of infant burial in Ireland from Cillin to Cist. *World of Archaeology* 31(3): 407–22.

Green, M. 1998. Humans as ritual victims in the later pre-history of Western Europe. *Oxford Journal of Archaeology* 17(2): 169–89.

Holck, P. 1995. Why are small children so seldom found in cremations? In E. Smits, E. Iregren & A.G. Drusini (eds.), *Cremation Studies in Archaeology: Proceedings of the Symposium Amsterdam 26.–27. October* 1995: 33–8. Logos Edizioni, Padova.

Jaanits, L., Laul, S., Lõugas, V., Tõnisson, E. 1982. *Eesti esiajalugu*. Eesti Raamat, Tallinn.

Jonuks, T. 2009. *Eesti muinasusund*. Dissertationes Archaeologiae Universitas Tartuensis 2. Tartu Ülikooli kirjastus, Tartu.

Kalman, J. 1999. Human remains from the stone-cist graves of Rebala Lastekangrud, North Estonia. *Journal of Estonian Archaeology* 3(1): 19–34.

Kalman, J. 2000. Skeletal analysis of the graves of Kaseküla, Poanse I and Poanse II. *Eesti Ajaloo Muuseum: töid ajaloo alalt* 2: 17-40.

Lang, V. 1996. *Muistne Rävala: muistised, kronoloogia ja maaviljelusliku asustuse kujunemine Loode-Eestis, eriti Pirita jõe alamjooksu piirkonnas*. Muinasaja Teadus 4(I–II). Teaduste akadeemia kirjastus, Tallinn.

Lang, V. 2000. *Keskusest ääremaaks: viljelusmajanduslik u asustuse kujunemine ja areng Vihasoo-Palmse piirkonnas Virumaal*. Muinasaja teadus 7. Ajaloo instituut, Tallinn.

Lang, V., Laneman, M., Ilves, K. & Kalman, J. 2001. Fossil fields and stone-cist graves of Rebala revisited. *Archaeological Field Works in Estonia* 2000: 34–47.

Lang, V. 2007a. *Baltimaade pronksi- ja rauaaeg*. Tartu Ülikooli Kirjastus, Tartu.

Lang, V. 2007b. *The Bronze Age and Early Iron Age in Estonia*. Estonian Archaelogy 3. Tartu University Press, Tartu.

Lindquist, M. 1981. Mylingar offer: utsatta barn eller förhistorika barnegravingsar? *Gotländsk arkiv* 53: 7–12.

Lovejoy, C.O., Russell, K.F. & Harrison, M.L. 1990. Long bone growth velocity in Libben Population. *American Journal of Human Biology* 2: 533–41.

Lõugas, V. 1983. Über die Steingräbergruppe Lastekangrud Rebala. *ENSV TA Toimetised, Ühiskonnateadused* 4: 295–7.

Mandel, M. 1975. Ausgrabungen Der Steingräber von Kaseküla. *ENSV TA Toimetised, Ühiskonnateadused* 4: 74–6.

Mandel, M. 2003. 5.-13. sajandi Läänemaa kalmed. *Eesti Ajaloomuuseum: töid ajaloo alalt* 5: 1–243.

Mays, S. 2006. *The Archaeology of Human Bones.* Routledge, London & New York.

Molleson, T. 1991. Demographic implications of the age structure of early English cemetery samples. *Actes des Jornes Anthropologiques* 5: 113–21.

Parker Pearson, M. 1999. *The Archaeology of Death and Burial*. Sutton Publishing, Stroud.
Purhonen, P.1998. *Kristinukon saapumisesta Suomeen: uskontoarkeologinen tutkimus*. Suomen Muinasmuistoyhdistyksen Aikakauskirja 106. Suomen muinasmuistoyhdistys, Helsinki.
Purhonen, P.1999. Suku käski suolle viedä. *Tieteessä tapahtuu* 3/1999: 17–20. http://www.tieteessatapahtuu.fi/993/purhonen.htm
Roberts, C. & Manchester, K. 1995. *The Archaeology of Disease*, 2nd edition. Sutton Publishing, Stroud.
Saunders, S.R. 1992. Subadult skeletons and growth related studies. In S.R. Saunders & A. Katzenberg (eds.), *Skeletal Biology of Past Peoples: Research Methods*: 1–20. Wiley-Liss, New York.
Ubelaker, D.H. 1978. *Human Skeletal Remains: Analyses, Interpretations*. Aldine, Chicago.
Vedru, G. 2009. Layers of landscape, layers of site. *Estonian Journal of Archaeology* 13(1): 21–35.
Walker, P.L., Johnson, J.R. & Lambert, P.M. 1988. Age and sex biases in the preservation of human skeletal remains. *American Journal of Physical Anthropology* 76: 183–8.
WEA 1980 = Recommendations 1980. Workshop of European anthropologists, 'Recommendations for Age and Sex Diagnoses of Skeletons'. *Journal of Human Evolution* 9: 517–49.
Welinder, S. 1998. The cultural construction of childhood in Scandinavia, 3500 BC–1350 AD. *Current Swedish Archaeology* 6: 185–204.