**Supplementary material 1: Comparanda**

**Comparative materials**

In Sweden, there are archaeological sites similar in date to Sandby borg, where bodies have been found unburied. However, these have been *cremains* in burnt down houses (e.g. Vallhagar, Gotland) and could be the result of accidental events (Gejvall, 1955). Another site of comparable date is Uppåkra in Scania. Here, longhouses and a ceremonial house dating from the third to the tenth century ad have been excavated (Larsson & Söderberg, 2013). Three burnt down dwellings of different dates contained human remains (one element with a perimortem lesion). This has been interpreted to have been caused by a continual feud over centuries between local elite families (Larsson & Söderberg, 2013). There are also Iron Age sites in Scandinavia where commingled human remains showing signs of violence inflicted by weapons have been discovered deposited in wetlands, sometimes together with large numbers of weapons (e.g. Skedemosse on Öland: Monikaner, 2010; and Alken Enge at Vædebro: Mollerup et al., 2016). However, these remains appear to have been ritually manipulated postmortem and must be considered as completely different from those found at Sandby borg. Additionally, there are several skeletal assemblages which exhibit traces of brutal and lethal acts but are of different date (see for example Ingelmark, 1939; Kjellström, 2005). In conclusion, no other site in Scandinavia has been discovered where multiple victims have been left unburied in a similar manner.

**Weaponry and martial tactics**

In order to interpret the trauma inflicted on the Sandby borg victims, it is vital to consider contemporary military equipment and conduct of war. Knowledge of the contemporary armaments on Öland is limited, although we do know that the common weapons of this period in Scandinavia were the sword, the spear, and the shield (Nørgård Jørgensen, 1997). Very few weapons have been discovered inside Sandby borg apart from four or possibly five arrowheads, a spearhead, two sword pommels, and one sword bead (i.e. a decorative bead attached to the sword by a strap). In addition, a socketed axe was found, but this may have served as a tool rather than a weapon (Dutra Leivas & Victor, 2011; Victor et al., 2013; Victor, 2015; Gunnarsson et al., 2016). Weapons from the period can be studied by looking at weapon burials, but few that are contemporary with the ringfort have been documented in the region. Nevertheless, it is believed that the weaponry used in the Migration period was roughly the same as that of the preceding period, the Roman Iron Age, with the most common weapons found in Roman Iron Age graves being swords. These were made of iron and could be either single or double edged (e.g. Schulze, 1996: 90–101; Beskow-Sjöberg, 1996: 258; Ring & Rasch, 2001). In many graves, arrowheads, iron spears, and lance tips, some lancet-shaped, have been found (Schulze, 1996: 90–101; Beskow-Sjöberg, 1996: 258). Finds of bridle sets in graves show that some warriors may have been mounted in battle (e.g. Ramquist, 2017). The most common piece of defence equipment was the shield (Schulze & Holgersson, 2001: 122; Ring & Rasch, 2001). Two extraordinary helmets (Grimeton and Tuna) from the Swedish Migration period have been found, which probably belonged to the elite (Nerman, 1940). It is unknown what type of headgear was the most common, but helmets seem to have been influenced by the Roman ridge type (Couston, 2013). Little is known about other types of body armour, although examples of chain mail from the third century ad have been found in Denmark (at Vimose; Engström, 1992). Finds of weapons and weapon graves do not necessarily reveal anything about military organisation, but they imply a persistent warrior ideology. Structures of martial character (including the ringforts) and transregional similarities in weaponry may imply a military organisation involving freemen during the period (Nørgård Jørgensen, 1997; Niklasson, 1997: 173). In addition, weapons of various kinds in weapon deposits suggest an organisational structure, possibly inspired by the system of the Roman Empire (Engström, 1992). It is also possible that military units were commanded by warriors or chieftains not affiliated to a formal martial organisation (Lindbom, 2006: 254). A shift in armament and fighting tactics is believed to have taken place after the fifth century, from heterogeneous armament ‘to individual combat involving fully armed warriors’ (Nørgård Jørgensen, 1997). Few traces of battlefields exist. However, depositions in Danish wetlands from the Pre-Roman and Early Iron Age (fourth century bc to fourth century ad) of boats and large quantities of weapons (spears, swords, shields) such as at Hjortspring and Nydam have been discovered (Randsborg, 1995; Gebühr, 2001). The quantity of weapons and the character of the equipment at, for example, Hjortspring suggest that it had belonged to a military unit of at least 100 men, and the placement of the boats in bogs has been interpreted as war booty and offerings after victorious battles.

**References**

Beskow-Sjöberg, M. 1996. Stenåsa socken. In: U.E. Hagberg, B. Stjernquist & M. Rasch, eds. *Ölands järnåldersgravfält, III*. Stockholm: Riksantikvarieämbetet och Statens historiska museer, pp. 225–66.

Couston, J.C.N. 2013. Late Roman Military Equipment Culture. In: L. Lavan, & A. Sarantis, eds. *The Archaeology of War in Late Antiquity*. Leiden: Brill, pp. 463–92.

Dutra Leivas, I. & Victor, H. 2011. *Sandby borg I. Undersökningar 2011, Sandby sn, Mörbylånga kommun, Öland*. *Museiarkeologi sydost, Kalmar läns museum*. Kalmar: Kalmar läns museum.

Engström, J. 1992. Skandinaviskt krigsväsen under mellersta järnåldern. *Armémuseum Årsbok 1992, Meddelande* 52: 14–72.

Gebühr, M. 2001. *Nydam and Thorsberg: Iron Age Places of Sacrifice*. Schleswig: Archäologisches Landesmuseum Schloß Gottorf.

Gejvall, N.G. 1955. Human Bones in Buildings. In: M. Stenberger & O. Klindt-Jensen, eds. *Vallhagar: A Migration Period Settlement on Gotland, Sweden, part II*. Copenhagen: Munkgaard, pp. 766–67.

Gunnarsson, F., Victor, H. & Alfsdotter, C. 2016. *Sandby borg VII. Undersökningar 2015, Sandby sn, Mörbylånga kommun, Öland*. Kalmar: Kalmar läns museum.

Ingelmark, B.E. 1939. The Skeletons. In: B. Thordeman, ed. *Armour from the Battle of Wisby 1361*. Stockholm: Kungliga Vitterhets Historie och Antikvitets Akademien, pp. 149–209.

Kjellström, A. 2005. A Sixteenth-Century Warrior Grave from Uppsala, Sweden: The Battle of Good Friday. *International Journal of Osteoarchaeology,* 15: 23–50. <https://doi.org/10.1002/oa.746>

Larsson, N. & Söderberg, B. 2013. Brända hallar – diskontinuitet och kontinuitet. Ett järnåldersresidens i Uppåkra, Sydsverige. *Fornvännen,* 2013: 238–48.

Lindbom, P. 2006. *Vapnen under Wreccornas tid, 150-500 e.Kr.* Uppsala: Department of Archaeology and Ancient History, Uppsala University.

Mollerup, L., Ejgreen, A.K., Tjellden, E. & Hertz, E. & Kähler Holst, M. 2016. The Postmortem Exposure Interval of an Iron Age Human Bone Assemblage from Alken Enge, Denmark. *Journal of Archaeological Science Reports*, 10: 819–827. <https://doi.org/10.1016/j.jasrep.2016.06.021>

Monikaner, A. 2010. *Våld och vatten: Våtmarkskult vid Skedemosse under järnåldern*. Stockholm Studies in Archaeology 52. Stockholm: Institutionen för arkeologi och antikens kultur.

Nerman, B. 1940, Smärre Meddelanden. Ännu en konisk prakthjälm ifrån ett svenskt fynd. *Fornvännen* 1940: 312–15.

Nicklasson, P. 1997. *Svärdet ljuger inte* (Acta Archaeologica Lundensia 4. 22). Stockholm: Almqvist & Wiksell International.

Nørgård Jørgensen, A. 1997. Scandinavian Military Equipment and the Weapon Burial Rite, ad 530–800. In: C. Kjeld Jensen & K. Höilund Neilsen, eds. *Burial &. Society. The Chronological and Social Analysis of Archaeological Burial Data*. Oxford: Alden Press, pp. 149–63.

Ramquist, P. 2017. Saddle and Bridle from Högom, Central Sweden. In: C. Fabech & U. Näsman, eds. *The Sjösala Horsemen and the Equestrian Elite of Fifth-Century Europe*. Moesgård: Aarhus University Press, pp. 221–35.

Randsborg, K. 1995. *Hjortspring. Warfare and Sacrifice in Early Europe.* Aarhus: Aarhus University Press.

Ring, C. & Rasch, M. 2001. Persnäs socken. In: M. Rasch, ed. *Ölands järnåldersgravfält, IV*. Stockholm: Riksantikvarieämbetet och Statens historiska museer, pp. 137–70.

Schulze, H. 1996. Mörbylånga socken. In: U.E. Hagberg, B. Stjernquist & M. Rasch, eds. *Ölands järnåldersgravfält, III*. Stockholm: Riksantikvarieämbetet och Statens historiska museer, pp. 65–116.

Schulze, H & Holgersson, K. 2001. Källa socken. In: M. Rasch, ed. *Ölands järnåldersgravfält, IV*. Stockholm: Riksantikvarieämbetet och Statens historiska museer, pp. 79–136.

Victor, H. 2015. *Sandby borg IV. Undersökningar 2014, Sandby sn, Mörbylånga kommun, Öland. Museiarkeologi sydost, Kalmar läns museum*. Kalmar: Kalmar läns museum.

Victor, H., Emilsson, A. & Frisk, M. 2013. *Sandby borg III. Undersökningar 2013. Sandby sn, Mörbylånga kommun, Öland*. Kalmar: Kalmar läns museum.

**Supplementary material 2: Methods**

Skeletal articulation was documented *in situ* at Sandby borg. The MNI was calculated on the basis of the most frequent element or element zone in relation to side, age, and sex (see Gunnarsson et al., 2016; Alfsdotter in press). For adults, sex assessments were based on morphological traits of *os coxae* using methods developed by Phenice (1969) and Milner (1992) and, on crania, after methods found in Acscádi and Nemeskéri (1970). The degree of degenerative changes on the auricular surface and pubic symphysis of the *os coxae* were used to estimate the age at death in adults (Todd, 1920; Lovejoy et al., 1985; Brooks & Suchey, 1990). In addition, cranial suture closure (Meindl & Lovjoy, 1985), thickness of the *tabula externa* and *interna* (Holck, 1987), and dental wear (Brothwell, 1963) were observed. The age estimation of young individuals was based on the degree of epiphyseal fusion and dental development (Scheuer et al., 2009). All individuals were assigned to the following age groups: fetal= <birth; infant= 0–3 years; child= 3–12 years; adolescent= 12–20 years; young adult= 20–35 years; middle adult 35–50 years; old adult= 50+ (Buikstra & Ubelaker, 1994).

**References**

Acsádi, G. & Nemeskéri, J. 1970. *History of Human Life Span and Mortality.* Budapest: Akadémiai Kiadó.

Alfsdotter, C. In press. Humanosteologi i Sandby borg. In: L. Papmehl-Dufay & H. Victor, eds. *Sandby borg IX. Undersökningar 2016, Sandby sn, Mörbylånga kommun, Öland.* Report prepared for Kalmar läns museum

Brooks, J.M. & Suchey, S.T. 1990. Skeletal Age Determination Based on the Os Pubis: A Comparison of the Acsádi-Nemiskéri and Suchey-Brooks methods. *Human Evolution,* 5: 227–38. <https://doi.org/10.1007/bf02437238>

Brothwell, D.R. 1963. *Digging up Bones* *– The Excavation, Treatment, and Study of Human Skeletal Remains.* London: British Museum.

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

Gunnarsson, F., Victor, H. & Alfsdotter, C. 2016. *Sandby borg VII. Undersökningar 2015, Sandby sn, Mörbylånga kommun, Öland*. Kalmar: Kalmar läns museum.

Holck, P. 1987. *Cremated Bones. A Medical-Anthropological Study of an Archaeological Material on Cremation Burials*(Antropologiske skrifter 1). Oslo: Anatomisk institutt, Universitetet i Oslo.

Lovejoy, C.O., Meindl, R.S., Pryzbeck, T.R. & Mensforth, R.P. 1985. Chronological Metamorphosis of the Auricular Surface of the Ilium: A New Method for the Determination of Adult Skeletal Age at Death. *American Journal of Physical Anthropology,* 68: 15–28. <https://doi.org/10.1002/ajpa.1330680103>

Meindl, R.S. & Lovejoy, C.O. 1985. Ectocranial Suture Closure: A Revised Method for the Determination of Skeletal Age at Death Based on Lateral-Anterior Sutures. *American Journal of Physical Anthropology,* 68: 57–66. <https://doi.org/10.1002/ajpa.1330680106>

Milner, G.R. 1992. *Determination of Skeletal Age and Sex: A Manual Prepared for the Dickson Mounds Reburial Team*. Lewiston (IL): Dickson Mounds Museum.

Phenice, T.W. 1969. A Newly Developed Visual Method of Sexing the Os Pubis. *American Journal of Physical Anthropology,* 30: 297–302. <https://doi.org/10.1002/ajpa.1330300214>

Scheuer, L., Black, S. & Schaeter, M. 2009. *Juvenile Osteology: A Laboratory and Field Manual*. London: Academic Press.

Todd, T.W. 1920. Age Changes in the Pubic Bone. The Male White Pubis. *American Journal of Physical Anthropology,* 3: 285–334*.* <https://doi.org/10.1002/ajpa.1330030301>