

Claus von Carnap-Bornheim (editor), **Fund- und Forschungsgeschichte, naturwissenschaftliche und materialkundliche Untersuchungen. Das Thorsberger Moor, volume IV**. With contributions by Ruth Blankenfeldt, Claus von Carnap-Bornheim, Walter Dörfler, Julia Gräf, Klemens Kelm, Nina Lau, Suzana Matešić, and a reprint of Conrad Engelhardt (1825–1881). Published by the Verein zur Förderung des Archäologischen Landesmuseums [Schloss Gottorf] e. V., Schleswig 2014. 446 pages with 96 illustrations, 25 plates und 15 tables.

This work is the fourth volume of a new series on the excavations at and finds from Thorsberg bog in Schleswig-Holstein, Germany. The site, excavated by Conrad Engelhardt from 1858 through 1861, is famous for deposits of Roman Iron Age weapons and other metal artifacts, and organic remains, including clothing, wood, and leather. Together with previously published studies of specific artifact groups – coins, textiles, ceramics, wood – the series offers an authoritative, modern evaluation of the bog and its contents, and will also shed light on how the depositions at Thorsberg bog relates to materials in Danish Roman Iron Age bogs.

All four books are the fruit of an ambitious project launched by the Archäologisches Landesmuseum Schleswig, Stiftung Schleswig-Holsteinische Landesmuseen Schloss Gottorf. Three doctoral theses have led the way: Number One by Nina Lau on the horse harnesses and saddles appeared in 2014, the second by Ruth Blankenfeldt on the personal equipment was published in 2015; on both books see the relevant reviews in this issue. Volume Three by Suzana Matešić has been edited and will be reviewed soon. It might have facilitated the reader's work if the general chapters of the book in question here (chapters 1, 2 and 6) had appeared at the beginning of the series, but the editor has decided to publish first the three disserta-

tions, all ready to appear, and leave the introductory parts together with the miscellaneous chapters in volume Four, which nearly assumes the role of an appendix.

The volume includes six independent contributions listed without numbering in a bare table of contents: (1) the scientific examination of the site as well as the history of the investigations, collections, and archives, by Ruth Blankenfeldt, Nina Lau, and Suzana Matešić, (2) a re-print of the original 1863 publication of the bog by Conrad Engelhardt, (3) the presentation of the leather finds by Julia Gräf, (4) palaeo-ecological studies of the bog by Walter Dörfler, (5) metallographic analyses of selected objects from the bog by Klemens Kelm, and (6) a synopsis of the overall state of research on the Thorsberg bog discoveries by Claus von Carnap-Bornheim. Each of the sections begins with its own table of contents and concludes with a list of sources cited. Gräf's section on leather finds has an extensive English synopsis, and the scientific contributions by Dörfler and by Kelm have very brief English summaries. However, the other portions of the book have no translations. The absence of an overall introduction and the lack of a section or chapter numbering system make the organization of the book challenging for the reader to ascertain. Perhaps an introduction is offered in the first volume of the series. The lack of a strong editorial hand for consistency of content and presentation is surprising.

The book launches immediately into the specific studies. Ruth Blankenfeldt, Nina Lau, and Suzana Matešić are responsible for the first contribution of one hundred and twenty pages presented in several unnumbered parts of varying length. Topics include the location and natural resources of the Thorsberg bog, as well as the history of the finds, collections, and research at the site. A section on the topography and soils at the site leads the way, beginning with reports by Engelhardt and scientific studies from the nineteen-fifties. Botanical remains are used to ascertain the conditions of the bog when the deposits were made in the Roman Iron Age. The next short contribution explains the environment of the bog that was conducive to the preservation of some organic remains, especially leather and textiles. A one-page section discusses the disputed derivation of the place-name ›Thorsberg‹. The bog is associated with a nearby Viking Age cemetery called ›Thorsberg‹, distant a couple of hundred meters. However, in 1683, that hillock was referred to as ›Toßberg‹ or ›Taßberg‹ and did not bear the name of the Viking Age god Thor. In 1863, Engelhardt noted the name ›Taschberger Moor‹, but chose to use the appellation ›Thorsberg‹ and thus perpetuated a mistaken association with the god. After this short toponymy, the authors identify the precise locations of Engelhardt's excavations in the next section. His early drawings and later cadastral maps are matched with aerial photographs and geomagnetic prospection.

The next twenty pages by Blankenfeldt and others outline the history of finds from Thorsberg bog from the middle of the nineteenth century through the second half of the twentieth. The first mention of the Toßberg or Taßberg bog and hillock in 1683 in connection with peat-cutting was followed for two centuries by discoveries of objects that were nearly always destroyed. In 1856, a pharmacist named Mechlenburg found metal artifacts in the bog, which he gave to the royal collection in Flensburg and which awakened Engelhardt's interest. Engelhardt began digging in 1858 and gained the support of the Danish King Frederik VII for his excavations. Treasure-hunters active during this period made discoveries, which they sold widely. In 1885, the Flensburger Altertumsverein initiated further excavations. Finally, a more extensive campaign was planned by the Museum vaterländischer Alterthümer in Kiel in 1895, but great difficulties were encountered in trying to drain the bog so excavations were halted. Further soil and archaeological botanical investigations were directed from Kiel in the first half of the twentieth century, but no more digging took place until 1969. In the 1990s, geophysical investigations were carried out, particularly during a drought in 1997. Finally, the Archäologisches Landesamt Schleswig-Holstein carried out investigations of sediment in 2006–2007. This detailed exposition of the history of investigations at Thorsberg is necessary in order to trace the complicated history of the collections and archives.

In the next section, Blankenfeldt and others explain how the finds from Thorsberg came to nine collections currently housed in seven institutions in three countries. The history of the collections is inextricably complicated by the German-Danish war of 1864, which resulted in several changes in find locations.

The collections are: (1) Flensburger Sammlung. Most of the artifacts were sent to Kiel in 1864. – (2) Kieler Sammlung. Besides the objects sent from Flensburg, the Kiel collection contained other finds from Thorsberg. After the bombing of the Kiel Museum in the Second World War, the remaining finds were moved to the Archäologisches Landesmuseum Schloss Gottorf in Schleswig. – (3) Die königliche Sammlung Frederiks VII. In 1861, Engelhardt sent part of the Flensburg Collection to the king of Denmark in Copenhagen; at his death the collection was sent to the Museet for de nordiske Oldsager (later the National Museum of Denmark). – (4) Nationalmuseet (the National Museum of Denmark). Includes artifacts Engelhardt sent from Flensburg, King Frederik VII's private collection, and also later Thorsberg purchases. – (5) Museum für Vor- und Frühgeschichte der Staatlichen Museen zu Berlin. Items housed here were purchased in 1875. – (6) Museumsberg Flensburg has some finds according to the 1885 inventory and also from the 1895 excavation. – (7) Helms-Museum Hamburg. Holds finds from an 1858 excavation purchased by the museum in the eighteen-seventies. – (8) Moesgård

Museum. Has finds from Nydam and Thorsberg resulting from an exchange between Aarhus and Flensburg. – (9) Musée d'Archéologie nationale, Château de Saint-Germain-en-Laye. Contains only a few small finds probably taken to Paris by the king, as reconstructed from notes by Engelhardt; however, other objects mentioned in a list are missing.

Thus the artifacts are now in Schleswig, Copenhagen, Berlin, Flensburg, Hamburg, Moesgård, and Saint-Germain-en-Laye.

Inventories of these collections and other documents, including the journal of Johanna Mestorf (who was curator at the Museum für Vaterländische Alterthümer in Kiel), are examined by Blankenfeldt and others in the following section on archives of the Thorsberg finds. The shifting of objects from the Flensburg Collection and nineteenth-century archival methods resulted in discrepancies in the records. Events of the Second World War also caused the loss of artifacts and information, and missing objects are discussed fully in the next part. Another cause of confusion was the mixing of some finds from the Thorsberg and Nydam bogs. The histories of the excavations, collections, and archives – and the incomplete survival of the finds – are followed by a short piece on the history of research on the finds and find circumstances. Most of the finds were published by Engelhardt in the mid-nineteenth century and by Klaus Raddatz in the second half of the twentieth century. Beginning in 2008, researchers are reexamining the site with modern excavation and documentation methods and analyzing objects by means of current scientific techniques. The section closes with a concordance of finds listed by Engelhardt (1863) and Raddatz (1957–1987). In spite of the odd overall organization of the volume, Blankenfeldt and her co-authors bring clarity to a mass of confusing and complex materials. Their explication of the current state of the finds, collections, and archives from the Thorsberg bog is a sobering example for all archaeologists who must cope with old excavations and finds.

The second section of the book is a reprint of Engelhardt's 1863 Copenhagen publication in Danish of his excavations. The author devotes much of the work to description and illustration of the finds but he also attempts to explain how the deposits were made and preserved. He discusses other finds in Denmark from that period and remarks on the importance of the finds for understanding connections between northern and southern Europe. The current editor's decision to reprint this 1863 publication reflects what an outstanding excavation report it was for its time, and underscores that it remains a significant document for the study of the bog and its finds. Many scholars may not have access to the original publication, so the reprint makes it available to a wider audience. However, its placement interrupts the flow of the modern reports and might have been more successful as an appendix.

The third contribution to the volume is Julia Gräf's report on the leather finds from Engelhardt's excavations. Leather was preserved and sometimes secondarily tanned due to the acidic environment in the bog. Even though the leather was excavated in the eighties and some loss of finds has taken place, much can be deduced from the surviving fragments. The products were made of leather from cattle, calves, and goats, as identified by the animals' hair follicles. Several different stitching techniques are illustrated, and embossed patterns, glued-on gilding, and applied rivets are examined. Gräf proposes that some of the highest-quality leather may have been imported Roman pieces. She also suggests that two fragments that show non-native strontium isotope ratios may have animal origins in Norway and southern Sweden.

The leather products discovered in the Thorsberg bog include shoes, baldrics, scabbards, horse trappings, and furs. Gräf describes and interprets the finds, making many interesting suggestions. Twenty-one shoes and possible shoe fragments survive, all shrunk. Gräf compares them to remains of Roman shoes from wells at the Roman forts of Weltzheim and Saalburg. Left shoes predominate, she notes, perhaps because they might be sacrificed *pars pro toto* as ritual human offerings. Thirty-four pieces are identified as baldrics and fragments of belts and scabbards. Some straps were gilded and decorated, reflecting the high social status of bearers of these items, such as a portion of a goat leather scabbard embossed with eight-pointed star patterns. Equestrian equipment includes three unique bridle, rein, and harness pieces, and twenty-one fragments of straps. The bridle head-stall is shown as reconstructed by Engelhardt with nose fitting and twenty-seven silver-plated mounts, but Gräf also suggests other configurations. Leather finds with preserved patches of hair are interpreted as pieces of fur, perhaps fragments of a single fur cape similar to examples from northern European bogs. A change in stitching types is interpreted as evidence that a high-quality article of clothing was repaired by someone less skilled at sewing. Finally, Gräf examines the horizontal stratigraphy of the leather finds and notes that the overall number of leather garments represented at Thorsberg is far fewer than the number of sets of weapons. She proposes that the relative over-abundance of weapons might indicate that much leather either decayed completely or has not been excavated, or that each set of clothing was deposited with many weapons. After a discussion of finds, a six-page English summary and a catalogue of eighty-one leather items are provided. Almost all of the objects are drawn, and color photographs of twelve pieces are included. A concordance of the leather finds published by Engelhardt (1863) and Raddatz (1957–1987) and a list of comparative finds are appended.

In the fourth section of the book, Walter Dörfler presents analyses of the palaeoecological remains at Thorsberg bog that explain the development of the

bog and the surrounding environment. These analyses address two major research goals concerning human settlement of the area: (a) to date when bog offerings were made, and (b) to ascertain whether there was continuity between the fourth-century A. D. offerings and nearby Viking Period burials. The materials and methods of the studies are described, including the coring technique, measurements of peat and humus formation, and radiocarbon dating of the cores. Pollen analysis reveals clearing and development of the forest and thus human habitation in the ecosystem from the Mesolithic Period through the Medieval Period. The discussion section focuses on the relationship between the finds and the peat stratigraphy, and the results of the analyses are presented in German and in English translation. The major conclusion from analysis of the pollen diagrams of the Roman Iron Age through the Medieval Period is that the settlement near Thorsberg bog was abandoned about A. D. 620. Less certain is a suggestion that the bog may have continued in use as a sacrificial site through the Viking Period.

In section five, Klemens Kelm reports on metallographic examinations of objects from Thorsberg in the collections of Schloss Gottorf in Schleswig. The pieces include two pairs of bronze strap-ends, two pairs of silver strap-ends, two further bronze pieces that are not stylistically similar, and a bronze strip that may have a tinned surface. The study was instigated by metallographic investigations of objects from Ejsbøl that allowed identification of pieces from the same horse harness. The choice of scanning electron microscopy (SEM) with energy-dispersive X-ray analysis (EDX) is discussed. The findings do not contradict the stylistic analysis, but the author shows that patina and corrosion have adverse effects for determining the metal content of copper-zinc items from EDX analyses. Better results are achieved for elemental analysis of silver-copper artifacts due to less corrosion. Kelm confirms that the bronze strip was tinned and compares it to Roman tinning techniques. He proposes that resonance frequency analysis (RFA), atomic absorption spectroscopy (AAS), and inductively coupled plasma (ICP) – combined with microscopic imaging – could be useful to analyze casting and other production techniques of objects. A half-page summary of the discussion is offered in German and English.

In the sixth and final section, Claus von Carnap-Bornheim synthesizes the state of the investigations as a whole. He places the finds into a broader context of other excavated war-booty offering sites at Ejsbøl, Illerup Ådal, and Nydam bogs, and also weapon graves of the Roman Iron Age. In 1990, Jørgen Ilkjær proposed a chronological system for lance- and spear-blades at Illerup Ådal that has been applied elsewhere, but the acidic environment at Thorsberg bog did not allow the preservation of iron blades. Therefore, the relative dating of belt fittings and fibulae form the basis for Blankenfeldt's 2015 dating of the Thorsberg personal equipment to Phase C1a, the end of the second

century A. D. Carnap-Bornheim also reports that Ma-tešić (this series, volume III) dates the Thorsberg weapons and military equipment to Phase C1b, the first half of the third century A. D. The finds at Thorsberg and various Danish bog offering sites complement each other, allowing cross-dating and comparative studies. Differences between the sites, however, should not be ignored. The incompletely excavated area at Illerup Ådal covers around ten hectares, whereas the Thorsberg site is a 'kettle' bog of only about one thousand square meters.

Carnap-Bornheim proposes that the offering of destroyed weapons and equipment was ritually meaningful and that the primary goal of war-booty bog offerings was to destroy the identity of conquered warriors. He hypothesizes that ritual depositions were carried out officially – like Roman triumphal parades and ceremonies – not in secret, and that a large audience had an unobstructed view of the happenings (as confirmed by the pollen analysis). The author uses battle finds at Kalkriese (A. D. 9) and Harzhorn (A. D. 235/236) as well as war-booty from Thorsberg to comment upon military organization; however, due to the absence of iron blades at Thorsberg the number of men to whom this material may have belonged cannot be ascertained.

Whereas the finds at Illerup Ådal and Vimose reveal ties to southern Scandinavia, and Nydam to the western Baltic, the Thorsberg finds show connections to northern Elbe Germanic and provincial Roman areas. Elite finds of precious metals and figural representations at Thorsberg, including the two decorated silver disks, a bronze helmet, and a silver face-mask, display a mix of Roman and Germanic features, and it is not clear by whom they were made and to whom they belonged. Carnap-Bornheim's discussion of the

military control of raw materials and provincial workshops for the production of weapons and military equipment is the key. He concludes that the weapons and equipment found at Thorsberg – especially the high-status objects that betray a connection between provincial Roman and Germanic craft-working – are consistent with early Roman Iron Age Germanic warriors who were in contact with the Elbe-Oder region.

This volume will ultimately be assessed within the framework of the entire series. Unlike the other works on specific collections of material – personal equipment and horse trappings – that have recently been published, Volume Four is a collection of separate pieces. A readership that already knows about the Thorsberg bog finds is assumed, but any special-interest reader who dips into this book might be perplexed by the lack of a preface. Indeed, the section by Blankenfeldt and her co-authors could serve as an overall introduction to the entire series with its comprehensive background on the excavations, finds, collections, and archives. The choice to avoid a 'chapter' system makes using and referring to the work rather awkward. Reprinting Engelhardt's publication was an admirable decision to give credit to his work; nevertheless, with over three hundred identifiable metal finds and about seven hundred objects of organic material recorded at Thorsberg, the site and the finds deserve a complete, modern examination. The broader discussion about the nature of large-scale and small-scale war-booty offerings and about the origin of the people whose objects were sacrificed is yet to come. This volume is not the final word on Thorsberg, and the completion of the series is anxiously awaited.

University of Mississippi

Nancy L. Wicker