

and many others, shortly after its release. In many ways, this chapter is an audacious undertaking, considering the many points of scholarly contention surrounding this topic. Seaver explores a multitude of complex issues with finesse, many new insights, and a good sense of crediting most of the diverse opinions inherent in such an expansive topic.

Having provided the reader with a historical background, Seaver focuses on the primary subject of the book, the story of the Vinland map (Chapters 3 and 4). The author explores both the complex and intriguing investigation of the provenance of the map and the complex series of deals between private collectors and formal institutions that invariably escalated its price tag. Names, places, and dates associated with discussions about the map and its relationship to the two companion manuscripts occasionally take the reader on some detours—interesting excursions, but not always easily followed. Marston's handling of the acquisition of the manuscript comes in for close scrutiny, as does the study of wormholes in the map and the texts. The wormhole evidence, as well as watermarks, paper sources, handwriting analyses, and the relationship of the map to the two text manuscripts, the *Speculum Historiale* fragments and the *Tartar Relation*, are dealt with in greater detail in the fourth chapter.

In the following 60 pages (Chapters 5 and 6), Seaver takes the reader through fascinating discussions and arguments revolving around the Vinland map. Nothing escapes the author's inquiring mind and personal analysis, not even the politics of the pre-launch announcement to a selected audience in Oslo, attended by Helge and Anne Stine Ingstad, who in 1960 had discovered Norse ruins at L'Anse aux Meadows in Newfoundland. Seaver carefully builds her case against the authenticity of the map through her own thorough inquiries and personal ink experiments. She develops a case that is convincing and is supported by the steadily growing scepticism among expert scholars. With each step, one can sense the defences of the Yale publication authors weakening. In Chapters 7 and 8, Seaver explores the Vinland map in even greater detail, as a cartographic image and as a narrative. Enormously informative, these chapters may also be the greatest challenge to the readers' continuing attention. Discussions about temporal and historical dimensions of cartographical styles are far-ranging, as are the reflections of narrative legends, myths, and worldviews. At times the bookmark must be inserted, or else the reader might cry out, "too much data—too many words!" But page by page, often with what are probably necessary redundancies, the objective reader will most likely become convinced that Seaver has demonstrated beyond any reasonable doubt that the Vinland map is a modern fake.

In the final and longest chapter (9), the reader is well prepared to meet Father Josef Fisher, who according to Seaver is the author of the Vinland map. All the threads come together in what will for many readers be the smoothest part of the book. Seaver's excellent portrait of

the life of the Jesuit scholar is far from devoid of sympathy for Father Joseph, who, for reasons that will surprise many readers, decided to fabricate the Vinland map a few years before Hitler's invasion of Austria in 1938.

Through its sheer scope of inquiry and the breadth of the author's knowledge, the book is a major contribution to historic scholarship. It belongs in the library of anyone even remotely interested in Norse and cartographic history.

Peter Schledermann
The Arctic Institute of North America
University of Calgary
2500 University Drive NW
Calgary, Alberta, Canada
T2N 1N4

HUNTING, FISHING AND ANIMAL HUSBANDRY AT THE FARM BENEATH THE SAND, WESTERN GREENLAND: AN ARCHAEOZOOLOGICAL ANALYSIS OF A NORSE FARM IN THE WESTERN SETTLEMENT. By INGE BØDKER ENGHOFF. Copenhagen: Danish Polar Center, 2003. ISBN 87-90369-59-9. Meddelelser om Grønland, Man and Society 28. Published in cooperation with the Greenland Research Centre at the National Museum of Denmark (SILA) and the Greenland National Museum and Archives. 104 p., map, 50 b&w illus., bib. Softbound. DKK260,00 + s&h (US\$41.40).

As a zooarchaeologist (archaeozoologist), I was thrilled to see an entire book devoted to faunal remains, and I was doubly excited to see that this monograph was written about the animal skeletal material recovered from an Arctic site. The Arctic generally is perceived as fertile ground for zoological research because of its relatively good bone preservation, and this monograph reinforces this perception. Inge Enghoff has written one of the finest descriptions of Norse subsistence from a true zoological perspective. Her monograph on the Farm Beneath the Sand site is a thorough analysis that adheres to the long tradition of Quaternary zoology in Denmark (Møhl, 1997).

The Farm Beneath the Sand, or *Gården under Sandet* (GUS) as it is known in Danish, was a Norse farm in the Western Settlement of Greenland. More than half of this book's 104 pages are devoted to site and bone photographs, tables, and graphs, which makes this a data-rich publication. The contents of this monograph are not divided into numbered chapters, but rather organized by topical section. Jette Arneborg, the lead archaeologist for the site, provides the archaeological background and context for the animal remains, which include the site chronology and radiocarbon dates (p. 15, Table 1). The remainder of the report, written by Enghoff, is separated into the following nine sections: 1) Setting the scene; 2) Material and methods; 3) Results of the identification; 4) Hunting; 5) Fishing; 6) Animal husbandry: domestic mammals;

7) The roles of animals at GUS; 8) GUS in a broader perspective; and 9) Concluding remarks. One frustration is that there is no list of figures and tables, which makes it difficult to find particular items in the monograph.

The GUS site offers an opportunity not often afforded at Greenlandic Norse sites: the possibility to examine the change in subsistence patterns over time. In total, 8250 fragments of animal bone were identified that represent at least 36 species of fish, birds, and mammals. Site development is divided into three main phases covering the period AD 1000–1400: phase 1, the first 150 years; phase 2, the following 150 years; and phase 3, the last 100 years of settlement. The faunal material is further divided for purposes of finer-scale analysis into hunting of wild birds and mammals, fishing, and use of domestic mammals. These sections are discussed in detail, with summaries presented for the larger categories of hunted fauna: birds, seals, walrus, whales, reindeer (caribou), hare, fox and polar bear. Enghoff's specialty is fish, and she presents a comprehensive review of this taxon from a biological perspective. Although the fish remains are poorly preserved (with the exception of a mummified sculpin)—only 166 bones were recovered from fine mesh screening—this is the largest number of fish bones reported for any Greenlandic Norse site. Fish remains were recovered only from the second and third phases of site occupation; however, even this small sample suggests a shift from capelin and cod to char or trout, or both (p. 24, Table 4). Enghoff emphasizes that this small sample under-represents the importance of fish to the diet of North Atlantic Norse.

More quantitative analytical techniques, such as detailed age and size estimates, were used in the analysis of the domestic fauna than were used for the wild fauna. However, considerably more literature exists for comparison of domestic fauna, which makes this type of analysis possible. Enghoff addresses all possible scenarios for the age composition of sheep, goat, and cattle in this assemblage and compares her results to those obtained from other North Atlantic Norse sites. What is striking is the number of horse bones recovered from this site relative to other Norse Greenlandic localities. The horse remains are most similar to those found in Icelandic sites, which is not surprising. What is startling, however, is that the horse remains at this “lower status” farm site far outweigh in quantity those recovered from a nearby manor farm. Perhaps horses in this Greenlandic context were not useful for transport and did not confer status, but rather were lower-ranked food animals.

Enghoff notes that subdivision into phases of occupation, although useful for examining coarse changes, cannot address questions related to the very beginning and very end of occupation; “this is a pity, because it would have been interesting to know the GUS people's ‘starter set’ of domestic animals, as well as the possibly extreme situation just before the settlement was abandoned” (p. 90). She notes that GUS shares traits found in most Western

Settlement faunal assemblages, but not those of Eastern Settlement assemblages, by clearly describing the apparent subsistence differences between the Western and Eastern Norse Settlements in Greenland. For example, in the Western Settlements, harp seal is the most abundant species of seal, and sheep and cattle tend to be slightly shorter, or smaller, than those in the Eastern Settlements. Unfortunately, the reason for these differences is not explored further in this monograph.

A thorough description of GUS is presented within a wider perspective of a neighboring farm (Nipaatsok), an elite manor (Sandnes), a more coastally situated farm (Niaquusat), and other Western Settlements. The stable carbon isotopic composition ($\delta^{13}\text{C}$) of bone collagen extracted from Norse individuals buried in a churchyard at Sandnes exhibits a dramatic shift over time from an initial diet based on terrestrial foods to one dominated by marine foods. Although the marine faunal assemblages from GUS, Nipaatsok, and Sandnes indicate a shift toward more marine resources over time, this shift is neither dramatic enough nor large enough to account for these high stable carbon isotopic values. What is the explanation for these differences? Enghoff suggests that it is possible that the human skeletons from the late phases might have been predominantly inhabitants of Niaquusat, where the relative frequency of marine foods was extremely high. Perhaps the answer could have been more fully explored by addressing the taphonomic processes, both natural and cultural, that created these assemblages (Lyman, 1994). However, she does note that both the GUS and the Nipaatsok assemblages were recovered from within buildings and not from midden (garbage) deposits, and that midden remains could have provided more insight into overall discard patterns.

Enghoff's manuscript was originally written in Danish and subsequently translated into English. Unfortunately, a few passages may have been translated too literally from their original context: e.g., “radiocarbon datings” rather than “radiocarbon dates”; or “whales are jokers” (p. 90) rather than “whale remains are problematic”. However, I must emphasize that although occasionally distracting, these small errors do not detract from the overall value of this well-documented report. The black-and-white photographs of the site are extremely well done—particularly those of the bone remains, by G. Brovad of the Zoological Museum in Copenhagen, which demonstrate the range of preservation from fragile fish remains (Figs. 21–23) to the complete skeleton of a goat (Fig. 34). It is rare for publishers to allow for 24 such detailed photographs of archaeofaunal remains.

Enghoff's archaeozoological analysis is a comprehensive description of the extensive animal remains from a Greenlandic Norse site, and she provides a complete bibliography of relevant archaeological literature. This monograph affords the opportunity to explore the use of both wild and domestic species and to examine changes over time in Norse subsistence. Her writing style makes this

report comfortable and accessible even to non-specialists. I highly recommend this book to anyone interested in faunal remains or Norse archaeology. It would also serve as an excellent instructional supplement for a university course on zooarchaeology.

REFERENCES

- LYMAN, R.L. 1994. Vertebrate taphonomy. Cambridge: Cambridge University Press.
- MØHL, J. 1997. Greenland: A Quaternary zoological view. In: Gilberg, R., and Gulløv, H.C., eds. Fifty years of Arctic research: Anthropological studies from Greenland to Siberia. Copenhagen: Department of Ethnography, The National Museum of Denmark. 237–242.

*Christyann M. Darwent
Department of Anthropology
University of California, Davis
One Shields Avenue
Davis, California, U.S.A.
95616*