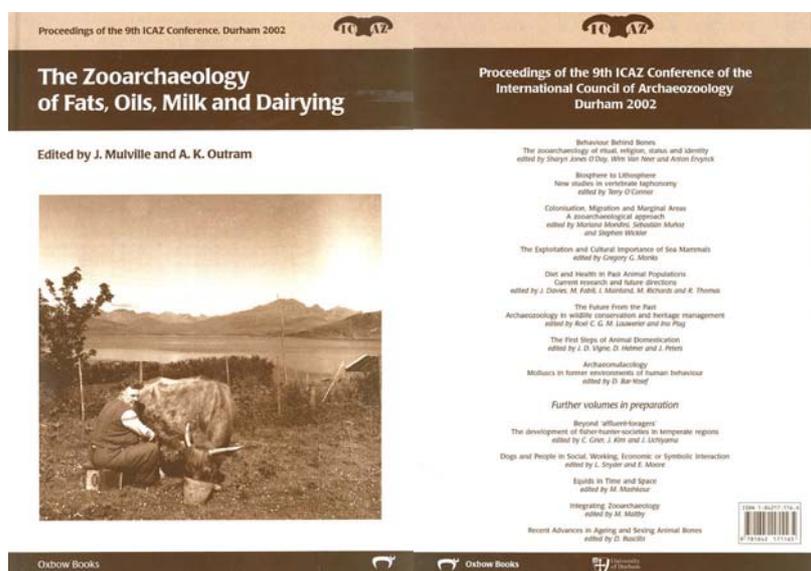


**Mulville, J. & A.K. Outram. Eds. 2005. The zooarchaeology of fats, oils, milk and dairying. – Oxford, Oxbow Books**

Book review by S. Ikram



The volume, ‘The zooarchaeology of fats, oils, milk and dairying’, edited by Mulville & Outram is the result of a session of the International Council of Archaeozoology conference held in Durham in 2002. The book is divided into three sections, starting with methodologies, going on to ethno–historical investigations, and ending with case studies. Short papers make up each section, with the lion’s share appearing in methodologies.

Contributions come from a wide array of scholars and cover a vast range of areas, time periods, and cultures, making for an interesting, entertaining, and useful volume. A wide range of ways of approaching the study of ancient diet and animal exploitation are explored, with detailed examples.

The methodology section is kicked off by an article by Legge who reinterprets identifications of herd exploitation using new technologies, and comparing them to the more traditional osteological analyses carried out on the same material at an earlier time. It continues with an article by Greenfield who deals with the Balkans and the change in exploitation patterns of cattle and ovicaprids from food to (by)products. This is followed by an article by Outram on bone fat. Analysis of fracture and fragmentation patterns, as demonstrated by Outram, is extremely useful in identifying bone marrow and grease extraction. The next article by Chamberlain & Forbes is a technical and very interesting piece on the possibilities of using microscopic thin sectioning on bones in order to identify the use to which herds have been put. The use of bone as fuel, a question that plagues many a zooarchaeologist, is addressed in the article by Théry–Parisot, Costamagno, Brugal, Fosse & Guilbert. The work focuses on experimental work, together with an analysis of bones that might have been used for this during the Palaeolithic. Privat, O’Connell, Neal & Hedges explore the question of isotopic investigations of diet and the ability to correctly distinguish between fermented and non–fermented dairy products as food sources. Brown & Heron’s article focuses on the possibility of detecting fish oils in ceramics. The last article in this section, by Mukherjee, Copley, Berstan, Clark & Evershed, uses gas chromatography–combustion isotope ratio mass spectrometry in order to investigate food production, processing, and consumption. This is a very useful and up to date article that provides us with an idea as to how far one can go (at the present) using these technologies in an effort to determine aspects of diet.

The ethno–historical section consists of six articles. The first, by Ryan, deals with milk herds in particular in east Africa. The second, by Saint–Germain, focuses on the importance of animal fat and its exploitation by the native population of northeastern America. Methods of obtaining, storing, and using fat is discussed. Tani’s contribution concerns the different ways in which milk ejection can be induced in animals by humans. Horwitz & Rosen’s useful overview explores the important role of camel milking in the southern Levant. A 13<sup>th</sup> century treatise on animal husbandry’s estimates of the yields of dairy products are compared to actual performances by the herds by Thompson. The section is rounded off by Nicholson’s article on the use of fish and sea mammal oil in the northern isles of Scotland. This includes the use of oil as food as well as its many other uses.

The last section of the book is made up of case studies, although one could argue that these articles could have fit into the other two sections. Mateos’s article deals with the analysis of bones, with a focus on fragmentation patterns, in order to differentiate whether they are used as sources of meat, fat, or both. The role of

the guanaco in the diet of the people in the southern Andes is the topic of De Nigris & Gonalons's article, while Mulville, Bond & Craig take a holistic approach to the faunal evidence from the Atlantic islands in order to better understand the exploitation of herds and a variety of ways of approaching the data. The identification of animal fats using cooking pots from Sagalassos is the topic of Kimpe, Jacobs & Waelkens's paper. The final article, by Alen & Ervynck deals with archaeological and experimental evidence concerning marrow extraction.

This volume, like the others in this series, is extremely valuable to any archaeozoologist, and particularly to anyone interested in the use of fats, oils, and dairy products. It is also useful to anthropologists, scholars of economy, diet, and many of the articles, particularly those in the ethno-historical section, make for entertaining reading. The editors and authors are to be congratulated for producing such a fine volume.

Mulville, J. & A.K. Outram. Eds. 2005. *The zooarchaeology of fats, oils, milk and dairying*. – Oxford, Oxbow Books. 208 pp. ISBN 184217116X. Price £ 45.00 (hardback).