Frontispiece: Tony Legge caught this fish in the Euphrates, near Raqqah, in 1983. He was particularly pleased with himself because several local 'experts' had advised him that he would catch nothing in this spot. Tony's eye for water did not let him down, however: he hooked the fish on his first cast. Photo by Peter Rowley-Conwy.

AN OFFPRINT FROM

ECONOMIC ZOOARCHAEOLOGY

Studies in Hunting, Herding and Early Agriculture

Edited by

PETER ROWLEY-CONWY, DALE SERJEANTSON AND PAUL HALSTEAD

Hardback Edition: ISBN 978-1-78570-445-1
Digital Edition: ISBN 978-1-78570-446-8 (epub)

OXBOW | books

Oxford & Philadelphia
www.oxbowbooks.com

Published in the United Kingdom in 2017 by
OXBOW BOOKS
The Old Music Hall, 106–108 Cowley Road, Oxford OX4 1JE

and in the United States by
OXBOW BOOKS
1950 Lawrence Road, Havertown, PA 19083

Hardback Edition: ISBN 978-1-78570-445-1
Digital Edition: ISBN 978-1-78570-446-8 (epub)

A CIP record for this book is available from the British Library

Library of Congress Cataloging-in-Publication Data

Names: Rowley-Conwy, Peter, editor. | Serjeantson, D. (Dale), editor. |
Halstead, Paul, editor.
Title: Economic zooarchaeology : studies in hunting, herding and early
agriculture / edited by Peter Rowley-Conwy, Dale Serjeantson and Paul
Halstead.
Description: Oxford ; Havertown, PA : Oxbow Books, 2017. | Includes
bibliographical references.
Identifiers: LCCN 2017002833 (print) | LCCN 2017018632 (ebook) | ISBN
9781785704468 (epub) | ISBN 9781785704475 (mobi) | ISBN 9781785704482 (
pdf) | ISBN 9781785704451 (hardback)
Subjects: LCSH: Animal remains (Archaeology) | Economics, Prehistoric.
Classification: LCC CC79.5.A5 (ebook) | LCC CC79.5.A5 E29 2017 (print) | DDC
930.1/0285--dc23
LC record available at https://lccn.loc.gov/2017002833

Printed in Malta by Gutenberg Press Ltd
Typeset in India by Lapiz Digital Services, Chennai

For a complete list of Oxbow titles, please contact:

UNITED KINGDOM
Oxbow Books
Telephone (01865) 241249, Fax (01865) 794449
Email: oxbow@oxbowbooks.com
www.oxbowbooks.com

UNITED STATES OF AMERICA
Oxbow Books
Telephone (800) 791-9354, Fax (610) 853-9146
Email: queries@casemateacademic.com
www.casemateacademic.com/oxbow

Oxbow Books is part of the Casemate Group

Front cover: The “Cairo” deer, see Ch. 33, Ikram and Bertini; Metapodials (photo by Terry O’Connor).
Back cover: Tony Legge teaching bone identification in the field, at Danilo in Croatia in 2005 (photo by A.M.T. Moore).

Contents

PART VI: CONTINENTAL EUROPE AND THE MEDITERRANEAN

Contributors

Shaw Badenhorst Ditsong National Museum of Natural History (former Transvaal Museum), 432 Paul Kruger St, Pretoria 0001/Department of Anthropology and Archaeology, University of South Africa, PO Box 392, UNISA 0003, South Africa. shaw@ditsong.org.za

Marie Balasse Archéozoologie, Archéobotanique: Sociétés, Pratiques et Environnements, UMR 7209 CNRS/MNHN. CP56. 55, rue Buffon 75005, Paris, France. balasse@mnhn.fr

Louise Bertini American University in Cairo, P. O. Box 74, Road 90, Tagammu 5, New Cairo 11825, Egypt. bertini@aucegypt.edu

Suzanne E. Pilaar Birch Department of Anthropology & Department of Geography, University of Georgia, Athens, Georgia, USA 30602. sepbirch@uga.edu

Amy Bogaard Institute of Archaeology, University of Oxford, 36 Beaumont St, Oxford, OX1 2PG, UK. amy.bogaard@arch.ox.ac.uk

Richard Bradley School of Archaeology, Geography and Environmental Science, University of Reading, PO Box 217, Whiteknights, Reading, RG6 6AH, UK. r.j.bradley@reading.ac.uk

Peter Bogucki School of Engineering and Applied Science, Princeton University, Princeton, NJ 08544, USA. bogucki@princeton.edu

Lídia Colominas Institut Català d'Arqueologia Clàssica, Plaça d'en Rovellat s/n, Tarragona, 43003, Spain. lcolominas@icac.cat

Pam Crabtree Anthropology Department, Center for the Study of Human Origins, New York University, USA. pamcdougc@comcast.net

Paul Croft Lemba Archaeological Research Centre, Lemba 8260, Paphos, Cyprus. paulcroft53@gmail.com

Simon J. M. Davis Zooarqueologia, Laboratório de Arqueociências, DGPC, Rua da Bica do Marquês 2, 1300-087 Lisbon, Portugal. simonjmdavis@gmail.com

Robin Dennell Department of Archaeology, University of Exeter, Streatham Campus, Northcote House, Exeter EX4 4QJ, UK. r.dennell@sheffield.ac.uk

Jonathan Driver Department of Archaeology, Simon Fraser University, 8888 University Drive, Burnaby, British Columbia V5A 1S6, Canada. driver@sfu.ca

Rosalind E. Gillis Unité Mixte de Recherche (UMR) 7209, Archéozoologie, Archéobotanique: Sociétés, Pratiques et Environnements, Centre National de la Recherche Scientifique, Muséum National d'Histoire Naturelle, 75005 Paris, France. roze.gillis@gmail.com

Haskel J. Greenfield University of Manitoba, Department of Anthropology/ St. Paul's College, Winnipeg MB, R3T 2N2, Canada. haskel.greenfield@umanitoba.ca

Angelos Hadjikoumis Marie Curie fellow at UMR 7209, Archéozoologie et archéobotanique, CNRS, Muséum National d'Histoire Naturelle, Paris, France. angelicus@hotmail.com

Paul Halstead Dept. of Archaeology, University of Sheffield, Northgate House, West St., Sheffield S1 4ET, UK. p.halstead@sheffield.ac.uk

Charles Higham Department of Anthropology and Archaeology, University of Otago, PO Box 56, Dunedin, New Zealand. charles.higham@otago.ac.nz

Salima Ikram Department of Sociology, Anthropology, Psychology and Egyptology, American University in Cairo, AUC Avenue, PO Box 74, New Cairo 11835, Egypt. salimaikram@gmail.com

Valasia Isaakidou Agricultural Origins of Urban Civilisation Project, Institute of Archaeology, University of Oxford, 36 Beaumont St, Oxford, OX1 2PG, UK. val.isaakidou@gmail.com

David Jacques Archaeology, University of Buckingham, Buckingham MK18 1EG, UK. davidjacques1@yahoo.co.uk

Glynis Jones Department of Archaeology, University of Sheffield, Northgate House, West St., Sheffield S1 4ET, UK. g.jones@sheffield.ac.uk

Alexei Kasparov Laboratory of Archaeological Technologies, Institute for History of Material Culture of Russian Academy of Sciences, Dvortsovaia emb.18, 191186 St. Petersburg, Russia. alexkas@yahoo.com

Mark Maltby Bournemouth University, Christchurch House, Talbot Campus, Fern Barrow, Poole BH12 5BB, UK. mmaltby@bournemouth.ac.uk

Roger Mercer School of History, Classics and Archaeology, University of Edinburgh, William Robertson Wing, Edinburgh EH8 9AG, Scotland. RogerJMercer@aol.com

Miquel Molis Seminari d'Arqueologia del Próxim Orient (SAPPO), Prehistory Departament, Universitat Autònoma de Barcelona, 08169 Bellaterra, Barcelona, Spain. Miquel.Molist@uab.cat

Mariana Mondini Laboratorio de Zooarqueología y Tafonomía de Zonas Áridas IDACOR-CONICET, Universidad Nacional de Córdoba, Av. H. Yrigoyen 174, 5000 Córdoba, Argentina. mmondini@filo.uba.ar

Andrew M. T. Moore Rochester Institute of Technology, P.O. Box 902, New Castle, NH 03854-0902. USA. amtmoore@gmail.com

Sebastián Muñoz Laboratorio de Zooarqueología y Tafonomía de Zonas Áridas, IDACOR-CONICET, Universidad Nacional de Córdoba, Av. H. Yrigoyen 174, 5000 Córdoba, Argentina. smunoz@conicet.gov.ar

James F. O'Connell Department of Anthropology, University of Utah, Salt Lake City, Utah 84112, USA. james.oconnell@anthro.utah.edu

Sonia O'Connor Archaeological Sciences, University of Bradford, Richmond Building, Bradford, West Yorkshire BD7 1DP, UK. S.OConnor@bradford.ac.uk

Terry O'Connor Department of Archaeology, University of York, Environment Building, Heslington, York YO10 5DD, UK. terry.oconnor@york.ac.uk

Alan Outram Department of Archaeology, University of Exeter, Laver Building, North Park, Exeter EX4 4QE, UK. a.k.outram@exeter.ac.uk

Angela Perri Department of Human Evolution, Max Planck Institute for Evolutionary Anthropology, Deutscher Platz 6, 04103 Leipzig, Germany. angela.perri@eva.mpg.de

Peter Rowley-Conwy Durham University, Dept of Archaeology, South Road, Durham DH1 3LE, UK. p.a.rowley-conwy@durham.ac.uk

Maria Saña Laboratori d'Arqueozoologia, Prehistory Departament, Universitat Autònoma de Barcelona, 08169 Bellaterra, Barcelona, Spain. Maria.Sana@uab.cat

Dale Serjeantson Archaeology, Faculty of Humanities, University of Southampton, Southampton SO17 1BF. D.Serjeantson@soton.ac.uk

Harvey Sheldon Department of History, Classics and Archaeology, Birkbeck University of London, Malet Street, London WC1E 7HX, UK. h.sheldon@bbk.ac.uk

C. M. Stimpson Queen's University Belfast, The School of the Natural and Built Environment, Archaeology, Geography and Palaeoecology, Elmwood Avenue, Belfast BT7 1NN. c.stimpson@qub.ac.uk

Carlos Tornero Archéozoologie, Archéobotanique: Sociétés, Pratiques et Environnements, UMR 7209 CNRS/MNHN, CP56. 55, rue Buffon, 75005 Paris, France. ctornero@mnhn.fr

Joël Ughetto-Monfrin Archéozoologie, Archéobotanique: Sociétés, Pratiques et Environnements, UMR 7209 CNRS/MNHN. CP56. 55, rue Buffon,75005 Paris, France.

Tony Waldron Institute of Archaeology, University College London, 31–34 Gordon Square, London WC1H 0PY, UK. waldron@btinternet.com

27

Humans and animals in Mesolithic, Neolithic and Bronze Age Dorset

Mark Maltby

Introduction

One of Tony Legge's many lasting legacies is the contribution he made to the study of animals from Neolithic and Bronze Age sites in Dorset. He provided detailed analyses of the animal bones from six prehistoric sites on Cranborne Chase (Legge 1991) and more recently his comprehensive study of the bones from the causewayed enclosures and other Neolithic sites on Hambledon Hill has been published (Legge 2008). He used information from these studies to furnish several discussions on prehistoric animal husbandry and exploitation patterns (e.g. Legge 1981a; 1989). Given that I have also worked on some bone assemblages from the same periods and area, it seems an appropriate tribute to Tony, to review our current understanding of the zooarchaeology of the prehistoric period in Dorset. This paper will also draw upon some of the observations on animal exploitation in the region that were incorporated within the reviews of Serjeantson (2011) and Hambleton (2008).

The later Mesolithic (6000–4000 BC)

Although a number of inland and coastal sites dating to the later Mesolithic period are known in Dorset (e.g. Rankine 1962; Palmer 1999), little is known about animal exploitation. Marine shellfish were exploited on the Isle of Portland (Mannino and Thomas 2001) and bones of red deer, pig and cattle (presumably wild) were recovered from late nineteenth century excavations at Blashenwell, near Corfe Castle (Preece 1980). There are several Late Mesolithic sites in Cranborne Chase but the only significant faunal assemblage has been obtained from the Fir Tree Field shaft (FTF 92–94; Fig. 27.1). This included two partial skeletons of immature roe deer that possibly fell into the shaft plus a few other bones of roe deer, red deer, and wild boar, some of which do bear evidence of processing. Together with the presence of several microliths, this shows that wild mammals were being hunted in the area (Maltby 2007a). Unfortunately very few bones were obtained from the transitional Mesolithic/Early Neolithic layer in the shaft, which contained a few fragments of cattle and pig, small enough to be considered domestic, alongside antler and bones of red deer, roe deer and aurochs. However, the sample is too small and mixed to refute or support the impression gained elsewhere in southern England that there was a rapid shift from the exploitation of wild to domestic animals in the Early Neolithic (Serjeantson 2014).

The Early and Middle Neolithic (4000–3000 BC)

Tony Legge's (2008) work on the sites on Hambledon Hill will deservedly be regarded as the cornerstone of zooarchaeological studies for causewayed enclosures in Dorset. Although faunal assemblages have been examined from other enclosures in the county, including those from Maiden Castle (Armour-Chelu 1991), the assemblages from the Main and Stepleton Enclosures on Hambledon Hill are far larger, which enabled more detailed analysis. There are also smaller assemblages from a range of other early Neolithic features within the complex providing a total of over 7,800 identified elements. Readers should refer to the original report (Legge 2008) to appreciate the quality of his analysis fully, but the main conclusions can be summarised as follows:

(a) cattle were the dominant species represented, throughout the Hambledon complex, contributing between 60–70% of the post-cranial element counts.

(b) domestic pigs were the second most commonly identified species (20–30%).
(c) sheep/goat (mainly sheep) formed between 15–20% of the post-cranial elements.
(d) pig and sheep/goat mandibles were better represented than post-cranial elements because of better preservation but in terms of meat weight, cattle dominated.
(e) there were only small percentages of wild species, mainly red deer and roe deer.
(f) there was a high proportion of immature and young adult cattle represented.
(g) the majority of the adult cattle represented were female.
(h) most of the pigs were killed in their second year.
(i) there were a number of associated bone groups from the complex including segments of cattle vertebrae, groups of red deer antlers, a largely complete dog and two partial goat skeletons.

Complementary to Legge's zooarchaeological research, lipid residue analysis has shown that both ruminant meat and dairy products were commonly consumed (Copley *et al.* 2008). Isotope analysis has shown that the diet of most of the people sampled was quite high in protein (Richards 2008).

The impression gained from the excavations is that the Hambledon enclosures were used as venues intermittently but regularly for major gatherings which included the consumption of large quantities of food, particularly meat.

Legge pointed out that the assemblage from the Hambledon complex may not represent a typical pattern of consumption. This is an issue that makes interpretation of British Neolithic faunal assemblages challenging. The largest assemblages, whether from causewayed enclosures such as Hambledon Hill and Windmill Hill, Wiltshire (Grigson 1999) or from later Neolithic henge enclosures such as Mount Pleasant, Dorset (Harcourt 1979) and Durrington Walls, Wiltshire (Harcourt 1971; Albarella and Serjeantson 2002), are from sites that were often used for large-scale gatherings. The curious assemblage dominated by domestic cattle head and foot bones and bones of roe deer from the early Neolithic pit at Coneybury, Wiltshire (Maltby 1990; Legge 2008, 555; Serjeantson 2014) may be another example, as could the pig-dominated assemblage from a pit at Rowden, Dorset, possibly redeposited from a midden, (Maltby 1991a; Harris 2009). Food consumption at these gatherings may have been very different from the normal dietary pattern.

Similarly, the deposition of complete or partial skeletons of animals is a feature of many Neolithic assemblages. Although their frequency in the Dorset causewayed enclosures themselves at Hambledon Hill and Maiden Castle (Armour-Chelu 1981) is less than at Windmill Hill (Grigson 1999), several associated groups, mainly of cattle, but also of roe deer, sheep, goat and dog were found in the long barrow, cross dykes and outworks within the Hambledon complex (Legge 2008; Serjeantson 2011, 152–153). Interpretations of such groups depend on context, completeness, butchery and other taphonomic evidence. For example, the complete dog skeleton from Hambledon could have belonged to a pet that was afforded a burial in a special place, whereas the associated cattle vertebrae could be butchery waste or perhaps a symbolic sacrifice of food associated with feasting events. Serjeantson (2011, 30–31) has suggested that the partial goat skeleton from the outer cross-dyke at Hambledon may have belonged to an animal that acted as a guide to sheep flocks and was thus highly regarded and afforded a special burial.

Irrespective of whether the animal bones from Hambledon represent typical dietary and disposal patterns, the predominance of cattle is a common feature of assemblages from causewayed enclosures and other earlier Neolithic sites in southern England (Serjeantson 2011, 14–16; 2014). Legge's (1981a) influential and often cited paper on cattle husbandry, was largely derived from his initial analysis of the bones from Hambledon and the Middle Bronze Age assemblage from Grimes Graves, Norfolk (Legge 1981b). Most of his conclusions have stood the test of time. His metrical analysis of the limb bones from Hambledon, Windmill Hill and Durrington Walls (Legge 1981a, 176–177) showed a bias towards cows, which has been confirmed by subsequent analysis of further material from these sites (Grigson 1999; Legge 2008). The bias towards females and the presence of relatively large numbers of mandibles from calves led to the conclusion that dairy production formed a significant role in cattle husbandry in the Neolithic (Legge 1981a). Lipid analysis has since confirmed that ruminant dairy produce was deposited fairly frequently on pottery at Hambledon Hill and on other causewayed enclosure sites (Copley *et al*. 2005; 2008). The overall mortality profiles from Hambledon (Legge 2008, 541–544), however, do not show that there was intensive culling of calves there, with only *c*. 20% of the mandibles being from animals under 12 months old. Indeed there are high percentages (55–60%) of cattle killed between 18 and 36 months, suggesting that many cattle brought to Hambledon were not animals that had been exploited for secondary products for any length of time. There was a focus on meat consumption here. Legge (2008, 543–544) suggested that male calves and surplus young sub-adult and adult cows not required for breeding or milking were the ones usually selected to be brought to the enclosure for slaughter. There is also little evidence from here or other Neolithic sites in Dorset that cattle were commonly used as plough animals.

The majority of pigs at Hambledon were culled in their second year and few young piglets were represented (Legge 2008, 548–549). Provided they survive taphonomic decay, more mandibles of juveniles would be expected if pigs were being raised in or around the enclosures. Again, this would

suggest a focus on the culling of second-year pigs, many possibly brought to the sites from elsewhere.

Serjeantson (2011) has rightly observed that the abundance of sheep in earlier Neolithic sites in southern England has probably been underestimated in earlier surveys. At Hambledon, sheep were relatively well represented in both enclosures and in most of the smaller assemblages from other features (Legge 2008; Serjeantson; 2011, 138). However, excluding the goat skeletons, they provided only 17% of the total counts of cattle (58%), pig (24%) and sheep/goat (Serjeantson 2014). They were less well represented than in the causewayed enclosure features at Maiden Castle (Armour-Chelu 1991), where sheep ranked second (27%) behind cattle (52%) with pig third (19%) in the NISP counts. The bank barrow at Maiden Castle produced similar species ratios (cattle 54%; sheep/goat 23%; pig 20%; red deer 3%).

The low percentage (3.6%) of bones of wild species in the Hambledon complex is typical of other earlier Neolithic sites and supports the argument that the Neolithic 'package' from the continent, including the introduction of domestic forms of cattle, sheep, goat and pig, spread rapidly in southern Britain in the early fourth millennium BC (Serjeantson 2014). At Hambledon, red and roe deer contributed little to the meat diet and bones of wild boar and aurochs were also only occasionally identified (Legge 2008). Several of the aurochs bones came from the south long barrow (Legge 2008, 561). Jackson (1936) reported the presence of two aurochs skulls in the ditches at a long barrow at Thickthorn Down. Aurochsen skulls were also recorded at Maiden Castle (Armour-Chelu 1991). The association of aurochs in large burial monuments and other communal structures such as the Dorset Cursus (see below) may reflect their importance in symbolic deposition. Domestic cattle skulls have also been quite commonly been found in such contexts elsewhere in southern England (Serjeantson 2011). Another example from Dorset is the skull, probably from a domestic bull, found in the primary fill of a long barrow at Alington Avenue, near Dorchester (Maltby 2002).

Red deer counts at Hambledon and Maiden Castle, and at many other Neolithic sites, are supplemented by the presence of antlers, sometimes manufactured into picks (Legge 2008, 573–582; Serjeantson 2014; Worley and Serjeantson 2014). A single goose bone represents the only species of wild bird from sites in earlier Neolithic Dorset and Maiden Castle is the only site to have produced fish (but only two bones each of cyprinids and trout) (Serjeantson 2014). Isotopic signatures from Hambledon Hill show that marine foods were rarely, if ever, eaten by the people represented there (Richards 2008).

Most of the Middle Neolithic faunal evidence has been obtained from Cranborne Chase. Excavations of the Dorset Cursus at Down Farm provided only 30 identified elements (Legge 1991, 54–55). Twenty-one of these were cattle, including tooth rows of one or more skulls from the upper fills of one ditch section. Significantly, six bones of aurochs were also recorded, forming a much high proportion of the bovine assemblage than anywhere in the Hambledon complex. Two bones of red deer and one of pig were also identified.

Dating from the latter half of the fourth millennium BC and thus broadly contemporary with the Cursus was the Monkton-up-Wimborne pit complex (MUW97; Fig. 27.1). At the centre of this complex was a wide pit, at the edge of which four inhumations, possibly sacrificial victims, were interred. Shortly after, a 4.5 m deep shaft was inserted through the pit's southern edge. The pit was ringed by 14 smaller pits (Green 2000, 79–84; 2007a). The lower fills of the shaft were interspersed with depositions of chalk and sandstone objects, arrowheads and a few disarticulated human bones. Near the base of the shaft was a partial carcass of a juvenile pig showing evidence of butchery and charring. Other small groups of associated bones of pig and cattle were also recovered along with a complete skull and a horncore of male cattle and a complete mandible and tibia of dogs. Associated with a few sherds of Peterborough Ware, these and other disarticulated animal bones, some with evidence of butchery, probably represent symbolic depositions sometimes associated with food consumption. A total of 46 bovine bones were recovered from these shaft fills, including an aurochs humerus. In addition to the 19 bones from the butchered piglet, 40 bones of pig (probably all domestic) were recovered. The 21 red deer antler fragments ranged in size from fairly complete picks to small, often eroded and burnt, fragments. However, significantly, no sheep/goat bones were identified (Maltby 2007b).

Sheep/goat was also absent in an assemblage of 94 identified fragments of larger mammals in layers associated with Peterborough Ware in the Fir Tree Field shaft. Cattle provided 51% of the identified material, followed by pig (36%). Five bone and three antler fragments belonged to red deer and two bones each of roe deer and aurochs were also recorded (Maltby 2007a).

Evidence for animal exploitation during the Middle Neolithic from elsewhere in Dorset is extremely limited. The primary fill of the late fourth millennium enclosure at Flagstones, near Dorchester, only produced two vertebrae and 14 fragments of antler of red deer and three bones of dog/fox. Slightly earlier pits from this site produced just 16 identified fragments, all of cattle (Bullock and Allen 1997).

The later Neolithic to the Early Bronze Age (*c*. 3000–1500 BC)

Although there are several assemblages from Dorset dating to this period, none approach the size of the one from Hambledon. Much of the evidence again comes from the Cranborne Chase area around Down Farm (Fig. 27.1), where excavations have produced a number of assemblages with faunal assemblages that have been mainly analysed by

Legge (1991) and this author (Maltby 2007a; 2007b; Maltby *et al.* 2007; Rothwell and Maltby 2007). Material from other areas of Dorset is sparse, although the Dorchester environs have produced several samples which will also be discussed.

Grooved Ware assemblages

It has long been recognised that British later Neolithic assemblages, particularly those associated with Grooved Ware, often contain large amount of pig bones (e.g. Grigson 1981), with samples from major monuments such as the Durrington Walls henge enclosure (Harcourt 1981; Albarella and Serjeantson 2002) and the West Kennet palisade enclosure (Edwards and Horne 1997) in Wiltshire being cited as prime examples. Many of these sites are considered to have been associated with feasting. Recent reviews have largely confirmed this trend (e.g. Serjeantson 2011), although Rowley-Conwy and Owen (2011) have shown that there are some regional variations with several assemblages from Yorkshire and the east Midlands containing more cattle than pig.

Indeed, Tony Legge's analysis of Wyke Down 1 henge on Cranborne Chase (WD1; Fig. 27.1) also showed that not all Grooved Ware assemblages are dominated by pig. Although restricted to 59 identified fragments obtained from the ring of pits that formed the enclosure, the assemblage was dominated by cattle (76%) with pig (15%), sheep/goat (5%) and red deer (3%) represented in small numbers (Legge 1991, 56–58). Similarly, the assemblage of 122 identified fragments from the adjacent Wyke Down 2 henge ditch (WD2; Fig. 27.1) was also dominated by cattle (67%), followed by pig (28%), sheep/goat (3%) and roe deer (3%) (Rothwell and Maltby 2007). In contrast, pig provided 60% of the 294 fragments identified to the larger mammals found in pits from the adjacent settlement area. Cattle contributed only 34% and sheep/goat just 5% of this sample. Red deer, roe deer, dog and fox elements were also present in small numbers. The Grooved Ware pits from Fir Tree Field (DF78; Fig. 27.1) produced 144 fragments, of which 48% were identified as cattle, followed by pig 42%. Sheep/goat elements (5%) were again poorly represented. However, the higher percentage of cattle bones overall on this site was the result of their predominance in one of the pits (11A). Pigs outnumbered cattle in the other pits (Legge 1991, 65; Rowley-Conwy and Owen 2011, 333). Legge's (1991) detailed analysis of fragmentation patterns and taphonomic data showed that larger bones were preferentially selected from surface middens for deposition in all the pits, particularly pit 11A, which included a complete cattle skull. This was also the only pit that produced bones (rather than antler) of red deer and roe deer, as well as the exceptional find of a bear's ulna that, like many of the other bones, had been gnawed by dogs before deposition.

A short distance away, two more Grooved Ware pits adjacent to the Fir Tree Field shaft produced a total of 43 identified fragments, of which 28 belonged to pig, 13 to cattle and two, including an antler tine, to red deer. Again, bones of sheep/goat were not identified. Many of the bones were charred and, as in several of the other pits discussed above, included bones placed on the base of the pits sometimes in close association with unusual artefacts, in this case flint axes and nodules (Maltby 2007a).

The assemblage from a Grooved Ware pit at Barford Farm, Pamphill, near Wimborne in east Dorset, produced an assemblage of 159 identified fragments again dominated by pig (71%). Cattle provided 28% of the bones. There were two elements of red deer but bones of sheep/goat are again conspicuous by their absence (Maltby 1989).

The best known of the Grooved Ware faunal assemblages from the Dorchester environs comes from the Mount Pleasant henge enclosure (Harcourt 1979). Species counts based on minimum numbers of 37 individuals produced 46% pig, followed by 22% cattle and 11% sheep/goat. Bones of wild species (aurochs, boar, fox, red deer) were recorded in small numbers along with dog and horse. One bone of a crane was also recovered. The date of the horse bone has not been confirmed by radiocarbon dating but, if authenticated, would represent one of the earliest finds of this species in southern England (Serjeantson 2011, 32–33). In contrast to many of the assemblages discussed above, apart perhaps from an articulated radius and ulna of an aurochs, Harcourt (1979) did not note the presence of any associated bone groups, complete skulls or other placed deposits. This contrasts with the evidence for placed depositions of bones within many of the late Neolithic pits of a massive timber structure discovered in Dorchester. Most of these bones belonged to pigs, particularly upper limb bone elements. A few of the pits also produced red deer antler (Maltby 1993, 315). Several placed deposits were also recorded in the assemblage from the Thomas Hardye School site in Dorchester (Gardiner *et al.* 2007; Serjeantson 2011, 151). Two pit rings from Conygar Hill produced a total of 40 pig and 21 cattle bones (Bullock and Allen 1997, 193). All the pig bones came from the primary fill of one pit and, although at least two pigs are represented, some of these remains were probably from partial skeletons.

The evidence from Dorset therefore confirms that Grooved Ware assemblages are usually dominated by pig. However, the recent analyses have demonstrated that there can be significant variations in species representation within and between sites, often reflecting the presence of placed depositions of selected individual elements and sometime more complete carcasses of animals. Therefore whether these depositions necessarily accurately reflect typical dietary practices is debatable. The increase in pig consumption on many of these sites is, however, not in

doubt and is supported by the frequent presence of pig lipid residues in the ceramics (Cropley *et al.* 2005).

What is often under-emphasised in the analysis of Grooved Ware assemblages is the consistently poor representation of sheep/goat bones. They are absent from several of the Dorset assemblages and in only one case (Mount Pleasant) did they provide over 10% of the counts. This is part of a much wider phenomenon, as the graphs of species representation from a wide range of Grooved Ware sites in England have clearly demonstrated (Rowley-Conwy and Owen 2011, 332–333). Either, as is often implicitly implied, sheep were rarely selected for slaughter at these sites that focussed on feasting on pork and beef, or they were not generally being kept in large numbers at this time. Their poor representation cannot be explained by environmental factors alone. Dorset was not totally dominated by forests at this time. For example, although woodland was still prevalent in valley bottom and floodplain areas, there were also substantial areas of grassland available in the Upper Allen Valley of Cranborne Chase throughout the Neolithic (French *et al.* 2007, 220–226). However, none of the later Neolithic Dorset sites (with or without Grooved Ware) have produced substantial amounts of sheep bones. It therefore seems likely that these open areas of grassland were largely been used for cattle rather than sheep pasture. Although they were imported to the region at the onset of the Neolithic, sheep numbers may have declined after the era of the causewayed enclosures.

Other Late Neolithic, Beaker and Early Bronze Age assemblages

The upper fills of the pit/shaft at Monkton-up-Wimborne produced Late Neolithic lithics but no Grooved Ware pottery, although there were a few sherds of Peterborough Ware (Green 2007a). The faunal assemblage was quite poorly preserved and included many eroded and burnt fragments and a high percentage of loose teeth, which are more resilient to decay than bones. This may partially explain the high percentage of cattle (71%) amongst the 137 identified larger mammal fragments. Pig provided only 15% of the assemblage and, as discussed above, sheep/goat was poorly represented on a non-Grooved Ware site (5%). Red deer was only represented by one bone and six antler fragments and roe deer by a cast antler. Five bones of dog included three forelimb bones probably from the same individual (Maltby 2007b).

With regard to Beaker sites, the Mount Pleasant henge has produced one of the largest assemblages from Britain (Harcourt 1979; Allen and Maltby 2012). The assemblage included high percentages of pig (47% of a minimum of 75 individuals), followed by cattle (24%) and sheep/goat (16%). Bones of wild species also continued to be present in small numbers. Red and roe deer, aurochs, wild boar and fox were represented along with a few bones of duck and geese (Harcourt 1979). Although there is a modest increase in sheep/goat compared with the Grooved Ware assemblage from the site, generally there were no significant changes in species representation and deposition practices.

Several sites on Cranborne Chase have produced animal bones from contexts associated with Beakers, although none of them are large assemblages. A layer near the top of the Monkton-up-Wimborne pit contained a few Beaker and Early Bronze Age sherds along with an inhumation (Green 2007a). The associated bone assemblage is poorly preserved, being dominated by loose teeth. Cattle provided 62% of the identified larger mammal fragments, compared with only 17% pig. Sheep/goat, indeed, outnumber pig, providing 20% of the total. Another cast antler of roe deer and a red deer antler tine were the only records of those species and dog was represented by a single tooth (Maltby 2007b).

The upper levels of the Fir Tree Field shaft were also associated with Beaker pottery along with another small, poorly preserved, bone assemblage. Cattle (13 fragments), pig (5) and sheep/goat (1) were the only species identified (Maltby 2007a, 298–299). Animal bones were also found in four nearby pits, producing a total of 213 identified bones of larger mammals. These included 17 bones of a juvenile sheep/goat in one pit and 27 from a young piglet in another (Maltby 2007a, 299–301). Excluding these associated groups, cattle provided 47% of the identified mammals, followed by pig (40%) and sheep/goat (11%). Red deer was only represented by a burnt antler fragment and roe deer by a shed antler and a loose tooth. However, the assemblages of the four pits varied substantially. Sheep/goat bones (including the partial skeleton and two goat bones) were only deposited in any numbers in one of the pits. Cattle were the most common species in this pit and in one other. Pig elements including the partial piglet skeleton were dominant in a third.

Two pond barrows originating in the Early Bronze Age have been investigated on Cranborne Chase. Tony Legge's analysis of the Down Farm pond barrow established that pairs of elderly cows and sheep had been buried diametrically opposite each other outside the pond barrow (Legge 1991, 72–75). This unique find gave further support to the symbolic role animals often had in and around barrow sites during the Late Neolithic and Early Bronze Age (Serjeantson 2011). Another recently excavated example from Dorset is the Fordington Farm Beaker inhumation, in which the head of an adult male rested on a cattle scapula and his feet on a cattle atlas. Three other filleted cattle scapulae and two scorched cattle humeri accompanied the burial (Maltby 1991b).

The pond barrow excavated at Monckton-up-Wimborne (MUW02; Fig. 27.1) was constructed during the early Bronze Age but some of the depositions continued into the middle Bronze Age (Green 2007b). The faunal assemblage

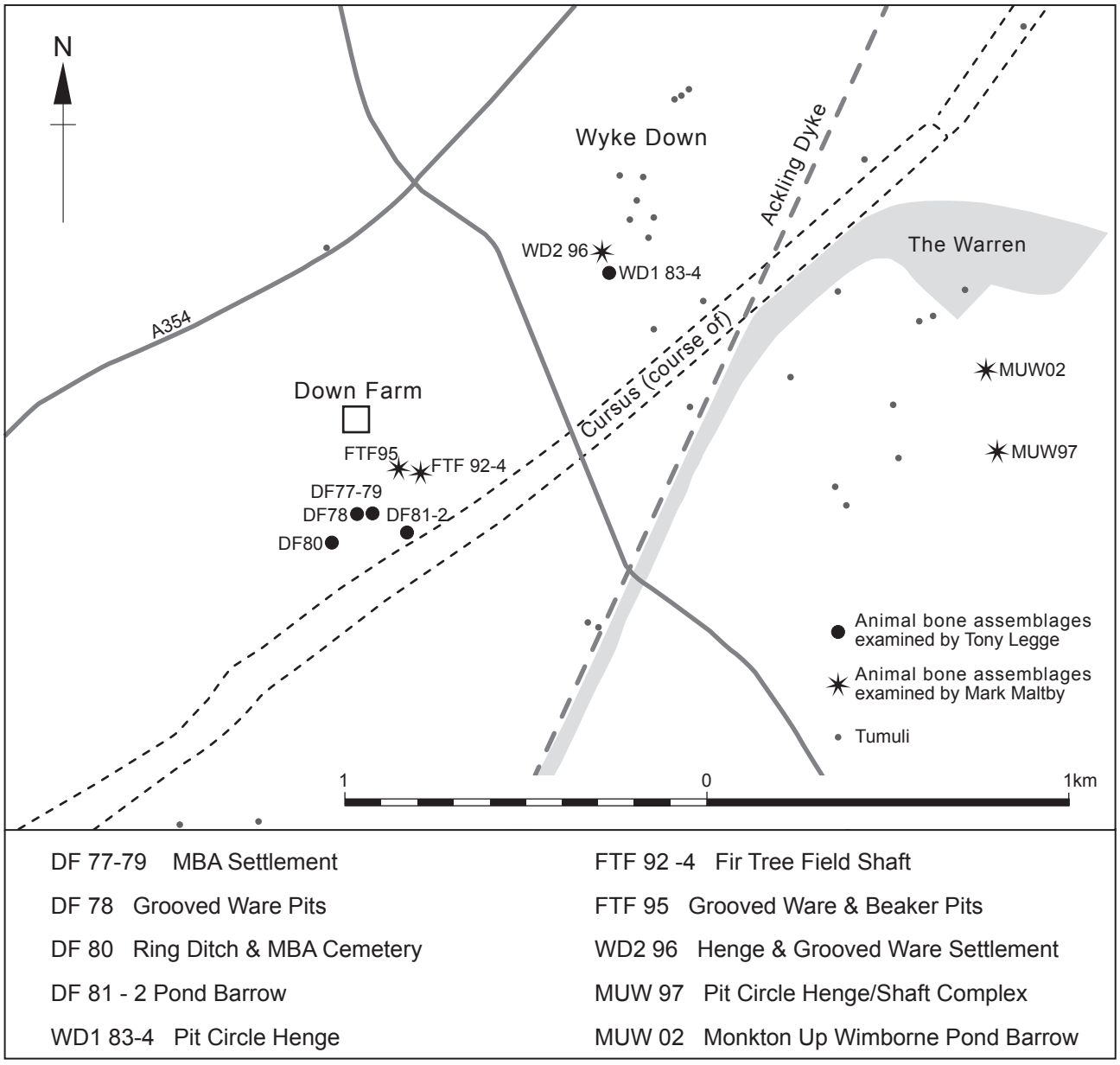

Fig. 27.1. Plan of Down Farm and Wyke Down showing excavated sites and location of animal bone assemblages examined by Tony Legge and Mark Maltby. Illustration by Robert Reed, with permission.

was poorly preserved with most of the surviving elements being loose teeth. Cattle (51%) and sheep/goat (46%) dominated the assemblage of 271 identified fragments, whereas pig (3%) was very poorly represented. Red deer was only represented by a loose tooth and antler fragment (Maltby *et al.* 2007).

Although the Beaker and Early Bronze Age deposits come from a restricted number of sites of diverse types, there is noticeably less consistency in species representation compared with the largely cattle-dominated assemblages of the earlier Neolithic and the largely pig-dominated Grooved Ware assemblages. Although sheep/goat continue to be poorly represented in some assemblages, they are significantly more abundant in others. This may reflect that this was a period of transition both in the practices associated with consumption and deposition of animals but also in the emergence of sheep husbandry as a significant factor in the regional economy. The assemblages from the later Neolithic and earlier Bronze Age Dorset sites generally are too small to provide information about exploitation practices beyond very general observations that can contribute to broader discussions (e.g., Legge 1981a;

Serjeantson 2011). The continued practice of placing animal deposits in association with both burial and settlement sites demonstrates their symbolic as well as function role to the communities involved.

The later Bronze Age (1500–800 BC)

There are still very few substantial assemblages from the Middle Bronze Age in southern England (Hambleton 2008). Therefore the assemblage from the Down Farm enclosure examined in detail by Legge (1991, 77–90), although of modest size, is again often cited in reviews of this period. Altogether, 368 identified mammal bones were obtained from the enclosure ditch. Cattle (49%) and sheep/goat (43%) elements dominate whereas pig drops spectacularly to 3%. Red deer, horse, dog and roe deer are represented in small numbers (Legge 1991). He demonstrated that sheep/goat were better represented by mandibles and other more robust elements and therefore are underestimated in fragment counts. This is a pattern now widely recognised by other analysts. Legge's tooth ageing analysis showed that around 50% of the sheep were culled by two years of age and that meat production was the major consideration in their husbandry, as he also observed in the contemporary assemblage from Grimes Graves in Norfolk (Legge 1981b; 1981 2007, 82). He also noted and illustrated (Legge 2007, 78) that there was a high (although unquantified) percentage of periodontal disease in sheep mandibles, indicative of poor nutrition. Cattle ageing evidence was limited but there were indications that more calves were represented than in earlier periods, which he used to support his arguments that there was an increase in dairy production during this period, as witnessed at Grimes Graves (Legge 1981a; 1981b) and subsequently on some other later Bronze Age sites (Hambleton 2008, 61–65). Legge also showed that cattle were generally becoming smaller in the Bronze Age in Dorset.

Other Middle–Late Bronze Age assemblages from near Dorchester include Poundbury, which produced 621 identified mammal bones, dominated by mainly adult cattle (72%). However this percentage is inflated by the inclusion of several partial cattle skeletons, possibly from a major butchering episode (Buckland-Wright 1987). Sheep/goat (12%) comfortably outnumbered pig (3%). A single bone of horse was recovered along with modest numbers of red and roe deer.

The Middle Farm site, on the Dorchester By-pass, produced 454 identified mammal fragments from ditches, of which 53% were identified as sheep/goat, and 44% as cattle. Only one horse and three pig bones were recorded (Bullock and Allen 1997, 194). Only sheep/goat (12) and cattle (10) were identified in the contemporary assemblage from Fordington Bottom (Rielly 1997).

The limited Dorset evidence therefore supports the general trends observed for the later Bronze Age period (Serjeantson 2007; Hambleton 2008). Sheep became much more prevalent in an economy that increasingly relied more heavily on enclosed arable farming. With a few exceptions, pig declined to very low levels, at least in chalkland areas, from where much of the evidence has been obtained. Horses were more consistently represented but only in very small numbers. There is evidence from some areas that dairy production of cattle and sheep became more important. Fish bones are usually absent and bird bones only recorded rarely on most non-wetland sites.

Endpiece

There is still much to learn about human and animal interactions in these periods in Dorset. Evidence is heavily reliant on sites around Cranborne and Dorchester. There are still few samples large enough to merit analysis beyond the basic levels of species representation. However, complex patterns and changes in animal exploitation and deposition have begun to be recognised and these would not be possible if it were not for Tony Legge's innovative analyses and insights into assemblages from this region.

References

Albarella, U. and Serjeantson, D. (2002) A passion for pork: butchery and cooking at the British Neolithic site of Durrington Walls. In P. Miracle (ed.) *Consuming Passions and Patterns of Consumption*, 33–49. Cambridge, University of Cambridge MacDonald Institute.

Allen, M. J. and Maltby, M. (2012) Chalcolithic land-use, animals and economy – a chronological changing point? In M. J. Allen, J. Gardiner and A. Sheridan (eds.) *Is There a British Chalcolithic? People, Place and Polity in the late Third Millennium*, 281–297. Prehistoric Society Research Papers 4, Oxford, Oxbow Books and Prehistoric Society.

Armour-Chelu, M, (1991) The faunal remains. In N. M. Sharples, *Maiden Castle. Excavations and Field Survey 1985–1986*, 139–151., London, English Heritage Archaeology Report 19.

Buckland-Wright, J. C. (1987) The animal bones. In C. Sparey Green, *Excavations in Poundbury, Dorchester, Dorset, 1966–1982. Volume I: the Settlements*, 129–132. Dorchester, Dorset Natural History and Archaeological Society Monograph 7.

Bullock, A. E. and Allen, M. J. (1997) Animal bones (Southern By-pass). In R. J. C. Smith, F. Healy, M. J. Allen, E. L. Morris, I. Barnes and P. J. Woodward, *Excavations along the Route of the Dorchester By-pass, Dorset, 1986–1988*, 190–199. Salisbury, Wessex Archaeology Report 11.

Copley, M. S., Berstan, R., Mukherjee, A. J., Dudd, S. N., Docherty, G., Straker, V., Payne, S. and Evershed, R. P. (2005) Dairying in antiquity III: evidence from absorbed lipid residues dating to the British Neolithic. *Journal of Archaeological Science* 32, 523–546.

Copley, M. S., Berstan, R, Scott, A. and Evershed, R. P. (2005) Organic residue analysis of pottery vessels: determination of vessel use and radiocarbon dates. In R. Mercer and F. Healy, *Hambledon Hill, Dorset, England. Excavations and Survey of a Neolithic Monument Complex and its Surrounding Landscape*, 527–535. Swindon, English Heritage.

Edwards, A. and Horne, M. (1997) Animal bone (West Kennet Palisade Enclosure 1). In A. Whittle, *Sacred Mound, Holy Rings: Silbury Hill and the West Kennet Palisade Enclosures: a later Neolithic Complex in North Wiltshire*, 117–129. Oxford, Oxbow Books.

French, C., Lewis, H., Allen, M. J. Green, M., Scaife, R. and Gardiner, J. (2007) *Prehistoric Landscape Development and Human Impact in the upper Allen Valley, Cranborne Chase, Dorset*. Cambridge, University of Cambridge McDonald Institute.

Gardiner, J., Allen, M. J., Powell, A. B., Harding, P., Lawson, A. J., Loader, E., McKinley, J. I., Sheridan A. and Stevens, C. J. (2007) A matter of life and death: Late Neolithic, Beaker and Early Bronze Age settlement and cemeteries at Thomas Hardye School, Dorchester. *Proceedings of Dorset Natural History and Archaeological Society* 128, 17–52.

Green, M. (2000) *A Landscape Revealed; 10,000 Years on a Chalkland Farm*. Stroud, Tempus.

Green, M. (2007a) Monkton-up-Wimborne late Neolithic pit circle/ shaft complex (MUW97). In C. French, H. Lewis, M. J. Allen, M. Green, R. Scaife and J. Gardiner, *Prehistoric Landscape Development and Human Impact in the upper Allen Valley, Cranborne Chase, Dorset*, 114–122. Cambridge, University of Cambridge McDonald Institute.

Green, M. (2007b) Monkton-up-Wimborne pond barrow (MUW02). In C. French, H. Lewis, M. J. Allen, M. Green, R. Scaife and J. Gardiner, *Prehistoric Landscape Development and Human Impact in the upper Allen Valley, Cranborne Chase, Dorset*, 122–130. Cambridge, University of Cambridge McDonald Institute.

Grigson, C. (1981) Fauna. In I. Simmons and M. Tooley (eds.) *The Environment in British Prehistory*, 110–124. London, Duckworth.

Grigson, C. (1999) The mammalian remains. In A. Whittle, J. Pollard and C. Grigson, *The Harmony of Symbols. The Windmill Hill Causewayed Enclosure, Wiltshire*, 164–252. Oxford, Oxbow Books.

Hambleton, E. (2008) *Review of Middle Bronze Age – Late Iron Age Faunal Assemblages from Southern Britain*. Portsmouth, English Heritage.

Harcourt, R. A. (1971) Animal bones from Durrington Walls, In G. J. Wainwright, *Durrington Walls Excavations 1966–1968*, 338–350. London, Report of the Research Committee of the Society of Antiquaries of London 29.

Harcourt, R. A. (1979) The animal bones. In G. J. Wainwright, *Mount Pleasant, Dorset: Excavations 1970–1971*, 214–223. London, Report of the Research Committee of the Society of Antiquaries 37.

Harris, O. (2009) Making places matter in early Neolithic Dorset. *Oxford Journal of Archaeology* 28, 111–123.

Jackson, J. W. (1936) Report on the animal remains, 93–95 in C. D. Drew and S. Piggott, Excavation of a Long Barrow 163a on Thickthorn Down, Dorset. *Proceedings of the Prehistoric Society* 3, 77–96.

Legge, A. J. (1981a) Aspects of cattle husbandry. In R. J. Mercer (ed.) *Farming Practice in British Prehistory*, 169–181. Edinburgh, Edinburgh University Press.

Legge, A. J. (1981b) The agricultural economy. In R. J. Mercer, *Grimes Graves, Norfolk: Excavations 1971–1972*, 79–103. London, HMSO.

Legge, A. J. (1989) Milking the evidence: a reply to Entwistle and Grant. In A. Milles, D. Williams and N. Gardner (eds.) *The Beginnings of Agriculture*, 217–242. Oxford, British Archaeological Reports S 496.

Legge, A. J. (1991) The animal remains from six sites at Down Farm, Woodcutts. In J. Barrett, R. Bradley and M. Hall (eds.) *Papers on the Prehistoric Archaeology of Cranborne Chase*, 54–100. Oxford, Oxbow Books.

Legge, A. J. (2008) Livestock and Neolithic society at Hambledon Hill. In R. Mercer and F. Healy, *Hambledon Hill, Dorset, England. Excavations and Survey of a Neolithic Monument Complex and its Surrounding Landscape*, 536–585. Swindon, English Heritage.

Maltby, M. (1989) Animal bones. In S. Howard, A double ring-ditched, Bronze Age barrow at Barford Farm, Pamphill. *Proceedings of the Dorset Natural History and Archaeological Society* 111, 46–49.

Maltby, M. (1990) The animal bones (from the Coneybury Anomaly). In J. Richards, *The Stonehenge Environs Project*, 57–61. London, English Heritage Monograph 16.

Maltby, M. (1991a) The animal bones. In P. J. Woodward, *The South Dorset Ridgeway: Survey and Excavations*, 105–106. Dorchester, Dorset Natural History and Archaeological Society Monograph 8.

Maltby, M. (1991b) The animal bones, 121–122 in P. Bellamy, Excavation of Fordington Farm round barrow. *Proceedings of the Dorset Natural History and Archaeological Society* 113, 107–132.

Maltby, M. (1993) Animal bones. In P. J. Woodward, S. M. Davies and A. H. Graham (eds) *Excavations at the Old Methodist Chapel and Greyhound Yard, Dorchester*, 315–340. Dorchester, Dorset Natural History and Archaeological Society Monograph 12.

Maltby, M. (2002) Animal bones from prehistoric features. In S. M. Davies, P. S. Bellamy, M. J. Horton and P. J. Woodward, *Excavations at Alington Avenue, Fordington, Dorchester, Dorset, 1984–1987*, 53–55. Dorchester, Dorset Natural History and Archaeological Society Monograph 15.

Maltby, M. (2007a) Animal bones from the Fir Tree Shaft field and associated pits. In C. French, H. Lewis, M. J. Allen, M. Green, R. Scaife and J. Gardiner, *Prehistoric Landscape Development and Human Impact in the Upper Allen Valley, Cranborne Chase, Dorset*, 295–305. Cambridge, University of Cambridge McDonald Institute.

Maltby, M. (2007b) Faunal remains (Monkton-up-Wimborne pit/ shaft complex). In C. French, H. Lewis, M. J. Allen, M. Green, R. Scaife and J. Gardiner, *Prehistoric Landscape Development and Human Impact in the Upper Allen Valley, Cranborne Chase, Dorset*, 361–372. Cambridge, University of Cambridge McDonald Institute.

Maltby, M., Ford, V. and Mason, K. (2007) Animal bones (Monkton-up-Wimborne pond barrow). In C. French, H. Lewis, M. J. Allen, M. Green, R. Scaife and J. Gardiner, *Prehistoric Landscape Development and Human Impact in the Upper Allen Valley, Cranborne Chase, Dorset*, 384–386. Cambridge, University of Cambridge McDonald Institute.

Mannino, M. A. and Thomas, K. D. (2001) Intensive Mesolithic exploitation of coastal resources? Evidence from a shell deposit on the Isle of Portland (Southern England) for the impact of human foraging on populations of intertidal rocky shore molluscs. *Journal of Archaeological Science* 28, 1101–1114.

Palmer, S. (1999) *Culverwell Mesolithic Habitation Site, Isle of Portland, Dorset. Excavation Report and Research Studies*. Oxford, British Archaeological Reports 287.

Preece, R. C. (1980) The biostratigraphy and dating of the tufa deposit at the Mesolithic Site at Blashenwell, Dorset, England. *Journal of Archaeological Science* 7, 345–362.

Rankine, W. F. (1962) The Mesolithic age in Dorset and adjacent areas. *Proceedings of the Dorset Natural History and Archaeological Society* 83, 91–99.

Richards, M. P. (2008) Stable isotope values. In R. Mercer and F. Healy *Hambledon Hill, Dorset, England. Excavations and Survey of a Neolithic Monument Complex and its Surrounding Landscape*, 522–527. Swindon, English Heritage.

Rielly, K. (1997) Animal bone (Fordington Bottom). In R. J. C. Smith, F. Healy, M. J. Allen, E. L. Morris, I. Barnes and P. J. Woodward, *Excavations Along the Route of the Dorchester By-pass, Dorset, 1986–1988*, 270–273. Salisbury, Wessex Archaeology Report 11.

Rothwell, A. and Maltby, M. (2007) Summary of the faunal remains analysis (Wyke Down Henge 2 and Grooved Ware settlement). In C. French, H. Lewis, M. J. Allen, M. Green, R. Scaife and J. Gardiner, *Prehistoric Landscape Development and Human Impact in the Upper Allen Valley, Cranborne Chase, Dorset*, 319–320. Cambridge, University of Cambridge McDonald Institute.

Serjeantson, D. (2007) Intensification of animal husbandry in the Late Bronze Age? The contribution of sheep and pigs. In C. Haselgrove and R. Pope (eds.) *The Earlier Iron Age in Britain and the Near Continent*, 80–93. Oxford, Oxbow Books.

Serjeantson, D. (2011) *Review of Animal Remains from the Neolithic and Early Bronze Age of Southern Britain (4000 BC–1500 BC)*. Portsmouth, English Heritage.

Serjeantson D. (2014) Survey of animal remains from southern Britain finds no evidence for continuity from the Mesolithic period. *Environmental Archaeology* 19 (3), 256–262. DOI: http://dx.doi.org/10.1179/1749631414Y.0000000020

Worley, F. and Serjeantson, D. (2014) Red deer antlers in Neolithic Britain and their use in the construction of monuments. In K. Baker, R Carden and R. Madgwick (eds.) *Deer and People: Past, Present and Future*, 119–131. Oxford, Windgather Press..