

# FROM FORAGERS TO FARMERS



edited by  
Andrew Fairbairn and Ehud Weiss



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FROM FORAGERS TO FARMERS  
PAPERS IN HONOUR OF GORDON C. HILLMAN

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*Edited by*  
Andrew S. Fairbairn and Ehud Weiss

OXBOW BOOKS  
*Oxford and Oakville*

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*Published by*  
Oxbow Books, Oxford, UK

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

ISBN 978-1-84217-354-1  
EPUB ISBN: 978-1-78297-331-7  
PRC ISBN: 978-1-78297-332-4

*This book is available direct from:*

Oxbow Books, Oxford, UK  
(Phone: 01865-241249; Fax: 01865-794449)

*and*

The David Brown Book Company  
PO Box 511, Oakville, CT 06779, USA  
(Phone: 860-945-9329; Fax: 860-945-9468)

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*Cover images of traditional agriculture in central and  
northern Turkey, 1985.1995*

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*Front (upper): Common millet (Panicum miliaceum);  
(main image): threshing wheat with oxen-drawn sledge;  
(lower): boiling wheat grains for bulgur.  
Back (upper left): steppe landscape; (upper right): β otation  
machine at Hallan Çemi excavations;  
(lower left): β our mill; (lower right): sickle harvesting of  
wheat.*

*Photos: Mark Nesbitt and Delwen Samuel*

*Printed and bound in Great Britain by  
The Short Run Press  
Exeter*

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Introduction:

In honour of Professor Gordon C. Hillman

*Andrew S. Fairbairn and Ehud Weiss*

It is with great pleasure that we present 28 academic papers honouring the career of archaeobotanist Professor Gordon C. Hillman. We offer the papers in celebration of Gordon's significant and lasting contribution to our understanding of ancient plant use. For many contributing authors and both editors, this work is also about saying thank you to a mentor and tutor, regarded with great affection as both a colleague and friend. Two stimuli led to the publication, the first being Gordon's early retirement in 1997 and the second being the award in 2004 of the Distinguished Economic Botanist award by the Society for Economic Botany. That award recognized Gordon's considerable contribution to our understanding of plant use, especially the key subject of agricultural origins, one that Gordon has done much to illuminate through experimental, ethnobotanical and archaeological research. The award was accompanied by a session of 14 oral papers presented as a tribute to Gordon's achievements, which form the core of this volume. Following the 2004 meeting, additional papers were contributed by a number of Gordon's colleagues wishing to honour Gordon's influence. The final volume contains papers covering a wide range of themes, periods and geographical regions, providing an accurate reflection of just how broad Gordon's influence on archaeobotany has been. Many of his favourite research topics are represented through the work of close colleagues and a large number of the students Gordon formally and informally mentored.

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We have divided the papers in this volume into four sections, though note that some papers could have sat in more than one. [Chapters 1–3](#) provide personal reflections on Gordon’s career from three of his longest and most valued professional colleagues Andrew Moore, David Harris and George Willcox. They contain some deeply felt and incisive comments on Gordon’s contributions to the study of the origins of agriculture, near eastern archaeobotany and archaeobotany as a whole, and are accompanied by photographs showing some familiar Gordon field poses, including the plate used for the frontispiece by David Harris of Gordon stalking the wild rhubarb of Turkmenistan. Gordon’s long and fruitful partnership with David Harris also led to a key publication in global archaeobotany, namely the 1989 *Foraging and Farming* volume, which showcased studies of past plant use from all parts of the world for the wider archaeological community and is of course echoed in the title of this festschrift.

A second section includes papers that explore some aspects of archaeobotanical theory and method, areas to which Gordon has made significant and lasting contributions. The paper by Mark Blumler and Giles Waines, and that by Martin Jones discuss issues surrounding the seasonality of crop production, including respectively a discussion of the problems and potential for spring sowing in the ancient Near East and the use of seed dormancy as a source of information about ancient plant husbandry. Both are topics close to Gordon’s heart, explored through some of his pioneering ethnoarchaeological work in Turkey and Syria. Joy McCorrison’s at times humorous, challenging and incisive paper provides both a review of archaeobotany’s theoretical history and a timely call for a reconsideration of the subject’s

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future research goals and theoretical orientation, exploring territory beyond the confines of materialist discourse. Dorian Fuller and Chris Stevens' paper provides an equally challenging essay providing an agenda for archaeobotanical research in contributing more fully to understanding social organization in complex societies, illustrated through examples spanning the globe.

Gordon Hillman pioneered the systematic use of ethnobotany to provide models of plant management, use, and discard applicable to the archaeological record, based on the Turkish fieldwork undertaken while a fellow at the British Institute of Archaeology in Ankara. As well as providing testable archaeological models, that research also functioned to record rapidly disappearing plant-use practices for posterity. Gordon recognized that fact and inspired in many students the urge to research and record plant use in their home countries and other regions where globalization threatens traditional practice. Several of those students are represented in the third section of the book, here providing valuable ethnoarchaeological AND cultural studies of a relevance extending way beyond the confines of archaeology. Pleasingly, they include two studies located in Turkey, the paper by Füsün Ertüğ dispelling the myth that wild plants only provide famine foods in agricultural societies and that by Sarah Mason and Mark Nesbitt providing evidence for widespread and recent use of acorns as a staple food in Anatolia. Both papers challenge established assumptions about the role of plants routinely applied to past societies. The other papers in this section draw on ethnographic field studies across the Old World, and include detailed descriptions of crop processing activities in Morocco and Syria (Pena-Chocarro *et al.*), the use of water-chestnut (Borojevic)

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and doum palm (De Moulins and Phillips), with Ann Butler's paper discussing selection in cultivated legumes. All of these papers provide new and detailed accounts of plant use, in several cases providing direct links to the archaeological record. Experimental archaeology, another form of enquiry Gordon encouraged in his students, is also represented here, including a study of tuber harvesting in Gordon's native Sussex (Wollstonecroft) and experimental reconstructions of corn-drying kilns in Ireland (Monk and Kelleher).

The final and largest section of the book contains papers considering ancient plant use from sites and regions around the world. Upper Palaeolithic and Epipalaeolithic studies from southwest Asia (Martinoli, Weiss) and Egypt (Thanheiser) provide an insight into plant-use in pre-farming societies, a favourite topic of Gordon's. Marie Standifer and colleagues provide an account of the identification and ancient uses of *Eryngium yuccifolium* in North America and Jean Kennedy discusses the potential and difficulties of understanding the prehistory of banana cultivation and domestication. Elena Sergusheva and Yury Yostretsov's account of the advance of agriculture in the Russian Far East is a significant summary of recent work in the region, opening to an English audience a number of key Russian archaeobotanical studies. Anaya Sarpaki's study of the Neolithic archaeobotany of Knossos provides some new primary studies into the subject which perhaps Gordon is best known for, the origins of agriculture. Plant species are investigated in the following papers where Mordochai Kislev revisits the classification, identification and origins of *Triticum parvicoccum* and Naomi Miller and Alhena Gadotti provide an archaeobotanical foray into understanding the identity of plants recorded in ancient texts. The final papers

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move us into North Africa, including a study of cotton in Egypt and Nubia (Clapham and Rowley-Conwy), fodder and food in Bronze Age Egypt (Murray) and food in the Roman and Islamic site of Qesir (Van der Veen).

In authorship, geographical scope and thematic content the volume provides some reflection of the breadth of Gordon's professional and intellectual influence and covers many of Gordon's intellectual interests from the origins of agriculture and pre-farming plant food use, to the study of crop husbandry, archaeochemistry, and experimental archaeology. Those interests and Gordon's success as both a teacher and mentor stem from a deep enthusiasm for the study of the plant world in general and human use of plants in particular, extending back into his childhood in Hailsham, East Sussex, where work for the family's horticulture business and local farms provided a formative experience, and one that Gordon continues to fondly recall. Work on nature conservation projects in the UK, notably at the remote Alston Moor in the Cumbrian Pennines, and in the European Herbarium at London's Natural History Museum were followed by a BSc degree in Agricultural Botany at the University of Reading where he developed the strong interest in plant taxonomy and evolution that continues to underpin his research interests. Gordon was fortunate to then study with palaeoethnobotanist Maria Hopf for a period of postgraduate training, experience that led to a major switch in career interests. In 1970 Gordon embarked on a 5-year research fellowship at the then British Institute of Archaeology in Ankara, one that was to have a pronounced effect on the development of archaeobotany in Britain and Southwest Asia. During those years Gordon developed field recovery methods, such as the Ankara flotation machine and, invaluable, proved to excavators the

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value of integrated, large-scale archaeobotany to archaeological projects. He also undertook numerous ethnobotanical and ecological observations that provided the empirical support to his revolutionary work on crop processing sequences that underpins much archaeobotanical taphonomic reasoning to this day. A subsequent lecturing position in the Dept. of Botany, University College Cardiff allowed Gordon to further his interests in botany and archaeobotany, which was fully indulged in his appointment at the Institute of Archaeology in 1981. That position allowed Gordon to develop fully his own school of archaeobotany at undergraduate and postgraduate level, which in turn produced a steady stream of graduates to take up new positions in the burgeoning field of archaeological science. It also provided Gordon with the institutional credibility within archaeology to act as a strong and convincing advocate for the subject. It is clear from the comments of senior colleagues, that the Gordon's influence during that period was a key part of the development of archaeobotany in the UK and its eventual expansion in both the commercial and university sectors. Gordon retired from a full time academic position in 1997, but continues to follow his research interests, pursuing them alongside his cherished family life. Recent research includes continued work at the globally significant site of Abu Hureyra, research on plant use at Çatalhöyük and his collaborations with survival expert Ray Mears which have seen Gordon emerge as a TV star in the series '*Wild food*', with accompanying book.

Contributors to this book include colleagues and friends from most of the key phases of Gordon's professional life after his training with Maria Hopf. The longest relationships represented here include those with Andrew Moore and

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George Willcox, who worked with Gordon in the field in the early 1970's, Mick Monk from the Cardiff years and David Harris, who had the great foresight to appoint Gordon to his influential position at the Institute of Archaeology in 1981. And it is there that most of the other contributors first met Gordon, including both editors, mostly as students, but also as collaborators and confidantes. Every contributor has told us a different story of first meeting Gordon and then of how he influenced their work, yet all share one observation – the inspiring effect of Gordon's unbounded enthusiasm. Anyone who has had the pleasure of working in either the field or laboratory with Gordon would know of the infectious enthusiasm that turned even mundane tasks into enjoyable and memorable events. That enthusiasm was essential in drawing so many students into archaeobotany, a term which Gordon has always preferred to palaeoethnobotany. Anyone exiting the third floor lift in the Institute of Archaeology in the 1980's and 1990's would have been confronted with the sight of Gordon's office, at times shared with up to three other colleagues and crammed full of books, cereal sheaves and reaping hooks, with at least 1–3 students and visiting colleagues, taking full advantage of his good nature, deep knowledge and awful coffee. Just about any archaeological topic involving plants and people was likely to be under discussion and at times one would be greeted by strange sights including in one instance (thanks to Ann Butler for the memory) eminent crop geneticist Daniel Zohary climbing the bookshelves to retrieve a rare volume from an upper shelf. Only with the benefit of hindsight and experience of more usual academic environments can the true uniqueness and great intellectual value of the phenomenon best described simply as 'Gordon's Office' be fully appreciated.

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Gordon's Office was only one part of the archaeobotanical infrastructure created and still maintained at the Institute of Archaeology, which also included a world-class seed collection, including rare specimens from now extinct Turkish cereal landraces, and excellent microscopy facilities provided at a time before the recent resurgence in UK higher education funding. As many of us will know from personal experience, development of the essential infrastructure for teaching and research in archaeological science requires a level of effort, persuasion and fund-raising ability that should not be underestimated. In Ankara, an archaeobotany research laboratory, with parallel collection to that housed in London, was also founded at the British Institute and continues to act as a resource used for Turkish scholars and visitors alike. In terms of personnel, Gordon trained, both formally and informally, many of the archaeobotanists now working in the UK and many more around the world, including university and government staff in Argentina, Australia, Austria, France, Ireland, Israel, Italy, Russia, Spain, Switzerland, Syria, Turkey, and the USA. And many of those archaeobotanists continue to beat a path to Gordon's door in Hailsham whenever they are in the UK.

Gordon also has a legacy of academic publications, here listed on [pages xi–xv](#) and compiled by Mark Nesbitt. A brief perusal will show the breadth and depth of his research interests and the presence of many key papers opening new and novel approaches to past plant use. For Gordon has always pushed back the frontiers of archaeobotany, providing key methodological, theoretical and substantive contributions to the field. Many of his papers also present primary data from, at the time, poorly understood areas of the world's past, opened to Gordon because of the respect archaeological

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colleagues had for his abilities. From the dusty steppes of Central Asia, along the mighty Euphrates River, to the high Anatolian Plateau, into North Africa's sands, into the stomach of Lindow Man, via the marshes of his home county, to the experimental cereal plots of Cardiff and Cambridgeshire, and up the most wind-blasted mountains of Wales, Gordon has worn a path of archaeobotanical discovery that many would envy and few have the energy to try and match. Gordon's research, and the collaborations on which they were built, were important in helping to move archaeobotany from a marginal position in archaeological endeavour to a standard technique in archaeology's repertoire. Gordon was a key figure in this change of minds, combining a mixture of determination, strength, knowledge and the ability not just to argue the point, but back it up with results and interpretations that are relevant to the wider archaeological community. One of Gordon's strongest characteristics is that he is able to produce archaeological results which have a scientific rigour, are well and broadly argued, and also have a human quality in their interpretation. From early cereal domestication at Abu Hureyra, to infant faeces at Wadi Kubbaniya and those coprolitic "pearls beyond price" from latrines and ancient stomachs across Europe, Gordon's writing, like live performances, inspire, entertain, and educate. And so often he has shown no fear of tackling the big issues, perhaps most famously the origins of crops in the Near East, but also in his most recent work, providing scientifically grounded understanding of wild plant use in the most distant and technically difficult periods of the human past.

As well as providing inspiration and mentorship, one thing that Gordon has implanted immovably within both editors, and we believe many of his students, is the belief that what

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we do is not only valuable, but vital for any study of humanity, especially the subjects of botany, ethnobotany and, of course archaeology itself. For, plant-based issues are at the very core of understanding the world in which we live, its environments, its cultures, its economies, its pasts and its many possible futures. Archaeobotany provides the only means of providing the necessary long-term and globally universal historical grounding to such issues as agricultural security and human-induced environmental change. As such we are not lost in some intellectual backwater, adrift from humanity's

mainstream, but ride in academic currents coursing through the core of human experience. For this understanding, and his enthusiasm, compassion, knowledge, inspiration and advocacy, his friendship and encouragement, we salute Prof. Gordon C. Hillman.

By way of acknowledgement

As well as being educational, preparing this volume has been an honour and pleasure for both editors. In producing it we would like to thank and acknowledge the authors for their efforts in writing the papers and also for forbearance in waiting for publication, a process slowed by the career progress of both editors. All papers were subject to anonymous peer-review by at least two reviewers and we thank the panel of reviewers, listed in the appropriate section, for their contribution to the volume. We also thank Mark Nesbitt for the cover photographs and for compiling the Hillman Bibliography and finally, of course, Clare Litt and the team at Oxbow for producing the volume.

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As a final note, it is with great sadness that we acknowledge the passing of reviewer Andrew Sherratt and author Marie Standifer during the publication process. Andrew Sherratt, a leading European Prehistorian, enthusiastically provided, as ever, incisive reviews of several papers and was pleased to be able to contribute to the celebration of a valued colleague. He is greatly missed. Marie Standifer approached the editors at the ICE in 2004 and asked to contribute a paper to this volume as a tribute to a person who in a short period of time had proved a significant influence on her life. We finish this introduction with the full publication of a passage by Marie that she hoped would accompany the paper, published here, one that she spent her final months completing. It reflects the experience of many who Gordon encouraged into archaeobotany and its final sentences express the overwhelming sentiment that we and other authors in this volume share.

*“When I met Gordon, I was very discouraged. My children had grown up, and I had gone back to school for a second career in archaeology. In my studies, I began to hear a little about archaeobotany. My first career had been in plant anatomy, and archaeobotany sounded very appealing, but I couldn’t get any training in at Louisiana State University. Nothing looked encouraging, and I was having serious second thoughts.*”

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*Then, in 1984, I went to England with my husband who was taking a sabbatical at the University of Reading. Since I was interested in doing something either in archaeology or archaeobotany, I soon found myself in Barbara Pickergill's care. And before I knew what was happening, I had working space in her lab and a study program that included time with both Gordon Hillman at the Institute of Archaeology, University College, London, and the anatomy lab in the Jodrell Laboratory at the Royal Botanic Gardens, Kew.*

*Gordon was very busy that fall helping students finish up their archaeobotanical projects in the new Master's program at the Institute of Archaeology. So, at our first meeting, I had to wait while he solved a crisis in the lab and then listened to an account of an exciting something that had just been seen under the SEM.*

*When we did get to talk, I found him a very rapt listener and one of the kindest men I have ever known. After hearing my tale of woe, he told me that he also was a plant anatomist (imagine !), and said, "I don't think you have a problem, at all. Don't spend your time learning to identify seeds; use your anatomy to study the vegetative parts of plants and work out diagnostic characters that can be used to identify them. Vegetative plant parts were probably a major part of the prehistoric diet, but they aren't often preserved. When they are, they aren't recognized, because archaeobotanists can't identify them." And then he said something that has become my creed: "Vegetative plant remains usually get sorted into the pile of unidentifiables. They aren't really unidentifiable, they're just unidentified. You can identify them – if you know plant anatomy!"*

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*That hour with Gordon was a real breakthrough for me, and I am forever grateful to him. I still find him one of the most inspirational human beings I have ever met. Thank you, thank you, thank you, Gordon – just for being you!”*

Marie Standifer

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