

Cambridge University Press

978-0-521-10520-0 - Olduvai Gorge: Excavations in Beds III, IV and the Masek Beds, 1968-1971, Volume 5

M. D. Leakey

Frontmatter

[More information](#)

At Olduvai Gorge in northern Tanzania natural erosion exposed a deep series of superimposed geological beds containing rich artefact and fossil assemblages spanning the last 1.8 million years. The site is famous as a result of excavations conducted there since 1951 under the direction of Mary Leakey and her husband, the late Louis Leakey.

The first definitive report on these excavations was published in 1965, followed by three further volumes over the next twenty-four years. Volume 5, written largely by Mary Leakey herself, is the last of these reports, and records the archaeological finds in the upper part of the Olduvai sequence from excavations carried out from the end of 1968 until 1971. The period covered here is from about 1.2 to 0.4 million years ago, and the finds include artefacts and faunal remains excavated from sites in Beds III, IV and the Masek Beds. The volume follows on from the archaeological record in Beds I and II published in 1971 in Volume 3 of the series.

In addition to the chapters by Mary Leakey, Richard Hay has written a brief summary of the geology as a background to the archaeology, Derek Roe provides a metrical analysis of the handaxes and cleavers, Paul Callow describes the technology and raw materials, and Peter Jones details experimental work on the manufacture and use of tools, in particular those associated with butchering and skinning. Celia Nyamweru's appendix describes the mapping out of the JK Pits archaeological site at Olduvai. An overview by Derek Roe sums up the entire volume and draws the contributions together, interpreting and expanding upon their conclusions.

Cambridge University Press

978-0-521-10520-0 - Olduvai Gorge: Excavations in Beds III, IV and the Masek Beds, 1968-1971, Volume 5

M. D. Leakey

Frontmatter

[More information](#)

OLDUVAI GORGE

VOLUME 5

Cambridge University Press

978-0-521-10520-0 - Olduvai Gorge: Excavations in Beds III, IV and the Masek Beds, 1968-1971, Volume 5

M. D. Leakey

Frontmatter

[More information](#)



Frontispiece: Olduvai Gorge, view across the Main Gorge

Cambridge University Press

978-0-521-10520-0 - Olduvai Gorge: Excavations in Beds III, IV and the Masek Beds, 1968-1971, Volume 5

M. D. Leakey

Frontmatter

[More information](#)

OLDUVAI GORGE

VOLUME 5

EXCAVATIONS IN BEDS III, IV
AND THE MASEK BEDS, 1968–1971

M. D. LEAKEY WITH D. A. ROE

WITH CONTRIBUTIONS BY

P. CALLOW, R. L. HAY, P. R. JONES,
CELIA K. NYAMWERU AND D. A. ROE



CAMBRIDGE
UNIVERSITY PRESS

Cambridge University Press

978-0-521-10520-0 - Olduvai Gorge: Excavations in Beds III, IV and the Masek Beds, 1968-1971, Volume 5

M. D. Leakey

Frontmatter

[More information](#)

CAMBRIDGE UNIVERSITY PRESS

Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore, São Paulo, Delhi

Cambridge University Press

The Edinburgh Building, Cambridge CB2 8RU, UK

Published in the United States of America by Cambridge University Press, New York

www.cambridge.org

Information on this title: www.cambridge.org/9780521105200

© Cambridge University Press 1994

This publication is in copyright. Subject to statutory exception and to the provisions of relevant collective licensing agreements, no reproduction of any part may take place without the written permission of Cambridge University Press.

First published 1994

This digitally printed version (with additions) 2009

A catalogue record for this publication is available from the British Library

Library of Congress Cataloguing in Publication data

(REVISED FOR VOLUME 5)

Olduvai Gorge.

Includes bibliographical references and index.

v. 5. Excavations in Beds III, IV and the Masek Beds,

1968-1971 / M. D. Leakey and D. A. Roe.

1. Fossil man - Tanzania - Olduvai Gorge.

2. Olduvai Gorge (Tanzania) - Antiquities.

3. Tanzania - Antiquities.

GN282.043 1991 569'.9 88-20398

ISBN 978-0-521-33403-7 hardback

ISBN 978-0-521-10520-0 paperback

Additional resources for this publication at www.cambridge.org/9780521105200

Figures 2.3, 4.8, 5.3 and 5.18 are available for download

CONTENTS

<i>List of figures</i>	page viii
<i>List of tables</i>	x
<i>List of plates</i>	xii
<i>Introductory Note</i>	xiii
<i>Acknowledgements</i>	xv
<i>List of abbreviations</i>	xvi
Introduction M. D. LEAKEY	1
1 Geology and dating of Beds III, IV and the Masek Beds R. L. HAY <i>University of Illinois at Urbana-Champaign</i>	8
2 Bed III. Site JK (Juma's Korongo) M. D. LEAKEY	15
3 The base of Bed IV. WK Hippo Cliff, PDK Trench IV, WK Lower Channel M. D. LEAKEY	36
4 Lower Bed IV. HEB East, HEB and HEB West, WK Intermediate Channel M. D. LEAKEY	45
5 Upper Bed IV. WK Upper Channel, WK East A and C, PDK Trenches I-III, HEB West Level I M. D. LEAKEY	75
6 The Masek Beds and sites in uncertain stratigraphic positions M. D. LEAKEY	116
7 The fauna M. D. LEAKEY	130
8 A metrical analysis of selected sets of handaxes and cleavers from Olduvai Gorge D. A. ROE <i>Donald Baden-Powell Quaternary Research Centre, University of Oxford</i>	146
9 The Olduvai bifaces: technology and raw materials P. CALLOW <i>University of Cambridge</i>	235
10 Results of experimental work in relation to the stone industries of Olduvai Gorge P. R. JONES	254
11 Summary and overview D. A. ROE	299
Appendix A. Modified bones from Beds III and IV M. D. LEAKEY	311
Appendix B. Mapping of an archaeological site at Olduvai Gorge CELIA K. NYAMWERU <i>St Lawrence University, New York</i>	315
<i>References</i>	321
<i>Index</i>	323

FIGURES

Figures 2.3, 4.8, 5.3 and 5.18 are available for download from www.cambridge.org/9780521105200

Int. 1 Sketch map showing the sites excavated in Beds III, IV and the Masek Beds	page 2	5.5 WK East A: sections along north and east faces of Trench I and the Trial Trench	88
Int. 2 Diagrammatic section of Beds III, IV, and the Masek, Nduvu and Naisiusiu Beds to show the stratigraphic positions of the excavated sites and hominid remains	3	5.6 WK East A: plan of finds in the upper part of the channel filling (Spits 1 to 3)	88
1.1 Map showing major geologic and topographic features in the area surrounding Olduvai Gorge	9	5.7 WK East A: plan of finds in Spits 4 and 5	89
1.2 Palaeogeography of Bed III with inferred drainage pattern	11	5.8 WK East A: plan of finds in the upper part of Spit 6	90
1.3 Palaeogeography of Bed IV with inferred drainage pattern	11	5.9 WK East A: plan of finds in Spit 6b (the middle part of Spit 6)	91
1.4 Palaeogeography of the Masek Beds with inferred drainage pattern	13	5.10 WK East A: plan of finds in the lower part of Spit 6 (Spit 6c)	92
2.1 Section from west to east along the main drainage channel in Beds III and IV from TK to JK	16	5.11 WK East A: plan of finds in basal part of channel fill (Spits 6d and 7)	93
2.2 JK: the surface with pits and the surrounding area in the JK Gully	26	5.12 WK East A: graph to show proportionate occurrences of artefacts, faunal remains and cobbles in the channel	94
2.3 JK: contoured plan of pits and furrows		5.13 WK East A: sundry small tools	95
3.1 WK Hippo Cliff: plan showing positions of the hippo bones and associated finds	37	5.14 WK East A: punches	97
4.1 HEB East: section along the south face of the trench	46	5.15 WK East A: pitted anvils and hammerstones	98
4.2 HEB East: plan of finds above the channel (Spit 1)	47	5.16 WK East C: section along the east face of the excavation	103
4.3 HEB East: plan of finds in the upper part of the channel (Spit 2)	47	5.17 WK East C: graph to show proportionate occurrences of artefacts, faunal remains and cobbles in the channel	104
4.4 HEB East: plan of finds in the middle part of the channel (Spit 3)	48	5.18 PDK Trenches I-III: plan of finds in the channel	
4.5 HEB East: plan of finds in the lower part of the channel (Spit 4)	49	6.1 FLK Masek Beds: section along the west face of the excavations	117
4.6 HEB East: graph to show proportionate occurrences of artefacts, faunal remains and cobbles at different levels in the channel	50	6.2 FLK Masek Beds: plan of finds in the lower part of the channel	117
4.7 HEB and HEB West: plan of excavations and channels in Level 4	53	6.3 FLK Masek Beds: superimposed outlines of five handaxes showing similarity in size and form	118
4.8 HEB and HEB West: section along the south face of the excavations		6.4 Scrapers from FLK Masek Beds	119
4.9 HEB West: plan of finds associated with the sand lens	65	6.5 HK: section along north face of trench showing stratigraphic position of artefacts	124
5.1 Bed IV: section along the south side of the gorge showing sites PDK Trenches I-III, PDK Trench IV, WK East, the hippo butchery site and WK	76	6.6 TK Fish Gully: section to show the relationships of artefacts <i>in situ</i> to those in disturbed context	127
5.2 WK: stratigraphic section showing positions of the three channels with artefacts	77	8.1 Measurements taken from the bifaces	152
5.3 WK: plan of finds in the channels and on the eroded surface associated with the channel		8.2 (a) Framework for the handaxe-shape diagrams. (b) Array of plan-forms on the handaxe-shape diagrams	155
5.4 WK: pitted anvils and hammerstones	83	8.3 Framework for the cleaver-shape diagrams	156
		8.4 Array of plan-forms on the cleaver-shape diagrams	157
		8.5 Cleaver butt-shape symbols	157
		8.6 Handaxe-shape diagrams: HK	205
		8.7 Handaxe-shape diagram: TK FG	206
		8.8 Handaxe-shape diagram: FLK Masek	207
		8.9 Handaxe-shape diagram: PDK Trenches I-III	208

LIST OF FIGURES

8.10 Handaxe-shape diagram: WK East A	209	of handaxes as they are re-sharpened several times	274
8.11 Handaxe-shape diagram: WK East C	210		
8.12 Handaxe-shape diagram: WK	211	10.12 and 10.13 The maximum and minimum size ranges from sites in Bed I, Lower and Lower Middle Bed II for polyhedrons, subspheroids and spheroids	276
8.13 Handaxe-shape diagram: HEB West Level 2a	212		
8.14 Handaxe-shape diagram: HEB West Level 2b	213		
8.15 Handaxe-shape diagram: HEB West Level 3	214		
8.16 Handaxe-shape diagram: HEB East	215	10.14 The maximum and minimum size ranges for polyhedrons, subspheroids and spheroids from sites in Upper Middle and Upper Bed II	276
8.17 Handaxe-shape diagram: PDK Trench IV	216		
8.18 Handaxe-shape diagram: BK	217		
8.19 Handaxe-shape diagram: TK Upper Level	218	10.15 and 10.16 The maximum and minimum size ranges for polyhedrons and the subspheroid group from sites in Bed III and the base of Bed IV, and from Lower Bed IV	277
8.20 Handaxe-shape diagram: TK Lower Level	219		
8.21 Handaxe-shape diagram: SHK	220		
8.22 Handaxe-shape diagram: EF–HR	221		
8.23 Handaxe-shape diagram: MLK	222	10.17 The maximum and minimum size ranges for polyhedrons and the subspheroid group for Upper Bed IV, Masek and post Masek sites	277
8.24 Cleaver-shape diagram: HK	223		
8.25 Cleaver-shape diagram: FLK Masek	224	10.18 Weight frequency charts for subspheroids from Beds III, IV, Masek and post Masek sites	278
8.26 Cleaver-shape diagram: WK	225		
8.27 Cleaver-shape diagram: HEB West Level 2a	226		
8.28 Cleaver-shape diagram: HEB West Level 2b	227		
8.29 Cleaver-shape diagram: HEB West Level 3	228	10.19 Weight frequency charts for subspheroids from Bed IV sites	279
8.30 Cleaver-shape diagram: HEB East	229		
8.31 Cleaver-shape diagram: PDK Trench IV	230	10.20 Numbers of quartzite pieces with spherical index of 2 and less	280
8.32 Cleaver-shape diagram: BK	231		
8.33 Cleaver-shape diagram: SHK	232	10.21 Weight frequencies for Beds III, IV and the Masek Beds samples of subspheroids and hammerstones compared with hammerstones from PRJ flaking floor	281
8.34 Cleaver-shape diagram: EF–HR	233		
8.35 Cleaver-shape diagram: MLK	234		
9.1 Bifaces: areas of cortex, primary flake scar and secondary flaking	246	10.22 and 10.23 Scatter diagrams showing the width/length and thickness/length ratios for the <i>outils écaillés</i> and punches from JK, PDK Trench IV, HEB East, HEB West Level 1 and HEB Level 3	284
9.2 Bifaces: as Fig. 9.1B, but for the two most common raw materials	247		
10.1 Sources and distribution of raw materials used for stone tools found at sites in Beds I–IV and the Masek Beds	255	10.24 and 10.25 Scatter diagrams to show the width/length and thickness/length ratios of <i>outils écaillés</i> and punches from WK Upper and Intermediate Channels, WK East C and PDK Trenches I–III	285
10.2 Lava bifaces: charts showing tool frequency within weight classes and the range of edge length preserved on them	264		
10.3 Lava bifaces: charts showing tool frequency in various weight categories and the range of edge length preserved on them	264	10.26 Width/length and thickness/length ratios for <i>outils écaillés</i> and punches from WK East A.	286
10.4 Phonolite bifaces: charts showing tool frequency in various weight categories and the range of edge length preserved on them	265	10.27 Comparable ratios for <i>outils écaillés</i> and punches from experimental flaking	286
10.5 Quartzite bifaces: charts showing the tool frequency in various weight categories and the range of edge lengths preserved on them	266	10.28 How the concavo-convex edge is formed through battering the end of a flake	287
10.6 The different average weight/edge-length relationships of basalt bifaces from Bed IV made on cores and on large flakes	268	10.29 and 10.30 The three main ways in which flakes split while being battered	288
10.7 Cross sections of quartzite slab bifaces as compared to a quartzite biface made on a large flake	269	10.31 The two main ways in which an oval cobble can be held for bipolar flake battering	289
10.8 The fourfold increase of shape and area as perimeter length is doubled and also the greater area of a circle than that of a slim triangle of the same perimeter length	270	10.32 The angled pits produced on cobbles used for bipolar battering	290
10.9 Edge length available for use on a triangular and a disc-shaped tool	270	10.33 The time required to penetrate elephant skin 1.5 cm thick with un-retouched flakes of quartzite, phonolite, basalt and chert	292
10.10 Percentages of blank types on which bifaces are made in Bed IV	272	10.34 Rates of skin cutting by different flake types	293
10.11 The changing ratio of weight to edge length		A.1 Detail of map of the main Pits surface	314
		A.2 Arrangement of surveyed strips on main Pits surface	316
		A.3 Control points used for measuring a single strip	316
		A.4 Modification to levelling staff in order to make measurements in narrow grooves	319

TABLES

2.1 Soil samples from Olduvai: the JK Pits and vicinity	33	cleavers: t-values and estimates of significance: ratio B_1/B_2	171
7.1 List of fauna from sites excavated in Beds III, IV and the Masek Beds	131–2	8.15 Metrical analysis of bifaces: handaxes and cleavers: t-values and estimates of significance: ratio L_1/L	172
7.2 List of all known fauna from Beds III, IV and the Masek Beds	133	8.16 Metrical analysis of bifaces: summary of all the statistical comparisons of the handaxe and cleaver samples	173
7.3 Minimum numbers of individual mammals from sites excavated in Beds III, IV and the Masek Beds	134	8.17 Metrical analysis of bifaces: handaxes: length	174–5
7.4 Minimum numbers and percentages of mammals from sites excavated in Beds III, IV and the Masek Beds	134	8.18 Metrical analysis of bifaces: handaxes: weight	174–5
7.5 Fauna from JK	135–6	8.19 Metrical analysis of bifaces: handaxes: ratio Th/B	176–7
7.6 Fauna from WK Lower Channel	137	8.20 Metrical analysis of bifaces: handaxes: ratio T_1/L	
7.7 Fauna from HEB East	138	8.21 Metrical analysis of bifaces: handaxes: ratio B/L	176–7
7.8 Fauna from HEB and HEB West	139	8.22 Metrical analysis of bifaces: handaxes: ratio B_1/B_2	178–9
7.9 Fauna from WK Intermediate Channel	140	8.23 Metrical analysis of bifaces: handaxes: ratio L_1/L	180–1
7.10 Fauna from WK Upper Channel	141	8.24 Metrical analysis of bifaces: handaxes: t-values and estimates of significance: length	180
7.11 Fauna from WK East A	142	8.25 Metrical analysis of bifaces: handaxes: t-values and estimates of significance: weight	181
7.12 Fauna from WK East C	143	8.26 Metrical analysis of bifaces: handaxes: t-values and estimates of significance: ratio Th/B	182
7.13 Fauna from PDK Trenches I–III	143	8.27 Metrical analysis of bifaces: handaxes: t-values and estimates of significance: ratio T_1/L	183
7.14 Fauna from FLK Masek	144	8.28 Metrical analysis of bifaces: handaxes: t-values and estimates of significance: ratio B/L	184
8.1 The biface samples studied	150	8.29 Metrical analysis of bifaces: handaxes: t-values and estimates of significance: ratio B_1/B_2	185
8.2 Metrical analysis of bifaces: handaxes and cleavers: length	158–9	8.30 Metrical analysis of bifaces: handaxes: t-values and estimates of significance: ratio L_1/L	186
8.3 Metrical analysis of bifaces: handaxes and cleavers: weight	160–1	8.31 Metrical analysis of bifaces: summary of all the statistical comparisons of the handaxe samples	187
8.4 Metrical analysis of bifaces: handaxes and cleavers: ratio Th/B	160–1	8.32 Metrical analysis of bifaces: cleavers: length	188–9
8.5 Metrical analysis of bifaces: handaxes and cleavers: ratio T_1/L	162–3	8.33 Metrical analysis of bifaces: cleavers: weight	188–9
8.6 Metrical analysis of bifaces: handaxes and cleavers: ratio B/L	162	8.34 Metrical analysis of bifaces: cleavers: ratio Th/B	190–1
8.7 Metrical analysis of bifaces: handaxes and cleavers: ratio B_1/B_2	164–5	8.35 Metrical analysis of bifaces: cleavers: ratio T_1/L	190–1
8.8 Metrical analysis of bifaces: handaxes and cleavers: ratio L_1/L	164–5	8.36 Metrical analysis of bifaces: cleavers: ratio B/L	192
8.9 Metrical analysis of bifaces: handaxes and cleavers: t-values and estimates of significance: length	166	8.37 Metrical analysis of bifaces: cleavers: ratio B_1/B_2	192–3
8.10 Metrical analysis of bifaces: handaxes and cleavers: t-values and estimates of significance: weight	167	8.38 Metrical analysis of bifaces: cleavers: ratio L_1/L	194–5
8.11 Metrical analysis of bifaces: handaxes and cleavers: t-values and estimates of significance: ratio Th/B	168	8.39 Metrical analysis of bifaces: cleavers: cleaver edge angle	194
8.12 Metrical analysis of bifaces: handaxes and cleavers: t-values and estimates of significance: ratio T_1/L	169	8.40 Metrical analysis of bifaces: cleavers: ratio CEL/B	195
8.13 Metrical analysis of bifaces: handaxes and cleavers: t-values and estimates of significance: ratio B/L	170		
8.14 Metrical analysis of bifaces: handaxes and			

LIST OF TABLES

8.41	Metrical analysis of bifaces: cleavers: t-values and estimates of significance: length	196	9.8	Cleavers: mean and standard deviations for quantitative attributes, by site	243
8.42	Metrical analysis of bifaces: cleavers: t-values and estimates of significance: weight	196	9.9	Handaxes from Bed IV only: means and standard deviations for quantitative attributes, by raw material and industry type	244
8.43	Metrical analysis of bifaces: cleavers: t-values and estimates of significance: ratio Th/B	197	9.10	Cleavers from Bed IV only: means and standard deviations for quantitative attributes by raw material and industry type	245
8.44	Metrical analysis of bifaces: cleavers: t-values and estimates of significance: ratio T_1/L	197	9.11	Handaxes: medians and interquartile ranges for types of surface and for secondary scar ratios, by site	248
8.45	Metrical analysis of bifaces: cleavers: t-values and estimates of significance: ratio B/L	198	9.12	Cleavers: medians and interquartile ranges for types of surface and for secondary scar ratios, by site	249
8.46	Metrical analysis of bifaces: cleavers: t-values and estimates of significance: ratio B_1/B_2	198	9.13	Handaxes from Bed IV only: medians and interquartile ranges for types of surface and for secondary scar ratios, by raw material and industry type	250
8.47	Metrical analysis of bifaces: cleavers: t-values and estimates of significance: ratio L_1/L	199	9.14	Cleavers from Bed IV only: medians and interquartile ranges for types of surface and for secondary scar ratios, by raw material and industry type	251
8.48	Metrical analysis of bifaces: cleavers: t-values and estimates of significance: cleaver edge angle	199	9.15	Handaxes and cleavers from Bed IV only: typological frequencies for each raw material	252
8.49	Metrical analysis of bifaces: cleavers: t-values and estimates of significance: ratio CEL/B	200	10.1	The archaeological distribution of polyhedrons, spheroids and subspheroids in the Olduvai sequence	275
8.50	Metrical analysis of bifaces: summary table for all the statistical comparisons of the cleaver samples	201	10.2	Polyhedrons, spheroids and subspheroids in Beds III and IV, the Masek Beds and post Masek occurrences	278
8.51	Metrical analysis of bifaces: summary table for all the statistical comparisons made	201	10.3	The archaeological distribution of <i>outils écaillés</i> , punches and pitted anvils in the Olduvai sequence	283
9.1	Handaxes: frequency of occurrence of the various raw materials, by site	236	10.4	<i>Outils écaillés</i> , punches and pitted anvils in Bed III, Upper and Lower Bed IV	283
9.2	Cleavers: frequency of occurrence of the various raw materials, by site	236	10.5	Results of experimental battering of flakes using bipolar techniques	291
9.3	Handaxes and cleavers: frequency of cortex and primary scars, by biface type and raw material	238	10.6	Experimental butchery of large carcasses with stone tools showing the amount of meat removed and time involved	294
9.4	Handaxes and cleavers: occurrence of different combinations of cortex and primary scars on the two faces	239	A.1	Booking of the control points for strip C of the main Pits surface.	318
9.5	Handaxes and cleavers: occurrence of different combinations of cortex and primary scars on the two faces, by bed and industry type	239	A.2	Booking of the levelling	318
9.6	Handaxes and cleavers: occurrence of different combinations of cortex and primary scars on the two faces, by raw material and industry type	240			
9.7	Handaxes: means and standard deviations for quantitative attributes, by site	242			

PLATES

Frontispiece Olduvai Gorge

Between pages 322 and 323

- | | |
|--|--|
| 1 The north side of the gorge showing Beds I, II and the red Bed III overlain by Bed IV | 15 Cleavers from WK Upper Channel |
| 2 Bed III, JK: photographic mosaic of the pits and furrows | 16 WK Upper Channel: handaxes and bifaces |
| 3 JK, Pit 2 | 17 Three pitted hammerstones or anvils with single pits from WK Upper Channel |
| 4 JK: two pairs of convergent furrows | 18 Pitted hammerstones or anvils from WK Upper Channel |
| 5 Aerial photograph of Magado Crater | 19 A pitted anvil from WK Upper Channel |
| 6 Magado Crater: salt evaporation pits | 20 Quartzite handaxes from FLK Masek Beds |
| 7 Magado Crater: irrigation channels | 21 Two large quartzite handaxes from FLK Masek Beds |
| 8 Bed IV, HEB Level 3: cleaver and handaxes | 22 Elephant acetabulum from JK |
| 9 Bed IV, HEB West, Level 2b: cleavers and handaxes | 23 Elephant acetabulum from HEB Level 3 |
| 10 Looking west down the gorge from WK East | 24 Fragments of elephant limb bone shafts flaked to pointed ends, from HEB and LLK |
| 11 Bed IV, site WK at an early stage in the excavation | 25 Three distal ends of humeri, probably of hippopotamus |
| 12 Bed IV, WK Upper Channel: pitted anvils, handaxes and other artefacts | 26 Three proximal condyles of hippopotamus femora |
| 13 Bed IV, WK Upper Channel: handaxes, cleavers and other artefacts, with faunal remains | |
| 14 Handaxes from WK Upper Channel | |

Introductory Note to the 50th Anniversary of the Discovery of 'Zinjanthropus'

The Olduvai Gorge in the Republic of Tanzania came to the attention of the world shortly after my mother Mary discovered the 'Zinjanthropus boisei' skull on July 17th 1959. The field of African prehistory, and in particular the study of human evolution, has changed and developed dramatically over the past 50 years. I am particularly pleased that Cambridge University Press have decided to republish the 5 monographs that comprehensively cover the many scientific studies that have been undertaken on the Olduvai material collected by my parents, Louis and Mary, working with a number of colleagues. As the Golden Anniversary of the discovery approaches, it is timely to reflect on the importance of that find.

I was lucky to arrive at Olduvai two days after the discovery and I well recall the excitement of the occasion. My parents were operating on a very tight budget and the field season was short. Fortunately, on hand was world-renowned photographer Des Bartlett who, aided by his wife Jen, fully recorded on film the first few days of excavations and reassembly of bone fragments back in camp. As pieces were glued back together, and the shape of the skull and its morphology became clear, my parents showed uncharacteristic and unrestrained emotion! At the time, ages for fossils were wild guesses and radiometric dating had not been done anywhere in Africa. The best, guessed age for Zinj was a little more than 500,000 years. Some months later, a real Potassium/Argon date was obtained by Jack Evenden and Garniss Curtis, and the 1,750,000 age was announced. This ignited huge excitement worldwide and for the first time my father was able to raise financial support for extended field work at Olduvai. Everything changed. The unqualified enthusiasm and support of the National Geographic Society from 1960 onwards had a major impact on the later work at Olduvai, and indeed on the growing international interest of Africa as the cradle of humanity.

Since those first exciting years at Olduvai, the investigation of human origins has gone forward and extended to many other sites in Africa. The age of hominins has been taken back to beyond five million years and the collected fossils and lithic records are now numerous. International multi-disciplinary teams are working in many parts of the world and, with the exception of a few fundamentalist 'flat earth' types, the acceptance of the fossil record of our past is widely accepted. Much of this has come about because of the initial Olduvai finds.

The pioneering work at Olduvai was the launch of this fantastic 50-year period when we as a species have come to realize and appreciate our common evolutionary past. Olduvai, conserved and protected by the Republic of Tanzania, remains as a landmark in the epic story of humanity, and these monographs are a wonderful testimony to that landmark.

Richard Leakey, FRS

ACKNOWLEDGEMENTS

Once more I wish to express my gratitude to the United Republic of Tanzania for permission to continue working at Olduvai Gorge, as well as to Mr A. A. Mturi, Director of Antiquities, and Mr A. J. N. Mgina, former Conservator of the Ngorongoro Conservation Authority, for their help and cooperation.

The National Geographic Society, Washington, DC has been largely responsible for funding the work at Olduvai over many years. I am deeply indebted to the Committee for Research and Exploration for their generosity and to the late Dr Melvin M. Payne, then Chairman, for his interest and encouragement. The L. S. B. Leakey Foundation has also made generous grants, particularly for the purchase of vehicles. Other persons, who wish to remain anonymous, have made most welcome annual gifts. To all those whose financial aid has enabled me to work at Olduvai I tender my most grateful thanks.

Mr Peter Jones worked for several years at Olduvai as my assistant, I am greatly indebted to him for his skilful photography and help in camp logistics. His chapter in this volume describing his experimental work in the manufacture and uses of stone tools is a most valuable contribution which throws new light on some of the features that have long puzzled those of us studying stone industries.

I am once more deeply indebted to Dr Richard Hay for his help and cooperation in solving the stratigraphic problems of the sites excavated in Beds III, IV and the Masek Beds. Drs Andrew Brock, the late Alan Cox and Frank Brown have all contributed greatly to elucidating the geomagnetic sequence at Olduvai; their work has been invaluable. My particular thanks are due to Dr Raymonde Bonnefille for her study of the Olduvai fossil pollen spectra. When she began her work at the gorge it was widely considered to be a waste of time and money since the consensus of opinion

held that pollen grains were almost certainly unobtainable from the highly alkaline Olduvai sediments. Dr Bonnefille's identification of many hundreds of specimens and comparison with the extant flora has been an invaluable contribution to our knowledge of the past environment. Dr Derek Roe and Dr Paul Callow merit my special thanks for voluntarily undertaking to analyse the bifacial tools; this has been of very great help in studying the industries. Mr Gordon Hanes has made valuable contributions to Olduvai by financing the building of two site museums and two windmills to generate electricity. The late Mr George Dove, former owner of the Ndotu Safari Lodge, most kindly devoted a great deal of time to building the camp and also supplied furniture from his own house before leaving Tanzania for Australia. Mr R. I. M. Campbell and Mr John Reader, both professional photographers, have made available their skill to photograph sites and specimens; they have my particular thanks.

Many others have helped the work at Olduvai, directly and indirectly. My thanks are especially due to Mrs John Brindeis, Mrs Janet Leakey, Dr R. J. Clarke, Mrs M-A. Harms, Dr John Harris, Miss Mary Jackes and Dr Celia Nyamweru, for their active assistance at Olduvai.

By 1968 the late Mr Heslon Mukiri, who had been my excavation foreman since 1937 during my first dig in Kenya at the Neolithic site of Hyrax Hill, sadly found himself unable to continue active field work. He was sorely missed but I am greatly indebted to my Wakamba staff for their skill and patience in excavation.

Since I left Olduvai and returned to live in Kenya the Governors of the National Museums of Kenya and my son Richard have made available to me study space to prepare this volume for publication. I am most grateful for their courtesy.

M. D. LEAKEY

ABBREVIATIONS FOR ARTEFACTS SHOWN IN SITE PLANS

AWL	Awl
CH	Chopper
D	Debitage
DC	Discoid
HM	Hammerstone
HX	Handaxe
LTF	Laterally trimmed flake
OE	<i>Outil écaillé</i>
PAV	Pitted anvil/hammerstone
PU	Punch
SC	Scraper
SPH or SP	Spheroid
SSP	Subspheroid
ST	Sundry tool
UT	Utilised
UTH	Utilised heavy-duty
UTL	Utilised light-duty