PART - 1 (EARLY HARAPPAN AND HARAPPAN)

PART - H (KUSHAN AND GUPTA PERIODS)



MADHU BALA VISHNU KANT

WITH CONTRIBUTIONS FROM K.S. RANA A.K. SHARMA MEMOIRS OF THE ARCHAEOLOGICAL SURVEY OF INDIA NO. 115

# EXCAVATIONS AT DHALEWAN (1999-2000 & 2001-2002)

PART - I (EARLY HARAPPAN AND HARAPPAN) PART - II (KUSHAN AND GUPTA PERIODS)

# MADHU BALA

# VISHNU KANT

with contributions from K.S. RANA A.K. SHARMA



THE DIRECTOR GENERAL ARCHAEOLOGICAL SURVEY OF INDIA 24, TILAK MARG, NEW DELHI 2018

Cover Photos	:	Triangular Terracotta	Bone Dice,	
Front	:	Cake bearing an incised boat,	Mature Harappan	
		Mature Harappan		
		Pot Sherds, Grey Ware Early Harappan	e (Fabric F),	
Back	:	Terracotta Moulded Rattle, Gupta Period		

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#### FOREWORD

I am glad to present before the scholars the report of the Excavations at Dhalewan, District Mansa (Punjab) carried out in two field seasons i.e. 1999-2000 and 2001-2002 under the direction of Ms. Madhu Bala, Superintending Archaeologist, Excavation Branch-II, New Delhi. The excavation revealed the then early Harappan settlement (Period IA) which gradually evolved into a Harappan settlement with planned houses along the lane and fortification, emerged as a fortified complex in transition Period IB and finally achieved peak stage in Mature Harappan Period (IC) by 'de novo' the inner planning with big houses, streets and grand fortification. Further, after a considerable gap of time Kushan occupied the site and it continued up to Gupta Period.

I hope that the publication of the said report would be certainly beneficial to the scholars, researchers and students particularly on Harappan studies.

In our endeavour to bring out this detailed and well illustrated excavation report in a presentable form, I record my deep appreciation of my colleagues Dr. Urmila Sant, Joint Director General, ASI Dr. K. Lourdusamy, Director (Pub.) for their co-operation. My special thanks are due towards Dr. Manuel Joseph and Shri Abinash Mohanty, Dy. S.A. (Pub.); Shri Vishnu Kant, Dy. S.A. (Retired), Delhi Circle and Shri Hoshiar Singh, Production Officer, ASI (Retired) for their persistent and unstinted efforts. I would like to thank M/s Viba Press Pvt, Ltd. for publishing this report.

New Delhi 21-02-2018

(Usha Sh Director General

Archaeological Survey of India



#### PREFACE

The archaeological importance of the ancient mound at Dhalewan came into existence in 1980 during my first exploration visit to this area under the leadership of Shri Jagat Pati Joshi, former Director General of Archaeological Survey of India. At that time, the mound was not found much disturbed and was covering an area of 1500 x 1500 m approximately.

In all, 25 sites having Harappan remains were explored in Mansa taluk along the Ghaggar and its tributaries, covering an area of about 1250 Sq. Km. The whole area shows a very important zone of Harappan Culture. The mounds at Dhalewan, Gurnikalan, Baglan De Theh, Lakhmirwala and Hasanpur are the bigger sites, in this area and situated closely at a distance of 3 to 5 km. Dhalewan is located on the western side of the present Sirhind Canal, which possibly made on the old depression of Sirhind, a tributary of Ghaggar.

The Ghaggar and its tributaries consisted of the important 'Economic Pocket', which mobilized the internal trade and communication with their resources of northern region of the lower Himalayas and further transported to Bahawalpur area via Kalibangan (Rajasthan) and to other Harappan sites in Haryana, Punjab and Rajasthan. Along the same Ghaggar, M.R.Mughal reported 250 Early and Mature Harappan sites in an area of 1000 Sq. Km. in Bahawalpur Region.

On considering the view of the archaeological importance of Dhalewan, the field work at the site has been carried out in two field seasons in 1999-2000 and 2001-2002 by the team of Excavation Branch-II under my direction. The site revealed the remains of Harappan settlement on virgin soil as first occupants and after a considerable gap of time, the site was re-occupied by Kushans and continued up to the Gupta Period. The re-occupation by Kushans on Harappan mounds is noticeable as a common feature in Punjab, Haryana and Rajasthan. This feature most likely existed on those mounds, which particularly fall on ancient trade routes.

The excavation at Dhalewan produced ample evidence of structures, antiquities, pottery, etc. of Harappan assemblage. The lower deposits were divided into three subperiods i.e. Early Harappan Period (Period IA), Transition Period (Period IB) and Mature Harappan Period (Period IC). All excavated material of Harappan assemblage has tried to be fully analysed and side-by-side a comparative data presented thereon with a full concentrative approach of study. A good attempt has also been made to throw some light on the development from Early Harappan to Mature Harappan from one stage to another stage locally while reporting the material of Harappan assemblages carefully. Similarly, the early historical material belongs to Kushan (Period II) and Gupta (Period III) revealed from upper deposits (re-occupational deposits) has also studied and reported without ignoring their importance. The report is divided into two parts, Part I deals with the Early Harappan and Harappan material in first 14 Chapters alongwith the reports on scientific studies of Harappan pottery and copper samples in Chapter 15 and animal bones in Chapter 16. The first four chapters of the report are commonly dealing with the material of Harappan assemblages, Kushan and Gupta Periods. The Part II of the report deals the material of Kushan and Gupta Periods, which covers next 8 chapters from Chapters 17 to 24.

I hope the readers will fully enjoy and gain a broad idea about the archaeology of the site with this illustrative report, which is supported with more than 200 excellent photographs and 180 line drawings.

1 would like to express my special gratitude to Shri Jagat Pati Joshi, former Director General of Archaeological Survey of India for inspiring me to select this site for excavation.

I must express my gratitude to the Director Generals of Archaeological Survey of India, Shri Ajay Shankar Srivastava, IAS, for giving me an opportunity to execute excavation at the site and to Smt. Anshu Vaish, IAS, Shri K.N. Srivastava, IAS and Shri Gautam Sengupta, for providing me all facilities particularly after my retirement from the Survey w.e.f. 31.03.2009 to till date to complete the report for publication.

Date : 30.09.2010 Place : New Delhi

(MADHU BALA)

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I feel great pleasure to acknowledge Shri Jagat Pati Joshi, former Director General, Archaeological Survey of India, Dr. S.P. Gupta, former Director, Allahabad Museum, Allahabad, Shri K.N. Dikshit, former Joint Director General and Dr. R. S. Bisht, Joint Director General, Archaeological Survey of India, for generous valuable suggestions during their expertise visits at Dhalewan in both the field seasons. I am deeply beholden to them and mention special thanks of gratinude. I also acknowledge my senior colleague Shri C. Dorjee, Director, Archaeological Survey of India, and the then S.A. of the Chandigarh Circle for their several visits during the excavations and providing us some field staff in both seasons.

On the field, while excavating the site I got full and devoted assistance from my colleagues' Sarvashri Vishnu Kant (Camp Incharge), Ajay Kumar Srivastava, Dr. Praveen Kumar Mishra, Assistant Archaeologists; Vinod Kumar Srivastava, Sr. Photographer; V.P. Verma, Draftsman Gr-1; Subhash Chand Chandel, Photographer Gr-1; Ram Kumar, Surveyor Gr-I; Chhote Lal Yaday, Store Keeper of the Excavation Branch-II, New Delhi; Jitendra Sharma, Assistant Archaeologist, Chandigarh Circle, in both seasons and Anil Kumar Dagar, Assistant Archaeologist of this office in second season. Shri Rajesh Bakshi, Photographer Gr-I, Chandigarh circle helped us in first season. Shri B.D.Awasthi, Nityanand, Rajendra Yaday, Prabin Kesri, Shankar Sharma, Ashish Srivastava and Dr. Shivakant Bajpai, P.G.D.A. holders supervised trenches there at Dhalewan and helped us in registering the antiquities. Sarvashri Shobhan Chaterjee. Teja Singh and Sanjay Sharma, photographers of the Directorate in the first season, did some valuable photographic work. Shri Vijay Kumar, Chief Artist and Shri Kishan Singh, Drawing Officer of the Head Quarter office checked field drawings there at Dhalewan. I most thankfully acknowledge all of the field staff for their tremendous help in all respect during the excavations.

Short-term training programmes in excavation techniques had also been imparted in both seasons at the site to the students of M.A. (Final) Ancient Indian History Culture and Archeology of Kurukshetra University, Kurukeshetra and Rohtak University, Rohtak, Haryana. Prof. Arun Kesarvani and Prof. Amar Singh, of Kurukshetra University, and Rohtak University respectively also visited the site time to time during the training programmes.

Local authority of Mansa District and also of village level fully cooperated with us and provided two security guards permanently at the site for both seasons. I acknowledge all who cooperated with us in organizing and running the camp peacefully at Dhalewan.

In report writing work Shri Jagat Pati Joshi, former Director General, Archaeological Survey of India, guided me from time to time till his death. I will always be thankful to him. Major report writing works have been completed by me and Shri Vishnu Kant with assistance of Dr. Hari Om Sharan and B.S. Fonia, Assistant Archaeologists of the Excavation Branch. Both of them have provided all the measurements, weights as required for structures and antiquities as well as contributed works on Chert Blades and Faience Bangles respectively. Shri B.D. Awasthi assisted in preparation of chapters on terracotta figurines and beads. On my request, Shri K.S. Rana, Director, Science, Dehradun, sent his reports on scientific studies of Harappan pottery and copper samples; and Shri A.K. Sharma, Archaeological Advisor, Chattisgarh State and former Superintending Archaeologist, Archaeological Survey of India has prepared a report on Animal bones.

An excellent drawing work has been produced by Shri V. P. Verma, Draftsman Gr-I; Smt. Priti Shandilya, Draftsman Gr-II; Puran Chand Mukhiya, Marksman, under the whole supervision of Shri Vijay Kumar, Chief Artist of Head Quarter office. Shri Suresh and Smt. Pooja also assisted in preparation of several drawings. Shri Shyam Mohan Proprietor of Adwin Inc. prepared the digital drawings.

A fine quality work of photography of antiquities and pottery has been done by Shri Ravindra Kumar, Photographer Gr-I of Head Quarter office and of bones by Shri Subhash Chand, Photographer Gr-I of the Excavation Branch.

Smt. Anjali Negi neatly typed out the entire manuscript, charts and tables with utter care, precision and made it press ready on computer. Shri Narendra Kumar helped me in providing the excavated material for study and writing work.

I express my vigorous thanks to Dr. R.S. Bisht, Dr. R.S. Fonia and Dr. Shubhra Pramanik, Directors (EE) to facilitate the Excavation Branch-II during my three times tenure in Branch for excavating the site and report writing work thereon as well as for facilitating me particularly after the retirement for completing the remaining work.

I am extremely thankful to all of them who helped me in speedily completing the work of report writing within a short span of my third time posting in the Branch before my retirement for which I am also thankful to Smt. Anshu Vaish, IAS and Shri K.N. Srivastava, IAS, Shri Gautam Sen Gupta, Directors General, Archaeological Survey of India for retaining me in the Branch till my retirement and permitting me to work after the retirement.

# CONTENTS

ä.,	Foreword	111
b.	Preface	v - vi
¢,	Acknowledgement	vii + viii
đ.	Illustrations, Part I (Early Harappan and Harappan) (i) List of Figures (ii) List of Plates	xii - xv xv - xx
¢.	Illustrations, Part II (Kushan and Gupta Periods) (i) List of Figures (ii) List of Plates	xxi - xxii xxii - xxv

#### PART I

# (Early Harappan and Harappan)

1	Dhalewan : An Introduction	Madhu Bala	1 - 14
2.	Summary of Results	Madhu Bala	15 - 17
3,	Chronology	Vishnu Kant	19 - 22
4.	The Cuttings A. Stratigraphy B. Structures (i) Structures of Period 1A (ii) Structures of Period IB (iii) Structures of Period IC (iv) Fortification	Vishnu Kant	23 - 141
5.	The Pottery	Madhu Bala	143 - 261
6.	Seal and Sealings A. Seal B. Sealings	Madhu Bala	263 - 268
7	Terracotta Animal Figurines	Madhu Bala	269 - 282
8.	Transport A. Land Transport B. Water Transport	Vishnu Kant	283 - 302

9,	Terracotta Minitikas and Cakes	Vishnu Kant	303 - 325
10.	Bangles and Rings	Madhu Bala	327 - 354
W.= 5	A. Terracotta	2000:167.50570cc	
	B. Faience		
	C. Shell		
	D. Copper		
ΞĪ.	Beads, Spacers and Pendants	Madhu Bala	355 - 404
	A. Semi-precious Stone Beads	0.000/02/02/02/02/02/02/02/02/02/02/02/02/	
	B. Steatite Beads		
	C. Terracotta Beads		
	D. Gold Bead		
	E. Spacers : Terracotta and Shell		
	F. Pendants : Ivory, Shell and Terracotta		
12.	Weights	Vishnu Kant	405 - 415
	A. Stone Weights		
	B: Terracotta Weights		
13.	Tools	Vishnu Kant	417 - 428
	A. Chert Blades		
	B. Copper Axe		
	C. Bone Tools		
14,	Other Important Findings	Vishnu Kant	429 - 463
	A. Terracotta Gamesmen		
	B. Bone Dice		
	C. Stone Querns and Pestles		
	D, Terracotta Sling Balls		
	E. Terracotta Buttons		
	F. Terracotta Ear Studs		
	G. Terracotta Linga-like Objects		
	H. Hopscotches		
	I. Terracotta Scraper like Objects		
	J. Terracotta Sharpener		
	K. Terracotta Wheeled Toys		
	L. Terracotta Rattle		
15.	Report on Scientific Studies of Pottery and	K.S. Rana	465 - 515
	Copper Samples		
	A. Report on Pottery Samples		
	B. Report on Copper Samples		
16.	Animal Bones from Dhalewan	A.K. Sharma	517 - 533

.

#### PART II (Kushan and Gupta Periods)

17,	Structures of Early Historical Period A. Kushan Period B. Gupta Period	Vishnu Kant	535 - 552
18.	The Pottery A. Kushan Period B. Gupta Period	Madhu Bala	553 - 609
19.	Scalings	Vishnu Kant	611 - 613
20,	Coins	Madhu Bala	615 - 620
21.	Human and Animal Figurines A. Human Figurines B. Animal Figurines	Madhu Bala	621 636
22.	Beads and Pendants A. Beads (i) Beads, Kushan Period (ii) Beads, Gupta Period B. Pendants	Madhu Bala	637 - 662
23,	Metal Objects A. Iron Objects B. Iron and Copper Objects	Vishnu Kant	663 - 669
24.	Other Important Antiquities A. Terracotta Wheels B. Terracotta Skin Rubbers C. Terracotta Sling Balls D. Terracotta Footed Pedestals ( <i>Chaukis</i> ) E. Terracotta Footed Pedestals ( <i>Chaukis</i> ) E. Terracotta Votive Tanks F. Terracotta Rattles G. Terracotta Rattles G. Terracotta Potter's Stamps and Mould H. Terracotta Potter's Dabbers I. Terracotta Ear Studs J. Terracotta Elongated Dice K. Incised Terracotta Tablets L. Hopscotches M. Stone Querns and Pestles N. Shell Bangles O. Decorated Stone Piece	Visinu Kant	671 - 714

# ILLUSTRATIONS

#### PART I (Early Harappan and Harappan)

#### (i) List of Figures

#### Chapter - 1 Dhalewan : An Introduction

Fig. 1.1	Map : Extent of the Harappan Civilization showing	
- C	location of Dhalewan.	2
Fig. 1.2	Contour Plan of the site.	- 5
Fig. 1.3	Map : Proto historic sites in the Saraswati basin.	
Made and the second	(other sites near Dhalewan showing in the enlarged area).	- 8
Fig. 1.4	Map : Drainage pattern of the vedic Saraswati in the Himalayas.	- 9
Fig. 1.5	Map : Ancient sites in north-west India. (alongwith the explored	
	sites of Mansa region shown in the enlarged area).	13

#### Chapter - 4 The Cuttings

Fig. 4.1	Plan : Excavated area.	24
Fig. 4.2	Section : Facing west, Trench B-5, Qds. 1 & 4.	26
Fig. 4.3	Section : Facing north, Trenches YA10, Qd. 2 and	
	ZA10, Qds. 1 and 2.	27
Fig. 4.4	Section : Facing cast, Trenches YC12, Qds. 1 & 4; YC13,	
	Qds. 1 & 4; YC14, Qds. 1 & 4 and YC15, Qds. 1 & 4.	31
Fig. 4.5	Section : Facing north, Trench ZH5, Qds. 3 & 4.	35
Fig. 4.6	Section : Facing west, Trenches YF11, Qds. 1 & 4; YF12,	
	Qds. 1 & 4; YF13, Qds. 1 & 4 and YF14, Qds. 1 & 4.	37
Fig. 4.7	Table : Concordance of layers.	38
Fig. 4.8	Plan : Showing structures of different periods.	40
Fig. 4.9	Plan : Partially exposed house, Period IA.	45
Fig. 4.10	Plan : Partially exposed house, Period IA.	49
Fig. 4.11	Plan : Kiln, Period IA; fortification, Period IB and a wall, Period IC	. 50
Fig. 4.12	Plan : Lane alongwith part plans of the adjoining houses, Period IB.	58
Fig. 4.13	Plan : Partially exposed wall and Tandoor, Period 1B.	62
Fig. 4.14	Plan : Partially exposed house, Period IB.	68
Fig. 4.15	Plan : Partially exposed houses, Period IB.	71
Fig. 4.16	Plan : Post holes of circular bird's cage, Period IB.	72
Fig. 4.17	Plan : Post holes of circular-bird's cages, Period 1B.	76
Fig. 4.18	Conjectural view of a bird's cage.	78
Fig. 4.19	Plan : Impression of wooden (?) rafters and post holes in the	20
200 1 20	Plan - Partially arroad wall alanimith stamma in (2) Pariod 10	.02
Fig. 4.20	Plan of a horse. Phase 1 Paried IC	02
rag and t	rian of a nouse, rhase 1, renod h.	33

Fig. 4.22	Isometric view of a house	94
Fig. 4:23	Plan : Street, Period IC.	100
Fig. 4:24	Plan : Steatite bead making area, Phase II, Period IC.	103
Fig. 4.25	Plan : Partially exposed walls, Phase I, Period IC.	109
Fig. 4.26	Plan : Partially exposed house, Phase I, Period IC.	112
Fig. 4.27	Plan : Partially exposed house, Phase I, Period IC.	115
Fig: 4.28	Plan : Partially exposed room alongwith tandoor, Phase II, Perio	d IC. 120
Fig. 4.29	Plan : Storage jar alongwith walls, Phase II, Period IC.	126

# Chapter - 5 The Pottery

Fig. 5.1	Plain and painted pottery.	147
Fig. 5.2	Plain and painted pottery.	149
Fig. 5.3	Plain and painted pottery.	151
Fig. 5.4	Plain and painted pottery.	153
Fig. 5.5	Plain and painted pottery.	155
Fig. 5.6	Bi-chrome pottery.	157
Fig. 5.7	Decorated pottery.	159
Fig. 5.8	Decorated pottery (Fabric B).	160
Fig. 5.9	Plain and painted pottery.	162
Fig. 5.10	Plain and painted pottery.	163
Fig. 5.11	Plain and painted pottery.	165
Fig. 5.12	Plain and painted pottery.	167
Fig. 5.13	Plain and painted pottery.	168
Fig. 5.14	Incised decorated pottery (Fabric D).	170
Fig. 5.15	Incised decorated pottery (Fabric D).	172
Fig. 5.16	Incised decorated pottery (Fabric D).	174
Fig. 5.17	Incised decorated pottery (Fabric D),	175
Fig. 5.18	Incised decorated pottery (Fabric D).	177
Fig. 5.19	Buff ware sherds.	179
Fig. 5.20	Grey ware sherds.	182
Fig. 5.21	Grey ware sherds.	185
Fig. 5.22	Grey ware lids.	188
Fig. 5.23	Grey ware sherd with pinched designed knobbed	
2011 <b>- 1</b> 00 - 2012 - 2013	surface (Hakra Ware).	190
Fig. 5.24	Plain and painted pottery,	191
Fig. 5.25	Plain and painted pottery.	193
Fig. 5.26	Plain, painted and perforated pottery.	= 194
Fig. 5.27	Plain and painted pottery.	196
Fig. 5.28	Plain and painted pottery.	197
Fig. 5.29	Plain and painted pottery.	199
Fig. 5.30	Plain and painted pottery.	200
Fig. 5.31	Plain, painted and incised decorated pottery.	202
Fig. 5.32	Plain, painted and incised decorated pottery.	204
Fig. 5.33	Painted pot.	205

Fig. 5.34	Plain and painted pottery.	207
Fig. 5.35	Plain and painted pottery.	209
Fig. 5.36	Plain and incised decorated pottery.	212
Fig. 5.37	Plain and painted stands.	213
Fig. 5.38	Plain pottery.	215
Fig. 5.39	Plain and painted bowls.	216
Fig. 5,40	Plain and painted bowls.	218
Fig. 5.41	Plain, painted and incised decorated pottery,	220
Fig. 5.42	Cut ware : 1 - Lid, 2 - Sherd,	222
Fig. 5.43	Plain and painted pottery.	223
Fig. 5.44	Painted pottery.	226
Fig. 5.45	Painted pottery.	229
Fig. 5.46	Painted pottery.	232
Fig. 5.47	Bi-chrome pottery.	234
Fig. 5.48	Bi-chrome pottery.	236
Fig. 5,49	Bi-chrome pottery.	239
Fig. 5.50	Potsherds bearing graffiti marks.	242
Fig. 5.51	Potsherds bearing graffiti marks.	244
Fig. 5.52	Potsherds bearing graffiti marks.	245
Fig. 5.53	Potsherds bearing graffiti marks.	247
Fig. 5.54	Potsherds bearing graffiti marks.	249
Fig. 5.55	Potsherds bearing graffiti marks.	251
Fig. 5.56	Potsherds bearing graffiti marks.	252
Fig. 5.57	Potsherds bearing graffiti marks.	254
Fig. 5.58	Inscribed pottery.	255
Chapter -	8 Transport	

# Fig. 8.1Terracotta cart frames.Fig. 8.2Terracotta cart frames.Fig. 8.3Terracotta cart frames.Fig. 8.4Terracotta wheels.

Fig. 8.5 Triangular terracotta cake bearing an incised sail boat. 301

286

289

290

295

#### Chapter - 10 Bangles and Rings

Fig. 10.1	Plain and decorated terracotta bangles.	330
Fig. 10.2	Segmented terracotta bangles.	338
Fig. 10,3	Faience bangles.	343
Fig. 10.4	Copper bangles and rings.	354

#### Chapter - 11 Beads, Spacers and Pendants

Fig. 11.1	Semi-precious stone beads, Period IA.	358
Fig. 11.2	Semi-precious stone beads, Period IC.	370
Fig. 11.3	Terracotta bicone beads, Periods IA and IB.	387

Fig. 11.4	Terracotta bicone beads, Period IC.	390
Fig. 11.5	Terracotta short cylindrical beads, Period IC.	393
Fig. 11.6	Other terracotta beads, Period IC.	397
Fig. 11.7	Spacers and Pendants.	401

#### **Chapter - 13 Tools**

Fig. 13.1	Chert blades.	420
Fig. 13.2	Copper axe.	423
Fig. 13.3	Bone and Ivory tools.	428

#### **Chapter - 14 Other Important Findings**

Fig. 14.1	Terracotta gamesmen.	431
Fig. 14.2	Terracotta knobbed gamesmen.	436
Fig. 14.3	Bone dice showing the numbering system.	439
Fig. 14.4	Terracotta sling balls.	446
Fig. 14.5	Terracotta wheeled toys.	461
Fig. 14.6	Terracotta rattle.	463

#### Chapter - 15 Report on Scientific Studies of Pottery and Copper Samples

Figs.	15.1 to 15.21	TG-DTA, DTA and DTG Graphs.	487-507
Figs.	15.22 to 15.25	SEM Images and EDX Graphs.	510-514

#### (ii) List of Plates

# Chapter - 1 Dhalewan : An Introduction

PL 1.1	General view of the site.	3
PL 1.2	View of the mound showing excavated trenches.	4

#### Chapter - 4 The Cuttings

Pl. 4.1	General view during excavation, from north.	25
Pl. 4.2	Section facing east, trench YC12, Qds. 1 and 4.	32
PL 4.3	Section facing east, trench YC13, Qds. 1 and 4.	33
PL 4.4	View showing Gupta structure (upper level), below Kushan structure (left), further below Harappan structures and section	-
	facing east, trench ZH5, Qds. 3 and 4.	36
PI, 4.5	General view showing the excavated structures from north-west, Period IA (extreme left), IB (middle) and IC (half right).	41
Pl. 4,6	View showing deposits of Period IA below the mud-brick wall of Period IB.	42
Pl. 4.7	Partially exposed house with cabin type room, Period IA (lower),	46
	Lane and adjoining houses, Period 1B (upper).	-40

Pl. 4.8	Whitish floor, Period IA.	47
Pl. 4.9	Overground tandoor, Period IA.	47
PI. 4.10	Circular kiln, Period IA (lower) and a part of fortification	SH
0.029/07/850	wall over the kiln, Period IB.	51
Pl. 4.11	Partially exposed rooms with the evidence of burnt wood, Period IB.	54
PL 4.12	A close view of burnt wood.	54
Pl. 4.13	The evidence of brunt wood between the space of two rooms,	1.0401401
-H. 170-20115	Period IB.	55
Pl. 4.14	View of a lane, Period IB.	59
PL 4.15	Partially exposed wall and overground tandoor, Period IB.	63
Pl. 4.16	Partially exposed house with brick payed floor on the right and	20
	part of a fortification wall on the left, Period IB.	66
PL 4.17	Deposits of Period IA (lower left); partially exposed house	P Para C
A TELEVISION	showing remains of burnt wood in the rooms, Period IB,	
	(middle); structures alongwith a drain, Period IC (upper level).	69
Pl. 4.18	Post holes of circular bird's cage, Period IB.	73
Pl. 4.19	Post holes of circular bird's cages, Period IB.	77
Pl. 4.20	Partially exposed wall and a storage (ar (lower part), Period IB.	83
Pl. 4.21	A close view of a storage jar (lower part), Period IB.	84
Pl. 4.22	Reed impressions on clay, moderately fired, Phase I, Period IC,	87
Pl. 4.23	Fragmentary terracotta tile, Period IC.	88
Pl. 4.24	Circular structure for pounding grains, Phase II, Period IC.	90
Pl. 4.25	A Kachcha drain, Phase II. Period IC and a circular kiln, Period I	1.91
Pl. 4.26	View of a house showing corner rooms, Phase 1, Period IC.	95
Pl. 4.27	A heap of mud balls, Phase I, Period IC.	96
Pl. 4.28	Foundation pit of the walls on the right, Phase I, Period IC.	
21973-01122-00-0	and a thin wall on the left, Period IB.	97
Pl. 4.29	View of a street, Phase I, Period IC.	101
Pl. 4.30	View showing steatite bead making area, Phase II, Period IC,	104
Pl. 4.31	A close view of scattered steatite beads, Phase II, Period IC.	105
Pl. 4.32	Partially exposed fortification wall with circular platforms on	
	the interior, Phase I, Period IC.	107
Pl. 4.33	Partially exposed walls, Phase I, Period IC.	110
PL 4.34	Partially exposed house with drain (upper level) Phase I,	
	Period IC and structures of Period IB with evidence of	
	burning activities (middle level).	116
Pl. 4.35	Partially exposed room with tandoors on the exterior, Phase II,	
	Period IC_	121
Pl. 4.36	Partially exposed room with a lower part of a pot, Phase II,	
	Period IC	123
PL 4.37	Partially exposed structures, Phase II, Period IC.	127
Pl. 4,38	General view showing fortification wall (in front) and	
	Harappan settlement on the back, from east.	130
Pl. 4.39	View showing fortification wall (in left) and Harappan	
	settlement on the interior.	131

....ivi

PI 4:40	View showing deposits of Period IA below the Sutification wall	
11 4.40	on the exterior.	132
PL 4.41	View showing fortification wall with a rectangular bastion	
	at the entrance.	133
PL 4.42	View showing the deposits in trench ZBS with no remains	
167.7 7.7.7	of fortification.	134
PL 4.43	View showing the partially exposed fortification wall and	
85 H B	circular platforms on the interior (in back), Phase I, Period IC.	140
Chapter - 5	The Pottery	
Text level		lan
	PL 4.40 PL 4.41 PL 4.42 PL 4.43 Chapter - 5	<ul> <li>PI. 4.40 View showing deposits of Period IA below the fortification wall on the exterior.</li> <li>PI. 4.41 View showing fortification wall with a rectangular bastion at the entrance.</li> <li>PI. 4.42 View showing the deposits in trench ZBS with no remains of fortification.</li> <li>PI. 4.43 View showing the partially exposed fortification wall and circular platforms on the interior (in back), Phase 1, Period IC.</li> <li>Chapter - 5 The Pottery</li> </ul>

M. 24	view of a Pottery yard.	2144
Pl. 5.2	Plain and painted pottery.	152
PL 5.3	Bi-chrome pottery.	158
Pl. 5.4	Fragmentary basin of Red ware (Fabric D).	171
PL 5.5	Buff ware sherds.	180
PL 5.6	Buff ware sherds.	181
Pl. 5.7	Grey ware sherds.	183
PL 5.8	Grey ware sherds.	186
PL 5.9	Grey ware lids	189
PL 5,10	Full pot of Red ware.	206
PL 5.11	Plain and painted pottery.	210
Pl. 5.12	Cut ware : 1. lid, 2. sherd.	221
Pl. 5.13	Painted pottery.	224
PL 5.14	Painted pottery.	227
PL 5.15	Painted pottery.	230
PL 5.16	Bi-chrome pottery.	235
PL 5.17	Bi-chrome pottery.	237
PL 5.18	Bi-chrome pottery.	240
Pl. 5.19	Inscribed pottery.	255
Pl. 5.20	Miniature pots.	257
Pl. 5.21	Bowl of Red ware.	258
Pl. 5.22	Other pottery,	260
PL 5.23	Pottery bearing cloth impressions.	261

# Chapter - 6 Seal and Sealings

Pl. 6.1	Terracotta seal : A - Seal, B - Impression, C - Back and D - Side	264
PL 6.2	Fragment of a sealing showing reeds and rope impressions	
	on the reverse.	266
PL 6.3	Fragment of a Sealing.	268

# Chapter - 7 Terracotta Animal Figurines

PL 7.1	Terracotta animal figurines.	270
PL 7.2 A	Terracotta bull figurine bearing 'trident' symbol on the hind part.	272
Pl. 7.2 B	Close view showing 'trident' symbol.	272

PL 7.3	Terracotta animal figurines,	273
Pl. 7.4	Terracotta bull figurines	277
Pl. 7.5	Terracotta animal figurines.	280
Pl. 7.6	Terracotta animal figurines.	282

#### Chapter - 8 Transport

Pl. 8.1	Terracotta cart frames.	285
Pl. 8.2	Terracotta cart frames.	288
Pl. 8.3	Terracotta hubbed wheels, Periods 1A and 1B.	293
PL 8,4	Terracotta wheels, Period 1B.	294
Pl. 8.5	Terracotta wheels, Period 1C.	298
PL 8.6	Terracotta hubbed wheels.	
PL 8.7	Triangular terracotta cake bearing an incised sail boat.	302

# Chapter - 9 Terracotta Mustikas and cakes

PL 9.1	Terracotta mustikas in large quantity.	304
Pl. 9.2	Triangular terracotta cakes.	308
Pl. 9.3	Other terracotta cakes.	310
Pl. 9.4	Terracotta mustikas.	312
Pl. 9.5	Terracotta spheroids.	314
Pl. 9.6	Convex terracotta cakes.	316
Pt. 9.7	Terracotta cakes and mustikas bearing graffiti marks.	318
Pl. 9,8	Terracotta cakes and mustikas bearing mat impressions.	321
Pl. 9.9	Terracotta cakes and mustikas bearing incised design.	323
Pl. 9.10	Inscribed terracotta cake.	324

#### Chapter - 10 Bangles and Rings

Pl. 10.1	Plain terracotta bangles.	329
Pl. 10.2	Plain and decorated terracotta bangles.	333
Pl. 10.3	Segmented terracotta bangles.	337
Pl. 10.4	Faience bangles.	342
PL 10.5	Shell bangles.	349
Pl, 10,6	Copper bangles and rings.	353

#### Chapter - 11 Beads, Spacers and Pendants

Pl. 11.1	Steatite beads in large quantity, Period IC.	356
PL 11.2	Semi-precious stone beads, Period IA.	357
Pl. 11.3	Semi-precious stone beads, Period IB.	361
Pl. 11.4	Semi-precious stone beads, Period IC.	365
Pl. 11.5	Semi-precious stone beads, Period IC.	369

XVIII

Pl. 11.6	Steatite beads, Period IA.	375
Pl. 11.7	Steatite beads, Period IB.	377
PL 11.8	Steatite beads, Period IC.	381
PL 11.9	Steatite beads, Period IC,	384
Pl. 11.10	Terracotta bicone beads, Periods 1A and 1B,	386
Pl. 11.11	Terracotta bicone beads, Periods IC,	389
PL 11.12	Terracotta short cylindrical beads, Period IC.	392
Pl. 11.13	Close view of a bead bearing graffiti mark.	392
Pl. 11.14	Other terracotta beads, Period IC	396
Pl. 11.15	Gold bead.	399
Pl. 11.16	Spacers : Terracotta and shell.	399
PL 11.17	Pendants : Terracotta and shell.	403

# Chapter - 12 Weights

PL 12.1	Cubical stone weights.	408
Pl. 12.2	Stone weights.	410
Pl. 12.3	Other stone weights.	412
Pl. 12.4	Terracotta weights.	414

# Chapter - 13 Tools

Pl. 13.1	Chert blades.	419
Pl. 13.2	Copper axe.	422
Pl. 13.3	Bone and Ivory tools.	425
PL 13.4	Bone and Ivory tools.	427

# Chapter - 14 Other Important Findings

Terracotta double headed (addorsed) bull camesman.	430
Terracotta gamesmen.	430
Terracotta knobbed gamesmen.	435
Bone dice.	438
Saddle - querns and pestles.	442
Stone pestles and querns.	444
Terracotta sling balls.	446
Terracotta buttons, A - top, B - bottom.	448
Terracotta car studs.	450
Terracotta linga - like objects.	452
Hopscotches.	454
Terracotta scraper like objects,	457
Terracotta sharpener.	458
Terracotta wheeled toys.	460
Terracotta rattle,	463
	<ul> <li>Terracotta double headed (addorsed) bull gamesman.</li> <li>Terracotta gamesmen.</li> <li>Bone dice.</li> <li>Saddle – querns and pestles.</li> <li>Stone pestles and querns.</li> <li>Terracotta sling balls.</li> <li>Terracotta buttons, A - top, B - bottom.</li> <li>Terracotta ear studs.</li> <li>Terracotta <i>linga</i> – like objects.</li> <li>Hopscotches.</li> <li>Terracotta sharpener.</li> <li>Terracotta sharpener.</li> <li>Terracotta wheeled toys.</li> <li>Terracotta rattle.</li> </ul>

Chapter	in repart of percent states of roter, and copper shap	
Pl. 15.1	Pottery Samples.	466
Pl. 15.2	Pottery Samples.	467
PL 15.3	Pottery Samples.	468
Pl. 15:4	Stereomicroscopic Images of Pottery Samples.	469
Pl. 15.5	Stereomicroscopic Images of Pottery Samples.	470
Chapter -	16 Animal Bones from Dhalewan	
Pl. 16.1	Bones of Cattle, Early Harappan, Period IA.	518
Pl. 16.2	Bones of Capra, Early Harappan, Period 1A.	518
Pl. 16.3	Bones of Cattle, Mature Harappan, Period IC.	519
Pl. 16.4	Bones of Cattle, Mature Harappan, Period IC.	519
Pl. 16.5	Teeth of Cattle, Capra and Sus, Mature Harappan,	
	Period IC.	520
PL 16.6	Third Phalanx of Cattle, Mature Harappan, Period IC.	520
Pl. 16.7	Bones of Capra, Early Harappan, Period IA.	521
Pl. 16.8	Horns of Cattle, Early Harappan, Period IA.	521
PL 16.9	Horns of Capra and Deer, Early Harappan, Period 1A.	523
PL 16:10	Horns of Capra and Deer, Mature Harappan, Period IC.	523
PL 16.11	Horns of Cattle, Mature Harappan, Period IC.	524
PL 16.12	Teeth of Capra, Early Harappan, Period 1A.	524
PL 16.13	Bones of Capra, Mature Harappan, Period IC.	525
Pl. 16.14	Bones of Turtle, Mature Harappan, Period IC.	525
PL 16.15	Bones of Asinus, Early Harappan, Period IA.	526
PL 16.16	Bones of Eqqus Caballus Linn, Mature Harappan,	
	Period IC.	526
Pl. 16,17	First phalanx of Capra, Mature Harappan, Period IC.	528
PL 16.18	Bone Tools, Mature Harappan, Period IC.	528
PL 16.19	Bone Tools, Mature Harappan, Period IC.	530
Pl. 16.20	1. Skinning marks; 2 Puncturing mark,	
	Mature Harappan, Period IC.	530

#### Chapter - 15 Report on Scientific Studies of Pottery and Copper Samples

#### Illustrations PART II (Kushan and Gupta Periods)

#### (i) List of Figures

# Chapter - 17 Structures of Early Historical Period

Fig. 17.1	Plan of a work shop (?), Period II.	539
Fig. 17.2	Partially exposed room alongwith portable hearths, Period II.	542
Fig. 17.3	Partially exposed room and hearth, Period III,	549

#### Chapter - 18 The Pottery

Fig. 18,1	Vases of red ware, Period II.	555
Fig. 18.2	Spouted and other vases of red ware, Period II,	556
Fig. 18.3	Decorated red ware vase, Period II.	558
Fig. 18.4	Decorated and spouted vases of red ware, Period II.	559
Fig. 18.5	Decorated vases of red ware, Period II.	561
Fig. 18.6	Decorated vases of red ware, Period II.	562
Fig. 18.7	Decorated sherds of red ware, Period II.	564
Fig. 18.8	Decorated sherds and spouted pot of red ware, Period II.	565
Fig. 18.9	Painted sherds of red ware, Period II.	567
Fig. 18.10	Vases, bowl and lid-cum-bowl of red ware, Period II.	569
Fig. 18.11	Handled lamps and other pots of red ware, Period II.	570
Fig. 18:12	Sprinklers and bottle necked flasks of red ware, Period II,	572
Fig. 18.13	Handi, bowls and lids of red ware.	574
Fig. 18,14	Lids, bowls and inkpot of red ware, Period II.	576
Fig. 18.15	Basins of red ware, Period II.	577
Fig. 18.16	Decorated basins and other decorated sherds of red ware,	
	Period II.	579
Fig. 18.17	Decorated vases and perforated pots of red ware, Period II.	380
Fig. 18.18	Lamps of red ware, Period II.	581
Fig. 18.19	Spouts of red ware, Period II.	583
Fig. 18.20	Vases of red ware, Period III.	586
Fig. 18.21	Spouted and other pots of red ware, Period III.	587
Fig. 18.22	Decorated red ware vases, Period III.	589
Fig. 18.23	Decorated and spouted vases of red ware, Period III.	590
Fig. 18.24	Perforated bowl, decorated vases and sherds of red ware,	
	Period III.	591
Fig. 18.25	Painted sherds of red ware, Period III.	593
Fig. 18.26	Painted sherds of red ware, Period III.	595
Fig. 18.27	Sprinkler-like bottle necked vases of red ware, Period III.	596
Fig. 18,28	Perforated bowi and basins of red ware, Period III.	598
Fig. 18.29	Perforated bowl and basins of red ware, Period III.	600
Fig. 18.30	Bowls and lid-cum-bowls of red ware, Period III.	602
Fig. 18.31	Lids and bowls of red ware, Period III.	604

Fig. 18.32	Lamps and lids of red ware, Period III.	605
Fig. 18.33	Spouts of red ware, Period III.	607
Chapter -	19 Sealings	
Fig. 19.1	Terracotta sealing, Period III.	612
Chapter -	22 Beads and Pendants	
Fig. 22.1	Ghat shaped terracotta beads, Period II.	646
Fig. 22.2	Arecanut shaped terracotta beads, Period II,	649
Fig. 22.3	Other terracotta beads, Period II.	651
Fig. 22.4	Semi-precious stone beads, Period III.	653
Fig. 22.5	Terracotta beads, Period III.	657
Fig. 22.6	Pendants.	660
Chapter -	23 Metal Objects	
Fig. 23.1	Iron objects.	665
Fig. 23.2.	Iron and copper objects.	668
Chapter -	24 Other Important Antiquities	
Fig. 24.1	Terracotta sling balls,	677
Fig. 24.2	Terracotta clongated dice showing the numbering system.	701
(ii) List of	Plates	
Chapter -	17 Structures of Early Historical Period	
PL 17.1	Terracotta drain. Period II.	536
Pl 17.2	Burnt bricks, Period III.	536
Pl. 17.3	Terracotta roof tiles. Period III.	537
PL 17.4	Terracotta decorated tiles. Period III.	537
PL 17.5	U-shaped hearths, Period III.	538
Pl. 17.6	Work shop (?), Period II.	540
PL 17.7	Portable hearths, Period II,	543
PL 17.8	Burnt brick wall. Period II.	547
PL 17.9	U-shaped hearth, Phase II (upper left) and partially exposed	
	room, Phase I (lower right), Period III.	550
Chapter -	18 The Pottery	
The second se	PERCENT CONTRACTOR CONTRACTOR	

P1.	18.1	Basin of Red ware.	599
PI.	18.2	Other pottery.	609

mit

#### Chapter - 19 Sealings

PI.	19.1	Terracotta sealing,	Period III.	612
Pl.	19.2	Terracotta scaling,	Period III.	613

#### Chapter - 20 Coins

Pl. 20.1.	Copper coins : Obverse views, Period II.	616
Pl. 20.2.	Copper coins : Reverse views, Period II.	617
Pl. 20.3	Copper and silver coins : Obverse views, Period III.	619
Pl. 20.4	Copper and silver coins : Reverse views, Period III.	620

#### Chapter - 21 Human and Animal Figurines

Pl. 21.1	Terracotta human heads.	622
Pl. 21.2	Terracotta human figures in sitting posture.	623
Pl. 21.3	Terracotta plaque showing lower half of a lady figure.	624
Pl. 21.4	Terracotta male figure.	626
Pl. 21.5	Fragments of terracotta human figures,	627
Pl. 21.6	Terracotta ram.	629
PL 21.7	Terracotta animal figurines.	631
Pl. 21.8	Terracotta figurines A - bull and B - pedestalled figure.	632
Pl. 21.9	Terracotta animal figurines.	634
PL 21.10	Terracotta bird figurines.	636

#### Chapter - 22 Beads and Pendants

Pl. 22.1	Carnelian beads, Period II.	638
PL 22.2	Semi-precious stone heads, Period II.	641
PL 22.3	Shell beads, Period II.	644
Pl. 22.4	Ghat shaped terracotta beads, Period II.	646
Pl. 22.5	Arecanut shaped terracotta beads, Period II.	648
Pl. 22.6	Other terracotta beads, Period II,	651
Pl. 22.7	Semi-precious stone beads, Period III.	653
Pl. 22.8	Terracotta beads, Period III.	656
Pl. 22.9	Ivory and shell pendants.	659
Pl. 22.10	Terracotta and stone pendants.	662

#### Chapter - 23 Metal Objects

PL.	23.1	Iron objects.	664
PI.	23.2	Iron and copper objects.	667



Chapter -	24 Other	Important Antiquities
122-224		SON-MENTALS

PL 24.1	Terracotta wheels.	672
Pl. 24.2	Terracotta skin rubbers.	674
Pl. 24.3	Terracotta sling balls,	677
Pl. 24,4	Terracotta footed pedestals (chaukis).	680
Pl. 24.5	Terracotta footed pedestal (chauki).	680
Pl. 24.6	Terracotta votive tanks.	682
PL 24.7	Close view of a terracotta votive tank.	683
Pl. 24.8	Terracotta rattles.	685
Pl. 24.9	Close view of a rattle.	685
Pl. 24.10	Terracotta moulded rattle, one side view.	687
Pl. 24.11	Terracotta moulded rattle, other side view.	688
Pl. 24.12	Terracotta potter's stamps and mould.	690
PL 24.13	Terracotta mould, A - negative and B - impression.	691
PL 24,14	Terracotta stamp, A - front and B - back.	692
Pl. 24,15	Terracotta potter's stamps,	694
Pl. 24.16	Terracotta potter's dabbers.	696
Pl. 24.17	Terracotta ear studs.	698
Pl. 24.18	Terracotta elongated dice.	700
Pl. 24,19	Incised terracotta tablets.	703
Pl. 24:20	Hopscotches.	706
Pl. 24.21	Legged - stone quern.	708
Pl. 24.22	Stone pestles, quern and rubbing stone.	709
Pl. 24.23	Shell hangles.	711
Pl. 24.24	Decorated stone piece.	713

xxxiv

# PART I

(Early Harappan and Harappan)

# Dhalewan : An Introduction MADHU BALA

CHAPTER

#### SITUATION

The site (Lat 30° 1' 20" N; Long 75° 35' 45" E) is situated at Dhalewan in District Mansa, Punjab (Fig 1.1). The district Mansa with headquarter at Mansa was created on 13th April, 1992. Mansa was formerly a subdivision of district Bhatinda, Punjab. It is about 60 km from Bathinda or Bhatinda on Bathinda Patiala Road, about 20 km from Sunam Railway station and about 7 km from the township of Bhikhi. The approach to Dhalewan from Bhikhi is partially kachha and pucca road, which is negotiable by jeep or Bullock cart. The mound suddenly emerges out from the adjoining low sand dunes and lush green fields (Pl. 1.1). The mound is located on the eastern side of the canal locally known as drain, which has been dug on the dried up bed of ancient Sirhind nallah. From far away one could see the mound, which is very impressive having a height of about 8 m and admeasuring about 500 m north-south and 800 m east-west. The mound is capped by a Marhi and surrounded by neem, babool and a huge banian trees. The mound has cultural deposits of about 5 m. The contour rises at the site from 222 m to 230 m. The contour plan of the site shows the present shape and size of the mound, which is remained safe after agriculture operation of recent past. The plan also indicates the excavated area. (Fig. 1.2 and Pl. 1.2)

#### GEOMORPHIC FEATURES

Sand dunes' and sand hills appear to be an important geomorphic feature of the area. Various types of sand dunes are available in the area. Ghaggar (Sarasvati) is the only river flowing in the district, which rises from the Shivalik hills, enters into this district from Haryana. The area of Mansa district forms a part of the Indo-Gangetic alluvial plains consisting of quaternary sediments. The whole area of the district falls under semi-arid region.

#### ARCHAEOLOGICAL POTENTIALITIES

Dhalewan is an important site, which is situated on Sarasvati basin and explorations have clearly confirmed Early Harappan, Harappan and Kushan & Gupta Cultural contents of the mound. The archaeological potential has been further confirmed by the finding of mud brick structures on the surface during exploration.

Jagmohan Singh Hans, Manua, Punjab District Gazetteers', 2002.

EXCAUATIONS AT DHALEWAN (1999-2000 A 2001-2002)



Fig. 1.1







EXCAUATIONS AT DHALEWAN (1999-2000 # 2001-2002)



#### SARASVATI RIVER

In the last hundred years considerable literary, archaeological and scientific investigations have developed on river Sarasvati<sup>2</sup> that according to Nadistuti of Rigveda

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#### Dividende : An Introduction

(10.75) places Sarasvati between Yamuna and Satluj. There is no doubt that the Rigvedic river Sarasvati was a mighty river which emanated in the Himalayas and emptied in the Arabian ocean. (see Fig. 1.4)

Verses on Sarasvati3

Imam me Gange Yamune Sarasvati Sutudri stomam sachatā Parusyyā/ Asiknyā Marudvridhe Vitastyā Ārjikive šriņuhyā Susomayā //5// Trīstāmayā prathamam yātave sajūh Susartvā Rasayā Švetyā tyā/ tvam Sindho Kubhayā Gomatīm Krumum Mehatuvā saratham yābhīriyase //6//

During the Mahabharata period it emanated from Plakshaprasarvar which was located in lesser Himalayas passing through many lakes, holy spots and forests, it disappeared in the sandy desert.

Tato vinašnam gachhenniyato niyatāsanah / gachhatyantarhitā yatra maruprišthe sarasvatī / chamase cha šivodbhede Nāgodbhede cha dašyate //8//\*

All along the Sarasvati, a large number of proto-historic (Fig. 1.3) and early historical sites are located and some of which have been recently excavated also. A number of scholars have written about the mythical Sarasvati river and there are four schools of thought: (i) due to the climate wetter conditions it was a perennial or semiperennial river during proto-historic and early historic times (ii) there has been no significant change in the environment in the last 5000 years (iii) the Sarasvati experienced dry and wet cycles depending on joining of Yamuna and Satluj (iv) tectonic movements occurring during 2nd millennium B.C. delinked Sarasvati and its tributaries from its water sources in the higher Himalayan region. Lal writes, "the origin of Vedic Sarasvati from the glaciers in the Himalayas which made it perennial river on its own and its being joined by Satluj from the north west, indeed made it a formidable river. The map gives a clear picture of the drainage pattern of the Vedic Sarasvati in the Himalayas (Fig. 1.4). This is clearly indicated by its bed, though now dry which was as much as 6-8

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M.A. Courty, Le Mileu Physique et Utilisations due Sol. Prospections archaeologiques au nord-oues de L'Inde. Rapport preminaire 1983-84-MAFI-Sons la-direction d' Henri-Paul Franchitt, Editions Recharche Sur les Civilizations - Memoir No. 62, 1985, pp. 1-31; 'Integration of Sediment and Soil Information in the Reconstruction of Protohistoric and Landscapes of the Ghaggar Plain (North-West India)', South Asian Archaeology 1985. (Eds) Karen Frifelt and Per Sorensen. 1989, pp. 255-59. E.A. Durrani, 'Climate of the Lower Indus Valley in Ancient Times', Journal of the University of Peshawar, Vol. 10, 1965, pp. 33-37.

Rigveda Sainhita, edited by Shriram Sharma Acharya and Bhavati Devi Sharma, Brahmavarchasa, Shantikanja, Hardwar, 1994-95. SRG VII.

<sup>&</sup>lt;sup>4</sup> The Mahabharata, Vol. 3, Aranyakaparvan, Part-L Chapter 80, verse 118, p. 268, edited by Vishina S. Sukhankar 1942.





Fig. 1.4
EXCAPATIONS AT DRALEWAN (1959-3000 & 2007-3002)

kilometers in width for quite some part of its length. And it is this might that is reflected when the Vedic seers sang and said Sarasvati started in the mountain peaks with her fast and powerful waves and present among all rivers and vibrant the Sarasvati moves on from the mountains to the ocean." Lal has rightly remarked about the Archaeological importance of the area "All told it is becoming increasing clear that there was a considerable expanse on the early Harappan Culture in the basins of Sarasvati and its tributaries and this cultural complex was heading towards the mature Harappans<sup>50</sup>. The shifting of the course of Drishadvati to southeast depicted Sarasvati as one of the main sources of its water and made it shrink to a small river. Compete drying up of Sarasvati was due to the shift of Satluj joining Beas due to tectonic movements in the region which changed the drainage system.

## PREVIOUS WORK

The mound at Dhalewan was first discovered during the explorations carried out by a team headed by Sh. Jagat Pati Joshi in 1980. The author assisted him during the exploration and the discoveries were first highlighted in the seminar the "Cultural Heritage of Indian Village", held on 13th-14th April, 1982 at the Museum of Mankind in London".

The Exploration was conducted with the help of land set imagery of the Punjab and Rajasthan region which clearly records the shifts of the rivers<sup>+</sup> in the region during the Proto-historic period particularly Indus and its tributaries, Ghaggar, Sarasvati and Markanda<sup>4</sup>. The Sirhind nallah and other palaeo-channels are clearly noticeable

The Sarasvati was a mightier river than the Indus with its own net-work of tributaries along which lay hundreds of sites with at least three 'economic pocket'; one northern-along Sirhind and Sarasvati; second central-in Bahawalpur area and the third southern in Kutchh.

The Early-Harappan and Harappan settlements were largely located along the major and perennial rivers. This was obviously due to the fact, the urban phase of the civilization had the technological capabilities to thwart the onslaught of the seasonal and occasional floods by erecting high defences and platforms.

The explorations in 1980 have clearly established the fact that due to the erratic behaviour of the Ravi, Beas and Satluj, the Harappans did not prefer these for their settlements except occasionally. Therefore, no major Harappan site is available between Manda and Ropar although the area has been subjected to intensive exploration. However, it appears that during the late Harappan times, preference for settlements on

B.B.Lal, The Surveyal flows on - The Continuity of Indian Culture, New Delhi, 2002, pp. 14-19 & 44.

<sup>&</sup>lt;sup>4</sup> Jagat Pati Joshi, Settlement Patterns in 3rd, 2nd and 1st millermium in India with special reference discovery in Purgab.

Yashpal et al 'Remote sensing of the Lost Sarawati river, Proceeding of the India Acenary of Sciences, 1981, pp. 318-331.

<sup>&</sup>lt;sup>1</sup> D.P.Agrawal & B.M. Pande, 'Ecology & Archueology of Western India', New Delhi, 1977, pp. 55-106.

#### Divalences - An Detroduction

the tributaries of those major rivers gained impetus. Due to economic poverty and population shrinkage, they were unable to maintain protection platforms and, therefore, moved to the tributaries in higher regions, towards the north where water was still available and the danger of flood was less and comparatively of lower magnitude.

The settlement pattern of the proto-historic cultures in this part of India was primarily dependent on the changing patterns of the rivers. In other words, hydrological changes affecting adversely, the availability of water in the middle and lower courses of the perennial river-system like the one we observe in the Ghaggar-Sarasvati-Hakra, made the Harappans leave their settlements and break their 'urban fabric' forever. In the wake of these two phenomena lies the fragmentation of cities, both demographically and qualitatively. No wonder, the number of late Harappan sites register manifold increase but in a non-urban context of smaller settlements located much closer to each other than earlier. The movements of the late Harappans favour areas in the northern parts of the present Punjab, Haryana and northern Uttar Pradesh since in these regions the older river systems still retained water. Not only that the directional changes in the settlement pattern from the Harappan to the late Harappan has been from the west to the east and from the major river-valley to the tributaries. During the Painted Grey Ware times, middle courses of the rivers like the Ghaggar, Sarasvati and Drishdvati became active, albeit limitedly.

Archaeological explorations in lower Punjab i.e., in the region of District Mansa adjoining District Ganganagar of Rajasthan, Bhatinda of Punjab precisely speaking between Sutlej and Sarasvati rivers forming a basin, yielded more than 25 Early Harappan, Harappan and late Harappan sites, which were located some 28 years back. The sites are situated in an area of about 50 x 25 km (1250 sq.km.) (Fig. 1.5). The settlements are situated on an average distance of 3-7 kms. At present, most of these sites have come under the 'green revolution' and these are leveled excepting very few. One such site is at Dhalewan which has been excavated and the results are quite encouraging showing a cultural complex 'leading towards the mature Harappan' with an antecedent culture belonging to *circa 3rd millennium* B.C.

The availability of twenty five sites" in an area of approximately 50 km x 25

Š. No.	Name of the site explored	t.a.	Long.	Approximate Area (m x m)	Cultural Assemblage found in exploration	Villager town/city tentatively classified us	Group
1.	Alike	29"45' N	75°20' E	200 x 200	Late Hurappan	Village	C
2	Danewala I	29"49' N	75"20' E	200 x 200	Late Harappan	Village	C
3.	Danewala 11	29"49' N	75'24' E	200 x 200	Late Harappan	Village	C
4.	Chboti Mansa	30"13' N	75905' E	300 x 300	Early Harappan/ Late Harappan	Village	C
٩.	Lalianwali	29=30" N	75-20' E	200 ± 200	Harappan	Village	С
ŏ.,	Luuwala	29=31' N	75"28" E	200 x 200	Harappan	Village	C

<sup>6</sup> Harappan settlements in District Mansa, Punjab discovered in 1980.

#### EXCAUATIONS AT DRIALEWAN (1999-2000 & 2007-2002)

km i.e. 1250 sq.km. in Mansa District shows that this area was a very important zone of the Early Harappan and Harappan cultures. The Early Harappans and Harappans preferred the Ghaggar and its tributaries for their settlements, as this was more static river-system than the Beas, Satluj and Ravi, which were erratic in their behaviour and changing their courses very often. The Sirhind, a tributary of the Ghaggar, was one of the most important lines of communication between Punjab and Rajasthan for getting raw materials like timber, especially *Deodar* used in house-building activities. This channel appears to be buzzing with activity in the third and second millenniam BC. Studies of the settlement-pattern based on the size of the mounds of the area by J.P. Joshi, suggest that it had three types of settlements: (A) Cities of about 1500 x 1500 m to 1000 x 1000 m in area, such as Dhalewan, Gurni kalan, Baglian Da Theh, Lakhmirwala and Hasanpur. These are generally situated at a distance of 3 to 5 km from each other. (B) In between, there appears to be six towns, ranging in area of about 500 x 500 m at Karampura, Dallewala I & II, Sahnewali, Hirke, and Bare II. It has been observed that all the cities and towns are situated on the eastern side of the river where

7.	Bhikhi	30°04' N	7534' E	300 x 300	Late Harappan	Village.	C
К,	Gurni Kalan II	30°00" N	75°30' E	400 x 400	Early Harappan/ Harappan	Village	C
5.	Nehriwala	30°05" N	75°25' E	400 x 400	Late Harappan	Village	C
10.	Naiwala I	29955' N	75°30' E	400 x 400	Early Harappan/ Harappan	Village	c
11,	Naiwala II	29°55' N	75°30° E	400 x 490	Early Harappan/ Harappas	Village	¢
12.	Naiwala III	29°55 N	75°30° E	400 x 400	Early Harappan/ Harappan	Village	C
13.	Naiwala IV	29°55' N	75°30' E	400 x 400	Early Harappan/ Harappan	Village	c
14,	Naiwala V	29°55' N	75°30 E	400 x.400	Early Harappan/ Harappan	Village	c
15.	Dallewala I	29°49' N	75°25' E	500 x 500	Harappan	Town	-18
16.	Hirke	29°44' N	75°23' E	500 x 509	Harappan/Late Harappan	Town	8
17.	Karampura	29253° N	75°25' E	500 x 500	Harappan	Town	B
18.	Dallewala II	29°50' N	75 25 E	500 x 500	Hurnppan	Town	B
19,	Bare II	29*54' N	75 29 E	500 x 500	Late Harappan	Town	В
20.	Sahnewali	20155' N	75°30' E	500 x 500	Late Harappan	Town	8
21.	Dhalewan	30702" N	75935° E	1500 x 1500	Early Harappan/ Harappan	City	Α
22.	Gumi Kalan I	30°00' N	75°32' E	1290 x 1200	Early Harappan/ Harappan	City	A
23,	Hassanpar II	29°58' N	75°30' E	1000 x 1000	Early Harappan/ Harappan	City	A
24.	Lakhisirwidu	29°52' N	75°25' E	1500 x 1500	Early Harappon/ Harappon	City	A
25,	Baglian Da Theh	29557' N	50°28' E	1000 x 1000	Early Harappan <sup>7</sup> Harappan	City	A



Fig. 1.5

#### EXCAPATIONS AT DHALEBAN (1998-2000 & 2001-2002)

denudation by floods was less, while (C) a series of villages, numbering 14, covering approximately an area of 200 x 200 m to 400x400 m. Viz., Alike, Denewala I & II, Chhoti Mansa, Lalianwali, Laluwala, Bhikhi, Gurni Kalan II, Nehriwala and Naiwala I to V is situated on the western side, which was subjected to occasional floods. At present, also, big cities on the Yamuna are situated on the southern side of the river where the thrust of floods is less. This area, therefore, gives the best evidence of all the three types of settlements placed near each other, creating an ideal situation of an urban complex. Their commercial interaction is as the pre-requisite for a developed civilization. It seems that Sirhind was an important 'economic pocket', which mobilized the resources of the northern region of the lower Himalayas and transported them to Bahawalpur area via Kalibangan, and also to Harappan sites in Harvana and Punjab. The situation is almost the same, which exists in Kutch, which was a halfway house with a concentration of more than 25 sites between Sind and Gujarat. It may be pertinent to mention that there was yet another 'economic pocket' on the same Sarasvati-Hakra in the Bahawalpur region where M.R. Mughal has traced about 250 sites in an area of 1000 sq.km. from Yazman to Dernwar Fort.10

These are some observations based on archaeological exploration which need an integrated scientific study of this zone, where dense cultural activity took place in circa 3rd millennium B.C. and the limited excavations of two seasons at Dhalewan shows the importance of the area and the site as well.

Ingat Pati Joshi, Madhu Bala and Jassuram, 'The Indus Civilization : A Reconsideration on the Basis of Distribution Maps', Eds. B.B.Lal and S.P.Gupta, in *Frontiers of The Indus Civilization*, New Delhi, 1984.

# Summary of Results MADHU BALA

CHAPTER

## DHALEWAN AT A GLANCE

30°1'20"N; 75°35'45"E
Size - 360x300 m; Height - 8 m
222-230 m
Total-5.20 M in Sq B5; Harappan-3.50 m in Sq
B5; Kushan-1.20 m in ZH5; Gupta-1.80 m in
ZH5
18
Harappan - Early (IA), Transition (IB) &
Mature (IC); Kushan (II) and Gupta (III).
Period IA 3764 ± 116 BC; Period IC 3167 ±
137 BC and 3147 ± 151 BC

## CULTURE SEQUENCE

Two seasons' excavations at Dhalewan have given a sequence of three Periods; Period I - Harappan, Period II - Kushan and Period III - Gupta. Period I is divided into three sub-periods viz. IA, IB and IC in which IA shows settled pattern of life of Early Harappan on virgin soil with domestication of animals. Thereafter emergence of fortification, lane, bouses along the lane, crafts and limited trade in Period IB and grand fortification, big houses, street, development of crafts, trade etc. in Period IC. Kushans appeared in Period II after a considerable break of time which was followed by Guptas in Period III.

## A. HARAPPAN

I. STRUCTURES : The structures made of moulded sun backed mud bricks with greyish coloured clay mortar. The quality of bricks shows uniformity of size and finish. The size of bricks is of the ratio 1:2:3 in Early Harappan and 1:2:4 in Mature Harappan. The houses, street and lane have followed the cardinal direction. North of Harappans is noticed 20° west to the present north. Mud bricks and *kachcha*, both drains are available. The houses made with single-brick walls, mostly header wise, occasionally stretcher wise and have two rooms, spacious courtyard and an over ground circular hearth (*tandoor*) in Period IA. Appearance of fortification, lane, houses made along the lane in planned manner shows the developments and security vision in Period IB. Spacious houses with four rooms and a courtyard; street; grand fortification; etc. made Dhalewan fully matured through gradual development from carly Harappan stage to transition and

reached on peak stage in Period IC. The circular platforms may have used as open-shops or for sitting and gossiping the folks in leisure time. Similar platforms occur along the streets at Kalibangan and Surkotada.

No burnt brick has so far been found in Period I.

2. POTTERY : All the six fabrics of Period I (Early Harappan) of Kalibangan are available here at Dhalewan in Periods IA and IB. The white painted red ware has black out lines which is more or less similar to Kunal. Grey ware has footed bowls, dishes, dish-on-stand, squat dish-on-stand and *lota*. Perforated jars and dishes-on-stand duly anticipate from the earliest levels. Buff ware presents their two kinds i.e. buff slip on red ware and buff slip on buff ware. The fabrics A, B and D are found more in quantity in comparison to others. The attention is made to F at the site with fine varieties and shapes. Graffiti occurs right from Period IA. A knobbed surfaced grey ware resembles the Hakra ware. The story-painting is absent at the site. The Harappan pottery includes the typical Harappan shapes. A number of potsherds are painted with the classical Harappan painted designs viz. *peepal* leaf, criss-cross pattern, chess board pattern etc.

3. ANTIQUITIES : Fragment of a terracotta cart frame has been found from the earliest level of Period IA. Cubical weights of stone and terracotta from 2.5 gm to 650 gm; a terracotta seal depicted with the buffalo; chert blades; bone tools ; beads of semi-precious stone, steatite, terracotta and gold; bangles of terracotta, faience and shell are important. Beads of steatite were locally manufactured. Terracotta cakes, *mustika* type and other were manufactured. One triangular cake has an incised boat, probably indicating the water transport. Amongst copper objects an axe, a ring and bangles which are worth mentioning from Period I.

4. BONES : The excavations have yielded sufficient quantity of bones to suggest that the people in all the periods domesticated animals particularly cattle. These were used for agriculture, milk-products and transportation. From Harappan period, the most conspicuous discovery is that of the bone of *Equus Caballus* Linn. Besides, the bones of goat, sheep, ox, buffalo, sus (pig) and the antler of wild deer are noticed by Shri A.K. Sharma in his physical observation.

5. CHRONOLOGY : Like Bhirrana (IIA) and Kalibangan (1), the fortification starts in pre-mature stage, presence of Kalibangan's six fabrics and Kunal's typical white painted ware, the dating of Dhalewan could be slightly earlier to Kalibangan I and Banawali. Carbon-14 dates suggest that the Harappan Culture at Dhalewan may have started at least in between 3750 - 3500 BC as C-14 date of Period IA is received from Bribal Sahani Institute of Palaeobotany, Lucknow is 3764± 116 BC.

6. CONCLUSION : Dhalewan is one of the unique sites of Punjab area, its excavations produce quite encouraging results after Ropar, Bara and Kotla Nihang. Site presents a cultural complex leading towards the mature Harappan with an antecedent culture viz. Pd. 1A - Early Harappan belonging - 3rd quarter of 4th millennium BC and a transition phase through which culture reached on mature stage in Period IC. About 25 Harappan sites were explored in 1986 in lower Punjab area which covers District Mansa and Bhatinda both, thus the whole Harappan zone of this area is important and

#### Summary of Results.

consist of a rich-economic pocket along the Sirhind Channel, a tributary of Ghaggar which mobilized the trade and resources of the northern region of lower Himalayas to Bahawalpur area via. Kalibangan and to the sites of Punjab and Haryana. The depitiction of a boat on a triangular terracotta cake from mature Harappan level attests the water transport.

## B. KUSHAN

 STURCTURE : So far as the structures of Kushan period is concerned, these are not as rich here as found in other part of India. Only brick-walls made out of burnt bricks as wells as mud bricks, a terracotta drain represent the structures of this period. Special mention may be made to the portable hearth.

 POTTERY : The Pottery consist of red ware only with limited Kushan shapes i.e. bowls of oblique cut rim, sprinkler, lid, and impressed pottery. A few of them consists of Rangmahal style paintings.

 ANTIQUITIES : Terracotta human heads having peculiar Kushan features, ram, votive tanks, sling balls, ghat-shaped and arecanut shaped beads; semi-precious stone beads; copper coins and metal objects are important finds.

4. CHRONOLOGY : Period II - 1st to 2nd century AD.

5. CONCLUSION : The Kushans re-occupied the Harappan mounds particularly on those sites which were located on trade routes in Punjab, Haryana and Rajasthan. In between the Sutlej and Yamuna, the tribal kings of this period were more powerful, as the finding of hoards of tribal coins from this area suggest. The material culture reflects a few Kushan features at the site.

## C. GUPTA

 STURCTURE : Mud brick walls & U-shaped hearths represented the structures. No burnt brick structure is found. However, burnt bricks were recovered from the site. Besides, terracotta roof tiles and decorated tiles are also recovered.

 POTTERY : Footed base bowls; handled lamps; spouted pots; perforated pots; chequer patterns designs and peacock painted pots are recovered.

3. ANTIQUITIES : Terracotta sealings with legend *Raja Dharm'* in Brahmi of 4th - 5th century AD and a pair of human feet showing a religious character; terracotta beads & semi-precious stone beads; moulded rattle; copper coins; metal objects are important finds. Nicely moulded terracotta female figure in *rebhunga mudra* is a fine example.

4. CHRONOLOGY : Period III - 3rd to 5th century AD.

5. CONCLUSION : The site ends with the rich deposits of Gupta. However, a modern religious complex was constructed in the recent past on the mound. Sealing of 'Vijay Gupta' suggests that he may have ruled locally and another seal of religious character somewhat indicates towards Buddhism.



Few sites, which have been explored and excavated in the region of Sarasvati and Drishadwati divide, show a chronological horizon wherein some of the sites could be analysed and the date of Period I at Dhalewan could be fixed. On fixing the chronology of Dhalewan the sites at Bhirrana, Kunal, Kalibangan and Banawali give a clue to the position of Dhalewan, which could be placed in the horizon between Kunal and Kalibangan, Period L<sup>1</sup>

Now let us examine in brief the sites mentioned above and try to understand the chronological horizon wherein Dhalewan emerges.

The site of Bhirrana has yielded a four-fold sequence of cultures with a settlement having Hakra ware in the earliest period and underground circular dwelling pit cut into natural soil with a diameter of 2.30 m. These dwelling pits have brick-lining with mud plaster. No postholes have been found around the pits. The next period at the site, has bichrome pottery. In the third period, which appears to be, a transitional has a fortified township with streets and lanes following the cardinal directions. The ratio of bricks is 1:2:4 and the average house consists of 3 to 4 rooms. Period 1 of Bhirrana is dated to 5th-6th millennium BC on the basis of C14 dating. It may be noted that the earliest period of Bhirrana has dwelling pits which has a Neolithic lineage but it is followed by the pottery of Kalibangan 1 type and it is in the third period which happens to be a transitional period wherein a fortified township appears. From the point of view of the emergence of fortification in the early Harappan times, this aspect is comparable to Dhalewan where it appears in Period IB.

The ancient site of Kunal in district Hissar has an early Harappan horizon in Period I, II is transitional and Period III is Harappan. The first settlers dug pit of 2 m diameter having depth of 1.10 m over which huts were made of wattle and daub. This has yielded pottery of Kalibangan I type. A small blade industry and some bone tools, domestication and farming are available. In the second period moulded bricks having a ratio of 1:2:3 are found and dwelling pits are available with brick-lining inside. The largest pit has a diameter of 2.75 m.

This period has yielded seven steatite seal with geometric motif and perforated boss at the back, which is significant. The third period has bricks having a ratio of 1:2:4

B.B.Lal, el al, 2003 Excavations at Kalibangan. The early Harappans MASI - 98, pp. 25-36, Archaeological Survey of India.

Jagat Pati Joshi, Harappan Architecture and Civil Engineering, Rupa & Co., 2008, pp.28-30.

Jane R. Melntosh, The Ancient Indus Valley - New perspectives, 2008, p. 82,

#### ENCAVATIONS AT DRALEWAY (1999-2000 & 2001-2002)

and a soakage jar, attached to a drain in the street. The most outstanding finds are two crowns, armlets, spiral silver bangles, necklace made of beads of gold and twelve thousand beads of semi-precious stones and beads of lapis lazuli, chert-blades and pottery with bucranian design. The C-14 dates place the Early Harappan Culture between 2900 to 2500 BC.

At Banawali in Phase IA mud bricks of the ratio of 1:2:3, circular bins have been found. During Phase IB the fortification wall was made. During Phase II the entire township was built *de novo*, which had a citadel and lower township with radial streets and surrounded by a moat. This period has yielded mature Harappan pottery and antiquities.

The site at Dhalewan wherein the Early Harappans occupied the area in Sub-Period IA and it has all the six fabrics of pottery of Kalibangan and predominance of fabric 'F' of grey ware with many exotic shapes like the squat dish-on-stand, footed bowls and a variety of lids with rings. This collection has some sherds of white painted red ware also of Kunal type and has a greater affinity with that site. It appears that the concept of having a fortification wall may be for protection against animals or enemy developed in Sub-Period IB. In this respect, the development of fortification and development of streets and lanes in cardinal directions at Dhalewan in Period IB appears to be precursor to Kalibangan and Banawali. It appears that Dhalewan was pioneer in the concept of fortification, streets and lanes, which took a grand shape in Kalibangan in Period I and Banawali in Phase IB.

Thus, it appears that Dhalewan Sub-Periods IA and IB came into existence after Kunal and but before Kalibangan and Banawali. The early Harappan settlement at Kalibangan may be placed broadly between 3000 - 2700 BC. Keeping in view, the C-14 dates from Bhirrana and Kunal, it will be appropriate to conclude that Dhalewan existed prior to 3000 BC. The white painted red ware of Kunal type, the size of bricks, the dominance of F fabric in pottery, presence of a piece of Hakra Ware and the beginning of architecture as indicated above help in fixing the chronology of Dhalewan.

The following three C-14 dates for Harappan Period of Dhalewan have been received from the Birbal Sahani Institute of Palaeobotany, Lucknow.

## 1. Period IA. (Early Harappan)

BS-2904 S-3738 DLW-2000, Trench YC-13, Qd-2, Layer (5A), Depth 128-134 cm, Charcoal (sample collected from a kiln, STR No. 123), Acid pretreatment, Sample CO2 = 41.74%: Dead CO2 = 58.26% CalPal Online Result.o.o., The CalPal Online Radiocarbon Calibration, 14C-age BP: 4930 ± 100 Calendric Age Cal BP: 5714 ± 116 68% range Cal BP: 5597 - 5830 Calendric Age Cal BC: 3764 ± 116 Range Cal BC : 3880-3640

#### Chrimalogy

2. Period IC, Phase I (Mature Harappan) BS-2905
S-3739
DLW-2002, Trench YC-10, Qd. 4, Layer (10), Depth 320 cm, Charcoal, Acid pretreatment, Sample CO2 = 87,90% : Dead CO2 = 12,10%
CalPal Online Result.o.o. The CalPal Online Radiocarbon Calibration 14C-age BP: 4470 ± 80
Calendric Age Cal BP: 5117 ± 137
68% range Cal BP: 4979 - 5254
Calendric Age CalBC: 3167 ± 137
Range Cal BC 3304-3030

#### 3. Period IC, Phase I (Mature Harappan) BS-2906

S-3740 DLW-2002, Trench YC-10 Qd. 2, Layer (12), Depth 362 cm, Sediment, Acid pretreatment, Sample CO2 = 62.6%; Dead CO2 = 37.40%CalPal Online Result.o.o. The CalPal Online Radiocarbon Calibration 14C-age BP:  $4450 \pm 90$ Calendric Age Cal BP:  $5097 \pm 151$ 68% range Cal BP: 4946 - 5248Calendric Age Cal BC:  $3147 \pm 151$ Range Cal BC: 3298-2996

However, the C-14 dates of Dhalewan are placing the site quite earlier than the other Harappan sites. All three C-14 dates of Dhalewan fall at right places in successive manner (i.e. for Period IA  $3764 \pm 116$  and for Period IC  $3147 \pm 151$  BC &  $3167 \pm 137$ ) and are comparable to few other Harappan sites those also yielded at least one early date.

## TABLE I

#### (i) Showing comparable C-14 dates for Mature Harappan from few other Harappan sites.<sup>2</sup>

S.No.	Name of the site	C-14 dates	Remarks
1.	Shortughai	Calib - 2 BC 3033, 2957, 2946	Out of six dates
2	Surkotada	Calib - 2 BC 2865, 2810, 2747, 2725, 2697, 2674, 2668	Out of four dates of Phase LA
3.	Kulibangan	Calib - 1 BC 2875- 2530	Out of four dates of Early Phase
4.	Flarappa	<ul> <li>(i) Calib BC 2913</li> <li>(ii) Calib BC 2863, 2812, 2742, 2726, 2696, 2677, 2666</li> <li>(iii) Calib BC 3338, 3213, 3203</li> <li>(iv) BC 1 Sigma 3334, 2990</li> </ul>	From mound A B From mound E From mound E Of 1993, all four dates for Period 3
5.	Mitathal	2883, 2796, 2784 BC	Out of three dates for Period II B
6.	Hulas	3318, 3231, 3181, 3159, 3139 BC	Out of two dates
7,	Jhukar	3371 BC	

B.B. Lal, 1997 The Earliest Civilization of South Asia, pp. 239-254, New Delhi.

## (ii) Showing comparable TL date for Mature Harappan from Bhagwanpura

TL date : 5460 BP (at the depth of 2.25 m)

Both C-14 dates for Mature Harappan (Period IC) of Dhalewan run in between Calendric Age Cal BC 3304 -3030 and 3298-2996. On considering an average limit for Mature Harappan at Dhalewan may have flourished in between Calendric Age Cal BC 3304-2996.

The C-14 date of the site for Period IA (Early Harappan) has provided by BSIP, Lucknow Calendric Age Cal BC 3880-3648. In this context an attention is needed towards recently excavated site Bhirrana that produces three dates for early levels (known for Hakra ware) of the site. Out of three, two dates are calibrated age 1 Sigma 4770 (4536, 4506, 4504) 4353 BC and 1 Sigma 5336 (5041) 4721 BC.<sup>1</sup>

On the basis of available C-14 dates of Dhalewan and their comparative study with other harappan sites, the Harappan Culture on the site may have been rooted atleast in third quarter of 4th millennium BC (3750-3500 BC) and gradually picked up a maturity in Period IC after moving through a transition phase (Period IB) in first quarter of 4th millennium BC (3250-3000 BC).

The available data of Early C-14 dates including Dhalewan for Harappan Civilization is not enough. The C-14 dates of two major Harappan sites i.e. Dholavira and Rakhigarhi are still awaited. In this direction further research is needed.

The Period II, Kushan Period, ascribable to 1st century AD to 2nd century AD on the basis of the study of pottery and terracotta figurines.

The Period III, Gupta Period, datable to 3rd century AD to 5th century AD based on the study of terracotta sealings, terracotta figurines and pottery.

<sup>8.</sup>B. Lat, 2015 The Rigvedic People, pp. 54-55, New Delhi,



## A. STRATIGRAPHY

### INTRODUCTION

The mound at Dhalewan has been considerably cut, eroded and levelled along the periphery of the mound due to several agricultural operations in this area. Besides, as stated earlier the top of the mound is capped by structures of Marhi-complex and some huge trees. Thus, the area available for excavation had been in the slopes and in the central portion of the mound, which incidentally happened to be the available highest point.

In all, 30 trenches have been laid (Fig. 4.1 and Pl. 4.1). The purpose of digging trench B5 located in central area, is to obtain a complete culture sequence and later it could expand horizontally on sides, so that structures of all periods could be exposed in the terrace over the natural soil.

The available maximum cultural deposit at Dhalewan is 5.20 m.

The following selected sections portray the evidence of various structures in relation to different layers, which enables us to understand the structural activity of each sub-period, particularly of Period I. The Harappan followed by the early historical Kushan and Gupta periods after a break. One important thing which is very certain that in Period I there appears to be some sort of evolution of architecture which in the later periods, of course after a break is absent and there is tremendous pit activity. What does it indicate? A poor habitational concept or paucity of water and agriculture produce. Of course the amount of pots and pans and even a seal suggest existence of a buzzing habitation, but of a rural nature.

## DLW, Trench B5, Qds. 1 & 4 Section, Facing West (Figs. 4.2 and 4.7)

This is a section between pegs C5 and C6, at almost in the centre of the mound, has the maximum available cultural deposit of 4.90 m and gives a complete picture of cultural succession at the site. One important thing, which has been noticed about this section, is that it has the least disturbed strata in the area.

The layers (18) to (15), layers (14) to (11) and layers (10) to (7) represent the deposits of Period IA (Early Harappan), Period IB (Transition) and Period IC (Mature Harappan) respectively. The layer (6A) indicates the break at the site.

EXCAUATIONS AT DHALEWAN (1999-2000 & 2001-2002)



Fig. 4.1

24







FIg. 4.3

The layers (6) to (4) show the deposits of Period II (Kushan) and layers (3) to (1) produce the material of Gupta Period i.e. Period III (Fig. 4.7).

Out of 5.20 m cultural deposits of trench B5, 3.50 m belongs to Harappan assemblage and remaining 1.70 m to Kushan and Gupta.

Layer (1) contains loose earth with ash and potsherds. It is 70 cm thick. It is followed by layer (2), which has very compact yellowish earth at the upper level. It is 40 cm thick. Pit no. 1 sealed by humas is cut to (1), (2) & (3) layers, Pit no. 2 is sealed by layer (1) has ash, loose earth and potsherds, it has cut layers (2), (3) & (4). Layer (2) also seals a hard yellow earth floor of 15 cm thick. Layer (4) is a layer full of loose earth, ash and potsherds. It is 25 cm thick. Layer (5) has semi-compact patches and potsherds. It is 35 cm thick. Layer (6) has loose greyish earth, brickbats and bricks. It is 40 cm thick. Layer (6A) has sand and loose earth showing desertion of the habitation. It is 15 cm thick. Pit no. 3 is sealed by layer (6) and it has loose material. It cuts into layer (7). Layer (7) has loose greyish earth, bricks and brickbats. It has a thickness of 30 cm. Pit 4 is sealed by layer (7) and cuts into layer (8) and the mud-floor of mature Harappans. Layer (8) has very compact yellowish earth and has potsherds in it. It is quite a thick layer. It is 55 cm in thickness. There is 10 cm thick mud-floor over layer (10), which consists of greyish loose earth and ash. It is 30 cm thick. Layer (11) is also layer containing loose greyish earth potsherds and ash. It is 35 cm thick, layer (12) is a thin layer of 15 cm. Layer (13) is a layer with loose earth and is 25 cm thick. It seals a mudfloor of 20 cm thick below which layer (15) having loose earth and mud brickbats have been found. It is 20 cm thick. Layer (16) has loose earth and ash. It is 20 em thick. Layer (17) is loose layer, full of greyish loose earth, ash and potsherds. It is 60 cm thick. Layer (18) has compact earth of yellowish colour and it is 50 cm in thickness which lies above natural soil.

## DLW, Trenches YA10, Qd 2 and ZA10, Qds 1 & 2 Section, Facing North (Figs. 4.3 & 4.7 and PL 4.40)

This is a section, which gives the story of cultural succession at Dhalewan from the Early Harappan Period to Gupta Period in a deposit of 4.90 m. The lower stratum is quite intact over the natural soil but the upper strata is very much disturbed by pits of Gupta and Kushan periods. Layer (1) is 25 cm thick of humus and is of light greyish colour. Layer (2) occurs below layer (1) is 20 cm thick, is of light grey colour and has loose earth. Layer (3) occurs below layer (2) is 35 cm thick and is semi-compact and yellowish in colour. Layer (3) is 60 cm thick of yellowish loam. Layer (4) occurs below layer (3), has is 50 cm thick and light yellowish compact earth. Layer (5) is located below layer (4) and is 60 cm thick. It is of yellowish compact earth with brickbats. Layer (6) is below layer (5) and is of light greyish compact earth. It is 60 cm thick. Layer (7) is below layer (6) and is composed of semi-compact earth with ash and it is 30 cm thick. Layer (7A) is below layer (7). It is composed of greyish loose earth, ash and brickbats. It is

#### Die Cutings

40 cm thick. The top of layer (8) suggests a break in occupation. Layer (9) is yellowish compact earth, potsherds and brickbats. It is 80 cm thick. Layer (8) seals the mud brick fortification wall (STR-48) and the circular mud structure (STR-80). Layer (9) is 80 cm thick which is of compact yellowish earth and is a contemporary deposit of mud brick fortification wall. Layer (10) is yellowish compact earth having a thickness of 20 cm. Layer (11) occurring below layer (10) consists of grey loose earth and ash and is 30 cm thick. Layer (12) is thick compact yellowish deposit of 90 cm thick. This is just above the natural soil and there is also a dump of the earliest settlers in this area. Layers (10), (11) and (12) belong to sub-period IA in this area.

The Layers (12) to (10) represents the deposits of Period IA below the fortification wall on its outer face (PL 4.40). The layer (9) shows the deposit contemporary to the fortification of period IC and layer (8) seals the fortification after the desertion of the site. No sterile layer is traced. The deposits of layers (7A) to (4) and (3) to (1) belong to Kushan (Period II) and Gupta (Period III) respectively. (Fig. 4.7)

Out of the total deposits 5.50 m in trenches YA10 and ZA10 2.80 m belongs to Harappan assemblage and the remaining 2.70 m upper deposit to Kushans and Guptas.

As earlier pointed out, there are six pits and two dumps revealed in this section. Pit no. 1 is sealed by layer (2) and is cut into layers (3) and (4). It has pottery, a full pot and ash along with loose earth. Pit no. 2 has been cut into an earlier pit and contains loose earth, ash and some compact yellowish earth patches. Layer (2) is sealed the pit. Pit no. 3 is also sealed by layer (2) and cut into layers (3) and (4). While layer (3) consists of loose earth and layer (4) is compact earth. Pit no. 4 is cut into layers (4) and (5). Pit no. 5 is sealed by layer (5) and has pottery, brickbats loose earth and ash. This pit has been cut into the Kushan levels and appears to be a huge refuge pit. Pit no. 6 sealed by layer (7A) and cut into layer (8). This is a pit on the top of Harappan occupation.

## DLW, Trenches YC12, Qds. 1 & 4, YC13, Qds. 1 & 4, YC14, Qds. 1 & 4 and YC15, Qds. 1 & 4 Section, Facing East (Figs. 4.4 & 4.7 and Pls. 4.2 & 4.3)

This is a section, which projects cultural activity of all the periods. While on the northern side though considerable erosion has taken place, but layers (8), (9) and (10) above the natural soil represent all the three sub-periods of the Harappan occupation, particularly below peg YC15. This also clearly shows the mud brick fortification wall, STR-39 and 41. Layer (10) represents Period 1A. Below peg YC13, on the right side, mud brick wall (STR-83) of Period 1B, mud brick wall (STR-55), mud brick wall with foundation trench (STR-57) and mud

#### EXCAUATIONS AT INFALEWAN (1999-2000 & 2001-2002)

floor of Period IC are clearly marked out in section. Mud brick wall of Phase 1 of Period IC (STR-50) has four courses of brick. On the southern side STR-4, the mud brick wall of Phase C could be easily noticed and it is sealed by layer (8). Besides this, this section clearly shows near peg YCII the steatite bead factory (STR-19) below layer (7) belonging to Phase II of Period IC, of the Mature Harappan period.

This section is important from the point of view of the structures of Kushan and Gupta Periods, which are, unfortunately, few due to the ravages of time. The mud floor below layer (2) of Gupta Period and mud brick wall STR-8 sealed by (3) of Kushan Period are worthy of record.

In this section an upper deposit of about 1.20 m represented by layers (1) to (4) belongs to Gupta Period i.e. Period III. Below this, a deposit of about .70 m represented by layers (5) and (6) belongs to Kushan Period i.e. Period II. The whole upper deposit of about 1.90 m deposited over the ancient Harappan mound belong to Early Historical Period (Periods II and III). This deposit reduces in thickness while moving towards north at the site. On the northern lower ridge, it disappears. From layers (7) to (10), a deposit of about 1.20 m represented the deposit of Harappan culture in which layer (7) belongs to Phase II of Period IC, layer (8) and (8A) belong to Phase I of Period IC while layer (9) belongs to Period IB and layer (10) to (1A). In place of break-layer in between layer (7) and (6) vertical cracks are found all over in Sq. YC11 and YC12.

In all, this section has cultural deposits of 2.40 m. In the southern side layer (1) is 25 cm thick and consists of humus. Below layer (1) occurs layer (2) which consists of greyish loose earth, ash and potsherds. It is 40 cm thick. Layer (3) is a compact layer of yellowish earth and clay, which is sealed by a mud floor. It is 55 cm thick. Layer (4) is below layer (3) has greyish loose earth and ash. It is 20 cm thick. Layer (5) is a thick loose greyish earth having loose material and ash. It is 25 cm thick. Layer (6) is yellowish compact layer with potsherds. It is 20 cm thick. There appears to be a cultural break after layer (6). Layer (7) consisting of semi-compact earth, an embedded large pot, a dump of refuse material and large number of steatite beads scattered on the floor in burnt and baked position, were found. It appears to be a steatite bead producing area. It has thickness of 30 cm.

In the eastern side, though erosion has taken place layer (8), which consists of yellowish compact material, is 55 cm (max.) thick. Layer (9), which occurs helow (8), is also a compact yellowish layer with ash patches. It is 25 cm thick. Pit 7 has been cut into layer (10) and sealed by layer (9). It has pottery and mud brickbats. Layer (10) has compact yellowish earth and has thickness of 30 cm. It is a layer just above the natural soil.



Fig. 4.4

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EXCAVATIONS AT DHALEWAN (1999-2008 & 2001-2002)

The Cuttings



Pl. 4.3 Section, facing cast, trench YC13, Qds. I and 4.

## DLW, Trench - ZH5, Qds. 3 and 4 Section, Facing North (Figs, 4.5 & 4.7 and Pl. 4.4)

This is a section facing north between the peg numbers ZJ4 and ZH4. In this section, the upper portion is disturbed by pit nos. 1, 3, 4, 5 and 6. Pit no, 9 cuts the mature Harappan levels. The section has a cultural deposit of 4.50 m.

Layer (1) is humus and is 30 cm thick. Layer (1A) is a loose layer with ashy earth and it is 38 cm thick. Layer (2) below layer (1A) is broad, thick yellowish in colour and compact, It is 35 cm thick. Layer (3) is yellowish in colour and very compact earth. It is a habitational layer having a hearth (STR-1) and a floor. The thickness of the layer is 40 cm. Layer (4) is a loose layer of earth having potsherds and brickbats and 30 cm thick. It is greyish in colour. Layer (5) is 50 cm thick has compact patches of greyish earth. Layer (6) is 25 cm thick of composed loose earth. Layer (7) has semi-compact earth and is 35 cm thick. Layer (7A) is 20 cm thick of compact earth. Layer (8), which is 20 em thick and laver (8A) 25 cm thick and laver (9), which is 15 cm thick and has grevish compact earth. Layer (10) is 20 cm thick and has compact earth. Layer (11), which shows the beginning of the Kushan period, has a mud brick wall (STR-6), a floor which is sealed by layer (10). This is the first occupational strata of the Kushan period after the break. Layer (12), yellowish in colour, quite compact in nature is 30 cm thick and compact earth with some gravel. Layer (13) which is generally greyish in colour but loose in nature. It is 40 cm thick. It has ash and potsherds. Layer (14), which has yellowish compact material potsherd and brickbats. Layer (15) is greyish in colour, loose in nature has considerable brick bats potsherds and ash. It is 40 cm thick. Layer (16) is a contemporary deposit of mud brick wall (STR-17). It has compact yellowish earth, clay patches, brickbats and potsherds. Layer (16) on this side is the first occupational deposit of mature Harappans over the natural soil. It is 35 cm thick. It has been cut by pit no. 9.

As pointed out earlier this section has 6 pits. The maximum pit activity is found in the Gupta levels. These pits are full of refuse, ash and pottery.

In all, this section shows about 4.50 m of cultural deposits out of which lower 1.50 m deposit belong to Harappan assemblage and denoted by layers (16) to (12); over that about 1.20 m deposit represented by layers (11) to (7) belong to Kushan Period after a break; and 1.60-1.80 m upper deposit in this trench is denoted by layers (6) to (1) which belongs to Gupta Period (Fig. 4.7). In this trench floor of 10-20 cm thick of mature Harappan Period, Phase 1 made by soling of bats of *mustikus* and cakes mixed with earth, has been traced. It is not possible to show the floor in this section which is marked as (15 AF).





EXCAVATIONS AT DHALEWAN (1999-2000 & 2001-2002)

Pl. 4.4 View showing Gupta structure (upper level), below Kushan structure (right), further below Harappan structures and section facing east, trench ZH5, Qds. 3 and 4.





DHALEWAN: 2001-2002 DISTRICT MANSA, PUNJAB DLW-TRENCHES, YF 11 QDTS. 1 AND 4 YF 12 QDTS. 1 AND 4 YF 13 QDTS. 1 AND 4 YF 14 QDTS. 1 AND 4

SECTION FACING WEST



FERIOD     BS     ZHS     ZHS     WHI     WHI     WHI       EBODLE     III     III     IIII     IIII     IIIII     IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII			T R E N	ICE OF LAVERS C H E S		
	PERIOD	8	SHS	XA10 ZA10	YEN YEN2 YEN3 YEN4	7012 7013 7014 7016
	(surra)		3			****
	THEOR &	• • •	4-9-1-	irer a		
		8	R	Е X	к	
	ERIOD-IC RE HARAPPARA					4.7. <b>6</b>
	ERIOD-IB VANIETONI					

#### The Cuttings

## DLW, Trenches YF11, Qds. 1 & 4, YF12, Qds. 1 & 4, YF13, Qds. 1 & 4 and YF14, Qds. 1 & 4 Section, Facing West (Figs. 4.6 and 4.7)

This is a section, which is running north to south on the periphery of the mound, which has been cut for agricultural operations, for levelling the fields. It has an average cultural deposit on the lower edge ranging from 1 m to 1.50 m, the section has Early Harappan deposit and structures of the Transition and Mature phases.

Layer (1) of humus is covered by the soil dump of recent agricultural operation. Layer (2) seals the structure STR-32, STR-26 & STR-27. However, STR-69 is sealed by modern dump while STR-104, 102 and 105 are sealed by layer (2). STR-107, STR-88 are sealed by humus. Layers (4) and (5) consist of compact earth which is a contemporary deposit of STR-88. Layer (4) is 37 cm thick and layer (5) is 50 cm thick respectively. The northern side is also disturbed by pit nos. 3, 4 and 5.

In this section, layer (5) measuring 50-60 cm thick and has 10 cm thick whitish compact mud floor of Early Harappan, Period IA. The layer (5) with whitish floor has traced in Sq. YF14 and Qd-1 of Sq. YF13. Over that about 60 to 70 cm deposit is denoted by layers (4) and (3) both belong to Period IB (transition period). Both layers have been traced in YF12 and YF13. Over that about 80-90 cm deposit is denoted by layers (2) and (1) of Mature Harappan Period, Phase I and Phase II respectively. A foundation trench has also revealed with wall (STR-69) of a house of the Phase I of Period IC. The mature Harappan deposits found in trenches YF11, YF12 and Qd. 3 and 4 of YF13. This section shows the stage wise structures from Periods 1A to 1C. Amongst, these structures, a whitish floor of Period IA; lane of period IB, between STR-88 and 107 are important.

## B. STRUCTURES

## 1. STRUCTURES OF PERIOD IA (EARLY HARAPPAN)

The Early Harappan deposits of Period IA are recognized by 50-80 cm in trenches B5, YA10 and ZA10, YD13 (Pl. 4.6), YE14, YF14, YC15 and YC13, at the site. This deposit is identified as a first occupational deposit over the virgin soil at Dhalewan. The structures of this period are revealed in trenches YC13, YE14 and YF14 only (Left side structures of Pl. 4.5). A roughly circular kiln is found in quadrant 2 of trench YC13. Partially exposed house with cabin type small room, a big room, a good evidence of whittish flooring allover and a circular hearth (*tandoor*) is unearthed in trench YF14. Partially exposed walls of another house are recovered in trench YE14. The structure numbers 116 to 123 are represented by the structures of Period IA at the site. These are shown in brown colour on the Plan of the site (Fig. 4.8).





Pl. 4.5 General view showing the excavated structures from north-west, Period IA (extreme left), 1B (middle) and 1C (half right).

EXCAUATIONS AT DHALEWAN (1999-2800 & 2001-2002)



Pl. 4.6 View showing deposits of Period 1A below the mud-brick wall of Period 1B.
#### The Cuttings

The Early Harappan walls are found thin in comparison to Mature Harappan walls. The breadth of the walls varies from 26 to 60 cm. The actual measurements of the breadth of the wall are noticed as 26, 32, 36, 40 and 60 cm.

Generally, Early Harappans constructed single-brick walls. The single brick mostly used header wise in construction of a wall but at some places stretcher (length wise) are also used in construction to further reduce the breadth upto 26 cm of the wall. Both the walls did not follow the English bond system. In between, 32 to 60 cm thick, walls probably used as a load bearing walls of the roof. At one place, 60 cm thick wall is also found which is made with the use of one row of header and other row of stretcher. The brick size used in construction of the walls is in the ratio of 3:2:1. The actual brick sizes measure 32x24x11, 32x26x11, 36x24x12, 40x30x10 and 38x20x9 cm. Greyish coloured mud has been used for binding. No evidence of plaster on walls is revealed so far as in Early Harappan stage at Dhalewan. The rooms of the house, small cabin type as well as long spacious, both are found. An evidence of a circular hearth (*landoor*) is revealed at the northern side of a house in the spacious courtyard. Thus we can assume that Early Harappans at Dhalewan were made spacious houses.

A very good evidence of floor made of fine quality of whitish mud/clay which is found all over in the Early Harappan houses. It measures about 10-20 cm in thickness and was laid at the lowest level on the compact surface of virgin soil at Dhalewan. It is also the first structural activity at the site. The slope of the floor measuring 20-30 cm down towards north indicates all the drains probably flowed towards north-western direction in Early Harappan times. But, as such no drain has so far been traced in Early Harappan level. Drains recovered in Mature Harappan level open or flow towards northwestern direction. The main drain (ancient Nahar) was possibly situated near the site in north-west. At present, a modern drain (Nahar) also flows probably in the same depression of the ancient Nahar towards south-western direction. It appears that, all the Early Harappan and Harappan drains fell in the ancient Nahar, a branch of Sirhind in the north-west.

Some type of industrial or commercial activity is shown by the finds of a kiln. A roughly circular kiln is represented by a burnt earth encircled by a raised boundary and a roughly rectangular raised platform within the circle along the boundary in the north-western side. Ash and small particles of charcoal were found in large quantity from this place. The north-eastern part of the kiln was later on covered in successive period i.e. Period IB by the construction of a fortification wall of Early Harappan settlement over it. For what purpose, the kiln was made; it is not possible to work out from the recovered evidences.

In general, the Early Harappans made their spacious houses in cardinal direction and maintained true north-south and east-west directions. The north of the Early Harappans is noticed at the site with 20° fluctuation towards west of the present north. Usually, the houses were made of single brick-wall construction. Therefore, the sizes of the rooms are found small in comparison to the Mature Harappans. The houses have

#### EXCAVATIONS AT DHALEWAN (1999-2000 & 2001-2002)

atleast two rooms with a spacious courtyard and a circular hearth (tandoor) in open area. The whitish coloured fine quality of flooring found all over in the houses produces a good example of construction in this period. (PL 4.8). Some type of industrial activity also appears in this period. In the Early Harappan settlement of Period IA, the houses and the industrial area both are found unfortified while in Period IB fortified at Dhalewan.

Individual descriptions and other details of the structures of Period IA are given below.

### STRUCTURE NOS. 116, 117 AND 118 (Fig. 4.9 and Pls. 4.7, 4.8 & 4.9)

- 1. Location : DLW, Square No. YF14 and Quadrants : All
- 2. Type of structure: Partially exposed house
- Stratigraphic position: Sealed by layer (4)
- Period and Structural phase: Period IA (Early Harappan)
- Measurement of structures in cm: 116: 112x32x11; 117: 630x26 to 36x40; 118: 216x32x40
- Number of courses : Four
- Masonry and bond: 116 only header wise; 117 partly header and partly stretcher wise; 118 - header wise
- 8. Composition of mortar: Mud
- Orientation of longer axis : North-west to South-east and North-east to Southwest
- 10. Nature of bricks used: Mud bricks
- Dimension of bricks in cm : 116: 32x24x11; 117: 36x26x12; 118: 32x24x11
- 12. State of preservation: Good
- 13. Shape and other distinguishing feature: STR No. 116, 117 and 118 comprise a partially exposed house having a small cabin type room of size 2.16 x 0.86 m, another long room of size maximum available length 4.90 x 2.30 m and a circular hearth in the courtyard with a good evidence of a fine whitish floor all over. The slope of the floor towards north is noticed 20-30 cm. The brick size used in construction of walls is in ratio of 3:2:1.

Details of each structure :-

STR No. 116 :- Western side wall of a small cabin type room laid header wise with orientation towards north-west to south-east.

Measurements : maximum available length 112 cm, breadth 32 cm, maximum available height 11 cm; number of courses - two and brick size - 32 x 24 x 11 cm.

The Cuttings



Fig. 4.9





Pl. 4.8 Whitish floor, Period 1A.



Pl. 4.9 Overground tandoor, Period 1A.

STR 117 :- Northern side wall of both small cabin type room and long room with orientation of north-east to south-west. The breadth of the single brick wall varies because it is partly made of header wise and partly made of stretcher wise.

Measurements : maximum available length 6.30 m, breadth from 26 to 36 cm, height 40 cm; maximum available courses are three and brick sizes - 26x24x12 cm, 36x26x12 cm.

STR 118 :- Mid wall between small cabin type room and a long room, is made header wise with orientation of north-west to south-east.

Measurements : length 2.16 m, breadth 32 cm, height 40 cm; maximum available courses : four and brick size - 32 x 24 x 11 cm.

Whitish Floor (Pl. 4.8) :- Partially exposed floor made of fine whitish clay is running all over in the both rooms and in the courtyard. It was disturbed by pit activities at several places in Early Historical Period. It has a slope towards north of about 20-30 cm and has a thickness of 10-20 cm.

Circular Hearth (tandoor) - an over ground (PI. 4.9) :- Over ground circular hearth is situated in the courtyard of about 4 m far from cabin type room in the north. The reddish surface found on the inner side is showing its regular use.

Diameter of the hearth: Inner 43 cm, Outer 55 cm and maximum available height 10 cm

### STRUCTURE NOS. 119 and 120 (Fig. 4.10)

- 1. Location : DLW, Square No. YE14 and Quadrant : 2
- Type of structure: Partially exposed rooms of a house
- Stratigraphic position: Sealed by layer (4)
- Period and Structural phase: Period IA (Early Harappan)
- Measurement of structure in cm: 119: 285x32x11; 120: 290x40x22
- Number of courses : Two
- Masonry and bond: Header wise
- 8. Composition of mortar: Mud mortar
- 10. Orientation of longer axis : North-west to South-east
- 11. Nature of bricks used: Mud bricks
- Dimension of bricks in cm : 119: 32x26x11; 120: 40x30x10



Fig. 4.10

EXCAPATIONS AT DHALEWAN (1999-2008 & 2001-2002)



Fig. 4.11





PL 4.10 Circular kiln, Period 1A (lower) and a part of fortification wall over the kiln, Period 1B.

- 13. State of preservation: Good
- Shape and other distinguishing feature: STR No. 119 and 120 comprise at least a partially exposed room of size length 2.85 m(?), breadth 2.30 m.

Details of each structure :

STR 119 : Partially exposed northern side mud brick wall of the room is laid header wise with orientation towards north-east to south-west.

Measurements : length 2.85 m (maximum available), breadth 32 cm, height 11 cm; number of course - one and brick size - 32 x 26 x 11 cm.

STR 120 : Partially exposed eastern side mud brick wall of the same room is laid header wise with orientation towards north-west to south-east and further run towards north for another room.

Measurements : maximum available longth 2.90 m, breadth 40 cm, height 22 cm; number of courses - two and brick size - 40 x 30 x 10 cm.

### 3. STRUCTURE NO. 123 (Fig. 4.11 and Pl. 4.10)

- 1. Location : DLW, Square No. YC13 and Quadrant : 2
- 2. Type of structure: Kiln
- 3. Stratigraphic position: Sealed by layer (9)
- 4. Period and Structural phase: Period IA, Early Harappan
- 5. Measurement of structure in cm : Diameter: inner 272 & outer 212; height 10
- 6. Number of courses : One
- Masonry and bond: Brick-bats construction
- 8. Composition of mortar mud mortar
- 9. Nature of bricks used: Mud bricks
- 10. Dimension of bricks in cm : 25(?)x22x10
- State of preservation: Not so good
- 12. Shape and other distinguishing feature: A roughly circular kiln having raised boundary and a roughly rectangular small sized raised platform within the circle along the boundary in the northwestern side. The boundary possibly lined by brick or brickbats. Few brickbats are found laid on the boundary and a brick of size 25(?)x22x10 cm is found in the circle. Ash and small pieces of charcoal are found in good quantity from the area with potsherds. Few pieces of pottery are still

### The Camings

visible there in the kiln. The purpose of the kiln is not clear. However, presence of the kiln in Early Harappan stage of Period 1A indicates beginning of some type of industrial activity in this Period at Dhalewan. A carbon sample has also collected from the kiln for C-14 dating (see Chapter 3).

## II. STRUCTURES OF PERIOD IB (TRANSITION)

Period IB represented by deposits of 60-80 cm which is found at the lower ridge on the north and northwest end of the mound. The residential structures were uncarthed in trenches YF14, YE14, YD14, YC14, YF13, YE13, YD13, YB13, YJ13, YH11 and YG11. The fortification wall is revealed in trenches YC15, YC14, YB14, YC13, YB13, YA11, YA10 and ZA10 in the northeastern side of the settlement. The structure numbers 81 to 115 represent the residential structures. The structure numbers 39 to 48 are marked to show the fortification. The yellow colour has marked on Plan to indicate the structures of this period (Fig. 4.8).

The main structural findings of Period IB are the appearance of a lane and connected houses along the lane in a planned manner. The fortification wall of about 2.50 m in width at the north-eastern side of the settlement makes Dhalowan a fortified complex.

The houses in comparison to Period IA have larger rooms. Similarly more use of single brick-wall in construction of Period IA slowly converted to thick walls in this period. Side by side single brick wall constructions were also continued but in lesser use. Probably the outer walls of the houses or the load bearing walls of the rooms were made thicker than other walls of the house.

The entrance of the house is traced at Dhalewan in the north at one place. The planning of the rooms at four corners with a open courtyard of the plot most probably developed in this period. The roofs were constructed by support of wooden beams as found burnt wood at two places in trenches YD14 and YE13 in this level (Pls. 4.11, 4.12 & 4.13).

The brick sizes used in the houses are found generally in the same ratio as found in Period IA i.e. 3:2:1. The actual bricks sizes used in construction of the houses in this period measuring 32x26x11 cm, 44x28x12 cm, 34x24x8 cm, 37x26x9 cm, 36x24x12 cm, 38x18x10 cm, 34x24x11 cm, 30x27x11 cm, 32x27x11 cm and 28x23x10 cm. The use of the circular hearth (*tandoor*) in the kitchen continued during this period as well.

Noteworthy feature of this period is a burning activity which is traced in this level in several quadrants viz. YD14, Qds. 3&4, YE14, Qd. 4, YE13 Qds. 1 & 2 and YF13, Qds. 1 & 2 of about more than 30m long span and covered two or three houses. It took place at the end of the Period IB. Another noteworthy feature of this period is tracing out of the remains of the bird's cage in the form of the dotted circles of 1.30m and 2m in diameters on plan. The depression marks (small post-holes) made by creeting the EXCAUATIONS AT DHALEBON (1999-2000 & 2001-2002)



Pl. 4.11 Partially exposed rooms with the evidence of burnt wood, Period 1B.



Pl. 4.12 A close view of burnt wood.





Pl. 4.13 The evidence of burnt wood between the space of two rooms, Period 1B.

bamboo sticks in a fenced manner on plan forming a circle probably either to keep the tamed animal/bird inside it or to store the material. Remains of three circles are traced at two places in which two circles are intersecting each other at one place. Intersecting circles indicate that after the disuse of first cage, the second cage was subsequently made at the same place in the successive phase of Period IB.

The main alignment of the planning of the houses is found same as in period IA. The shifting of north is also noticed 20° towards west in this period. The houses are made in cardinal directions along the lanes. It seems that some sort of well-planned settlement with the concept of fortification was slowly appearing in this Period.

The walls follow the English bond system. The width of the walls runs 32 cm to 98 cm. The single brick-wall mostly constructed only header wise. The double bricks walls consists either one row of header and other row of stretcher or both rows of header. Three-brick-wall consists of all rows of header. Footings at lower level in outer edge of the wall are noticed at two places. Probably, both sides footing may have been used for constructing strong wall. It shows one of the developments in their engineering skill in this period.

The fortification wall is also one of the main finding of this Period. It is found running towards north-west to south-east. The deviation of present north of the wall is noticed about 40°- 45° towards west. The wall is traced upto 60m in length. Beyond that in the same direction i.e. south-east, Trench ZB8 is laid out about 15-20 m far from the extreme exposed south-eastern part in trench ZA10 to check the further extension of the said wall. But, it has not so far been traced. It seems that the wall might have been either taken a turn or the area under ZB8 shows an opening of the settlement which might have been a gate.

The north-western end of the fortification wall clearly shows an opening towards north-east of the settlement. The other side of the gate had disappeared due to agricultural operations. It contained a rectangular projection of 8x12.70 m at the north-western end. The projection part suggests a floor of a room or a bastion at the gate. The lower courses of remaining fortification wall are not found beyond 2.50 m in width in the east in some of the trenches. It seems that the fortification wall in their initial stage was about 2.50m wide in Period IB. The settlement is found in the western side of the fortification. At two places, the deposits of about 50-80 cm have been noticed below the fortification, which represent the material of unfortified settlement of Period IA.

The residential houses in the western side of the fortification represent the settlement of this period. Over all about 7 houses are traced. But, all are partially exposed. Amongst these, three houses are situated along the lane, other two are connected with the fortification and remaining two are in the west.

The northern side houses, along the lane consist of at least four small rooms and a spacious courtyard with a circular hearth (broken). The southern wall i.e. back wall of the house is thicker than other walls. It has no entry from the lane. It seems that the

#### The Contings

concept of main door opening towards south in the houses had not been generally accepted. As nowadays, the southern opening in the house is avoided. In the western side small cabin type rooms are laid in a row along the western wall which is measuring  $2.60 \times 0.98$  m,  $2.60 \times 1.74$  m and  $2.50 \times 1.84(?)$  m respectively from the south. The forth-squarish room is laid along the southern wall with a small gap from the other room in the east. The courtyard of north-cast has a circular hearth of diameter 46-54 cm (inner) in the east along southern wall of the house.

One of the southern side houses of the lane in the west consists of atleast three rooms and a courtyard with the evidence of the postholes forming a circle for bird's cage in the courtyard. Two intersecting circles made by small postholes for bamboo-sticks are found. The adjoining house in the east also has the evidence of a bird's cage made in similar fashion. The remains of a quarter part of the circle are found in the courtyard of the adjoining house. The owners of the houses probably kept their small-tamed animals or birds in the bird's cage or used to stack grass or materials in it. This house has atleast two rooms and a courtyard with remains of a bird's cage.

The noteworthy feature of the adjoining house is about 1m wide entrance towards north which opens in the lane. The other noteworthy feature is the finding of the burning activity in this level at the end of Period IB. Burnt remains are found in all the southern side houses of the lane. The burnt-wood remains in red colour are found fully scattered in the space between two rooms i.e. the space between STR Nos. 92 and 94. It seems that wooden beams supported the roofs of the both rooms. The roofs of the both rooms or atleast one room were laid out probably with a slope towards the space between the rooms. So, that during the courses of burning the wooden material fell down and deposited in between the said space. Similar remains of burnt wood are also found scattered inside the two rooms of another house in trenches YD-14 and YD13. Both the houses suggest use of wooden beams. Another important feature noticeable from both the houses is the construction of corner room/rooms on the plot. This feature is found fully developed in one of the house of Period IC. The use of thick walls upto 92 cm and side-by-side the use of thin walls of 32 cm is noticed in construction of both the houses.

Thus, Dhalewan emerged as a fortified settlement in Period IB. It shows that an early Harappan settlement of Period IA at Dhalewan was gradually evolving into a Harappan settlement with planned houses along the lane and fortification as well in Period IB. The latter indicates the security angle of the Harappans at Dhalewan, which initially developed in Period IB. So that this period (Period IB) is noticed as transition period from Early Harappan (Period IA) to Mature Harappan (Period IC) where in a grand fortification around the settlement is available.

### STRUCTURE NOS. 88, 91, 95, 100 and 107 (Fig. 4.12 and Pl. 4.14)

- Location : DLW, Squares and Quadrants : YF14, Qd. 3 & 4, YE14, Qd. 2 & 4 YF13, Qd. 1 & 2
- Type of structure: Lane





Pl. 4.14 View of a lane, Period 1B.

EXCAPATIONS AT DRULEWAN (1999-2000 & 2001-2002)

- Stratigraphic position: Sealed by layer (3)
- 4. Period and Structural phase: Period IB (Transition)
- 5. Measurement of structure in cm : length 2000; width 200
- 6. Number of courses of side walls : Four
- Masonry and bond of side walls: One row of header and another row of stretcher or only header
- 8. Composition of mortar: Mud
- 10. Orientation of longer axis : South-west and North-east
- 11. Nature of bricks used in side walls : Mud brick
- Dimension of bricks in cm : 36x26x11; 44x28x12; 34x24x8
- 13. State of preservation: Good
- 14. Shape and other distinguishing feature: STR Nos. 88, 91, 95 and 100 and 107 comprise a lane of a transition Period IB. It is a 115 cm to 200 cm wide lane running southwest to northeast among the adjoining houses. The lane is found 2m wide in the southwest and 1.15 m wide in the northeast. It seems that southern side house of the lane in the northeast was encroached some part of the lane thus the lane became narrow in northeast. The northern side houses have not shown any clear opening towards the lane. It suggests that this lane is situated in the back part of the northern side houses. A southern side house has an entrance from lane. Both side of the lane, are found partially exposed rows of the houses.

In successive period IC (Mature Harappan), houses further encroached the lane in the north-castern side for making their outer platform (STR No. 67). The lane became almost non-functional. The STR. No. 107 presents an evidence of footing along the wall (STR No. 100) for strengthening the wall.

STR 88 - Mud brick back wall of the northern side houses of the lane running south-west to north-east. Measurements : length 20 m x breadth 0.60 m x height 0.15m; Brick size - 32 x 26 x 11 cm; Maximum available courses - two.

STR 91 - Mud brick front wall of the southern side house of the lane is running south-west to north-east. The northern part of the wall is shown encroachment in the lane. Measurements : length (maximum available) 3.75 m x breadth 1.05 m x height 0.22m; Brick size - 44 x 28 x 12 cm; Maximum available courses - two.

STR 95 - Mud brick front wall of the same southern side house of the lane is running south-west to north-east and closely attached with STR No. 91 in the east and in the west it turns towards south at a right angle and makes a opening of the house in the north. Measurements : length 5.20 m x breadth 0.34 m x height 0.23m; Brick size - 34 x 24 x 8 cm; Maximum available courses - three.

#### The Cottings

STR 100 - Mud brick front wall of the another southern side house of the lane is running south-west to north-east and in the east it turns towards south at a right angle with leaving a space of about 90 cm with STR No. 95 for an entrance in the north for an adjoining house in the west. Measurements : length (maximum available) 5.20 m x breadth 0.60 m x height 0.36 m; Brick size - 37 x 26 x 9 cm; Maximum available courses - four.

STR 107 - Probably this is a 42 cm wide footing of the wall and running along the northern side of the STR No. 100 at the lowest level for provinding strength. STR No. 107 was traced under the soil which was laid out for the working level of the lane. Measurements : length (maximum available) 1.80 m x breadth 0.38 m x height 0.23 m; Brick size - 36 x 24 x 12 cm; Maximum available courses - two.

## 2. STRUCTURE NO. 115 (Fig. 4.13 and Pl. 4.15)

- 1. Location : DLW, Square No. YJ13 and Quadrant : 4
- 2. Type of structure: Wall with a circular hearth
- 3. Stratigraphic position: Sealed by layer (2)
- 4. Period and Structural phase: Period IB (Transition)
- 5. Measurement of structure : (a) length 4.22m (b) width 0.44m (c) height 0.12m
- 6. Number of course : One
- 7. Masonry and bond: Only header wise
- 8. Composition of mortar: Mud
- 9. Orientation of longer axis : North-east to South-west
- 10. Nature of bricks used: Mud brick
- 11. Dimension of bricks : (a) length 44 cm (b) width 28 cm (c) thickness 12 cm
- 12. State of preservation: Good
- 13. Shape and other distinguishing feature: Partially exposed single brick wall with a overground circular hearth (*tandoor*) near it on the northern side. The wall is running south-west to north-east. Only lower part of the *tandoor* is found, it is recognized by the finding of burnt earth and ashes from *tandoor*. Measurements : maximum available length 4.22 m x breadth 0.44 m x height 0.12 m; Brick size 44 x 28 x 12 cm; Number of course one; Diameter of a circular hearth inner 69 cm and outer 116 cm.

# 3. STRUCTURE NO. 112 (Fig. 4.8)

- 1. Location : DLW, Square No. YG11 and Quadrant : 1
- 2. Type of structure: Partially exposed room

EXCAUCTIONS AT DILALEWAN (1999-2000 # 2001-3002)



Fig. 4.13

62





Pl. 4,15 Partially exposed wall and overground tandoor, Period 1B.

- 3. Stratigraphic position: Sealed by layer (2)
- 4. Period and Structural phase: Period IB
- Measurement of structure in cm ; length 306; width 58; height 3 (not fully exposed)
- Number of courses : One (Lower part has not been excavated)
- Masonry and bond: Only header wise
- 8. Composition of mortar: Mud mortar
- 9. Orientation of longer axis : North-west to South-east
- 10. Nature of bricks used: Mud brick
- Dimension of bricks : (a) length 32 38 cm (b) width 20 cm (c) thickness 9-10 cm
- 12. State of preservation: Good
- 13. Shape and other distinguishing feature: STR 112 comprises a partially exposed room of a house in which the western wall of the room is fully exposed and other two connected side walls turned at the right angle, towards west for making a room, are partially exposed. The room's size roughly measures 2 m x 0.42 m (maximum available breadth). It seems that the room may have been squarish in shape. Fully exposed eastern sidewall is running north-west to south-east. Other two connected walls of the room are running north-east to south-east. Other two connected walls of the room are running north-east to south-west, in which northern wall is comparatively thinner than southern wall. These walls measure length (maximum available) 90 cm x breadth 58 cm x height 10 cm and length (maximum available) 102 cm x breadth 58 cm x height 10 cm, respectively.

### STRUCTURE NOS. 113 & 114 (Fig. 4.8)

- Location : DLW, Square No. YH11 and Quadrant : 2
- Type of structure: Corner of a room or courtyard
- Stratigraphic position: Sealed by layer (2)
- 4. Period and Structural phase: Period IB
- Measurement of structures in cm : 113: 206x24x11; 114: 164x24x11
- Number of course : One
- 7. Masonry and bond: Only header wise
- 8. Composition of mortar: Mud mortar
- Orientation of longer axis | STR 113 North-west to South-east; STR 114 - North-east to South-west

#### The Contings

- 10. Nature of bricks used: Mud brick
- 11. Dimension of bricks : (a) length 30 cm (b) width 24 cm (c) thickness 11 cm
- 12. State of preservation: Good
- 13. Shape and other distinguishing feature: STR 113 and 114 comprise a partially exposed room or courtyard showing a south-western corner of a room. The walls of the room are made with single brick construction. It is found near structure no. 112 which is also a partially exposed room. STR 112, 113 and 114 seem the parts of the same house.

STR 113 - Measurements : length (maximum available) 2.06 m x breadth 0.24 m x height 0.11m; Number of course - one.

STR 114 - Measurements : length (maximum available) 1.64 m x breadth 0.24 m x height 0.11 m; Number of course - one.

## 5. STRUCTURE NOS. 81 and 82 (Fig. 4.8 and Pl. 4.16)

- Location : DLW, Square No. YB13 and Quadrant : 4
- 2. Type of structure: Partially exposed gallery and room
- Stratigraphic position: Sealed by layer (5)
- Period and Structural phase: Period IB
- Measurement of structures in cm : 81: 100x27x11; 82: 226x32x23
- Number of courses : Two
- Masonry and bond: Only header wise
- 8. Composition of mortar: Mud-
- 9. Orientation of longer axis : North-east to South-west
- 10. Nature of bricks used: Mud brick
- Dimension of bricks in cm : (a) length 30 to 32 (b) width 24 to 27 (c) thickness
- 12. State of preservation: Average
- 13. Shape and other distinguishing feature: STR Nos. 81 and 82 comprise a partially exposed house, attached with the fortification having a gallery and a room with mud brick paved floor. The gallery is shown on the southern side of the room and measures 100 cm wide and shown by two parallel single brick walls, which are running from north-east to south-west. The adjacent room in the north has northern and southern walls with brick paved floor. The pavement of the floor was laid out somewhat in irregular manner.

EXCAUATIONS AT DUALEWAN (1999-2000 & 2001-2002)



PI. 4.16 Partially exposed house with brick paved floor on the right and part of a fortification wall on the left, Period IB.

### The Comings

Details of each structure are as below :-

STR 81 - Southern side wall of the gallery.

Measurements : length (maximum available) 1 m x breadth 0.32 m x height 0.11 m; Number of course - one; Brick size - 30 x 27 x 11 cm.

STR 82 - (i) Northern side wall of the gallery and southern wall of the room.

Measurements : length (maximum available) 2.26 m x breadth 3.20 m x height 0.23 m; Number of courses - two; Brick size - 32 x 27 x 11 cm.

(ii) Northern side wall of the room (its very small portion is exposed).

Measurements : length (maximum available) 0.56 m x breadth 0.50 m x height 0.23 m; Number of courses - two; Brick size is not available.

(iii) Mud brick paved floor is exposed in between two walls. The pavement of the floor has laid out by various sizes of mud bricks and brick bats in irregular manner. Measurements : length (maximum available) 1.62 m x breadth 1.94 m x height 0.11 m; Number of course - one; Brick size is not available.

## 6. STRUCTURE NOS. 83 to 86 (Fig. 4.14 and PL 4.17)

- Location : DLW, Squares and Quadrants: YC14-1 & 4, YD13-1 & 2, YD14-3 & 4
- Type of structure: Partially exposed house
- 3. Stratigraphic position: Sealed by layer (2)
- Period and Structural phase: Period IB
- Measurement of structure in cm : 83: 300x54to58x28; 84: 640x58x29; 85: 136x30x10; 86: 280x60x90x32
- Number of courses : Three
- 7. Masonry and bond: Two rows of header; one row of header
- 8. Composition of mortar: Mud mortar
- 9. Orientation of longer axis : North-east to South-west
- 10. Nature of bricks used: Mud
- Dimension of bricks in cm : 28x23x10
- 12. State of preservation: Good
- 13. Shape and other distinguishing feature: STR Nos. 83 to 86 comprise a partially exposed house consisting of atleast a small room, a long room and a courtyard. The western side small room has a size 184x136 cm (maximum available). The both outer walls of the room are constructed thicker than the middle wall. The



ENCAVATIONS AT DHALEWAN (1999-2000 & 2002-2002)







Pl. 4.17 Deposits of Period 1A (lower left); partially exposed house showing remains of burnt wood in the rooms, Period 1B (middle); structure alongwith a drain, Period 1C (upper level).

connected long room in the east measuring 358x266 cm (maximum available). Another wall STR 83 in the east is running in the same direction with taking a ledge toward south with STR 84 and attached with fortification. The noteworthy feature of this period is the finding of burning activity in both rooms in the form of a burnt wood, which suggesting that the wooden beams were probably used for making the roof of the house. Other noteworthy feature is the finding of the use of footing in construction of the wall of the house for provinding more strength. It is noticed in STR No. 86 i.e. western outer wall of the small room. The lower two courses are projected in stepping manner for the footing. The STR 86 and 87 probably indicate an entrance to this house from north.

Details of each structures :-

STR 83 - Northern side wall of a house running towards north-east to southwest and attached with the fortification at right angle. Measurements : length (maximum available) 3 m x breadth 0.54 to 0.58 m x height 0.28 m; Number of courses - three; Brick size is not available.

STR 84 - Northern side wall of both room's and running north-east to south-west. Measurements : length (maximum available) 6.4 m x breadth 0.58 m x height 0.29 m; Number of courses - three; Brick size - 28 x 23 x 10 cm.

STR 85 - Mid Wall i.e. a partition wall of the room running from north-west to south-east. It is a single brick wall. Measurements : length (maximum available) 1.36 m x breadth 0.30 m x height 0.10 m; Number of course - one; Brick size - 28 x 23 x 10 cm.

STR 86 - Western side outer wall, of the house as well as that of the small room is running north-west to south-east. This wall has a footing in its outer edge at lower two courses. It is the thickest wall of the house. Measurements : length (maximum available) 2.80m, breadth 0.60m without footing and 0.90m including footing, height 0.32m; Number of courses - three; Brick size - 28 x 23 x 10 cm. The STR 86 and STR 87 show an entrance for this house or could be a gallery in between.

### 7. STRUCTURE NOS. 87, 91 to 97 and 99 (Figs. 4.14 to 4.16 and PL 4.18)

- Location : DLW, Squares and Quadrants : YF14-3, YF13-2 & 3, YE14-4, YE13-1 & 2, YD14-4, YD13-1
- Type of structure: Partially exposed house
- Stratigraphic position: Sealed by layer (2).
- Period and Structural phase: Period IB (Transition)
- Measurement of structures in cm : 87: 338x60x45; 91: 366x106x19; 92: 406x100x19; 93: 194x34x10; 94: 570x64x12; 95: 546x34x17; 96: 316x32x28; 97: 184x34x28; 99: 190x26x8
- 6. Number of courses : Five

The Cattings



Fig. 4.15

EXEMPATIONS AT DHALEWAN (1999-2000 & 2001-2002)



Fig. 4.16



- Masonry and bond: One row of header, another row of stretcher; two rows of header, another row of stretcher; one row of header
- Composition of mortar: Mud mortar
- 9. Orientation of longer axis : North-east to south-west
- 10. Nature of bricks used: Mud brick
- Dimension of bricks in cm : 36x22x10; 32x22x9; 44x18x9; 36x32x9; 34x26x10; 36x30x12; 34x20x11; 34x22x8; 32x24x8; 26x22x8
- 12. State of preservation: Good
- 13. Shape and other distinguishing feature: STR Nos. 87, 91 to 97 and 99 comprise partially exposed another house consisting at least two rooms, and a courtyard with the remains of small post holes forming a circle for a birds cage (Fig. 4.16 and Pl. 4.18). The house falls along the lane on the south. The house has an entrance of 90 cm wide in the north, which opens in the lane. The size of the western-squarish room is 318 cm x 360 cm. Another room in the east with a gap of 70 cm is partially exposed and available size is 400 cm x 260 cm(?). The noteworthy features in this house are tracing the remains of a birdcage in the courtyard and the burning activities at this level. The fashion of making the bird cage in the back courtyard is found same in both adjoining southern side's houses. of the lane. The remains are partially found in the form of the small sized postholes of bamboo sticks, which is making an arc for a circle. Burnt wood, red in colour is found in between the space of the rooms. It seems that the upper structure probably was laid out on wooden beams having a slope towards the space between the rooms wherein during the course of burning the wood had fallen and not deposited.

The walls used in construction of the house vary 29 cm to 32 cm, 62 cm and 100 cm to 106 cm in width. The single brick wall is constructed header wise. The double brick wall is constructed with both rows of headers and three brick construction of the wall consisting of all rows of headers.

The northern wall of the eastern room is covered with some area of the lane so that the lane became narrow in the east.

The details of the structures :-

STR No. 87 - The partially exposed mud brick wall of the house is with northwest to south-east orientation. It is joined by another wall at right angle at the middle, which is also partially exposed. The STR 86 and 87 probably are forming a lane or an entrance for adjoining house of east. Measurements : length (maximum available) 338 cm x breadth 60 cm x height 45 cm; Number of courses - five; Brick size - 36 x 22 x 10 cm.

STR No. 91 - The orientation of this thick mud-brick wall is north-east to southwest. Measurements : length (maximum available) 366 x breadth 106 x height 19 cm; Number of courses - two; Brick sizes 44 x 18 x 9 cm and 32 x 22 x 9 cm.

#### The Camings

STR No. 92 - The orientation of this thick mud-brick wall is north-west to southeast. Measurements : length 406 cm x breadth 100 cm x height 19 cm; Number of courses - two; Brick size - 36 x 32 x 9 cm.

STR No. 93 - The orientation of this thin mud-brick wall is north-east to southwest. Measurements : length 194 cm x breadth 34 cm x height 10 cm; Number of course - one; Brick size - 34 x 26 x 10 cm.

STR No. 94 - The orientation of this thick mud-brick wall is north-west to southeast. Measurements : length 570 cm x breadth 64 cm x height 12 cm; Number of course - one; Brick sizes 36 x 30 x 12 cm and 34 x 20 x 11 cm.

STR No. 95 - The orientation of this thin mud-brick wall is north-east to southwest. Measurements : length 546 cm x breadth 34 cm x height 17 cm; Number of courses - three; Brick size - 34 x 22 x 8 cm.

STR 96 - The orientation of this wall thin mud-brick is north-west to south-east. Measurements : length 316 cm x breadth 32 cm x height 28 cm; Number of courses - four; Brick size - 32 x 24 x 8 cm.

STR 97 - The orientation of this thin mud-brick wall is north-east to south-west. Measurements : length 184 cm x breadth 34 cm x height 28 cm; Number of courses - four; Brick size - 36 x 32 x 9 cm.

STR 99 - The orientation of this thin mud-brick wall is north-east to south-west. Measurements : length 190 cm (maximum available) x breadth 26 cm x height 8 cm; Number of course - one; Brick size - 26 x 22 x 8 cm.

## 8. STRUCTURE NOS. 98, 100 to 107 (Figs. 4.15, 4.17, 4.18 & 4.19 and PL 4.19)

- Location : DLW, Square No. YF13 and Quadrants : All
- 2. Type of structure: Partially exposed house
- Stratigraphic position: Sealed by layer (3)
- 4. Period and Structural phase: Period IB
- Measurement of structure in cm : 960x36x30; 544x62x40; 398x58x20; 656x42x10; 324x38x10; 112x32x10; 194x40x10; 356x100x10; 190x36x23
- Number of courses : Four
- Masonry and bond: Header wise; one row of header, another row of stretcher; one row of header, another two of stretcher
- Composition of mortar: Mud mortar.
- 9. Orientation of longer axis : North-east to South-west
- 10. Nature of bricks used: Mud brick
- Dimension of bricks in cm : 36x24x10; 38x26x10; 38x24x10; 42x28x10; 38x22x10; 32x22x10; 40x20x10; 44x26x10; 28x24x10
- 12. State of preservation: Good







Pl. 4.19 Post holes of circular bird's cages, Period 1B.

ENCAUATIONS AT DILALEWAN (1999-2000 & 2001-2002)



Fig. 4.18


79

#### EXCAUATIONS AT DIEALEWAN (1999-2000 & 2001-2002)

13. Shape and other distinguishing feature: STR No. 98 and 100-107 comprise a partially exposed house consisting of at least three rooms and a courtyard with the remains of the post holes of hamboo sticks forming the circles for bird's cages. The eastern corner room almost squarish in shape measures 350 x 330 cm. The northern wall of the room as well as for the house is thick and constructed by double. bricks. It follows the pattern of one row of header another row of stretcher generally and some places both row of stretcher with a gap at the middle. The footings at lower level in the outer side of the wall (STR 107) are noticeable for the stronger wall. Western wall of the house also followed the same pattern. Other two walls of the room are constructed with a single brick pattern by using header. Another partially exposed room in the west measures 340x260 cm (maximum available). The third room lying in the south of second room is also partially exposed and measuring 260 x 110 cm (maximum available). The spacious courtyard of the house lying in south is also partially exposed and consists of 500 cm (maximum available) x 590 cm. An interesting feature of the house is the finding the remains of postholes made probably by crecting bamboo sticks, which formed the circles for bird's cage in the courtyard (Fig. 4.17 and Pl. 4.19). Actually two intersecting circles formed by small post holes of bamboo sticks are traced and measuring 130 cm to 200 cm in diameters. Probably the bamboo sticks were used in a fence manner possibly either to keep the tamed animal/birds inside it or to store the material (Fig. 4.18). Dr. (Mrs.) Sangeeta Gupta, Scientist - Incharge, Wood Anatomy Discipline, Forest Research Institute, Dehradun (UK) has done a firsthand physical observation of the samples of burnt wood remains which were sent for analysis. She observed the remains of bamboo. The intersecting circles indicate that after the disused the first cage, the second cage was made at the same place in the successive phase of period 1B. Three post holes are also observed at the distance of 202 cm, 150 cm and 132 cm respectively from the northern wall (STR 102) of the courtyard (Fig. 4.19 and PL 4.19). It suggests that a varandah was added further in successive phase in the courtyard. An evidence of wooden rafters found at this level by the presence of loose soil making straight lines. (Fig. 4.19 and Pl. 4.19)

The entrance of the house has not been found but most probably it opened in the northern side lane and was situated in the unexcavated western part of the house.

Plans of STR 105 and 106 indicate that in the 1st successive phase a room was constructed over the remains of second room of the house in the west with slight variation in the orientation of about 10° towards east and measuring 206 cm x 132 cm (maximum available).

The single brickwalls, double brick walls and also triple brick walls were used in the construction of the house. Single brick walls have widths of 30 cm and 38 cm and made header wise. The double brick wall has a width of 90 cm and was made with one header and one stretcher wise. The triple brick wall has not shown uniform pattern and has a width of about 1m.

Details of structures :-

STR No. 98 - Eastern sidewall of the house with orientation towards north-west to south-east. It also seems a common wall with the adjoining house at the east.

#### The Cattings

Measurements : length 9.60 m x breadth 36 cm x height 30 cm; Number of courses -three; Brick size - 36 x 24 x 10 cm.

STR No. 100 - Northern side mud-brick wall of the house with orientation towards north-east to south-west. Measurements : length 544 cm x breadth 62 cm x height 40 cm; Number of courses - four; Brick size - 38 x 26 x 10 cm.

STR No. 101 - Western side mud-brick wall of the eastern room with orientation towards north-west to south-cast. Measurements : length 3.98 m x breadth 58 cm x height 20 cm; Number of courses - two; Brick size - 38 x 24 x 10 cm.

STR No. 102 - Southern wall of both rooms and mid-wall of the house with orientation towards north-east to south-west. Measurements : length 6.56 m x breadth 42 cm x height 10 cm; Number of course - one; Brick size - 42 x 28 x 10 cm.

STR No. 103 - Western wall of the third room with orientation towards northwest to south-east. Measurements : length 3.24 m x breadth 38 cm x height 10 cm; Number of course - one; Brick size - 38 x 22 x 10 cm.

STR No. 104 - Southern wall of the third room with orientation towards northeast to south-west. Measurements : length 112 cm x breadth 32 cm x height 10 cm; Number of course - one; Brick size - 32 x 22 x 10 cm.

STR No. 105 - Partially exposed south sidewall probably constructed in successive Phase of Period IB with orientation towards north-east to south-west. Measurements : length 194 cm x breadth 40 cm x height 10 cm; Number of course - one: Brick size - 40 x 20 x 10 cm.

STR No. 106 - Eastern side wall also probably constructed in successive phase of period IB over the eastern side wall of the second room of the house with orientation towards north-west to south-east and it turns towards west at right angle for the room. This wall is laid out with a difference of  $10^{\circ}$  east with previous wall of this Period. Measurements : length 350 cm x breadth 100 cm x height 10 cm; Number of course - one; Brick sizes 44 x 26 x 10 cm and 28 x 24 x 10 cm.

STR No. 107 - Partially exposed footing of the wall (STR-100) is noticed at the lower two courses in north. Measurements : length 190 cm x breadth 36 cm x height 23 cm; Number of courses - two; Brick size - 36 x 24 x 10 cm.

# 9. STRUCTURE NO. 112 A (Fig. 4.20 and Pis. 4.20 & 4.21)

- 1. Location : DLW, Square No. YG11 and Quadrant : 3
- 2. Type of structure: Partially exposed wall alongwith storage jar
- 3. Stratigraphic position: Sealed by layer (2)
- 4. Period and Structural phase: Period IB
- 5. Measurement of structure : (a) length 150 cm (b) width 40 cm (c) height 10 cm
- Number of course : One
- 7. Masonry and bond: Two rows of stretcher

AUDA WASHINGSOFT AND A

81

EXCAVATIONS AT DILALEWAN (1999-2008 & 2001-2002)



Fig. 4.20



Pl. 4.20 Partially exposed wall and a storage jar (lower part), Period 1B.



Pl. 4.21 A close view of a storage jar (lower part), Period 1B.

#### The Compes-

- Composition of mortar: Mud.
- 9. Orientation of longer axis : North-east to south-west
- Nature of bricks used: Mud
- Dimension of bricks in cm : 34x20x10
- 12. State of preservation: Good
- 13. Shape and other distinguishing feature: Partially exposed double brick wall along with a storage jar, kept in situ on its southern side. The brick wall is constructed by using two rows of stretchers. The northeastern part of the wall was hidden by wall built (STR no. 34) later in the successive period. Storage jar is sun baked probably made using a coiling method.

Measurements : Storage jar - outer diameter 32 cm and inner diameter 28 cm.

## III. STRUCTURES PERIOD IC (MATURE HARAPPAN)

The deposits of period IC are identified of about .80-1.50 m at the site in trenches B5, ZH5, E11, YA10, ZA10, YC12, YC13, YB13, YB14, YD13, YD14, YE14, YE13, YE12, YF11, YG12, YG11, YG10 and YH11. The major plans of exposed houses are revealed at the northern ridge over the structures of Period IB in two successive phases. The fortification, street and big sized houses made of strong walls are the main structures of this period. The entire plan of the inner settlement of the mature stage was constructed *de novo* over the settlement of Period IB after levelling the ground surface. Mud-brick fortification wall of Period IB was extended in width upto 3.50 m towards east on its outer edge and converted it into a strong fortification wall in this period. The remains of fortification wall are found in trenches YC15, YC14, YB14, YC13, YB13, YA11, YA10 and ZA10.

A manufacturing area within the settlement is identified probably for making the steatite beads in trench YC12.

The STR numbers 49-80 are represented the structures of Phase I of Period IC at the site and marked in blue colour on the Plan of the site (Fig. 4.8). The structure numbers 14-38 is represented the structures of Phase II of Period IC and marked in pink colour on the Plan of the site (Fig. 4.8).

The structure numbers 39-48 are denoted to the fortification wall of the settlement and marked in green colour on the Plan of the site (Fig. 4.8).

Overall, the plans of five houses are exposed in this period in which one house is almost fully exposed and remaining four houses are partially exposed. Three houses are found in the northern area of the mound, which was constructed in a line in the east of the street up to the fortification. Possibly, the western street may have taken a turn at right angle towards east to go out side the fortified settlement through an opening (i.e.

#### EXT:49:4710NS AT DILALEWAY (1998-2000 & 2001-2002)

gate) of the northeast. The fully exposed house of Phase I made on a plot of size 16.6 m x 13.15 m and consisting four rectangular rooms placed at the corner of the plot. The remaining portion of the plot was left for a courtyard. Therefore the plan of the courtyard roughly seems like a cruciform. The fashion of corners rooms, which was probably rooted in Period IB at the site, is visible in evolved stage in this house. The fully exposed three rooms are measuring 4.83 x 3.02 m, 3.20 x 2.05 m and 3.70 x 2.70 m placed at north-western, north-eastern and south-western corners respectively. It seems that the fourth room probably constructed similar in size of north-eastern corner room as indicated by northern wall (STR No. 21A) of the room. An interesting finding is noticeable by revealing of a heap of a large quantity of mud-balls/*mustikas* kept *in situ* on the mud floor of the courtyard in front of the fourth said room in the north. The compact mud floor is spread all over in the house. The western side rooms are bigger in size than eastern side rooms of the house. Noteworthy evidence from the house is a foundation trench for creecting the strong wall, which is traced at the outer edge of the north-eastern room of the house (Pl. 4.28). The walls of the house measure 80-88 cm in width.

Another partially exposed house in the east of the above mentioned house has alteast three rooms and a courtyard. Location wise this house is constructed after leaving an uneven space of about 2 m to 2.30 m from the western side house. The space between the houses is probably solving the purpose of the lane. The size of the plot is not less than  $18.20 \times 12.60 \text{ m}(?)$  maximum available. The fully exposed two big rectangular rooms of similar in size (8.40 x 5.25 m) constructed close to each other in the north. The remains of mud-brick paved floor are traced in this house. The walls of this house are thicker as well as stronger in comparison to the above mentioned house. The width of the walls varies 100 to 150 cm. Other partially exposed room is also rectangular in the south-west measuring  $5.50(?) \times 3.80 \text{ m}$ . The remaining part in the southeast is probably a portion of the courtyard. The remains of a platform like projection is traced in the north which suggests a north western room consisting atleast one opening towards north for using the platform. This house probably may have had main entrance from the lane in the west.

The third house in the same line is constructed near the fortification with leaving a narrow space with the middle house probably for a drain. This house is also partially exposed and consists of a rectangular room of size 3.45 x 2.20 m and a courtyard. The evidence of foundation trench is also traced in this house with STR-54 and 57. Further in the east an uneven space of 2.30 to 3.26 m is left probably for a lane for moving along the inner side of the fortification.

Two circular platforms are traced also made closer to the southern end of the exposed fortification. Both the platforms are closely constructed next to each other. The platforms may have probably been used as open shops along the inner portion of the fortification or commonly used for sitting by people on the outer edge of the platforms for daily social gathering and gossiping as well.

Another remarkable feature of this phase is the presence of a more compact floor laying out by the pieces of *mustikax* and cakes mixed with the earth as a flooring material





PL 4.22 Reed impressions on clay, moderately fired, Phase I, Period 1C.

EXCAUATIONS AT DIIALEWAN (1999-2000 & 2001-2002)



Pl. 4.23 Fragmentary terracotta tile, Period 1C.

### The Castings

which also suggests about a secondary use of *mustikas* and cakes. The religious aspect of *mustikas* and cakes is doubtful. Infact, it is quite improbable that people used the religious material for laying out the floor of their house.

An important feature of Phase I of this period is presence of moderately fired mud lumps bearing reed impressions suggesting about a mud structure like a hut or another temporary structure (Pl. 4.22). Another interesting feature of this phase is a recovery of a piece of a terracotta tile indicating towards use of tile-paved tapered roof in construction. (Pl. 4.23).

A mud-brick fortification wall is found running towards north-west to south-east. The fortification wall of the Period IB is extended in width upto 3.50m on its outer edge and constructed more strong fortification in Phase I of this period. The strong fortification wall indicates that the security angle or may be need was more developed in mature stage of Harappans.

The settlers of Phase II of mature Harappans have reused the main structures of Phase I e.g. street, fortification and at some places constructed walls over the previous walls for their houses. The area of the settlement became constricted at the site in this phase and after the end of this phase the site was deserted for a considerable time.

The main structures of this phase are few partially exposed houses. Interesting feature of this period is the finding of the steatite bead making area, which shows the industrial activities of the Harappans. Two pots and the multiple hearths are found altogether with steatite beads of different sizes in large quantity. The scattered beads near the pot and also from the pots suggest an industrial area probably for manufacturing of the steatite beads (Fig. 4.24 and Pls. 4.30 & 4.31).

Other important feature of this phase is discovery of storage pot in the room found in situ near the wall at two places. Another noticeable feature is location of a circular structure of diameter 90 cm in the courtyard of a house, which was probably used for pounding the grains (Pl. 4.24). A kachha, drain was found in trench YC10, Qds. 1 & 4 at site which runs towards north (Pl. 4.25).

Another partially exposed room of a house and its courtyard with two circular ovens (tandoors) in a line is exposed on the outer corner of the room.

The walls of Phase II used in construction were found reduced in width in comparison to Phase I. The houses of Phase II are poor in construction. The Brick sizes used in construction of the wall are in same ratio as found in Phase I.

The area of settlement of Period IA and IB at Dhalewan as estimated by two seasons' limited excavations was not less than 4000 sqm. The remains restricted mainly in the northwestern part of the mound. The lower ridges of east as well as of south have not produced the remains of Period IA and IB. In Period IC, the settlement in the east as well as in the south was probably extended, as the remains have been found spread

EXCAUATIONS AT DHALEWAN (1999-2000 & 2001-2002)



Pl. 4.24 Circular structure for pounding grains, Phase II, Period 1C.



Pl. 4.25 A Kachcha drain, Phase II, Period IC and a circular kiln, Period II.

all over. The present available area of the mound measures 8100 sqm. Infact, the mound had more area of ancient occupation. Extreme lower ridges all around had been levelled and brought under cultivation. (Fig. 1.2 & Pl. 1.2)

The remains of the settlement of Period IC at Dhalewan show the maturity in all respect in comparison to Periods IA and IB. So far as the structural remains found at Dhalewan is concerned, it produced a gradual development from Early Harappan (Period IA) to Period IB i.e. transition and reaching on a peak stage in Period IC. For example, the small sized houses of IA converted into medium sized houses in Period IB and further into large sized in Period IC; Similarly the cabin type small sized room of the houses found in Period IA are found slightly bigger on plan in Period IB and further enlarged some places upto a big hall in Period IC; the houses of IB found at some places along the lane and in Period IC necessity of street was added in between the houses; the walls of Period IA mostly made of single brick construction and in Period IB continuation of single brick. Further in Period IC thick and strong walls are used in construction of the houses with the evidences of foundation trenches. Similarly fortification wall of Period IB measuring of about 2.50 m in width was extended and constructed into a stronger wall upto 6 m in this Period.

## STRUCTURE NOS. 65, 69 to 76, 21A, 37A and 38A (Figs. 4.21 & 4.22 and Pis. 4.26, 4.27 & 4.28)

- Location : DLW, Square Nos. YG12, YF13, YF12 & YG11 and Quadrants : All
- Type of structure: House
- Stratigraphic position: Sealed by layer (1)
- 4. Period and Structural phase: Period IC, Phase 1
- Measurement of structure in cm: 1660x80to88x41; 882x80x66; 476x80x55; 366x80x29; 550x80x32; 474x88x32; 1260x76x50
- Number of courses : Seven
- Masonry and bond: Middle row of header, outer rows of stretcher; two rows of stretcher and one row of header; two rows of header
- Composition of mortar: Mud mortar
- Orientation of longer axis : North-west to South-east and North-east to southwest
- 10. Nature of bricks used: Mud brick
- Dimension of bricks in cm : 40x22x9; 38x20x10; 38x20x9; 42x22x9; 42x20x9; 44x22x9; 38x18x9
- 12. State of preservation: Good
- 13. Shape and other distinguishing feature: STR Nos. 69 to 76, 21A, 37A and 38A comprise an almost fully exposed house consisting four rectangular rooms at the corners of the plot. The remaining portion of the plot seems a courtyard, which



Fig. 4.21





EXCAUATIONS AT DIFALEWAN (1999-2000 & 2001-2002)



Pl. 4.27 A heap of mud balls, Phase I, Period 1C.





Pl. 4.28 Foundation pit of the walls on the right, Phase I, Period 1C and a thin wall on the left, Period 1B.

roughly looks, like a cruciform. The oblong shaped plot measures 16.60 x 13.15 m. The fully exposed three rooms are measuring 4.83 x 3.02 m.; 3.20 x 2.50 m and 3.70 x 2.70 m of north-western, north-eastern and south-western corners respectively. The partially exposed fourth room seems equal to the north-eastern room of the house as indicated by its northern wall. The interesting feature of the house is noticed by the presence of foundation trench for constructing stronger wall in this period than period IB. Another noticeable feature is the finding of a heap of mud balls or *mustikas* kept *in situ* in the courtyard near the southwestern room of the house. Amongst the *mustikas* or balls two or three are moderately fired and the remaining are found unbaked or sunbaked. The evidence suggests that the local people usually made the *mustikas*.

The width of the walls used in the construction varies 80 to 88 cm. Two and three bricks walls used in the construction of a house having two outer rows of stretcher and middle row of header or both rows of header, two consecutive rows of stretcher and inner row of header and vice versa. The brick size used in construction of the wall is noticed in the ratio of 4:2:1. The compact mud floor is traced all over in the house. The STR No. 65 seems to be an outer platform of the house in the cast on the lane side, which is shown in key plan (Fig. 4.8). In between the western side rooms of the house, the space of about 140-157 m wide probably indicate an entrance, which open towards street in the west.

Three houses have been found in a line in between the street and fortification. It is the first house located on the eastern side of the street.

The same house was used with some addition and alteration in the successive Phase II of Period IC (see STR. 21, 37 and 38) shown in orange colour on plan.

The details of the structures :-

STR No. 69 : Northern wall of the house with orientation of north-east to southwest. Measurements : length 16.60 m x width .80 to .88 m x height .41 m; Number of courses - five; Brick size - 40x22x9 cm.

STR No. 70 : Eastern wall of the house with the orientation of north-west to south-east. Measurements : available length 8.82 m x width .80 m x height .66 m; Number of courses - seven; Brick size - 40x20x10 cm.

STR No. 71 : Southern wall of the north-eastern room with the orientation of north-east to south-west. Measurements : length 4.76 m x width .80 m x height .55 m; Number of courses - five; Brick size - 38x20x10 cm.

STR No. 72: Western wall of the north-eastern room with the orientation of northwest to south-east. Measurements : length 3.66 m x width 0.80 m x height 0.29 m; Number of courses - three; Brick size - 38x20x9 cm.

STR No. 73 : Eastern wall of the north-western room with the orientation of north-west to south-east. Measurements : length 5.50 (maximum available) x

#### The Cuttings

width 0.80 to 0.84 x height 0.32 m; Number of courses - four; Brick size - 42x22x9 cm.

STR No. 74 : Southern wall of the north-western room with the orientation of north-east to south-west. Measurements : length 4.74m x width .88 m x height .32 m; Number of courses - four; Brick size - 42x22x9 cm.

STR No. 75 : Western side wall of the house with the orientation of north-west to south-east. Measurements : length 12.60 m (maximum available) x width .76 m height .50 m; Number of courses - six; Brick size - 42x20x9 cm.

STR No. 76 : Northern side wall of the south-western room with the orientation of north-east to south-west. Measurements : length 4.36 m x width .80 - .84 m height .50 m; Number of courses - six; Brick size - 44x22x9 cm.

STR No. 21A : Northern wall of a south-eastern corner's room with the orientation of north-east to south-west lying just below the STR No. 21 i.e. a wall of the Phase II. Only elevation facing north of the wall is visible. Measurements : length (maximum available) 4.60 m x width is not visible x height .64 m; Number of courses - seven.

STR No. 37A : Eastern side wall of a south-western corner's room of a house with the orientation of north-west to south-east lying just below the STR No. 37 i.e. a wall of the Phase II. Only elevation facing west of the wall is visible. Measurements : length (maximum available) 3.00 m x width is not visible x height .56 m; Number of courses - six.

STR No. 38A : Southern side wall of a south-western corner's room of a house with the orientation of north-east to south-west lying just below the STR No. 38 i.e. a wall of the Phase II. Only elevation facing north of the wall is visible. Measurements : length (maximum available) 3.60 m x width is not visible x height 0.48 m; Number of courses - five.

STR No. 65 : Probably remains of eastern side platform of the house with orientation towards north-west to south-east. Measurements : length (maximum available) 5.36 m x width 2.30 - 2.72 m x height .36 cm; Number of courses - four; Brick size - 38x18x9 cm. (Fig. 4.8)

## STRUCTURE NOS. 75, 77 and 78 (Fig. 4.23 and Pl. 4.29)

- Location : DLW, Squares and Quadrants: YG10 1 & 2, YG11 1 & 2, and YG12 - 1 & 2
- Type of structure: Street
- Stratigraphic position: Sealed by layer (2)





Pl. 4.29 View of a street, Phase 1, Period 1C.

EXCAUATIONS AT DHALEWAN (1999-2006 & 2001-2002)

- 4. Period and Structural phase: Period IC, Phase 1
- 5. Measurement of structure in cm : (a) length 2140 (b) width 275
- 6. Number of courses of side walls : Nine
- Masonry and bond of side walls : Two rows of stretcher and one row of header, middle row of header and outer rows of stretcher
- 8. Composition of mortar: Mud mortar
- 9. Orientation of longer axis : North-west to South-east
- 10. Nature of bricks used: Mud brick
- Dimension of bricks: (a) length 40-42 cm (b) width 20-24 cm (c) thickness 9-10 cm
- 12. State of preservation: Good
- 13. Shape and other distinguishing feature: STR No. 75, 77 and 78 are basically the side walls of the houses lying along the street and side by side forming a street of 2.75 m wide of the Mature Harappan settlement belonging to Phase L The orientation of the street is north-west to south-east and almost parallel to the exposed fortification wall of the east.

Details of the structures :

STR No. 75 : Western side wall of the eastern side house of the street with orientation towards north-west to south-east. Measurements : length 12.60 m (maximum available) x breadth .76 m x height .50 m; Number of courses - six; Brick size - 42x20x9 cm.

STR No. 77 : It is a corner of the wall of another house and falls on the eastern side of the street. Measurements (maximum available) : length .80 m x width .80 m x height .79 m; Number of courses - nine; Brick size - 40x20x9 cm.

STR No. 78 : Western wall of the street with orientation towards north-west to south-east. Measurements (maximum available) : length 14.70 m x width .96 m - .86 m x height .41 m; Number of courses - six; Brick size - 40x24x10 cm.

### STRUCTURE NO. 19 (Fig. 4.24 and Pis. 4.30 & 4.31)

- 1. Location : DLW, Square No. YC12 and Quadrant : 4
- Type of structure: Bead making area
- Stratigraphic position: Sealed by layer (7)
- 4. Period and Structural phase: Period IC, Phase II
- 5. Measurement of structure : Part plan found in a quadrant

102

The Cuttings



Fig. 4.24





Pl. 4.31 A close view of scattered steatite beads, Phase II, Period 1C.

### State of preservation: Not so good

7. Shape and other distinguishing feature: STR No. 19 is one of the main structures of phase II showing the industrial activities of the Harappans in their last phase of the settlement at Dhalewan. The finding of the steatite bead making area is represented by two pots and multiple hearths all together with steatite beads of different sizes in more quantity found scattered near the pot and also from the pot.

The lower parts of two storage jars are found *insitu* in a line near the western section of the quadrant. The ash in more quantity is collected near the pot and also from the pot. Micro to small size steatite beads from 1.54 mm to 14.03 mm in diameters are collected near the pots. These are found scattered closely near the pot in more numbers (Fig. 4.31). In the east of the pots with a gap of 1.60 m the remains of the small sized multiple hearths are traced, in 'U' shaped which is found closely constructed together in different directions. The hearths were probably used for heating the steatite paste beads of various shapes and sizes for making them strong. However, no raw material has so far been found from this place but the findings of steatite beads in large quantity suggest the steatite bead making was practiced. In the north a semi circular pit like plan is found with full of brownish grey powdery ash the other part of the pit in the north has not exposed. The exposed semi circular shaped pit has a small tip like projection at the middle in the south.

The pots, scattered beads, multiple hearths and a circular pit with full of ash altogether present a picture of a work shop. This could be a bead making factory.

Measurements : area of the work shop (maximum available area) : 4.25 x 4.25 m. Diameter of the pots : 64 cm and 58 cm; Area of multiple hearth : 100 x 100 cm; Size of the 'U' shape hearths - length 30 cm x breadth 16 cm; length 32 cm x breadth 16 cm; length 20 cm x breadth 18 cm (Broken), western side, southern side and south eastern side respectively.

### STRUCTURE NO. 80 (Fig. 4.8 and Pls. 4.32 & 4.43)

- Location : DLW, Square No. YA10 and Quadrant : 2
- Type of structure: Partially exposed circular platforms
- Stratigraphic position: Sealed by layer (8)
- 4. Period and Structural phase: Period IC, Phase I
- Measurement of structure in cm : Diameter 400 and 210; height 20.
- Number of courses : Two
- 7. Masonry and bond: Bricks laid stretcher wise in circular manner



Pl. 4.32 Partially exposed fortification wall with circular platforms on the interior, Phase 1, Period 1C.

- 8. Composition of mortar: Mud
- 9. Orientation of longer axis : North-east to south-west
- 10. Nature of bricks used: Mud brick
- 11. Dimension of bricks in cm : (a) length 42 (b) width 20 (c) thickness 10
- 12. State of preservation: Good
- 13. Shape and other distinguishing feature: STR No. 80 comprises two circular platforms which are traced along and close to the fortification at the southern end on the inner side. Both platforms are closely laid out and suggest either used as open shops or for commonly used for sitting by persons for daily social gathering and gossiping.

The platform is laid out by brick in concentric circles, northern platform is smaller than the southern platform. A wall was constructed with orientation towards east to west in later phase after cutting the northern platform.

Diameter of northern platform : 2.10 cm; Number of courses - two; Height 20 : cm.

Diameter of southern platform : 4 m (approximately); Number of courses - two; Height : 20 cm.

# 5. STRUCTURE NOS. 17 and 18 (Fig. 4.25 and Pl. 4.33)

- 1. Location : DLW, Square No. ZH5 and Quadrant : 3
- 2. Type of structure: Partially exposed room
- Stratigraphic position: Sealed by layer (15)
- 4. Period and Structural phase: Period IC, Phase I
- Measurement of structure in cm : 262x52x26; 162x62x26
- 6. Number of courses : 3
- 7. Masonry and bond; One row of header and another row of stretcher
- 8. Composition of mortar: Mud
- 9. Orientation of longer axis : North-west to south-east
- 10. Nature of bricks used: Mud brick
- 11. Dimension of bricks in cm : 32x18x8
- 12. State of preservation: Good

The Camings



Fig. 4.25



Pl. 4.33 Partially exposed walls, Phase I, Period IC.



#### The Cottings

13. Shape and other distinguishing feature: Partially exposed STR No. 17 and 18 present a view of the corner of a room. STR No. 17 and 18 join at right angle and making a north-eastern corner of the room. The wall used in construction of a room made of double brick by using a row of headers and other row of stretchers.

The STR 18 has a footing at the lower level on the inner edge.

On the outside of the room in the west a compact floor probably of a courtyard is revealed on plan of about 30 cm thick. It is made of pieces of *mustikas* and cakes mixed with earth and pottery as a flooring material. From this place a large quantity of *mustikas* and cakes are collected.

**STR No. 17** - Western wall of a room with orientation towards north-west to south-east. Measurements (maximum available) : length 262 cm x breadth 52 x height 26 cm; Maximum courses - three: Brick size - 32 x 18 x 8 cm.

STR No. 18 - North wall of a room with orientation towards south-west to northeast having a footing on its inner edge at lower level. Measurements - maximum available length 162 cm x breadth 62 cm (including footing) x height 26 cm; Number of courses - three; Brick size - 32x18x8 cm.

### 6. STRUCTURE NOS. 50 to 57 (Fig. 4.26)

- Location : DLW, Squares and Quadrants : YD14 3, YC14 4, YD13 2 YC13 - All Qdts.
- 2. Type of structure: Partially exposed house
- 3. Stratigraphic position: Sealed by layer (7)
- 4. Period and Structural phase: Period IC, Phase I
- Measurement of structure in cm : 326x48x36; 132x40x10; 74x64x33; 330x54x25; 370x78x49; 504x76x42; 368x78x65; 504x80x72
- Number of courses : Eight
- Masonry and bond: One row of header and another of stretcher; central row of header and outer two of stretcher
- 8. Composition of mortar: Mud
- 9. Orientation of longer axis : North-west to south-east
- 10. Nature of bricks used: Mud brick
- Dimension of bricks in cm : 34x22x8; 40x22x10; 38x16x8; 34x16x8; 34x20x9; 40x20x10; 40x20x9; 38x18x9
- 12. State of preservation: Good

EXCAUATIONS AT DILATEMEN (1899-2000 & 2001-2002)



Fig. 4.26

#### The Comings

13. Shape and other distinguishing feature: STR Nos. 50 to 57 comprise a partially exposed house consisting of at least a room and a courtyard. This is the third house which was laid in the same line near the fortification with leaving a narrow space between the middle house of the same line and this house, probably for a drain (Fig. 4.34). The rectangular room of the house measuring 345 x 220 cm produces an evidence of a foundation trench with its eastern wall. Another wall in the east constructed parallel by leaving a space of about 70 cm to the eastern wall of the first room. Further in the east a lane is exposed along the fortification for moving towards south. A whitish compact mud floor spread throughout the house. The triple brick walls and double brick walls are used for making the house. The triple brick wall consists of outer two rows of stretcher and middle row of header and double brick wall which has both rows of stretcher or one row of header and other row of stretcher.

The remaining part in the south is possibly used as a courtyard. The remains of the enclosure wall of the courtyard are also partially revealed as STR Nos. 50, 51, 52 & 53 and represent western, southern and eastern walls of the courtyard. A lower part of a jar is found fixed *in situ* in the courtyard near the eastern wall.

Details of individual structure :-

STR No. 50 - The western enclosure wall of the house with orientation towards north-west to south-east, consisting of a footing on its inner edge. Measurements (maximum available) : length 326 cm x breadth 48 cm and 64 cm (including footing) x height 36 cm; Number of courses - four; Brick size - 34x22x8 cm.

STR No. 51 - Southern enclosure wall of the house, with orientation towards north-east to south-west. Measurements (maximum available) : length 132 cm x breadth 40 cm, total breath is 58 cm, other part is robbed x height 10 cm; Number of course - one; Brick size - 40x22x10 cm.

Note : An animal skeleton has been found buried after cutting a pit on this wall in Early Historical Period.

STR No. 52 - Eastern wall of the courtyard with orientation north-west towards south-east. Measurements (maximum available) : length 74 cm x breadth 64 cm x height 33 cm; Number of courses - four; Brick size - 38x16x8 cm.

STR No. 53 - Other part of eastern enclosure wall of the house with orientation towards north-west to south-east. Measurements (maximum available) : length 330 cm x breadth 54 cm x height 25 cm; Number of courses - five; Brick size - 34x16x8 cm.

STR No. 54 - Eastern wall of the room with orientation towards north-west to south-east comprises an evidence of foundation, which is traced on its outer edge. Measurements (maximum available) : length 370 cm x breadth 78 cm x height 49 cm; Number of courses - five; Brick size - 34x20x9 cm.

STR No. 55 - Southern wall of the room with orientation towards south-west to north-east. Measurements (maximum available) : length 504 cm x breadth 76 cm x height 42 cm; Number of courses - four; Brick size - 40x20x10.

STR No. 56 - Western wall of the room with orientation north-west to southeast. Measurements (maximum available) : length 368 cm x breadth 78 cm x height 65 cm; Number of courses - seven; Brick size - 40x20x9 cm.

STR No. 57 - Northern wall of the room with orientation towards south-west to north-east. Measurements (maximum available) : length 504 cm x breadth 80 cm x height 72 cm; Number of courses - eight; Brick size - 38 x 18 x 9.

## 7. STRUCTURE NOS. 58 to 64 (Fig. 4.27 and Pl. 4.34)

- Location : DLW, Squares and Quadrants : YD13 All Qdts, YE13 2, 3 & 4, YE12 - All Qdts.
- 2. Type of structure: Partially exposed house
- Stratigraphic position: Sealed by layer (1)
- Period and Structural phase: Period IC, Phase I
- Measurement of structure in cm : 650x100x33; 910x130x36; 1050x100x36; 786x150x38; 272x108x32
- Number of courses : Four
- Masonry and bond: Five rows of stretcher; three rows of stretcher and other of header
- Composition of mortar: Mud
- Orientation of longer axis : North-east to south-west
- 10. Nature of bricks used: Mud brick
- Dimension of bricks in cm : 40x18x8; 36x16x8; 40x20x9; 38x20x9; 30x16x8; 42x22x9; 36x18x8; 40x20x10; 32x20x9; 34x16x8; 34x20x9
- 12. State of preservation: Not so good
- 13. Shape and other distinguishing feature: STR Nos. 58 to 64 comprise a partially exposed house which was planned on the plot measuring at least 18.20 x 12.60(?) m. with a gap of 200-230 cm possibly by leaving a space for a lane in the west. It is a middle house between street and fortification having at least three rooms and a courtyard. The fully exposed two northern rooms measuring 8.40 x 5.25 m seem like rectangular halls of more or less similar size. Other partially exposed room also rectangular, in the south-west measures 5.50 (?) x 3.80 m. The remaining part in the south-east has been left probably for a courtyard. The floor of the house is found paved with mud bricks. The wall of the house is made thicker and stronger
The Colliege



Fig. 4.27

EXCAUATIONS AT DUALEWAN (1999-2000 & 2001-2002)



Pl. 4.34 Partially exposed house with drain (upper level), Phase-I, Period 1C and structures of Period 1B with the evidence of burning activities (middle level).



#### The Cuttings

than the walls of other houses. The width of the walls used in construction of the house varies 100 - 150 cm. The north-western room of the house consisting of platform like projection in the north, is suggesting at least one opening which may have been there in the north of the hall for using the platform.

Details of individual structure :-

STR No. 58 - The remains of the mud brick paved floor and walls with orientation north-cast to south-west of the western hall. Measurement of the wall (maximum available) : length 650 cm x breadth 100 cm x height 33 cm; Number of courses - four; Brick sizes - 40x18x8 cm, 36x16x8 cm.

Measurement of the floor (maximum available) length 620 cm x breadth 340 cm; Brick sizes - 42x26x10 cm, 40x20x9 cm.

STR No. 59 - The remains of a southern wall and the part of a courtyard with orientation towards north-east to south-west. Measurement of the wall (maximum available) : length 910 cm x breadth 130 cm x height 36 cm; Number of courses - four; Brick size - 40x20x9 cm.

Measurement of floor of the courtyard (maximum available) : length 180 cm x breadth 90 cm x height not available; Number of course - one (?): Brick size - 38x20x9 cm.

Eastern enclosure wall of the courtyard with orientation towards north-west to south-east (also Part of STR-59). Measurements (maximum available) : length 240 cm x breadth NA x height 9 cm; Number of course - one; Brick size - 30x16x8 cm.

STR No. 60 - Northern wall of the north-western hall and part of a platform in the north, with orientation towards north-east to south-west. Measurements (maximum available) : length 1050 cm x breadth 100 cm x height 36 cm; Number of courses - four; Brick size - 42x22x9 cm.

Measurement of platform (Maximum available) : length 670 cm x breadth 100 cm x height 14 cm; Number of courses - two; Brick size - 40x18x8 cm.

Mud brick paved floor of the hall - Measurements (maximum available) : length 376 cm x breadth 160 cm x height not available; Number of course - one(?); Brick size - 32x20x9 cm.

STR No. 61 - Western side wall of the north-western hall of the house and part of a floor of the hall with orientation towards north-west to south-east. Measurement of the wall (maximum available) : length 430 cm x breadth 98 cm x height not available; Number of course - one; Brick size - 34x16x8 cm. Mud brick paved floor - Measurements (maximum available) : length 525 cm x breadth 130 cm x height not available; Number of course - one; Brick size - 38-42x20x9 cm.

STR No. 62 - Southern wall of the hall and part of a floor of the hall, with orientation towards north-east to south-west. Measurement of the wall (maximum available) : length 786 cm x breadth 150 cm x height 38 cm; Number of courses - four; Brick size - 34x20x9 cm.

Mud brick paved floor - Measurements (maximum available) : length 686 cm breadth 120 cm x height 8 cm; Number of course - one; Brick size - 36x18x8 cm.

STR No. 63 - Eastern side wall of the third room of the house, with orientation towards north-west to south-east. Measurements (maximum available) : length 272 cm breadth 108 cm x height 32 cm; Number of courses - three; Brick size - 40x20x10 cm.

STR No. 64 - Western side wall of the third room of the house, with orientation towards north-west to south-east and part of a floor of the room. Measurements (maximum available) : length 370 cm x breadth 98 cm x height 24 cm; Number of courses - three; Brick size - 34x16x8 cm.

Mud brick paved floor of the room - Measurements (maximum available) : length 470 cm x breadth 150 cm x height 8 cm; Number of course - one; Brick size - 38x22x8 and 32x18x8.

#### STRUCTURE NOS. 66, 67 and 68 (Fig. 4.8)

- 1. Location : DLW, Squares and Quadrants : YD14 4, YE14 3
- 2. Type of structure: Partially exposed house
- Stratigraphic position: Sealed by layer (2)
- Period and Structural phase: Period IC, Phase 1
- Measurement of structure in cm : 350x38x9; 420x200x20; 540x162x20
- Number of courses : Two
- Masonry and bond: Only header wise, floors laid with headers and stretcher both
- 8. Composition of mortar: Mud
- Orientation of longer axis : North-east to south-west
- Nature of bricks used: Mud brick
- 11. Dimension of bricks in cm : 38x18x9; 42x26x10; 38x20x10
- 12. State of preservation: Not so good

118

## The Cattleys

13. Shape and other distinguishing feature: STR No. 66, 67 and 68 can be discerned by the remains of a house in the extreme north by leaving a space of about 400 cm from the line of houses in the south. In fact, the remains have not shown any clear plan of the house, but this house has a very good evidence of a whitish compact mud floor. The use of single brick wall also continued in Period IC as seen in this house. Besides, a mud brick floor or platform of the house has an evidence of a ghost wall between STR Nos. 67 and 68. It is the only remains of Period IC so far been found in extreme north at the lower ridge.

The details of structures :-

**STR No. 66** - A single brick wall constructing header wise with orientation towards south-west to north-east, whitish mud floor is traced around the wall. Measurements (maximum available) : length 350 cm x breadth 38 cm x height 9 cm; Number of course - one: Brick size - 38x18x9 cm.

STR No. 67 - The remains of mud brick paved floor with orientation towards south-west to north-east. Measurements (maximum available) : length 420 x breadth 200 x height 20 cm; Number of courses - two; Brick size - 42x26x10 cm.

STR No. 68 - The remains of mud brick paved floor with orientation towards south-west to north-east. Measurements (maximum available) : length 540 x breadth 162 x height 20 cm; Number of courses - two; Brick size - 38x20x10 cm.

# 9. STRUCTURE NOS, 14 and 15 (Fig. 4.28 and Pl. 4.35)

- 1. Location : DLW, Square No. B5 and Quadrant : 4
- 2. Type of structure: Walls and Tandoars
- Stratigraphic position: Sealed by layer (8)
- 4. Period and Structural phase: Period IC, Mature Harappan Phase II
- Measurement of structure in cm : 195x58x20; 224x58x20
- Number of courses : Two
- Masonry and bond: Two rows headers; one row of header and two rows of stretcher
- Composition of mortar: Mud
- 9. Orientation of longer axis : North-west to south-east
- 10. Nature of bricks used: Mud brick
- 11. Dimension of bricks in cm : (a) length 32 (b) width 16 (c) thickness 10
- 12. State of preservation: Good

EXCAUATIONS AT DRALEWAN (1999-2000 & 2001-2002)







PL 4.35 Partially exposed room with tandoors on the exterior, Phase II, Period IC,

13. Shape and other distinguishing feature: STR Nos. 14 and 15 present a view of a north-eastern corner of the room of a house. It is attached with circular ovens (*tandoor*) on the outer edge. It suggests that this might be a part of a kitchen in the courtyard of a house of Mature Harappan period. The ash and charceal are also recovered from the ovens.

The details of structures :-

STR No. 14 - Southern wall of a toom with orientation towards north-east to south-west. Measurements (maximum available) : length 195 cm x breadth 58 cm x height 20 cm; Number of courses - two; Brick size - 32x16x10 cm.

STR No. 15 - Eastern wall of a room with orientation towards north-west to south-cast at right-angle with another wall (STR No. 14). Measurements (maximum available) : length 224 cm x breadth 58 cm x height 20 cm; Number of courses + two; Brick size - 32x16x10 cm.

Circular ovens overground (*tandoor*) - Two circular ovens are found attached with STR No. 14 on the outer face in a line with orientation towards north-west to south-east.

Diameter of the ovens : 36 and 42 cm; Total area covered : 150x62 cm.

# 10. STRUCTURE NOS. 20 to 27 and 36 to 38 (Fig. 4.21 and PL 4.36)

- Location : DLW, Squares and Quadrants: YG11-2, YF12 -3 & 4, YE12-4 & YF11-1
- 2. Type of structure: Partially exposed house
- Stratigraphic position: Sealed by layer (1)
- Period and Structural phase: Period IC, Phase II
- Measurement of structure in cm : 240x160x10; 460x64x11; 338x70x33; 200x80x22; 140x56x22; 144x36x39, 138x46x39; 390x72x14; 188x80x15; 176x130x10; 450x64x20; 268x62x25
- Number of courses : Five
- Masonry and bond: One row of header and another row of stretcher; only header
- Composition of mortar: Mud.
- 9. Orientation of longer axis : North-east to south-west
- 10. Nature of bricks used: Mud brick
- Dimension of bricks in cm : 40x24x11; 38x22x11; 42x20x11; 40x20x11; 36x18x8; 40x24x12; 48x24x10; 34x20x9; 38x20x10; 40x20x10; 48x20x10
- 12. State of preservation: Good

122





Pl. 4.36 Partially exposed room with a lower part of a pot, Phase II, Period 1C.

13. Shape and other distinguishing feature: STR Nos. 20 to 27 and 36 to 38 comprise a partially exposed house consisting of a room and a courtyard. In fact, few walls (STR 37, 38 and 21) are raised over the walls of the previous Phase i.e. Phase I. Similarly a platform (STR no. 20) is also raised over the previous structure. It seems that the residents of this phase reused the houses of Phase 1 of Period IC with addition and alteration. The western room measuring 385 cm x breadth 295 cm has a mud brick paved floor and a lower part of the pot which is found kept *in situ* closely near the eastern wall of the room (PL 4.36). No other clear plan is traced. The walls (STR 21 to 27) seem like the enclosure wall of the house in the south, The walls used in construction found thin in comparison to the walls of Phase I. The widths of the walls vary from 80, 70, 62, 32 cm. The double brick walls and at one place, a single brick wall are laid for their houses.

The details of structures :-

STR No. 20 - Brick-on-edge platform or floor constructed over the STR No. 65 of Phase I with orientation towards north-west to south-east.

Measurements (maximum available) : length 2.4 m x breadth 1.60 m x height 10(?) cm; Number of course -one; Brick size is not available.

STR No. 21 - Mud brick wall raised over the wall (STR 21A) of Phase I with the same orientation towards north-cast to south-west.

Measurements (maximum available) : length 4.60 m x breadth .64 m x height .11 m; Number of course - one; Brick size - 40x24x11 cm.

STR No. 22 - Mud brick wall with orientation towards north-west to south-east.

Measurements: length 3.38 m x breadth 70 m x height 33 m; Number of courses - three; Brick size - 38x22x11 cm.

STR No. 23 - Mud brick wall with orientation towards north-east to south-west.

Measurements : length 2 m x breadth .80 m x height .22 m; Number of courses - two; Brick size - 42x20x11 cm.

STR No. 24 - Mud brick wall with orientation towards north-west to south-east. Measurements : length 1.40 m sx breadth .56 m x height 22 cm; Number of courses - two; Brick size - 40x20x11 cm.

STR No. 25 - Remains of single mud brick-wall found at two places in the same orientation towards north-west to south-east.

Measurements of the northern part : length 1.44 m x breadth .36 m x height .39 m; Number of courses - five; Brick size - 36x18x8 cm. Measurement of the

#### The Cuttings

southern part : length 1.38 m x breadth .46 m x height .39 m; Number of courses - five; Brick size - 40x24x12 cm.

STR No. 26 - Mud brick wall with orientation towards north-east to south-west.

Measurements : length 3.9 m x breadth .72 m x height .14 m; Number of courses - two; Brick size - 48x24x10 cm.

STR No. 27 - Mud brick wall with orientation towards north-west to south-east.

Measurements (maximum available) : : length 1.88 m x breadth .80 m x height .15 m; Number of courses - two; Brick size - 34x20x9 cm.

STR No. 36 - Mud brick paved floor of the room with orientation towards northwest to south-cast. Lower part of the storage pot found *in situ* in the room near the eastern wall. Diameter of the pot - 60 cm.

Measurements (maximum available) : length 1.76 m x breadth 1.30 m x height .10 m; Number of course - one; Brick size - 38x20x10 cm.

STR No. 37 - Partly revealed mud brick wall with orientation towards north-west to south-east.

Measurements (maximum available) : length 4.5 m x breadth .64 m x height .20 m; Number of courses - two; Brick size - 40x20x10 cm.

STR No. 38 - Partly revealed mud brick wall with orientation towards north-east to south-west.

Measurements : length 2.68 m x breadth .62 m x height .25 m; Number of courses - three; Brick size - 48x20x10 cm.

# 11. STRUCTURE NOS. 28 to 35 (Fig. 4.29 and PL 4.37)

- 1. Location : DLW, Squares and Quadrants : YF11-1,3 & 4, YG11-3, YG10-2
- Type of structure: Partially exposed house
- 3. Stratigraphic position: Sealed by layer (1)
- 4. Period and Structural phase: Phase II of Period IC
- Measurement of structure in cm : 160x81x13; 332x68x48; 450x64x16; 340x46x9; 488x64x25; 148x54x44
- 6. Number of courses : Five
- 7. Masonry and bond: One row of header and another of stretcher
- 8. Composition of mortar: Mud

EXCAUATIONS AT DHALEBAN (1999-2000 & 2001-2002)



Fig. 4.29



Pl. 4.37 Partially exposed structures, Phase II, Period 1C.

- 9. Orientation of longer axis : North-east to south-west
- 10. Nature of bricks used: Mud brick
- Dimension of bricks in cm : 40x20x9; 38x20x10; 36x18x9
- 12. State of preservation: Good
- 13. Shape and other distinguishing feature: STR Nos. 28 to 35 present a view of a partially exposed house which consists of at least 2 rooms and a courtyard. The western room along the street measures 430 x 338 cm and eastern room, which is partially exposed, measures (maximum available) 330 x 200 cm. The courtyard is located at the middle. A storage jar is (Fig. 5.33 and Pl. 5.10) traced *in situ* in the courtyard near the western wall of the eastern side room. Another interesting feature is noticed in the courtyard, is a circular structure paved by mud bricks probably for pounding the grains (Pl. 4.24). It is located in the northwestern corner of the courtyard near the eastern wall of the western room. The circular structure is badly damaged and taken concaveness at the middle, which indicates the regular use for pounding. The maximum available size of the courtyard is 610 x 338 cm.

The details of structures :-

STR No. 28 - Partly revealed circular structure paved with mud brick for pounding the grains (Pl. 4.24). This structure constructed after cutting some part of the structures of the previous phase. Diameter : 90 cm

STR No. 29 - Partly revealed eastern side mud brick wall of the eastern room with orientation towards north-west to south-east.

Measurements (maximum available) : length 1.60 m x breadth .81 m x height .13 m; Number of courses - two; Brick size - 40x20x9 cm.

STR No. 30 - Partly revealed western side mud brick wall of the eastern room with orientation towards north-west to south-east.

Measurements (maximum available) : length 3.32 m x breadth .68 m x height .48 m; Number of courses - five; Brick size - 38x20x10 cm.

STR No. 31 - Partly revealed circular structure laid out with the bricks follow the pattern of concentric circles. (Fig. 4.29 and Pl. 4.37). A circular oven was constructed after cutting it in Kushan Period.

STR No. 32 - Partly exposed eastern side mud brick wall of the western room with orientation towards north-west to south-east.

Measurements (maximum available) : length 4.50 m x breadth .64 m x height .16 m; Number of courses - two; Brick size - 36x18x9 cm.

STR No. 33 - Partly exposed northern side mud brick wall of the western room with orientation towards north-east to south-west.

Measurements (maximum available) : length 3.40 m x breadth .46 m x height .9 m; Number of course - one; Brick size - 36x18x9 cm.

STR No. 34 - Western side mud brick wall of the western room with orientation towards north-west to south-cast.

Measurements: length 4.88 m x breadth .64 m x height .25 m; Number of courses - three; Brick size - 36x18x9 cm.

STR No. 35 - Partly exposed southern side mud brick wall of the western room with orientation towards north-east to south-west.

Measurements (maximum available) : length 1.48 m x breadth .54 m x height .44 m; Number of courses - four; Brick size - 36x18x9 cm.

# IV. FORTIFICATION WALL (PERIOD IB AND PERIOD IC)

The remains of the fortification wall are traced on the east of the settlement (PIs. 4.38 &4.39) in the trenches YC15, Qds. 3 and 4; YC14 all quadrants, YB14, Qd. 1; YC13, Qd. 2; YB13, Qd. 4; YA11, Qd. 2; YA10, Qd. 2 and ZA10, Qd. 1. The structure numbers 39 to 48 represent the fortification wall as shown in purple colour for Period IB and in light green colour for Period IC on Plan (Fig. 4.8) of the site.

In fact, Dhalewan itself emerged as a fortified complex in Period IB (transition), Subsequently, in Period IC, the fortification wall was extended in breadth for making a more strong fortification wall. The orientation of the wall is found towards north-west to south-east and measuring overall about 60 m in length. The alignment of the wall has an angle of deviation of about 40°-45°, from present north.

The brick sizes used in construction of the fortification wall are in the ratio of 3:2:1 and 4:2:1. The maximum 8 courses are traced with maintaining a height of about 87 cm.

Western edge of the fortification wall is found in several places in its 60m long span. But the eastern edge is not properly traced beyond 2.50 m. At lower level it is found, in quadrant 4 of YB14 and in quadrants 1, 2 and 3 of YB13. In further east, its extended eastern edge i.e. outer face of the fortification constructed in Period IC is found over a deposit of about 50-80 cm of Period IA, which is noticed at two places in YB14. Qd. 1 and ZA10, Qd. I (PI, 4.40). The total breadth including extended breadth is noticed of about 6 m. On the extreme north-west at the lower ridge of the mound the breadth of the wall is observed 8 m and the wall is shown an end on its north-western face. But the settlement of Period IB found running towards north-west on western side of the fortification wall and not shown the end. This end of the fortification in the north-





Pl. 4.39 View showing fortification wall (in left) and Harappan settlement on the interior.

EXCAVATIONS AT DELALEMAN (1999-2000 & 2001-2002)



Pl. 4.40 View showing deposits of Period 1A below the fortification wall on the exterior.



Pl. 4.41 View showing fortification wall with a rectangular bastion at the entrance.

ENCAUATIONS AT DILALEWAN (1999-2000 & 2001-2002)



PL 4.42 View showing the deposits in trench ZB8 with no remains of fortification.

#### The Cumps

west indicating about an entrance from the east to the fortified complex. The other face i.e. south-western could not yet been traced which possibly was damaged due to agricultural operation in the recent past. The exposed part near the gate i.e. STR nos. 39 to 44 are jointly shown as a rectangular portion of 12.70 m x 8 m (Pl. 4.41). This suggests a squarish bastion or watchman room closely attached with the entrance for security purpose. Further, in the south-east, the eastern face of the wall not maintained the breadth of 8 m. Some places it is measuring not more than 2.50 m in breadth at lower level. The evidence is also suggesting the initial breadth of the wall in general in Period IB was 2.50 m. (Pls. 4.38 & 4.41)

The extended breadth in the east of Period IC is traced in trenches ZA10, Qd. 1 and YA11, Qd. 2. It measures of about 6 m including extended breadth. Thus, the general breadth of the fortification wall was about 6 m, in Period IC. This shows that about 3.50 m breadth was added in Period IC for making it strong.

To trace out the further extension in length towards southeast, another trench viz. ZB8 had laid out for excavation in the same alignment with a gap of about 15-20 m. But no other part of the fortification wall has yet been found (PI. 4.42). This suggests that either the fortification wall may have taken a turn towards west or this empty portion of trench ZB8 has another entrance from east after a gap of about 80 m from the first entrance. However, the Harappan settlement at this site had an extension in the south up to 250 m. Due to a short span of two years of excavations, only a portion of 60 m in length of the fortification wall could be exposed.

At one place in trench YC 13, Qd. 2 the fortification wall STR No. 45 was constructed in Period IB over the circular kiln of Period IA by hiding the eastern part of the kiln (PL 4.10). The deposits noticed below the outer face of the fortification wall in ZA10, Qd. 1; YB14, Qd.1 and the circular kiln below the inner face of the fortification wall in YC13, Qd. 2 clearly suggests that an unfortified settlement was there at Dhalewan before Period IB.

Thus, the excavations at Dhalewan show unfortified settlement in Period IA. It emerged as a fortified settlement in transition Period IB. It indicates that the security vision of Harappan at Dhalewan initially appeared in Period IB and fully developed in Period IC. The construction of more strong fortification wall by extending the breadth of the wall of Period IB in successive Period IC i.e. Mature Harappan stage is also observed.

# STRUCTURE NOS. 39 to 44 (Fig. 4.8 and Pl. 4.41)

 Location : DLW, Squares & Quadrants : YC15, Qds. 3 & 4, YC14 - All qds. YB14 - Qd. 4

135

- Type of structure: Fortification wall
- 3. Stratigraphic position: Sealed by layer (8)
- 4. Period and Structural phase: Period IB and IC

EXCAUATIONS AT DUALEWAN (1999-2000 & 2001-2002)

- Measurement of structure in cm : 1270 x 800
- 6. Number of courses : Maximum four courses
- Masonry and bond: English bond
- 8. Composition of mortar: Mud mortar
- 9. Orientation of longer axis : North-west to south-east
- 10. Nature of bricks used: Mud brick
- Dimension of bricks in cm : 40x22x10; 36x32x10; 34x24x10; 40x24x10; 38x36x10; 36x20x10; 36x26x10; 34x22x10
- State of preservation: Good
- 13. Shape and other distinguishing feature: Structure Nos. 39 to 44 comprise a partially exposed fortification wall measuring 8 meter in breadth and 12.70 meter in length with orientation from north-west to south-east. This portion of the fortification wall has a maximum size in breadth in comparison to other places. Probably, this part of the fortification wall was used to construct either squarish bastion of 8 m x 12.70 m or a watchman room near the gate for security purpose in Period IC. The north-western face of the wall ends at the north-west suggesting about an entrance from east to the fortified complex. Other face of the gate i.e. south-eastern could not yet been traced due to agricultural operation which has damaged this portion in the recent past. The brick sizes used in construction of fortification wall are in the ratio of 3:2:1 and 4:2:1 both. On the outer edge of the fortification wall a deposit of about 50 to 80 cm of Period IA is yielded below. the fortification particularly below STR No. 44 in square YB14, Od. 1. Pit activities in Early Historical Period were also damaged to the wall at several places.

Details of individual structures :-

STR No. 39 - Location YC15, Qd. 4, partially exposed fortification wall showing its north-western face and also indicating about an entrance from the east to the fortified complex with the orientation of north-west to south-east.

Measurements : length 2.40 m (maximum available) x breadth 6 m x height .38m; number of courses - four; brick sizes 40 x 22 x 10 cm, 36 x 32 x 10 and 34 x 24 x 10 cm.

STR No. 40 - Location YC15, Qd. 3, partially exposed fortification wall showing other part in continuation of STR No. 39 and also showing its outer face in the cast with the orientation of north-west to south-east.

Measurements : length 6.10 m (maximum available) x breadth 2.70 m x height .10 m; Number of course - one; brick sizes 40 x 24 x 10 cm and 38 x 36 x 10 cm.

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STR No. 41 - Location YC14, Qd. 1, partially exposed fortification wall showing its western face with the orientation of north-west to south-east.

Measurements : length 3.50 x breadth 3.60 m (maximum available) x height .30 m; number of courses - three; Brick size - 36 x 20 x 10 cm.

STR No. 42 - Location YC14, Qd. 2, partially exposed fortification wall showing, the middle portion in between STR No. 40 and 41, with orientation of northwest to south-east.

Measurements : length 1.50 m (maximum available) x breadth 3.10 m (maximum available) x height .18 m; number of courses - two; Brick size - 36 x 26 x 10 cm.

STR No. 43 - Location YC14, Qd. 3 & 4, its partially exposed fortification wall showing western face and also showing the further running part towards southeast with the orientation of north-west to south-east.

Measurements : length 3.90 m (maximum available) x breadth 4.36 m (maximum available) x height .10 m; Number of course - one; Brick size - 34 x 22 x 10 cm.

STR No. 44 - Location YB14, Qd. 1, partially exposed fortification wall showing its outer face on the east, and also showing continuation towards south-west with orientation of north-west to south-east.

Measurements : length 3.20 m (maximum available) x breadth 2.00 m (maximum available) x height .26 m; number of courses - three; Brick size - 40 x 22 x 10 cm.

# 2. STRUCTURE NO. 45 (Figs. 4.8, 4.11 and Pls. 4.10 & 4.41)

- 1. Location : DLW, Squares and Quadrants: YC13, Qd. 2 & YB14, Qd.1
- 2. Type of structure: Fortification wall
- 3. Stratigraphic position: Sealed by layer (8)
- 4. Period and Structural phase: Period IB
- 5. Measurement of structure : (a) length 4.64 (b) width 2.50 (c) height 87 cm
- 6. Number of courses : Eight courses
- Masonry and bond: English bond
- Composition of mortar: Mud
- Orientation of longer axis : North-west to south-east
- 10. Nature of bricks used: Mud
- 11. Dimension of bricks : (a) length 34 cm (b) width 18 cm (c) thickness 10 cm

- 12. State of preservation: Not so good
- 13. Shape and other distinguishing feature: Structure No. 45 comprises a partially exposed fortification wall showing its western face perfectly. The portion of the wall was constructed over a circular kiln (STR No. 123) of Period IA by hiding the eastern part of the kiln. The eastern face of the wall is showing the end with maintaining the breadth of about 2.50 m beyond that in the east no evidence is traced. It is suggesting that the fortification wall in transition Period IB had a breadth of about 2.50 m. The available height is 87 cm in which lower portion of the wall made of the bricks bearing ratio 3:2:1.

# 3. STRUCTURE NO. 46 (Fig. 4.8 and Pls. 4.16 & 4.41)

- Location : DLW, Square No. YB13 and Quadrant: 4
- 2. Type of structure: Partially exposed fortification wall
- 3. Stratigraphic position: Sealed by layer (8)
- 4. Period and Structural phase: Period IB
- 5. Measurement of structure : (a) length 6.23 m (b) width 2.50 m (c) height .46 m
- 6. Number of courses : Four courses
- 7. Masonry and bond: English bond
- 8. Composition of mortar: Mud mortar
- 9. Orientation of longer axis : North-west to south-east
- 10. Nature of bricks used: Mud bricks

1L	Dimension of bricks : 1. (a) length 40 cm	(b) width 20 cm	(c) thickness 10 cm
	2. (a) length 40 cm	(b) width 22 cm	(c) thickness 10 cm
	3. (a) length 28 cm	(b) width 28 cm	(c) thickness 10 cm

- 12. State of preservation: Good
- 13. Shape and other distinguishing feature: Structure No. 46 comprises a further running part of the fortification wall in the southeast and showing its western face perfectly. The eastern face of the wall is showing the end at the breadth of about 2.50 m and beyond that in the east no fortification is traceable. It is also suggesting that the fortification wall of Period IB having a breadth of about 2.50 m. The closely placed walls (STR No. 81 & 82) of a partially exposed house of period IB also constructed of the brieks having a size of 28 cm x 28 cm x 10 cm. The same size of bricks was also used in construction of the fortification wall of Period IB.

#### The Cottings

- 4. STRUCTURE NO. 47 (Fig. 4.8)
- 1. Location ; DLW, Square No. YA11 and Quadrant: 2
- 2. Type of structure: Partially exposed fortification wall
- 3. Stratigraphic position: Sealed by layer (7)
- 4. Period and Structural phase: Period IC
- 5. Measurement of structure : (a) length 4.90 m (b) width 3.90 m (c) height 0.30 m
- 6. Number of courses : Four courses
- 7. Masonry and bond: English bond
- 8. Composition of mortar: Mud
- 9. Orientation of longer axis : North-west to south-east
- 10. Nature of bricks used: Mud
- 11. Dimension of bricks : (a) length 36 cm (b) width 22 cm (c) thickness 9 cm
- 12. State of preservation: Good
- 13. Shape and other distinguishing feature: Structure No. 47 comprises another running part of the fortification wall in the south-east. It is exposed after a removal of early historical deposit of 2.18 m. The exposed part is showing the outer face of the fortification wall having a height of about 0.30 m.

# 5. STRUCTURE NO. 48 (Fig. 4.8 and PL 4.43)

- 1. Location ; DLW, Square Nos. ZA10 & YA10 and Quadrants: 1 & 2 respectively
- 2. Type of structure: Partially exposed fortification wall
- 3. Stratigraphic position: Sealed by layer (8)
- 4. Period and Structural phase: Period IC
- Measurement of structure : (a) length 4.74 m (maximum available) (b) width 6.00 m (c) height 0.80 m
- Number of courses : Eight courses
- 7. Masonry and bond: English bond
- Composition of mortar: Mud
- 9. Orientation of longer axis : North-west to south-east
- 10. Nature of bricks used: Mud bricks
- 11. Dimension of bricks : (a) length 44 cm (b) width 24 cm (c) thickness 10 cm
- 12. State of preservation: Good

EXCAUATIONS AT DHALEWAN (1999-2000 & 2001-2002)



Pl. 4.43 View showing the partially exposed fortification wall and circular platforms on the interior (in back), Phase I, Period 1C.

#### The Contings

13. Shape and other distinguishing feature: Structure No. 48 comprises a further running part of the fortification wall showing probable extreme end in the south-east. The exposed part is showing its both faces i.e. outer and inner and measuring a breadth of about 6.00 m. This part of the wall was also exposed after a removal of early historical deposit of 2.48 m. An early Harappan deposit of period IA is also noticed below the outer face of the fortification wall (Pl. 4.40). Near the inner edge, two circular platforms were laid out in Period IC over the deposits of about 60-70 cm of previous periods. This suggests that an unfortified settlement of period IA. The entire fortification wall measures 60 m approximately from structure no. 39 to structure no. 48.

# The Pottery MADHU BALA

The Pottery of Periods IA and IB as compared to the Mature Harappan Pottery of Period IC : (1) is ill fired (2) is not very well levigated mixed with sand (3) striation marks are not regular. The Pottery is fired at 400°c to 600°c in an oxidizing kiln (4) pottery is turned on a slow wheel.

# Diagnostic Traits of Pottery of Periods IA and IB

The pottery of Periods IA and IB was characterized by six fabrics as at Kalibangan' which has been labelled for convenience as Fabrics A to F by Thapar as elucidated below:

Fabric A was marked by distinct features, which isolated it from the other fabrics. The vessels of this fabric, although made on wheel, were carelessly potted, betraying unskilled handling with telltale traces of irregular striations. Comparatively light and thin sectioned and red to pinkish in colour, most of the vessels were painted in black, combined at times with white (hatched in the drawings), over a dull-red surface, the field of decoration being confined to the portion above the girth). The design elements, drawn in free style, included: horizontal bands, sometimes as thick as the height of the neck and loops fringed below or enclosed by horizontal bands; criss-cross; ladders enclosing open opposed triangles; pendant latticed leaves bordered above by horizontal bands; vertical enclosing chain; lenticulars with multiple horizontal bordered above and below with thick bands; and segments or scallops with fillers; and moustache-like bifold scroll within wavy verticals or conifers. A characteristic design, however, consisted of symmetrically joined semicircles with intervening space, giving the effect of pendent concave-sides triangles. The triangles and the enclosed semi-circles being decorated with different patterns including criss-cross, oblique or wavy lines ladders, lenticulars, spiders, etc. As fillers were used such motifs as: radiating lines ending in solid discs; four-petalled flowers; cactus-like plants; and square with radiating triangles at the end. The range of shapes was, however, very limited and comprised vases with outturned or out-curved rims and disc or ring bases and bowls with tapering or convex sides. Of unusual interest were the pedestal-base and the hole-mouth among the vase-forms and the cordoned profile in the bowls.

Fabric B was distinguished primarily by its paste-texture and surface treatment. The vessels of this fabric were carefully potted on the wheel and were treated with a red slip up to the shoulder, the slipped area being further diversified by black painted

Madhu Bala, 'The Pottery' in B.B.Lal, et al Excurations at Kaliburgan - The Early Harappans, MASI 98, A.S.L. 2003, pp. 101-102.

#### EXCAVATIONS AT DHALEWAN (1999-2000 & 2001-2002)

horizontal bands of varying thickness. The remaining surface of the vessels (excepting perhaps the base) was covered with a thin clayey solution, often mixed with sand while wet, roughened by horizontal or wavy combines or by tortoise-shell or dendrite impressions. Over this rusticated surface, naturalistic designs, floral, animal and bird were painted in black, combined at times with the ancillary white.



Pl. 5.1 View of a Pottery yard.

Fabric C was marked by a finer-textured paste and allover smooth-slipped surface in shades of red and plum or purple-red. The repertory of painted designs, which were essentially in black, included, besides the recurrent carefully-ruled horizontal bands or loops or criss-cross, borders of plants, scale, metopes, latticed loops or pendant triangles. The shapes represented in this fabric comprised globular and ovoid vases with disc-bases, lids, straight-sided bowls and dishes and offering stands including a noteworthy form with an extra-flared lip.

#### The Pattery

Fabric D was characterized by vessels with thick sturdy section and slipped red surface. Common shapes included heavy jars including the one with an accentuated flange round the neck; bowls and basins or troughs. The last-named, however, was the most characteristic of this fabric. The basins with a ring-base were decorated internally on the sides with sharp ridged varying patterns often bordered by wavy lines and on the outsides with single or multiple impressions rows of cord impressions. A fragment executed with the incised patterns, when the paste was plastic or yielding, as evidenced by the raised or burred edges along the incised lines. The decoration on bowls and the flat-bottomed basins however, consisted of grouped wavy lines, doubtlessly produced by the employment of multiple-pronged tool held with a pencil grasp. Besides, black-painted horizontal bands and loops were not infrequent in this fabric. The tradition of incised design was carried in late Harappan and Bara pottery.

Fabric E comprised vessels with a buff or reddish buff slip. Common shapes included: large-and medium-sized jars including those with whole mouth or a flange round the rim; lids; bowls and offering-stands and dishes including a small chalice. The painted decoration (in black sometimes tending to purplish and occasionally white, pigment) consisted of the ubiquitous horizontal bands oblique lines with fronds; sigmas in horizontal sequence above joined semicircles with fillers and borders of scales and latticed or plain scallops or loops; and such individualistic motifs as multi-petalled flowers, fish and stylized butterfly or double-axe within, wavy verticals.

Fabric F related to the grey-coloured pottery and was represented in forms viz. lids, dish-on-stand, basins, footed bowls, bowls and vases. For decoration both black and white pigments (hatched in the drawing) were used. Some exclusive types i.e. the footed bowls, vases and squat-dishes, pots etc mark this fabric. No designs have been found in this ware. It has a self-slip or a wash, but the surface is burnished. There are examples of burnishing on the rims in the inner sides also. In dishes and bowls the burnishing is in both outer and inner side. In grey ware the variety of types of pottery at Dhalewan is apparently remarkable. The potting technique involves both medium and thick fabrics. In footed wares and dishes-on-stands besides the use of wheel the luting technique by hand is available. Generally the pots are made of grey coloured fine earth and it is well fired.

The Fabrics A, B and D are found in more quantity at Dhalewan in comparison to others. The attention is made by the presence of Fabric F at the site with their finer varieties and shapes as well. The buff ware, plain and painted both are revealed at the site right from Period IB in less quantity. Mostly, it bears buff slip on red ware surface. Special attention also is made by the occurrence of small fragments of perforated jar from Period IA at Dhalewan. It is also noticeable at Dhalewan, that the graffiti marks on pottery are recovered right from Period IA. It is interesting to note out that a grey sherd collected from Period IB bears knobbed surface, which resembles the Hakra Ware.

## Pottery of Period IC

The Pottery of Period IC as compared to Early Harappan Pottery of Period IA and also Period IB.

- (i) is so well fired normally more than 900<sup>∞</sup> C or even some times upto 1100<sup>∞</sup> C in fully oxidized condition<sup>2</sup>.
- (ii) is made of well levigated clay
- (iii) is potted on fast wheel and striation marks are noticed very clear and regular as well.
- (iv) is sturdy red.
- (v) is included with cut ware.
- (vi) is included with variety of paintings
- (vii) is included with variety of new shapes.
- (viii) is included with large pots.

The early Harappan pottery of Periods IA and IB with their fabrics found continued with Harappan pottery in Period IC.

New shapes in the pottery of Period IC include a fine variety of big sized goblet on footed stand, small sized beaker also on footed stand, large sized vase with globular body, perforated pots, narrow neck vase with a finger size perforation for mouth opening, centrally placed knobbed lid, small to long pedestalled stand-dishes with flanged rim, ring stand-pots, concave base pot, footed stand pots, cut ware pots etc.

The decorations are executed on pottery of this period by means of painting generally in black and occasionally in white. Besides, incised decorations are also recovered on pottery.

The painted designs consist of floral and geometrical both designs which include peepal leaf, hatched peepal leaves on branches, triangles with dots on their corners, crisscross pattern, wavy lines, horizontal bands, chess-board-pattern, sun and leaf motif, chain of opposite triangles, curves, semi-circles, chain of intersecting semi-circles, etc. The story painting is absent at the site.

The incised designs seem as usual in pattern, which were found in Periods IA and IB in case of large basins of Fabric D on the interior and in case of vase on the exterior. Besides, few finer quality of decoration revealed on the top, basal part of the dishes on the centre which contain nail impressed decorations in a circle, incised dotted lines radiating from centre in different directions in a circle, grooved concentric circles, etc.

Amongst the graffiti marks on pottery maltese cross, square with four triangles on all corners, bow and arrow are important. A rim fragment of Red ware basin bears an inscription like pattern. The letters are so lightly inscribed. (Pl. No. 5.19 and Fig. 5.58)

See Chapter-15 Report on Scientific Studies of Pottery and Copper Samples.

The Ponery



Fig. 5.1

# A. PLAIN AND DECORATED

# Fig. 5.1

- Jar of red ware with featureless rim, concave neck and oblique sides, painted with black showing thick band on the neck and group of triangles, of medium fabric showing an oxidized core, treated with bright red slip. From Period IA (Fabric A).
- Jar of red ware with featureless rim, concave neck and oblique sides, painted with black showing thick band and continuous multiple triangles, of medium fabric showing an oxidized core, treated with bright red slip. From Period IB (Fabric A).
- Vase of red ware with featureless rim, concave neck, painted with black thick and thin bands, of medium fabric showing an oxidized core, treated with bright red slip. From Period IB. (Fabric A).
- Pot of red ware with wide mouth, featureless rim, concave neck and down shoulder, of medium fabric showing an oxidized core, treated with red slip. From Period IB (Fabric A).
- Vase of red ware with featureless rim, concave neck and oblique sides, spherical body, of medium fabric showing an oxidized core, treated with red slip. From Period IA.
- Miniature vase of red ware with featureless rim, concave neck and elongated body, of medium fabric showing an oxidized core, treated with red slip. From Period IA (Fabric A)
- Miniature bowl of red ware with featureless rim, straight sides and flat base, of medium fabric showing an oxidized core, treated with red slip. From Period IA.
- Miniature vase of red ware with broken rim, concave neck and spherical body, of coarse fabric showing an oxidized core, treated with red slip. From Period IB.
- Cup-on-stand of red ware with a broken rim, straight sides and ring stand, of fine fabric showing an oxidized core, treated with red slip. From Period IA.

# Fig. 5.2

- Jar of red ware with featureless rim, concave neck and oblique sides, painted with thick black band, of medium fabric showing an oxidized core, treated with red slip. From Period 1B. (Fabric A)
- Jar of red ware with featureless rim, concave neck and oblique sides, painted with thick black band on the neck, of medium fabric showing an oxidized core, treated with red slip. From Period IA (Fabric A).

148







- Jar of red ware with featureless rim, concave neck and oblique sides, of medium fabric showing an oxidized core, treated with red slip. From Period IA.
- Jar of red ware with featureless rim, concave neck and oblique sides, painted with a thin black band below the neck, of medium fabric showing an oxidized core, treated with red slip. From Period IA. (Fabric A)
- Jar of red ware with flanged rim, oblique sides, painted with thin black on the edge of the rim, of medium fabric showing an oxidized core, treated with red slip. From Period IA. (Fabric A).
- Stand part of a pot of red ware with oblique sides and ring base, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Bowl of red ware with broken rim, shallow tapering sides and short ring base, of medium fabric showing an oxidized core, treated with red slip. From Period IB.

# Fig. 5.3 and Pl. 5.2

- Jar of red ware with broken rim, oblique sides, painted with a white band, of medium fabric showing an oxidized core, treated with red slip. From Period IB. (Pl. 5.2, No. 2)
- Jar of red ware with broken rim, oblique sides, painted with black, of medium fabric showing an oxidized core, treated with red slip. From Period IA. (Pl. 5.2, No. 8)
- Bowl of red ware with thickened rim, tapering sides, painted with black showing band and vertical lines, of medium fabric showing an oxidized core, treated with red slip. From Period IB. (Pl. 5.2, No. 6)
- Jar of red ware with broken rim and oblique sides, painted with black showing comb like designs, of medium fabric showing an oxidized core, treated with red slip. From Period IA.(Pl. 5.2, No. 1)
- Jar of red ware with broken rim, oblique sides, painted with black showing bands and vertical lines, of medium fabric showing an oxidized core, treated with red slip. From Period IA. (PL 5.2, No. 4)
- Jar of red ware with broken rim, oblique sides, painted with black showing horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From Period IA. (PI, 5.2, No. 5)
- Bowl of red ware featureless rim, concave neck and spherical body, painted with black and white showing criss-cross design between the horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From Period IA. (Pl. 5.2, No. 7)
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Fig. 5.3

EXCAVATIONS AT DRALEMAN (1979-2000 & 2001-2002)



Pl. 5.2 Plain and painted pottery.

152

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The Pattery
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 Pot of red ware with featureless rim, concave neck, globular body, of medium fabric showing an oxidized core, treated with red slip. From Period IB. (Pl. 5.2, No. 3)

- Miniature pot of red ware with featureless rim, concave neck and spherical body, painted with black horizontal bands around the oval, ring base, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Pot of red ware with featureless rim, concave neck and spherical body with disc base, painted with thick band on the neck, of medium fabric showing an exidized core, treated with red slip. From Phase 1 of Period IC. (Fabric A)
- Miniature pot or red ware with broken rim, spherical body and ring base, painted with black vertical and curved lines within horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Jar of red ware with flanged rim, concave neck, having painted bands on rim and shoulder, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Pot of red ware with featureless rim and slightly spherical body, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Pot of red ware with featureless rim, concave neck and globular body, of fine fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Fragmentary jar of red ware with slightly thickened rim, concave neck, of fine fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Lower portion of miniature pot of red ware with footed base, of fine fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Lower portion of a pot of red ware with footed base, of fine fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Miniature pot of red ware with featureless rim, slightly concave neck, spherical body and ring base, of coarse fabric showing an oxidized core, treated with red slip. From Period IB.







ENCAUNTIONS AT DHALEWAY (1999-2000 & 2001-2002)

# Fig. 5.5

- Deep bowl of red ware with featureless, rim tapering sides, painted with black band on the lip of the interior, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Small bowl of red ware with featureless rim, tapering sides, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Bowl of red ware with featureless rim, shallow, tapering sides, of fine fabric showing an oxidized core, treated with red slip. From Period IB.
- Bowl of red ware with featureless rim having painted band on the rim on both sides, tapering sides, ring base, of medium fabric showing an oxidized core, treated with red slip. From Period IA.
- Bowl of red ware with featureless rim, deep, convex sides, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Bowl of red ware with carinated neck and tapering sides, painted with thick black bands, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Bowl of red ware with broken rim, tapering sides and footed base, painted with thin black band, of fine fabric showing an oxidized core, treated with bright red slip. From Period IA.

# Fig. 5.6 and Pl. 5.3

- Big jar of red ware with featureless rim, concave neck and oblique sides, painted with black and white horizontal bands and multiple arches below the bands, of medium fabric showing an oxidized core, treated with red slip. From Period IB (Fabric A).
- Jar of red ware with broken rim, oblique sides, painted with black and white making *pipal* leaves on rough surface, of medium fabric showing an oxidized core, treated with red slip. From Period IB (Fabric B).
- Jar of red ware with broken rim, oblique sides, painted with black and white making leaves like design, of medium fabric showing an oxidized core, treated with red slip, From Period IB (Fabric B).

The Pinters



Fig. 5.6

- Jar of red ware with slightly outturned rim, concave neck, oblique sides with a decorated rib, painted with black showing thick band, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Vase of red ware with slightly out turned rim, concave neck, oblique sides, painted with black on the rim and neck, of medium fabric showing an oxidized core, treated with red slip. From Period IA.
- Pot of red ware with broken rim, oblique sides, decorated externally with wavy lines with clay, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Jar of red ware with broken rim, oblique sides, externally decorated with horizontal lines with clay, of medium fabric showing an oxidized core, treated with red slip. From Period IA.

EXCAUATIONS AT INIALEMAN (1999-2000 & 2001-2002)



Pl. 5.3 Bi-chrome Pottery.





Fig. 5.7

EXCAUATIONN AT DRALEWAN (1995-2008 & 2001-2002)



Fig. 5.8

160

# The Pomery

### Fig. 5.8

- Big jar of red ware with featureless rim, concave neck, oblique sides, painted with black on the neck and rim, having rough surface, of medium fabric showing an oxidized core, treated with red slip. From Period IB (Fabric B).
- Big jar of red ware with broken rim, oblique sides, having rough surface, painted with black showing horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From Period IB (Fabric B).
- Jar of red ware with broken rim and oblique sides, having black painted bands on rough surface, of medium fabric showing an oxidized core, treated with red slip. From Period IB (Fabric B).
- Jar of red ware with broken rim and oblique sides, painted with black and having rough surface, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC (Fabric B).
- Jar of red ware with broken rim, oblique sides, painted with black on rough surface, of medium fabric showing an oxidized core, treated with red slip. From Period IA (Fabric B).
- Jar of red ware with broken rim, oblique sides, having rough surface, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC (Fabric B).

- Jar of red ware with thickened rim and concave neck, of fine fabric showing an oxidized core, treated with red slip. From Period 1A.
- Miniature pot of red ware with featureless rim, concave neck and spherical body, of fine fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Handle of red ware with broken sides, of medium fabric showing an oxidized core, treated with red slip. From Period 1B.
- Fragmentary bowl of red ware with featureless rim, straight sides and saggar base, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Stand of dish-on-stand of red ware with ring base, oblique sides, painted with black on sides of stem, of medium fabric showing an oxidized core, treated with red slip. From Period IB.



ENCAVATIONS AT DITALEWAN (1999-2000 & 2001-2002)

Fig. 5.9



The Pattery



Fig. 5.10

### Fig. 5.10

- Deep bowl of red ware with featureless rim, tapering sides with a mild carination, painted on the rim, of medium fabric showing an oxidized core, treated with red slip. From Period 1B.
- Pot of red ware with flanged rim, straight sides, of coarse fabric showing an oxidized core, treated with red slip. From Period IB.
- Bowl of red ware with featureless rim, tapering sides with a mild carination, small ring base painted with black bands, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Bowl of red ware with nail headed rim, tapering wavy sides, painted black band on the rim, of medium fabric showing an oxidized core, treated with red slip. From Period IA.
- Bowl of red ware with featureless rim, tapering sides, painted with black 
  the rim, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Bowl of red ware with an out turned rim, shallow and flat base, of medium fabric showing an oxidized core, treated with red slip. From Period IA.
- Stand of dish-on-stand of red ware with tapering sides, of medium fabric showing an incomplete oxidized greyish core, treated with red slip. From Period IA.

- Deep bowl of red ware with featureless rim and tapering sides, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Stand of Dish-on-stand with oblique sides and painted base with black, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Stand of dish-on-stand of red ware with oblique sides and thickened base, of medium fabric showing an oxidized core, treated with red slip. From Period IA.
- Stand of dish-on-stand of red ware with thickened base, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Stand of dish-on-stand of red ware with broken dish, oblique sides, of fine fabric showing an oxidized core, treated with red slip. From Period IB.

The Pattery



Fig. 5.11

- Small stand of goblet having discular concave base, of fine fabric showing an oxidized core treated with bright red slip. From Period IB.
- Deep bowl of red ware with featureless rim and tapering sides, painted with black band on the rim, of coarse fabric showing an oxidized core, treated with red slip. From Period IB.
- Small stand of dish-on-stand of red ware with straight sides and out turned discular base, of fine fabric showing an oxidized core, treated with red slip. From Period IB.
- Deep bowl of red ware with featureless rim, slightly concave neck and tapering sides and ring stand, of medium fabric showing an oxidized core, treated with red slip. From Period IA.

- Lid of red ware with broken wide knob, painted with black around the knob showing black bands, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Lid of red ware with broken knob painted with black bands around the knob, of fine fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Shallow bowl of red ware with flanged rim and flat base, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Deep bowl of red ware with out turned rim, tapering sides, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Deep bowl of grey ware with out turned rim and tapering sides, of fine fabric showing an oxidized core, treated with red slip. From Period IB.
- Deep bowl of red ware with slightly out-turned rim, tapering sides, of coarse fabric showing an oxidized core, treated with red slip. From Period IA.
- Shallow bowl of red ware with thickened out turned rim, tapering sides, of coarse fabric showing an oxidized core, treated with red slip. From Period IB.

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The Pottery
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Fig. 5.12

EXCAUATIONS AT DITALEMAN (1999-2008 & 2001-2002)





#### The Pattery

#### Fig. 5.13

- Bowl of red ware with featureless rim, tapering sides, of medium fabric showing an oxidized core, treated with red slip. From Period IA.
- Bowl of red ware with out turned rim, grooved tapering sides, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Big jar of red ware with beaked rim, oblique sides, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Fragmentary jar of red ware with broken rim, oblique sides, painted with horizontal bands in two groups, of fine fabric showing an oxidized core, treated with red slip. From Period IA.

#### Fig. 5.14 and Pl. 5.4

- Very big and deep basin of red ware with slightly out turned rim, tapering sides sager base, internally decorated with groups of incised horizontal bands and wavy lines below, of medium fabric showing an oxidized core, treated with red slip. From Period IB. (Pl. 5.4)
- Basin of red ware with beaked rim, tapering sides, shallow base, internally decorated with groups of incised wavy lines in between horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Basin of red ware with slightly out-turned rim, oblique sides, decorated with incisions showing group of wavy lines, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Fragmentary sherd of red ware with broken rim, oblique sides, decorated externally with incision showing criss-cross design, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Middle portion of a dish of red ware with flat base, decorated internally with group of incised circles and continuous wavy lines on the sides, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Dish-of-stand of red ware with small stand and decorated dish with group of incised horizontal and vertical lines, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Big jar of red ware with broken rim, oblique sides, decorated externally with group of incised wavy lines and painted black band, of medium fabric showing an oxidized core, treated with red slip. From Period IB.

EXCAULTIONS AT DHALEWAN (1999-2000 & 2001-2002)



Fig. 5.14



Pt. 5.4 Fragmentary basin of Red ware (Fabric D).





Fig. 5.15



# Fig. 5.15

The Pollery

- Basin of red ware with featureless rim, tapering sides, internally decorated with incisions showing horizontal bands and group of wavy lines below, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Basin of red ware with broken rim, tapering sides, decorated with incisions showing diamond like design, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period 1C.
- Jar of red ware with broken rim, oblique sides decorated externally incised crisscross design, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Basin of red ware with broken rim, tapering sides, internally decorated with incisions making diamond like design, of medium fabric showing an oxidized core, treated with red slip. From Period IB.

- Basin of red ware with featureless rim, tapering sides, decorated internally with incisions showing group of horizontal lines and group of wavy lines, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Basin of red ware with out turnd rim, tapering sides, decorated internally with incisions showing horizontal and wavy lines, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Basin of red ware with out turned rim, tapering sides, decorated with incisions showing group of wavy lines and oblique lines on horizontal lines, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- 4. Basin of red ware with slightly out turned rim, tapering sides, decorated internally with groups of incised horizontal bands and wavy lines, of medium fabric showing an oxidized core, treated with red slip. From Period IB.



ENCAVATIONS AT DIDALEWAN (1999-2000 & 2001-2002)



Fig. 5.16

The Pettery



Fig. 5.17

EXC48 ATIONS AT DRALEBAN (1999-2008 & 2001-2002)

## Fig. 5.17

- Fragment of a jar red ware with broken rim, oblique sides, having incisions externally making group of wavy lines continuous inbetween groups of horizontal lines, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Fragmentary jar of red ware with broken rim and oblique sides, decorated with incisions making arches below the group of horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- 3. Fragmentary jar of red ware with broken rim, oblique sides, decorated with the group of incised wavy lines, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Fragmentary jar of red ware, decorated with incisions showing wavy lines, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Fragmentary jar of red ware oblique sides, decorated with wavy lines, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Fragmentary jar of red ware with broken rim, oblique sides, decorated with bands & wavy lines and horizontal lines, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Fragmentary jar of red ware with broken rim, oblique sides, decorated with incisions showing horizontal bands and group of wavy lines, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Fragmentary jar of red ware with broken rim & oblique sides, decorated with incisions showing horizontal bands and group of wavy lines and painted bands, medium fabric showing an oxidized core, treated with red slip. From Period IB.

- Basin of red ware with slightly out turned rim, tapering sides, decorated internally with continuous wavy lines, with horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Pot of red ware with broken rim & oblique sides decorated with incisions making leaves like design, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Fragmentary basin of red with broken rim, internally decorated with group of continuous wavy lines, of medium fabric showing an oxidized core, treated with red slip. From Period 1B.



Fig. 5.18

- Fragmentary jar of red ware with broken rim, decorated internally with incisions making irregular lines and wavy lines, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Fragmentary jar of red ware with broken rim, oblique sides, decorated externally with continuous wavy lines, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Fragmentary jar of red ware with broken rim, oblique sides, decorated externally with wavy lines and horizontal bands below, of medium fabric showing an oxidized core, treated with red slip. From Period IA.

#### Fig. 5.19 and Pl. 5.5

- Vase of red ware with featureless rim, concave neck, spherical body, of fine fabric showing an oxidized core, treated with buff slip. From Period IB.
- Vase of red ware with featureless rim, concave neck, of fine fabric showing an oxidized core, treated with buff slip. Unstratified.
- Vase of red ware with featurcless rim, concave neck and spherical body, of fine fabric showing an oxidized core, treated with buff slip. From Period IB.
- Pot of red ware with slightly out-turned rim, of fine fabric showing an oxidized core, treated with buff slip. From Period IB.
- Base of pot of red ware with broken rim, flat base and tapering sides, of fine fabric showing an oxidized core, treated with buff slip. From Period IB.
- Pot of buff ware with broken rim, tapering sides, painted with black and brown showing horizontal band, of medium fabric showing an oxidized core, treated with buff slip. From Period IB. (PL 5.5, No. 7)
- Pot of red ware with broken rim, tapering sides, painted with black horizontal bands, of medium fabric, showing an oxidized core, treated with buff slip. Unstratified. (PL 5.5, No. 6)
- Dish-on-stand of red ware with flaring base, of medium fabric showing an oxidized core, treated with buff slip. From Phase I of Period IC.

#### Pl. 5.6

Sr. 1 to 11 : Small shoulder fragments of buff ware pots.

The Pomer



Fig. 5.19

179

# EXCAVATIONS AT DRALEWAN (1995-2000 & 2001-2002)



Pl. 5.5 Buff ware sherds.



EXCAUATIONS AT DILALEWAN (1999-2000 & 2001-2002)







Pl. 5.7 Grey ware sherds.

#### Fig. 5.20 and Pl. 5.7

- Dish of grey ware with flanged rim, shallow, of fine fabric showing complete oxidized core, well burnished, treated with self-wash. From Period IB.
- Base of small dish-on-stand of grey ware with flaring sides and folded base, of fine fabric showing complete oxidized core, treated with self wash. From Period IB.
- Dish of grey ware with flanged rim, shallow, of fine fabric showing complete oxidized core, well burnished, treated with self-wash. From Period IB
- Lower portion of dish-on-stand of grey ware, having hollow base with oblique sides with thickened base, of fine fabric showing complete oxidized core, well burnished, treated with self wash. From Phase I of Period IC.
- Base of dish-on-stand of grey ware with oblique sides and thickened base, of fine fabric showing complete oxidized core, well burnished, treated with self wash. From Period IB
- Lower portion of dish-on-stand of grey ware with hole in centre, flaring sides and thickened base, of fine fabric showing an oxidized core, well burnished, treated with self wash. From Period IB.
- Lower stem portion of dish-on-stand of grey ware having flaring sides of the base, of fine fabric showing a complete oxidized core, well burnished, treated with selfwash. From Phase 1 of Period IC.
- Lower portion of stem of dish-on-stand having ledge on the stem, straight sides, of fine fabric showing an oxidized core, well burnished, treated with self-wash. From Phase 1 of Period IC.
- Fragment of dish of grey ware with flanged rim, shallow, of fine fabric showing an oxidized core, well burnished on both sides, treated with self-wash. From Period IB.
- Base of dish-on-stand of grey ware with flaring out folded sides and thickened base, of fine fabric showing an oxidized core, well burnished, having graffiti mark, treated with self wash. From Period IB.

The Pastery



Fig. 5.21

EXCAUATIONS AT DITALENTAN (1999-2000 & 2001-2002)



Pl. 5.8 Grey ware sherds.
#### The Pattery

## Fig. 5.21 and Pl. 5.8

- Bowl-on-stand of grey ware with flanged rim, having evidence of four legs, deep, of fine fabric showing complete oxidized core, burnished externally and internally, treated with grey slip. From Period IB. (Pl. 5.8, No. 1)
- Bowl-on-stand of grey ware with splayed out rim, having three legs, deep, of fine fabric showing oxidized core, burnished externally and internally, treated with dark grey slip. Unstratified. (PL 5.8, No. 4)
- Fragmentary jar of grey with thickened out turned rim, oblique sides, of medium fabric showing oxidized core, burnished externally, treated with self-wash. From Phase II of Period IC. (Pl. 5.8, No. 3)
- Lower portion of bowl-on-stand of grey ware played out ring base, of medium fabric showing complete oxidized core, burnished, treated with self-wash. From Period IB. (Pl. 5.8, No. 5)
- Fragmentary bowl of grey ware with thickened featureless rim, tapering sides, deep, of medium fabric showing an oxidized core, treated with self-wash. From Period IA. (Pl. 5.8, No. 6)
- Pot of grey ware with broken rim, concave neck, spherical body and broken splayed out stand, of fine fabric showing oxidized core, treated with self wash. From Period IB. (Pl. 5.8, No. 2)

## Fig. 5.22 and Pl. 5.9

- Lid of grey ware with broken knob flanged rim top forming into a sharp ridge and straight sides, hollow ring base, of fine fabric showing complete oxidized core, treated with self wash. Unstratified.
- Lid of grey ware with circular flat knob, flanged rim, straight sides, hollow ring base, of fine fabric showing incomplete oxidized core, treated with self wash. Unstratified.
- Broken lid of grey ware with prominent elongated flat knob, flanged rim, straight sides, hollow ring base, of fine fabric showing complete oxidized core, treated with self-wash. From Phase 1 of Period 1C.
- Lid of grey ware with prominent button shaped knob, flanged rim, straight sides, bollow wide ring base, of fine fabric showing an oxidized core, treated with selfwash. From Period IA.

### ENCAUATIONS AT DRALEWAN (1999-2000 & 2001-2002)







The Dates



Pl. 5.9 Grey ware lids.

- Lid of grey ware with small flattish knob with flanged rim, straight sides, hollow ring base, of fine fabric showing an oxidized core, treated with self wash. Unstratified.
- Lid of grey ware with button shaped prominent knob, flanged rim, straight sides, hollow ring base, of fine fabric showing an oxidized core, treated with self-wash. From Phase 1 of Period IC.
- Lid of grey ware with prominent long knob, flanged rim, straight sides, hollow ring base, of fine fabric showing an oxidized core, treated with self wash. From Phase II of Period IC.



Fig. 5.23

 Fragmentary sherd of grey ware with pinched designed knobbed surface externally, of medium fabric showing an oxidized core, treated with grey slip. From Period IB. (Hakra ware).

# Fig. 5.24

- Big jar of red ware with flanged rim, concave neck and oblique sides, of coarse fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Big jar of red ware with featureless rim, concave neck, oblique sides, painted with black bands, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Big jar of red ware with out turned rim, oblique sides, of coarse fabric showing an incomplete oxidized greyish core, treated with red slip. From Phase I of Period IC.

190

The Fallery



Fig. 5.24

EXCAULTIONS AT DHALER IN (1999-2000 & 2001-2002)

- Big jar of red ware with out-turned rim, concave neck, rough oblique sides, of coarse fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Big jar of red ware with beaded rim, oblique sides, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.

## Fig. 5.25

- Big jar of red ware with featureless out turned rim, concave neck, oblique thick sides, of fine fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Big jar of red ware with featureless out turned rim, concave neck and oblique sides, painted in black showing black bands on the exterior, of fine fabric showing incomplete oxidized greyish core, treated with red slip. From Phase 1 of Period IC.
- Big jar of red ware with featureless rim, concave neck, oblique sides, of medium fabric showing an oxidized core, treated with red slip. Unstratified.
- Big goblet of red ware with sharp out turned edged rim, concave neck, elongated body and footed base, painted externally with black bands, of fine fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Pot of red ware with featureless rim, concave neck and spherical body, of fine fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.

## Fig. 5.26

- Jar of red ware with featureless rim, concave neck and oblique sides, rim and neck externally painted with thick black band, of fine fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Big jar of red ware with flanged rim concave neck and oblique sides, rim externally painted with thin black band, of fine fabric showing an oxidized core, treated with bright red slip. From Phase I of Period IC.
- Big jar of red ware with flanged rim, concave neck and oblique sides, of fine fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Big jar of red ware with flanged rim, concave neck and oblique sides, rim painted with thin black band, of fine fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.

192

The Pattery



Fig. 5.25

EXCAUATIONS AT DHALEWAN (1999-3000 & 2001-3002)



#### The Policer

- Wide mouth pot of red ware with flanged rim, globular body, painted with black thick bands internally and externally, of fine fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Long perforated jar of red ware with slightly out turned rim, straight perforated sides, of fine fabric showing an oxidized core, treated with red slip. Unstratified.
- Big jar of red ware with closing rim with prominent ledge and perforations, oblique sides, painted with black showing horizontal band and dots, of fine fabric showing an oxidized core, treated with red slip. From Period IB.
- Perforated jar of red ware with featureless closing rim, oblique perforated sides, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.

- Narrow neck vase of red ware with featureless rim and long concave neck, of fine fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Beaker of red ware with sharp edged rim, concave sides and footed base, of fine fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Miniature pot of red ware with wide mouth and featureless rim, concave neck, carinated body, painted externally with thick black band, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Miniature pot of red ware with wide mouth, featureless rim, concave neck and oblique sides, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Pot of red ware with wide mouth, concave neck, spherical body and flat base, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Small pot of red ware with wide mouth, concave neck, spherical body and flat base, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Miniature pot of red ware with featureless rim, slightly concave neck and spherical body, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Stand of red ware with tapering sides, painted externally with thick black band, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.

EXCAUATIONS AT DITALEMAN (1999-2006 & 2001-2002)



Fig. 5.27





Fig. 5.28

- Big jar of red ware with featureless rim, concave neck, oblique sides, of coarse fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Jar of red ware with featureless rim, concave neck, oblique sides, painted with black on the rim, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Jar of red ware with out-turned rim and concave neck, painted with black band on the rim, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Lid of red ware with prominent knob, tapering sides, flat base, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Jar of red ware with featureless rim, concave neck, oblique sides, painted with black stroke on shoulder, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Vase of red ware with featureless rim, slightly concave neck and oblique sides, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Bowl of red ware with featureless rim, tapering sides with a ledge and ring base, painted with black band on the rim, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.

- Vase of red ware with featureless rim, concave neck and oblique sides, painted externally with thick black band, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Vase of red ware with featureless rim, concave neck, oblique sides, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Vase of red ware with featureless rim, concave neck, painted externally with black from rim to shoulder, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Vase of red ware with featureless rim, concave neck, oblique sides, painted two horizontal bands on shoulder, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.





Fig. 5.29



Fig. 5.30



### The Panery

 Vase of red ware with featureless rim, concave neck, oblique sides, painted with black showing horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.

## Fig. 5.30

- Big jar of red ware with flanged rim, concave neck and oblique sides, painted externally on the rim, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Big jar of red ware with out-turned featureless rim, oblique sides, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Jar of red ware with featureless rim, concave neck, oblique sides, bearing cloth impression on the interior, of coarse fabric showing an oxidized core, treated with red slip. From Period IB.
- Big jar of red ware with nail headed rim, concave neck and globular body, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Jar of red ware with featureless rim, concave neck and spherical body, painted with black band on the exterior. From Phase I of Period IC.
- Jar of red ware with featureless rim, concave neck and oblique sides, painted with black band on neck and rim, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Jar of red ware with featureless rim, concave neck and spherical body, painted with black bands externally, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Jar of red ware with wide mouth, featureless rim, concave neck, spherical body, of fine fabric showing and oxidized core, treated with bright red slip. From Phase 1 of Period 1C.

- Bowl of red ware with beaked rim, tapering sides, of medium fabric showing an incomplete oxidized greyish core, treated with red slip. From Phase II of Period IC.
- Bowl of red ware with featureless rim, carinated sides, painted with black band of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.



EXCAUATIONS AT DHALEWAN (1999-2000 & 2007-2002)





#### Par Pottery

- Bowl of red ware with featureless rim and tapering sides, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Deep bowl of red ware with slightly out-turned rim and straight sides with perforation, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Bowl of red ware with slightly out-turned rim, painted internally and externally with black bands, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Dish of red ware with broken rim, decorated with nail design in a circle in the centre, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Dish of red ware with broken rim, decorated with incised concentric circles in the centre, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Dish of red ware with broken rim, decorated with nail design in a circle in the centre, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Fragmentary dish of red ware with notched design in a circle in the centre, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.

- Big jar of red ware with featureless rim, concave neck and oblique sides, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Stand of dish-on-stand of red ware with tapering sides, painted with black showing horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Stand of dish-on-stand of red ware with tapering sides, top decorated with group of incised concentric circles, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Big goblet of red ware with sharp edged rim, concave neck, elongated body with grooved interior and footed base, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Stand of red ware with tapering sides, painted externally with black horizontal band, of fine fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.



EXCAULTIONS AT DHALEWAY (1999-2000 & 2001-2002)



Fig. 5.32



Fig. 5.33

# Fig. 5.33 and PL 5.10

 Big pot of red ware with featureless rim, short concave neck, globular body and short ring base painted with black showing horizontal bands on the neck and body, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.





Pl. 5.10 Full pot of Red ware.

# The Pottery



Fig. 5.34

- Miniature bowl of red ware with featureless rim, thick straight sides and flat base, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Miniature bowl of red ware with featureless rim, thick tapering sides and sager base, of medium fabric showing an oxidized core, treated with red slip, From Phase II of Period IC.
- Goblet of red ware with slightly out turned rim, concave neck, elongated body and flat base, of medium fabric showing an oxidized core, treated with red slip. Unstratified.
- Goblet of red ware with slightly out turned rim, concave neck, elongated body, flat base, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Pot of red ware with broken rim, elongated body and flat base, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Pot of red ware with broken rim, spherical body and disc base, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Lid or red ware with probably prominent knob, straight sides, painted with black band externally, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.

### Fig. 5.35 and Pl. 5.11

- Narrow neck vase of red ware with featureless rim, a small perforation for a mouth, concave neck oblique sides, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC, (PI, 5.11, No. 2)
- Vase of red ware with featureless vertical rim, oblique sides, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC. (Pl. 5.11, No. 6)
- Bowl of red ware with featureless rim, tapering sides, flat base, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC. (PI. 5.11, No. 1)
- Small bowl of red ware with incurved rim, convex sides, painted with black showing cirss-cross design, ring base, of medium fabric showing an oxidized core, treated with red slip. From Period IB. (PL 5.11, No. 3)





Fig. 5.35



Pl. 5.11 Plain and painted pottery.

### The Pottery

- Narrow neck vase of red ware with out turned rim, small perforation for a mouth, concave neck and oblique sides, painted with black showing horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC. (Pl. 5.11, No. 4)
- Stand of red ware with tapering sides, painted with black showing flowers and row of intersecting semi-circles above the band, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC. (Pl. 5.11, No. 5)

## Fig. 5.36

- Dish-on-stand of red ware with slightly out-turned rim, concave sides and flat base attached with ledged stem, of medium fabric showing an oxidized core, treated with red slip. Unstratified.
- Squat dish-on stand of red ware with out turned rim and flat base attached with stem, of fine fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Squat dish-on-stand of red ware with flanged rim and flat base with broken stem, decorated with black band, of fine fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- 4 Dish of dish-on-stand of red ware with out turned rim and tapering sides, with broken stem, decorated with incision, of fine fabric showing an oxidized core, treated with red slip. Unstratified.
- Squat dish of dish-on-stand of red ware with flanged rim, flat base and broken stem, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Squat dish of dish-on-stand of red ware with flanged rim, flat base, of fine fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Stem portion of dish-on-stand of red ware with continuous incisions on the stem, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.

### Fig. 5.37

 Stand of dish-on-stand of red ware with oblique sides, painted externally with black showing triple concentric semi-circles within horizontal bands, of fine fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.





EXCAUATIONS AT DITALEWAN (1999-2000 & 2001-2002)







- Stand of dish-on-stand of red ware with oblique sides and thickened base, of fine fabric showing an oxidized core, treated with red slip. From surface.
- Stand of dish-on-stand of red ware with oblique sides, of fine fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Base of dish-on-stand of red ware with thickened rim, of fine fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Ring base of red ware with base and lower ring, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Ring base of red ware with tapering sides and thickened rim of the lower ring, of fine fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Decorated lower portion of a footed stand of red ware with carinated sides, of medium fabric showing an oxidized core, treated with red slip. Unstratified.
- Miniature stand of a goblet of red ware with concave sides and out turned base, of fine fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.

- Bowl of red ware with incurved rim, slightly convex sides, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Bowl of red ware with featureless rim, tapering sides, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Squat dish of red ware with nail headed rim, flat base, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Dish of dish-on-stand with flaring rim, tapering sides, painted with black showing horizontal hand along the rim, of fine fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Stand of red ware with ring base, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.

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The Patter
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Fig. 5.38





Fig. 5.39

### The Pomery

# Fig. 5.39

- Deep bowl of red ware with featureless rim, tapering sides with a carination, of coarse fabric showing an oxidized core, treated with bright red slip. Unstratified.
- Deep bowl of red ware with featureless rim, tapering sides and flat base, of medium fabric showing an incomplete oxidized core, treated with red slip. From an unstratified level.
- Shallow bowl of red ware with thickened rim, tapering sides and flat base, of coarse fabric showing an incomplete oxidized core, treated with red slip. From Phase II of Period IC.
- Bowl of red ware with featureless rim, straight sides and ledged carinated body, of fine fabric showing a complete oxidized core, treated with red slip. From Period IA.
- Bowl of red ware with featureless rim, slightly concave sides and carinated body, of coarse fabric showing an incomplete oxidized core, treated with red slip. From Phase II of Period IC.
- Shallow bowl of red ware with featureless rim, concave sides, carinated body and flat base, of fine fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Shallow bowl of red ware with slightly out-turned rim, tapering sides, of medium fabric showing an oxidized core, treated with red slip. From Period IB.

- Deep bowl of red ware with featureless rim, tapering sides, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Deep bowl of red ware with thickened rim, tapering sides and disc base, of fine fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Deep bowl of red ware with featureless rim, tapering sides, of medium fabric showing an oxidized core, treated with red slip. Unstratified.
- Deep bowl of red ware with slightly thickened rim, tapering sides, painted with black on the rim, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Deep bowl of red ware with splayed out featureless rim and tapering sides, of fine fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.

EXCAUATIONS AT DRALEWAN (1999-2000 & 2001-2002)



Fig. 5.40

### The Pottory

- Deep bowl of red ware with thickened rim, tapering sides, externally painted with black on the rim, of medium fabric showing an oxidized core, treated with red slip, From Phase II of Period IC.
- Big deep bowl of red ware with thickened rim, and tapering sides externally painted with black bands, of fine fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.

### Fig. 5.41

- Deep bowl of red ware with broken rim, tapering sides and concave base, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Dish of dish-on-stand of red ware with flanged rim, flat base and broken stem, decorated with incision, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Bowl of red ware with thickened rim, tapering sides, painted with black band internally, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Bowl of red ware with featureless rim, tapering sides, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Jar of red were with beaked rim, concave neck, oblique sides, of fine fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Big jar of red ware with beaked rim, oblique sides, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.

# Cut Ware

# Fig. 5.42 and Pl. 5.12

- Lid of red-cut ware with circular knob on the top and carinated body having triangular cuts all around with a rectangular opening, possibly a lamp shade or a toy cage, of fine fabric showing complete oxidized core, treated with a red slip. Unstratified.
- Fragmentary pot of red-cut ware with slightly out turned broken rim, straight sides, cut design showing a panel of diamond design, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.

EXCAUATIONS AT DHALEBAN (1999-2000 & 2001-2002)



Fig. 5.41



Pl. 5.12 Cut ware : 1. lid ; 2. sherd.

221

EXCAULTIONS AT DITALEWAN (1999-2000 & 2001-2002)



Fig. 5.42


Fig. 5.43

223

ENCAUATIONS AT DHALEWAN (1999-2000 & 2007-2002)



Pl. 5.13 Painted pottery.

#### The Pettery

# Fig. 5.43 and PL 5.13

- Basin of red ware with out turned rim, corrugated, tapering sides having, of fine fabric showing an oxidized core, treated with grey slip. From Phase I of Period IC. (Pl. 5.13, No. 7)
- Stand of red ware with tapering sides, painted with black showing row of pipal leaves on branches, of fine fabric showing an oxidized core, treated with red slip. From Phase I of Period IC. (Pl. 5.13, No. 1)
- Jar of red ware with broken rim, oblique sides, painted with black showing a plant within horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC. (Pl. 5.13, No. 2)
- Bowl of red ware with slightly out-turned rim, concave-cum-straight sides, painted with black showing running oblique lines within horizontal bands on the rim, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC. (PL 5.13, No. 6)
- Small pot of red ware with broken rim, oblique sides, painted with black showing vertical lines within horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC. (Pl. 5.13, No. 5)
- Jar of red ware with broken rim, oblique sides, painted with black showing triangle with dots and having cord design below the painting, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC. (Pl. 5.13, No. 4)
- Jar of red ware with broken rim, oblique sides, painted with black showing row of triangles with dots, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC. (Pl. 5.13, No. 3)

# Fig. 5.44 and Pl. 5.14

- Jar of red ware with broken rim, oblique sides, painted with black showing oblique lines within horizontal band, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC. (Pl. 5.14, No. 1)
- Jar of red ware with broken rim and oblique sides, painted with black showing criss-cross design within horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC. (Pl. 5.14, No. 4)
- Jar of red ware with broken rim, oblique sides, painted with black showing crisscross design within horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC. (Pl. 5.14, No. 3)

EXCAUATIONS AT DIFALEWAN (1999-2000 & 2001-2002)



Fig. 5.44



Pl. 5.14 Painted pottery.



- Jar of red ware with broken rim, oblique sides, painted with black showing crisscross design and bands, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC. (Pl. 5.14, No. 7)
- Jar of red ware with broken rim and oblique sides, painted with black showing criss-cross design within triangle, of medium fabric showing an oxidized core, treated with red slip. From Period IB. (Pl. 5,14, No. 5)
- Jar of red ware with broken rim, oblique sides, painted with black showing semicircles within horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC. (Pl. 5.14, No. 2)
- Jar of red ware with broken rim, oblique sides, painted with black showing alternatively wavy and horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC. (Pl. 5.14, No. 6)
- Small pot of red ware with featureless rim and oblique sides, painted with black showing criss-cross design within horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC. (PI. 5.14, No. 8)

# Fig. 5.45 and PL 5.15

- Big jar of red ware with broken rim, oblique sides, painted with black showing floral and sun like design, of fine fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Big jar of red ware with broken rim, oblique sides, painted with black showing floral and sun like design, of fine fabric showing an oxidized core, treated with red slip. From Phase 11 of Period IC.
- Big jar of red ware with broken rim, oblique sides, painted with black showing petals and sun like design on horizontal bands, of fine fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Big jar of red ware with broken rim, oblique sides, painted with black showing opposite triangles on horizontal bands, of fine fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Jar of red ware with broken rim, oblique sides, painted with black showing hetched leaves, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.

The Futtery



Fig. 5.45

# EXCAUATIONS AT DILALEWAN (1999-2008 # 2001-2002)



Pl. 5.15 Painted pottery.



### The Pottery

- Jar of red ware with broken rim, oblique sides, painted with black showing chessboard design, of fine fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Jar of red ware with broken rim, almost straight sides, painted with black showing floral and sun like design, of fine fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.
- Jar of red ware with broken rim, oblique sides, painted with black showing chessboard design, of fine fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.

# Fig. 5.46

- Jar of red ware with broken rim, oblique sides, painted with black showing various types of leaves, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Jar of red ware with broken rim, oblique sides, painted with black showing leaves, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Jar of red ware with broken rim, oblique sides, painted with black showing leaves on branches, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Jar of red ware with broken rim, oblique sides, painted with black showing leaves and sun mosif, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Jar of red ware with broken rim and oblique sides, painted with black showing horizontal band, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- far of red ware with broken rim, straight sides, painted with black showing fish like design, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Jar of red ware with broken rim, oblique sides, painted with black showing running oblique lines within horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.

# EXCAVATIONS AT DIRALEMAN (1998-2000 & 2001-2002)



Fig. 5.46

#### The Pottery

- Jar of red ware with broken rim, oblique sides, painted with black showing leaves, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC.
- Fragmentary small jar of red ware painted with black showing different types of leaves, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.

# Fig. 5.47 and Pl. 5.16

- Fragmentary jar of red ware with oblique sides, painted with black and white bands, of medium fabric showing an oxidized core, treated with red slip. From Period IA. (PL 5.16, No. 6)
- Fragmentary jar of red ware with oblique sides, painted with two horizontal bands of white, of medium fabric showing an oxidized core, treated with red slip. From Period IB. (Pl. 5.16, No. 4)
- Fragmentary jar of red ware with oblique sides, painted with black and white horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From Period IB. (Fabric C). (Pl. 5.16, No. 3)
- Fragmentary jar of red ware with oblique sides, painted with white horizontal thick band, of medium fabric showing an oxidized core, treated with red slip. From Period IA. (Pl. 5.16, No. 7)
- Fragmentary jar of red ware with oblique sides, painted with white horizontal band within black bands, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC. (Fabric C). (PL 5.16, No. 2)
- Fragmentary jar of red ware with oblique sides painted with white band within black, of medium fabric showing an oxidized core, treated with red slip. From Period IB. (Fabric C). (Pl. 5.16, No. 1)
- Fragmentary miniature jar of red ware with featureless rim concave neck, painted with white and black bands, of medium fabric showing an oxidized core, treated with red slip. From Period IB. (Fabric C). (Pl. 5.16, No. 5)



EXCAUATIONS AT DHALEWAN (1999-2006 & 2001-2002)

Fig. 5.47









EXCAVATIONS AT DILALEWAN (1999-2000 & 2001-2002)

Fig. 5.48





### Fig. 5.48 and Pl. 5.17

- Fragmentary jar of red ware with oblique sides painted with black and white bands alternatively, of fine fabric showing an oxidized core, treated with red slip. From Phase I of Period IC. (Fabric A). (PL 5.17, No. 6)
- 2 Fragmentary jar of red ware with oblique sides, painted with white within two horizontal black bands, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC. (Fabric C). (PI, 5.17, No. 7)
- 3 Fragmentary jar of red ware with oblique sides, painted with two black bands, of fine fabric showing an oxidized core, treated with red slip. From Phase II of Period IC. (Fabric C). (Pl. 5.17, No. 3)
- 4 Fragmentary jar of red ware with oblique sides painted with white within black bands, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC. (Fabric A). (PL 5.17, No. 5)
- 5 Fragmentary jar of red ware with concave neck, painted with black and white alternate bands, of fine fabric showing an oxidized core, treated with red slip. From Period IB (Fabric A). (Pl. 5.17, No. 8)
- 6 Fragmentary jar of red ware with oblique sides, painted with black and white bands, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC. (Fabric C). (Pl. 5.17, No. 4)
- 7 Fragmentary jar of red ware with oblique sides, painted with white within black bands, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC. (Fabric C). (Pl. 5.17, No. 2)
- 8 Fragmentary jar of red ware with oblique sides, painted with black and white sunlike design on rough surface, of medium fabric showing an oxidized core, treated with red slip, From Phase 1 of Period IC. (Fabric B). (Pl. 5.17, No. 1)

# Fig. 5.49 and PL 5.18

- Big jar of red ware with featureless rim concave neck and oblique sides, painted with black and white horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC. (Fabric C). (Pl. 5.18, No. 7)
- Fragmentary jar of red ware with oblique sides, painted with black and white horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC. (Fabric C). (PI. 5.18, No. 4)

238





Fig. 5,49

EXCAUATIONS AT DHALEWAN (1999-2000 & 2001-2002)



Pl. 5.18 Bi-chrome pottery.

### The Pottery

- Fragmentary jar of red ware with oblique sides, painted with black and white bands, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC (Fabric A), (Pl. 5,18, No. 6)
- Fragmentary jar of red ware with oblique sides painted with black and white bands on the shoulder, having rough surface, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC. (Fabric B). (Pl. 5.18, No. 5).
- Fragmentary jar of red ware with oblique sides painted with black making festoon design, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC. (Fabric A). (Pl. 5.18, No. 1)
- Fragmentary jar of red ware with oblique sides, painted with black and white bands and incisions below the painting, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC. (Fabric C), (Pl. 5.18, No, 2)
- Fragmentary pot of red ware with broken rim, painted with black showing continuous wavy line and black and white horizontal bands, of medium fabric showing an oxidized core, treated with red slip. Unstratified. (Pl. 5.18, No. 3)

# Fig. 5.50

- Fragmentary Jar of red ware with oblique sides, having graffiti probably bird like design, of medium fabric showing on oxidized core, treated with red slip. From Period IB.
- Fragmentary jar of red ware with broken rim, oblique sides, having bird like graffiti on the rough surface, of medium fabric showing an oxidized core, treated with red slip. From Period 1 A.
- Fragmentary jar of red ware with oblique sides, having graffiti on the rough surface, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Jar of red ware with broken rim oblique sides, having graffiti, of medium fabric showing an oxidized incomplete greyish core, treated with red slip. From Period IB.
- Jar of red ware with broken rim, oblique sides, having graffiti showing prong like design on the surface, of coarse fabric showing an incomplete oxidized core, treated with red slip. From Period IB.
- Bowl of red ware with a thickened rim, graffiti mark shown five pointed star internally, of medium fabric showing an oxidized core, treated with red slip. From Period IB.



Fig. 5.50

### The Pattery

# Fig. 5.51

- Fragmentary jar of red ware with broken rim oblique sides, having bird like graffiti on the rough surface, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Fragmentary jar of red ware with broken rim, oblique sides, having graffiti on the rough surface also painted with black, of medium fabric showing an oxidized core, treated with red slip. From Period IA (Fabric B).
- Fragmentary jar of red ware with broken rim oblique sides having square with triangles on four corners on the surface, of medium fabric showing complete oxidized core, treated with red slip. From Period IB.
- Fragmentary jar of red ware with broken rim oblique sides having square with triangles on four corners like graffiti on the surface, of medium fabric showing complete oxidized core, treated with red slip. From Period IB.
- Fragmentary jar of red ware with broken rim oblique sides having maltese cross graffiti on the surface, of fine fabric showing an oxidized core, treated with red slip. From Period IB.
- Fragmentary jar of red ware with broken rim oblique sides, having square with triangles on four corners, like graffiti on the surface, of fine fabric showing an oxidized core, treated with red slip. From Period IB.
- Fragmentary jar of red ware with broken rim oblique sides having square with triangles on four corners, like graffiti on the surface, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Fragmentary jar of red ware with broken rim, oblique sides having maltese cross graffiti on the surface, of fine fabric showing an oxidized core, treated with red slip. From Period IB.

# Fig. 5.52

- Fragmentary jar of red ware with broken rim, oblique sides, having '# like graffiti on the surface, of medium fabric showing an oxidized core, treated with red slip. From Period IB. (Fabric A).
- Fragmentary jar of red ware with broken rim, oblique sides, showing graffiti mark on the surface, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC. (Fabric A).







Fig. 5.52

- Fragmentary jar of red ware with broken rim, oblique sides having graffiti under black band, of medium fabric showing an oxidized core, treated with red slip. From Period IB (Fabric A).
- Fragmentary jar of red ware with broken rim and oblique sides, showing graffiti on the surface, of fine fabric showing an oxidized core, treated with red slip. From Period IB. (Fabric A).
- Fragmentary jar of red ware with broken rim and oblique sides, having graffiti on the surface, of fine fabric showing an oxidized core, treated with red slip. From Period IB. (Fabric B).
- Fragmentary jar of red ware with broken rim and oblique sides, having bow and arrow like graffiti on the surface, of fine fabric showing an oxidized core treated with red slip. From Period IB. (Fabric B).
- Deep howl of red ware with thickened featureless rim, tapering sides, having plant like graffiti on the inner wall, of medium fabric showing an oxidized core, treated with red slip. From Period IB. (Fabric A).

# Fig. 5.53

- Fragmentary jar of red ware with broken rim, oblique sides, having trident type graffiti on the rough surface showing continuous incision, of medium fabric showing an oxidized core, treated with red slip. From Phase I of Period IC. (Fabric B)
- Fragmentary jar of red ware with broken rim, oblique sides, having graffiti on the thin lined rough surface, of fine fabric showing an incomplete oxidized core, treated with red slip. From Period IB. (Fabric B).
- Fragmentary jar of red ware with broken rim, oblique sides, having graffiti and a painted line below on the surface, of fine fabric showing an oxidized core, treated with red slip. From Period IB.
- Fragmentary jar of red ware with broken rim, oblique sides, having graffiti mark on the surface, of fine fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Fragmentary jar of red ware with broken rim, oblique sides, having graffiti of trident type on the surface showing continuous incision, of medium fabric showing an oxidized core, treated with red slip. From Period IA. (Fabric B)
- Fragmentary jar of red ware with broken rim, oblique sides, having painted thin & thick lines and graffiti mark on the surface, of fine fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.

246



Fig. 5,53

- Fragmentary jar of red ware with broken rim, oblique sides, having graffiti on the surface, of medium fabric showing complete oxidized core, treated with red slip. From Period IB.
- Fragmentary jar of red ware with broken rim, oblique sides, having trident type graffiti on the surface showing continuous incision lines, of medium fabric showing incomplete oxidized greyish core, treated with red slip. From Phase 1 of Period IC. (Fabric B).
- Fragmentary jar of red ware with broken rim, oblique sides, having graffiti marks and painted line on the surface, of medium fabric showing an oxidized core, treated with red slip. From Period IB.

# Fig. 5.54

- Fragmentary jar of red ware with broken rim, oblique sides, having decorated maltese cross on the surface, of fine fabric showing an oxidized core, treated with red slip. From Period IB.
- Fragmentary jar of red ware with broken rim, oblique sides, having maltese cross graffiti on the surface, of fine fabric showing an oxidized core, treated with red slip. From Period IB.
- Fragmentary jar of red ware with broken rim and oblique sides, having graffiti and painting showing thick band on the surface, of fine fabric showing an oxidized core, treated with red slip. From Period IB. (Fabric A)
- Fragmentary jar of red ware with broken rim and oblique sides, having graffiti on the surface, of fine fabric showing an oxidized core, treated with red slip. From Period IB.
- Fragmentary jar of red ware with broken rim, oblique sides, having graffiti mark on the surface, of fine fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC.
- Fragmentary jar of red ware with broken rim, oblique sides, having graffiti on the surface, of fine fabric showing an oxidized core, treated with red slip. From Period IA.
- Fragmentary jar of red ware with broken rim, oblique sides, having graffiti mark on the surface, of fine fabric showing an oxidized core, treated with red slip. From Period 1B.
- Fragmentary jar of red ware with broken rim, oblique sides, having graffiti on the surface showing trident like design, of coarse fabric showing complete oxidized core, treated with red slip. From Period IA.

248

The Pottery



Fig. 5.54

## Fig. 5.55

- Bowl of red ware with featureless rim, tapering sides, showing painted band on the rim and having graffiti mark internally, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Bowl of red ware with thickened rim, tapering sides having graffiti showing plus type design, of coarse fabric showing an oxidized core, treated with red slip. From Period IB.
- Deep bowl of red ware with featureless rim, tapering sides, showing graffiti mark internally, of medium fabric showing an oxidized core, treated with red slip. From Period IB.
- Jar of red ware with thickened rim, tapering sides, concave neck, having trident like graffiti on the surface, of fine fabric showing an oxidized core, treated with red slip. From Period IB.
- Vase of red ware with out turned rim, tapering sides, two graffiti on the top of the rim, of fine fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.

# Fig. 5.56

- Jar of red ware with broken rim, oblique sides, painted thick band upto the neck and showing graffiti on the painting, of medium fabric showing an oxidized core, treated with red slip. From Period IA.
- Jar of red ware with broken rim, straight sides, multiple lined graffiti on the black painted surface, of fine fabric showing an oxidized grey core, treated with red slip. From Period IB.
- Jar of red ware with broken rim, oblique sides showing graffiti, of coarse fabric showing an oxidized core, treated with red slip. From Period IB.
- Vase of grey ware with broken rim, oblique sides showing multiple line graffiti, of fine fabric showing an oxidized core, treated with a wash. From Period IB.
- Fragmentary jar of grey colour with broken rim, oblique sides, having star like graffiti mark on the rough surface, treated with grey wash. From Period IB.
- Jar of red ware with broken rim, oblique sides, having graffiti on the surface, of medium fabric showing an incomplete oxidized core, treated with red slip, From Phase II of Period IC.

The Pettery



Fig. 5.55



# EXCRUTIONS AT INHALEWAN (1999-2000 & 2001-2001)

Fig. 5.56

#### The Postery.

- Fragmentary jar of red ware with broken rim, oblique sides, having a pained line on the top and star like graffiti on the incisions. From Phase II of Period IC.
- Jar of red ware with broken rim, oblique sides and having graffiti on the surface, of medium fabric showing an incomplete greyish core, treated with red slip. From Phase 1 of Period IC.

# Fig. 5.57

- Terracotta fragmentary tawa (half broken) having graffiti like mark, of coarse fabric. From Phase II of Period IC.
- Fragmentary jar of red ware with broken rim, oblique sides, having trident like graffiti mark on the rough surface, of medium fabric showing an oxidized core, treated with red slip. From Period IB (Fabric B).
- Fragmentary jar of red ware with broken rim, oblique sides, having 't' like graffiti mark below black painting, of medium fabric showing an oxidized core, treated with red slip. From Phase 1 of Period IC. (Fabric A).
- Fragmentary jar of red ware with broken rim, oblique sides having graffiti on the surface, of medium fabric showing an oxidized core, treated with red slip. Unstratified.
- Fragmentary jar of red ware with broken rim oblique sides, having 'V' like graffiti above black and white bands, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC. (Fabric C).
- Fragmentary jar of red ware with broken rim, oblique sides, having 'zig-zag' like graffiti on the surface, of medium fabric showing an oxidized core, treated with red slip. Unstratified. (Fabric B).
- Fragmentary jar of red ware with flanged rim, concave neck and oblique sides, having graffiti on rim, of medium fabric showing an oxidized core, treated with red slip. From Phase II of Period IC.

# Inscribed pottery Fig. 5.58 and Pl. 5.19

A fragment of a rim of a basin has an inscription on top before firing. However, it bears eight letters. But, few of them are visible and others are faint. These are lightly inscribed by a pin like instrument. From left first letter is similar to Brahmi 'ga' shown with an acute angle with apex at the top and next is similar to English letter N. Third letter more or less resembles with Mahadevan Sign List No. 129.

EXCAVATIONS AT BHALEWAN (1999-2000 # 2001-2002)



Fig. 5.57

Fourth consists of obliquely placed two parallel strokes. Sixth is not properly visible. Seventh looks like 'lembda' or similar to Mahadevan Sign List No. 125. Last is a curved vertical stroke. From Period IB. (Transition Period) DLW, Reg. No. 726.

Measurement : length 136.42 mm breadth 51.47 mm thickness 31.93 mm



Fig. 5.58 Inscribed pottery.



Pl. 5.19 Inscribed pottery.

# Other Pots Pl. 5.20

 Miniature vase : featureless vertical rim; small concave neck; carinated body with long oblique shoulder; flat base; Medium fabric; well fired. From Phase II of Period IC.

Measurement : height 46.17 mm, breadth 50 mm

 Miniature vase : partly broken; slightly out turned rim; concave neck; globular body; flat base; medium fabric; well fried; dull red core; treated with light red slip. From Period IB.

Measurement : height 41.51 mm, breadth 39.30 mm

 Wide mouthed miniature vase : flared-out-sharpened rim; small concave neck; slightly elongated body with mild carination at the middle; flattish base; medium fabric; not so well fired; devoid of any slip treatment. From Phase 1 of Period IC.

Measurement : Height 46.95 mm, breadth 44.70 mm

 Miniature vase : upper part is broken; globular body; round base; coarse fabric; ill fired; grey core; devoid of any slip treatment. From Period IB.

Measurement : height (broken) 25.30 mm (maximum available), breadth 40.11 mm

 Miniature Pot : featureless slightly out turned small rim; short concave neck; elongated body; flat base; medium fabric; not so well fired; dull red in colour; devoid of any slip treatment. From Phase II of Period IC. DLW, Reg. No. 694.

Measurement : Height 32.20 mm, breadth 30.04 mm

# PL 5.21

Medium sized bowl of red ware : thickened featureless vertical rim; hemispherical body; small flattish base; medium fabric; not so well fired; grey core between the red; treated with red slip and decorated with a horizontal band in black colour along the rim. From Phase 1 of Period IC.

Measurement : Height 49.82 mm, breadth 95.69 mm





Pl. 5.20 Miniature pots.



EXEAUATIONS AT DRALEWAN (1999-2000 & 2002-2002)



PL 5.21 Bowl of Red ware.
#### The Pottery

## Pl. 5.22

- Handle fragment of red ware, small loop handle of a cup or bowl, of medium fabric having an oxidized core, treated with red slip. From Phase II of Period IC. DLW, Reg. No. 1025.
- Handle fragment of red ware, small loop handle of a cup or bowl, of medium fabric having an oxidized core, treated with red slip. From Phase I of Period IC. DLW, Reg. No. 1279.
- Miniature bowl of red ware with featureless vertical rim, straight sides, flat base, of fine fabric having an oxidized core, treated with a light red slip. From Phase 1 of Period IC. DLW, Reg. No. 1716.
- Fragment of a miniature bowl of red ware with featureless rim, hand made, tapering uneven sides, flat base, of coarse fabric having an oxidized core, devoid of any slip treatment. From surface. DLW, Reg. No. 1717.
- Miniature shallow bowl (?) of red ware with concave sides thick and flat base, hand made, of medium fabric, oxidized core, treated with red slip. From Phase II of Period IC, DLW, Reg. No. 132.

# Cloth Impressions on Pottery PL 5.23

All three sherds of red ware vases bear cloth impressions on the interior of the shoulder part. These impressions probably came during the course of joining the rim and shoulder in leather hard condition by using the cloth in between the fingers and pot. The various indirect impressions of the cloth indicate that there was a large variety of cloth in the Harappan Period.

# EXCAVATIONS AT DHALEWAN (1999-2000 & 2001-2002)



Pl. 5.22 Other pottery.







## A. SEAL

A damaged grey-terracotta rectangular seal<sup>1</sup> (size 3.2 x 2.2 x 0.4 cm) with a perforated knob (boss) on the back bears a two-horned figure of a standing buffalo on the obverse. The body of the buffalo is longish and slender; the toes and tail are well depicted; and the horns are curved in. It also bears two letters of Harappan pictographic script below the figure of the standing buffalo. The first letter which is just below the mouth of the animal is like a hollow cross similar to Mahadevan Sign List No. 150 which could also be a manger and the second one is a lozenge with an angle like fixture at all four corners more or less similar to Mahadevan Sign List No. 284 and marked at the lower middle side. The seal is, more like the copper tablets of Mohenjodaro. The seal is found from Phase II of Period IC at Dhalewan. DLW, Reg. No. 1371. (PI, 6.1)

Buffalo2 is available in composite figures in copper tablets from Mohenjodaro:

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<sup>&</sup>lt;sup>4</sup> Madha Bala, A Harappan Seal from Dhalewan - Site in the Saraswati Valley, Paramanthan, Nagpur, 2003, pp.50-52.

<sup>&</sup>lt;sup>2</sup> Jagat Pati Joshi, Excavations at Bhagwanpura etc., MASI No. 89, New Delhi, 1998.

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EXCAUATIONS AT DITALEWAN (1999-2000 & 2001-2002)



Pl. 6.1 Terracotta seal : A - Seal, B - Impression, C - Back and D - Side.

## Seat and Seatings

Buffalo + Man + deer (?) + snake (M504-506), Markhor + Camel + Buffalo (M551-566), Zebu + Tiger + Buffalo (M567-579).

The depiction of water buffalo is very significant on the seal. The single depiction of this animal is rare in Harappan seals. In all, Mahadevan (1977) has listed 14 seals, which have a representation of single buffalo'. Joshi and Parpola (1987) have published one more seal from Banawali. Though the frequency of its depiction on seals is low but it is found in almost all major excavated sites of West Punjab. Sind (Pakistan), Gujarat and Rajasthan.

Water Buffalo is of two types, the wild (Bubalus Arnee) and domesticated type (Bubalus Bubalis). It is characterised by semi-circular ribbed horns. The horns are "very well captured by the Indus artists in the greater Indus region and Mesopotamia." It appears that the water buffalo was available in the Greater Indus area in wild and domestic forms. The bones of water Buffalo were extracted from the excavations at Mohenjodaro, Harappa, Dhatwa, Nageshwar, Rangpur, Surkotada, Lothal and Kalibangan, suggesting its domesticated use for milk. Besides for harnessing in ploughs and carts. However, the seal showing combat scene and a Buffalo being speared by a man and another seal depicting a person throwing a spear and three men standing near a tree suggest that it was hunted as well. The Combat scene of buffalo further attests it. A copper figure of a buffalo from Mohenjodaro and one in the Daimabad attest to its depiction by the Indus artists.

The distinctive ribbed curvature of the horns of the buffalo certainly attracted the Indus people. It appears that the animal's horn or the animal itself had a religious significance. Making a composite figure of buffalo and tiger is very thought provoking. The horned designs in the early Indus pottery (Bukranian design) from Kotdiji and its depiction on seals appear to have a religious link. The Kotdiji design and the Siva Pasupati horns have ribs in the horn, which is realistic. It may be pointed out that in Indus seals about 20 times horned figures have been shown besides the horned figure engraved in the broken terracotta cake from Kalibangan. Thus, it may be said that the buffalo horns had a religious significance in depiction by the Indus artists. In the terracotta tablet from Harappa 'a person is attempting to kill a buffalo (Mahisa) perhaps offering sacrifice to a Siva-like scated figure'. Lal has pointed out that this practice is still prevalent in some parts of Himachal Pradesh.<sup>4</sup> The religious significance of buffalo in the Harappa culture is interesting.

Besides, Dhalewan in the Sarasvati valley, buffalo is also depicted on seals at the Harappan sites at Banawali and Kalibangan, of course as a single animal. Buffalo bones have been found in excavations at these sites.

<sup>1.</sup> Mahadevan, The Indus Script MASI No. 77, pp. 33-34, New Delhi, 1977.

<sup>&</sup>lt;sup>4</sup> B.B.Lat, The Homeland of The Aryam Evidence of Rigvedic Flora and Fauna & Archaeology, New Dethi, 2005 pp. 39-40.

ENCAUATIONS AT DIMLERON (1999-2000 & 2001-2002)



Pl. 6.2 Fragment of a sealing showing reeds and rope impressions on the reverse.

## B. SEALINGS

Scalings are considered as a positive impression of the seal on the clay. The clay is invariably used for stamping the seal. So that scaling bears seal impression on the obverse and the package impression on the reverse like cloth, reeds, strings/thread/rope etc. At Dhalewan, only two specimens of scaling are found from mature Harappan level. However, the quantity of scalings reported from other Harappan sites is also very very low in comparison to the scals. The limited excavation at Dhalewan has given two scalings and a terracotta seal. All three came out from Mature Harappan level.

## Pl. 6.2

Fragment of a sealing : Roughly convex obverse bears no seal impression. It has few finger-nail marks, which were, came out possibly during the process of applying and side by side pressing the clay over the package.

Reverse consists of the deep impressions of the reeds with the further deep impressions of four lines of thin rope or string at the middle of the reeds. The reeds seem to have been used for packaging and over which the rope was used for tying the package with four successive rounds. The concave impressions of the four rounds of the rope and also of reeds suggest that the package was in cylindrical form; moderately baked; grey in colour. From Phase I of Period IC, DLW, Reg. No. 84.

Measurements : Length 66.57 mm breadth 55.42 mm thickness 19.08 mm

## Pl. 6.3

Fragment of a sealing : ovoid; obverse consists of a square or rectangular faint seal impression bearing a side profile of a human figure facing right in standing posture with an inscription like pattern at the upper infront of the face as usually found on Harappan seal. Only one letter, which somewhat resembles a standing bird in an U like sign jutting out with three small horizontal strokes on either side on the exterior; other part is missing. It is moderately baked, dull red in colour. From Phase II of Period IC. DLW, Reg. No. 890.

Measurements : Length 43.47 mm x breadth 57.11 mm x height 23.75 mm

207

EXCAVATIONS AT DRALEWAN (1999-2000 & 2001-2002)



Pl. 6.3 Fragment of a sealing.

# Terracotta Animal Figurines MADHU BALA

## INTRODUCTION

In excavation at Dhalewan which has yielded a rich haul of 55 figurines of terracotta as shown in the table given below. The bull figurines have been found in maximum numbers among the animal figurines. The bull were seems the most important and popular; therefore these are found largest in number. Next is dog. The sun backed clay figurines are also available with well-fired specimens. Generally it has joint legs with or without flat body and also flat shapes. All specimens are solid made of fine-grained clay, also well fired, though in the thicker portions the core remains smoky. Few examples treated with slips viz. red, grey etc.

CHAPTER

## Table : Showing the numbers of terracotta figurines with their Period-wise distribution

Periods	1A.	IB	IC	Unstratified	Surface	Total
Numbers	2	0	32	15	6	55

The body parts of the figurines are modelled by way of indicating eyes is by a pinhole, although some time the incision is also used. The nostril is also denoted by pinholes. The back legs of animal figurines are indicated by vertical incision. The ears horns, hump, mouth and other body parts are marked by pinching. The legs are generally in truncated cone and cylindrical forms. Each are separated in U or V shapes.

The bulls are mostly shown in two types, first one the humped is prominently ruised and merged with the head and in second case the head and humped each is separated. The dog in sitting posture is also remarkable figurine.

In maximum number of terracotta animal figurines are mutilated. This mutilation is some times attributed to the cult of mother-goddess involving the offer of animal figures as votive objects'. Figures of bull said to have been used as votive offering to the mother goddess at Kulli, Mehi etc<sup>2</sup>. According to Mackey, red slip is used to have been associated with the fertility cult.<sup>1</sup>

Special mention is made to a terracotta bull figurine, which is marked with a 'trident' symbol on the left hind part. It suggests a Saivism tradition at Dhalewan among Harappans.

S.R.Rao . Lothal, (1955-62) Vol. II, pp. 481, Delhi, 1985

<sup>7</sup> A.Stein : An Archaeological tour in Gedrosia, Memoir of the Archaeological Survey of India, 1921, p. 92, Calcutta

<sup>\*</sup> E.J.H. Mackey, Further excavations at Mohenjudaro, 1938, Vol. 1, pp. 227



Terroundta Animal Figurines

Selected specimens are described below :-

## Pls. 7.1 and 7.2 A & B

 Fragment of a crudely hand modelled indeterminate animal: damaged face; three rows of the punching holes on the back and hind part; solid; medium grained clay; ill fired; greyish core; without any treatment. From Phase II of Period IC. DLW, Reg. No. 368.

Measurements : length 50.64 mm, height 34.19 mm, thickness 43.85 mm.

 Fragment of a crudely hand modelled indeterminate animal: damaged face; the hind is slightly marked out by pinching; the incision at the back to separate two legs; solid; fine grained clay; not so well fired; smoky core; dull red brownish surface; without any treatment. From Phase II of Period IC, DLW, Reg. No. 626.

Measurements : length 70.17 mm, height 48.73 mm, thickness 32.02 mm.

 Fragment of a crudely hand modelled figure of indeterminate animal: damaged face; solid; medium grained clay; well fired; reddish core; without any treatment. From Phase I of Period IC. DLW; Reg. No. 77.

Measurements : length 51.77 mm, height 47.90 mm, thickness 34.19 mm

 Fragment of a hand modelled figure of indeterminate animal: damaged face; curved tail; solid; medium grained elay; well fired; reddish core; treated with red slip. Unstratified. DLW, Reg. No. 1054.

Measurements : length 61.16 mm, height 40.33 mm, thickness 33.42 mm.

 Fragment of a crudely hand modelled figure of indeterminate animal; damaged face; solid; medium grained clay; well fired; reddish core; treated with red slip. From Phase 1 of Period IC. DLW, Reg. No.355.

Measurements : length 71.24 mm, height 35.03 mm, thickness 37.10 mm.

6. Fragment of a crudely hand modelled figure; could be a dog? The mouth is not straight, but slightly curved; the ears are small; only the right arm has survived, it has pinching and legs are small and broken, it appears that the animal may have been in a seated posture; solid; medium grained clay; well fired; though the core has remained smoky; traces of thin red slip. From Phase II of Period IC. DLW, Reg. No. 285.

Measurements : length 53.65 mm, height 27.85 mm, thickness 29.01 mm.

EXCAUCTIONS AT DILALEWAN (1999-2008 & 2001-2002)



Pl. 7.2A Terracotta bull figurine bearing 'trident' symbol on the hind part.



Pl. 7.2B Close view showing 'trident' symbol.



#### Terracoma Animal Figurines

7. Partly broken hand modelled figure of indeterminate animal: damaged face; top of the head has a hole through which a cord was presumably passed in order to swing the toy; broken tail; on the back side of the hind is decorated with three pin hole marks; solid; medium grained clay; not so well fired; smoky core; reddish brown colour; treated with thin red slip. Unstratified. DLW, Reg. No. 367.

Measurements : length 34.68 mm, height 35.60 mm, thickness 23.72 mm.

 Partly broken hand modelled figure of indeterminate animal; pinching mouth; long neck gently curved; small holed eyes though which a cord was presumably passed in order to swing; broken legs; solid; fine grained clay; well fired; reddish core; without any treatment; From Surface, DLW, Reg. No. 499.

Measurements : length 49.66 mm, height 46.96 mm, thickness 34.33 mm.

 Bull: fragment of a crudely hand modelled figure; prominently raised pinching hump, it is merged with the head; solid; medium grained elay; well fired; dark greyish colour; treated with same colour slip. From Phase I of Period IC. DLW, Reg. No. 324.

Measurements : length 53.72 mm, height 50.97 mm, thickness 28.90 mm.

 Bull: partly broken; crudely hand modelled figure; prominently raised hump is depicted by pinching; it is merged with the head; projected hind; the incision is at the back for separate two legs; truncated legs; solid; medium grained clay; well fired; dark greyish colour; without any treatment; From Phase II of Period IC, DLW, Reg. No. 1297.

Measurements : length 45.91 mm, height 43.60 mm, thickness 29.59 mm.

11. Bull : fragment of a hand modelled figure; prominently raised hump which merges with the head; on the front, its bearing single deep grooved line; though the tip is damaged; the mouth has been nicely marked out by pinching, it is not straight but gently curved in; pin holed eyes; the horns are projected forward. It appears to be a small; pin hole on the top of the left horn; a mark of a trident is noticed on the left hind, it has been particularly depicted by incised line in which upper two side lines are shown curved up and middle line is shown by a straight line below it. One sign of a pole, overall it is decorated in slightly oblique manner. According to the Saivism tradition, it is an auspicious symbol; the upper part of the hind is rounded; there is no evidence of a tail; solid; medium grained clay; of dark greyish slip which has disappeared. Unstratified. DLW, Reg. No. 1296. (PL 7.2 A and B)

Measurements : length 57.47 mm, height 38.09 mm, thickness 23.13 mm.

 Bull : Fragment of a crudely hand modelled figure; prominently raised hump; the incision at the back is to separate two legs; solid; medium grained clay; not so well fired; dull red colour; smoky core; without any treatment; From Phase 1 of Period IC, DLW, Reg. No. 424.

Measurements : length 39.62 mm, height 30.47 mm, thickness 23.01 mm.

13. Bull : fragment of a nicely hand modelled figure; sharp mouth, tip of the mouth of toy has a hole; beautifully projected and curved up horns though the left horn is partly damaged; on the forehead and its back portion decorated with the multipin holes and also a series of pin holes around the neck, it seems to be a garland; solid; medium grained clay; almost well fired; reddish core; without any treatment. Unstratified. DLW, Reg. No. 200.

Measurements : length 27.10 mm, height 40.60 mm, thickness 18.01 mm.

 Bull : fragment of a highly worn out crudely hand modelled figure; prominently raised hump is merged with the head; incised tail; solid; medium grained elay; well fired; greyish colour; without any treatment; From Phase II of Period IC. DLW, Reg. No. 328.

Measurements : length 49.88 mm, height 40.31 mm, thickness 24.64 mm,

## Pl. 7.3

 Fragment of a crudely hand modelled figure of indeterminate animal: long mouth; prominent snout; the incision at the back to separate two legs; the hind in left side protrusions; solid; almost fine grained clay; well fired; reddish core; without any treatment. Surface, DLW, Reg. No. 313.

Measurements : length 60.10 mm, height 39.15 mm, thickness 28.83 mm.

 Fragment of a crudely hand modelled figure of indeterminate animal : damaged face; the incision at the back to separate two legs; solid; medium grained clay; not so well fired; smoky core; brownish colour; without any treatment. Unstratified. DLW, Reg. No. 435.

Measurements : length 49.77 mm, height 38.73 mm, thickness 23.98 mm.

 Fragment of an indeterminate animal : stumpy legs; drooping thick tail; solid; fine grained clay; ill fired; greyish core; without any treatment. From Surface, DLW, Reg. No. 1738.

Measurements : length 43.46 mm, height 34.49 mm, thickness 19.34 mm.

 Fragment of a crudely hand modelled figure of indeterminate animal: damaged face; the incision at the back to separate two legs; pinching hind; truncated legs; solid; medium grained clay; well fired; reddish core; without any treatment. Unstratified. DLW, Reg. No. 367.



#### EXCAUATIONS AT DRALEWAY (1999-2000 & 2001-2002)

Measurements : length 56.46 mm, height 31.14 mm, thickness 28.92 mm.

 Bull : partly broken hand modelled figure; raised head and hump; short thick neck; small snout and puny joint legs, flat body; solid; medium grained clay; moderately fired; reddish core; dull red colour. From Phase II of Period IC. DLW, Reg. No. 1011.

Measurements : length 54.02 mm, height 38.30 mm, thickness 21.12 mm.

 Indeterminate animal: fragment of a hand modelled figure; round hind; joint legs; flattish back; head and tail are missing; solid; medium grained clay; moderately fired, reddish core; treated with dark greyish colour. From Phase II of Period IC, DLW, Reg. No. 1089.

Measurements : length 53.40 mm, height 35.98 mm, thickness 23.12 mm.

 Fragment of a crudely hand modelled figure of indeterminate animal; solid; fine grained clay, sun baked, light greyish mud colour. Unstratified. DLW, Reg. No. 1405.

Measurements : length 46.47 mm, height 32.78 mm, thickness 21.05 mm.

 Fragment of a hand modelled figure of indeterminate animal: damaged face; conical leg; short tail; solid; medium grained clay; not so well fired; smoky core; dark brownish colour; without any treatment. Unstratified. DLW, Reg. No. 123.

Measurements : length 43.23 mm, height 35.58 mm, thickness 26.04 mm.

 Bull : fragment of a roughly hand modelled figure; raised head and hump; short and thick neck, having small joint legs; double incision mark, solid; medium grained clay; moderately fired, smoky core, dull red colour. From Phase I of Period IC. DLW, Reg. No. 914.

Measurements : length 59.80 mm, height 39.67 mm, thickness 19.65 mm.

 Fragment of nicely hand modelled figure of indeterminate small animal: damaged face; solid; fine grained clay; ill fired; greyish core; without any treatment. From Period IA. DLW, Reg. No. 173.

Measurements : length 32.09 mm, height 23.34 mm, thickness 16.17 mm.

 Indeterminate animal: fragment of a hand modelled figure; raised hind; short joint legs; it is decorated with multi-lined incision around the neck and across the front body; the head and tail are missing, solid; medium grained clay; well fired; greyish core; greyish colour; It is recovered from cruciform courtyard of a big house. From Phase 1 of Period IC, DLW, Reg. No. 528.

276

Terracutta Animal Figurines



Pl. 7.4 Terracotta bull figurines.



Measurements : length 49.61 mm, height 32.91 mm, thickness 19.58 mm.

 Bull : fragment of a hand modelled figure; pinching hump; raised neck; having pinhole on the back at the top, solid; fine grained clay; sun baked; light greyish mud colour. From Phase II of Period IC. DLW, Reg. No. 376.

Measurements : length 57.59 mm, height 34.83 mm, thickness 23.51 mm.

PL 7.4

 Bull : fragment of a nicely hand modelled figure; the hump is prominently raised and decorated with obliquely running incised small lines, it is enclosed by vertical incised lines; the eyes are shown in the form of an oval, the right eye is not well delineated; pinched ears are slightly invert; cured mouth; the forehead is decorated with three notched marks, the middle mark is shown in the form of an arrow, another two marks in shape of pinhole, the upper part of the muzzle having two small incised lines; thickened and conical legs; solid; fine grained clay; well fired; reddish core; red colour; without any treatment. From Phase 1 of Period IC, DLW, Reg. No. 178.

Measurements : length 65.16 mm, height 46.58 mm, thickness 27.15 mm.

 Bull-fragment of a crudely hand modelled figure; the pinching hump is merge with the head; the front right leg is slightly conical and curves in; the anus has been marked in by a pin hole; solid; medium grained clay; well fired; reddish core; without any treatment. From Phase II of Period IC. DLW, Reg. No. 522.

Measurements : length 49.24 mm, height 48.27 mm, thickness 27.77 mm

3. Bull : intact; crudely hand modelled figure; the hump is prominently raised and merged with the head; the mouth has been made by pressing and pinching, so it has sharp mouth, it is not straight but slightly curves in; the legs of each are separated and not of the same size; solid; coarse grained clay; well fired; treated with a thin red slip. Unstratified. DLW, Reg. No. 58

Measurements : length 56.05 mm, height 50.07 mm, thickness 33.43 mm.

 Bull : partly broken; raised hump; damaged face; small legs; solid; medium grained clay; ill fired; greyish core; without any treatment. From Period IA. DLW, Reg. No. 492.

Measurements : length 57.07 mm, height 43.14 mm, thickness 24.94 mm.



#### Terrocatto Animal Figurines

 Small bull : partly broken hand modelled figure; pinching and pointed mouth; hump merged with the head; conical short legs; solid; fine grained clay; well fired; reddish core; without any treatment. From Surface. DLW, Reg. No. 1739.

Measurements : length 39.65 mm, height 32.78 mm, thickness 17.25 mm.

 Bull : fragment of a hand modelled figure, pinched hump is merged with the head; pinching mouth; the incision at the back to separate the legs; solid; fine grained clay; sun baked, light grayish-mud colour. Unstratified. DLW, Reg. No. 373.

Measurements : length 62.50 mm height 35.30 mm, thickness 24.86 mm.

## PL 7.5

 Bull : fragment of a crudely hand modelled figure: pinched mouth; incised tail; broken legs; partly broken hump; solid; coarse grained clay; well fired; dark grey colour; without any treatment. From Phase II of Period IC. DLW, Reg. No. 625.

Measurements : length 41.50 mm, height 32.59 mm, thickness 21.68 mm.

 Bull : fragment of a hand modelled figure; damaged face; partly broken hump; solid; medium grained clay; well fired; dull red colour; without any treatment. From Phase II of Period IC. DLW, Reg. No. 54.

Measurements : length 45,72 mm, height 29,80 mm, thickness 22.54 mm.

 Bull : fragment of a crudely hand modelled figure: pinched mouth; the anus is shown with a small pin hole; the right side's front leg has wrinkles below: partly broken hump; solid; fine grained clay; well fired; dark greyish colour; without any treatment. Unstratified: DLW, Reg. No. 565.

Measurements : length 44.69 mm, height 31.02 mm, thickness 21.64 mm,

 Fragment of a crudely hand modelled figure of indeterminate animal : back right leg is slightly conical; solid; medium grained clay; ill fired; smoky core; without any treatment. From unstratified. DLW, Reg. No. 1127.

Measurements : length 40.72 mm, height 38.74 mm, thickness 20.60 mm.

5. Fragment of a hand modelled small figure of indeterminate animal: damaged face; the incision at the back to separate two legs; single nail mark on the hind; solid; medium grained clay; not so well fired; smoky core; dark brownish colour; treated with a bright red slip. From Phase II of Period IC. DLW, Reg. No. 1452.

Measurements : length 31.51 mm, height 17.00 mm, thickness 17.73 mm.

EXCLUATIONS AT BRALEWAN (1999-2000 & 2001-2002)



Pl. 7.5 Terracotta animal figurines.

280

Terricom Animal Figurines

 Bull: fragment of a crudely hand modelled small figure; pinching hump is merged with the head; solid; fine grained clay; sun baked, light greyish mud colour; From Phase I of Period IC. DLW, Reg. No. 992.

Measurements : length 38.05 mm, height 27.04 mm, thickness 16.20 mm.

## Pl. 7.6

 Bull : fragmentary; raised hump; cylindrical legs; solid; medium grained clay; well fired; reddish core; treated with thin red slip. From Phase II of Period IC. DLW, Reg. No. 1551.

Measurements : length 65.13 mm, height 61.35 mm, breadth 16.59 mm.

 Fragment of indeterminate animal : solid; medium grained clay; almost well fired; slightly greyish core; without any treatment. From Phase 1 of Period IC. DLW, Reg. No. 442.

Measurements : length 39.06 mm, height 25.13 mm, breadth 19.44 mm.

 Fragment of a bull figurine : raised hump; ill fired: greyish core; without any treatment, From Phase II of Period IC. DLW, Reg. No. 59.

Measurements : length 35.57 mm, height 40.28 mm, breadth 22.38 mm,

 Fragment of bull figurine : only raised hump is visible; ill fired; greyish core; without any treatment; grey colour. From Phase II of Period IC. DLW, Reg. No. 341.

Measurements : length 35.44 mm, height 43.39 mm, breadth 23.31 mm.

 Fragment of a bull figurine : raised hump; small mouth; solid; well fired; greyish core; without any treatment; grey colour. From Phase II of Period IC. DLW, Reg. No. 1740.

Measurements : length 35.73 mm, height 35.62 mm, breadth 20.52 mm.

EXCAUATIONS AT DHALEWAN (1999-2000 & 2001-2002)



Pl. 7.6 Terracotta animal figurines.



# A. Land Transport Terracotta Models of Cart Frames and Wheels

Bullock-cart was an important mean of land transport of Harappan Civilization. This can be concluded on the basis of finding of terracotta models of cart, cart frame and wheel on a mass scale from various Harappan sites of India and Pakistan and also of traces of cart-tracks at Harappa<sup>1</sup>. Dhalewan is another site, which has added the significance of bullock-cart right from the Early Harappan times. The bullock-carts were used to reach certain destinations via lanes and streets in the settlement and from one settlement to another settlement for transporting material for trade and other purposes as well. Dhalewan has yielded a street of 2.75 m wide Period IC and a lane of 2.00 m wide from Period IB. The introduction of wide-street in Mature Harappan (Period IC) in comparison to lanes of transition Period (Period IB) indicates towards a development of better transport system. It suggests that at least two bullock carts may have passed or crossed at a time by using the street of Mature Harappan Period at Dhalewan.

There are two types of terracotta cart frames found at Dhalewan. First one, has a solid and thick rectangular chassis body with pinholes all around for creeting the vertical sticks while other has a rectangular chassis but perforated framed body with pinholes all around for creeting the vertical sticks. The former type has an example of longitudinal hole at the front face of the body probably for fixing horizontal rod to tide bulls. These specimens have no provision of holes for axle. These were possibly having external provision for supporting the axle. On the free projecting ends of the axle, the wheels were attached.

Similarly, three types of wheels are encountered at Dhalewan from Harappan level. First one, is a simple wheel without hub, second one has a hub on one side probably on the exterior and third one has hubs on both sides.

The diameter of the wheels varies 26.38 mm to 80.46 mm. It suggests that the models of cart from small to big size were available there at Dhalewan. On the basis of the models of cart frame and wheel recovered at Dhalewan, two probable shapes of bullock-cart could to be suggested, out of which one has solid rectangular chassis and other one has a framed chassis with or without hubbed wheels.

It is interesting to mention that an example of spoked-wheel from Period IB has been marked out with four incised spokes at right angles on both sides. Ample evidence

Wheeler, R.E.M. 1947, Harappa, 1946 Vol. II, PL XXXVB

of spoked wheels from mature Harappan levels has also been reported from Kalibangan, Banawali and Rakhigarhi.

Another feature of a hubbed wheel is that it consists of hubs on both sides but a closed hub on the exterior.

Period	Quantity		
	Cart Frames	Wheels	
IA	1	1	
IB	4	6	
IC	13	22	
Unstratified	7	6	
Total	25	35	

# Table showing the frequency of Terracotta Cart Frames and Wheels with their Periods

Selected specimens are described below.

## I. TOY CART FRAMES

## Pl. 8.1 and Fig. 8.1

 Cart-frame (ratha) : fragmentary; solid; roughly triangular in shape; having small horizontal holes with a constant gap forming a curved line at the upper part for fixing a chassis and a big hole at the lower near the apex for a axle, also consisting of a grooved line at the middle on the top curved surface; and suggesting ratha like side frame; well fired; dull red core and colour; devoid of any surface treatment. From Phase I of Period IC. DLW, Reg. No. 1713. (Fig. 8.1, No. 1)

Measurements : length 105.47 mm (maximum available) breadth 57.76 mm, thickness 27.93 mm

 Cart-frame : fragmentary; concave, rectangular and solid chassis with small and big vertical holes all-around along the border with gaps for fixing the wooden post vertically; and a horizontal hole at the front for fixing the rod to tide the bulls; not so well fired; dull red core and colour; devoid of any surface treatment. From Phase I of Period IC. DLW, Reg. No. 1714. (Fig. 8.1, No. 2)

Measurements : length 89.05 mm (maximum available) breadth 54.27 mm, thickness 15.86 mm



Pl. 8.1 Terracotta cart frames.

EXCAUATIONS AT DIIALENCAN (1999.2000 & 2001-2002)



Fig. 8.1 Terracotta cart frames.

### Transport

 Cart-frame : fragmentary, solid; rectangular chassis having vertical holes along the border with gaps for fixing the wooden posts and a longitudinal hole at the front of the body probably for fixing horizontal rod to tide bulls; not so well fired; smoky core; dull red colour; devoid of any surface treatment. Unstratified. DLW, Reg. No. 1715.

Measurements : length 38.38 mm (maximum available) breadth 38.81 mm (maximum available) thickness 15.08 mm

4. Cart-frame : fragmentary; slightly concave and solid chassis with small vertical holes along the border for fixing the wooden posts as well as at the middle at least two rows of three holes for tiding axle externally; not so well fired; dull red core and colour; devoid of any surface treatment. From Phase II of Period IC. DLW, Reg. No. 420.

Measurements : length 62.10 mm (maximum available) breadth 53.93 mm, thickness 19.44 mm

 Cart-frame : fragmentary; concave, solid and rectangular chassis having small vertical holes along the border with gaps for fixing the wooden posts; not so well fired; smoky core; dull red colour; devoid of any surface treatment. From Phase III of Period IC. DLW, Reg. No. 258.

Measurements : length 55.61 mm (maximum available) breadth 50.72 mm, thickness 18.35 mm

## PL 8.2 and Figs. 8.2 & 8.3

 Cart frame; fragmentary; corner of chassis consists of a rectangular side bar and a cross bar with equidistantly placed vertical holes in side bar for fixing wooden posts and a horizontal hole either for joining with the animal or pulling directly by tiding the thread into the hole; well fired; red core; faint remains of a pinkish white wash. From Period IA, DLW, Reg. No. 223. (Fig. 8.2, No. 1)

Measurements : length of the frame (maximum available) 71.98 mm, breadth 37.64 mm, breadth of the bar 15.95 mm, thickness of the bar 16.72 mm

2. Cart frame; fragmentary; front corner of the framed chassis consists of ovoid side bar having vertical holes with a gap for fixing the vertical wooden posts and a cross bar with the remains of horizontal hole for either attaching with the animal or directly pulling by tiding a thread into the hole; well fired; red core; treated with a pinkish white wash on the upper surface. From Period IB. DLW, Reg. No. 158.

Measurements : length of the frame (maximum available) 47.88 mm, breadth of the frame 39.79 mm, breadth of the bar 13.57 mm, thickness of the bar 14.14 mm

EXCAUATIONS AT DHALEWAN (1999-2000 & 2001-2002)



Pl. 8.2 Terracotta cart frames.

Dunipart.



Fig. 8.2 Terracotta cart frames.

EXCAUATIONS AT DITALEWAN (1999-2000 & 2001-2002)



Fig. 8.3 Terracotta cart frames.

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 Cart frame; corner of a chassis consists of a ovoid side bar and a cross bar having vertical holes in side bar and horizontal hole in a cross bar for fixing wooden post and for joining the animal or directly pulling by tiding the thread into the hole respectively; well fired; red core and colour; devoid of any surface treatment. From Phase 1 of Period IC, DLW, Reg. No. 1724.

Measurements : length of the frame (maximum available) 49.61 mm, breadth 26.31 mm, breadth of the bar 13.17 mm, thickness of the bar 10.61 mm

 Cart frame : fragmentary, corner of chassis consists of a roughly ovoid cross bar and a side bar having vertical holes at the middle in side bar only for fixing wooden posts; well fired; red core and colour; devoid of any surface treatment. From Phase 1 of Period IC. DLW, Reg. No. 421. (Fig. 8.2, No. 2)

Measurements : length of the frame 62.31 mm (maximum available), breadth of the frame 56.88 mm, thickness of the bar 12.62 mm, breadth of the bar 27.97 mm

 Cart frame; fragmentary; roughly rectangular side bar of a framed chassis having small vertical holes at the middle with constant gaps for fixing the wooden posts; cross bar broken; well fired; red core and colour; devoid of any surface treatment. From Phase II of Period IC, DLW, Reg. No. 1245.

Measurements : length 80.43 mm (maximum available) breadth 20.15 mm, thickness 11.68 mm

 Cart frame; fragmentary; squarish side bar of a framed chassis having equidistantly placed vertical as well as horizontal holes alternatively for fixing vertical wooden posts; cross bar broken; well fired; red core and colour; devoid of any surface treatment. From Phase I of Period IC. DLW, Reg. No. 269. (Fig. 8.3, No. 3)

Measurements : length 51.65 mm (maximum available) breadth of the bar 23.40 mm, thickness of the bar 29.36 mm

 Cart frame; fragmentary; squarish with rounded cornered side bar of a framed chassis having horizontal and vertical holes with a gap alternatively for fixing wooden cross bars and vertical posts respectively; well fired; red core; treated with a fine red slip. From Phase 1 of Period IC. DLW, Reg. No. 130. (Fig. 8.3, No. 4)

Measurements : length of the bar 47,47 mm, breadth 24,38 mm, thickness 21,94 mm

# II. WHEELS

# Hubbed Wheels, Period IA and IB Pl. 8.3

 Hubbed wheel : Intact, medium sized; roughly pentagonal shaped; hubbed exterior and plain interior; not so well fired; dull red colour; small sized hole at the centre for axle; thick and flat rim; devoid of any surface treatment. From period IB. DLW, Reg. No. 164.

Measurements : Diameter of the wheel 44.08 mm, diameter of the hub 16.22 mm, diameter of the hole 5.45 mm, height of the hub 4.81 mm, thickness of the rim 10.03 mm

2 Hubbed wheel : Intact, medium sized; truncated bicone shaped with concave sides; not so well fired; hubbs on both sides; dull red colour; small hole at the centre for axle; thin and somewhat roundish rim; devoid of any surface treatment. From Period IB. DLW, Reg. No. 978.

Measurements : Diameter of the wheel 48.94 mm, diameter of the hubs 9.21 mm, diameter of the hole 4.95 mm, height of the hubs 5.32 and 4.39 mm, thickness of the rim 7.55 mm

 Hubbed wheel : fragment, small sized; roughly truncated cone with concavely tapering sides; prominent hubbed exterior and plain interior; not so well fired; grey colour; small hole at the centre for axle; devoid of any surface treatment. From Period IB, DLW, Reg. No. 254.

Measurements : Diameter of the wheel 32.12 mm, diameter of the hub 15.25 mm, diameter of the hole 3.33 mm, height of the hub 6.37 mm, thickness of the rim 4.92 mm

 Hubbed wheel : fragmentary, small sized; roughly pentagonal shaped; hubbed exterior and plain interior; well fired; dull red colour; slightly thick and flattish rim; big hole at the centre for a axle; devoid of any surface treatment. From Period IA. DLW, Reg. No. 232.

Measurements : Diameter of the wheel 31.02 mm, diameter of the hub 12.15 mm, diameter of the hole 6.66 mm, height of the hub 4.70 mm, thickness of the rim 8.22 mm

## Wheels, Period IB PL 8.4 and Fig. 8.4

 Spoked wheel : fragmentary, small sized; short cylindrical shaped; almost plain exterior and perfectly plain interior; not so well fired; dull red colour; small hole at the centre for a axle; thin and flat rim; four incised spokes at the right angle



Pl. 8.3 Terracotta hubbed wheels, Periods 1A and 1B.

EXCAPATIONS AT DHALEWAN (1999-2000 & 2001-2002)



Pl. 8.4 Terracotta wheels, Period 1B.
Transport



# Fig. 8.4 Terracotta wheels.

on both sides but not in the same directions, before firing; devoid of any surface treatment. From Period IB. DLW, Reg. No. 1741. (Fig. 8.4, No. 5)

Measurements : Diameter of the wheel 40.88 mm, diameter of the hole 5.62 mm, thickness of the wheel 10.70 mm

 Hubbed wheel : almost intact; large sized; truncated bicone shaped with concavely tapering sides; prominently hubbed on both sides; well fired; light red colour; slightly sharp edged rim; devoid of any surface treatment. From Period IB. DLW, Reg. No. 1260. (Fig. 8.4, No. 6)

Measurements : Diameter of the wheel 62.84 mm, diameter of the hubs 20.88 and 22.67 mm, diameter of the hole 10.69 mm, height of the hubs 10.44 and 9.75 mm, thickness of the rim 5.50 mm

 Wheel : intact, medium sized; short cylindrical shaped; plain exterior and interior as well; well fired; light red colour; big hole at the centre for a axle; thick and flat rim; treated with a red slip. From Period IB. DLW, Reg. No.1138 (Fig. 8.4, No.1)

Measurements : Diameter of the wheel 45.29 mm, diameter of the hole 14.80 mm, thickness of the rim 16.86 mm

## Wheels, Period IC Pl. 8.5

 Hubbed wheel : fragmentary, medium, cone shaped with two concave sides, projected hub on one side, plain interior, central hole for a axle, some what rounded rim, not so well fired, grey core, treated with a red slip. From Phase 1 of Period IC. DLW, Reg. No. 1726.

Measurements : Diameter of the wheel 62.97 mm, diameter of the whole 7.19 mm, thickness of the wheel 10.08 mm

 Hubbed wheel : fragmentary, large sized; truncated bicone shaped with concave sides; prominently projected hubs on both sides; thin and flat rim; small hole at the centre for axle; no so well fired; smoky core; treated with a thick pinkish red slip. From Phase II of Period IC. DLW, Reg. No. 1310.

Measurements : Diameter of the wheel 80.46 mm, diameter of the hubs 16.13 and 17.02 mm, diameter of the hole 8.24 mm, height of the hubs 14.42 and 14.33 mm, thickness of the rim 7.84 mm

 Hubbed wheel : fragmentary; medium sized; truncated bicone shaped with concave sides; gradually projected hubs on both sides but closed hub on the exterior; small central blind hole; thick and flat rim; not so well fired; smoky

296

#### Transport

core; dull red colour; devoid of any surface treatment. From surface. DLW, Reg. No. 17.

Measurements : Diameter of the wheel 52.60 mm, diameter of the hub 23.82 mm, diameter of the hole 4.93 mm, height of the hub 5.43 mm, thickness of the rim 13.46 mm

4. Hubbed wheel : fragmentary; large sized; truncated cone shaped with two concave sides; small and low height hub on one side; plain interior; thin and flat rim; small central hole for a axle; well fired; red core; devoid of any surface treatment. From Phase I of Period IC. DLW, Reg. No. 1247.

Measurements : Diameter of the wheel 73.75 mm, diameter of the hub 17.17 mm, diameter of the hole 7.42 mm, height of the hub 6.15 mm, thickness of the rim 6.42 mm

5. Hubbed wheel : broken hub; medium sized; truncated cone with concavely tapering sides; one sided hub but broken; plain interior; thin and flat rim; hole at the centre for axle; well fired; red core; treated with a red slip. From Phase II of Period IC, DLW, Reg. No. 1505.

Measurements : Diameter of the wheel 54.91 mm, diameter of the hub 18.25 mm, diameter of the hole 7.24 mm, thickness of the rim 5.70 mm

6. Hubbed wheel : intact; medium sized; roughly pentagonal shaped with two concave sides; prominently projected hub on one side; plain interior; thick and flattish rim; small hole at the centre for a axle; not so well fired; dull red colour; devoid of any surface treatment. From Phase II of Period IC. DLW, Reg. No. 907.

Measurements : Diameter of the wheel 43:58 mm, diameter of the hub 19:57 mm, diameter of the hole 7:09 mm, height of the hub 10:03 mm, thickness of the wheel 10:64 mm

 Wheel : intact; medium sized; short cylindrical shaped; plain exterior and interior; thick and flattish rim; central hole for a axle; not so well fired; dull red and smoky colour; devoid of any surface treatment. From Phase II of Period IC. DLW, Reg. No. 129.

Measurements : Diameter of the wheel 42.14 mm, diameter of the hole 10.70 mm, thickness of the wheel 18.40 mm

 Hubbed wheel : fragmentary; medium sized; truncated cone shaped with two concave sides; gradually projected hub on one side; with uneven surface; plain interior; central hole for a axle; thin and flattish rim; not so well fired; dull red

EXCAPATIONS AT DHALEWAN (1999-2009 & 2001-2002)



Pl. 8.5 Terracotta wheels, Period 1C.

#### Transport

surface; devoid of any surface treatment. From Phase I of Period IC. DLW, Reg. No. 935.

Measurements : Diameter of the wheel 46.52 mm, diameter of the hub 13.22 mm, diameter of the hole 5.77 mm, height of the hub 6.96 mm, thickness of the rim 4.92 mm

9. Hubbed wheel : partly broken; medium sized; truncated cone with concave sides; small and low height hub on one side; plain interior; thick and flat rim; small hole at the centre for a axle; not so well fired; smoky core; dark grey colour; devoid of any surface treatment. From Phase II of Period IC. DLW, Reg. No. 807.

Measurements : Diameter of the wheel 47.30 mm, diameter of the hub 14.73 mm, diameter of the hole 6.06 mm, height of the hub 3.48 mm, thickness of the wheel 6.22 mm

## Pl. 8.6 and Fig. 8.4

 Decorated hubbed wheel : fragmentary; medium sized; truncated cone shaped with two concave sides; long and prominently projected hub on one side; plain interior; thick and flat rim; small central hole for a axle; not so well fired; dark smoky core; dull red surface; decorated with nail marks forming roughly a circle around the hub on the exterior, before firing; devoid of any surface treatment. From Phase I of Period IC. DLW, Reg. No. 1743. (Fig. 8.4, No. 3)

Measurements : Diameter of the wheel 61.51 mm, diameter of the hub 15.46 mm, diameter of the hole 5.58 mm, height of the hub 16.60 mm, thickness of the wheel 10.73 mm

 Hubbed wheel : intact; small sized; truncated cone shaped with two concave sides; prominently projected hub on one side; plain interior; small central hole for a axle; sharp edged rim; not so well fired; dull red colour; devoid of any surface treatment. From Phase I of Period IC. DLW, Reg. No. 1344. (Fig. 8.4, No. 4)

Measurements : Diameter of the wheel 26.38 mm, diameter of the hub 8.32 mm, diameter of the hole 3.32 mm, height of the hub 3.32 mm, thickness of the wheel 3.45 mm

 Hubbed wheel : Intact; medium sized; truncated cone shaped with concave sides; small and low height hub on one side; plain interior; sharp edged rim; small hole at the centre for a axle; not so well fired; dull red colour; devoid of any surface treatment. From Phase II of Period IC. DLW, Reg. No. 1742. (Fig. 8.4, No. 2)

EXC45 ATTONS AT DILALEWAN (1999-2000 & 2001-2002)



Pl. 8.6 Terracotta hubbed wheels.

#### Transport

Measurements : Diameter of the wheel 42.36 mm, diameter of the hub 10.87 mm, diameter of the hole 4.30 mm, height of the hub 2.10 mm, thickness of the wheel 4.02 mm

## B. Water Transport

### PL 8.7 and Fig. 8.5

Sail boat : as far as the water transport is concern an incised sail boat was carved like a graffiti before firing on terracotta triangular cake. The body of the boat is shown by a group of two almost parallel-incised curved lines. The left upper part of the boat is shown out turned and below it two parallel horizontal strokes are marked on the outer sides. On the right hand side the upper part of the boat is looking sharp and straight and below it two strokes are also there but in other way. Three triangular sail-frames are drawn placing apex upward and attached to the valley of the boat on which probably the sail-cloth may have been tied. It is the only evidence to indirectly validate existence of water transport in Mature Harappan Period at Dhalewan. It also suggests that Dhalewan people of Period IC were well aware about the boat. A graffiti on pottery and an impression of a seal, depict boats both from Mohenjodaro<sup>4</sup>. Terracotta model of a boat has also been reported from Lothal<sup>4</sup> in support of water transport in Harappan Period. From Phase II of Period IC. DLW, Reg. No. 1700.

Measurements : sides 60.53 x 47.76 x 36.46 mm thickness 16.34 mm



Fig. 8.5 Triangular terracotta cake bearing an incised sail boat.

<sup>&</sup>lt;sup>2</sup> Marshall, J. 1931 Mohenjodam and the Indus Civilization, London.

Ran, S.R. 1979 and 1985 Lothal - Vols I & II A Harappun Port Town (1955-62). New Delhi, ASi

EXCAUATIONS AT DHALEWAN (1999-2000 & 2001-2002)



PL 8.7 Triangular terracotta cake bearing an incised sail boat.

# Terracotta Mustikas and Cakes VISHNU KANT



CHAPTER

- Ovoid (elliptical with finger depressions at the middle i.e. mustikas)
- 2. Triangular cake
- 3. Spheroid (solid ball shaped)
- 4. Convex with finger depression on either sides at the centre
- 5. Circular cake
- 6. Squarish/Rectangular/Wedge shaped cake

The *mustikas* (Ovoid) and triangular cakes are found in more quantity than spheroid and convex. Circular and squarish cakes both are found less in numbers in comparison to others (Table-I).

As such no mustikas and cakes are found at Dhalewan which shows their religious significance as reported from other Harappan sites viz. Lothal<sup>4</sup> and Kalibangan<sup>2</sup>. So far as fire alter is concerned there is no evidence of it at Dhalewan. However, few mustikas and cakes are collected from the deposit of ash either with bones or without bones. But in fact, no burnt patches or fire alter is traced. Further, it is interesting to note out that a compact floor of about 15-20 cm thick laid out by fragments of mustikas, cakes and pottery mixed with earth as a flooring material from Phase I of Mature Harappan level (Period IC). It shows the secondary use of mustikas and cakes. Similar evidences of floor by soling of reused mustikas and cakes were also reported from Rakhigarhi<sup>1</sup>.

The mustikas and cakes are found moderately fired and made of normal clay. It is traced more or less all over on plan and found from each and every house of both phases of Mature Harappan stage (Period IC). A heap of mud-spheroid (balls) of more than 100 in numbers is found kept *in situ* on the floor of a cruciform courtyard of a house of Phase I of Mature Harappan (Period IC). Widespread presence at the site of the said objects suggest that the *mustikas* and cakes were manufactured and subsequently moderately fired

<sup>5.</sup>R. Rao, 1979, Lothal, A Harappan Port Town (1955-62) MASI-78, p. 217

<sup>&</sup>lt;sup>3</sup> B.B.Lal, et al. 2015, Excavations at Kalibangan : The Harappans, Part I, MASI-110, Fire Altars in Chapter 6, pp. 287-307, Archaeological Survey of India.

<sup>1.</sup>A.R. 1997-98, p. 57.

EXCAVATIONS AT DHALEWAN (1999-2000 & 2001-2002)



Pl. 9.1 Terracotta mustikas in large quantity.

#### Terracons Muntikas and Cakes

locally by the residents of the houses of both phases of Period IC. No special kind of clay was prepared for the said purpose. The readily available clay was used for making *mustikas* and cakes. Shape-wise some of the convex shaped have fewer contour at one side. A piece of plano-convex is also available. The rectangular shaped cakes bear rounded corners. Few of them have variation in upper and lower breadths and looks like wedge shaped. A piece having two-rounded corner and two sharp corners looks like semi-elliptical in shape.

Various sized *mustikas* and cakes are collected (Table-I). Amongst, *mustikas* (ovoid) measuring length 11.7-9.6 x breadth 7.5-6.5 x height 6.2-5.1 cm, length 9.5-8.2 x breadth 6.4-3.5 x height 5-2.4 cm and length 4.4-4.3 x breadth 2.4-2.1 x height 1.6-1.3 cm for large, small and miniature respectively; triangular cakes measuring sides 11.4 - 9 and thickness 3.9 - 3.5 cm, sides 8-6 and thickness 3.4 - 2 cm and sides 5 - 3.5 and thickness 2-0.9 cm for large to small respectively; circular cakes measuring diameter 12-7.2 cm, thickness 2.9-1.9 cm; spheroid measuring diameter 7.9-6 cm and 5.5-4.5 cm for large to small respectively; convex measuring diameter 10.4-6.3 and 3.9 to 1.7 cm height at the centre and squarish/rectangular/wedge shaped measuring 6.9 x 6.8 x 2.5 cm (squarish) 9.6 x 6.4 x 2.5 cm (rectangular) 8.9 x 7.8-5.8 x 2.8 cm, 8.7 x 5.6-4.3 x 3.1 cm and 6.4 x 6.0 - 6.4 x 2.2 cm (wedge-shaped).

Some of the *mustikas* and cakes almost fragmentary bear mat impression either on one side or on all sides (Table-II). A keen observation of mat impressed surfaces suggest different types of mat in which at least three types of mat designs are recognized on the basis of their knitting. It seems that some times *mustikas* and cakes were kept on the mat for sun-drying. Amongst these ovoid *mustikas* are found in more quantity than others (Table-II). But those having mat impression on all three surfaces probably were used for decorating purpose and may have been used as skin rubbers as well.

Some of the *mustikas* and cakes have incised-graffiti-marks, before firing. Amongst the graffiti marks plus (+) like mark seems popular which is traced on more than 28 *mustikas* and triangular cakes. Few pieces have more than one letter and shows inscription like pattern. But not so clear inscription is observed on cakes/*mustikas*. Besides few have remains of incised designs in which noticeable one is bearing a boat like incised design (Fig. 8.5 and PI.8.7). Another one consisted of nail impressions and remaining were decorated with notched impressions.

Period	Size	Types of mustikas and cakes						Grand
		Ovuid (mustikas)	Triangular	Spheroid	Convex	Circular	Squarish/ Rectangular/ Wedge Shaped	Total
	Large	1	1	2	0	0	0	4
18	Medium	1	0	0	0	0	0	16
	Small	2	11°	3	0	1	0	7
	Miniature	0	0	0	0	0	0	0

TABLE-I Showing the numbers of *Mustikas* and Cakes with their Periods

EXCOUNTIONS AT DILALEBOAN (1999-2008 & 2001-2002)

i.	Large	27	82	17	0	5	0	131
IC	Medium	44	0	0	8	0	6	58
	Small	42	21	17	-4	5	3	92
	Miniature	2	0	0	0	0	0	2
υ	Large	2	14	6	0	0	0	22
	Medium	8	0	0	- 4	0	1	13
	Small	7	3	2	- ît -	0	0	13
	Miniature	0	0	0	0	0	0	0
	Total	136	122	47	17	11	10	343

## TABLE-II

## Showing numbers of mat impressed Mustikas and Cakes with their Periods

Period	Ovoid (Including fragmentary)	Triangular (Fragmentary)	Total	
IB	2	0	2	
IC	24	7	31	
U	7	0	7	
Total	33	7	40	

## TABLE-III

## Showing numbers of Mustikas and Cakes bearing graffiti marks or incised design with their Periods

Period	Graffiti Mark	Ovoid (almost fragmentary)	Triangular Fragmentary	Circular Cake	Convex fragmentary	Total
[B	Other Graffiti Mark	0	1	0	0	ų.
	Graffiti mark + like sign	17	10	0	0	27
IC	Other Graffiti marks	4	n	0	0	15
	Incised design	2	6	- 1)	0	9
U	Graffiti mark + like sign	0	2	0	0	2
	Other Graffiti marks	0	1	0	0	1
	Incised design	0	0	0	4	1
	Total	23	31	L.	1	56

U -stands for unstratified in the tables

306

## A. TERRACOTTA CAKES

## (i) Triangular Cakes (Pl. 9.2)

 Triangular Cake : Largest in the lot ; triangular with rounded corners; thin sectioned terracotta cake; moderately fired; light red coloured. From Phase 1 of Period IC. DLW, Reg. No. 1607.

Measurements : sides 114 x 112 x 110 mm, thickness 24 mm

2 Triangular Cake : Large sized comparatively smaller than above; triangular with some what rounded corners; thin sectioned terracotta cake; moderately fired; reddish coloured. From Phase II of Period IC. DLW, Reg. No. 1608.

Measurements : sides 100 x 98 x 98 mm, thickness 24 mm

3 Triangular Cake : Large sized but smaller than No. 2; triangular; thick sectioned terracotta cake; moderately fired; greyish red coloured. From Phase 1 of Period IC. DLW, Reg. No. 1609.

Measurements : sides 98 x 95 x 96 mm, thickness 39 mm

4 Triangular Cake : Small in the lot; triangular; thin sectioned terracotta cake; moderately fired; greyish red coloured. From Phase I of Period IC. DLW, Reg. No. 1610.

Measurements : sides 50 mm each, thickness 9 mm

5 Triangular cake : medium sized; triangular; thin sectioned terracotta cake; moderately fired; grevish coloured; unstratified. DLW, Reg. No. 1615.

Measurements : sides 87 x 89 x 80 mm, thickness 17 mm

6 Triangular Cake : more or less equal to No. 4; triangular with some what rounded corners; thick sectioned terracotta cake; moderately fired; light red coloured. From Phase II of Period IC. DLW, Reg. No. 1015.

Measurements : sides 49 x 49 x 48 mm, thickness 16 mm

7 Triangular Cake : Small sized but comparatively bigger than above; triangular with rounded apex; thick sectioned terracotta cake; moderately fired; light red coloured. From Period IB. DLW, Reg. No. 1611.

Measurements : sides 63 x 63 x 60 mm, thickness 24 mm

EXCAUATIONS AT DHALEWAN (1999-2000 & 2001-2002)



Pl. 9.2 Triangular terracotta cakes.

Terracide Mustikes and Cakes

8 Triangular Cake : Medium sized; triangular with rounded corners; thick sectioned terracotta cake; moderately fired; reddish grey coloured. From Period IB. DLW, Reg. No. 1612.

Measurements : sides 75 x 74 x 81 mm, thickness 26 mm

### (ii) Other Cakes (Pl. 9.3)

L Circular cake : Large sized: circular; thick sectioned terracotta cake; moderately fired; light red coloured. From Phase II of Period IC. DLW, Reg. No. 1596.

Measurements : Diameter 119 mm, thickness 30 mm.

 Wedge shaped cake : Medium sized; wedge shaped; thick sectioned terracotta cake; moderately fired; grey coloured. From Phase II of Period IC, DLW, Reg. No. 1597.

Measurements : base 60 mm, sides 64 mm, top 35 mm, thickness 22 mm.

 Circular cake : Medium sized, circular; thin sectioned terracotta cake; moderately fired; light red coloured. Unstratified. DLW, Reg. No. 1598.

Measurements : Diameter 87-91 mm, thickness 19 mm

 Squarish cake : Medium sized; squarish with some what tapering sides; thick sectioned terracotta cake; moderately fired; greyish coloured. From Phase 1 of Period IC. DLW, Reg. No. 1599.

Measurements : sides 72 x 71 x 66 x 68 mm, thickness 26 mm.

 Semi-elliptical cake : Medium sized; semi-elliptical with slightly wider base at one side forming due to creating pressure in leather hard condition; thin sectioned terracotta cake; moderately fired; reddish colured. From Phase II of Period IC. DLW, Reg. No. 932.

Measurements : Diameter of smaller axis 78 mm, height 68 mm, thickness 20 mm.

 Rectangular or oval cake : Medium sized; rectangular with rounded corners or ovalish; thin sectioned terracotta cake; moderately fired; light red colured. From Phase 1 of Period IC. DLW, Reg. No. 1600.

Measurements : length 97 mm, breadth 65 mm, thickness 25 mm.

EXCAUATIONS AT DHALEWAN (1999-2000 & 280/-2002)



Pl. 9.3 Other terracotta cakes.

Terraculta Mustikas and Cakes

## B. MUSTIKAS (Pl. 9.4)

 Mustika : Large sized; ovoid with a deep finger depression at the middle on either sides; thick sectioned; terracotta; moderately fired; greyish coloured. From Period IB. DLW, Reg. No. 1630.

Measurements : length 110 mm, breadth 65 mm, thickness 49 mm

 Mustika : Medium sized; ovoid with a deep finger depression at the middle on either sides; terracotta; thick sectioned; moderately fired; greyish red coloured. From Phase 1 of Period IC. DLW, Reg. No. 1632.

Measurements : length 100 mm, breadth 52 mm, thickness 37 mm

 Mustika : Medium sized; ovoid with a deep finger depression at the middle on either sides; terracotta; thick sectioned; moderately fired; reddish grey coloured. From Phase I of Period IC. DLW, Reg. No. 1633.

Measurements : length 88 mm, breadth 56 mm, thickness 41 mm

 Mustika : Largest in the lot; ovoid with a deep finger depression at the middle on either sides; thick sectioned; terracotta; moderately fired; light red coloured. From Phase I of Period IC. DLW, Reg. No. 1629.

Measurements : length 110 mm, breadth 66 mm, thickness 57 mm

 Mustika : Medium sized; thick sectioned; terracotta; moderately fired; light red coloured. From Period IB. DLW, Reg. No. 1634.

Measurements : length 86 mm, breadth 50 mm, thickness 44 mm

 Mustika : Small sized; ovoid with a finger depression at the middle on either sides; comparatively thick sectioned; terracotta; moderately fired; greyish coloured. From Period IB, DLW, Reg. No. 1638.

Measurements : length 70 mm, breadth 50 mm, thickness 48 mm

 Mustika : Small sized; ovoid with a finger depression at the middle on either sides; thick sectioned; terracotta; moderately fired; light red coloured. From Phase I of Period IC. DLW, Reg. No. 1640.

Measurements : length 66 mm, breadth 40 mm, thickness 30 mm

 Mustika : Small sized; ovoid with a finger depression at the middle on either sides; thick sectioned; terracotta; moderately fired; light red coloured. From Phase 1 of Period IC. DLW, Reg. No. 1639.





#### Terracutta Mastikas and Cahes

Measurements : length 75 mm, breadth 40 mm, thickness 37 mm

 Mustika : Large sized; ovoid with a deep finger depression at the middle on either sides and a depression of a upper part of a palm with fingers on one face of the mustika; thick sectioned; terracotta; moderately fired; light red coloured. From Phase II of Period IC, DLW, Reg. No. 1631.

Measurements : length 110 mm, breadth 61 mm, thickness 48 mm

 Mustika : Small sized; ovoid with a finger depression at the middle on either sides; thick sectioned; terracotta; moderately fired; light red coloured. From Phase 1 of Period IC. DLW, Reg. No. 1635.

Measurements : length 57 mm, breadth 35 mm, thickness 28 mm

 Mustika : Miniature; ovoid with a mild finger depression at the middle on either sides; thick sectioned; terracotta; moderately fired; light red coloured. From Phase II of Period IC. DLW, Reg. No. 1636.

Measurements : length 43 mm, breadth 23 mm, thickness 16 mm

 Mustika : Miniature; ovoid with a deep finger depression at the middle on either sides; comparatively thin sectioned than above; terracotta; moderately fired; light red coloured. From Phase II of Period IC. DLW, Reg. No. 1637.

Measurements : length 43 mm, breadth 21 mm, thickness 13 mm

## C. SPHEROIDS (Pl. 9.5)

 Spheroid : Largest in the lot; spherical; solid; terracotta; moderately fired; greyish red coloured. From Period IC. DLW, Reg. No. 1623.

Measurements : Diameter 79 mm.

 Spheroid : Large sized but comparatively smaller than no. 1; roughly spherical; solid; terracotta; moderately fired; grey coloured. From Phase T of Period IC. DLW, Reg. No. 1624.

Measurements : Diameter 71 mm.

 Spheroid : Medium sized; spherical; solid; terracotta; well fired; red coloured. From Phase 1 of Period IC, DLW, Reg. No. 1625.

Measurements : Diameter 65 - 67 mm.



Pl. 9.5 Terracotta spheroids.

#### Territoun Monthes and Cakes

 Spheroid : Medium sized; spherical with uneven surface; solid; terracotta; moderately fired; light red coloured. From Period IB. DLW, Reg. No. 1626.

Measurements : Diameter 63 - 64 mm.

 Spheroid : Small sized; spherical; solid; terracotta; moderately fired; greyish red coloured. From Phase II of Period IC. DLW, Reg. No. 1628.

Measurements : Diameter 45 - 49 mm.

 Spheroid-cum-ovoid : Small sized; ovoid; solid; terracotta; moderately fired; light red coloured. From Phase II of Period IC. DLW, Reg. No. 693.

Measurements : Diameters 35 and 46 mm.

 Spheroid : Small sized; spherical with uneven surface; solid; terracotta; moderately fired; grey coloured. From Period IB. DLW, Reg. No. 1627.

Measurements : Diameter 46 - 49 mm.

## D. CONVEX (Pl. 9.6)

 Convex : Fragmentary; largest in the lot; terracotta; convex with a deep finger depression at the centre on either sides with less convexity at one side; thick sectioned; moderately fired; red coloured. From Phase II of Period IC. DLW, Reg. No. 1601.

Measurements : Diameter 102 mm, thickness 39 mm

 Convex : Large sized; terracotta; convex with a deep finger depression at the centre on either sides; thick sectioned; moderately fired; light red coloured. From Phase II of Period IC. DLW, Reg. No. 1602.

Measurements : Diameter 89 mm, thickness 38 mm

 Convex : Large sized; terracotta; convex with a deep finger depression at the centre on either sides with very less convexity at one side; thin sectioned; moderately fired; greyish coloured. From Phase II of Period IC. DLW, Reg. No. 1603.

Measurements : Diameter 90 mm, thickness 29 mm

 Convex : Medium sized; terracotta; convex with a deep finger depression at the centre on either sides; thick sectioned; moderately fired; greyish red coloured. From Phase II of Period IC. DLW, Reg. No. 1604.

Measurements : Diameter 80 mm, thickness 36 mm

EXCAUATIONS AT DITALEMAN (1999-2000 & 2001-2002)



Pl. 9.6 Convex terracotta cakes.

#### Terracoust Mustikas and Cakes

 Convex : Medium sized; terracotta; convex with a finger depression at the centre on either sides; thin sectioned; moderately fired; greyish red coloured. From Phase II of Period IC. DLW, Reg. No. 1605.

Measurements : Diameter 75 mm, thickness 17 mm

 Convex : Small sized; terracotta; convex with a finger depression on either sides; thick sectioned; moderately fired; greyish red coloured. From Phase II of Period IC, DLW, Reg. No. 1606.

Measurements : Diameter 66 mm, thickness 29 mm

 Convex : Medium sized; terracotta; convex with a deep finger depression at the centre on either sides with almost no convexity on other side; thick sectioned; moderately fired; greyish coloured. From Phase I of Period IC. DLW, Reg. No. 1048.

Measurements : Diameter 73 mm, thickness 40 mm

## E. TERRACOTTA CAKES AND MUSTIKAS BEARING GRAFFITI MARK (Pl. 9.7)

 Mustika : Large sized; terracotta ovoid having a deep finger depression at the middle on either sides ; thick sectioned; bearing a plus (+) like sign in which long vertical stroke intersected by a small oblique stroke almost at the middle before firing on one face of the mustika; moderately fired; light red coloured. From Phase I of Period IC, DLW, Reg. No. 1642.

Measurements : length 109 mm, breadth 67 mm, thickness 49 mm

 Mustika : Fragmentary; large sized; terracotta ovoid with finger depression on either sides ; thick sectioned; bearing deeply incised plus (+) like mark before firing on one face of the mustika; moderately fired; grey coloured. From Phase 1 of Period IC, DLW, Reg. No. 1646.

Measurements : length 82 (maximum available) mm, breadth 67 mm, thickness 41 mm

3. Mustika : Large sized; terracotta ovoid; narrow at the middle due to pressing by fingers on either sides in leather hard condition; thick sectioned; bearing two almost parallel vertical incised lines intersected two parallel horizontal lines at the lower ends. Further at the upper end another group of two parallel horizontal lines intersected the vertical parallel lines on one face of the mustika; moderately fired; grey coloured. From Phase 1 of Period IC. DLW, Reg. No. 1643.

Measurements : length 100 mm, breadth 69 mm, thickness 47 mm

EXCAUATIONS AT DHALEWAN (1999-2000 & 2001-2002)



Pl. 9.7 Terracotta cakes and mustikas bearing graffiti marks.

#### Terrounts Munitas and Cakes

4. Mustika : Large sized; terracotta ovoid having a deep finger depression at the middle on either sides ; thick sectioned; bearing a plus (+) like sign in which vertical line intersected by a curved horizontal stroke at the middle before firing on one face of the *mustika*; other face having finger marks at the upper end; moderately fired; greyish red coloured. From Phase II of Period IC. DLW, Reg. No. 1641.

Measurements : length 107 mm, breadth 68 mm, thickness 42 mm

 Triangular cake : Fragmentary; medium sized; triangular; thick sectioned terracotta cake; bearing upper part of two plus (+) like marks obliquely intersecting each other at the same centre before firing on one face of the cake; moderately fired; reddish grey coloured. From Phase I of Period IC. DLW, Reg. No. 1651.

Measurements : (maximum available) sides 52 x 37 mm, thickness 29 mm

 Triangular cake : Fragmentary; medium sized; triangular; thick sectioned terracotta cake; bearing upper part of two plus (+) like marks obliquely intersecting each other at the same centre before firing on one face of the cake; moderately fired; grey coloured. From Phase I of Period IC. DLW, Reg. No. 1650.

Measurements : maximum available sides 65 x 60 mm, thickness 31 mm

 Triangular cake : Fragmentary; medium sized; triangular; thin sectioned terracotta cake; bearing deeply incised plus (+) like mark before firing on one face of the cake; moderately fired; light red coloured. From Phase I of Period IC. DLW, Reg. No. 1649.

Measurements : sides 96 x 64 (maximum available) x 46 mm (maximum available), thickness 21 mm

 Triangular cake : medium sized; triangular; thick sectioned terracotta cake; bearing an incised arrow mark before firing on either sides; moderately fired; grey coloured. Unstratified. DLW, Reg. No. 1652.

Measurements : sides 83 x 73 x 81 mm, thickness 32 mm.

 Triangular cake : medium sized; triangular; thick sectioned terracotta cake; bearing deeply incised plus (+) like mark before firing on one face of the cake; moderately fired; light red coloured. Unstratified. DLW, Reg. No. 1647.

Measurements : length 86 x 90 x 88 mm, thickness 22 mm

## F. MAT IMPRESSED MUSTIKAS AND CAKES (PL 9.8)

 Mustika : Medium sized; ovoid but roughly rectangular; having a deep finger depression on either sides at the middle; bearing mat impression on roughly rectangular face and few impression also visible on one vertical side connected to this face; terracotta; moderately fired; greyish red coloured; the impression shows a pattern of mat weaving in which the horizontal straws having an equal gap of about 5 mm each and vertical straws or thread(?) maintaining also an equal gap of about 15 mm for each rows. From Phase 1 of Period IC. DLW, Reg. No. 1653.

Measurements : length 109 x breadth 64 mm x thickness 43 mm

 Mustika : Fragmentary; ovoid; thick sectioned; terracotta; moderately fired; grey coloured; bearing similar type mat impressions on both the faces. The weaving pattern is completely different in which both horizontal and vertical lines of straw strips weaved each other with leaving a gap of one straw from both side, while maintaining a equal horizontal and vertical distance. From Phase 1 of Period IC. DLW, Reg. No. 1656.

Measurements : length 53 mm (broken) x breadth 60 mm x thickness 30 mm

 Mustika : Fragmentary: ovoid having uneven surface or finger depression on surface; terracotta; moderately fired; light reddish colour; bearing mat impression on one face; weaving pattern is found similar to Sr. No. 2. From Surface. DLW, Reg. No. 1655.

Measurements : available size 91 x 62 mm, thickness 45 mm

4. Mustika : Medium sized but smaller than above; ovoid having a mild finger depression at the middle on either sides; bearing mat impression on one face and on its left vertical side; terracotta; moderately fired; the mat impression shows a similar type weaving as in No. 1 but its vertical weaving having a some curved like profile. From Phase I of Period IC. DLW, Reg. No. 1654.

Measurements : length 83 x breadth 59 mm x thickness 39 mm

 Triangular cake : Fragmentary; thick sectioned; terracotta; moderately fired; light reddish coloured; bearing similar type mat impressions on all faces of the cake; the weaving pattern is similar to Sr. No. 4. From Period IB. DLW, Reg. No. 1661.

Measurements : available size 54 x 48 mm x thickness 21 mm

 Mustika : Fragmentary: ovoid; thick sectioned; terracotta; moderately fired; greyish red coloured; bearing similar type mat impressions on both sides; the weaving pattern is similar to Sr. No. 2. From Period IB. DLW, Reg. No. 1658.

320



Pl. 9.8 Terracotta cakes and mustikas bearing mat impression.

Measurements : available size 47 x 35 mm, thickness 23 mm

7. Mustika : Fragmentary; medium sized; ovoid having faint remains of finger depression at the middle on either sides; terracotta; moderately fired; greyish coloured; bearing mat impression on one face; the weaving pattern is different in which vertical weaving in zigzag form not maintaining a straight line with a gap of about 10 mm of each row and a gap of 3-5 mm maintaining for setting the horizontal straws. From Phase II of Period IC. DLW, Reg. No. 1657.

Measurements : length 56 mm (broken) x breadth 63 mm x thickness 33 mm

 Triangular cake : Medium sized. Fragmentary thick sectioned; terracotta cake; moderately fired; reddish grey coloured; bearing mat impression all around; the weaving pattern is almost similar to No. 1 but obliquely impressed. From Phase I of Period IC. DLW, Reg. No. 1660.

Measurements : sides 60 x 55 (broken) x 55 (broken) thickness 27 mm

 Triangular cake : Fragmentary; thick sectioned; terracotta; moderately fired; greyish coloured; bearing similar type mat impressions as found in Sr. No. 2 on all faces; in addition to it, a part of a plus (+) like incised sign is traced on its one face as a graffiti mark. From Phase II of Period IC, DLW, Reg. No. 1659.

Measurements : sides 64 mm (broken) x 53 mm x thickness 29 mm

## G. TERRACOTTA CAKES AND MUSTIKAS BEARING INCISED DESIGNS (Pls. 9, 9 and 9.10)

 Triangular cake : Fragmentary; medium sized; thin sectioned; terracotta cake; moderately fired; dull red coloured; bearing nail impressions in irregular manner on a triangular face before firing. From Phase II of Period IC. DLW, Reg. No. 1663.

Measurements : Length 75.73 mm breadth 54.92 mm thickness19.43 mm

 Triangular cake : Fragmentary; thick sectioned; moderately fired; grey red coloured; bearing incised design on one triangular face before firing. The design possessed a part of a hexagon or rectangle(?) divided into the sectors by several same centered oblique lines. From Phase II of Period IC. DLW, Reg. No. 1666.

Measurements : Length 51.37 mm breadth 38.23 mm thickness 24.44 mm

Terraciona Mustikas and Cakes



Pl. 9.9 Terracotta cakes and mustikas bearing incised design.

EXCAVATIONS AT DHALEWAN (1999-2000 & 2001-2002)



Pl. 9.10 Inscribed terracotta cake.

#### Terrocomo Mestikas and Cakes

 Circular cake : Medium sized; thin sectioned; terracotta; moderately fired; dull red coloured; bearing deeply marked nail impressions in irregular manner on a circular face before firing. From Phase 1 of Period IC. DLW, Reg. No. 1662.

Measurements : Diameter 86.75 mm thickness 23.92 mm

4. Mustika : Fragmentary: medium sized; thick sectioned; terracotta; moderately fired; dull red surface with grey core at the middle; bearing part of a incised design on one surface. The design possessed a part of rectangle/lozenge bordered by three parallel lines or four concentric lozenges/rectangles before firing. From Phase II of Period IC. DLW, Reg. No. 1665.

Measurements : Length 52.54 mm breadth 61.13 mm thickness 33.40 mm

5. Triangular cake : Fragmentary; thin sectioned; terracotta cake; moderately fired; greyish red coloured; bearing a part of incised design on one triangular face before firing. The design is not so clear having two vertical curved lines over the horizontal straight line, below it another vertical curved line is shown. From Phase II of Period IC, DLW, Reg. No. 1668.

Measurements : Length 56.44 mm breadth 40.07 mm thickness 20.27 mm

 Triangular cake : Fragmentary; thick sectioned; some what well fired; red coloured; bearing part of an almost similar incised design on both triangular face before firing. The floral design is well displayed by using curved lines. From Phase II of Period IC. DLW, Reg. No. 1664.

Measurements : Length 51.03 mm breadth 50.23 mm thickness 31.29 mm

7. Triangular cake : Fragmentary; medium sized; triangular; thick sectioned; terracotta cake; moderately fired; dull red coloured; bearing incised design on one triangular face. The design possessed the border of the triangular face made by zig-zag line and further divided in sectors. From Phase II of Period IC, DLW, Reg. No. 1667.

Measurements : Length 67.58 mm breadth 40.20 mm thickness 38.11 mm

## Pl. 9.10

Inscribed triangular cake : Fragmentary; thick sectioned; moderately fired; red coloured; bearing light incision not so clear but inscription like pattern on a triangular face as well as on a vertical face. A Y shaped sign followed by four irregular vertical curved strokes along the one side of the periphery of a triangular face, another on the vertical face having three vertical strokes attached by a horizontal line at the upper portion. From Phase II of Period IC. DLW, Reg. No. 511.

Measurements : (maximum available) length 66.20 mm x breadth 63.49 mm x thickness 28.77 mm

# Bangles and Rings MADHU BALA



## A. TERRACOTTA BANGLES

As a common feature of Harappan culture, the terracotta bangles are recovered in large quantity at Dhalewan. In comparison to grey-segmented bangles, the red plain with circular section, an ordinary variety of bangles are found more in numbers suggesting that the common people of the society wore these bangles. Two other varieties of red terracotta bangles are there at Dhalewan i.e. flat with rectangular section and plano-convex with almost semi-circular section. Few examples of decorated red terracotta bangles are also in the collection in which two or three bangles, consisting of parallel painted strokes in black colour on white semi-circular surface on the exterior of the circular sectioned bangle; and other one decorated with a running scalloped design on the exterior of the rim of the bangle by pinching the clay in leather hard condition with an equal gap of about 1 mm. All are of medium fabric and well fired. Few of these are devoid of any surface treatment.

In segmented variety, bangles are found more in grey terracotta but there is rare presence of red terracotta. Few examples of decorated bangles of grey terracotta consisting of closely placed parallel-incised lines along the rim on the exterior of the rectangular sectioned bangles. The exterior of these bangles present a false view of the segmented bangle. But, in fact, these are not segmented. The segmented bangles are made by fixing of two and more bangles of equal size in leather hard condition. The two to four segmented bangles are in the collection of grey terracotta. Only four of segmented bangles are represented the red terracotta. Grey as well as red both is of fine fabric, well fired in oxidized condition and treated with a fine slip. Two or three crude examples are found here at Dhalewan of segmented bangles and these are made of two ordinary circular sectioned red terracotta bangles.

Over all more than 310 bangles are collected out of which 50 are segmented 246 are ordinary and remaining 5 are decorated. In this whole lot most are found fragmentary. Only three examples are recovered full in shape in which two are fully intact and other prepared by joining the pieces.

In common type circular sectioned bangles of red terracotta, the inner diameters vary from 90 mm to 24 mm. This suggests that these bangles were more popular in fashion and used by people of all age groups of the Mature Harappan society of Period IC. The thickness of the bangles varies from 5.52 mm to 12.02 mm.

The fine variety of grey terracotta segmented and non-segmented, the inner diameters of the bangles vary 68 mm to 28 mm. This variation in diameter shows that the bangles were also used by child to adult. These bangles were popular in fashion from early. Harappan (Period IA) onwards.

Selected specimen are described below :-

## (i) Plain Bangles

## Pl. 10.1 and Fig. 10.1

 Plain Bangle : Full (mended); medium sized; thick; dull red; circular sectioned; not so well fired; devoid of any surface treatment. From Phase I of Period IC. DLW, Reg. No. 1119. (Fig. 10.1, No. 2)

Measurements : Inner diameter 62 mm; diameter of the section 10.30 mm

 Plain Bangle : Intact; small sized; comparatively smaller than nos. 1 and 3; red; circular sectioned; well fired; treated with a red slip. From Phase II of Period IC. DLW, Reg. No. 488. (Fig. 10.1, No. 9)

Measurements : Inner diameter 36 mm; diameter of the section 8.20 mm

 Plain Bangle : Intact; medium sized comparatively smaller than no. 1; medium thick, circular sectioned, well fired, treated with a dull red wash. From Phase 1 of Period IC. DLW, Reg. No. 1733. (Fig. 10.1, No. 6)

Measurements : Inner diameter 66.3 mm, diameter of the section 7.61 mm.

 Plain Bangle : Largest in the lot; fragmentary; thick but comparatively lesser than no. 5; red; circular sectioned; well fired; devoid of any surface treatment. From Phase II of Period IC. DLW, Reg. No. 1545.

Measurements : Inner diameter 90 mm; diameter of the section 10.40 mm

 Plain Bangle : Large but comparatively smaller than no. 4; thick; fragmentary; red; circular sectioned; well fired; devoid of any surface treatment. From Phase II of Period IC. DLW, Reg. No. 519. (Fig. 10.1, No. 8)

Measurements : Inner diameter 80 mm; diameter of the section 11.75 mm

 Plain Bangle : Medium sized; fragmentary; thick; dull red; circular sectioned; not so well fired; devoid of any surface treatment. From Phase II of Period IC. DLW, Reg. No. 871.



Pl. 10.1 Plain terracotta bangles.

## EXCAVATIONS AT DRALEWAN (1999-2000 & 2001-2002)



Fig. 10.1 Plain and decorated terracotta bangles.
## Bangles and Rings

Measurements : Inner diameter 70 mm; diameter of the section 10.02 mm

 Plain Bangle : Fragmentary; small sized; comparatively thicker than no. 8; red; circular sectioned; well fired; treated with a dull red wash. From Phase II of Period IC, DLW, Reg. No. 831.

Measurements : Inner diameter 42 mm; diameter of the section 7.62 mm

 Plain Bangle : Fragmentary; medium sized but smaller than no. 1 and 6; thin; dull red; circular sectioned; not so well fired; devoid of any surface treatment. From Phase II of Period IC, DLW, Reg. No. 1077.

Measurements : Inner diameter 50 mm; diameter of the section 6.82 mm

Plain Bangle : Fragmentary; medium sized equal in size but bit smaller than no.

 thick; red; circular sectioned; well fired; devoid of any surface treatment. From
 Phase II of Period IC, DLW, Reg. No. 1024.

Measurements : Inner diameter 60 mm; diameter of the section 8.79 mm

 Plain Bangle : Fragmentary; small sized; thin; dull red; circular sectioned; not so well fired; treated with a dull red occur wash. From Phase 1 of Period IC. DLW, Reg. No. 457.

Measurements : Inner diameter 40 mm; diameter of the section 6.20 mm

 Plain Bangle : Fragmentary; small sized; thin; smoky red; circular sectioned; not so well fired; devoid of any surface treatment. From Phase II of Period IC, DLW, Reg. No. 699.

Measurements : Inner diameter 30 mm; diameter of the section 5.52 mm

 Plain Bangle (?): Fragmentary; small sized; thickest in the lot; red; well fired; circular sectioned; treated with fine red slip. From Phase I of Period IC, DLW, Reg. No. 1496. (Fig. 10.1, No. 10)

Measurements : Inner diameter 16 mm; diameter of the section 12.02 mm

 Plain Bangle : Fragmentary; small; red; circular sectioned; well fired; devoid of any surface treatment. From Phase II of Period IC. DLW, Reg. No. 138.

Measurements : Inner diameter 24 mm; diameter of the section 7.21 mm

 Plain Bangle : Fragmentary; small sized; thin; smoky red; circular sectioned; not so well fired; devoid of any surface treatment. From Phase II of Period IC. DLW, Reg. No. 811.

Measurements : Inner diameter 34 mm; diameter of the section 7.01 mm

# (ii) Plain and decorated bangles

## Pl. 10.2 and Figs. 10.1 & 10.2

 Plain Bangle : Fragmentary; small sized; thin; rectangular sectioned; red; well fired; flat exterior and interior as well; treated with a red slip; probably separated from segmented bangles. From Period IB. DLW, Reg. No. 1476.

Measurements : Inner diameter 40 mm; thickness 4.28 mm; breadth 3.36 mm

 Plain Bangle : Fragmentary; medium sized; thick; rectangular sectioned; dull red; not so well fired; slightly concave sides; flat exterior and interior as well; treated with a light red wash; From Early Harappan level (Period IA), DLW, Reg. No. 1008.

Measurements : Inner diameter 50 mm; thickness 9.87 mm; breadth 6.50 mm

 Plain Bangle : Fragmentary; large sized; thick; semi-circular sectioned; red; well fired; convex exterior and flat interior; treated with a red slip. From Phase I of Period IC. DLW, Reg. No. 523. (Fig. 10.1, No. 3)

Measurements : Inner diameter 70 mm; thickness 7.93 mm; breadth 8.66 mm

 Plain Bangle : Fragmentary; medium sized; thick; squarish sectioned; red; well fired; slightly concave at one side; flat exterior and interior as well; treated with a red slip. From Phase I of Period IC. DLW, Reg. No. 738. (Fig. 10.1, No. 1)

Measurements : Inner diameter 52 mm; thickness 9.68 mm; breadth 8.57 mm

 Plain Bangle : Fragmentary; medium sized; thin; rectangular sectioned; dull red; not so well fired; flat exterior and interior as well; treated with a dull red wash. From Phase I of Period IC. DLW, Reg. No. 1002.

Measurements : Inner diameter 50 mm; thickness 5.77 mm; breadth 9.86 mm

 Plain Bangle : Fragmentary; large sized; thick; rectangular sectioned with rounded corner; light grey; not so well fired; flat inner and slightly convex outer; devoid of any surface treatment. From Phase II of Period IC. DLW, Reg. No. 682.



Pl. 10.2 Plain and decorated terracotta bangles.

### EXCAUATIONS AT DIIALEWAN (1999-2000 & 2901-2002)

Measurements : Inner diameter 70 mm; thickness 9.50 mm; breadth 7.07 mm

 Plain Bangle : Fragmentary; large sized; thick; rectangular sectioned; red; well fired; flat inner and convex outer; devoid of any surface treatment. From Phase II of Period IC, DLW, Reg. No. 709.

Measurements : Inner diameter 70 mm; thickness 9.89 mm; breadth 8.26 mm

 Painted Bangle : Fragmentary; small sized; thin; roughly circular sectioned; with some what flattish interior; red; well fired; treated with a painted running design of parallel horizontal strokes in black colour on white surface on the exterior. From Phase 1 of Period IC, DLW, Reg. No. 887.

Measurements : Inner diameter 46 mm; diameter of the section varies 6.98 - 7.33 mm

 Painted Bangle : Fragmentary; medium sized; thick; circular sectioned; dull red; not so well fired; treated with a painted running design of parallel almost horizontal strokes in black colour over a white surface on the exterior. From Phase I of Period IC. DLW, Reg. No. 941. (Fig. 10.1, No. 5)

Measurements : Inner diameter 52 mm; diameter of the section 7.80 mm

 Painted Bangle : Fragmentary; large sized; thick; circular sectioned; dull red; not so well fired; treated with a painted running design of a group of five parallel horizontal strokes in red colour over a white surface on the exterior with a constant gap among each group. From Phase II of Period IC. DLW, Reg. No. 1095.

Measurements : Inner diameter 70 mm; diameter of the section 10.95 mm

 Decorated Bangle : Fragmentary; medium sized; rectangular sectioned; grey; fine fabric; well fired; flat interior and grooved exterior; decorated with closely placed parallel grooved lines along the rim on the whole surface of the exterior; treated with a grey slip. From Phase I of Period IC, DLW, Reg. No. 654.

Measurements : Inner diameter 61 mm; thickness 5.32 mm; breadth 8.05 mm

12. Decorated Bangle : Fragmentary; medium sized; thick; rectangular sectioned; grey; fine fabric; well fired; flat interior and grooved exterior; decorated with elosely placed parallel grooved lines along the rim on the whole surface of the exterior; treated with a fine grey slip. From Period IB. DLW, Reg. No. 926.

Measurements : Inner diameter 58 mm; thickness 5.65 mm; breadth 8.93 mm

#### Bangles and Rings

 Plain Bangle : Fragmentary; medium sized; thick; roughly rectangular sectioned; black; fine fabric; well fired; convex exterior and flat interior; treated with a black slip. From Period IB: DLW, Reg. No. 1498.

Measurements : Inner diameter 42 mm; thickness 5.05 mm; breadth 6.67 mm

 Plain Bangle : Fragmentary; small sized; thick; rectangular sectioned; grey; fine fabric; well fired; slightly convex exterior and flat interior; treated with a grey slip. From Period IB. DLW, Reg. No. 1035.

Measurements : Inner diameter 28 mm; thickness 6.26 mm; breadth 4.65 mm

 Plain Bangle : Fragmentary; medium sized; thick; roughly rectangular sectioned; light grey; fine fabric; well fired; convex exterior and flat interior; treated with a fine light slip. From Phase I of Period IC. DLW, Reg. No. 133.

Measurements : Inner diameter 60 mm; thickness 5.28 mm; breadth 6.32 mm

 Plain Bangle : Fragmentary: medium sized; thin; roughly rectangular with rounded corner sectioned; grey; well fired; slightly convex; fine fabric; flattish sides; treated with a fine grey slip. From Period IB. DLW, Reg. No. 462.

Measurements : Inner diameter 56 mm; thickness 5.32 mm; breadth 4.38 mm

 Plain Bangle : Fragmentary; small sized; thick; roughly rectangular sectioned; dark grey; fine fabric; well fired; convex exterior and flat interior; treated with a fine dark grey slip. From Period IA. DLW, Reg. No. 1500. (Fig. 10.1, No. 4)

Measurements : Inner diameter 36 mm; thickness 5.36 mm; breadth 6.60 mm

 Plain Bangle : Fragmentary; medium sized; thick; roughly rectangular sectioned; grey; fine fabric; well fired; convex exterior and flat interior; treated with a fine grey slip. From Period IA. DLW, Reg. No. 1008.

Measurements : Inner diameter 44 mm; thickness 5.58 mm; breadth 6.45 mm

19. Decorated Bangle : Fragmentary; large sized: thick; roughly circular sectioned; dull red; well fired; decorated with running design made by pinching the clay in leather hard condition with a constant and equal gap, all over the rim of the bangle looking like scalloped exterior; finally treated with a red slip. From Phase II of Period IC. DLW, Reg. No. 643. Similar examples occur at Lothal' in Periods A and B. (Fig. 10.1, No. 7)

S.R.Rao, 1985, Lothal A Harappan Port Town (1955-62), p. 517, pl. CCXXX nos. 4 to 6

Measurements : Inner diameter 68 mm; thickness varies 9.78-10.11 mm; breadth 8.67 mm

# (iii) Segmented bangles

## Pl. 10.3 and Fig. 10.2

 Segmented bangle : Fragmentary; two segmented; small sized; thin rectangular sectioned with grooved sides; grey; fine fabric; well fired; exterior and interior having grooved at the middle due to pasting of two equal sized bangles; treated with a grey slip. From Period IB. DLW, Reg. No. 1391.

Measurements : Inner diameter 30 mm, thickness 4.63, breadth 5.80 mm

 Segmented bangle : Fragmentary; two segmented; small sized; thin; rectangular sectioned with fluted sides; grey; fine fabric; well fired; exterior and interior having grooved at the middle due to pasting of two equal sized bangles; treated with light grey slip. From Period IB. DLW, Reg. No. 1335.

Measurements : Inner diameter 36 mm, thickness 4.51, breadth 6.58 mm

 Segmented bangle : Fragmentary: two segmented; medium sized; thin; rectangular sectioned with fluted sides; grey; fine fabric; well fired; exterior and interior having grooved at the middle due to pasting of two equal sized bangles; treated with light grey slip. From Period IA, DLW, Reg. No. 487.

Measurements : Inner diameter 46 mm, thickness 5.01, breadth 6.47 mm

4. Segmented bangle : Fragmentary; two segmented; medium sized; thin; rectangular sectioned with grooved sides; grey; fine fabric; well fired; the exterior and interior bearing grooved at the middle due to pasting of two equal sized bangles; faint remains of a dark grey slip. From Period IA. DLW, Reg. No. 487.

Measurements : Inner diameter 50 mm, thickness 5:83, breadth 8:31 mm

 Segmented bangle : Fragmentary, two segmented; medium sized; thin rectangular sectioned; with groomed exterior and interior; grey; fine fabric; well fired; looking like deeply grooved centre along the rim on the exterior and interior as well, due to pasting of two ovoid sectioned bangles; treated with a grey slip. From Period IB, DLW, Reg. No. 754. (Fig. 10.2, No. 2)

Measurements : Inner diameter 56 mm, thickness 5.38, breadth 7.92 mm



Pl. 10.3 Segmented terracotta bangles.



338

## Bangles and Rings

 Segmented bangle : Fragmentary; three segmented; medium sized; rectangular sectioned with grooved exterior and interior as well as due to pasting of three similar bangles one upon each other; fine fabric; grey, well fired; treated with grey slip. From Phase II of Period IC. DLW, Reg. No. 477.

Measurements : Inner diameter 60 mm, thickness 5.37, breadth 11.16 mm

 Segmented bangle : Fragmentary; three segmented; medium sized; thin: rectangular sectioned with grooved sides; grey; fine fabric; well fired; exterior and interior looking grooved due to pasting of three equal sized bangles; treated with a grey slip. From Period IB. DLW, Reg. No. 1141. (Fig. 10.2, No. 3)

Measurements : Inner diameter 44 mm, thickness 5.71, breadth 9.42 mm

 Segmented bangle : Fragmentary; three segmented; medium sized; thin; rectangular sectioned with fluted sides; grey; fine fabric; well fired; due to pasting of three ovoid sectioned bangles one upon each other, the exterior as well as interior looking grooved along the rim; treated with grey slip. From Period 1B, DLW, Reg. No. 1326.

Measurements : Inner diameter 56 mm, thickness 5.46, breadth 11.31 mm

 Segmented bangle : Fragmentary; three segmented; medium sized; thin; rectangular sectioned with fluted sides; light grey; fine fabric; well fired; the exterior and interior looking grooved due to pasting of three equal sized bangles; treated with a light grey slip. From Period IB. DLW, Reg. No. 1523.

Measurements : Inner diameter 56 mm, thickness 5.43, breadth 10.31 mm

 Segmented bangle : Fragmentary; small sized single example of four segmented; thin rectangular sectioned with fluted sides; grey; fine fabric; well fired; grooved exterior and almost plain interior but pasting of four equal sized bangles in the same process is visible from section. From Period 1B. DLW, Reg. No. 1462. (Fig. 10.2, No. 5)

Measurements : Inner diameter 36 mm, thickness 4.28, breadth 14.29 mm

 Segmented bangle : Fragmentary; medium sized; two segmented; thin rectangular sectioned with grooved sides; fine fabric; red with smoky core; well fired; grooved exterior and interior at the middle due to pasting of two equal sized bangles; treated with red slip. From Period IB, DLW, Reg. No. 1476.

Measurements : Inner diameter 50 mm, thickness 5.24, breadth 7.04 mm

 Segmented bangle : Fragmentary; medium sized; two segmented; thin rectangular sectioned with grooved sides; fine fabric; red with smoky core; well fired; grooved exterior and interior at the middle due to pasting of two equal sized bangles; treated with red slip. From Period IB. DLW, Reg. No. 1476.

Measurements : Inner diameter 50 mm, thickness 5.33, breadth 7.66 mm

 Segmented bangle : Fragmentary; small sized; ovoid sectioned with grooved sides; red with smoky core; medium fabric; not so well fired; grooved exterior and interior at the middle due to pasting of two circular sectioned bangles; devoid of any surface treatment. From Phase II of Period IC, DLW, Reg. No. 134. (Fig. 10.2, No. 6)

Measurements : Inner diameter 40 mm, thickness 7.07 mm, breadth 14.31 mm

 Segmented bangle : Fragmentary; small sized; ovoid sectioned with grooved sides; red; medium fabric; well fired; grooved exterior and interior at the middle due to pasting of two equal sized circular sectioned bangles; devoid of any surface treatment. From Phase 1 of Period IC. DLW, Reg. No. 949.

Measurements : Inner diameter 36 mm, thickness 6.35 mm, breadth 12.40 mm

15. Segmented bangle : Fragmentary; two segmented; large sized; thin rectangular sectioned with grooved exterior and interior; light grey; fine fabric; well fired; due to pasting of two ovoid sectioned bangles, the exterior and interior looking grooved at the middle along the rim, treated with light grey slip. Unstratified, DLW, Reg. No. 782

Measurements : Inner diameter 68 mm, thickness 5.45 mm, breadth 7.81 mm

 Segmented bangle : Fragmentary; three segmented; medium sized; rectangular sectioned with grooved exterior and interior as well as due to pasting of three similar bangles; fine fabric; dull red; well fired; devoid of any surface treatment. From Period IB. DLW, Reg. No. 480.

Measurements : Inner diameter 58 mm, thickness 5:26, breadth 10.17 mm

# **B. FAIENCE BANGLES\***

Faience bangles are collected in less quantity in comparison to terracotta and shell at Dhalewan from Mature Harappan level i.e. Period IC. The various size bangles measure the diameters from 30 mm to 80 mm suggesting its use by children and grownup people. The thickness varies from 4.45 mm to 6.82 mm while breadth of the circumference of the bangles varies from 4.52 mm to 12.65 mm. All are fragmentary in a whole lot of 25 bangles. Decorated as well as plain both, fashionable bangles were recovered. Bangles have circular, rectangular, elliptical/ovoid or triangular sections.

Contributed by Shri B.S.Fonia, Assistant Archaeologist.

#### Hangles and Rings

Incised decorations are made on the upper surface of the bangles by using closely placed parallel oblique lines in a running pattern with or without border lines, closely placed parallel horizontal lines enclosed by border lines also in running pattern. Few of the bangles seem moulded. The core of the bangles mainly noticed fine grained having light grey to light reddish colour. Finally, the bangle treated with a thick coating of a light greenish, turquoise green or bluish green coloured slip along with a glossy finish.

Selected specimens are described below :-

# Pl. 10.4 and Fig. 10.3

 Decorated bangle : fragmentary; ovoid, fine sandy grained grey sectioned; convex interior and exterior as well; decorated with a running horizontal closely placed parallel incised lines enclosed by border lines on the exterior. Finally, treated with a light green thick coating of a slip. The shine remained under the grooving. From Phase II of Period IC. DLW, Reg. No. 255. (Fig. 10.3, No. 1)

Measurements : Inner diameter 60 mm; thickness 6.80 mm; breadth 10.12 mm

 Decorated bangle : fragmentary; ovoid, fine sandy grained dark grey sectioned; convex interior and exterior as well; decorated on outer surface with a ranning design of the groups of closely placed oblique incised lines drawn in opposite direction; treated with a light green slip; evidence of shine is peeled off at present. From Phase II of Period IC. DLW, Reg. No. 260. (Fig. 10.3, No. 2)

Measurements : Inner diameter 70 mm; thickness 6.02 mm; breadth 10.57 mm

 Decorated bangle : fragmentary; somewhat ovoid, fine grained grey sectioned; almost flattish on the exterior and convex on the interior; decorated with a running oblique closely placed incised lines on the whole outer surface; treated with a slivery light bluish green slip. From Phase II of Period IC. DLW, Reg. No. 283. (Fig. 10.3, No. 4)

Measurements : Inner diameter 60 mm; thickness 5.98 mm; breadth 10.35 mm

4. Decorated bangle : fragmentary; semi-circular, fine grained grey sectioned; flat exterior and convex interior; decorated with a running oblique parallel incised lines enclosed by border lines on the central part of the outer surface; treated with a light green slip, faint remains of shine found under grooving. From Phase II of Period IC. Reg. No. 1104. (Fig. 10.3, No. 3)

Measurements : Inner diameter 50 mm; thickness 5.35 mm; breadth 7.42 mm



Pl. 10.4 Faience bangles.

342



Fig.10.3 Faience bangles.

5 Decorated bangle i fragmentary; ovoid, fine sandy grained grey sectioned; convex interior and exterior as well; decorated on outer surface with a running oblique parallel incised lines enclosed with a border lines after leaving some space on both edges of the bangle; treated with a light bluish green silvery shining thick coating of a slip. From Phase III of Period IC, DLW, Reg. No. 283.

Measurements : Inner diameter 60 mm; thickness 6.37 mm; breadth 9.91 mm

 Plain Bangle : Fragmentary; thick elliptical, fine grained and greyish sectioned; biconvex smooth surface; treated with a thick light greenish coating of a slip alongwith a silvery shine. From Phase II of Period IC: DLW, Reg. No. 279. (Fig. 10.3, No. 5)

Measurements : Diameter 40 mm, thickness 5.79 mm and breadth 10.16 mm

 Plain Bangle : Fragmentary; similar in shape and size but comparatively thicker as well as broader in breadth from Sr. Nos. 2 to 6; treated with a coating of slightly dark but also light green slip. The shiny slip is peeled off at present. From Phase II of Period IC, DLW, Reg. No. 283.

Measurements : Diameter 40 mm, thickness 6.67 mm and breadth 12.65 mm

 Decorated bangle : fragmentary; largest in breadth in the whole lot almost rectangular, fine grained grey sectioned; flat exterior and some what convex-cumflattish interior; decorated with closely placed parallel oblique incised lines in a running pattern on the whole outer surface; treated with light greenish slip. From Phase II of Period IC, DLW, Reg. No. 685. (Fig. 10.3, No. 6)

Measurements : Inner diameter 50 mm; thickness 6.77 mm; breadth 16.04 mm

 Decorated bangle : fragmentary; almost semi-circular, fine grained light grey sectioned; flat interior and convex exterior; decorated on the central part of outer surface with a running pattern of the group of closely placed same directional oblique parallel incised lines with a gap between each groups and enclosed by border lines; treated with a light green slip. From Phase II of Period IC. DLW, Reg. No. 1442.

Measurements : Inner diameter 60 mm; thickness 6.44 mm; breadth 10.82 mm

 Decorated bangle : fragmentary; circular, fine grained and light grey sectioned; decorated with horizontal closely placed parallel incised lines probably closed by border lines in running pattern on the outer convex surface; treated with a silvery shining light green coating of a slip. From Phase II of Period IC. DLW, Reg. No. 283.

Measurements : Inner diameter 40 mm; thickness 6.28 mm; breadth 7.22 mm

#### Rangies and Rings

 Decorated bangle : fragmentary; ovoid-cum-circular, fine grained and light grey sectioned; decorated with running oblique parallel incised lines on the whole convex exterior like a rope design; faint remains of a shiny dark green thick coating of a slip under grooving. From Phase II of Period IC. DLW, Reg. No. 124. (Fig. 10.3, No. 7)

Measurements : Inner diameter 60 mm; thickness 7,63 mm; breadth 6,27 mm

12. Decorated bangle : fragmentary; circular, fine grained and light grey sectioned; decorated with a group of closely placed oblique parallel incised lines rise from both edges of the rim of the bangle in opposite direction and other group placed also in opposite direction and making a lozenge in between the group. Possibly, the same pattern repeated alternatively; treated with coating of slivery shine. From Phase II of Period IC. DLW, Reg. No. 283. (Fig. 10.3, No. 8)

Measurements 1 Inner diameter 30 mm; thickness 6.40 mm; breadth 5.98 mm

 Decorated bangle : fragmentary; triangular with rounded corners, fine grained and grey sectioned; flat interior and apex on exterior with sloppy surface; decorated closely placed vertical-cum-oblique parallel incised lines on both sloppy surfaces of the triangle on the exterior, treated with a dark green slip; Unstratified, DLW, Reg. No. 820. (Fig. 10.3, No. 9)

Measurements : Inner diameter 50 mm; thickness 4.79 mm; breadth 5.28 mm

 Plain Bangle : Fragmentary; triangular, fine grained light greyish sectioned; flat interior and sharp edges (apex of the triangle) exterior with plain tapering sides: remains of the light bluish green coating also with faint remains of shiny slip. Unstratified. DLW, Reg. No. 1062. (Fig. 10.3, No. 10)

Measurements : Diameter 30 mm, thickness 6.99 mm and breadth 6.82 mm

 Plain bangle : Fragmentary, almost circular, fine grained sectioned; smooth surface, treated with dark turquoise green coating of a slip. From Phase II of Period IC, DLW, Reg. No. 1745. (Fig. 10.3, No. 11)

Measurements : inner diameter 80 mm, thickness 6.84 mm

 Plain bangle : Fragmentary; thick-semi-elliptical, fine grained light greyish sectioned; flattish interior and ovalish exterior; faint remains of a dark greenish colour coating of a slip. From Phase II of Period IC. DLW, Reg. No. 1451.

Measurements : Diameter 40 mm, thickness 5.72 mm and breadth 14.77 mm

 Plain Bangle : fragmentary; thin semi-elliptical, fine grained grey sectioned; treated with a dark greenish coating of a slip. From Phase II of Period IC. DLW, Reg. No. 1167.

Measurements : Diameter (inner) 60 mm; thickness 4.52 mm; breadth 4.45 mm

 Decorated bangle : fragmentary; triangular, fine grained sectioned; bearing a chain of oblique parallel lines on both tapering sides, flat interior and angular exterior, treated with dark turquoise green coating of a slip. From Phase II of Period IC. DLW, Reg. No. 128. (Fig. 10.3, No. 12)

Measurements : Inner diameter 80 mm; thickness 6.53 mm; breadth 6.21 mm

## C. SHELL BANGLES

Not only terracotta bangles, the shell bangles were also popular at Dhalewan in Harappan levels. The presence of the shell bangles were noticed right from Period IA. However, only one bangle is encountered from Period IA. All are fragmentary. Large to small sized bangles are in collection. The diameter of the bangles varies from 30 mm to 120 mm suggesting about the favoured choice for all aged group. The fashion to wear many shell bangles in both hands from wrist to above the elbow is so popular in some region of India viz. Rajasthan, Gujarat etc. even today. The variation in diameters most probably meant for the above said purpose. The similar fashion may have there at Dhalewan in Harappan Period. The inner surface of the shell bangles was trimmed to make plain surface in most of the cases. But, few examples has uneven surface i.e. natural surface of the shell on the interior. In few cases the exterior surface of the shell bangles was also trimmed on their outer edges to make a convexity. Thus, the bangles found at Dhalewan were bearing squarish, rectangular, plano-convex and triangular sections.

It is interesting to note that an example bears a pinhole through which a metal wire was possibly used for repairing the broken bangle. It indicates that the shell bangles are so valuable to Harappans in their last Phase i.e. Phase II of Mature Harappans.

Over all more than 50 shell bangles are collected out of which one belongs to Period IA, 10 belong to Period IB, 38 belongs to Period IC and remaining are unstratified.

The selected specimens are described below :

## PL 10.5

 Shell bangle : fragmentary; large sized; thin rectangular sectioned; natural brown colour; mildly convex exterior and pain interior. From Period IB. DLW, Reg. No. 165.

Measurements : Inner diameter 70 mm, thickness 4.06 mm, breadth 2.83 mm.

 Shell bangle : fragmentary; small sized; thin rectangular sectioned; natural white colour; plain thin exterior and interior as well. From Period IB. DLW, Reg. No. 161.

Measurements : Inner diameter 30 mm, thickness 5.16 mm, breadth 2.41 mm.

 Shell bangle : fragmentary; large sized; thin squarish sectioned; natural off-white colour; plain some what tapering exterior and interior as well. From Phase II of Period IC. DLW, Reg. No. 680.

Measurements : Inner diameter 74 mm, thickness 4.46 mm, breadth 3.96 mm.

 Shell bangle : fragmentary; large sized; thin rectangular sectioned; natural off white colour; plain and thin exterior and interior as well. From Phase II of Period IC. DLW, Reg. No. 802.

Measurements : Inner diameter 60 mm, thickness 4.16 mm, breadth 2.03 mm.

 Shell bangle : fragmentary; medium sized; thin rectangular sectioned; off white natural colour; thin plain exterior and interior as well. From Period IB. DLW, Reg. No. 824.

Measurements : Inner diameter 58 mm, thickness 4.32 mm, breadth 1.92 mm.

 Shell bangle : fragmentary; large sized; very thin rectangular sectioned; natural dull white colour; plain and thin exterior and interior as well. From Phase II of Period IC, DLW, Reg. No. 1152.

Measurements : Inner diameter 64 mm, thickness 7.69 mm, breadth 1.99 mm.

 Shell bangle : fragmentary; medium sized; thin rectangular sectioned; off white natural colour; plain interior and mildly convex exterior. From Phase I of Period IC. DLW, Reg. No. 822.

Measurements : Inner diameter 56 mm, thickness 4.41 mm, breadth 5.16 mm.

 Shell bangle : fragmentary; irregular in shape; medium sized; square sectioned; natural off-white colour; plain but some where tapering natural surface on the interior and plain exterior. From Phase II of Period IC DLW, Reg. No. 765.

Measurements : Inner diameter 54 mm, thickness 5.62 mm, breadth 4.45 mm.

 Shell bangle : fragmentary; medium sized; thin rectangular sectioned; natural dull white colour with a brownish band along the rim; thin and plain exterior and interior as well. From Phase II of Period IC. DLW, Reg. No. 1014.

#### EXCAVATIONS AT DHALEWAN (1999-2000 & 2001-2002)

Measurements : Inner diameter 50 mm, thickness 6.45 mm, breadth 2.84 mm.

 Shell bangle : fragmentary; large sized; thin square sectioned; natural white colour with a brownish band along the rim; plain exterior and interior as well. From Phase II of Period IC. DLW, Reg. No. 706.

Measurements : Inner diameter 70 mm, thickness 4.56 mm, breadth 4.69 mm.

 Shell bangle : fragmentary; large sized; thin rectangular sectioned; natural dull white colour; plain and thin exterior and interior as well. From Phase II of Period IC. DLW, Reg. No. 680(2).

Measurements : Inner diameter 70 mm, thickness 3.91 mm, breadth 5.12 mm,

 Shell bangle : fragmentary; large sized; thin squarish sectioned; natural white colour with few bands; almost plain exterior and interior as well. From Period IB, DLW, Reg. No. 1092.

Measurements : Inner diameter 64 mm, thickness 4.20 mm, breadth 4.06 mm.

 Shell bangle : fragmentary; large sized; thin squarish-cum-parallelogram sectioned; natural off-white colour; plain some what tapering exterior and interior as well. From Phase II of Period IC. DLW, Reg. No. 1425.

Measurements : Inner diameter 86 mm, thickness 5.63 mm, breadth 4.35 mm.

 Shell bangle : fragmentary; medium sized; roughly pentagonal shaped sectioned; natural off white colour; slightly sharp edge at the middle on the exterior with tapering sides and some what concave interior. From Phase II of Period IC. DLW, Reg. No. 1197.

Measurements : Inner diameter 50 mm, thickness 3.49 mm, breadth 8.54 mm.

 Shell bangle : fragmentary; extra large sized(?); thin rectangular sectioned with rounded corners; natural dull white colour; plain exterior and interior as well. From Phase II of Period IC, DLW, Reg. No. 291.

Measurements : Inner diameter 120 mm, thickness 2.43 mm, breadth 8.42 mm.

 Shell bangle : fragmentary; small sized; thick ovalish sectioned; natural light brown colour; convex exterior and uneven exterior. From Phase II of Period IC. DLW, Reg. No. 407.

Measurements : Inner diameter 30 mm, thickness 4.98 mm, breadth 8.40 mm.



Pl. 10.5 Shell bangles.

 Shell bangle : fragmentary; large sized: roughly triangular sectioned; off white natural colour; plain tapering exterior and interior as well. From Phase I of Period IC. DLW, Reg. No. 775.

Measurements : Inner diameter 80 mm, thickness 4.21 mm, breadth 8.51 mm.

 Shell bangle : fragmentary; large sized; thick roughly rectangular sectioned; natural off white colour; almost plain exterior and some what uneven natural surface on the interior. From Period IB. DLW, Reg. No. 469.

Measurements : Inner diameter 64 mm, thickness 6.04 mm, breadth 9.84 mm.

 Shell bangle : fragmentary; medium sized; roughly triangular sectioned; dark brown colour after burning; flat interior and convexity tapering exterior; broader in breadth. From Period IB. DLW, Reg. No. 1350.

Measurements : Inner diameter 50 mm, thickness 5.90 mm, breadth 10.08 mm.

 Shell bangle : fragmentary; medium sized; thin roughly triangular sectioned; brownish white banded surface with less natural shining probably a burnt piece; sharp edged with sloppy sides on the interior and some what convex exterior; broader in breadth. From Phase 1 of Period IC, DLW, Reg. No. 715.

Measurements : Inner diameter 60 mm, thickness 4.34 mm, breadth 12.52 mm.

21. Shell bangle : fragmentary; large sized; thin arc typed sectioned; natural off white colour with light brownish cross bands; convex exterior concave interior; a transverse hole across the section at the middle; more likely for fitting studs to decore the hangle. From Phase II of Period IC. DLW, Reg. No. 1223.

Measurements : Inner diameter 80 mm, thickness 3.94 mm, breadth 28.32 mm.

 Shell bangle : fragmentary; medium sized; thin roughly triangular sectioned; natural white colour with few brownish bands; plain exterior and some what uneven natural surface on the interior; broader in breadth. From Period IB. DLW, Reg. No. 708.

Measurements : inner diameter 60 mm, thickness 4.40 (max.) mm, breadth 12.90 mm.

 Shell bangle : fragmentary; large sized; roughly triangular sectioned; off white natural colour; uneven natural surface on the interior and tapering exterior; broader in breadth. From Phase I of Period IC. DLW, Reg. No. 1282. Measurements : Inner diameter 90 to 110 mm, thickness 5.57 mm, breadth 14.40 mm.

 Shell bangle : fragmentary; large sized; thin plano-convex sectioned; natural off white colour with light brown bands; convex exterior and plain interior. From Period IA. DLW, Reg. No. 1220

Measurements : Inner diameter 70 mm, thickness 4.26 mm, breadth 5.27 mm.

 Shell bangle : fragmentary; extra large sized; irregular in size; thick squarish-cumparallelogram shaped sectioned; natural greyish brown colour; tapering exterior and some what uneven natural surface on the interior. From Phase II of Period IC. DLW, Reg. No. 1284.

Measurements : Inner diameter 110 mm, thickness 6.34 mm, breadth 5.23 mm.

 Shell bangle : fragmentary; medium sized; roughly triangular sectioned; dull white natural colour; flat interior and less sharp edged exterior with some what tapering sides. From Period IB. DLW, Reg. No. 1383.

Measurements : Inner diameter 46 mm, thickness 7.88 mm, breadth 5.16 mm.

 Shell bangle : fragmentary; medium sized; squarish sectioned; natural dull white colour with a brownish band on the exterior along the rim; plain exterior and interior as well. From Phase II of Period IC. DLW, Reg. No. 678.

Measurements : Inner diameter 50 mm, thickness 5.23 mm, breadth 4.57 mm.

 Shell bangle : fragmentary; medium sized; roughly squarish sectioned; white colour without natural shining probably burnt piece; somewhat uneven natural surface on the exterior and interior as well. From Phase 1 of Period IC. DLW, Reg. No. 1567.

Measurements : Inner diameter 54 mm, thickness 6.27 mm, breadth 5.57 mm.

 Shell bangle : fragmentary; large sized; irregular in shape; thick uneven some what pentagonal sectioned; natural dull white colour; uneven natural surface on the interior and sharp exterior at the middle with tapering sides. From Phase II of Period IC, DLW, Reg. No. 275.

Measurements : Inner diameter 60 mm, thickness 9.55 mm, breadth 8.40 mm.

# D. COPPER BANGLES AND RINGS

Few copper bangles and rings were recovered from the excavation from mature Harappan level at Dhalewan. Copper is a precious metal and Harappans were well aware

EXCAUATIONS AT DHALEWAN (1999-2000 & 2001-2002)

of this metal. Various Harappan sites have revealed the copper and bronze objects. The metal bangles and rings were possibly used by rich people among the Harappans at Dhalewan. These had a long span durability in comparison to others like shell, faience and terracotta bangles. Plain as well as decorated copper bangles are found at Dhalewan. Plain bangle has a circular, ovoid or plano-convex section. Decorated bangles consist of running design of semi-circular studs. Few bangles are made by using a thin flat strip in side it to make it stronger and finally covered with a copper foil. Rings are made of thin wire and nose/ear rings have comparatively thin wire on their upper end for hanging into the perforation of the ear lobe or nose. The scientific analysis of copper samples of Dhalewan has been dealt in Chapter - 15.

Selected specimens are described below.

## Pl. 10.6 and Fig. 10.4

 Bangle : Partly broken; bangle with open ends; circular in section; use of thin copper strip inside the bangle to make it strong; finally covered with thick copper foil over the strip. From phase II of Period IC. DLW, Reg. No. 692.

Measurements : Diameter 60 mm, breadth 4.74 mm, thickness 3.66 mm

 Decorated bangle : fragmentary; senii circular in section; externally decorated with a running design of semicircular studs. From Phase II of Period IC. DLW, Reg. No. 692.

Measurements : Diameter 50 mm, breadth 7.74 mm, thickness 5.62 mm

 Bangle : Fragmentary; small in size; semi circular in section; use of thin strip inside the bangle to make strong; finally covered with copper foil. From Phase 1 of Period IC. DLW, Reg. No. 785.

Measurements : Diameter 60 mm, breadth 1.80 mm, thickness 3.71 mm

 Ear/nose ring : partly broken: lower ring covered with thin sheet of copper foil over a thin copper wire; remains of thin copper wire at the upper end suggesting the use for hanging into the perforation of the ear hole. From Phase II of Period IC. DLW, Reg. No. 1148.

Measurements : Diameter 20 mm, thickness 1.07 mm

 Ear/nose ring : Broken; lower ring made of flat strip with rectangular section and connected with thin wire at the both upper ends for hanging into the perforation of the car lobe. From Phase 1 of Period IC. DLW, Reg. No. 842.

Measurements : Diameter 16 mm, breadth 2.06 mm, thickness 1.15 mm



 Ring : Broken; coiled; made of double circular wire. From Phase I of Period IC. DLW, Reg. No. 1446.

Measurements : Inner diameter 16 mm, breadth 3.79 mm, thickness 1.80 mm

 Bangle : fragmentary; made of almost circular or biconvex wire. From Phase 1 of Period IC. DLW, Reg. No. 899.

Measurements : Diameter 60 mm, thickness 3.23 mm



Fig. 10.4 Copper bangles and rings.

# Beads, Spacers and Pendants MADHU BALA



# INTRODUCTION

The excavation yielded more than 80 Semi-precious stone beads from the Harappan period. Out of these about 10 beads recovered from surface. Terracotta alone accounts 51 beads in number. One tiny gold bead is also found in this deposit.

Among the materials used for making beads mention may be made in order of priority of steatite, faience, soda light, carnelian, lapis lazuli, agate, quartz, jasper, chalcedony etc. Shell beads are also recovered in this period.

The period wise distribution of these is as follows. Period IA consists of only 16 beads under which 9 Semi-precious stone, 3 terracotta, 1 soda light, 1 faience and 1 tale beads; Period IB having 29 beads out of which 21 semi precious, 7 shell beads and 1 bead of faience; and Period IC having 66 Semi-precious stone beads, 43 terracotta beads, 28 faience and 5 shell beads. Only 5 specimens are recovered from unstratified level.

In general the use of steatite, faience, lapis lazuli, agate seems to be very wide spread. Nearly fifty percent of the total numbers of the beads found in the excavation are of steatite and terracotta. Represented specimens of steatite and lapis lazuli are mostly in a cylindrical circular or tubular in shape and all other specimens either have a bicone or barrel, disc and spherical in shapes etc.

Many terracotta beads plain as well as decorated were collected at Dhalewan. These are moderately backed and represent the most commonly noticed forms such as short cylindrical, bi-cone, barrel, spherical etc. Few beads found at one place it seems to be a garland.

Numerous disc shaped steatite beads of various sizes (PI. 11.1) are found scattered at one place (YC12, Qd.4) with two pots and the multiple hearths and an ash pit suggesting an industrial area probably for manufacturing steatite beads of Phase II of Period IC. [LA.R. 1999-2000, p. 125].

## A. SEMI-PRECIOUS STONE BEADS

## Semi-precious stone beads, Period 1A ( Pl. 11.2 and Fig. 11.1)

 Small faience bead : Broken; light green in colour; long tubular. From Period IA. DLW, Reg. No. 1219. (Fig. 11.1, No. 13)

Measurements : Length 5.51 mm; breadth 2.40 mm; diameter of hole .86 mm

EXCAUATIONS AT DIIALEWAN (1999-2000 & 2001-2002)



PL 11.1 Steatite beads in large quantity, Period 1C.

356



Pl. 11.2 Semi-precious stone beads, Period 1A.





Bends Spacers and Pendone

 Agate bead : Pale yellowish with white band; long barrel; circular. From Period IA. DLW, Reg. No. 238. (Fig. 11.1, No. 12)

Measurements : Length 14.14 mm; breadth 5.18 mm; diameter of hole 2.25 mm

 Long stone bead : Broken; grey with brownish patches; long barrel; roughly circular. From Period IA. DLW, Reg. No. 1524. (Fig. 11.1, No. 11)

Measurements : Length 35 841 mm, Breadth 9.06 mm; diameter of hole 3.74 mm

 Small talc bead : Partly broken; dull white colour with faint remains of a green slip; short tubular. From Period IA. DLW, Reg. No. 1311. (Fig. 11.1, No. 9)

Measurements : Length 4.19 mm; breadth 4.12 mm; diameter of hole 1.56 mm

 Small white stone (?) bead : Ashy white with same colour band; long barrel. From Period IA. DLW, Reg. No. 1591, (Fig. 11.1, No. 10)

Measurements : Length 7.04 mm; breadth 3.07 mm; diameter of hole 1.49 mm

 Small carnelian bead : Dark orange in colour; truncated; short bicone; circular. From Period IA. DLW, Reg. No. 186. (Fig. 11.1, No. 8)

Measurements : Length 3.89 mm; breadth 1.54 mm; diameter of hole .91 mm

 Small stone (?) bead : Bright blue in colour; short tubular; circular. From Period IA. DLW, Reg. No. 180. (Fig. 11.1, No. 4)

Measurements : Length 2.35 mm; breadth 2.87 mm; diameter of hole 1.27 mm

 Small stone (?) bead : Bright grey in colour; short tubular; circular. From Period IA. DLW, Reg. No. 180. (Fig. 11.1, No. 5)

Measurements : Length 2.86 mm; breadth 3.07 mm; diameter of hole 1.03 mm

 Small Lapis Lazuli bead : Partly broken; azure blue in colour; short tubular; circular. From Period IA. DLW, Reg. No. 1180, (Fig. 11.1, No. 3)

Measurements : Length 2.34 mm; breadth 2.01 mm; diameter of hole 1.05 mm

 Small Lapis Lazuli bead : Azure blue in colour; short tubular; circular. From Period IA. DLW, Reg. No. 192. (Fig. 11.1, No. 7)

Measurements : Length 2.99 mm; breadth 2.93 mm; diameter of hole 1.49 mm

 Small shell bead : Rough profile; off white in colour; short tubular. From Period IA. DLW, Reg. No. 413. (Fig. 11.1, No. 1)

Measurements : Length 5.11 mm; breadth 4.58 mm; diameter of hole 2.25 mm

 Small soda-light bead : Grey and light blue in colour; short tubular circular. From Period IA. DLW, Reg. No. 218. (Fig. 11.1, No. 6)

Measurements : Length 2.82 mm; breadth 4.85 mm; diameter of hole 1.29 mm

 Small jasper bead : Partly broken; chocolate brown in colour; truncated bicone; circular; having an incised line on a tapering surface. From Period IA. DLW, Reg. No. 217. (Fig. 11.1, No. 2)

Measurements : Length 4.58 mm; breadth 3.93 mm; diameter of hole 1.08 mm

# Semi-precious stone beads, Period IB Pl. 11.3

 Medium size agate bead : Partly broken; ocher red in colour with multi bands. From Period IB. DLW, Reg. No. 1362.

Measurements : Length 7.97 mm; breadth 7.78 mm; diameter of hole 1.48 mm

 Small carnelian bead : Red in colour; standard bicone, From Period IB. DLW, Reg. No. 1464.

Measurements : Length 6.89 mm; breadth 4.01 mm; diameter of hole 1.41 mm

 Small carnelian bead : Orange colour; truncated bicone, From Period IB. DLW, Reg. No. 1415.

Measurements : Length 7.10 mm; breadth 3.75 mm; diameter of hole 1.84 mm

 Small agate bead : White and grey in colour; truncated bicone, lenticular. From Period IB, DLW, Reg. No. 1461.

Measurements : Length 9.85 mm; breadth 7.87 mm; diameter of hole 1.60 mm

 Medium size Marble (?) bead : White colour; truncated roughly spherical. From Period IB. DLW, Reg. No. 1081.

Measurements : Length 8.25 mm; breadth 5.50 mm; diameter of hole 1.60 mm

 Small faience (?) bead : Light green in colour, roughly spherical. From Period IB. DLW, Reg. No. 1326.



Pl. 11.3 Semi-precious stone beads, Period 1B.

EXCAPATIONS AT DILALEWAN (1999-2000 # 2001-2002)

Measurements : Length 7.07 mm; breadth 5.80 mm; diameter of hole 1.60 mm

 Small shell bead : Dull white colour; disc shape. From Period IB. DLW, Reg. No. 1356.

Measurements : Length 1.91 mm; breadth 6.87 mm; diameter of bole 1.19 mm

 Small shell bead : Dull white in colour; tubular. From Period IB. DLW, Reg. No. 1422.

Measurements : Length 3.50 mm; breadth 3.35 mm; diameter of hole 1.36 mm

 Small shell bead : Off white in colour; tubular. From Period IB. DLW, Reg. No. 1422.

Measurements : Length 3.39 mm; breadth 3.38 mm; diameter of hole 1.16 mm

 Long lapis lazuli bead : Azure blue in colour; cylindrical. From Period IB. DLW, Reg. No. 660.

Measurements : Length 8.19 mm; breadth 3.31 mm; diameter of hole 1.33 mm

 Long lapis lazuli bead : Partly broken; blue in colour; cylindrical. From Period IB. DLW, Reg. No. 148.

Measurements : Length 9.01 mm; breadth 3.49 mm; diameter of hole 1.53 mm

 Small lapis lazali bead : Azure blue colour; tubular. From Period IB. DLW, Reg. No. 1212.

Measurements : Length 2.92 mm; breadth 2.62 mm; diameter of hole .87 mm

 Tiny Lapis Lazuli bead : Blue in colour; tubular. From Period IB. DLW, Reg. No. 166.

Measurements : Length 3.25 mm; breadth 2.13 mm; diameter of hole 1.60 mm

- Small shell bead : Pale colour; bicone, From Period IB, DLW, Reg. No. 1418.
   Measurements : Length 3.47 mm; breadth 2.83 mm; diameter of hole 1.58 mm
- Small stone bead : Dark blue colour; tubular. From Period IB. DLW, Reg. No. 1323.

Measurements : Length 2.30 mm; breadth 4.04 mm; diameter of hole 1.62 mm

Reads, Spacers and Pendanty

 Small Lapis Lazuli bead : Azure blue în colour; tubular. From Period IB. DLW, Reg. No. 1417.

Measurements : Length 3.75 mm; breadth 2.22 mm; diameter of hole 1.20 mm

- Small shell bead : White colour; tubular. From Period IB. DLW, Reg. No. 430.
   Measurements : Length 4.67 mm; breadth 1.52 mm; diameter of hole 2.35 mm
- Small shell bead : Off white colour; tubular. From Period IB. DLW, Reg. No. 448.
   Measurements : Length 5.29 mm; breadth 2.33 mm; diameter of hole 1.98 mm
- Small shell bead : Dull white in colour, truncated bicone. From Period IB, DLW, Reg. No. 1368.

Measurements : Length 5.65 mm; breadth 3.72 mm; diameter of hole 1.80 mm

- Small bead (?) : Blue in colour, tubular. From Period IB. DLW, Reg. No. 1413.
   Measurements : Length 3.60 mm; breadth 2.44 mm; diameter of hole .98 mm
- Small lapis lazuli bead : Azure blue in colour; tubular. From Period IB. DLW, Reg. No. 1334.

Measurements : Length 2.34 mm; breadth 4.18 mm; diameter of hole 1.72 mm

 Small Lapis Lazuli bead : Azure blue in colour; tubular. From Period IB. DLW, Reg. No. 1395.

Measurements : Length 4.04 mm; breadth 2.37 mm; diameter of hole 1.48 mm

 Small bead (?) : Sea green in colour; truncated spherical, From Period IB, DLW, Reg. No. 1470.

Measurements : Length 3.96 mm; breadth 2.21 mm; diameter of hole 1.38 mm

 Small Lapis Lazuli bead: Azure blue in colour; tubular. From Period IB. DLW, Reg. No. 1474.

Measurements : Length 2.40 mm; breadth 1.62 mm; diameter of hole 1.10 mm

 Small Lapis Lazuli bead : Azure blue in colour; tubular. From Period IB. DLW, Reg. No. 851.

Measurements : Length 3.60 mm; breadth 2.30 mm; diameter of hole 1.10 mm

 Small Lapis lazuli bead : Azure blue in colour; tubular. From Period IB. DLW, Reg. No. 1351.

Measurements : Length 3.43 mm; breadth 2.12 mm; diameter of hole 1.34 mm

 Small steatite bead : blue in colour; tubular, rough surface. From Period IB. DLW, Reg. No. 174.

Measurements : Length 2.09 mm; breadth 3.04 mm; diameter of hole 1.42 mm

 Small Lapis Lazuli bead: Azure blue in colour; tubular. From Period IB. DLW, Reg. No. 1396.

Measurements : Length 3.68 mm; breadth 2.16 mm; diameter of hole 1.13 mm

 Small lapis lazuli bead : Azure blue in colour; partly broken; tubular; roughly circular. From Period IB. DLW, Reg. No. 1116.

Measurements : Length 3.65 mm; breadth 2.47 mm; diameter of hole 1.21 mm

# Semi-precious stone beads, Period IC Pl. 11.4

 Small Faience (?) bead : Ashy white: short barrel; circular. From Phase I of Period IC. DLW, Reg. No. 965.

Measurements : Length 13.38 mm; breadth 8.75 mm; diameter of hole 3.84 mm

 Small quartz bead : Cracky surface; snow white colour; standard spherical. From Phase II of Period IC. DLW, Reg. No. 742.

Measurements : Length 13.68 mm; breadth 13.01 mm; diameter of hole 1.72 mm

 Small agate bead : Light red colour with dull colour bands; short cylindrical. Unstratified. DLW, Reg. No. 521.

Measurements : Length 4.64 mm; breadth 2.02 mm; diameter of hole 1.60 mm

 Small shell bead : White; disc; circular. From Phase II of Period IC. DLW, Reg. No. 292.

Measurements : Length 9.68 mm; breadth 1.92 mm; diameter of hole 1.96 mm

 Small shell bead : Dull white in colour; disc shape; circular. From Surface. DLW, Reg. No. 23.

364

Reads: Spacers and Pendiants



Pl. 11.4 Semi-precious stone beads, Period 1C.

Measurements : Length 11.91 mm; breadth 5.63 mm; diameter of hole 2.65 mm

 Small faience bead : Light green colour; roughly spherical. Unstratified. DLW, Reg. No. 332.

Measurements : Length 8.22 mm; breadth 8.04 mm; diameter of hole 1.48 mm

 Small faience bead : Light green colour; roughly spherical. Unstratified. DLW, Reg. No. 414.

Measurements : Length 11.86 mm; breadth 8.74 mm; diameter of hole 4.22 mm

 Agate bead : Light brownish in colour with white and spotted brownish bands; truncated long barrel. From Phase II of Period IC. DLW, Reg. No. 1003.

Measurements : Length 28.18 mm; breadth 10.40 mm; diameter of hole 3.66 mm

 Small Agate bead : White colour with asby white and ocher bands, roughly bicone. From Phase II of Period IC. DLW, Reg. No. 771.

Measurements : Length 7.63 mm; breadth 3.61 mm; diameter of hole 1.82 mm

 Small chalcedony (?) bead : Partly broken; white colour; roughly spherical. From Phase 1 of Period IC. DLW, Reg. No. 114.

Measurements : Length 9.22 breadth 6.44 diameter of hole 1.66

 Small faience bead : Partly broken; light green colour; roughly spherical. Unstratified. DLW, Reg. No. 618.

Measurements : length 6.52 mm, breadth 7.77 mm, diameter of hole 1.64 mm

 Small Agate bead : Black colour with white band; short barrel; circular. From Phase II of Period IC. DLW, Reg. No. 743.

Measurements : Length 7.84 mm; breadth 5.91 mm; diameter of hole 1.40 mm

 Small Agate (?) bead : Half black and half dull white colour; short barrel. From Phase I of Period IC. DLW, Reg. No. 80.

Measurements : Length 7.84 mm; breadth 6.04 mm; diameter of hole 1.46 mm

 Small coral (?) bead : Dark red colour; truncated; roughly barrel. From Phase II of Period IC. DLW, Reg. No. 1526.

Measurements : Length 7.57 mm; breadth 7.42 mm; diameter of hole 2.36 mm
Small Agate bead : Ashy white with white bands; long barrel; circular, Unstratified, DLW, Reg. No. 664.

Measurements : Length 14.17 mm; breadth 5.85 mm; diameter of hole 1.64 mm

 Small Agate bead : Almond in colour with patches light purple colour; truncated barrel; circular. From Phase I of Period IC. DLW, Reg. No. 1101.

Measurements : Length 18.92 mm; breadth 9.66 mm; diameter of hole 3.36 mm

 Small faience bead : Dull green in colour; roughly spherical. From Phase I of Period IC, DLW, Reg. No. 274.

Measurements : Length 8.71 mm; breadth 6.48 mm; diameter of hole 1.54 mm

 Small faience bead : Light green; tubular. From Phase II of Period IC. DLW, Reg. No. 650.

Measurements : Length 4.24 mm; breadth 4.36 mm; diameter of hole 1.38 mm

- Small (?) bead : Dull white; tubular. From surface. DLW, Reg. No. 1160.
  Measurements : Length 3.60 mm; breadth 3.96 mm; diameter of hole 1.34 mm
- Small bead of quartz : partly broken; sea green in colour; spherical. From Phase 1 of Period IC. DLW, Reg. No. 459.

Measurements : Length 3.23 mm; breadth 2.20 mm; diameter of hole 1.01 mm

 Tiny quartz bead : Light yellowish colour; tubular. From Phase 1 of Period IC. DLW, Reg. No. 454.

Measurements : Length 3.04 mm; breadth 1.92 mm; diameter of hole 1.02 mm

 Tiny stone bead : Black colour; short tubular. From Phase II of Period IC. DLW, Reg. No. 428.

Measurements : Length 3.68 mm; breadth 2.55 mm; diameter of hole 1.62 mm

 Tiny stone bead : Black colour; spherical. From Phase 1 of Period IC. DLW, Reg. No. 1360.

Measurements : Length 3.72 mm; breadth 1.72 mm; diameter of hole 1.42 mm

 Tiny stone bead : Black colour; spherical; From Phase I of Period IC. DLW, Reg. No. 1360.

Measurements : Length 2.98 mm; breadth 1.78 mm; diameter of hole 1.10 mm

 Small stone bead : Ocher colour; tubular; From Phase II of Period IC. DLW, Reg. No. 489.

Measurements : Length 4.64 mm; breadth 2.02 mm; diameter of hole 1.60 mm

 Small shell bead : Dull white colour; short barrel; circular. From Phase I of Period IC. DLW, Reg. No. 787.

Measurements : Length 4.90 breadth 3.80 diameter of hole 2.06

 Small shell bead : Dull white colour; short barrel. From Phase I of Period IC. DLW, Reg. No. 968.

Measurements : Length 5.49 mm; breadth 3.86 mm; diameter of hole 1.62 mm

 Small shell head : Light pinkish with dull white patches; roughly disk shape: circular. From Phase II of Period IC. DLW, Reg. No. 1537.

Measurements : Length 8.36 breadth 3.98 diameter of hole 1.32 mm

## Semi-precious stone beads, Period IC Pl. 11.5 and Fig. 11.2

 Small carnelian bead : Partly broken; orange red in colour; convex bicone; circular. From Phase I of Period IC. DLW, Reg. No. 118. (Fig. 11.2, No. 27)

Measurements : Length 11.56 mm; breadth 10.80 mm; diameter of hole 4.21 mm

 Small camelian bead : Not well finished; orange red in colour; with dark brown patches; roughly spherical. From Phase I of Period IC. DLW, Reg. No. 517. (Fig. 11.2, No. 31)

Measurements : Length 10.50 mm; breadth 4.63 mm; diameter of hole 1.08 mm

 Long Agate bead : Broken; light yellowish in colour with dark brown bands; long barrel. From Phase II of Period IC. DLW, Reg. No. 1036. (Fig. 11.2, No. 28)

Measurements : Length 36.09 mm; breadth 7.49 mm; diameter of hole 3.47 mm

 Small agate bead : Orange red in colour with white bands; disc shape; circular. From Phase I of Period IC. DLW, Reg. No. 278. (Fig. 11.2, No. 30)



Pl. 11.5 Semi-precious stone beads, Period 1C.

EXCAPATIONS AT DRALEWAN ITVON-2000 & 2001-2012)



Fig. 11.2 Semi-precious stone beads, Period IC.

370

Measurements : Length 11.92 mm; breadth 3.58 mm; diameter of hole 2.04 mm

 Small carnelian bead : Wax colour with light red patches; roughly spherical. From Phase 1 of Period IC. DLW, Reg. No. 529. (Fig. 11.2, No. 23)

Measurements : Length 9.17 mm; breadth 9.23 mm; diameter of hole 2.01 mm

 Small Agate bead : Broken; wax colour with brownish patches and white band; roughly spherical. From Phase II of Period IC. DLW, Reg. No. 56. (Fig. 11.2, No.26)

Measurements : Length 10.33 mm; breadth 8.63 mm; diameter of hole 1.64 mm

 Small Lapis lazuli bead : Azure blue colour; barrel; roughly circular. From surface. DLW, Reg. No. 305. (Fig. 11.2, No. 1)

Measurements : Length 8.59 mm; breadth 6.72 mm; diameter of hole 1.74 mm

 Small carnelian bead : Light red colour; bicone with pentagonal tapering sides. From Phase II of Period IC. DLW, Reg. No. 1224. (Fig. 11.2, No. 25)

Measurements : Length 9.86 mm; breadth 8.27 mm; diameter of hole 1.64 mm

 Small carnelian bead : Orange red in colour with dark brown patches; standard spherical. From Phase I of Period IC. DLW, Reg. No. 13. (Fig. 11.2, No. 24)

Measurements : Length 9 mm; breadth 7.97 mm; diameter of hole 2.22 mm

 Long carnelian bead : Partly broken ; light red colour with same colour dark bands; long cylindrical; circular. From Phase I of Period IC. DLW, Reg. No. 391. (Fig. 11.2, No. 29)

Measurements : Length 14.33 mm; breadth 5.34 mm; diameter of hole 2.22 mm

 Small carnelian bead : Partly broken; orange red in colour; roughly barrel; circular. From Phase II of Period IC. DLW, Reg. No. 684. (Fig. 11.2, No. 22)

Measurements : Length 7.95 mm; breadth 6.70 mm; diameter of hole 1.89 mm

 Small carnelian bead : Chocolate red colour; roughly spherical. From Phase II of Period IC. DLW, Reg. No. 264. (Fig. 11.2, No. 14)

Measurements : Length 6.47 mm; breadth 5.73 mm; diameter of hole 1.42 mm

 Small Lapis lazuli bead : Dark blue colour; truncated barrel; circular. From surface. DLW, Reg. No. 34. (Fig. 11.2, No. 2) Measurements : Length 7.65 mm; breadth 5.77 mm; diameter of hole 2.70 mm

 Small Agate bead : Brownish colour white bands; roughly barrel; circular. From Phase 1 of Period IC. DLW, Reg. No. 437. (Fig. 11.2, No. 15)

Measurements : Length 7.06 mm; breadth 5.10 mm; diameter of hole 2.32 mm

 Small camelian head : Orange red in colour; roughly spherical. From Phase II of Period IC. DLW, Reg. No. 848, (Fig. 11.2, No. 20)

Measurements : Length 5.87 mm; breadth 1.60 mm; diameter of hole 1.17 mm

 Tiny carnelian bead : Dark red colour, truncated bicone. From Phase I of Period IC. DLW, Reg. No. 1437. (Fig. 11.2, No. 6)

Measurements : Length 2.17 mm; breadth 3.53 mm; diameter of hole 1.14 mm

 Tiny carnelian bead : Partly broken ; dark red colour; tubular. From Phase I of Period IC. DLW, Reg. No. 1437. (Fig. 11.2, No. 5)

Measurements : Length 3.98 mm; breadth 2.78 mm; diameter of hole 1.36 mm

 Small Lapis Lazuli bead : Azure blue colour, tubular. From Phase 1 of Period IC. DLW, Reg. No. 444. (Fig. 11.2, No. 3)

Measurements : Length 4.51 mm; breadth 2.10 mm; diameter of hole 1.50 mm

 Small Lapis Lazuli bead : Dark blue colour; tubular. From Phase I of Period IC. DLW, Reg. No. 1299. (Fig. 11.2, No. 4)

Measurements : Length 4.45 mm; breadth 1.92 mm; diameter of hole 1.08 mm

 Small carnelian bead : Blood red colour; truncated bicone; roughly circular. From Phase II of Period IC. DLW, Reg. No. 1108. (Fig. 11.2, No. 7)

Measurements : Length 3.72 mm; breadth 1.96 mm; diameter of hole 1.36 mm

 Small carnelian bead : Red colour with waxy patches; roughly tubular. From Phase II of Period IC. DLW, Reg. No. 1277. (Fig. 11.2, No. 21)

Measurements : Length 5.07 mm; breadth 3.16 mm; diameter of hole 1.32 mm

 Small carnelian bead : Red colour; tubular. From Phase 1 of Period IC. DLW, Reg. No. 1066. (Fig. 11.2, No. 16)

Measurements : Length 5.41 mm; breadth 2.50 mm; diameter of hole 1.29 mm



Reads, Spacers and Pendants

 Small Lapis Lazuli bead : Azure blue colour; tubular. From Phase II of Period IC. DLW, Reg. No. 1047. (Fig. 11.2, No. 13)

Measurements : Length 3.14 mm; breadth 2.63 mm; diameter of hole 1.56 mm

 Small Lapis Lazuli bead : Azure blue colour; tubular. From Phase I of Period IC. DLW, Reg. No. 1438. (Fig. 11.2, No. 18)

Measurements : Length 3.81 mm; breadth 2.40 mm; diameter of hole 1.42 mm

 Small Lapis Lazuli bead : Azure blue colour, tubular; circular. From Phase 1 of Period IC. DLW, Reg. No. 1438. (Fig. 11.2, No. 19)

Measurements : Length 4.82 mm; breadth 2.77 mm; diameter of hole 1.60 mm

 Small Lapis lazuli bead : Dark blue colour; tubular; circular. From Phase II of Period IC. DLW, Reg. No. 1510. (Fig. 11.2, No. 9)

Measurements : Length 4.36 mm; breadth 1.80 mm; diameter of hole 1.34 mm

 Small Lapis Lazuli bead : Dark blue colour; tubular. From Phase 1 of Period IC. DLW, Reg. No. 592. (Fig. 11.2, No. 12)

Measurements : Length 3.42 mm; breadth 1.84 mm; diameter of hole 1.04 mm

 Small Lapis Lazuli bead : Dark blue colour; tubular. From Phase II of Period IC. DLW, Reg. No. 995. (Fig. 11.2, No. 10)

Measurements : Length 3.03 mm; breadth 1.84 mm; diameter of hole 1.22 mm

 Small Lapis Lazuli bead : Azure blue colour; tubular. From Phase I of Period IC. DLW, Reg. No. 1389. (Fig. 11.2, No. 8)

Measurements : Length 3.13 mm; breadth 1.28 mm; diameter of hole 1.06 mm

 Small Lapis Lazuli bead : Azure blue colour, tubular, circular. From Phase I of Period IC, DLW, Reg. No. 1255. (Fig. 11.2, No. 7)

Measurements : Length 3.82 mm; breadth 2.46 mm; diameter of hole 1.54 mm

31. Small Lapis Lazuli bead : Azure blue colour; bicone, circular. From Phase II of Period IC. DLW, Reg. No. 1200. (Fig. 11.2, No. 11)

Measurements : Length 3.90 mm; breadth 2.20 mm; diameter of hole 1.08 mm

# B. STEATITE BEADS Steatite beads, Period IA (Pl. 11.6)

 Small steatite bead : dull white colour; short cylindrical. From Period IA. DLW, Reg. No. 1471.

Measurement: Length 3.51 mm; breadth 5.19 mm; diameter of hole 1.68 mm

 Small steatite bead : dull white colour; truncated; short bicone roughly circular. From Period IA. DLW, Reg. No. 1525.

Measurement: Length 2.58 mm; breadth 5.15 mm; diameter of hole 1.52 mm

- Small steatite bead : dull white colour; tubular. From Period IA. DLW, Reg. No. 490.
  Measurement: Length 1.98 mm; breadth 4.18 mm; diameter of hole 1.36 mm
- Small steatite bead : dull white colour; tubular. From Period IA. DLW, Reg. No. 490.
  Measurement: Length 1.96 mm; breadth 3.76 mm; diameter of hole 1.46 mm
- Small steatite bead : white colour; discular, From Period IA, DLW, Reg. No. 1401.
  Measurement: Length .52 mm; breadth 4.45 mm; diameter of hole 1.68 mm
- Small steatite bead : white colour, roughly elliptical. From Period IA. DLW, Reg. No. 1009.

Measurement: Length 1.51 mm; breadth 5.20 mm; diameter of hole 1.16 mm

 Tiny steatile bead : white colour; thin discular. From Period IA. DLW, Reg. No. 1401.

Measurement: Length .93 mm; breadth 2.65 mm; diameter of hole .78 mm

- Small steatite bead : white colour; bicone. From Period IA. DLW, Reg. No. 486. Measurement: Length 2.34 mm; breadth 5.13 mm; diameter of hole 1.42 mm
- Small steatite bead : dull white colour; short cylindrical. From Period IA. DLW, Reg. No. 1218.

Measurements : Length 3.22 mm; breadth 4.20 mm; diameter of hole 1.46 mm

 Small steatite bead : dull white colour; short cylindrical. From Period IA. DLW, Reg. No. 1218. Boads, Spacers and Pendano-



Pl. 11.6 Steatite beads, Period 1A.

#### EXCAUATIONS AT DRALEWAN (1999-2000 & 2001-2002)

Measurement: Length 3.10 mm; breadth 4.46 mm; diameter of hole 1.07 mm

- Small steatite bead : dull white colour; tubular. From Period IA. DLW, Reg. No. 493.
  Measurement: Length 2.43 mm; breadth 4.23 mm; diameter of hole 1.34 mm
- Tiny steatite bead : white colour, thin discular. From Period IA. DLW, Reg. No. 1401.

Measurement: Length .91 mm; breadth 2,65 mm; diameter of hole .88 mm

 Small steatite bead : dull white colour; short tubular. From Period IA. DLW, Reg. No. 1056.

Measurement: Length 1.50 mm; breadth 3.58 mm; diameter of hole 1.19 mm

- Tiny steatite bead : dull white colour; tubular. From Period IA. DLW, Reg. No. 1472.
  Measurements : Length 1.77 mm; breadth 2.76 mm; diameter of hole .86 mm.
- Tiny steatite bead : dull white colour; tubular. From Period IA. DLW, Reg. No. 1472.
  Measurements : Length 1.51 mm; breadth 2.75 mm; diameter of hole .88 mm
- Small steatite bead : white colour, discular. From Period IA. DLW, Reg. No. 486.
  Measurement: Length .58 mm; breadth 3.26 mm; diameter of hole 1.80 mm
- Tiny steatite bead : dull white colour, short cylindrical. From Period IA. DLW, Reg. No. 1540.

Measurement: Length 1.70 mm; breadth 2.20 mm; diameter of hole .69 mm

 Tiny steatite bead : white colour, thin discular. From Period IA. DLW, Reg. No. 1540.

Measurements : Length .88 mm; breadth 2.74 mm; diameter of hole 1.76 mm

### Steatite beads, Period IB Pl. 11.7

 Big size steatite bead : white colour, cylindrical-cum-slightly thick size discular. From Period IB. DLW, Reg. No. 193.

Measurements : length 1.05 mm, breadth 11.91 mm, diameter of hole 3.18 mm

376



Pl. 11.7 Steatite beads, Period 1B.

2 Big size steatite bead : white colour; cylindrical-cum-discular, thin. From Period IB. DLW, Reg. No. 193. Measurements : length 0.57 mm, breadth 11.70 mm, diameter of hole 3.68 mm 3. Small steatite bead : white colour; truncated short bicone. From Period IB. DLW, Reg. No. 1204. Measurements : length 3.77 mm, breadth 6.58 mm, diameter of hole 1.82 mm Small steatite bead : dull white colour; cylindrical. From Period IB. DLW, Reg. 4. No. 1209. Measurements : length 4.77 mm, breadth 2.57 mm, diameter of hole 1.14 mm Small steatite bead : white colour; short cylindrical, From Period IB, DLW, Reg. 5. No. 1209. Measurements : length 3.99 mm, breadth 4.65 mm, diameter of hole 1.47 mm 6. Small size steatite bead : white colour; discular, From Period IB, DLW, Reg. No. 163. Measurements : length 1.42 mm, breadth 4.26 mm, diameter of hole 1.42 mm Small size steatite bead : white colour; discular, comparatively bigger in size than 7. No. 6. From Period IB. DLW, Reg. No. 163. Measurements : length 0.91 mm, breadth 5.42 mm, diameter of hole 2.51 mm Tiny size steatite bead : white colour; discular. From Period IB. DLW, Reg. No. 82 181. Measurements : length 0.66 mm, breadth 2.98 mm, diameter of hole 0.90 mm 9. Medium size steatite bead : white colour; discular. From Period IB. DLW, Reg. No. 181. Measurements : length 0.82 mm, breadth 6.90 mm, diameter of hole 2.66 mm 10. Big size steatite bead : dull white colour; discular, From Period IB, DLW, Reg. No. 181.

Measurements : length 0.80 mm, breadth 9.93 mm, diameter of hole 3.29 mm

 Small steatite bead : white colour; short tubular; circular. From Period IB. DLW, Reg. No. 1444.

#### Reads. Spacers and Pendants

Measurements : length 2.65 mm, breadth 4.24 mm, diameter of hole 1.03 mm

 Small steatite bead : white colour; short tubular, circular. From Period IB. DLW, Reg. No. 1444.

Measurements : length 2.47 mm, breadth 3.48 mm, diameter of hole 1.04 mm

 Small size steatite bead ; white colour; discular. From Period IB. DLW, Reg. No. 640.

Measurements : length 0.79 mm, breadth 4.08 mm, diameter of hole 1.81 mm

 Small steatite bead : dark grey in colour; short tubular. From Period IB. DLW, Reg. No. 1473.

Measurements : length 2.81 mm, breadth 4.30 mm, diameter of hole 1.25 mm

- Tiny steatite bead : white colour; discular. From Period IB, DLW, Reg. No. 1473.
  Measurements : length 0.80 mm, breadth 2.55 mm, diameter of hole 0.78 mm
- Tiny steatite heads : dark grey colour; discular. From Period IB. DLW, Reg. No. 1473.

Measurements : length 1.17 mm, breadth 2.78 mm, diameter of hole 0.84 mm

 Tiny steatite bead : dark grey colour; discular. From Period IB. DLW, Reg. No. 1473.

Measurements : length 1.04 mm, breadth 2.22 mm, diameter of hole 0.81 mm

- Tiny steatite bead : white colour; discular. From Period IB, DLW, Reg. No. 1473.
  Measurements : length 1.38 mm, breadth 2.26 mm, diameter of hole 0.98 mm
- Small steatite bead : white colour, discular. From Period IB. DLW, Reg. No. 1473.
  Measurements : length 2.58 mm, breadth 4.85 mm, diameter of hole 0.99 mm
- Small steatite bead : white colour; tubular, circular, From Period IB, DLW, Reg. No. 1231.

Measurements : Length 2.97 mm; breadth 4.68 mm; diameter of hole 1.38 mm

# Steatite beads, Period IC PL 11.8

 Medium size steatite bead : broken; white colour; short barrel; circular. From Phase II of Period IC. DLW, Reg. No. 973.

Measurements : Length 9.15 mm Breadth 12.01 mm, diameter of hole 5.05 mm

 Medium size steatite bead : partly broken; white colour; cylindrical with narrow ends. From Phase II of Period IC. DLW, Reg. No. 293.

Measurements : Length 10.58 mm Breadth 5.41 mm Diameter of hole 1.93 mm

 Small steatite bead : white colour; short barrel; circular. From Phase II of Period IC. DLW, Reg. No. 294.

Measurements : Length 3.80 mm breadth 6.66 mm diameter of hole 2.19 mm

 Tiny steatite bead ; white colour; discular. From Phase II of Period IC. DLW, Reg. No. 294.

Measurements : Length 1.86 mm, breadth 4.22 mm diameter of hole 1.02 mm

 Medium steatite bead : milky white colour; long cylindrical. From Phase 1 of Period IC. DLW, Reg. No. 1585.

Measurements : Length 7.05 mm, breadth 3.12 mm, diameter of hole 1.71 mm

 Small steatite bead : white colour; truncated short bicone, circular. From Phase II of Period IC. DLW, Reg. No. 1317.

Measurements : Length 3.48 mm, breadth 5.50 mm, diameter of hole 1.04 mm

 Medium size steatite bead : dull white colour; lentecular barrel. From Phase 1 of Period IC. DLW, Reg. No. 1740.

Measurements : Length 13.18 mm, breadth 2.40 mm, diameter of hole 1.62 mm

 Big size steatite bead : white colour; truncated barrel; circular. From Phase 1 of Period IC, DLW, Reg. No. 141.

Measurements : Length 14.49 mm, breadth 0.27 mm, diameter of hole 2.42 mm

 Small steatite bead : dull white colour; short tubular. From Phase I of Period IC. DLW, Reg. No. 1352.

380



	Measurements : Length 3.30 mm Breadth 5.11 mm, diameter of hole 1.08 mm
10,	Small steatite bead : doll white colour; short tubular. From Phase I of Period IC. DLW, Reg. No. 1352.
	Measurements : Length 2.57 Breadth 4.06 mm, diameter of hole 1.31 mm
11.	Small steatite bead : dull white colour; roughly tubular. From Phase I of Period IC. DLW, Reg. No. 1352.
	Measurements : Length 3.98 mm, breadth 3.47 mm, diameter of hole 1.16 mm
12.	Small steatite bead : dull white colour; tubular. From Phase I of Period IC. DLW, Reg. No. 1352.
	Measurements : Length 4.09 mm, breadth 4.75 mm, diameter of hole 1.36 mm
13.	Small steatite bead : milky white; short cylinder. From Phase I of Period IC. DLW, Reg. No. 770.
	Measurements : Length 2.78 mm Breadth 4.41 mm, diameter of hole 1.24 mm
14.	Tiniest steatite bead : white colour; discular. From Phase II of Period IC. DLW, Reg. No. 1332.
	Measurements : Length 0.77 mm, breadth 1.54 mm, diameter of hole 0.33 mm
15.	Small steatite bead : white colour; barrel, circular. From Phase I of Period IC. DLW, Reg. No. 823.
	Measurements : Length 3.74 mm Breadth 3.12 mm, diameter of hole 1.22 mm
16.	Small steatite bead : white colour; short cylinder, circular. Unstratified. DLW, Reg. No. 1208.
	Measurements : Length 2.92 mm, breadth 3,24 mm, diameter of hole 0.94 mm
17.	Small steatite bead : white colour; cylinder. From Phase I of Period IC. DLW, Reg. No. 464.
	Measurements : Length 4.16 mm, breadth 3.39 mm, diameter of hole 1.26 mm
18.	Small steatite bead : white colour with the remains of green slip; tubular, From Phase 1 of Period IC, DLW, Reg. No. 427.
	Measurements : Length 2.76 mm, breadth 4.07 mm, diameter of hole 1.12 mm

 Small steatite bead : white colour; cylindrical. From Phase 1 of Period IC. DLW, Reg. No. 427.

Measurements : Length 4.01 mm, breadth 3.95 mm, diameter of hole 1.19 mm

 Small steatite bead : dull white colour; short cylinder. From Phase II of Period IC. DLW, Reg. No. 1088.

Measurements : Length 2.71 mm, breadth 4.78 mm, diameter of hole 0.96 mm

## Steatite Beads, Period IC Pl. 11.9

 Big size steatite bead : white colour; discular. From Phase II of Period IC. DLW, Reg. No. 955.

Measurements : Length 0.52 mm, breadth 14.03 mm, diameter of hole 3.41 mm

 Slightly small steatite bead : dull white colour; thin discular. From Phase II of Period IC. DLW, Reg. No. 955.

Measurements : Length 0.90 mm, breadth 9.53 mm, diameter of hole 3.44 mm

 Small steatite bead : white colour; discular; two beads attached together. From Phase II of Period IC. DLW, Reg. No. 773.

Measurements : Length 0.88 mm, Breadth 6.91 mm, diameter of hole 2.24 mm

 Small steatite bead : white colour; discular; two beads attached together. From Phase II of Period IC. DLW, Reg. No. 773.

Measurements : Length 0.67 mm, Breadth 7.00 mm, diameter of hole 2.10 mm

 Big size steatite bead : white colour; thin discular. From Phase II of Period IC. DLW, Reg. No. 773.

Measurements ; Length 1.01 mm, Breadth 11.12 mm, diameter of hole 3.28 mm

 Big size steatite bead : white colour; thin discular. From Phase II of Period IC, DLW, Reg. No. 927.

Measurements : Length 0.60 mm, Breadth 12.04 mm Diameter of hole 3.61 mm

 Small size steatite bead : white colour; thin discular, From Phase I of Period IC, DLW, Reg. No. 567.

EXCAPATIONS AT DELALEMAN (1999-2000 & 2001-2002)



Pl. 11.9 Steatite beads, Period 1C.

#### Beads, Spacers and Pendanm

Measurements : Length 0.70 mm, Breadth 4.34 mm, Diameter of hole 1.68 mm

- Small steatite bead : white colour; thin discular. Unstratified. DLW, Reg. No. 229.
  Measurements : Length 0.92 mm, Breadth 3.07 mm, diameter of the hole 0.92 mm
- Small steatite bead : white colour; thin discular. From Phase I of Period IC. DLW, Reg. No. 563.

Measurements : Length 0.65 mm, breadth 3.58 mm, diameter of the hole 1.64 mm

 Tiny steatite bead : white colour; discular. From Phase II of Period IC. DLW, Reg. No. 1074.

Measurements : Length 1.20 mm, Breadth 2.42 mm, Diameter of hole 0.72 mm

 Small steatite bead : white colour; discular. From Phase II of Period IC. DLW, Reg. No. 639.

Measurements : Length 0.91 mm, breadth 3.81 mm, diameter of hole 1.52 mm

 Small steatite bead : white colour; discular. From Phase II of Period IC. DLW, Reg. No. 639.

Measurements : Length 0.53 mm, breadth 4.54 mm, diameter of the hole 1.82 mm

### C. TERRACOTTA BEADS

### Terracotta bicone beads, Periods IA and IB (Pl. 11.10 and Fig. 11.3)

 Big size bead : standard; bicone, circular; small hole; well fired; treated with dark grey slip; dark grey colour. From Period IB. DLW, Reg. No. 1290. (Fig. 11.3, No.1)

Measurements : Length 31.02 mm; breadth 49.57 mm; diameter of hole 4.71 mm

 Medium size bead : bicone, circular, ill fired; without any treatment; pale colour. From Period IB. DLW, Reg. No. 432. (Fig. 11.3, No. 3)

Measurements : Length 23.39 mm; breadth 32.04 mm; diameter of hole 9.04 mm

 Big size bead : bicone, circular; well fired; without any treatment; pinkish red colour. From Period IB. DLW, Reg. No. 1159. (Fig. 11.3, No. 2)

Measurements : Length 27.89 mm; breadth 43.20 mm; diameter of hole 11.02 mm

 Big size bead : bicone, circular; well fired; grey colour. From Period IA. DLW, Reg. No. 281. (Fig. 11.3, No. 4)

ENCAVATIONS AT DHALEWAY (1999-2000 & 2001-2002)



Pl. 11.10 Terracotta bicone beads, Periods 1A and 1B.



Fig. 11.3 Terracotta bicone beads, Periods IA and IB.

Measurements : Length 27.89 mm; breadth 43.20 mm; diameter of hole 11.02 mm

 Medium size bead : bicone, circular; well fired; dull red in colour, bearing graffiti mark which resembles Mahadevan Sign List No. 214<sup>1</sup>. From Period IA. DLW, Reg. No. 1734. (Fig. 11.3, No. 5)

Measurements : Length 25.46 mm; breadth 31.59 mm; diameter of hole 8.11 mm

 Big size bead : barrel, circular; well fired; red in colour. From Period IA. DLW, Reg. No. 1032. (Fig. 11.3, No. 4)

Measurements : Length 36.59 mm; breadth 35.71 mm; diameter of hole 10.23 mm

# Terracotta Beads, Period IC Pl. 11.11 and Fig. 11.4

 Big size bead : bicone with concave sides; moderately baked; without any treatment; dull red colour. Unstratified. DLW, Reg. No. 364. (Fig. 11.4, No. 4)

Measurements : Length 27.27 mm; breadth 46.84 mm; diameter of hole 6.61 mm

 Medium size bead : Short bicone, circular; ill fired; treated with greyish slip. Unstratified. DLW, Reg. No. 271. (Fig. 11.4, No. 5)

Measurements : Length 17.38 mm; breadth 32.63 mm; diameter of hole 19 mm

 Medium size bead : short bicone, circular; sun baked; without any treatment; mud grey colour. Unstratified. DLW, Reg. No. 312. (Fig. 11.4, No. 9)

Measurements : Length 19.30 mm; breadth 34.18 mm; diameter of hole 4.80 mm

4. Big size decorated bead : with flat surface at the middle; incised design started with small oblique strokes around the hole like a sun motif, jigzag lines on both sides and running punched circulates on the central flat surface; roughly circular; moderately baked; without any treatment; pale red colour. From Phase I of Period IC. DLW, Reg. No. 51. (Fig. 11.4, No. 3)

Measurements : Length 30.38 mm; breadth 39.41 mm; diameter of hole 11.73 mm

 Medium size bead : Short bicone, circular; well fired; without any treatment; dull red colour. From Phase I of Period IC. DLW, Reg. No. 465. (Fig. 11.4, No. 12)

Measurements : Length 25.63 mm; breadth 33.96 mm; diameter of hole 10.76 mm

I. Mahadavan, 1977 The Indus Script-texts and tables MASI 77 published by Archaeological Survey of India: New Delhi, p. 33.

Beads Spacers and Pendants



Pl. 11.11 Terracotta bicone beads, Period 1C.

ENCAMATIONS AT DITALEWAN (1998-2000 & 2005-2002)



Fig. 11.4 Terracotta bicone beads, Period IC.

#### Beach, Spacers and Pendante

 Medium size bead : partly worn out; short bicone, roughly circular; ill fired; without any treatment; pale red colour. From Phase II of Period IC. DLW, Reg. No. 1106. (Fig. 11.4, No. 7)

Measurements : Length 20.78 mm; breadth 32.87 mm; diameter of hole 12.08 mm

 Medium size bead : Short barrel; circular; decorated with a series of mild vertical incised lines on the surface; well fired; without any treatment; dull red colour. From Phase I of Period IC. DLW, Reg. No. 843. (Fig. 11.4, No. 6)

Measurements : Length 20,21 mm; breadth 28.29 mm; diameter of hole 14.28 mm

 Big size bead : short bicone, circular; well fired; faint remains of red slip. From Phase 1 of Period IC. DLW, Reg. No. 526, (Fig. 11.4, No. 2)

Measurements : Length 26.98 mm; breadth 38.17 mm; diameter of hole 11.34 mm

 Medium size bead : Short bicone, truncated circular, well fired, light red in colour decorated with biconvex shaped designs around the perforation on both sides. From Phase I of Period IC. DLW, Reg. No. 966. (Fig. 11.4, No. 1)

Measurements : Length 27.88 mm; breadth 34.38 mm; diameter of hole 10.13 mm

 Small bead : short bicone, truncated, roughly circular, ill fired, grey in colour. From Phase 1 of Period IC. DLW, Reg. No. 1460. (Fig. 11.4, No. 11)

Measurements : Length 27.27 mm; breadth 46.84 mm; diameter of hole 6.61 mm

 Medium size bead : broken; short barrel; decorated with a series of mild vertical lines; suggesting a melon design; moderately baked; with out any treatment From Phase I of Period IC, DLW, Reg. No. 593. (Fig. 11.4, No. 10)

Measurements : Length 20.87 mm; breadth 24.24 mm; diameter of hole 11.55 mm

 Medium size bead : bicone, truncated; circular; well fired, treated with a red slip. From Phase I of Period IC. DLW, Reg. No. 624. (Fig. 11.4, No. 8)

Measurements : Length 31.48 mm; breadth 32.85 mm; diameter of hole 11.13 mm

# Short Cylindrical Beads, Period IC PL 11.12, 11.13 and Fig. 11.5

 Big Size bead : Largest in the lot; broken; short cylindrical-cum-discular with wide hole; well fired; without any treatment; dull red colour. From Phase II of Period IC, DLW, Reg. No. 991. (Fig. 11.5, No. 2)

EXCAPATIONS AT DILALEWAN (1999-2000 & 2001-2002)



Pl. 11.12 Terracotta short cylindrical beads, Period 1C.



Pl. 11.13 Close view of a bead bearing graffiti mark.

392



Fig. 11.5 Terracotta short cylindrical beads, Period IC.

#### ENCAVATIONS AT DITALEWAN (1999-3000 & 2001-2002)

Measurements : Length 46.29 mm; breadth 9.48 mm; diameter of hole 16.23 mm

 Big size bead : broken; short cylindrical-cum-discular; well fired; without any treatment; dark grey colour. From Phase II of Period IC. DLW, Reg. No. 669. (Fig. 11.5, No. 3)

Measurements : Length 10.52 mm; breadth 37.89 mm; diameter of hole 16.64 mm

 Big size bead : Broken; short cylindrical-cum-discular; incised graffiti marks; well fired; without any treatment; dark grey colour. From Phase II of Period IC. DLW, Reg. No. 1087. (Fig. 11.5, No. 4)

Measurements : Length 33.33 mm; breadth 13.01 mm; diameter of hole 13.34 mm

 Medium size beed : well finished; broken; short cylindrical-cum-discular; well fired; without any treatment; dull red colour, bearing graffiti mark on the side which resembles with Mahadevan Sign List No. 214<sup>2</sup>. From Phase II of Period IC. DLW, Reg. No. 813, (Pl. 11.3, Fig. 11.5, No. 5)

Measurements : Length 29.19 mm; breadth 11.05 mm; diameter of hole 12.80 mm

 Big size bead : Broken, short cylindrical-cum-discular; ill fired; without any treatment; dull red colour. From Phase I of Period IC. DLW, Reg. No. 89. (Fig. 11.5, No. 1)

Measurements : Length 42.48 mm; breadth 14.27 mm; diameter of hole 13.78 mm

 Big Size bead : Truncated bicone, discular, well fired; without any treatment; pale red colour. From Phase II of Period IC. DLW, Reg. No. 707. (Fig. 11.5, No. 6)

Measurements : Length 40.40 mm; breadth 13.41 mm; diameter of hole 15.10 mm

 Big size bead : Short cylindrical-cum-discular; rounded sides; small notched strokes on one surface; ill fired; without any treatment; pale red colour. From Phase II of Period IC. DLW, Reg. No. 1554. (Fig. 11.5, No. 9)

Measurements : Length 36.86 mm; breadth 13.58 mm; diameter of hole 14.03 mm

 Big Size head : Short cylindrical-cum-discular; well fired; without any treatment; red colour. From Phase II of Period IC, DLW, Reg. No. 1568. (Fig. 11.5, No. 7)

Measurements : Length 37.33 mm; breadth 14.14 mm; diameter of hole 17.29 mm

I. Mahadevan, 1977 The Indus Script-texts and tables MASI 77 published by Archaeological Survey of India: New Delhi, p. 33.

#### Beads, Aparers and Pendunes

 Medium size bead : Short cylindrical-cum-discular; ill fired; without any treatment; buff colour. From Phase II of Period IC. DLW, Reg. No. 705. (Fig. 11.5, No. 8)

Measurements : Length 36.32 mm; breadth 11.06 mm; diameter of hole 11.44 mm

 Big size bead : Short cylindrical-cum-discular; rounded sides; small notched strokes on one surface; ill fired; without any treatment; dull red colour. From Phase I of Period IC. DLW, Reg. No. 609. (Fig. 11.5, No. 10)

Measurements : Length 31.91 mm; breadth 14.17 mm; diameter of hole 12.19 mm

 Big size bead: Partly broken: short cylindrical-cum-discular; rounded sides; wide hole; moderately baked; burning marks on the surface; without any treatment; dull colour. From Phase I of Period IC. DLW, Reg. No. 781. (Fig. 11.5, No. 13)

Measurements : Length 35.25 mm; breadth 17.62 mm; diameter of hole 15.82 mm

 Medium size : well finished bead : short cylindrical-cum-discular; well fired; without any treatment. From Phase II of Period IC. DLW, Reg. No. 681. (Fig. 11.5, No. 11)

Measurements : Length 31.75 mm; breadth 8.46 mm; diameter of hole 16 mm

 Big size : Well finished head; thick bead; short cylindrical-cum-discular; well fired; without any treatment; red colour. From Phase II of Period IC. DLW, Reg. No. 681, (Fig. 11.5, No. 12)

Measurements : Length 31.44 mm; breadth 12.16 mm; diameter of hole 15.17 mm

### Other Terracotta beads, Period IC Pl. 11.14 and Fig. 11.6

 Medium sized bead : long cylindrical, circular, not so well fired, dull red in colour. From Phase II of Period IC. DLW, Reg. No. 1696. (Fig. 11.6, No. 1)

Measurements : Length 21.18 mm, breadth 6.70 mm, diameter of hole 2.50 mm

 Medium sized bead : long cylindrical-cum-barrel, circular, not so well fired, grey in colour. From Phase II of Period IC. DLW, Reg. No. 1696. (Fig. 11.6, No. 2)

Measurements : Length 21.38 mm, breadth 6.85 mm, diameter of hole 2.08 mm

 Medium sized bead : long cylindrical-cum-barrel, circular, well fired, dull red in colour. From Phase II of Period IC. DLW, Reg. No. 1696. (Fig. 11.6, No. 5)

Measurements : Length 19.41 mm, breadth 6.90 mm, diameter of hole 1.86 mm

EXCATATIONS AT DHALEWAN (1999-2000 & 2001-2002)



Pl. 11.14 Other terracotta beads, Period 1C.

Bendy, Spacery and Pendants



Fig. 11.6 Other terracotta beads, Period IC.

 Medium sized bead : roughly made, long cylindrical-cum-barrel, circular, not so well fired, dull red in colour. From Phase II of Period IC. DLW, Reg. No. 1696. (Fig. 11.6, No. 6)

Measurements : Length 25.22 mm, breadth 6.50 mm, diameter of hole 2.40 mm

 Medium sized bead : bicone, circular, not so well fired, dull red in colour. From Phase II of Period IC. DLW, Reg. No. 1697. (Fig. 11.6, No. 9)

Measurements : Length 8.24 mm, breadth 14.10 mm, diameter of hole 2.74 mm

 Small sized bead : bicone, circular, well fired, treated with light red slip. From Phase II of Period IC, DLW, Reg. No. 1697. (Fig. 11.6, No. 13)

Measurements : Length 8.24 mm, breadth 14.10 mm, diameter of hole 2.74 mm

 Small bead : short bicone; well fired: without any treatment; dull colour. From Phase I of Period IC. DLW, Reg. No. 441. (Fig. 11.6, No. 12)

Measurements : Length 6.74 mm; breadth 11.68 mm; diameter of hole 1.84 mm

 Small bead : bicone; well fired; without any treatment; dark grey colour. From Phase 1 of Period IC. DLW, Reg. No. 553. (Fig. 11.6, No. 11)

Measurements : Length 10.96 mm; breadth 11.68 mm; diameter of hole 2.21 mm

 Medium sized bead : roughly made, bicone with concave sides, circular, ill fired, dull red in colour, without any treatment. From Phase 1 of Period IC. DLW, Reg. No. 359. (Fig. 11.6, No. 10)

Measurements : Length 11.56 mm, breadth 12.70 mm, diameter of hole 2.72 mm

 Small bead : roughly barrel; well fired; without any treatment; red colour. Unstratified. DLW, Reg. No. 1235. (Fig. 11.6, No. 7)

Measurements : Length 12.81 mm; breadth 7.20 mm; diameter of hole 2.68 mm

 Small bead : roughly spherical; well fired; without any treatment; dull red colour. From Phase II of Period IC. DLW, Reg. No. 1453. (Fig. 11.6, No. 14)

Measurements : Length 6.52 mm; breadth 7.84 mm; diameter of hole 1.26 mm

 Small bead : spherical; circular, well fired, dull red colour, treated with a light red slip. From Phase II of Period IC. DLW, Reg. No. 1697. (Fig. 11.6, No. 4)

Measurements : Length 6.23 mm; breadth 7.32 mm; diameter of hole 1.92 mm

Beats, Spacers and Pendants



Pi. 11.15 Gold bead.



Pl. 11.16 Spacers : Terracotta and shell.

399

 Small bead : roughly bicone; well fired; without any treatment; dark grey colour. From Phase II of Period IC. DLW, Reg. No. 1504. (Fig. 11.6, No. 8)

Measurements : Length 6.50 mm; breadth 6.88 mm; diameter of hole 1.99 mm

 Small bead : partly broken, cylindrical-cum-barrel, circular. From Phase II of Period IC. DLW, Reg. No. 1234. (Fig. 11.6, No. 3)

Measurements : Length 9.96 mm; breadth 6.03 mm; diameter of hole 1.76 mm

## D. GOLD BEAD Gold bead, Period IB Pl. 11.15

Tiny gold head : truncated bicone; circular. From Period IB. DLW, Reg. No. 1370.

Measurements : Length 2.48 mm; breadth 2.86 mm; diameter of hole 1.24 mm

# E. SPACERS : Terracotta and Shell Pl. 11.16 and Fig. 11.7

 Medium size terracotta spacer : intact; cuboids shape; two parallel holes on the thin and longer sides; well fired; without any treatment; dull red colour. From Phase II of Period IC. DLW, Reg. No. 1737. (Fig. 11.7, No. 3)

Measurements : length 28.32 mm, breadth 17.47 mm height 14.12 mm

 Medium size terracotta spacer-cum-pendant : roughly elliptical; two parallel holes on the upper portion; well fired; without any treatment; grey colour. From Phase II of Period IC. DLW, Reg. No. 859. (Fig. 11.7, No. 1)

Measurements : length 28.87 mm, breadth 18.96 mm height 9.22 mm

 Medium size terracotta spacer : intact; roughly cuboids; two holes, one each on either smaller side; single rope impression near the hole; well fired; without any treatment; dull red colour. From Period IA. DLW, Reg. No. 182. (Fig. 11.7, No.2)

Measurements : length 32.71 mm, breadth 19.01 mm height 10.75 mm

 Beautiful shell spacer-cum-pendant : intact; buff white; leaf shape with blind holed dot incircle; two parallel holes on the upper sides. From Phase II of Period IC. DLW, Reg. No. 901. (Fig. 11.7, No. 12)

Measurements : length 25.85 mm, breadth 12.10 mm, thickness 4.35 mm

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Bends, Spacers and Pendants
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Fig. 11.7 Spacers and Pendants.

 Small shell spacer : intact; buff white colour; rectangular with angular cut on either longer side; two horizontal holes on either edge; it is made for two stringed necklace; it is comparatively bigger than others. From Period IB. DLW, Reg. No. 1385. (Fig. 11.7, No. 9)

Measurements : length 11.07 mm, breadth 13.17 mm thickness 3 mm

 Small shell spacer : intact; buff white colour; rectangular shape with angular cut at the middle on the longer side; two horizontal holes on either edges; it is made for two stringed necklace. From Phase I of Period IC. DLW, Reg. No. 903. (Fig. 11.7, No. 10)

Measurements : length 9.19 mm, breadth 10.60 mm thickness 4.25 mm

 Small shell spacer : intact; rectangular with angular cut on either longer side; two horizontal holes on either side; it is made for two stringed necklace. From Phase 1 of Period IC. DLW, Reg. No. 589. (Fig. 11.7, No. 11)

Measurements : length 11.07 mm, breadth 7.82 mm thickness 3.84 mm

### F. PENDANTS : Ivory, Shell And Terracotta Pl. 11, 17 and Fig. 11.7

 Ivory pendant : It is a fine example of pendants having elongated body; narrow neck and conical projection with pointed tip; oblique perforation at the top, Unstratified, DLW, Reg. No. 398. (Fig. 11.7, No. 8)

Measurements : length 21.06 mm, breadth 3.75 mm height 1.42 mm

 Shell pendant : lower part is broken; shape is not properly distinguished; probably it is a handle of a holder. From Phase II of Period IC. DLW, Reg. No. 297. (Fig. 11.7, No. 7)

Measurements : length 24,05 mm, breadth 8.78 mm diameter of hole 2.30 mm

 Terracotta pendant : upper part broken; conical shape with flat base and evidence of a transverse hole; well fired; without any treatment; dark grey colour. From Phase II of Period IC, DLW, Reg. No. 946. (Fig. 11.7, No. 6)

Measurements : length 27.22 mm, breadth 21.36 mm height 92 mm

 Terracotta pendant : conical flat base with incised line on the top; double transverse holes; well fired; without any treatment; dark grey colour. From Period IB. DLW, Reg. No. 1420. (Fig. 11.7, No. 5)


Pl. 11.17 Pendants : Terracotta and shell.

Measurements : length 36.81 mm, dia (maximum) 16.36 mm, diameter minimum 8.71 mm

 Terracotta pendant : tip is broken; conical with rounded base; well fired; with out any treatment; dull red colour. From Phase 1 of Period IC. DLW, Reg. No. 1169, (Fig. 11.7, No. 4)

Measurements : length 43.09 mm, breadth 23.32 mm, diameter minimum 11.09 mm



#### INTRODUCTION

Harappans were well aware of weighing and measuring systems in their mature phase as weights and scales both are reported from various Harappan sites viz. Mohenjodaro, Harappa, Lothal and Kalibangan'.

So far as Dhalewan is concerned, weights made of terracotta and stone both have been yielded from Harappan level right from transition Period i.e. Period IB. In all 7 terracotta weights are in collection. All specimens are hand made of well-levigated clay, well fired, treated with a slip and are cylindrical in shape. These examples are weighing from 4.884 to 66 gm. These are meant for weighing a small amount of material.

The stone weights are 16 in numbers. Few of them are cubical and others are spherical or ovoid in shape. In the category of the semi-precious stone, a white spotted blackish green stone and agate were used for making small sized cubical weights. Other stone weights are mainly made of quartzite sand stone of various colours i.e. grey, brown, pink etc. probably belonging to Kaliyana hills of present Haryana state. The weights of spherical or ovoid in shape are mostly having one, two or more flat/flattish surfaces for easy use temporarily in stable position on the pans during the course of weighing the material.

The weight of the each specimen was taken up with the full accuracy by means of newly fashioned digital weighing machine. To know the weighing system at Dhalewan the weight of each specimen was arranged in ascending orders after combining weights of terracotta and stone both. The Table I and Table II are showing the weight of terracotta and stone specimens respectively in gms separately. The lowest weight is available at Dhalewan weighing 2.05 gm and highest weight is weighing 650 gm. It suggests a developed weighing system was practiced at Dhalewan for weighing the material from smaller quantity to heavy quantity. An analysis on Dhalewan weights was done after applying well known system introduced by Hammy in his table III [in Mackey<sup>2</sup>, 2000 (reprint)] and taking 0.871 gm as a standard mean weight of his table. A weight of 87 gm of stone is also available at Dhalewan. The weights 8 times, 16 times, 100 times and 200 times of 0.871 gm are followed the Hammy table at Dhalewan. Besides these

<sup>&</sup>lt;sup>1</sup> E.J.H. Mackay, 2000 (reprint) Further Excavations at Mobenjodaro, Vol. I, pp. 601-612. M.S. Vats, 1974 (reprint), Excavations at Harappa, Vol. I, pp. 360-366 S.R.Rao, 1985 Lothal, A Harappan Port Town (1955-62), Vol.11, MASI 78, pp. 560-561 and 629-630 B.B. Lal, J.P.Joshi et al, 2009 Excavations at Kalibangan, The Harappans (1960-69), Part II Chapter 17, (Under Publication), Archaeological Survey of India.

<sup>&</sup>lt;sup>3</sup> E.J.H. Mackey, 2000 (reprint), Further Excavations at Mohenjodaro, Vol. 1, p. 602.

eight other weights are nearly equivalent at the ratios 116, 132, 148 upto 748 (series having a difference of 16 or multiple of 16 also applying on 0.871 gm). The latter seems to be used for weighing 116 times of the standard mean weight onwards directly without using another weight for small components of 16 times, 32 times and so on separately. Some sought of standardization in the system of weights among the Harappans seems to have developed. A comparative chart (Table IV) showing more or less equivalent weights of four major Harappan sites - Mohenjodaro, Harappa, Lothal and Kalibangan with the weights of Dhalewan. Analysis presents a good result. Out of 21 Dhalewan weights, more than half are found more or less equal. Amongst two of them are more equal with the maximum difference of 0.296 gms and 0.254 gms. (i.e. 7.105 gms and 13.948 gms) and found present on all four sites including Dhalewan. The study indicates towards a unique standardization of weighing system of Harappan culture.

S.No.	Weights in gm.
1	4.884
2	7.105
3	9.782
4	13.948
5	15.914
6	23.215
7	66

Table I : Showing the actual weight of Terracotta weights

#### Table II : Showing the actual weight of Stone weights

S.No.	Weights in gm.	S.No.	Weights in gm.
1	2,05	9	166
2	15.415	10	178
3	87	11	208
4	101	12	208
5	113	13	338
6	131	14	350
7	144	15	372
8	151	16	650

Table III : Showing an analysis on the line followed by Hemmy' and other analysis of the weights of Dhalewan taking a standard Mean weight 0.871 gm of Hemmy's Table

Equivalent Weight of Dhalewan in gm	Ratio of Hemmy's Table	Ratio other than Hemmy's table		
$0.871 \times 8 = 7.105$	8			
$0.871 \times 16 = 13.948$	16	· · · · · · · · · · · · · · · · · · ·		
$0.871 \ge 100 = 87$	100	1		

E.J.H. Mackay 2000 (Reprint) Further Excavations at Mohenjodaro, Vol. 1, pp. 601-612.

Buight

$0.871 \times 116 = 101$		116
0.871 x 200 = 178	200	
0.871 x 132 = 113		132
$0.871 \ge 148 = 131$		148
0.871 x 164 = 144		164
0.871 x 232 = 208		232
$0.871 \ge 280 = 338$		280
0.871 x 432 = 372		432
0.871 x 748 = 650		748

Table IV . The comparative chart of neights from which franappan and	Table	IV	1	The	comp	arative	chart	of	weights	from	other	Harappan	site
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Dhalewan	Mohenjodaro	Lothal	Harappa	Kalibangan
2.05		2.0929	2.5	2.050/2.164/2.125
4.884		4.3370	4.3	4/3:49/4.05
7.105	7.296	7.1500	7.0	7.187
9.782				
13.948	13.954	13.7000	13.9	13.937
15.415			15	
15.914	15.937			
23.215				
66				
87			86.2, 89.7	
101	96,476	98.2		
113				
131	129.50/133.50	135	132, 130.80	135.940
144				
151	151.424	156		
166				
178				
208		203.6		
338				
350				
372				
650				

#### A. STONE WEIGHTS

### Pl. 12.1 (Cubical Stone Weights)

 Rectangular weight : Intact; small; rectangular faced cuboid with rounded corners made of banded agate. From Phase 1 of Period IC. DLW, Reg. No. 360.

Weight : 15.415 gm Measurements : length 28.27 mm, breadth 21.48 mm, height 12.12 mm

EXCAUATIONS AT DITALEWAY (1999-2000 & 2001-2002)



Pl. 12.1 Cubical stone weights.

Hicketz

 Cubical weight : Intact; small; perfect cube made of creamish white spotted black stone; smallest weight in the whole lot. From Phase II of Period IC. DLW, Reg. No. 149.

Weight : 2.05 gm Measurements : length 9.66 mm, breadth 9.66 mm, height 9.21 mm

#### PI. 12.2 (Stone Weights)

 Ovoid weight : Intact; large; roughly ovoid with flattish surface; made of fine grained whitish sand stone with few short and thin red bands. From Phase II of Period IC. DLW, Reg. No. 1556.

Weight : 350 gm Measurements : Diameter 68.62 mm, height 59.29 mm

 Discular weight : partly broken; large; roughly short cylindrical with convex sides having flat top and base; made of whitish grey coloured medium grained quartzite stone. From Phase II of Period IC. DLW, Reg. No. 930.

Weight : (+) 372 gm Measurements : Diameter 59.62 mm, height 41.84 mm

 Spherical weight : Intact; largest in the whole lot; roughly spheroid with a flattish surface; made of medium grained light grey coloured quartzite stone. From Phase II of Period IC. DLW, Reg. No. 1686.

Weight : 650 gm Measurements : Diameter 71.63 mm, height 80.45 mm

 Spherical weight : Intact; roughly spheroid with a flattish surface; made of fine grained grey coloured quartzite stone. From Phase I of Period IC. DLW, Reg. No. 1687.

Weight : 338 gm Measurements : Diameter 56.11, height 66.10 mm

 Cubical weight : Intact; medium; cuboid with rounded corners and edges; made of medium grained whitish grey quartzite stone. From Phase II of Period IC. DLW, Reg. No. 1516.

Weight : 131 gm Measurements : length 42.65 mm, breadth 42.59 mm, heights 41.48 mm



Pl. 12.2 Stone weights.

Noighte

 Rectangular weight : Intact; medium; roughly rectangular in shape with rounded corners and having flat base and top; made of medium grained light greyish quartzite stone. From Period IB. DLW, Reg. No. 1688.

Weight : 144 gm Measurements : length 63.99 mm, breadth 51.34 mm, height 29.20 mm

#### PL 12.3 (Other Stone weights)

 Ovoid weight : Intact; medium; roughly ovoid having one flat surface; made of fine grained reddish quartzite stone. From Phase II of Period IC. DLW, Reg. No. 1689.

Weight : 101 gm Measurements : diameter 44.52 mm, height 31.81 mm

 Ovoid weight : Intact; medium; roughly ovoid with flattish top and base; made of medium grained reddish quartzite stone. From Phase I of Period IC. DLW, Reg. No. 1690.

Weight : 113 gm Measurements : Diameter 47.27 mm, height 32.50 mm

 Ovoid weight : Intact; medium; roughly ovoid with flattish base and top surface; made of fine grained greyish coloured quartzite stone. From Phase 11 of Period IC. DLW, Reg. No. 1691.

Weight : 151 gm, Measurements : Diameter 50.25 mm, height 37.07 mm

 Spherical weight : Intact; medium; roughly spherical with flattish surface; fine grained reddish brown coloured quartzite stone. From Period IB. DLW, Reg. No. 1693.

Weight : 166 gm Measurements : Diameter 48.54 mm, height 50.32 mm

 Spherical weight : Intact; medium; roughly spherical with a flattish base; made of medium grained grey coloured quartzite stone. From phase II of Period IC. DLW, Reg. No. 1694.

Weight: 208 gm Measurements: Diameter 47,44 mm, height 54,64 mm

#### EXCAPATIONS AT DILALEWAN (1999-2008 & 2001-2002)





Pl. 12.3 Other stone weights.

#### Weight

 Ovoid weight : Intact; medium; roughly ovoid having one flat surface; made of medium grained light greyish quartzite stone. From Phase I of Period IC, DLW, Reg. No. 1695.

Weight : 87 gm Measurements : Diameter 44.05 mm, height 35.44 mm

 Cubical weight : Intact; medium; roughly cuboid with more rounded corners and edges; made of whitish grey coloured medium grained quartzite stone. From Phase II of Period IC. DLW, Reg. No. 1107.

Weight : 208 gm Measurements : length 53.01 mm, breadth 51.01 mm, height 52.09 mm

 Spherical weight : Intact; medium; roughly spherical with flattish top and base; made of fine grained grey coloured quartzite stone. From Phase II of Period IC, DLW, Reg. No. 721.

Weight : 178 gm Measurements : Diameter 43,62 mm, height 53.05 mm

#### **B. TERRACOTTA WEIGHTS**

#### Pl. 12.4

 Cylindrical weight : Intact; large; short cylindrical with flat base and top; straight sides; solid; not so well fired; treated with a dull red slip. From Phase I of Period IC. DLW, Reg. No. 110.

Weight : 66 gm Measurements : Diameter 44.49 mm, height 23.74 mm

 Cylindrical weight : Intact; small; short cylindrical with almost flattish top and base; slightly concave sides; solid; not so well fired; treated with a dull red slip. From phase II of Period IC. DLW, Reg. No. 912.

Weight: 23.215 gm Measurements: Diameter 29.30 mm, height 19.56 mm

 Cylindrical weight : fragmentary; small; short cylindrical with concave top and base; almost straight sides; solid; not so well fired; dull red and smoky core; treated with a dull red slip. From Phase I of Period IC. DLW, Reg. No. 549.

Weight : (+) 13.948 gm Measurements : Diameter 27.76 mm, heights 16.33 mm



Pl. 12.4 Terracotta weights.

#### Cylindrical weight : Intact; small; short cylindrical with some what convex top and base; slightly concave sides; solid; well fired; treated with a dull red slip. From Period IB. DLW, Reg. No. 1384.

Weight : 15.914 Measurements : Diameter 21.91 mm, height 15.58 mm

Weight

 Cylindrical weight : partly broken; small; short cylindrical with flat base and top; straight sides; solid; moderately fired; grey in colour; devoided of any surface treatment. From Phase 1 of Period IC. DLW, Reg. No. 1701.

Weight : 7.105 gm Measurements : Diameter 21.47 mm, height 11.66 mm

 Cylindrical weight : Intact; small; cylindrical with slightly concave top and base; straight sides; solid; not so well fired; dull red some what smoky in colour; treated with a dull red slip. From Phase II of Period IC. DLW, Reg. No. 921.

Weight : 9,782 gm Measurements : Diameter 17.59 mm, height 20.48 mm

 Cylindrical weight : intact; small; roughly short cylindrical with almost flattish base and top; straight sides; solid; moderately fired; grey in colour; devoid of any surface treatment. From Phase I of Period IC. DLW, Reg. No. 1358.

Weight : 4.884 gm Measurements : Diameter 15.50 mm, height 16.59 mm



#### A. CHERT BLADES\*

The discovery of long parallel-sided chert blades is one of the important features of the Mature Harappan civilization in India and its sub- continent. The excavation of Dhalewan was no exception. The excavations yielded eleven blades (long and short) and two flakes from the transitional period as well as from the Mature Harappan period. These blades are made on fine-grained chert stone. As this raw material was not available locally, so the Dhalewan people had to import them from outside. It is well known that the Sukkur Rohri region, located at Sindh, in present Pakistan has had the main source of fine quality chert, which produce good-finished light duty tools like blades.

Among the collection, the flake blade, retouched and un-retouched blades suggest that the people of Dhalewan knew the blade making pressure technique. Limited excavations could not yield a large number of tools. All the blades found from the excavations show polishing. Probably they were heated at the temperature of 200-300° before use to make them strong.

Some of the tools retain bulb of percussion and one of them does not show prominent bulb, may be deliberately fused for hafting purpose. The maximum length of the tools varies from 84.01 to 13.48 mm; the width varies from 24.31 to 11.96 mm and thickness from 8.11 to 3.90 mm. It has been observed that three blades are intact and the rests are fragments.

Among the fragmented blades, two ground edged blades are noteworthy. They must have been used extensively, that their edges became worn out and rounded. The retouched tools were probably used as a knife for household purpose, cultivation and finishing of pottery etc. Stratigraphically, one blade and one flake (Reg. Nos. 1526 and 162) have been found from Period IB i.e. Transitional Phase between Early and Mature Harappan level and rests have been unearthed from the Mature Harappan Period IC.

As stated earlier that the blades/raw material were probably imported from Sindh region, Pakistan, hence there must had been internal and external trade relationship between the two.

<sup>\*</sup> Contributed by Dr. Hari Om Sharan, Assistant Archaeologist.

Selected specimens are described below.

#### Pl. 13.1 and Fig. 13.1

 Long parallel sided un-retouched blade : fragment; retains proximal and medial ends; fine grained grey tan mottled chert; trapezoidal in section; fresh in condition having plain platform ground at the proximal end, bulb is deliberately fused. Unstratified, DLW Reg. No. 1536.

Measurements : length 37.83 mm, width 24.31 mm, thickness 6.42 mm

 Parallel sided retouched blade : fragment; retains medial ends; fine grained opaque grey chert; trapezoidal in section; retouching normally on both the edges from dorsal as well as ventral surface. From Phase II of Period IC. DLW Reg. No. 764.

Measurements : length 17.51 mm, width 16.31 mm, thickness 4.03 mm

 Parallel sided ground edged blade : fragment; retains proximal end; fine grained grey black chert; trapezoidal in section; fresh in condition; having plain platform ground; prominent bulb of percussion. From Phase I of Period IC. DLW Reg. No. 147.

Measurements : length 13.48 mm, width 12.48 mm, thickness 3.90 mm

4. Parallel sided ground edged blade : fragment; retains proximal and medial ends; fine grained opaque grey chert; trapezoidal in section; fresh in condition having plain platform ground; rounded edges due to constant used, left edge is trampled, on the right edge near the proximal end small notched is noticed. From Phase II of Period IC. DLW Reg. No. 655.

Measurements : length 29.15 mm, width 13.06 mm, thickness 4.03 mm

 Parallel sided retouched blade : fragment; retains proximal and medial ends; fine grained grey tan mottled chert calcified; trapezoidal in section; retouched both the edges alternatively from dorsal as well as ventral surfaces; prominent bulb of percussion; marginal invasiveness. From Phase II of Period IC. DLW Reg, No.1566.

Measurements : length 52.51 mm, width 13.49 mm, thickness 6.96 mm

 Parallel sided retouched blade : fragment; retains medial ends; fine grained grey tan mottled chert; trapezoidal in section; fresh in condition retouching normally on both the edges from dorsal as well as ventral surfaces. From surface, DLW Reg. No. 1535.

Measurements : length 38.26 mm, width 17.85 mm, thickness 4.99 mm



Pl. 13.1 Chert blades.



## Fig. 13.1 Chert blades.

#### 420

#### EXEMPATIONS AT DILALEWAN (1999-2008 & 2082-2002)

7. Parallel sided retouched blade : fragment; retains medial ends; fine grained grey chert; trapezoidal in section; fresh in condition; shows alternatively retouching; on one edge an abrupt retouching is found in the ventral surface, hence the edge is semi invasive, another edge is partially retouched and the remaining portion is broken. From Phase II of Period IC, DLW Reg. No. 581.

Measurements : length 46.44 mm, width 18.22 mm, thickness 5.98 mm

 Parallel sided retouched blade : intact; fine grained grey tan mottled chert; triangular in section; fresh in condition having plain platform ground; convex distal end, retouching alternatively on both the edges from dorsal as well as ventral surfaces. From Period IB, DLW Reg. No. 1530.

Measurements : length 47.84 mm, width 18.50 mm, thickness 5.86 mm

 Parallel sided retouched blade : intact; fine grained grey tan mottled chert; triangular section; retouching alternatively on both the edges from dorsal as well as ventral surface, prominent mid rib, left edge is concave and right edge is convex semi-envesive. From Phase I of Period IC, DLW Reg. No. 1744.

Measurements : length 59.82 mm, width 19.75 mm, thickness 8.88 mm

10. Parallel sided retouched blade : fragment; retains proximal and medial ends; fine grained grey tan mottled chert; trapezoidal in section; fresh in condition having plain platform ground; retouching alternatively on both the edges from dorsal as well as ventral surfaces; right edge is trampled on the upper most part, left edge is concave near the proximal end. From Phase II of Period IC. DLW Reg. No. 981.

Measurements : length 84.01 mm, width 21.14 mm, thickness 5.33 mm

 Pabble : small; naturally flaked; dark brown in colour; curved top; plano-convex in section. From Period IB, DLW, Reg. No. 162.

Measurements : length 16.69 mm, width 11.96 mm, thickness 4.76 mm

 Chip : light brown in colour with a white band; roughly triangular in section; industrial waste. From Phase I of Period IC. DLW, Reg. No. 758.

Measurements : length 18.66 mm, width 11.78 mm, thickness 7.82 mm

#### B. COPPER AXE

Touts

So far as the copper/bronze tool is concerned only one blade-axe is recovered during excavation at Dhalewan from mature Harappan level. This type of axe is frequently reported from other Harappan sites. It is a medium sized blade-axe, which consists of double sloped curved blade at one of the shorter sides.



Pl. 13.2 Copper axe.



Fig. 13.2 Copper axe.



#### Pl. 13.2 and Fig. 13.2

Blade-axe : partly broken; thin rectangular in section; almost rectangular-cumwedge in shape; longer sides taper towards butt; double sloped sharp and curved blade with evidences of slightly splayed; broken at butt end. From Phase II of Period IC. DLW, Reg. No. 1506.

Measurements : length 155.33 mm, breadth 63.34 mm, thickness 4.77 mm

#### C. BONE AND IVORY TOOLS

Few bone and ivory tools have been recovered during the excavations from Harappan level right from Period IB. Amongst a lot of 12 objects of bone and ivory, 11 are tools and one as antimony rod. Out of 11, 9 made out of bone, antler and rest made out of ivory. The animal bones of cattle (oxen and buffalo), capra (sheep and goat), sus (pig) and deer are noticed by Shri A.K.Sharma in his first physical observation. Probably, these bones were used to make the tools. For further strengthen the bone tools, were usually heated and charred. It seems that few hard bones and charred bone fragments having sharp pointed tip were also used as a tool viz. borer, awl, etc. with or without further making their proper shapes. Shape wise the tools include piercer, stylus, point, awl, knife, arrowhead etc. The ceremonial knife of ivory and an arrowhead of antler belong to Period IB and rest to the mature Harappan Period IC.

Selected specimens are described below.

#### Pl. 13.3

 Knife : charred bone; fragmentary; sharp edged on one side; broken on other side; sharp angular tip; mildly curved profile; thin section. From Phase 1 of Period IC. DLW, Reg. No. 735.

Measurements : length 78.32 mm breadth 13.22 mm

 Arrow head : charred antler bone; partly broken; single tapering point; circular in section; polished. From Period IB. DLW, Reg. No. 161.

Measurements ; length 46.15 mm breadth 6.35 mm

 Ceremonial knife : ivory; fragmentary; thin blade; having fine sharp edges on both sides and a curved tip; polished. From Period IB, DLW, Reg. No. 1132.

Measurements : length 51.63 mm breadth 25.15 mm

 Point : charred bone; fragmentary; tapering towards a pointed tip; circular in section. From Phase II of Period IC. DLW, Reg. No. 1366.

Measurements : length 32.85 mm maximum diameter 6.07 mm



Pl. 13.3 Bone and Ivory tools.

 Antimony rod : ivory; broken; circular in section; small rod having thickened ends with some what pointed tips; polished on uneven chiseled surface. From Phase 1 of Period IC. DLw, Reg. No. 392.

Measurements : length 71.04 mm breadth 7.56 mm

 Awl : ivory; fragmentary; triangular in section; single long and fine sharp pointed tip. From Phase 1 of Period IC. DLW, Reg. No. 453.

Measurements : length 53.43 mm breadth 12.38 mm

 Point : bone; small fragment; tapering point; circular in section. From Phase II of Period IC. DLW, Reg. No. 296.

Measurements : length 17.75 mm maximum diameter 5.54 mm

 Point : charred bone; fragmentary; tapering towards a pointed tip; circular in section. From Phase II of Period IC. DLW, Reg. No. 306.

Measurements : length 32.80 mm maximum diameter 6.33 mm

#### Pl. 13.4 and Fig. 13.3

 Piercer-cum-side scarper shaped out from ivory, well polished, concave in shape. Part is distal end of missing, convex cross section. From Phase 1 of Period IC. DLW, Reg. No. 1411.

Measurements : Length 16.9 cm, max width 2.5 cm.

 Double point shaped out from shaft of animal long bone. Point on one end broken oval cross section. From Phase 1 of Period IC, DLW, Reg. No. 1256.

Measurements : Length 9.5 cm width 0.7 cm.

 Double stylus shaped out of short of long bone of animal with circular cross section. From Phase I of Period IC. DLW, Reg. No. 819.

Measurements : Length 6.3 cm width 0.7 cm.

 Piercer made out of cattle rib. Sharply pointed end whereas distal end is oval Dorsal surface is convex while vertical concave, convex cross section. From Phase I of Period IC, DLW, Reg. No. 542.

Measurements : Length 13.5 cm, maximum width 2.0 cm.



PL 13.4 Bone and Ivory tools.







# Other Important Findings VISHNU KANT

#### A. TERRACOTTA GAMESMEN

Terracotta gamesmen are one of the playing items for adults among the antiquities found at Dhalewan from Harappan level right from Period IA. Shape-wise various shapes are recovered from Dhalewan. By and large these are divisible into four shapes.

- 1. Long cylindrical with concave sided body.
- Conical with or without truncated top and with or without concave sided body.
- 3. Knobbed gamesmen with large circular base.
- Double headed (addorsed) bull gamesman.

All gamesmen are handmade, solid, made of well-levigated clay and mainly not properly fired. Some of the pieces have the remains of a slip. Few examples from conical variety consist of a pin-holed decoration. A single specimen of double-headed bull gamesman is an important example of mature Harappan Period at Dhalewan. However, single animal headed gamesmen are reported in various Harappan sites viz. Lothal<sup>1</sup>, Rojdi while double headed from Banawali<sup>2</sup>. Knobbed gamesmen with large circular base are also reported from Kalibangan<sup>1</sup>. But amongst the knobbed gamesmen, a double sided knobbed gamesman is also an important example of mature Harappan period from Dhalewan which consists of central knobs on both sides and circular projection at the middle. Probably, it is a spinning top (*firki* or *firkani*), which can move from both ends. Similar specimens occur at Lothal<sup>4</sup> in Periods A and B.

Selected specimens are described below :-

#### (i) Pl. 14.1 and Fig. 14.1

Double headed (Addorsed) bull gamesman : intact; cylindrical with slightly concave sided body bearing two side projected bull heads placing back to back or facing in opposite directions at the top; the bull are shown with angularly projected humps merged with the heads, drooping mouths; pinching heads and small horns; concave base; solid; not so well fired; treated with dull red slip. From Phase II of Period IC. DLW, Reg. No. 652. (Fig. 14.1, No. 12).

<sup>&</sup>lt;sup>1</sup> and <sup>4</sup> S.R.Rao, 1985, Lothal, A Harappan Port Town (1955-62) pp. 506-07, pl. CCXVII and pl. CCXXIV B.

Rediscovering India (1961-2011), pp. 138-139, Sr. No. 52 Published in 2012 by Archaeological Survey of India.

B.B.Lal, et al. 2015, Excavations at Kalibangan - The Harappans, Part I, MASI-110, T.C. Gamesmen in Chap. 9, pp. 544, 547-554, 556, Archaeological Survey of India.

EXCAUATIONS AT DRALEN'AN (1999-2008 & 2001-2002)



Pl. 14.1 Terracotta double headed (addorsed) bull gamesman.



Pl. 14.2 Terracotta gamesmen.



Fig. 14.1 Terracotta gamesmen.

Measurements : height 37.90 mm including bulls, diameter of the base 16.70 mm, breadth including bulls 38.04 mm

#### (ii) Pl. 14.2 and Fig. 14.1

 Gamesman : intact; long cylindrical with concave sided body having externally projected top and bottom; small; solid; flat base and top; well fired; treated with a dull red slip. From Phase 1 of Period IC. DLW, Reg. No. 21.

Measurements : height 33.99 mm, diameter of the base 19.89 mm, diameter at the middle 13.69 mm

 Gamesman ; partly broken; long cylindrical with concave sided body; flat base and top; solid; sun baked; greyish clay coloured surface; devoid of any surface treatment. From Phase I of Period IC. DLW, Reg. No. 544.

Measurements : height 32.11 mm, diameter of the base and top 19.21 mm, diameter at the middle 14.37 mm

 Gamesman : partly broken; long cylindrical with concave sided body; flat base and top; solid; not so well fired; dull red with smoky patched surface; devoid of any surface treatment. From Phase 1 of Period IC. DLW, Reg. No. 422.

Measurements : height 39.63 mm, diameter of the base 16.34 mm, diameter at the middle 13.86 mm

 Gamesman : intact; long cylindrical with concave sided body; flat base and top; solid; not so well fired; dull red and smoky patched crakled surface; devoid of any surface treatment. From Period IA. DLW, Reg. No. 188.

Measurements : height 30.50 mm, diameter of the base 15.51 mm, Diameter at the middle 11.59 mm

 Gamesman : intact; conical body with rounded tip and a flat base with rounded edges; solid; well fired; remains of a fine red slip. From Phase 1 of Period IC. DLW, Reg. No. 945.

Measurements : height 29.64 mm, diameter of the base 23.60

 Gamesman : partly broken; truncated conical body with concave sides; flat base; flat top bearing two blind pin holes in a line at the middle; solid; well fired; remains of a red slip. From surface. DLW, Reg. No. 29.

Measurements : height 29.56 mm, diameter of the base 27.73 mm, diameter at the top 12.76 mm

#### Other Important Findings

 Gamesman : intact: truncated cone body with concave tapering sides and base as well; looking like cone with cylindrical top; solid; not so well fired; dull red with smoky patched surface; devoid of any surface treatment. Unstratified. DLW, Reg. No. 599.

Measurements : height 21.76 mm, diameter of the base 19.86 mm. Diameter of the top 9.83 mm

 Gamesman : partly broken; long cylindrical with mildly tapering sided body; flat base and small flat top; solid; well fired; treated with dull red slip. Unstratified. DLW, Reg. No. 1644.

Measurements : height 34.37 mm, diameter of the base 20.25 mm, Diameter of the top 14.91 mm

9. Gamesman : intact; truncated cone with concave sided body; flat base and top; decorated with 3 blind pin holes at the top, one at the upper and two at the lower rows; another three pins holes forming a line with maintaining equal gaps placed vertically on either concavely tapering sides near the upper end; solid; well fired; faint remains of a dull red slip. From surface. DLW, Reg. No. 1645.

Measurements : height 33.05 mm, diameter of the base 32.52 mm, Diameter of the top 16.56 mm

 Gamesman : intact; roughly truncated conical body; almost flattish top and base; decorated on tapering sides with a running design of nine blind pin holed vertical lines maintaining almost equal gaps and three blind pin holes at the top forming a line; solid; not so well fired; dull red surface; devoid of any surface treatment. From surface. DLW, Reg. No. 366.

Measurements : height 28.66 mm, diameter of the base 24.33 mm, Diameter of the top 17.52 mm

 Gamesman : intact; conical body; flat base; decorated on tapering sides with four blind pin-holed vertical lines rising from the top in four cardinal direction and one blind pin hole at the tip; solid; not so well fired; smoky patched surface; devoid of any surface treatment. Unstratified. DLW, Reg. No. 703.

Measurements : height 27.58 mm, diameter of the base 20.28 mm

 Gamesman : intact; truncated cone body; solid; well fired; treated with a light red slip; decorated with five small blind pin holes at the truncated top of the cone. Unstratified. DLW, Reg. No. 1338. (Fig. 14.1, No. 13)

Measurements : height 26.83 mm, diameter of the base 22.42 mm, Diameter of the top 9.31 mm

#### Terracotta knobbed gamesmen

#### (ii) Pl. 14.3 and Fig. 14.2

 Single knobbed gamesman : fragmentary: large circular base having long cylindrical central knob; slightly concave base; some what rounded tip of the knob; solid; well fired; red in colour; devoid of any surface treatment. From Phase II of Period IC. DLW, Reg. No. 1622.

Measurements : height 39.02 mm, diameter of base 41.61 mm(?), diameter of the knob 15.65 mm

 Single knobbed gamesman : partly broken; medium sized; large circular concave base having short cylindrical central rounded knob; solid; not so well fired; grey colour; devoid of any surface treatment. Unstratified. DLW, Reg. No. 1341.

Measurements : height 28.94 mm, diameter of the base 44.19 mm, diameter of the knob 11.45 mm

 Single knobbed gamesman : broken knob; a single example of wheel made; large circular concave base having broken knob; solid; well fired; remains of a red slip on exterior. From Phase 1 of Period IC. DLW, Reg. No. 1331.

Measurements : height (available) 12.39 mm, diameter of the base 44.88 mm, diameter of the knob 19.76 mm

 Single knobbed gamesman : intact; medium sized; large circular concave base having short cylindrical central knob with flat top; solid; well fired; dull red colour; devoid of any surface treatment. From Phase 1 of Period IC. DLW, Reg. No. 806.

Measurements : height 19.34 mm, diameter of the base 38.74 mm, diameter of the knob 12.84 mm

 Single knobbed gamesman : intact; fine example; medium sized; large circular concave base having central cylindrical knob with pointed tip; solid; not so well fired; remains of a dull red slip on the exterior. From Phase 1 of Period IC. DLW, Reg. No. 1620.

Measurements : height 21.49 mm, diameter of the base 35.23 mm, diameter of the knob 11.81 mm

 Single knobbed gamesman : partly broken; medium sized; large circular convex base having central conical gradually projected short knob with pointed tip; single example of convex base; solid; well fired; treated with a light red slip on the exterior. Unstratified, DLW, Reg. No. 208.



Pl. 14.3 Terracotta knobbed gamesmen.

ENCAPATIONS AT INFALEWAN (1999-2000 4. 2007-2002)



Fig. 14.2 Terracotta knobbed gamesmen.

#### Other Important Findings.

Measurements : height 22.91 mm, diameter of the base 33.94 mm, diameter of the knob 11.94 mm

 Single knobbed gamesman : partly broken; large circular concave base having small cylindrical central knob with rounded top; solid; not so well fired; dull red smoky patched colour; devoid of any surface treatment. From Period IB. DLW, Reg. No. 1130.

Measurements : height 16.48 mm, diameter of the base 34.29 mm, diameter of the knob 10.23 mm

 Double sided knobbed gamesman : partly broken; medium sized; roughly circular flanged-projection made by pressing the clay at the middle; both sided roughly conical central knobs with rounded tips; the gamesman looking like spinning top which easily spins on both knobs; solid; not so well fired; grey in colour; devoid of any surface treatment. From Phase II of Period IC. DLW, Reg. No. 900.

Measurements : height 31.09 mm, diameter of the circular disc 36.38 mm, diameter of the knobs 11.87 mm

 Single knobbed gamesman : fragmentary; small sized; large circular slightly concave base having thin central cylindrical knob; solid; not so well fired; grey core and treated with dark grey slip. From Phase II of Period IC. DLW, Reg. No. 776.

Measurements : height 14.91 mm, diameter of the base 26.93 mm, diameter of the knob 7.29 mm

 Single knobbed gamesman : fragmentary; large hollow conical base having short conical knob with pointed tip; solid; not so well fired; grey core; treated with a grey slip on the exterior. From Phase II of Period IC. DLW, Reg. No. 253.

Measurements : height (available) 18.69 mm, diameter of the base 29.10 mm, diameter of the knob 8.45 mm

 Single knobbed gamesman : fragmentary; miniature; circular concave base having broken cylindrical knob; solid; well fired; red core and colour; devoid of any surface treatment. From Phase 1 of Period 1C. DLW, Reg. No. 1621.

Measurements : height (available) 10.77 mm, diameter of base 19.44 mm, diameter of the knob 6.12 mm

EXCAPATIONS AT DIIALEWAN (1999-2000 & 2001-2002)



Pl. 14.4 Bone dice.


Fig. 14.3 Bone dice showing the numbering system.

# **B. BONE DICE**

#### Pl. 14.4 and Fig. 14.3

A cuboid shaped bone dice discovered at Dhalewan is the only an important example of dice from Mature Harappan level. It is marked out with small blind holed dots in two incised concentric circles on all six sides. The pattern of marking the numbers i.e. 1 to 6 is as follows - one opposite six; three opposite four and five opposite two. This shows the sum of the numbers drawn on opposite sides in above mentioned three sets are seven as continued on the dices of later Mauryan Period at Purana Qila<sup>3</sup> and Sultanate Period at Lalkot<sup>6</sup> Delhi and even followed in the case of modern dice. The dices made of bone, shell, ivory and terracotta are reported from various Harappan sites. The use of dice is also found mentioned in Vedic literatures as *aksa* in Rigveda<sup>3</sup> for gambling. The similar order of pattern of marking the numbers occurs at Harappa<sup>8</sup>. Besides, two other patterns with different style of marking are noticed from other Harappan sites. The patterns are as follows.

- One opposite two; three opposite four; and five opposite six, occurs at Lothal<sup>9</sup>, Harappa, Mohenjodaro<sup>10</sup> and Kalibangan<sup>11</sup>. It is considered as a general and popular pattern of Harappans.
- One opposite two; three opposite five and four opposite six occurs at Mohenjodaro and Kalihangan.

Other details of cubical bone dice : Cuboid with rounded corners and edges; rough squarish surfaces due to more use for playing; remains of polishing on the surfaces. From Phase II of Period IC, DLW, Reg. No. 1091.

Measurements : Length 28.30 mm x breadth 27.21 mm x height 22.69 mm

## C. STONE QUERNS AND PESTLES

Amongst the important household items of the Harappan assemblage, two stone saddle-querns, one small stone quern and eight stone pestles are recovered in the excavation at Dhalewan right from Period IB. Both saddle-querns are more or less similar in shape. These are made out of the large blocks of brown coloured medium grained quartzite stone probably of kaliyana hills of nearby state of Haryana. Shape-wise these consist of a rough convex bottom and somewhat concave upper surface. The upper surface has been treated by means of flaking for making a rough surface. The saddle-

Displayed in Archaeological Museum, Parana Qila, New Defli

B.R. Mani, 1977 Delhi, Threshold of the Orient, New Delhi, pp. 76-77, Fig. 26 nos. 3 and 5.

A.A.Macdonell and A.B.Keith, 1995. Vedic Index of names and subject (Reprint), Vol. I, pp. 1-5.

M.S. Vats, 1974, Excavation at Harappa, Vol. 1 (Reprint), pp. 456-57.

<sup>\*</sup> S.R. Rao 1985 Lothal A Harappan Port Town, (1955-62), MASI-78, Vol. II, p. 503.

<sup>\*\*</sup> E.J.H.Mackey 2000, Further Excavations at Mohenjodaro, Vol. 1, ASI, ND (Reprint), pp. 556-60.

B.B. Lai, et al 2009, Excavations at Kalibangan. The Harappans, Part II, Chapter 21, III under publication, Archaeological Survey of India, New Delhi.

Other Impointer Florings

querns were used after fixing at one place on the ground in the kitchen or near the kitchen of a house. The upper concavity of the querns shows a constant and hard use for pounding of grains, spices herbs etc. by means of pestles of stone. The similar examples occur at Mohenjodaro<sup>12</sup>.

Another small stone quern seems mobile which is handy in size and used for grinding small quantity of material. The pestles are found small to medium in sizes and made out of medium to fine grained sand stone.

The specimens are described below :--

#### (i) Pl. 14.5

 (i) Saddle-quern : fragmentary; roughly rectangular with round corners and having convex bottom and some what concave top; made out of medium grained light brownish quartzite sand stone; upper rough surface bearing a concavity due to constant use with a pounder of stone; convex bottom suggesting its setting on the floor at a fixed place in the house for pounding herbs and spices. From Period IB, DLW, Reg. No. 1763.

Measurements : length 230 mm (broken) x breadth 250 mm x height 66.48 mm

(ii) Pestle : intact; rectangular with uneven convex top and smooth convex bottom; biconvex in section; made out of medium grained pinkish quartzite stone; smooth bottom showing its constant use for pounding herbs and spices. From Period IB. DLW, Reg. No. 1748.

Measurements : length 130.34 mm x breadth 75.24 mm x height 45.48 mm

2. (i) Saddle-quern : fragmentary; roughly rectangular with convex bottom and concave upper surface; convex bottom suggesting about its fixing on the ground at one place in the kitchen or near the kitchen in the house for pounding herbs and spices; made out of medium grained brownish quartzite stone; upper surface consists of remains of closely placed denting marks on either edges which originally had a rough surface. A deep cavity was worm in it by hard and constant use with a pounder of stone. From Phase I of Period IC. DLW, Reg. No. 1749.

Measurements : length 280 mm x breadth 185.70 mm x height 51.30 mm

(ii) Pestle : partly broken; rectangular; roughly elliptical in section; made out of medium grained light reddish coloured quartzite sand stone; smooth all around showing its constant use from both sides for pounding herbs and spices. From Phase I of Period IC. DLW, Reg. No. 1750.

<sup>&</sup>lt;sup>12</sup> E.J.H.Makekey, 2000, (Reprint), Further Excavations at Mohenjodaro, Vols. 1 & II, pp. 392, 93 & Pl. CIV, 13 &14.

EXCAVATIONS AT DILALEWAN (1999-2000 & 2001-2002)



Pl. 14.5 Saddle-querns and pestles.



#### Other Important Findings

Measurements : length 95.86 mm x breadth 55.34 mm x height 31.38 mm

#### (ii) PL 14.6

 Small quern : partly broken; rectangular with a smooth surface having a concavity at the centre; made out of light brownish medium grained quartzite sand stone; the small size and weight showing it as a handy quern or mobile quern with its use for pounding small quantity of item. From Period IB. DLW, Reg. No. 1751.

Measurements : Length 165.58 x breadth 97.88 mm x height 29.66 mm

 Pestle : partly broken; roughly squarish with rounded corners and rough convex top and smooth convex bottom; made out of fine grained whitish grey quartzite stone; more smooth bottom suggesting the constant use for pounding herbs and spices. From Phase II of Period IC. DLW, Reg. No. 1753.

Measurements : Sides 66.37 - 68.81 mm and height 52.54 mm

 Triangular pestle : partly broken; roughly triangular shape with rectangular smooth bottom; made out of medium grained red coloured sand stone; smooth bottom showing its use from one side only for pounding small quantity of herbs and spices. From Phase I of Period IC. DLW, Reg. No. 575.

Measurements : Sides 91.24 x 66.85 x 88.10 mm and thickness 36.23 mm

 Small pestle : intact; roughly rectangular with rounded at small ends and consisting of smooth surface all over; made out of white and light green banded medium grained sand stone; all around smooth surface showing its use from both sides for pounding small quantity of item. From Phase I of Period IC. DLW, Reg. No. 1755.

Measurements : length 68.60 mm x breadth 50.30 mm x height 30.09 mm

 Small pestle : intact; roughly semi-circular with large rectangular smooth bottom; made out of fine grained light brownish quartzite stone; its shape and smooth bottom showing its use for pounding small quantity of item. From Phase II of Period IC, DLW, Reg. No. 1016.

Measurements : length 52.80 mm x breadth 36.10 mm x height 38.38 mm

 Small pestle : intact; roughly circular; with a smooth surface; made out of fine grained black sand stone; smooth surface showing its use as a rubbing stone. From Phase 1 of Period IC, DLW, Reg. No. 1752.

Measurements : diameter 54.80 - 58.25 mm x height 40.25 mm

EXCAVATIONS AT DRALEWAN (1999-2000 & 2001-2002)



Pl. 14.6 Stone pestles and querns.



Other Important Findings.

 Circular pestle : intact; roughly circular with smooth surface; made out of fine grained grey coloured quartzite sand stone; one side more smooth surface showing its more use from one side for pounding small item. From Phase II of Period IC. DLW, Reg. No. 1754.

Measurements : diameter 68.80-71.68 mm x height 42.22 mm

#### D. TERRACOTTA SLING BALLS

Sling balls are important item of Harappan assemblage for hunting small animals and birds. Sling balls are well known as spherical missiles, which were possibly thrown by the help of double string bows or catapult type objects. The sling balls have been found in various sizes at Dhalewan. Small, medium and big sized sling balls consisting of diameters 15:27-20:00 mm, 20-30 mm and 30-52:02 mm respectively. Big sized sling balls were possibly thrown directly by hand after focusing the correct direction. Terracotta sling balls are encountered from Harappan level right from Period IB but mainly from Period IC i.e. Mature Harappan level at Dhalewan.

The terracotta specimens in the form of spheroid are hand made and solid mainly not so well fired or moderately fired or even unbaked. In all, about 60 sling balls are in collection, out of which 1,39 and 10 belong to Period IB, Period IC and unstratified respectively. Amongst these, few of them are decorated with various designs made with incised lines; blind pin holed dots or thumbnail marks. Probably the small sized decorated sling balls with plain sling balls were too used as terracotta marbles for playing by children.

The selected specimens are described below :-

#### (i) Pl. 14.7 and Fig. 14.4

 Decorated sling ball : Intact; medium; spheroid; decorated with two lines of almost equidistantly placed parallel thumb nail marks running all around the circumference and crossed each other at right angles on two places and roughly divided in four sagements to the surface of the ball; well fired; red in colour; devoid of any surface treatment. From Phase I of Period IC, DLW, Reg. No. 535.

Measurement : Diameter 19.28 mm

 Sling Ball : Intact; medium; spheroid with smooth but somewhat cracked surface; well fired; red with smoky patched in colour; devoid of any surface treatment. From Phase II of Period IC, DLW, Reg. No. 956.

Measurement : Diameter 20.38 mm

 Sling Ball : Partly broken; medium; spheroid with fine surface but some what broken; decorated with a group of pin hole dots in an irregular manner at one place; well fired; treated with a dull red slip. From Phase II of Period IC. DLW, Reg. No. 1746.

EXCAUATIONS AT DITALEWAN (1999-2090 A 2001-2002)



Fig. 14.4 Terracotta sling balls.



Pl. 14.7 Terracotta sling balls.

666

Other Important Findings

Measurement : Diameter 20.27 mm

 Sling Ball : Intact; large; spheroid with fine shiny surface; well fired; treated with a dull red slip. From Phase I of Period IC, DLW, Reg. No. 190.

Measurement : Diameter 24.94 mm

 Sling Ball : Intact; medium; spheroid with smooth surface; not so well fired; light grey in colour; decorated with incised lines which divides the ball in sectors; devoid of any surface treatment. From Phase II of Period IC. DLW, Reg. No. 1028.

Measurement : Diameter 16.63 mm

 Sling Ball : Intact; small; spheroid with smooth surface; well fired; treated with dull red slip. From Phase I of Period IC. DLW, Reg. No. 983.

Measurement : Diameter 17.28 mm

 Sling Ball : Intact; small; spheroid with almost smooth surface; not so well fired; brownish grey in colour; devoid of any surface treatment. From Phase II of Period IC. DLW, Reg. No. 1075.

Measurement : Diameter 15.27 mm

# E. TERRACOTTA BUTTONS

Two terracotta buttons have been recovered in the excavations at Dhalewan. It is an important item for decorating the garments. Buttons are also traced from an other Harappan site, Mohanjodaro<sup>19</sup>. Few of them are more or less similar to the findings of Dhalewan. Shape wise, the specimens of Dhalewan consists of hemispherical body with concave top having two closely placed small pin holes. Both specimens are similar in shape with varying sizes. These buttons may have been sewn on the garment by means of thread with the help of the needle. The buttons are usually stitched near the one edge of the garment at the fixed point in front of the button hole for fastening with the other edge of the garment. Both buttons are made of well levigated clay, in which one is well fired and treated with a slip.

Specimens are described below >-

#### PL 14.8, A & B

 Button : Intact, medium; hemispherical with concave top having two obliquely crossed and closely placed small pin holes almost at the middle for stitching.

E.J.H. Makay, 2000, Further Excavations at Mohenjoslaro, Vol. 1, pp. 541-544.

#### EXCAVATIONS AT DHALEWAN (1999-2666 & 2001-2002)



A



B Pl. 14.8 Terracotta buttons, A-top, B-bottom.

448

purpose by means of a thread with the help of a needle on to the garment; solid; well fired; faint remains of a red slip. From Phase II of Period IC. DLW, Reg. No. 1278.

Measurements : Diameter 24.27 mm, height 14.88 mm

2. Button : Intact, small; hemispherical with concave top having two closely placed small pin holes almost at the middle for stitching purpose by means of a thread with the help of a needle on to the garment; solid; not so well fired; dull red and smoky surface. Unstratified. DLW, Reg. No. 895.

Measurements : Diameter 14.41 mm, height 7.49 mm

#### F. TERRACOTTA EAR STUDS

Ear studs have been recovered in less quantity at Dhalewan mainly from Phase II of Period IC. Only four specimens are there at Dhalewan from Harappan level, out of which one is plain and remaining three are decorated either with/without incised dot in concentric circles on one face or blind pin holed dots in irregular manner on both faces. All specimens are handmade and not properly well fired. Three examples consist of a slip treatment of white, dull red and dark grey colour respectively and rest one was devoid of any surface treatment.

Shape wise, these are either similar to *damaru* shaped or reel shaped. The less number of ear studs suggests that these are uncommon in Harappan Period. The fashion for wearing ear stud was introduced in the last phase of Mature Harappan Period at Dhalewan.

Specimens are described below.

#### Pl. 14.9

 Ear Stud : fragmentary; medium; short cylindrical with concave body (damarushaped) and one concave face of the stud; solid; not so well fired; dull red core; treated with a white slip. From Phase II of Period IC. DLW, Reg. No. 1682.

Measurements : Diameter on the edge 38.11 mm, diameter at the middle 32.21 mm, thickness 28.28 mm

 Decorated ear stud : partly broken; big; short cylindrical with concave body; both faces fully decorated with blind pin holed marks in irregular manner; solid; well fired; grey core; treated with dark grey slip. From Phase II of Period IC. DLW, Reg. No. 1398.

Measurements : Diameter on the edge 45.89 mm, diameter at the middle 42.47 mm, thickness 22.14 mm

#### EXC404070NS AT DHALEMAN (1999-2608 4: 2001-2002)



Pl. 14.9 Terracotta ear studs.

#### Other Important Findings

 Decorated car stud : fragmentary; small short cylindrical with deeply concave body (damaru shaped) and having mildly concave both faces of the stud; outer face of the stud having decoration with roughly drawn incised concentric circles; well fired; grey in colour; devoid of any surface treatment. From Phase II of Period IC. DLW, Reg. No. 1683.

Measurements : Diameter on the edge 21.69 mm, diameter at the middle 15.76 mm, thickness 16.14 mm

4. Decorated ear stud : fragmentary; small; short cylindrical with concave body like damaru shaped; outer face having decoration with deep blind holed dot in incised concentric circles; solid; not so well fired; dull red core; treated with dull red slip. From Phase II of Period IC. DLW, Reg. No. 913.

Measurements : Diameter on the edge 26.96 mm, diameter at the middle 21.15 mm, thickness 17.24 mm

# G. TERRACOTTA LINGA-LIKE OBJECTS

In all, three conical *Linga*-like terracotta objects, varying in sizes, have been recovered in the excavation at Dhalewan. The phallic representation has also been reported from other Harappan sites. There are some realistically modelled phallic stones found at Mohenjodaro which according to Marshall<sup>14</sup> seem to have been meant for worship. Similarly, Fairservis<sup>19</sup> relates the finding of *Linga*-like objects in a storage jar at Harappa to the cults of rejuvenation and fertility.

At Dhalewan, out of three Linga-like objects, two are made of well-levigated clay and both have a good evidence of a blind depression-cum-hole on their tip. Stratigraphically, two of them belong to Mature Harappan level (Period IC). Remaining one is found from unstratified level.

Specimens are described below.

### PL 14.10

 Linga-like object : intact; conical having pointed tip with a blind hole; solid; well fired; treated with a dark grey slip. Unstratified. DLW, Reg. No. 26.

Measurements : available length : 45.92 mm, diameter : 20.19 mm

 Linga-like object : fragmentary; roughly conical with some what rounded tip having a mild depression in place of blind hole; solid; not so well fired; devoid of any surface treatment. From Phase 1 of Period IC. DLW, Reg. No. 1698.

Measurements : available length : 62.72 mm, diameter : 31.70 mm

<sup>&</sup>lt;sup>14</sup> Sir John Marshall 1931, Mohanjodaro & the Indus Civilization, p. 61, London,

W.A.Faimervis 1971 Roots of Ancient India, p. 292, London.

EXCAUATIONS AT BHALEWAN (1995-2000) & 2001-2002)



Pl. 14.10 Terracotta linga-like objects.



 Linga-like object : fragmentary; cylindrical having a curved top with a blind hole depression at the tip; solid; not so well fired; dull red in colour; devoid of any surface treatment. From Phase II of Period IC. DLW, Reg. No. 604.

Measurements : available length : 49.20 mm, diameter : 17.36 mm

## H. HOPSCOTCHES

Numerous quantities of hopscotches have been found in the excavation at Dhalewan from harappan level right from Period IB. Mostly the low curved parts of the pottery have been used for making the hopscotches. Some of the beautiful hopscotches prepared with lot of skill, are perfectly circular with smooth and rubbed rim. These are found in various sizes, as the variation of diameters and thickness measuring from 19.31 mm to 82.87 mm and from 4.48 mm to 12.18 mm respectively. Probably, the small to medium sized thin hopscotches are generally used for playing game in which each child by turn hop into and over squares marked on the ground to retrieve a marker thrown into one of these squares (6 or 8 squares). At present this game is so popular in Indian villages among the children particularly girls. The thick and medium to large sized hopscotch - discs are generally used for playing another game called pittha in which a stack of hopscotches is arranged from large to small sized on the ground and each child of a team by turn tries to break the stack by throwing the ball from a fixed distance and re-arranged it shortly within the challenge's time by the co-operation of the team without beaten by a throw of the ball of the children of another team. Pottery discs or hopscotches are freely reported from all Harappan sites in numerous quantities. At Rakhigarhi)" a stack of thick pottery discs of various sizes has been discovered insituin mature Harappan level and suggesting about the existence of pitthu game at that time. At present, this game is also popular among children in India particularly in the villages.

Selected specimens are described below :

# Pl. 14.11

 Hopscotch : Largest in the lot; circular; made of Pottery. From Phase I of Period IC. DLW, Reg. No. 1671.

Measurements : Diameter 82.87 mm, thickness 8.96 mm

 Hopscotch : Large; circular; made of pottery. From Phase II of Period IC. DLW, Reg. No. 1677.

Measurements : Diameter 66.33 mm, thickness 9.14 mm

 Hopscotch : Medium; roughly circular, made of pottery. From Phase 1 of Period IC. DLW, Reg. No. 1672.

B.B.Lal, 2002, The Saraswati Flows on, p. 90, fig. 4.15, Aryan Books International, New Delhi

# EXCAVATIONS AT INHALEWAN (1999-2000 4. 2001-2002)



Pl. 14.11 Hopscotches.

Measurements : Diameter 52.52 mm, thickness 10.48 mm

 Hopscotch : Large; circular, made out from the base of pottery. From Phase 1 of Period IC. DLW, Reg. No. 1673.

Measurements : Diameter 78.65 mm, thickness 12.18 mm

 Hopscotch : Medium; circular; made of pottery. From Phase I of Period IC. DLW, Reg. No. 1674.

Measurements : Diameter 46.98 mm; thickness 7.63 mm

 Hopscotch : Medium; circular; made of pottery. From Period IB. DLW, Reg. No. 1675.

Measurements : Diameter 40.98 mm, thickness 8.20 mm

 Hopscotch : Medium; circular; made of pottery. From Phase 1 of Period IC. DLW, Reg. No. 1631.

Measurements : Diameter 38.02 mm, thickness 11.07 mm

 Hopscotch : Medium; circular; made of pottery. From Period IB. DLW, Reg. No. 1550.

Measurements : Diameter 39.93 mm, thickness 7,01 mm

 Hopscotch : Medium; circular, made of pottery. From Phase I of Period IC. DLW, Reg. No. 710.

Measurements : Diameter 35.55 mm, thickness 8.73 mm

 Hopscotch : Small; perfectly circular with rubbed rim; made of pottery. From Phase I of Period IC. DLW, Reg. No. 1676.

Measurements : Diameter 22.42 mm, thickness 7.41 mm

 Hopscotch : Smallest in the lot; circular with smooth and rubbed rim; made of pottery. From Period IB, DLW, Reg. No. 1386.

Measurements : Diameter 19.31 mm, thickness 4.48 mm

 Hopscotch : Small; circular with smooth and rabbed rim; made of pottery. From Phase 1 of Period IC, DLW, Reg. No. 1592.

Measurements : Diameter 26.70 mm, thickness 10.55 mm

#### I. TERRACOTTA SCRAPER LIKE OBJECTS

In all, 6 specimens have been found at Dhalewan during excavation right from Period IB (Transition Period) of Harappan level. All are handmade, well fired and of medium fabric.

An elliptical curved profiled terracotta objects, shape wise more or less similar to mother of pearl's shell. It has one concave side and other convex. The concaveness and convexness made both by chiseling the extra mud by a sharp instrument during leather hard condition. All examples have at least one sharp edge on their longer side. One specimen consists of sharp edge all over. All specimens have a hole at the middle near the longer side for suspension.

It is difficult to ascertain the actual use. Either it was used as a pendent for animal or more likely as a scraper to peel-off fruit, vegetable etc.

Selected specimens are described below :

## Pl. 14.12

 Scraper : Intact; elliptical with a curved profile; concave obverse and convex reverse; a perforation at the middle near the longer side for suspension; sharp edged all around; medium fabric; well fired; thick sectioned at the middle; dull red surface; devoid of any surface treatment. From Period IB. DLW, Reg. No. 1129.

Measurements : length 91.21 mm, breadth 54.47 mm, thickness 13.24 mm

 Scraper : Partly broken; comparatively smaller than above; elliptical with a curved profile; concave obverse and convex reverse; a perforation at the middle near the longer side for suspension; sharp edged on another longer side; more thick sectioned on the perforated side and gradually becoming thin towards sharp edge; medium fabric; well fired; red surface; devoid of any surface treatment. From Phase 1 of Period IC. DLW, Reg. No. 789.

Measurements : length 89.06 mm, breadth 55.38 mm, thickness 12.48 mm

 Scraper : Intact; elliptical with a curved profile; concave obverse and convex reverse; a perforation at the middle near the longer side for suspension; more sharp edged also on the longer side but opposite to the perforation; thick sectioned on the perforated side and gradually becoming thin towards sharp edge; medium fabric; well fired; dull red surface; devoid of any surface treatment. From Phase 1 of Period IC, DLW, Reg. No. 789.

Measurements : length 92.16 mm, breadth 58.29 mm, thickness 10.05 mm

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Pl. 14.12 Terracotta seraper like objects.

ENCAUATIONS AT DILALEWAN (1999-2000 & 2001-2002)



Pl. 14.13 Terracotta sharpener.

#### Other Important Findings

4. Scraper : Intact; elliptical with a curved profile; concave obverse and convex reverse; a perforation near the longer side for suspension; sharp edged on another longer side; thick sectioned on perforated side and gradually becoming sharp on another longer side; medium fabric; well fired; red surface; devoid of any slip treatment. From Phase 1 of Period IC. DLW, Reg. No. 520.

Measurements : length 91.10 mm, breadth 49.52 mm, thickness 12.48 mm

5. Scraper : Broken; smallest in the lot; elliptical with a curved profile; concave obverse and convex reverse; a perforation near the straight longer side for suspension; sharp edged on another longer side; thick sectioned at the middle; medium fabric; not so well fired; dull red, smoky and uneven surface; devoid of any surface treatment. From Phase I of Period IC. DLW, Reg. No. 786.

Measurements : length 85.04 mm, breadth 54.90 mm, thickness 10.40 mm

#### J. TERRACOTTA SHARPENER

#### PI, 14.13

Terracotta Sharpener : fragmentary; elliptical with some what convexly flattish back and has a concave rubbed surface in the front, provide a good evidence of its use as a sharpener for retaining the sharp edge of the blade like instrument time to time; solid; well fired; faint remains of a slip. From Phase II of Period IC. DLW, Reg. No. 1699.

Measurement available length 50.64 mm, breadth 69.27 mm, thickness 10.08 mm

# K. TERRACOTTA WHEELED TOYS

Four terracotta wheeled toys have been recovered from the excavation at Dhalewan. Out of four, three are more or less similar in shape and show the stylized two wheeled birds. Fourth seems a bull like four-wheeled figure. All specimens consist of at least a perforation at the lower body for axle. On the free projecting ends of the axle, the wheels were attached. The group consists of two wheeled birds and a four wheeled bull with provision for attaching wheels, one or two on either side with the help of axles passing through the transverse longitudinal holes in the lower body. These are broadly enumerated in the category of children playing toys.

Selected specimens are described below :

#### Pl. 14.14 and Fig. 14.5

 Two wheeled bird : fragmentary; beak made out by pinching the clay; concave top; concave neck having a transverse perforation to tie a thread for pulling.

EXC.0.4TIONS AT DRIALEWAN (7999-2000 # 2001-2002)



Pl. 14.14 Terracotta wheeled toys.



Other Important Findings



Fig. 14.5 Terracotta wheeled toys.

purpose; comparatively large, somewhat cylindrical shaped lower body also having a transverse perforation for axle; moderately fired; devoid of any surface treatment. From Surface, DLW, Reg. No. 1747.

Measurements : height 50.50 mm, breadth 47.29 mm, thickness 25.90 mm

 Two wheeled bird : partly broken; beak made out by pinching the clay; concave top; concave neck having a transverse hole to tie a thread for pulling purpose; cylindrical shaped lower body also with a transverse hole for axle; moderately fired; devoid of any surface treatment. From Surface, DLW, Reg. No. 1747.

Measurements : height 60.78 mm, breadth 62.07 mm, thickness 37.03 mm

 Two wheeled toy : intact; without beak; concave top; concave neck having a transverse hole to tie a thread for pulling purpose; slightly splayed out lower ends also having a transverse hole for an axle; moderately fired; devoid of any surface treatment. Unstratified. DLW, Reg. No. 381.

Measurements : height 39.70 mm, breadth 31.53 mm, thickness 25.95 mm

 Four wheeled bull : partly broken; pinching mouth; prominent hump merged with the head; long cylindrical body having two transverse holes in place of legs for two separate axles; moderately fired; grey in colour, From Period IB, DLW, Reg. No. 1529.

Measurements : height 38.25 mm, breadth 67.24 mm, thickness 22.89 mm

# L. TERRACOTTA RATTLE

#### Pl. 14,15 and Fig. 14.6

Terracotta rattle : fragmentary; luted cylindrical handle having a pin hole perforation near the lower end for suspension; evidence of a circular/spherical rattle; medium fabric; well fired; treated with a bi-chrome painting in black and white colours on red slipped surface; the designs consists of a criss-cross pattern in which black coloured obliquely placed parallel lines are running under the white coloured vertical lines and finally closed with a black horizontal band at the junction of the handle. From Period IB, DLW, Reg. No. 1735.

Measurements : length 48.66 mm, diameter of the handle 17.63

Other Important Findings



Fig. 14.6 Terracotta rattle.



Pl. 14.15 Terracotta rattle.

# Report on Scientific Studies of Pottery and Copper Samples K.S. RANA<sup>1</sup>



# A. Report on Pottery Samples

# INTRODUCTION

Pottery samples of Dhalewan excavation include all six fabrics (i.e. A to F) of Early Harappan Period (Period IA) and some potsherds of Mature Harappan Period (Period IC). All samples have received in the laboratory of Director (Science) from Excavation Branch II, New Delhi for scientific analysis. In order to ascertain the exact and detailed nature and composition of these pot sherds, the samples of these sherds were subjected to scientific analysis on following parameters by application of both traditional and modern methods.

- 1. Visual examination and Photo Documentation
- 2. Wet Chemical Analysis
- 3. Stereomicroscope examination of the surface
- 4. Determination of Physical properties
- Determination of Firing Temperature and Baking Technique using Differential Thermal Analysis

# PART A

# 1. VISUAL EXAMINATION AND PHOTO DOCUMENTATION

Initially, the samples were visually examined and the observations were recorded by the photo documentation employing Camera and Stereomicroscope with photographic attachment. The documented photographs are appended below in the Pls. 15.1, 15.2 & 15.3 alongwith details of observations recorded in the wet analysis report.

# 2. WET CHEMICAL ANALYSIS

The pot sherds recovered from different locus and layers were analyzed using traditional wet chemical methods. This also included recording physical observations like the shape, size, texture, accretions and colours of the samples and their constituents. Following the standard methods of analysis the constituents of the samples were determined using gravimetric and volumetric methods by applications of various reagents and chemicals. Constituents so determined are loss of moisture, loss on Ignition, Silica, Ferric Oxide, Aluminium Oxide, Calcium Oxide and Magnesium oxide.

Shri K S. Rana, Joint Director General, Archaeological Survey of India, Chemistry Branch, Dehradon (U.K.)

#### EXCAVATIONS AT DHALEWAN (1999-2000 & 2001-2002)



B5/4 (18)



YC 13/4 (5)



YC 15/4 (3)



YD 14/3



ZH 5/3 &4





Report on Scientific Studies of Pottery and Copper Samples



YH 11/2 (2)



YB 13/2 (5)



YC 15/4 (3)



YF 13/ Baulk 3 & 4

Pl. 15.2







B 5/4 (8)





B 5/4 (11)



YC 10/2 (9)



YC 13/1 (4X)



YB 14/1 (2)



ZH 5/3&4

Report on Scientific Studies of Pontery and Copper Samples



B5/4(11)

ZH5/3&4 (15AF)



# VC-15/4 VC 13/1

YH-11/2

470

YC 15/4

# Pl. 15.5

The representative samples for chemical analysis were prepared by picking small quantities from different parts of the specific sample. These were then grinded to fine powder form in pestle mortar and the sample was then obtained by quartering as per BIS prescribed standard procedures. The samples being clay potsherds, the wet chemical analysis was conducted by adopting the standard silicate analysis for high silica content sample. The detail of chemical analysis is given in the following tables.

la s	99.50	99.12	97.00	51.00	
Magnesium Oxide M <sub>2</sub> 0 %	95 1	1.50	8	2	
Calcium Oxide CaO %	1.12	0.98	0.84	5	
Aluminum Oxide Al <sub>2</sub> 0, %	5.84	57.5	5.87	11.68	
Ferric Oxide Fe <sub>1</sub> 0, %	0.40	0.60	0.40	0.40	
Silica (Sio.) %	26.38	\$8.68	NR.58	79,64	
Loss an Ignition %	2.16	147	1,68	1.86	
Lass of Makture	0.16	0,17	0/10	15.0	
Physical Observations	Buff in Colour, having Shining purfeles on both the surface. Mud accretions observed on the surface.	Sample is buff in colour, with shiny particles, having black designs on its outer surface. Mud accretisms are visible on its surface	Buff in colour, having black polished surface. Mud accretions & shining particles visible on upper surface.	Dull red colour, edge thick, bread and round rim shaped Light cream line or patches visible. It seems that rud othre was applied over some potions	
Depth (in cm)	-100 to 120-	-48 kp -	5 5 5	410 10	
Layer	(ini)	4X A	4XB	2	
Locus	YC. DAT	YC. UM	YC. UM	5	
s ž					

Early Harappan Pottery : Fabric 'A' (Dull Red Ware)

	Total **	99.64		lini k	98.65		Print *	28.81
	Magnesium Oxide M <sub>1</sub> 0 %	020		Magnestum Oxide M.0 %	#1		Magnetium Oxide M <sub>1</sub> 0 %	ř
	Calcium Oxide CaO %	1.26		Calcium Oxide CaO %	1.54		Calcium Oxide CaO %	0.08
	Munimun Oxide Al,0, %	4.75		Aluminum Oxide Al,0, %	557	ĺ	Aluminum Oxide Al <sub>2</sub> 0, %	8.27
	Ferric Oside Fe <sub>1</sub> 0, %	0%0		Ferric Oxide Fe,0, %	₫:		Ferric Oxide Fe <sub>2</sub> 0, %	0.40
	Silica (Sio <sub>1</sub> ) %	90.74		Silica (Silo;) *L	85.21		Silica (Sie)	15.98
	Loss on Ignition %	1.48		Loss ou Ignifion %	2.95		Loss en Ignition %	1.43
-	Loss of Moisture %	0.11		Loss of Moisture	0.61	are)	Lees of Maisture	0.12
: Fabric 'C' (Deluxe Ware	Physical Observations	Lower side light th colour at few places ochre is applied; mud patches on surface; silica particles observed.	: Fabric 'D' (Incised Ware	Physical Observations	Buff colour rough surface, yellow other applied has been observed incised hining & design marks observed	: Fabrie 'B' (Rusticated M	Physical Observations	Buff colour smooth sufface on one side rough on the other, silica particles mud & lime (dry) slightly gravith spot on the groves observed
Pottery	Depth (in cm)	ai (161- 2015	Potterv	Depth (in cm)	-178 to	Pottery	Depth (in cm)	+ 20 to +10
nudd	Layer	15 AF	Dpan	Layer		DDHD	Layer	SHOL
Hara	Locus	201-SI 3 & 4	Haru	Locus	711- 11/2	Hara	Locus	YC. 1N4
Early	N.	-	clark	ן.	-	Early	4 Ž	-

#### EXC.01471035 AT DHALEWAN (7999-3000 & 2001-2002)

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Report on	Scientific	Studies of	Printery west	Copper	Samulay
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8.66	21.16		Total N	90.00
Ċ.	6,70		Magnesium Oxide M <sub>2</sub> 0 %	110
0.84	0.98		Calcium Oxide CaO %	5
¥2.0	1.79		Aluminum Oxide Al,0, %	- 2,70 -
0.40	0.80		Ferric Oride Fe,0, %	01
56.83	1FT6		Silica (Silo)	85.92
9	1.92		Loss on Ignition	1.75
1.0	0.13		Lots of Moisture %	0.22
Upper surface curved Lower surface with fine lines: grey in colour fine silica particle observed; after ignition at 950°C the sample colour channes, area in to book	Buff colour at some places dark red in colour. Upper surface has distinct lines, lower surface light in colour and rough in textore than above.	: Fabric 'E' (Buff Ware)	Physical Observations	Huff colour applied over outer surface. Silica purileles are observed in lower surface buff colour missing at some placer, black patches observed
-50 ta -75	- o - o - 5+	Potterv	Depth (in cm)	443 to 453
÷.	+	ppan	Liye	**
YC - 154	40- 143	Hara	Locus	έξ.
<b>r</b> +	(77)	Early	s ž	e

Early Harappan Pottery : Fabric 'F' (Grey Ware)

Total	100.64	100.64		66 66	
Magnesium Oxide M.0 %		4.5	1.70	021	
Calcium Oxide CaO %	1,12	15	0.56	0.56	
Alaminum Oride Al <sub>1</sub> 0, %	Oride Al,0, %		11.97	12.28	
Forric Oxide Fe <sub>1</sub> 0, %	09.0	0.40	09'0	070	
Silica (Sio <sub>2</sub> ) %	88.90	81.80 80.81		80.05	
Loss on Ignition	1.85	0.95	2.93	1.01	
Loss of Moixture %	0.17	0.15	0.05	0.57	
Physical Observations	Aftar grinding the sumple is grey in colour and heating at 950°C sample became dult red in colour.	After grinding the sample is grey in colour and at heating 950°C sumple became brick red in colour.	The pottery piece is hard & grey in colour, having tury shirming particles.	The pottery piece is hard & grey in colour, having tany shiming particles.	
Depth (in cm)	-85 to - 105	-30 m -25	-135 to	-135 tu	
Layer	*	en.	3.84	3&4 - 180	
Locus	-BX SSI	YC- 154	YF-13/ Baulk () picce)	YF-13/ Baufk (II piece)	
ż ź	-	(e) (	18	7	

EXCAVATIONS AT DELALEMAN (1999-1000 & 2001-2002)
1	-	1	8	45	5
	Ter	96	66	66	- 66
	Magnesium Oxide M <sub>1</sub> 0 %	1.10	87	1.40	04.1
	Calcium Oside CaO %	0.84	9.84	1.12	0.54
	Aluminum Oxide Al <sub>3</sub> 0, %	52.9	123	8.07	2.62
	Ferric Oxide Fe <sub>2</sub> 0, %	0/40	091	0300	09/0
	Silica (Sio <sub>1</sub> ) %	86.07	£7.8N	86.15	92.78
	Lots on Ignition %	1.34	Ŧ	2.09	1.50
	Loss of Moliture	0.17	0.13	0.24	0.15
	Physical Observations	The sample is buff in colour, having tray shining particles, red slipped incision curve mark an one side	Rounded shuped sample to buff in colour having black designs on its outer surface. Mud accretions are visible on its inner surface & having tiny shining particles.	The sample is buff in colour having mud morretions & shining particles.	The sample is curved rim portion buff in colour with dried mud accretions.
	Depth (in.cm)	-233 to -250	-263 to -269	-300 to -305-	-300 to
102200	Layer		v*	÷	0
And Construction	Locus	B-52	B-54	B-5/4	VC-10/2
WOLDS.	12	-	79	195	7

Report on Scientific Studies of Postery and Copper Samples

19/66	08.66	tX 06
97	2.00	240
i.en	5	ŧ.
7.76	5.12	12.40
1.00	0972	1.00
88,12	\$6792	79,46
337)	1.32	1.40
£I.û	0.22	0.24
Buff coloured having mild soil accretions in one surface the other surface is highly solied.	Sample in finished smooth with rounded edges, buff in colour. Dark black designs are visible on its one surface.	The sample is a curved piece, buff in colour, having beownish layers on one surface.
-10 10 -20	+20 10 0	390 to - 395
4	्तन	2
έΞ	YB- 141	ZH-5/ 3&4
-n.	6	4

## EXCAUATIONS AT DRALEMAN (1999-2000 & 2001-2002)

Report on Scientific Studies of Pomery and Copper Samples

## PART B

## DETERMINATION OF PHYSICAL PROPERTIES

As an important parameter of scientific investigation, the physical property of porosity, density water absorption and moisture content of the pottery samples were determined by using standard methods.

The possession of cavities between the mineral grains makes the material porous. The term porosity is given to the percentage of void space that a material contains. It is defined as the total proportion of the air space contained between the solid particles of which the body is composed of and is expressed as the percentage of the total volume of the sample.

The properties determined were the moisture content present in the sample, the total water absorption at ambient temperature, porosity in percentage and true density gms/cc of the sample.

After proper sample preparation the samples were heated to certain temperature and the moisture content was determined, samples were then immersed in water to ascertain their total water absorption. The porosity and true density of the samples were also determined by Lechetalier flask method and R.D. bottle method respectively. The results of this analysis are annexed below in the following table.

S.No.	Fabric	Locus	Luyer	Depti in ems	Moisture content (As such) (Ni)	Total water absorption # 48 hm.	Porosny (54)	True Denvity (gmu/ce)
1	Barly Harappan Fabric 'A'	JE-514	18	-450 to -472	0.240%	1438%	22.20%	2.215
2	Early Manippun Postery Fabric 'B'	YC-134	37	+20 in +10	8.39655	19,615	30.66%	2.531
3	Early Hamppan Pottery Fabric 'B'	YC-154	- <b>3</b> E	-50 16 -25	0.050%	10.72%	15,87%	2215
4	Early Harappan Pottery Fabric 'W	YD-14/2	:45	±5.10 0	0.210%	13.421%	30.939%	5.15%
5	Early Harappan Pottery Fabric 'C'	2013/3 &4	1541	-390 in -392	0.085%	14:960:52	19.989%	3.30%
.₩C	Early Harappan Pottery Fabric 'C'	YH-102	:a::	-170 in -196	0.261%	20.050%	39391394	2.765
3	Early Harappan Pottery Fabric "E"	YH-11/2	2	-143 to 153	0.350%	13.04%	23,78%	2.332
8	Early Harappan Fahrie 'P	¥B-13/2	3	-85 m -105	9,159%	13.006%	19,883%	2.334
9	Early Harappan Pottery Fabric 'P'	YC-154	3	-50 to -75	0.68254	15.089%	20.676%	1.921

10(1)	Early Hatappan Pottery Fabric 'F'	YT -13/Bank	384	-135 no -180	0.960%	15.1895	24.806%	1,747
un(ii)	Early Harappan Pottery Fabric T	YF-13/Batlk	36.4	-135 m -190	0,700%	10.104%	19,486%	2.389
IJ	Mature Harappan Pottery	B-54	8	-233 m -250	0.100%	12.976%	23.641%	3,299
12	Mature Hacoppon Pottery	8-54	NA)	-263 10 -269	0.7495	17.804%	38.73%	2.561
13	Mature Harappan Pottery	B-5/4	ij.	-300 to -305	0,174%	13,246%	19.959%	210
14	Mature Hamppon Pottery	YC-10/2	<u>.</u> 9	-300 to 320	0,057%	10(564%)	20.016%	2.387
Ιā	Mature Harappan Pottery	ZH-5/3 &4	12	-390 to -395	0.213%	14,336%	20.826%	2.671
46	Mature Hamppon Pottery	YC-13/1	ų,	+10 to -20	0.625%	14.036%	23.48%	2 309
17	Mature Hampton Ponery	YB-14/1	2	-20.10.0	0.045%	14.06%	22,10%	2.3127
15	Early Haroppan Pottery Fabric' A'	XC-134	.5	-100 to -120	0.387%	16,302%	30,338%	2:157
19	Early Harappen Postery Fabric 'A'	YC=121(A)	<b>3</b> 80	-48 to -60	0.365%	13.468%	35.533%	2.326
20	Early Harappan Pottery Fabric 'A'	YC-11/1(B)	4X	-48 to -60	0.252%	11.292%	21.565%	2.098

#### EXCAVATIONS AT DIIALEWAN (1999-2000 & 2001-2002)

## PART C

## Surface Studies Using Stereomicroscope

The samples were examined under Stereomicroscopic following standard techniques to determine the minute details of surface structure of the samples. Samples of appropriate shape and size were drawn and viewed under illumination with proper magnification. These images were captured using digital photographic camera attachment. A few of the images revealing important surface details are shown in Pts. 15.4 & 15.5.

The observations recorded for the different samples are presented in the following table with their locus and layer along with their depth.

Early Harappan Lonery - FADIR 3	Early	Harapa	an.	Pottery	1	Fabric	'A'
---------------------------------	-------	--------	-----	---------	---	--------	-----

S.No	Locus	Layer	Depth (in cm)	Observations (Through Stereomicroscope)
a.	YC-13/1	5	-100 to - 120	Dull red colour sample having shiny particles on both the surfaces. Deposition of dust, dirt and soil on the surface.

Report on Scientific Studies of Pottery and Copper Samples

2	YC-13/1	4X	-48 to -60	Deposition of black colour accretions on upper surface. Small micro holes on the surface on the lower side of the sample deposition of soil/ matrix.
3.	B-5/4	18	-450 to 472	Dull red colour sample has clean and smooth surface. Deposition of any type not noticed.

# Early Harappan Pottery: Fabric 'B'

S.No	Locus	Layer	Depth (in cm)	Observations (Through Stereomicroscope)
1.	YC-13/4	5	-20 to -10	Upper surface of the sample is heterogeneous with deposition of salt crystals & soil particles in some places.
2	YC-15/4	3	-50 to -75	Upper surface has light & dark colour bands. Surface is heterogeneous due to chipping. Soil & other accretionary deposits are present on the lower surface/side of the sample. Deposition of dust, salt/lime & dry accretionary deposit can be seen in the vertical section of the sample.
3,	YD-14/3	4	+ 5 to -0	Upper layer of the sample is heterogeneous with light & dark colour micro & macro holes can be seen on the upper side. In vertical section big holes & clay deposition can be seen on lower surface.

## Early Harappan Pottery: Fabric 'C'

S.No	Locus	Layer	Depth (in cm)	Observations (Through Stereomicroscope)
1	ZH5/3 &	415 AF	-390 to -395	The upper surface of earthen pottery is very rough. Red colour is missing from some places, shiny crystals of sand/silica have been observed on both the surface.

# Early Harappan Pottery: Fabric 'D'

S.No	Locus	Layer	Depth (in cm)	Observations (Through Stereomicroscope)
SE.	YH-11/2	3	-170 to -196	Upper surface having designed but rough & het erogenous, chipping of some portion from upper side have been observed. Deposition of dust, dirt and soil is also present.



S.No	Locus	Layer	Depth (in cm)	Observations (Through Stereomicroscope)
Ä	YH-11/2	2	-143 to -153	On the upper surface shiny crystals of silical sand deposition of dust, dirt & soil have been observed. Lower surfaces covered with soil dust and dirt.

## Early Harappan Pottery: Fabric 'E'

# Early Harappan Pottery: Fabric 'F'

S.No	Locus	Layer	Depth (in cm)	Observations (Through Stereomicroscope)
ų,	YB-13/2	5	-85 to -105	Upper surface is half dark grey and half light grey with glazed/glossyness. Surface accretions like dust, dirt and soil have been observed. In wet condition black colour comes in cotton.
2.	¥C-15/4	ŝ	-50 to -75	Upper surface is smooth having superficial accretionary deposits. Lower surface is also grey & rough with deposition of soil. In vertical section middle layer is black in colour.
3,	YF-13/ BAULK	3 & 4	-135 to -180	Upper surface having tiny shining crystals it may be silica/sand. In vertical section it has been observed that pottery is partially baked.

# Mature Harappan Pottery:

S.No	Locus	Layer	Depth (in cm)	Observations (Through Stereomicroscope)		
Е	B-5/4	8	-233 to -250	Upper layer is smooth. Vertical section of the pottery having partially backed middle portion.		
2.	B-5-4	8A	-263 to 269	Earthen pottery (red colour) with two black colour stripes. It seems black colour and red colour superficially used with cotton swab, colour comes out in cotton. Deposition of dust, dirt and other superficial accretionary deposit are also present.		
3.	B-5/4	-5/4 11	-300 to -305	Upper surface is having black colour designs with deposition of dust, dirt and soil surface is homogenous. In vertical section three layers have been observed clearly. Upper surface is red (Dark) in colour, middle layer partially baked and lower the 3rd layer is buff in colour.		

Report on Scientific Studios of Pottery and Copper Samples

4	YC-10/2	9	-300 to - 320	Upper surface is smooth with deposition soil. In some places upper layer chipped off (middle portion) has been observed very coarse & rough due to abrasion.
5.	YC-13/1	4	-10 to -20	Soil accretions are deposited over the upper surface. Lower surface is highly covered with dust, dirt and other accretion deposits.
6	YB-14/1	2	+10 10 -0	Upper baked surface is rough with deposition of dust, dirt and other accretionary deposits. In few places particles of silica/sand are visible.
7.	ZH-5/ 3 &4	12	390 to -395	Upper glazed red colour surface having dark brown colour stripes. Micro holes are visible on upper and lower surface.

## PART D

## Determination of Firing Temperature and Baking Technique by use of Differential Thermal Analysis & Gravimetry.

Determination of the firing temperature of these pottery sherds was carried out by use of differential thermal analyzer. This study was conducted at the Instrumentation Centre of Indian Institute of Technology, Roorkee.

In this study appropriate quantities of the sample were heated under a thermal programme up to the 14000C in the presence of air. The changes that occurred during heating process were recorded in Graphical form (Figs. 15.1 to 15.21). The firing process is defined as the process where ceramic powder or clay, which is compact, is heated to a temperature to develop useful properties.

The firing process includes chemical and physical changes in the body accompanied by a loss of porosity. The compacted powder bonds in a rigid matrix by Vitrification which involves glass formation e.g. structural clay, fire clay refractories or by Sintering where little or no liquid is present e.g. high alumina, ferrites, basic refractory, form oxides, carbides etc. The Firing Temperature generally is as follows:

Pottery Stone ware	÷	1270-1330°C
Earthenware	-	1250-1300°C
Art ware	2	1000-1200°C
Flower Pots	-	900-1000°C

The reactions occurring during firing are:

## Vitrification

Vitrification is the progressive reduction and elimination of porosity of a pottery composition with formation of glass phase as a result of heat treatment. The glass phase formation typically starts around 1100°C and accelerates after further increase in temperature.

A fine clay refractory brick may have as little as 8% glassy phase and a translucent fine pottery may have more than 60% glassy phase. However, in all cases the rate of glass formation increases with higher temperature and on more time at temperature.

During Vitrification Process the following physical changes takes place.

- Shrinkage due to loss of open pores.
- Development of closed pores.
- Development of glass phase.

## Sintering

Sintering is a process of permanent physical & chemical change, which are accompanied by reduced porosity by mechanism of grain growth and grain bonding.

Loss of physical water - below 100-200"C temperature.

#### Oxidation

Typically 300-400°C is the temperature where organic matter burns out. The carbon in these organisms oxidizes to carbon dioxide, which is an exothermic reaction.

Sulfides also burn out between 380-800°C to form S02 gas.

#### Decomposition

The de hydroxylation of clay sometimes called the loss of chemical water occurs between 450-700°C the decomposition of kaolin to meta-kaolin occurs by reaction.

Report on Scientific Studios of Pontery and Copper Samples

AI,SLO,(OH), -. ALSi,O,+2H,0

Some other materials & their decomposition temperatures are

Carbonates	542	400-1000"C gives off C0 <sub>2</sub>
Sulfates	$\odot$	1000-1200°C gives off SO <sub>2</sub>
Meta kaoline		1000-1200°C to mullite & silica
Kyonite		1300-1450°C to mullite & silica with an increase in volume

## Quartz Transformation

Silica goes through several polymorphous modifications on heating

Below 573°C alpha Quartz or low quartz 570-870°C beta quartz as high quartz 867°C and above tri dymite 1470-1710°C crystobalite Above 1710°C liquid

Majority of silica in most ceramics never transforms beyond beta quartz.

Body composition can effect the heating and cooling rate depending on what changes occur in the pottery body with temperature. DTA is the most widely used means of observing these changes it measures the exothermic and endothermic reaction that occur while a sample ceramic/pottery body is fired at a constant rate of 10°C / min as compared to an inert material (alumina). The types of reactions measured by DTA test are as follows:

Endothermic i.e. which absorbs heat :- results in Decompositions, Crystal transitions

Exothermic i.e. which gives off heat :- results in Oxidation, New phase formations

In addition TG-DTA helps to measure changes of a sample while being heated at a constant rate. TG-DTA identifies temperature region and magnitude of critical events during a drying or firing process e.g. drying, binder burnout, carbon oxidation, sulfur oxidation, structured body collapse, carbonate decomposition, recrystallisation, melting.

TGA measures the weight loss of material due to drying or complex chemical reactions that release gases, such as structural water release, structural decomposition, carbonate decomposition, sulfur oxidation. It also measures the weight gain of a material from a simple process of re-hydration or from more complex surface reaction from reactive gas atmospheres.

## Inferences based on the studies conducted :

## Sample (3) YC- 15/4

It shows a distinct exothermic reaction at 1167°C. The DTG measurement of the sample shows marked loss in weight at 1197°C. This is Suggestive of firing of pottery below 1100°C approximately. The low Porosity value as compared to other samples may be attributed to the fact that the sample has low Silica- Alumina ratio i.e. higher alumina content. The Vitrification has occurred in the sample but it appears that there was not enough scope for the sintering to take place as the firing temperature is below 1100°C.

#### Sample YC 13/4

The DTA graph reveals an exothermic reaction at 1170°C while the DTG reveals as weight change at 251°C which may be due the physical transformation of silica into low quartz form. This is Suggestive of firing of pottery below 1100°C approximately and possibly no vitrification proceeses of Shrinkage due to loss of open pores and development of closed pores did not occur as sintering and glassy phase formation due to vitrification occurs above 1100°C, which is evident in high porosity value as 36.6%.

#### Sample YC 15/4

The DTA graph shows absence of any heat change reaction while the DTG reveals weight change at 273°C indicative of the loss of physical moisture. The TG-DTA graph is not explicit beyond 1100°C to infer the firing temperature. The low porosity of the sample indicates that the glassy phase transformation of the silica contents may have occurred as there is a marked decrease in the density.

#### Sample B 5/4

The TG-DTA graph reveals an Endothermic reaction at approximately 200°C, which is suggestive of loss of physical water. The marked weight loss at about 1200°C and an exothermic reaction staring at approximately 1100°C. This is indicative of the firing temperature being less than 1100°C.

## Sample AF ZH 5/3 & 4

The DTA is observed to project an endothermic reaction at 1072°C while the DTG indicate as weight change as 265°C & 1254°C which indicates that firing might have been conducted upto 1000°C. The low Porosity of the sample may be due to low Silica-Alumina ratio i.e. higher alumina content. The Vitrification has occurred in the sample but it appears that there was not enough scope for the sintering to take place as the firing temperature is below 1000°C.

## Sample 1 YF-13/Baulk

The DTA is observed to show an absence of any heat change reaction. However the DTG analysis swabs change in weight at 52°C indicative of the loss of physical moisture & 412°C, which indicates oxidation of sulfide matter in the sample. The TG-DTA graph is not explicit beyond 1100°C to infer the firing temperature.

## Sample 3 & 4 D YF-13/Baulk

The DTA graph shows absence of any heat change reaction while the DTG reveals weight change at two place 48°C & 195°C indicative of the loss of physical moisture. The TG-DTA graph is not explicit beyond 1100°C to infer the firing temperature. However, certain peaks of distinct weight change are observed between 1100-1200 °C. The low porosity of the sample indicates that the glassy phase transformation of the silica contents may have occurred.

## Samples ZH 5/3 & 4

The DTA graphs shows two exothermic reactions one at 990°C temperature approx and the other between 1164°C while the DTG analysis reveals loss in weight at 219°C and another at 1241°C which is suggestive of firing below 900°C temperature. The weight change at 219°C may be due to loss in entrapped moisture.

### Sample (3) YH 11/2

This sample shows two distinct endothermic reactions at approx. 563°C & between 1132°C. The DTG measurement of the sample shows marked loss in weight at approx 67°C loss of moisture - at 615°C and the third at approx 925°C. Suggestive of firing of pottery below 550°C, loss of chemical water at around 615°C and quartz transition at 925°C.

## Sample (2) YH 11/2

It is observed to undergo exothermic reaction at approx 1164°C. However loss in weight at two instances one between 234°C loss of moisture and the other at 1164°C is observed suggestive of firing at less than 1100°C temperature. The exothermic reaction after 1100°C indicates the silica phase transition.

## Sample YC 10/2

The DTA graph appears constant with no apparent heat change reactions however the DTG graph reveals a weight change at 1004°C and 1024°C along with a weight change at 300°C. This change might have occurred due to decomposition of Meta kaoline at 1000-1200°C to mullite & silica.

## Sample(3) YH 11/2

It shows two distinct endothermic reaction at approx 563°C & 1132°C due to chemical water loss and Crystal transitions respectively.

The DTG measurement of the sample shows marked loss in weight at approx 67°C due to loss of moisture. The weight loss at 615°C and at 925°C may be attributed to the endothermic reactions. It is suggestive the firing of pottery below 500°C.

## Sample (2) YH 11/2

It is observed to undergo exothermic reaction at approx 1200°C. However loss in weight at two instances one between 234°C and the other at 1260°C is observed due to new phase formation and oxidation reactions, suggestive of firing less than 1100°C temperature.

The Remaining samples for which the TG-DTA studies were conducted suggest firing beyond 1200°C. The graphs for different samples have been recorded and presented in the annexure as given ahead.

## Acknowledgement:

Shri H.C. Thapaliyal, Sr. Photographer & Shri Satyavir Singh. Photographer for carrying out the photo documentation work.

<sup>2)</sup> Institute Instrumentation Centre, III, Roorkee for assisting in TG-DTA analysis.



Fig. 15.1



#### EXCAPATIONS AT DHALEMAN (1999-2000 & 2001-2002)

Fig. 15.2



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#### EXCAUATIONS AT BRALEWAN (1999-2000 & 2001-2002)





#### EXCAUATIONS AT DILALEWAN (1999-2000 & 2001-2002)



Report on Scientific Studies of Pottery and Copper Samples



V# ATG

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#### EXCAUATIONS AT DILALEWAN (1999-3000 & 3001-3002)



Report on Scientific Studies of Pottery and Copper Samples





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Fig. 15.17



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ENCAUATIONS AT DRALEWAN (1999-2000 & 2001-2002)



Repart on Scientific Studies of Pottery and Copper Samples



EXCAVATIONS AT DRALEWAN (1999-2000 & 2001-2002)



Report on Scientific Studies of Potary and Copper Samples

## B. Report on Copper Samples

The excavated copper samples (2 Nos.) were received in the laboratory of Director (Science) from the Superintending Archaeologist, Excavation Branch II, Purana Qila, New Delhi. The two pieces being excavated samples from Mature Harappan level i.e. Phase I of Period IC at Dhalewan site were received with accretionary deposits on the metal surface.

S.No.	Reg. No.	Location Sq/Qd.	Layer	Depth (in cm)	Object
1	1428	DLW, YG 10/1	4	84-95	Fragment of copper pipe
2		DLW, YC 10/2	10	363	Fragment of copper bangle

## Determination of the Elemental Composition of Metal Antiquities

In order to procure samples for accurate instrumental analysis, it was necessary to remove the adhering accretionary mud and corrosive products from the metal antiquities.

The excavated antiquities after chemically cleaning were analysed for determination of their elements and their proportions by the Scanning Electron Microscope with the energy dispersive technology.

The cleaned antiquities were then cut in small piece of proper dimensions and again cleaned to expose the surface. Finally, the cleaned and exposed surface of the antiquities sample was kept on a sample holder and viewed by the SEM. The image was viewed on a monitor and two different point areas were selected through the software and those areas were analysed by the electron bean of 20.0 kv which can strike on the metal surface up to certain depth to desire the correct elemental composition. The EDX attachment then recorded the graphical output for the sample. After noise reduction the peaks were identified and them the elements were quantified to get the % composition of the sample. The computer then recorded this. (Figs. 15.22 to 15.25)

## Conclusion:

The Sample YG 10/1 was analysed at two locations

- Iocation YG 10/1 2: the analysis reveals presence of Copper 31.2% and Iron 19.48% Silicon 7.53% and Oxides 30.07%
- location YG 10/1 3 : the analysis reveals presence of Oxides 88.94%.

This indicates that the corrosion of the metal alloy has occurred to the core of the metal, as also observed during the chemical cleaning of this sample did not expose Report on Scientific Studies of Pottery and Coppor Samples

a solid metal core. The absence of the Copper and Iron at one location is also suggestive of the extensive corrosion of the antiquity.

The Sample YC 10/2 was also analyzed at two locations

- location YC 10/2 1

and location YC 10/2 2 : the analysis at both the locations reveal presence of Copper 100% and 99.41 % i.e. it is composed of Copper metal.

The composition of the two samples were recorded which are annexed alongwith their graphs.



Fig. 15.22

510
Report on Scientific Studies of Postery and Copper Samples

Spectrum: YG10/1	2			
EI AN Series	unn. [w1%]	C norm. [wt%]	C Atom. [at%]	C Error [%]
Cu 29 K-series	31.20	32.78	15.45	0.9
Fe 26 K-series	19.48	20.46	10.97	0.5
Si 14 K-series	7.53	7.91	8.44	0.3
S 16 K-series	1.77	1.86	1.73	0.1
As 33 K-series	1.75	1.83	0.73	0.1
At 13 K-series	1.30	1.37	1.52	0.1
K 19 K-series	0.65	0.68	0.52	0.0
P 15 K-series	0.53	0.56	0.54	0.0
Mg 12 K-series	0.45	0.47	0.58	0.1
Ca 20 K-series	0.38	0.40	0.30	0.0
C117 K-series	0.08	0.08	0.07	0.0
F 9 K-series	0.00	0.00	0.00	0.0
C 6 K-series	0,00	0.00	0.00	0.0
0 8 K-series	30.07	31.60	59,14	3.2
Total	95	18	100.00	100



Fig. 15.23

#### EXCAVATIONS AT INCALEWAN (1999-2008 & 2001-2002)

Spectrum: YG10/1 3						
EI AN Series	unn. [wt%]	C norm. [wt%]	C Atom. [at.+%]	C Error [%]		
Fe 26 K-series	3.71	3.71	1.14	0.1		
Cu 29 K-serie	3.08	3.08	0.83	0.1		
Si 14 K-series	2.87	2.87	1.75	0.1		
Al 13 K-series	0.85	0.85	0.54	0.1		
K 19 K-series	0.26	0.26	0.11	0.0		
Ca 20 K-series	0.15	0.15	0.07	0.0		
S 16 K-series	0.11	0.11	0.06	0.0		
Mg 12 K-series	0.03	0.03	0.02	0.0		
F 9 K-series	0.00	0.00	0.00	0.0		
C 6 K-series	0.00	0.00	0.00	0.0		
0.8 K-series	88.94	88.94	95.47	27.6		





Fig. 15.24

Spectrum: YC 10/ EI AN Series	2 1 unn. [w1%]	C norm. [wt%]	C Atom. [at%]	C Error [%]
Cu 29 K-series	100.38	97.60	93.85	2.7
Mg 12 K-series	0.99	0.97	2.43	0.1
Al 13 K-series	0.45	0.44	1.00	0.0
S 16 K-series	0.40	0.39	0.75	0.0
Fe 26 K-series	0.11	0.11	0.12	0.0
CI 17 K-series	0.00	0.00	0.01	0.0
C 6 K-series	0.00	0.00	0.00	0.0
0 8 K-series	0.50	0.48	1,85	0.1
Total	102.85	100.00	100.00	

#### EXC49/4TIONS AT DHALEBAN (1998-2000 4 2001-2002)



Fig. 15.25

Report on Scientific Studies of Pottery and Copper Samples

EI AN Series	unn. [w1%]	C norm. [wt.+%]	C Atom. [nt%]	C Error [%]	
Cu 29 K-series	99.41	98.40	96.08	2.7	
Mg 12 K-series	0.92	0.91	2.32	0.1	
Al 13 K-series	0.20	0.20	0.46	0.0	
Fe 26 K-series	0.19	0.19	0.21	0.0	
S 16 K-series	0.14	0.14	0.27	0.0	
0 8 K-series	0.17	0.17	0.67	0.1	
Total	101.03	100,00	100.00	dimension of the	

Report prepared by Smt. Shilpa Raturi, Dy. Superintending Archaeologist Chemist under the guidance of K.S. Rana, Joint Director General, Archaeological Survey of India, Chemistry Branch, Debradun (U.K.).

Acknowledgement: Wadia Institute of Himalayan Geology for conducting the instrumental analysis of the samples.

### Animal Bones from Dhalewan A.K. SHARMA<sup>1</sup>



Numerous bones have been collected at the site from various levels and only selected bones from Periods IA to IC were subjected to examination for this report. As compared to Period IA almost double the numbers of bones were recovered from Periods IB & IC. This is particularly due to the fact that considerably less area of Period IA was excavated due to the presence of structures at the latter levels. In all three subperiods, the collection is overwhelmingly dominated by cattle bones. Only few of the bones, to be precise, one piece from Sub-period IA and six pieces from Sub-period IC are found in charred condition. Number of bones belonging to tender age animals are also few. Surprisingly there is not a single piece of bone having butchering mark.

CHAPTER

#### State of Preservation

Majority of the bones, recovered, are in good state of preservation. The presence of encrustations over the bones has sealed the pores of the aversion canals thus preventing the entry of organisms and the enveloping matter. This has helped in keeping intact the characters of the bones. Some have developed surface gloss. Collection from the lower levels emit metallicity of sound where as those from the top levels have developed numerous cracks due to the arid atmosphere.

Few pieces of shafts of long bones, shaped ready to use as tools, have also been identified.

#### Species Identified

From the collection nine species of animals could be identified. In all three Subperiods cattle out number all other species followed by goat.

A. Sub-period IA has yielded the bones of the following five animals :-

- Bos indicus Linn the domestic cattle
- 2. Bubalus bubalis Linn the Indian buffalo
- 3. Capra hircus aegagrus the goat
- 4. Equus asinus Linn the ass
- Homs of deer

Shri A.K. Sharma, Archaeological Adviser, Chhattisgarh State and former Superintending Archaeologist, Archaeological Survey of India.

EXCAPATIONS AT DHALEWAN (1999-2000 & 2001-2002)



Pl. 16.1 Bones of Cattle, Early Harappan, Period IA.



Pl. 16.2 Bones of Capra, Early Harappan, Period IA.

518

Animal Banes from Dhaleman



Pl. 16.3 Bones of Cattle, Mature Harappan, Period IC.



Pl. 16.4 Bones of Cattle, Mature Harappan, Period IC,

#### EXCAPATIONS AT DHALEWAN (1999-3000 & 2001-2003)



Pl. 16.5 Teeth of Cattle, Capra and Sus, Mature Harappan, Period IC.



Pl. 16.6 Third Phalanx of Cattle, Mature Harappan, Period IC.

Animal Benes from Dhalescan



Pl. 16.7 Bones of Capra, Early Harappan, Period IA.



Pl. 16.8 Horns of cattle, Early Harappan, Period IA.

The following eight species from Sub-period IB and IC, the transition and Mature Periods respectively have been recovered :

- 1. Bos indicus Linn the domestic cattle
- 2. Bubalus bubalis Linn the Indian buffalo
- Equus caballus Linn the horse
- 4. Capra hircus aegagnus the goat
- 5. Sus scrofa cristatus wenger the pig
- 6. Axis axis Erxleben the white spotted dear
- 7. Lissemys punctata (Bonnaterre) the River turtle
- 8. Elephas the elephant
- 1. Cattle : Both, Bos indicus (the Indian humped cattle) and Bubalus bubalis Linn (the Indian buffalo) are represented in both the Sub-periods IA (Pl. 16.1) and IC (Pl. 16.3, 16.4, 16.5 and 16.6). The population of both was almost even during the entire occupation of the site. The cattle population in Sub-period 1A and Subperiod IC, far outnumbered the population of all other species represented at the site indicating that animal husbandry was one of the major source of economy along with agriculture for inhabitants of Dhalewan. A few horn cores obtained from all three Sub-periods pointy upwards and not side wards as in the wild proto type (Pl.16.8 and 16.11).

Absence of cut marks indicates that cattle were mainly reared for milk and draft purposes. A close examination of third phalanx of large number of cattle show the increase of pedosis and exostosis pointing to the increasing dependence of men on cattle, in all three Sub-periods, for draft in purposes. The people were practicing a lot of agriculture that requires extensive use of cattle, both for ploughing and drawing of vehicles.

As specimens belonging to that of buffaloes do not exhibit any evidence of anchylosis, pedosis and exostosis, it is clear that buffalo population was not used for traction and agricultural purposes. The animal was reared solely for their milk.

Cattle belonging to massive variety have also been identified from other Harappan sites like Kalibangan, Malvan, Lothal, Surkotada and Bhagwanpura. The type available at Dhalewan hardly differs in any way from those identified at the above mentioned sites.

 Goat, Capra hircus degagrus, the oldest domestic animal: After cattle goat bones are the second largest chunck of the collection. There is a slight increase in the population of goat from Sub-period IA (Pls. 16.2, 16.7 and 16.9) to Sub-period IC (Pis. 16.10, 16.13 and 16.17). These animals are represented in the collection mostly by mandibular and maxillary fragments, metacarpal, metatarsal and limb bones. Animal Roses from Disalesons



Pl. 16.9 Horns of Capra and Deer, Early Harappan, Period 1A.



Pl. 16.10 Horns of Capra and Deer, Mature Harappan, Period IC.

EXCAVATIONS AT DILALEWAN (1999-2000 & 2001-2002)



Pl. 16.11 Horns of Cattle, Mature Harappan, Period IC.



Pl. 16.12 Teeth of Capra, Early Harappan, Period 1A.

524

Animal Banes from Dhaleman



Pl. 16.13 Bones of Capra, Mature Harappan, Period IC.



Pl. 16.14 Bones of Turtle, Mature Harappan, Period IC.

521

EXCAPATIONS AT DRALEWAN (1999-2008 & 2001-2002)



PL 16.15 Bones of Asinus, Early Harappan, Period IA.



Pl. 16.16 Bones of Eqque Caballus Linn, Mature Harappan, Period IC.

526

Animal Bones from Dialeman

As only some superficially charred bones of these animal have been recovered and as there are hardly any specimen bearing cut marks, it can probably be surmised that the goat was mostly reared for their milk, meat, hair and skin. Few younger ones were roasted without being dismembered probably on special ceremonial occasions for food. They were rarely slaughtered as was also the case with cattle. The size of the bones indicates that the reared goats were of medium in size. Well-preserved teeth with sharp cutting edges (Pls. 16.5, 16.8 and 16.12) indicate that there was plenty of green fodder available around.

- 3. Pig : Sur scrofa cristatus wenger the pig remains have been identified form most of the sites in India. Actually wild boar, the ancestor of modern day pig was associated with man in India right from the Neolithic times (circa 3000 B.C.) as per evidence for Burzahom and Gutkral. In Harappan context, this animal has been reported from Harappa, Mohenjo-daro, Lothal, Rangpur, Surkotada, Bhagwanpura and several other later sites. Indian domesticated pig is the domesticated form of the wild Sus scrofa Linn. In fact in the collection under study there is only a solitary bone of pig from Sub-period IC (PI. 16.5). The considerably lesser percentage of this animal at the site as compared to cattle shows that pork was not much preferred.
- 4. Horse and Ass : Bones of Equas asimus and Caballus have been recovered from Sub-period IA (Pl. 16.15) and IC (Pl. 16.16)respectively. Numbers of ass bones are just double that of horse. The parts recovered are very distinctive bones, i.e. metatarsal, first, second and third phalanges and caudal bones. The bones recovered belong to medium size variety. The animals were mainly used for transportation of men and material.

The occurrence of few bones of *Equus* at the archaeological sites is probably due to the reason that the *Equus* population in comparison to the cattle and goat was much less. In India, even today also, in a village hardly one or two horses could be found and some have even none.

 Elephant, Elephas: Parts of only tusk were found from the uppermost levels and used as pierce. They were probably imported from neighbouring area for making ornaments. Similar is the case at Mohenjodaro, Lothal and Kalibangan from where also only tusks of *Elephas maximus* Linn were recovered.

Though no bone remains of this animal have been found from the Harappan sites, but its representation on the seals and scaling shows that the Harappans had knowledge of this animal. In Indian cultural context it is normal not to find skeletal remains of elephants at the sites as their meat is never eaten and after death they are usually buried away from the habitation. EXCAUATIONS AT DHALEWAN (1999-2000 & 2001-2002)



Pl. 16.17 First Phalanx of Capra, Mature Harappan, Period IC.



Pl. 16.18 Bone Tools, Mature Harappan, Period IC.

#### HUNTING

Very limited number of bones belonging to wild animals recovered from the site show that there were not many animals in the vicinity, due to plenty of agricultural products and animal husbandry. Recovery of a horn core of a spotted deer (Pls. 16.9 and 16.10) or black buck shows that hunting was only a pleasure game for some.

#### FOOD HABITS

- A. Dhalewan people were mostly dependent on agricultural products for their food.
- B. They were reared large number of cattle including buffaloes for their milk.
- C. In Sub-period IC, by some section of the society, roasted pig meat which was eaten on special occasions. Some of the bones show symptoms of being submitted to fire. A few approach the stage of charring. Light burning may indicates that roasting was done mostly by burning of dry grass and leaves and not solid fuel.
- D. Absence of fish bones indicates that probably there was not deep water source in the vicinity or people did not like fish. Recovery of good number of shells (some charred) belonging to fresh water turtle (Pl. 16.14) from Sub Period IC indicate that the turtles were brought from some nearby area for food. Shells were used for making decorative designs as well as flesh rubbers.

#### BONE TOOLS FROM DHALEWAN

#### PL 16.18

- Fragment of cattle rib used as a scraper.
- 2. Shaft piece of long bone of capra, one end sharpened to be used as a point.
- 3. Shaft of long bone of cattle used as a scraper, one end pointed.
- Shaft of long bone of cattle used as a scraper. One end pointed and charred to be used as piercer.
- Rib fragment of a cattle, used as scraper.
- 6. Shaft fragment of long bone of capra. One end pointed.
- Vertebra of capra. On dorsal surface centre has been deepened to be used as a tool (base) for spindle whori.
- Shaft fragment of capra, one end pointed to be used as piercer. Charred to give extra strength.
- Shaft fragment of capra, one end pointed and sharpened to be used as piercer or point.



Pl. 16.19 Bone Tools, Mature Harappan, Period IC.



Pl. 16.20 1. Skinning marks; 2. Puncturing mark, Mature Harappan, Period IC.



Animal Banes from Dhalessan

#### Pl. 16.19

- Piercer made out of cattle rib, sharply pointed working end sharply pointed whereas distal end oval. Length 13.5 cm, maximum width 2.0 cm. Doral surface is convex while vertical concave. Convex cross section.
- Piercer-cum-side scraper shaped out of ivory, well polished, concave in shape. Length 16.9 cm. Max width 2.5 cm. Party distal end is missing, convex cross section.
- Double point shaped out from shaft of long bone of animal. Point on one end is broken, oval cross section. Length 9.5 cm width 0.7 cm.
- Double stylus shaped out from shaft of long bone of animal, circular cross section. Length 6.3 cm width 0.7 cm.

#### DESKING MARKS (PL 16.20, 1)

Cut marks resulting due to de-skinning process are generally seen on the surface of shafts or long bones. If the skinning of the animal is to be used as clothing then careful skinning marks are found along the phalanges, antlers and chin are of mandible. In the present case the proximal half of metatarsal of capra, transverse cut marks on the lateral surface have been produced. There are at least eight cut marks.

#### PUNCTURING MARKS (PL. 16.20, 2)

The dorsal surface of first phalanix of cattle just in the centre a deep hole had been created in order to extract bone marrow by the preg vulture. It was done after the dead cattle were thrown away or after dismembering and de-skinning. Bone marrow is the most favoured diet of vultures.

#### DISCUSSION

Faunal remains recovered and studied from all three Sub-periods at Dhalewan indicate about the agricultural activities, economic role of animals the site and food habits of the people. They also throw some light on the ecological condition in the area

- Cattle far outnumbered all other species. They were used for agricultural and draft purposes. Animal husbandry was widely practised. Horse and ass were used for transportation of men and material. But only few had the privilege of processing horse and ass as only few remains of assinus and Equas have been reovered from Period IA and Period IC respectively.
- Goat was reared mostly for their milk, meat, hair and skin. It seems that Cattle and Capra wealth was almost possessed by every family.

- 3. People of Dhalewan in all three Sub-periods did not relish meat and pork much. Probably they were predominantly vegetarian. The people enjoyed plenty of milk food. Occasionally some people used to go for hunting as a game and not due to compulsion of food. Moreover not much game was available in the near vicinity.
- Wool was in plenty to protect the people from cold of the area.
- All the recovered bones of the domesticated variety of animals are well developed and robust showing no signs of rarification. This indicates that there was plenty of fodder available in the area.
- Due to favourable climatic conditions, agriculture was well developed.
- Due to fertile nature of soil and plenty of water the ecological condition was balanced one.

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## PART II

# (Kushan and Gupta Periods)

### Structures of Early Historical Period VISHNU KANT

#### INTRODUCTION :

The deposits of Early Historical Period are represented by 2 to 3 m at the site in trenches B5, E11, ZH5, ZB8, YA10, ZA10, YA11, YC10, YC12, YB13 and YC13. In fact, the Kushans reoccupied the site after a considerable gap of time from the desertion of the Harappan settlement at Dhalewan. On the deserted mound after showing, a break, about 0.80 - 1.50 m deposits belong to Kushan Period and rest successive deposits of about 1.00 - 1.50 m to Gupta Period.

CHAPTER

As far as the structural activity of Kushans is concerned at Dhalewan, the haul is not as rich as found in other parts of India. The remains found in the form of the brick walls, are made out of the mud-bricks as well as burnt bricks. A noteworthy feature is the discovery of the two U-shaped portable hearths (Fig. 17.2 and Pl. 17.7) near the mud-brick wall of a house. The hearths were possibly shifted after their use and kept near the wall in opposite direction somewhat close to each other with their openings. No ash or burnt earth was recovered inside the hearths. The above evidence suggests the shifting of the kitchen in the open place or as required i.e. courtyard of the house particularly during the summer season. No plan of a house or any other significant structure have identified from this level. A fragment of a terracotta open drain (Pl. 17.1) recovered from this level. It has a perforation for nailing either wood or iron for fixing it horizontally i.e. perpendicular to the wall to drain the water away from the wall.

Structures of Gupta Period is denoted with mud brick construction at Dhalewan. No burnt brick structure has been found. However, square-shaped burnt-bricks recovered there at Dhalewan in this level (Pl. 17.2). The finding of roughly circular terracotta handmade roof-tiles indicates the use of sloppy roof covered with tiles in construction of the house (Pl. 17.3). Few decorated tiles also recovered from this level (Pl. 17.4). The fashion of U-shaped hearths also continued in the kitchen of Gupta Period (Fig. 17.3, Pls. 17.5 and 17.9).

The structure numbers 6 to 13 are marked for Kushan's structures and 1 to 5 for Gupta's structures. Former is shown in orange colour and latter in parrot green colour on the Plan of the site (Fig. 4.8).

#### A. KUSHAN PERIOD (PERIOD II)

#### 1. STRUCTURE NO. 6 (Fig. 17.1 and Pl. 17.6)

- Location : DLW, Square No. ZH5 and Quadrant : 3
- 2. Type of structure: Partially exposed plan of a workshop (?)

EXCAUATIONS AT BUALEWAN (1999-2008 & 2001-2002)



Pl. 17.1 Terracotta drain, Period II.



Pl. 17.2 Burnt bricks, Period III.

536

Structures of Early Historical Period



Pl. 17.3 Terracotta roof tiles, Period III.



Pl. 17.4 Terracotta decorated tiles, Period III.

537



Pl. 17.5 U-shaped hearths, Period III.



Fig. 17.1



Pl. 17.6 Work shop (?), Period II.

#### Structures of Early Himseleal Period

- 3. Stratigraphic position: Scaled by layer (10)
- 4. Period and Structural phase: Period II, Kushan
- 5. Measurement of walls in cm : 380x42x20; 174x34x9; chambers 58x20; 50x22
- 6. Number of courses : One
- 7. Masonry and bond: Only header
- 8. Composition of mortar Mud mortar
- 9. Orientation of longer axis : North-east to south-west
- 10. Nature of bricks used: Mud brick
- 11. Dimension of bricks : (a) length 34 cm (b) width 22 cm (c) thickness 9 cm
- 12. State of preservation: Not so good
  - 13. Shape and other distinguishing feature: STR No. 6 comprises a partially exposed workshop (?) having two enclosure walls of an area and at least four small sized rectangular chambers made of thin mud wall at northeastern corner of the area. The northern wall made of mud with orientation of north-east to south-west, and measuring length 380 cm (maximum available) x breadth 42 cm x beight 20 cm. Another wall made a right angle to the northern wall and showing a corner of the workshop(?) with orientation of north-west to south-east. It made of single mud brick construction consisting of only one course and enclosing the workshop in the east. The measurements of wall are length 174 cm (maximum available) x breadth 34 cm x height 9 cm. The brick size 34 x 22 x 9 cm.

The rectangular chambers found are filled with brownish ash in which two chambers are of equal size (58 x 20 cm) and constructed parallel to the northern wall in a row. Other two chambers laid out parallel to the eastern wall in a series in which one chamber measuring (50 x 22 cm) seems open towards west. Other southern chamber also partially exposed in the west. The thickness of mud wall of the chambers varies 6 to 10 cm. The actual purpose could not determine based on finding of the area. However, a copper coin, a glass bead and an iron piece have been recovered from this area.

#### 2. STRUCTURE NOS. 7 and 8 (Fig. 17.2 and Pl. 17.7)

- Location : DLW, Square Nos. YC12 & YC13 and Quadrants : YC12-1 & YC13-4
- Type of structure : Partially exposed room/courtyard (?) along with portable hearths
- Stratigraphic position: Sealed by layer (5)
- Period and Structural phase: Period II, Kushan



542

Structures of Early Historical Period



Pl. 17.7 Portable hearths, Period II.

- Measurement of structure in cm : 436x32-36x15; 362x32-36x18
- Number of courses : Two
- 7. Masonry and bond: Only header
- 8. Composition of mortar: Mud mortar
- 9. Orientation of longer axis : North-west to south-east and North-east to south-west
- 10. Nature of bricks used: Mud brick
- 11. Dimension of bricks in cm : 36x24x9; 36x20x9; 34x28x9
- 12. State of preservation: Good
- 13. Shape and other distinguishing feature: STR No. 7 & 8 comprise the partially exposed two sidewalls probably of the room/courtyard along with two portable U-shaped hearths found *insitu* near the northern wall. Both enclosure walls are made with single brick construction by using header. The courtyard has a size at least 436 cm x 362 cm. The portable hearths were closely kept in opposite direction towards their mouths near the northern wall. There is no evidence of burnt floor inside the hearths traced and no ash recovered from the hearths. Loose soil found from the bottom area. Both of the portable hearths have reddish surface on the interior suggesting regular burning marks and their use. The evidence indicates that both hearths were safely kept there after being used at any other place in the house.

Measurements: Western hearth - length 30 cm x breadth 26 (maximum & inner) x height 24 cm and thickness of the wall 10 to 12 cm.

Eastern hearth - length 50 cm x breadth 16 (inner) height 24 cm and thickness of the wall 12 to 14 cm.

Details of each structure:-

STR No. 7 :- Western wall of the courtyard with orientation of north-west to south-east measuring length 436 cm (maximum available) x breadth 32 to 36 cm x height 15 cm; Number of courses - two; Brick size - 36 x 24 x 9 cm.

STR No. 8 :- Northern wall of the courtyard with orientation of north-east to south-west measuring length 362 cm (maximum available) x breadth 32 to 36 cm x height 18 cm; Number of courses - two; Brick size - 36 x 20 x 9 cm; 34 x 28 x 9 cm.

#### 3. STRUCTURE NO. 9 (Fig. 4.8)

- Location : DLW, Square No. YC13 and Quadrants : 3
- Type of structure: Floor
- Stratigraphic position: Sealed by layer (5)

544

#### Structures of Early Historical Period

- Period and Structural phase: Period II, Kushan
- Measurement of structure : (a) length 318 cm (b) width 64 cm (maximum available)
- 6. Number of courses : One
- 7. Orientation of longer axis : East-west
- Nature of bricks used: Brunt brick bats
- 9. State of preservation: Not so good
- Shape and other distinguishing feature: STR No. 9 comprises a part of the floor laid out by burnt brick-bats in irregular manner.

#### 4. STRUCTURE NO. 10 (Fig. 4.8)

- 1. Location : DLW, Square No. YC12 and Quadrant : 4
- Type of structure: Partially exposed wall
- Stratigraphic position: Sealed by layer (5)
- 4. Period and Structural phase: Period II, Kushan
- Measurement of structure : (a) length 74 cm (b) width 20 cm (c) height 9 cm (maximum available)
- 6. Number of course : One
- 7. Masonry and bond: Only header
- 8. Composition of mortar: Mud mortar
- 9. Orientation of longer axis : North-west to south-east
- 10. Nature of bricks used: Mud brick
- 11. Dimension of brick : Not available
- 12. State of preservation: Not so good
- 13. Shape and other distinguishing feature: STR No. 10 comprises partially exposed wall found in the north-eastern corner of the quadrant 4. Only western face of the wall is exposed. Probably, this STR, 10 is the extension part of the STR 7. This wall is also running in same direction i.e. North-west to south-east. It seems that the STR 7, 8, 9 and 10 are the structures of the same house.



EXCAVOTIONS AT DILALEWAN (1999-2000 & 2001-2002)

#### 5. STRUCTURE NO. 11 (Fig. 4.8)

- 1. Location : DLW, Square No. YC13 and Quadrant : 3
- 2. Type of structure: Partially Exposed Wall
- 3. Stratigraphic position: Sealed by layer (5)
- 4. Period and Structural phase: Period II, Kushan
- Measurement of structure : (a) length 106 cm (b) width 38 cm (c) height 8 cm (maximum available)
- 6. Number of courses : One
- 7. Composition of mortar: Mud.
- 8. Orientation of longer axis : North-west to south-east
- 9. Nature of bricks used: Mud lumps
- 10. State of preservation: Not so good
- Shape and other distinguishing feature: STR No. 11 comprises partially exposed wall made of mud lumps found in the northeastern corner of the quadrant 3. Only western face of the wall is exposed.

#### 6. STRUCTURE NO. 12 (Fig. 4.8)

- 1. Location : DLW, Square No. YB13 and Quadrant : 3
- 2. Type of structure: Ghost wall
- 3. Stratigraphic position: Sealed by layer (3)
- 4. Period and Structural phase: Period II, Kushan
- Measurement of structure: L-shaped structure (i) North to south (a) length 292 cm (b) width 30 cm (c) height 8 cm
  - (ii) East to west (a) length 132 cm (b) width 30 cm (c) height 8 cm
- Number of courses : One
- 7. Composition of mortar: Mud mortar
- 8. Orientation of longer axis : North-west to south-east
Senctates of Early Historical Period



Pl. 17.8 Burnt brick wall, Period II.

#### EXCAPATIONS AT DHALEWAN (1999-2006 & 2001-2002)

- 9. Nature of bricks used: Burnt-brick-bats
- 10. State of preservation: Not so good
- 11. Shape and other distinguishing feature: STR No. 12 comprises partially exposed two walls joining each other at right angle and showing southwestern corner of a room (?). The most parts of the walls were stolen and found as the ghost walls. The remaining part is showing only one course made out of burnt-brick-bats. The orientation of the walls perfectly follows cardinal direction.

#### STRUCTURE NO. 13 (PL 17.8)

- 1. Location : DLW, Square No. E11 and Quadrant : 1
- Type of structure: Partially exposed wall
- Stratigraphic position: Sealed by layer (7)
- 4. Period and Structural phase: Period II, Kushan
- 5. Measurement of structure: (a) length 170 cm approx.
- 6. Number of courses : One
- 7. Composition of mortar: Mud
- 8. Orientation of longer axis : North-south
- 9. Nature of bricks used: Burnt-brickbats
- 10. State of preservation: Good
- Shape and other distinguishing feature : STR No. 13 comprises a wall made out of brunt-brick-bats. Only eastern face of the wall is exposed.

### B. GUPTA PERIOD (PERIOD III)

### 1. STRUCTURE NO. 1 (Fig. 17.3 and Pl. 17.9)

- 1. Location : DLW, Square No, ZH5 and Quadrant : 4
- 2: Type of structure: U-shaped hearth
- Stratigraphic position: Sealed by layer (3)
- 4. Period and Structural phase: Period III, Gupta, Phase II
- 5. Measurement of structure : (a) length 65 cm (b) width 38 cm

Strummen of Early Historical Period



Fig. 17.3



### Structures of Laity Historical Period

- 6. Orientation of longer axis : East-West
- 7. State of preservation: Good
- 8. Shape and other distinguishing feature: STR No. 1 comprises a U-shaped hearth made of mud. Its mouth opens towards east. A mud floor was found in the surrounding area. This area was used as a kitchen in the Phase II of Gupta period. The width of the sidewall of the hearth found uniform all around which is of about 10 cm.

### 2. STRUCTURE NOS. 2 to 5 (Fig. 17.3 and PL 17.9)

- 1. Location : DLW, Square No. ZH5 and Quadrant : 4
- Type of structure: Partially exposed room.
- 3. Stratigraphic position: Sealed by layer (5)
- 4. Period and Structural phase: Period III, Gupta, Phase I
- Measurement of structure in cm : 94x70x18; 170x72x18; 230x34x18; 158x66x18
- 6. Number of courses : Two
- Masonry and bond: Only header; one row of header another of stretcher or viceversa; two rows of headers
- 8. Composition of mortar: Mud mortar
- 9. Orientation of longer axis : North-south to east-west
- 10. Nature of bricks used: Mud brick
- Dimension of bricks in cm : 40x24x10; 36x16x8
- 12. State of preservation: Good
- 13. Shape and other distinguishing feature: STR Nos. 2 to 5 comprise a partially exposed room and a wall attached in the south with the room. The room has a size of 195 cm x 164 cm (maximum available). The room is not exactly rectangular or squarish. It became narrow towards north. Only three sidewalls are exposed. The southern sidewall of the room made with single brick construction having a width of 38 cm. The western & eastern sidewalls are made of double brick construction but vary in their widths. The width of the walls is 72 cm (STR-3) (maximum available) and 66 cm (STR-5). Another wall (STR2) attached in the south-western corner on the outside is revealed with orientation towards northwest to south-east is made of double brick construction having a width of 70 cm (maximum available). The brick sizes used in construction tally with the sizes

of bricks of Harappan period. It seems that the people of Gupta period reused the Harappan bricks for constructing their houses.

Details of each structure :-

STR No. 2 :- A partially exposed mud brick wall made of double brick construction having a row of header and another row of stretcher with the orientation of the north-west to south-east. Measurement of the structure : length 94 cm (maximum available) x width 70 cm (maximum available) x height 18 cm; Number of courses - two; Brick size - 40 x 24 x 10 cm.

STR No. 3 :- A partially exposed western side mud brick wall of the room is made of double brick construction having a two row of header with the orientation of north to south. Measurement of the wall : length 170 cm (maximum available) x width 72 cm (maximum available) x height 18 cm; Number of courses - two; Brick size - 40 x 24 x 10 cm.

STR No. 4 :- A mud brick southern side wall of the room made of single brick construction having a single row of header with the orientation of roughly eastwest. Measurement of the wall : length 230 cm x width 34 cm x height 18 cm; Number of courses - two; Brick size - 36 x 16 x 8 cm.

STR No. 5 :- A partially exposed mud brick eastern side wall of the room made of double brick construction having a two row of header and another row of stretcher with the orientation of the north-west to south-east. Measurement of the wall : length 158 cm (maximum available) x width 66 (maximum available) x height 18 cm; Number of courses - two; Brick size - 40 x 24 x 10 cm.



# A. KUSHAN PERIOD, PERIOD II

The pottery of Kushan Period is represented mainly by a red ware industry which is plain as well decorated. The diagnostic types are small to large sized, oblique cutrim bowls with corrugated tapering profile and string-cut disc base, sprinklers and vases with stampted decoration. Besides vases with Rang Mahal type painting, vases with ledged neck, spouted vessels, vases with grooved rim, vases with painted as well as incised decoration, vases with roughened lower part, straight sided pots, lipped lamps, handled incense burners and lamp, *surahi* with or without an additional hole for releasing air, bowls, lid-cum-bowls, lid with a centrally placed button, narrow mouthed inkpot, large basin with or without decorated rim, channeled spout-basin, short to long spouts and elephant trunk like spout are other important shapes.

There are mainly five types of decorations traced on the pots at the site in this period 1. incised, 2. painted, 3. stamped, 4. combination of incised and painted or incised and stamped or all three and 5. chain of thumps-depression.

Incised designs generally made before firing and are shown with horizontal bands around the neck, notched triangles on the rim and wavy lines on the handle of lamp. Few pots have the combination of painted and incised decoration on shoulder or rim or both. The painted designs are executed with black in the form of horizontal bands, chain of semi-circles, hatched semi-circles, vertical lines, wavy lines, criss-cross design, chain of full black triangles, plants, etc. Noteworthy painted decorations, which closely resemble the painting of Rang Mahal tradition, are also found on the pots. Few decorated pot bears combination of painted decorations on rim and on shoulder, alongwith rope design in relief on waist (Fig. 18.3).

The stamped designs consist of triratna symbol, leaves, sun symbol, diamond, flower, circles, concentric circles, semi-circles, triangles, oblique slashes, etc. The chain of thumb depression found partly on carination or on rim.

- Jar of red ware with inturned beaked rim, concave neck and oblique sides, of coarse fabric showing an oxidized core, treated with red slip. From Period II.
- Jar of red ware with nail headed rim with a ledge below and concave neck, of medium fabric showing an oxidized core, treated with red slip. From Period II.

- Big jar of red ware with thickened externally grooved out curved rim, concave neck and oblique sides, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Jar of red ware with featureless rim and concave neck with a ledge, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Big jar of red ware with externally thickened intumed rim and concave neck, of medium fabric showing an oxidized core, treated with red slip. From Period IL
- Jar of red ware with broken rim, prominently ledged neck and down shoulder, of fine fabric showing an oxidized core, treated with red slip. From Period II.
- Big jar of red ware with thickened rim, grooved-concave neck and oblique sides, of fine fabric showing an oxidized core, treated with red slip. From Period II.
- Jar of red ware with nail headed rim, slightly concave neck, of coarse fabric showing an oxidized core, treated with red slip. From Period II.

- Pot of red ware with featureless rim, short concave neck, corrugated spherical body and disc base, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Pot of red ware with thickened featureless out turned rim, wide mouth, concave neck and carinated body, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Pot of red ware with broken rim, having a flange on the neck, elongated body and disc base, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Vase of red ware with externally grooved out-turned rim, concave neck and globular body with sagger base, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Pot of red ware with splayed out rim, wide mouth, concave neck and short corrugated body with flat base, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Pot of red ware with featureless rim, concave neck, straight and corrugated sides and flat base, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Pot of red ware with featureless rim, concave neck, mildly-carinated body and flat base, of medium fabric showing an oxidized core, treated with red slip. From Period II.







# EXCAUATIONS AT DILALEWAN (1995-2008 & 2081-2002)

Fig. 18.2

#### The Ponery

- Spouted pot of red ware with featureless rim, concave neck, short spherical body having a spout and flat base, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- 9. Spouted pot of red ware with out-turned drooping rim, concave neck, short spherical body having a spout and concave base, of medium fabric showing an oxidized core, treated with red slip. From Period II.

## Fig. 18.3

 Big jar of red ware with externally thickened grooved rim, almost straight neck and decorated globular body with sagger base, painted with black from rim to body making horizontal bands and continuous semi circles within, also making double cords in relief between painting, of medium fabric showing an oxidized core, treated with red slip. From Period II.

#### Fig. 18,4

- Jar of red ware with thickened out-turned rim, concave neck, expanding sides, painted with black showing a group of vertical bands on rim and a horizontal band on neck, of fine fabric showing an oxidized core, treated with red slip. From Period II.
- Big jar of red ware with thickened grooved rim, straight neck and expanding sides, painted with black showing horizontal bands, of fine fabric showing an oxidized core, treated with bright red slip. From Period II.
- Big jar of red ware with nail headed rim, concave neck with a ledge, painted with black showing wavy line on rim and horizontal bands on sides, of fine fabric showing an oxidized core, treated with bright red slip. From Period II.
- 4. Big jar of red ware with nail-headed rim, concave neck with a ledge and oblique sides, painted black on rim with hatched semi-circles with vertical strokes and horizontal bands on sides, of fine fabric showing an oxidized core, treated with bright red slip. From Period II.
- Big jar of red ware with thickened grooved rim, concave neck and expanding sides, painted with black making wavy line within horizontal bands, of fine fabric showing an oxidized core, treated with red slip. From Period II.
- Jar of red ware with broken rim, concave neck with a ledge and globular sides, painted with black making horizontal and vertical bands alternatively and semi circles, of fine fabric showing an oxidized core, treated with bright red slip. From Period IL



Fig. 18.3

 Spouled pot of red ware with out-turned featureless rim, concave neck, spherical body with a spout and flat base, of medium fabric showing an oxidized core, treated with bright red slip. From Period II.



Fig. 18,4

- Big jar of red ware with splayed out beaked rim, short concave neck, mildly carinated spherical body having roughened lower exterior, painted with black on the rim making hatched double lined semi circles with vertical lines, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Vase of red ware with nail headed rim, grooved and painted concave neck and oblique sides, painted with black showing horizontal bands and flower like impressed design, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Jar of red ware with nail headed rim decorated with notched lines, painted on the rim showing horizontal and vertical lines, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- 4. Fragmentary jar of red ware with broken rim, straight sides, painted with black showing filled in criss-cross design within horizontal bands and design in relief with circles in dots below, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Jar of red ware with broken rim, oblique sides, painted with black showing dots within squares, triangles with vertical strokes and cord design in relief below within horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From Period II.

- Vase of red ware with somewhat nail headed rim and concave neck, decorated externally with cord design in relief below the rim, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Vase of red ware with featureless splayed out rim, concave neck, oblique shoulder with a line of thumb-impressed design below, straight sides having thickened extra earth for roughened surface, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- 3. Vase of red ware with splayed out rim having thumb-impressed decoration, concave neck, oblique sides, carinated body and sagger base body decorated with incised designs above and extra earth below, of coarse fabric showing an oxidized core, treated with red slip. From Period II.
- 4. Vase of red ware with featureless rim, globular body with four lug handles having extra earth on the lower part of body probably to keep warm, of coarse fabric showing an oxidized core, treated with red slip. From Period II.







Fig. 18.6



#### The Postery

5. Vase of red ware with broken rim, oblique sides and carinated body decorated with impressed design showing floral design and plant like design, of medium fabric showing an oxidized core, treated with red slip. From Period II.

- Fragmentary jar of red ware with broken rim, oblique sides, decorated with impressed design in two registers. The upper register has circlets above the zigzag line, lower register having hanging spring like device and diamonds, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Fragmentary jar of red ware with broken rim, concave neck and oblique sides, decorated with impressed design showing a horizontal row of concentric semi circles with seriated border and leaf design, of fine fabric showing an oxidized core, treated with red slip. From Period II.
- Fragmentary jar of red ware with broken rim, straight sides, decorated with the rows of impressed leaves, semi circles with radiating lines and rope design, of fine fabric showing an oxidized core, treated with red slip. From Period II.
- Fragmentary jar of red ware with broken rim, oblique sides, making a row impressed triratna symbols dent over a rope design in relief, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Fragmentary jar of red ware with broken rim and oblique sides, decorated with two rows of incised concentric circles and leaves below horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Fragmentary jar of red ware with broken rim, oblique sides, decorated with two rows of incised strokes, triangles and flora design between the rows of oblique strokes, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Fragmentary jar of red ware with broken rim, oblique sides, decorated with incised concentric circles with seriated exterior, of medium fabric showing an oxidized core, treated with red slip. From an unstratified level.
- Fragmentary jar of red ware with broken rim, oblique sides, decorated with a row of incised leaves and painted band below a rope design, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Fragmentary jar of red ware with broken rim, oblique sides, decorated with a row of incised design showing plants and circles on either sides of the bands, of medium fabric showing an oxidized core, treated with red slip. From Period II.



Fig. 18.7

564



Fig. 18.8

EXCAVATIONS AT DILALEWAN (1999-2000 & 2001-2002)

 Fragmentary jar of red ware with broken rim, concave neck and oblique sides, decorated with incised design making horizontal lines of triangles and squares below, of medium fabric showing an oxidized core, treated with red slip. From Period II.

## Fig. 18.8

- Fragmentary jar of red ware with broken rim and down shoulder, decorated with a row of incised circlets between bands, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Fragmentary jar of red ware with broken rim, oblique sides, decorated with impressed floral design in a row and painted black bands below, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Fragmentary jar of red ware with straight neck and oblique sides decorated with the rows of impressed leaves and circlets in between black bands, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- 4. Fragmentary jar of red ware with broken rim and down shoulder, decorated with a row of semi circles with radiating lines in between incised lines, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- 5. Fragmentary jar of red ware with broken rim, down sides, decorated with impressed circle with two strokes and leave like design either at the top or bottom and floral pattern below, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Fragmentary jar of red ware with lotus like floral design in relief, of coarse fabric showing an incomplete oxidized core, treated with red slip layer. From Period II.
- Small vase of red ware with featureless rim, small concave neck, spherical body, having a spout (broken) and flat base, of coarse fabric showing an oxidized core, roughened lower body, treated with red slip. From Period II.
- Small pot of red ware with featureless rim, slightly concave sides with sagger base, decorated with leaf-like pattern, of medium fabric showing an oxidized core, treated with red slip. From Period II.

## Fig. 18,9

 Big jar of red ware with broken rim, oblique sides, painted with black showing group of horizontal bands and floral pattern with hatching in-between bands, of medium fabric showing an oxidized core, treated with red slip. From Period II.



Fig. 18.9

- Fragmentary jar of red ware with broken rim, oblique sides with a carination, painted with black showing group of horizontal bands and chain in-between, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- 3. Fragmentary jar of red ware with broken rim, oblique sides, painted with black showing oblique and wavy lines both within horizontal bands, a row of plants on the horizontal bands and a rope designed applique band below, of medium fabric showing an oxidized core, treated with bright red slip. From Period II.
- Fragmentary jar of red ware with broken rim, down sides, painted with black showing a tree above horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Fragmentary jar of red ware with broken rim and oblique sides, painted with black showing oblique and a chain both lines within horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Fragmentary jar of red ware with broken rim, down sides, painted with black showing continuous horizontal bands and spring like below, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Fragmentary jar of red ware with broken rim, down sides, painted with black showing oblique lines, triangles and chain all within horizontal bands and hatched-semicircles below, of medium fabric showing an oxidized core, treated with red slip. From Period II.

- Small pot of red ware with featureless rim, elongated body and flat base, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Lid-cum-bowl of red ware with flat top, tapering sides and featureless rim, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Long pot of red ware with featureless rim, concave neck, elongated body with corrugations and flat base, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Deep bowl of red ware with out-turned rim, tapering sides and prominent disc base, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Long-pot of red ware with beaked rim, concave neck, straight sides and flat base, of medium fabric showing an oxidized core, treated with red slip. From Period II.









Fig. 18.11



#### The Poster

 Bottle-shaped vase of red ware with slightly out-turned rim, straight neck, elongated straight body having corrugation and flat base, of medium fabric showing an oxidized core, treated with red slip. From Period II.

### Fig. 18.11

- Incense burner of red ware with horizontally splayed out rim, carinated body, hollow padestalled base and incised decorated loop handle, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Incense burner of red ware with horizontally splayed out rim, carinated body, disc base and a loop handle, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Vise of red ware with featureless rim, small concave neck, clongated body having corrugations and flat base, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Bowl of red ware with slightly out-turned beaked rim and mildly tapering sides, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Pot of red ware with beaked rim, concave neck having a prominent ledge, oblique sides, of medium fabric showing an oxidized core, treated with red slip. From Period IL.
- Bowl of red ware with featureless vertical rim, grooved-straight sides, flattish base, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Small bowl of red ware with out-turned rim, tapering sides, sagger base, of medium fabric showing an oxidized core, treated with red slip. From Period II.

- Long bottle necked sprinkler of red ware with a flanged rim top, a small conical knob opening and narrow neck, of fine fabric showing an oxidized core, treated with red slip. From Period II.
- Long bottle necked sprinkler of red ware with a flanged rim top, a small conical knob opening and narrow neck, of fine fabric showing an oxidized core, treated with red slip. From Period II.
- Long bottle necked sprinkler of red ware with a depressed flanged rim top, a truncated small conical knob opening and narrow neck, of fine fabric showing an oxidized core, treated with bright red slip. From Period II.





- 4. Long bottle necked sprinkler of red ware with a flanged rim top, a long conical knob opening and narrow neck, of fine fabric showing an oxidized core, treated with red slip. From Period II.
- Long bottle necked sprinkler of red ware with broken rim, narrow neck and globular body, of fine fabric showing an oxidized core, treated with red slip. From Period II.
- Long bottle necked sprinkler of red ware with a flanged rim top, a small conical knob opening and long narrow neck having corrugated interior, of fine fabric showing an oxidized core, treated with bright red slip. From Period II.
- 7. Long bottle necked sprinkler of red ware with a flanged rim top, a nipple like knob opening and narrow neck, of fine fabric showing an oxidized core, treated with red slip. From Period II.
- Bottle-necked flask of red ware with inturned rim, funnel-shaped mouth and narrow neck, of medium fabric showing an oxidized core, treated with red slip. From an unstratified level.
- Bottle-necked flask of red ware with inturned rim, funnel-shaped mouth having an additional hole through the neck for releasing air while filling/emptying, of fine fabric showing an oxidized core, treated with red slip. From an unstratified level.
- Neck portion of a bottle-necked flask of red ware, painted with black bands and hatched triangles below, showing an oxidized core, treated with red slip. From Period II.
- Surahi of red ware with out-turned beaked rim, long narrow neck and spherical body, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Surahi of red ware with drooping rim, ledged concave neck and spherical body, of fine fabric showing an oxidized core, treated with red slip. From an unstratified level.

The Poarry

- Handl of red ware with out-turned rim decorated with thumb-depressed design, concave neck, oblique sides with carination and sagger base, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Small vase of red ware with out-turned rim, down sides with a ledge and flat base, of coarse fabric showing an incomplete oxidized core, treated with red slip. From Period II.

EXCAUATIONS AT DIIALEWAN (1998-2009 & 2001-2002)



574

The Potters

- Bowl of red ware with featureless rim, corrugated tapering sides, disc base, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Lid-cum-bowl of red ware with flat base, tapering sides with a ledged interior and featureless rim, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Bowl of red ware with featureless rim, corrugated tapering sides, disc base, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Bowl of red ware with featureless rim, corrugated tapering sides, disc base, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Small pot of red ware with flat top having a hole, straight sides and out-turned rim base, of medium fabric showing an oxidized core, treated with red slip. From Period 11.

- Lid-cum-bowl of red ware with flat topped inturned rim, tapering sides and flat base, of medium fabric showing an oxidized core, treated with red slip. From Period IL.
- Lid of red ware, having out-turned rim, ledged tapering sides, centrally placed button and flat base, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Bowl of red ware with out-turned featureless rim, tapering sides with a carination and flat base, of medium fabric showing an oxidized core, treated with red slip. From Period II
- Lid of red ware with featureless rim, tapering sides, centrally placed button and flat base, of medium fabric showing an oxidized core, treated with red slip. From Period II
- Deep bowl of red ware with oblique cut rim, corrugated tapering sides, flat base, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Deep bowl of red ware with oblique cut rim, tapering sides having corrugated interior and flat base, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Deep bowl of red ware with oblique cut rim, corrugated tapering sides, flat base, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Ink pot of red ware with out-turned short rim, narrow mouth, straight neck, expanding shoulder, squatted body with double carnations and sagger base, of medium fabric showing an oxidized core, treated with red slip. From Period II.

EXCAVATIONS AT DHALEMAN (1999-2000 & 2007-2002)



Fig. 18.14





Fig. 18.15

- Basin of red ware with flared out rim, concave neck and convex sides, painted with black on the rim showing intersecting semi-circles and thumb-depression on lug handle, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Basin of red ware with externally thickened rim and tapering sides, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Basin of red ware with horizontally splayed out rim, concave sides and large flat base, of fine fabric showing an oxidized core, treated with red slip. From Period II.

### Fig. 18.16

- Basin of red ware with horizontally splayed out rim, tapering sides and large flat base, incised decoration showing vertical lines and chain design on the rim, of medium fabric showing an oxidized core, treated with red slip. From an unstratified level.
- Basin of red ware with featureless incurved rim, tapering sides and having cord design externally, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Pot of red ware with nail headed rim and down sides decorated with impressed design showing hanging chain, of continuous semi-circles below a cord, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Vase of red ware with broken rim, concave neck and oblique sides, decorated with impressed design showing leaves, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Vase of red ware with broken rim, concave neck, oblique sides, decorated with incised bands and impressed leaves, of medium fabric showing an oxidized core, treated with red slip. From Period II.

- Jar of red ware with out-turned thickened rim, decorated with groups of incised slashes, zigzag lines and row of continuous semi-circles and painted with black bands, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Jar of red ware with nail-headed rim, decorated with incised design, of medium fabric showing an oxidized core, treated with red slip. From Period II.



EXCAUATIONS AT DILALEWAN (1998-2000 & 2001-2002)





Fig. 18.18

- Jar of red ware with beaked rim, decorated with incised design showing vertical lines and chain, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Perforated pot of red ware with nail-headed rim, concave neck, perforated spherical body below grooved shoulder and sager base, of medium fabric showing an oxidized core, treated with red slip. From Period II.
- Perforated pot of red ware with nail headed rim, concave neck with a rib, perforations below down shoulder and sager base, of medium fabric showing an oxidized core, treated with red slip. From Period II.

- Lipped-lamp of red ware with incurved rim having a lip, convex sides and string cut flat base, of medium fabric, not so well fired, dull red in colour, devoid of any slip treatment. From Period II.
- Lipped-lamp of red ware with featureless incurved rim having a lip, convex sides, string cut disc base, of medium fabric, well fired, treated with a red slip, evidence of soot marks on the lip. From Period II.
- Lipped-lamp of red ware with sharp edged rim having a prominent lip, mildly tapering sides turning towards string cut disc base, of medium fabric, well fired, treated with a red slip, evidence of soot marks on the lip. From Period II.
- Fragment of a handled lamp of red ware with beaked rim, tapering sides, hollow pedestal stand with grooved sides, evidence of a broken handle, of medium fabric, well fired, treated with a red slip. From Period II.

## Fig. 18.19

- Spout fragment of a vase of red ware with a nipple shaped mouth and bulged body, of fine fabric having an oxidized core, treated with red slip. From Period 11.
- Spout fragment of a vase of red ware with broken rim and prominently bulged body at the lower end having decoration of thumb-depressed design, of medium fabric having an oxidized core, treated with red slip. From Period II.
- Spout fragment of a vase of red ware with nipple shaped narrow mouth and tapering sides having a bulge at the lower end, of medium fabric, an oxidized core, treated with red slip. From Period II.
- Spout fragment of a vase of red ware with featureless straight rim and straight body, of medium fabric having an oxidized core, treated with red slip. From Period II.


- Spout fragment of a vase of red ware with a nipple shaped narrow mouth and almost straight sides, of medium fabric, an oxidized core, treated with red slip. From Period II.
- Spout fragment of a vase of red ware with featureless rim and straight sides, of medium fabric, an oxidized core, treated with red slip. From Period II.
- Spout fragment of a vase of red ware with a nipple shaped opening having grooved exterior and curved body, of medium fabric having an oxidized core, treated with red slip. From Period II.
- Spout fragment of a vase of red ware with a nipple shaped opening and perfectly curved body showing an elephant trunk, of medium fabric having an oxidized core, treated with red slip. From Period II.
- Spout fragment of a vase of red ware with broken rim and curved body at the upper end, of medium fabric having an oxidized core, treated with red slip. From Period II.
- Spout fragment of a vase of red ware with a nipple shaped small opening and angularly bulge body at the lower end, of medium fabric having an oxidized core, treated with red slip. From Period II.
- Channeled spout fragment of a basin of red ware with horizontally projected channel, having rope designed decoration at the joint, of medium fabric, oxidized core, treated with red slip. From Period II.

# B. GUPTA PERIOD (Period III)

The pottery of Gupta Period (Period III) consists of largely red ware, both plain as well as decorated. Medium to fine fabric pottery recovered in this period. The Gupta characteristic footed base sharp-edged bowls found at the site with other red-slipped pottery. Amongst this, there are medium sized vases with grooved rim, spouted vases, carinated pots, spouted vessels having roughened lower, sprinkler, surahi like narrow mouthed pot, lid, lid-cum-bowls, basins, spouted basins, handled lamps, etc. which are important.

The decoration made on pottery is of painted design with black on red slipped surface, incised design and stamped design.

The painted designs consist of horizontal bands, wavy lines, arches, vertical strokes or sigma within horizontal bands, triangles, chain of triangles, dot in diamond, criss-cross design, semi circles, flower, leaves, plant, bird, peacock, etc. The Pointy

The incised designs include generally horizontal bands. Besides these, rope design in relief and notched designs also found.

The stampted design bears only chequer-pattern. The combination of painted and incised decoration also found on the pottery of this period.

#### Fig. 18.20

- Jar of red ware with beaked rim, grooved concave neck and shoulder and globular body, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Jar of red ware with beaked rim with a ledge, short concave neck and grooved oblique sides, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Small vase of red ware with featureless rim, concave neck, spherical body and flat base, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Small vase of red ware with featureless straight rim, spherical body and flat base, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Small pot of red ware with broken rim, carinated body and flat base, of medium fabric showing an oxidized core, treated with red slip. From Period III.

#### Fig. 18,21

- Handi of red ware with horizontally splayed out rim, grooved concave neck, oblique sides and carinated body having roughened sagger base, of fine fabric showing an oxidized core, treated with red slip. From Period III.
- Lid-cum-bowl of red ware with featureless rim having centrally luted large mouthed pot, painted externally with horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Vase of red ware with externally thickened grooved rim, grooved and concave neck, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Vase of red ware with out-turned rim, concave neck, spherical body having a small spout and flat base, of medium fabric showing an oxidized core, treated with red slip. From Period III.







 Jar of red ware with featureless vertical rim, concave neck, carinated body and flattish base, of medium fabric showing an oxidized core, treated with red slip. From Period III.

# Fig. 18.22

- Jar of red ware with flared out decorated rim, concave neck and spherical body, painted with black showing a row of full black triangles on the rim and horizontal bands on the shoulder and rope design on the rim externally, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Fragmentary jar of red ware with externally thickened grooved rim, short concave neck and oblique sides, painted with black showing horizontal bands on the shoulder and rope design on the rim, of mediam fabric showing an oxidized core, treated with red slip. From Period III.
- Fragmentary jar of red ware with out-turned thickened rim, short concave neck and oblique sides, painted with black showing horizontal bands, incised slashes and zigzag line on the rim, of medium fabric showing a complete oxidized core, treated with red slip. From Period III.

# Fig. 18.23.

- Big jar of red ware with flat-topped thickened rim, concave neck and spherical body with sagger base, painted with black showing vertical lines within horizontal bands, flower, comb and chequer design below and sigmas further below within horizontal bands and chain of semi-circles on the rim, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Big jar of red ware with out-turned beaked rim, concave neck and spherical body having a spout with roughened lower surface, of medium fabric showing an oxidized core, treated with red slip. From Period III.

# Fig. 18.24

- Bowl of red ware with horizontally splayed out rim, tapering sides and flat base with perforations, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Jar of red ware with beaked rim and concave neck, decorated with running notched design on the rim, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Jar of red ware with vertical rim and concave neck, having painted band and rope design below on the rim, of medium fabric showing an oxidized core, treated with red slip. From Period III.





Fig. 18.22









- Jar of red ware with broken rim and oblique sides, decorated with stamped designed chequer-pattern on the body, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Jar of red ware with broken rim and oblique sides, decorated with stampted designed chequer-pattern on the body, of medium fabric showing an oxidized core, treated with red slip. From Period III.

- Jar of red ware with nail headed rim, concave neck and oblique sides, painted with black showing horizontal and oblique strokes, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Jar of red ware with beaked rim, concave neck and oblique sides, painted with black showing triangles on the rim and horizontal bands on the shoulder, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Jar of red ware with broken rim and oblique sides, painted with black showing flying birds like design, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Jar of red ware with broken rim and oblique sides, painted with black showing hatched leaves, of fine fabric showing an oxidized core, treated with red slip. From Period III.
- Jar of red ware with broken rim and oblique sides, painted with black showing hatched chequer design and horizontal bands below, of fine fabric showing an oxidized core, treated with red slip. From Period III.
- Small bowl of red ware with broken rim, carinated body and flat base, painted with black showing bands and arches, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Jar of red ware with broken rim, oblique sides painted with black showing bands, chequer design and semi-circles within horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Jar of red ware with beaked rim, concave neck and oblique sides, painted with black showing horizontal bands, on shoulder and continuous semi-circles with bands on the rim, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Fragment of a basin of red ware with inturned rim, tapering sides and flat base, painted with black showing birds, wavy lines within bands internally and vertical strokes on the rim, of medium fabric showing an oxidized core, treated with red slip. From Period III.

The Poseo



Fig. 18.25

- Fragmentary pot of red ware with oblique sides, painted with black showing plant and oblique lines within horizontal bands below, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Fragmentary pot of red ware with oblique sides, painted with black showing vertical lines within horizontal bands and continuous arches, of fine fabric showing an oxidized core, treated with bright red slip. From Period III.
- Fragmentary pot of red ware with oblique sides, painted with black showing wavy lines, full black triangles, continuous arches and vertical lines within horizontal bands, of fine fabric showing an oxidized core, treated with red slip. From Period III.
- Fragmentary pot of red ware with oblique sides, painted with black showing horizontal bands, a chain, a peacock within horizontal bands, of fine fabric showing an oxidized core, treated with red slip. From Period III.
- Fragmentary pot of red ware with oblique sides, painted with black showing chequer design with horizontal bands, of fine fabric showing an oxidized core, treated with red slip. From Period III.
- Fragmentary pot of red ware with oblique sides, painted with black showing dot in diamond design and oblique lines within horizontal bands, of fine fabric showing an oxidized core, treated with red slip. From Period III.
- Fragmentary pot of red ware with oblique sides, painted with black showing a peacock within horizontal bands and chequer design, of fine fabric showing an oxidized core, treated with red slip. From Period III.
- Fragmentary pot of red ware with oblique sides, painted with black showing horizontal bands and a chain of triangles within bands, of fine fabric showing an oxidized core, treated with red slip. From Period III.

- Sprinkler-like bottle necked vase of red with some what wide top and truncated conical mouth opening, small concave neck, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Upper part of a sprinkler-like bottle necked vase of red ware with a depressed flange rim and a long conical mouth opening, of medium fabric showing an oxidized core, treated with red slip. From an unstratified level.



Fig. 18.26



Fig. 18.27

- Upper part of a sprinkler-like bottle necked vase of red ware with double ledged top and a conical mouth opening, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Rim of a subari of red ware with featureless vertical rim and ledged narrow neck, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Neck-part of a surahi of red ware with broken rim, mildly ledged neck and oblique sides, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Miniature pot (?) of red ware with splayed out rim, ledged neck and mildly carinated body, painted with black showing oblique strokes within horizontal bands, of medium fabric showing an oxidized core, treated with red slip. From unstratified level.

#### The Pollery

# Fig. 18.28 and Pl. 18.1

- Perforated bowl of red ware with featureless rim, tapering sides and perforated flat base, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Basin of red ware with out-turned rim and ledged carinated body, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Basin of red ware with oblique-cut rim, tapering sides and sagger base, of medium fabric showing an oxidized core, treated with red slip. From Period III. (PL 18.1)
- Deep basin of red ware with featureless inturned rim, tapering sides and flat base, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Basin of red ware with featureless inturned rim and convex sides having a rib, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Basin of red ware with featureless inturned rim, corrugated tapering sides and flat base, of medium fabric showing an oxidized core, treated with red slip. From Period III.

- Basin of red ware with horizontally splayed out grooved rim, having evidence of a lug handle, concave neck, convex sides, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Bowl of red ware with broken rim, tapering sides with a ledge and flat base having evidence of perforations, application of mud-paste showing fish-skin design or uneven surface internally, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Basin of red ware with somewhat nail headed rim and tapering sides decorated with double lines incisions showing zigzag pattern, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Basin of red ware with thickened rim, tapering sides having triple lines incisions showing zigzag pattern, of medium fabric showing an oxidized core, treated with red slip. From Period III.



Fig. 18.28





Pl. 18.1 Basin of Red ware.

EXCAUATIONS AT DHALEMAN (1999-2000 & 2001-2002)



Fig. 18.29

The Pulley

# Fig. 18.30

- Bowl-cum-lid of red ware with everted rim, tapering sides and disc base, of fine fabric showing an oxidized core, treated with red slip. From Period III.
- Bowl of red ware with featureless rim, tapering sides having corrugations and disc base, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Bowl of red ware with featureless rim, tapering sides and footed base, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Bowl of red ware with featureless rim, tapering sides having corrugations and disc base, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Lid-cum-bowl of red ware with discular top, tapering sides ledged internally and featureless rim base, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Lid-cum-bowl of red ware with discular top, tapering sides with a prominent ledge internally and featureless rim base, of medium fabric showing an oxidized core, treated with red slip, From Period III.
- Lid of red ware with a projected discular top, tapering sides with ledged prominently internally and featureless rim base, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Bowl of red ware with featureless rim, tapering sides having corrugations and disc base, of fine fabric showing an oxidized core, treated with red slip. From Period III.

- Deep bowl-cum-lid of red ware with nail-headed rim, tapering sides, and flat base, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Lid-cum-bowl of red ware with featureless rim, tapering sides with ledged internally and flat base, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Lid-cum-bowl of red ware with featureless rim, tapering sides with ledged internally and flat base, of medium fabric showing an oxidized core, treated with red slip. From Period III.



#### The Pamery

- Lid-cum-bowl of red ware with inturned rim, tapering sides and footed base, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Bowl of red ware with featureless rim, tapering sides and flat base, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Bowl of red ware with featureless rim, tapering sides and flat base, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Miniature lid-cum-bowl of red ware with featureless rim, thick tapering sides having ledged interior and disc base, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Miniature lid-cum-bowl of red ware with thickened concave rim, tapering sides and disc base, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Miniature lid of red ware with horizontally splayed out rim, tapering sides and button knob, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Solid miniature lid of grey ware with horizontally splayed out rim and thick knob, of medium fabric showing an oxidized core, treated with red slip. From Period III.

- Lamp of red ware having incurved rim with a small lip, tapering sides and string cut flat base, of medium fabric, showing an oxidized core, treated with a red wash. From Period III.
- Hand made small lamp of red ware with featureless rim, small tapering sides and flat base, of medium fabric, showing un-oxidized core, dull red in colour, devoid of any surface treatment. From Period III.
- Hand made lamp of red ware with wavy rim having small lips all over made by pinching the clay, straight sides and large flat base, of medium fabric, showing un-oxidized core, dull red in colour, devoid of any slip treatment. From Period III.
- Lamp stand of red ware with hollow pedestal stand with a string cut flat discular top, outwardly tapering sides and out-turned rim base, of medium fabric, showing un oxidized core, treated with a red slip on the exterior. From Period III.
- Small lamp of red ware with sharp edged incurved rim, small convex sides, string cut flat base, of medium fabric, showing an oxidized core, dull red in colour, devoid of any slip treatment. From Period III.



# ENCAVATIONS AT DITALEWAN (1999-2000 & 2001-2002)









- Lid-cum-bowl of red ware with featureless vertical rim, concavely tapering sides, string cut flat base, of medium fabric, showing un-oxidized core, dull red in colour, devoid of any slip treatment. From Period III
- Fragment of a lid of red ware with centrally placed concave button, tapering sides, string cut flat-cum-concave base, of medium fabric, showing an oxidized core, treated with a red slip. From period III.
- Fragment of a lid of red ware with centrally placed conical button, tapering sides, string cut flat base, of medium fabric, showing an oxidized core, dull red in colour, devoid of any slip treatment. From Period III.
- 9. Fragment of a handled lamp of red ware with nail headed rim having equidistantly placed triangular projections, tapering sides, short hollow pedestalled base, evidence of a broken handle, of medium fabric, showing an oxidized core, treated with a light red slip. From Period III.

- Spout fragment of a vase of red ware with featureless rim, grooved straight body having a mild bulge at the lower end, of medium fabric showing an oxidized core, treated with red slip. From Period III.
- Spout fragment of a vase of red ware with broken rim, tapering sides, of medium fabric, showing an oxidized core, treated with red slip. From Period III.
- Spout fragment of a vase of red ware with featureless rim, short and straight sides, of medium fabric, showing an oxidized core, treated with red slip. From Period III.
- Spout fragment of a vase of red ware with oblique-cut-rim, short and straight body expending at the lower portion, of medium fabric, showing an oxidized core, treated with red slip. From Period III.
- Spout fragment of a vase of red ware with nipple-like opening, short body having a bulge at the lower part, of medium fabric, showing an oxidized core, treated with red slip. From Period III.
- Spout fragment of a vase of red ware with oblique-cut-rim, tapering body, of medium fabric, showing an oxidized core, treated with red slip. From Period III.
- Wide-mouthed spout fragment of a vase of red ware with oblique-cut-flared out rim, concave body having a prominent bulge at the lower part, of medium fabric, showing an oxidized core, treated with red slip. From Period III.





 Fragment of a spouted basin of red ware with featureless rim, grooved tapering sides having a horizontally luted short concave spout, of medium fabric, showing an oxidized core, treated with red slip. From Period III.

# **OTHER POTTERY (PL. 18.2)**

 Perforated miniature pot with broken rim, short globular body and perforated flattish base, of medium fabric, showing an oxidized core, dull red colour, devoid of any surface treatment. From Kushan Period (Period II).

Measurements : Height (broken) 31.23 mm, breadth 41.07 mm

 Decorated spout of a vase with probably a horse mouthed face having luted eyes, of medium fabric, showing an oxidized core, treated with a fine red slip. From Gupta Period (Period III).

Measurements : Length (broken) 54.76 mm, breadth 47.04 mm, height 47.14 mm

 Miniature lamp with seriated rim looks like a flower, straight sides and flat base, of medium fabric, showing an oxidized core, devoid of any surface treatment. From Gupta Period (Period III).

Measurements : Height 18.92 mm, breadth 30.57 mm

 Miniature bowl with thickened square-cut rim, vertical sides and flat base, of medium fabric, showing un-oxidized core, devoid of any surface treatment. From Gupta Period (Period III).

Measurements : Height 30.47 mm, breadth 27,79 mm



Pl. 18.2 Other pottery.





There are only two terracotta sealings found at Dhalewan in the excavation belonging to Gupta Period (Period III). First sealing is partly broken. The seal impression is ovalish in shape and traced on the lump of levigated clay with almost convex back having few reed-impressions and is fairly well fired. Other sealing has a rectangular impression and convex back. Both sealings have legends in Gupta Brahmi script of 4th - 5th Cent. AD. The first sealing seems religious in character.

Specimens are described below.

#### Fig. 19.1 and Pl. 19.1

The impression bears a pair of human feet (*padukas*) prints and below it a line of a legend in Gupta Brahmi characters of 4th-5th cent. AD. A horizontal line separates the legend and footprints. The whole impression is enclosed by an elliptical borderline. The legend probably possesses at least four Brahmi letters in which last one is found broken. Remaining three can be read as *Ra ja dha* (*rama*) or (*mma*). The impression depicting a pair of human feet suggesting a symbolic representation of Buddhist emblem and it also occurs on scaling at other sites with or without legend viz. Bhita<sup>1</sup>, Rajghat<sup>2</sup> and Sanghol<sup>1</sup> respectively. From Period III. DLW, Reg. No. 690.

Measurements : diameter 48.16 mm, height 35.80 mm

## Pl. 19.2

Terracotta sealing : seal impression, rectangular in shape traced on the lump of clay having a convex back. The impression bears a legend in a Brahmi script of Gupta characters of 4-5th century AD. The legend possesses at least four letters in which first, second and last are properly readable and third one is hazy in visibility. It reads as vi ja ya gu and possibly belongs to Vijayagupta; not so well baked; grey in colour; roughly semi circular in shape. From Gupta Period (Period III). DLW, Reg. No. 92.

Measurements : diameter 40.92 mm, height 29.99 mm

Size of the seal impression : length 23,61 mm, breadth 12.23 mm

Sir John Marshall 2002 (Reprint) Excavation at Bhita in Annual Report (1911-12) of A.S.I, p. 58, pl: XXI.

K.K.Thapliyal 1972 Studies in Ascient Indian Scals, p. 61, pl. XVIII, no. 5.

GB.Sharma 1986 Coins, seals and sealing from Sanghol, p. 74, pl. IX.



Fig. 19.1 Terracotta sealing, Period III.



Pl. 19.1 Terracotta sealing, Period III.





Pl. 19.2 Terracotta scaling, Period III.





# INTRODUCTION

There are eleven coins which are recovered from the excavations at Dhalewan from Early Historical levels. Out of 11 coins, 3 and 4 belong to Gupta and Kushan periods respectively and remaining 4 collected from surface. In this lot, only one coin is of sliver and others are of copper. Silver coin roughly triangular bears Gupta Brahmi letters of 4-5th Century AD. Copper coins, shape wise divided into three broad categories viz. circular, roughly triangular and square. Size wise, these are medium to large. Unfortunately, most of the coins are found heavily corroded and after chemical cleaning they are so much defaced that it is difficult to identify these coins properly.

The individual description are given below :

# Pls. 20.1 & 20.2

- Copper coin : almost circular, diameter 19.80, thickness 2.96 mm, weight 2.200 gm. The coin is badly defaced. No proper identification is possible. From Period II. DLW, Reg. No. 578.
- Copper coin : circular, diameter 18.40 mm, thickness 2.88 mm, weight 4.558 gm. Obv. : standing human figure holding a *ayudha* in his right hand; *Rev.* : standing human figure. From Period II. DLW, Reg. No. 672.
- Copper coin : triangular with rounded corners; sides 18.90 x 18.90 x 17.00 mm; weight 5.150 gm Obv standing king wearing long coat. Rev : tree, From Surface. DLW, Reg. No. 319.
- Copper coin : circular; diameter 23.32 mm, thickness 4.76 mm, weight 8.124 gm. The coin badly corroded. No clear identification is possible. From Period II. This coin found from one of the rectangular chambers of STR No. 6. DLW, Reg. No. 415.



Pl. 20.1 Copper coins : Obverse views, Period II.





EXCAVATIONS AT DHALEWAN 17998-2000 & 2001-2002)

#### Pls. 20.3 & 20.4

- Copper coin : circular; diameter 22.23 mm, thickness 3.69 mm; weight 8.409 gm. The coin is defaced. No proper identification is possible. From Period III. DLW, Reg. No. 1248.
- Copper coin : circular; diameter 21.90 mm, thickness 4.20 mm, weight 8.600 gm. The coin is defaced; hence, the details are not very clear. Yet some identification shows Obv. standing human figure bearing long coat (?); Rev. completely defaced. From Period III. DLW, Reg. No. 86.
- Copper coin : circular; partly broken; diameter 20 mm, thickness 3.51 mm, weight 6.298 gm. The coin is defaced. The details are not so clear. Yet some identification shows Obv. standing human figure (?); Rev. tree like symbol(?). From Period III. DLW, Reg. No. 596
- Copper coin : circular, diameter 21.89 mm, thickness 2.97 mm, weight 5.881 gm. The coin has defaced at one side. Obv. Archer type standing figure of a Gupta King; Rev. also bears standing human figure. From Period III. DLW, Reg. No. 747.
- Silver coin : triangular with round corners; sides 14 mm; thickness 3.69 mm, weight 3.754 gm. Obv. and Rev. bear a letter sa of Brahmi script of Gupta characters of 4th-5th cent. AD, From Surface, DLW, Reg. No. 1059.
- Small copper coin : square; sides 9.98 x 9.55 mm, thickness 2.25 mm, weight 1.065 gm. The coin is defaced completely. No proper identification is possible. From surface, DLW, Reg. No. 79.
- Copper coin : circular; diameter 17.67 mm, thickness 3.11 mm, weight 5.796 gm. Obv. a tree like symbol with other unidentifiable symbol; Rev. consists two lotus petals and a Brahmi letter like ma, From surface. DLW, Reg. No. 73.


Pl. 20.3 Copper and silver coins : Obverse views, Period III.

#### EXCAUATIONS AT DHALEWAN (1999-2008 & 2001-2002)



Pl. 20.4 Copper and silver coins : Reverse views, Period III.

620

# Human and Animal Figurines MADHU BALA

#### INTRODUCTION

The excavation of Dhalewan yielded 54 terracotta figurines. Their period-wise distribution is shown in a table below. These are mostly hand-modelled. A few specimens are wheel made. The body of the figurines is wheel-made in a pot form, limbs and other parts luted thereon.

CHAPTER

The Kushan figurines are sturdy in built and are medium to big in size. These not so well fired. The core is remained smoky or dull red. It is not well polished and some time it is devoid of any slip or wash. Appliqué mutilus have seen on them. Incised designs are mostly used. Over all available figurines followed up peculiar features of Kushan period. Most notable human figurine is a head of male figure with a long beard. It wears a turkey cap. Another distinguish figurine is a head of sheep. It is highly decorated, sturdy built, very well fired and treated with a light red slip.

In Gupta period, mostly figurines met well fired and red slipped. A few figurines are hollow, half wheel made and half hand-made. The striation marks are visible at inner side. Most remarkable figure is a moulded plaque, although broken. It is depicted with a standing female figure, in tribhunga mudra. It is well fired and very well treated with a bright red slip.

Period	Number of Animal	Human Figure	Total
Kushan	18	5	23
Gupta	22	2	24
Unstratified	3	-	3
Surface	4	1 mil	4
Total	47	7	54

Table: Showing the numbers of terracotta figurines with their Periods

Selected specimens are described below :-

# A. HUMAN FIGURINES

# PL 21.1

1. Small human head : partly broken; frontal view; nicely hand modelled; prominently arched eyebrows, each shown with a ridge superimposed by pinching; the nose has also been marked out by pinching up the clay of the face, the eyes has been shown in the form of lotus petal and protruded; the ears are projected side ways and made by the appliqué technique, the lips are well

EXCAPATIONS AT DILALEWAN (1999-2000 & 2001-2002)



PI. 21.1 Terracotta human heads.







EXCAUATIONS AT DHALEMAN (1999-2000 & 2091-2002)

Pl. 21.3 Terracotta plaque showing lower half of a lady figure.

#### Human and Animal Figurines

marked out and shows the medial line; the chin is also well marked out; the dimple of chin is denoted by a small pinhole; twisted uneven moustaches, the head was fixed to a lower part of the body by means of a socket hole, solid; fine grained clay; well fired, greyish in colour. From Kushan Period. DLW, Reg. No. 791.

Measurements : length 40.34 mm, height 33.90 mm, thickness 32.43 mm,

2. Small male head : slightly broken; carefully hand modelled and not well finished figure; pinching face and neck; pin holed eyes; arched eyebrows; slit mouth; long beard, denoted with vertical incised lines, it wears a mildly drooping turkey cap. There is a vertical hole across the head through which a cord presumably passed in order to swing; solid; fine grained clay; sun baked; greyish mud colour. From Kushan Period, DLW, Reg. No. 1407.

Measurements : length 41.33 mm, breadth 21.17 mm, thickness 17.41 mm

#### PL 21.2

Human figurines : fragmentary; crudely hand modelled; three middle figurines closely seated on pedestal with back rest. Lotus petal shaped appliqué eyes and pinching thick noses; top headdress shown with three vertical triangular projections with apex upward. These are wearing *janeaeu* (scared thread) and headgears, which is beautified by a pinhole line; navel depicted by deep finger depression. The legs marked out by incised lines. It seems like a *saptmatreka* figurine seated in votive tank, no proper identification for male or female. From Kushan Period. DLW, Reg. No. 1756.

Measurements : length 66.45 mm, height 108.47 mm, thickness 95.47 mm

# PL 21.3

Plaque of female : a fine example of Gupta Period, fragment of a nicely moulded female figure, she may be standing in *tribhunga mudra*, the right leg is straight, the left leg bents at knee and crosses the right leg. She bears a waistband, kangan in hand and anklet in foot; her left hand falling on her knee; upper part of the body is missing; solid; fine grained clay; moderately baked; smoky core; treated with a thick bright ochre-red slip. From Gupta Period. DLW, Reg. No. 1.

Measurements : length 128.75 mm, height 83.76 mm, thickness 33.56 mm

EXCAPATIONS AT DIRALEWAN (1999-2008 & 2001-2002)



PL 21.4 Terracotta male figure.



Human and Animal Figurines



Pl. 21.5 Fragments of terracotta human figures.

# Pl. 21.4

Body part of a male figure : fragment of a partly handmade and partly wheel made figure; bulging chest and stomach, navel shown with deep incised lines, below it, multi deep lines denoted wrinkles of the stomach; further below male organ is shown; hollow; fine grained clay; well fired; reddish core; treated with red slip. It seems to be a spout of a pot. From Gupta Period. DLW, Reg. No. 99.

Measurements : length 58.24 mm, height 59.88 mm, thickness 48.88 mm

#### PL 21.5

 Foot of a human figure : fragment of a nicely hand modelled figure; it wears (uphunah) footwear, it is shown by multi-liner incised lines across the whole foot part up to the anklet. It shows leather(?) shoes; solid; medium grained clay; well fired; reddish core; treated with thick red slip. From Kushan Period. DLW, Reg. No. 16.

Measurements : length 48.27 mm, height 23.36 mm, thickness 24.56 mm

 Plaque of a human hand : fragment of a partly wheel made and partly handmade figure, the right hand bent at elbow, palm portion is broken, solid; medium grained clay; well fired; reddish core; treated with fine red slip on the exterior. From Kushan Period, DLW, Reg. No. 1736.

Measurements : length 40.10 mm, height 64.22 mm, thickness 14.46 mm

# B. ANIMAL FIGURINES

#### Pl. 21.6

Ram head : partly broken; nicely hand modelled figure; pellet eyes with pinhole pupil; pierced nostrils; slit mouth; rounded snout. It is decorated with single incised line; the curved horns having multi deep incised lines; the forehead decorated with a vertical series of multi pinholes enclosed by vertical incised lines; solid; fine grained clay; well fired, reddish core, treated with a dull red slip. From Kushan Period. DLW, Reg. No. 1486.

Measurements : length 66.80 mm, height 53.72 mm, thickness 78.93 mm

#### Pls. 21.7 & 21.8 (A and B)

 Bull : Fragment of a hand modelled figure; sturdy built with a short thick neck; hump merged with the head; truncated legs; having two pin holes near left side horn probably for eyes and ears; solid; fine grained clay; well fired; reddish core; treated with a thin red slip. From surface, DLW, Reg. No. 97. (Pl. 21.8 A)

Measurements : length 101.02 mm, height 106.46 mm, thickness 58.10 mm





Pl. 21.6 Terracotta ram.



 Undetermined animal : fragment of a nicely hand modelled figure; decorated with punching strips on the backs; two mild vertical lines below the neck; solid; fine grained clay; well fired. From Kushan Period. DLW, Reg. No. 354.

Measurements : length 76.20 mm, height 68.13 mm, thickness 45.00 mm

 Bull : fragment of a hand modelled figure; sturdy built; hump merged with the head; drooping mouth; appliqué pellets and pin holed eyes; truncated legs; broken back part; solid; fine grained clay; well fired; reddish core; treated with a thin red slip. From Surface. DLW, Reg. No. 1684.

Measurements : length 99.43 mm, height 94.37 mm, thickness 62.96 mm

 Undetermined animal : fragment of a hand modelled figure; truncated long legs; rounded hind; solid; fine grained elay; well fired; reddish core; treated with a thin red slip. From Gupta Period. DLW, Reg. No. 854.

Measurements : length 74,78 mm, height 68.24 mm, thickness 85.4 mm

 Undetermined animal : partly broken; hand modelled figure; rounded muzzle and slit mouth, it has round back; it is hollow may be a pedestal, solid; medium grained clay; well fired but core remained smoky; without any treatment. From Kushan Period, DLW, Reg. No. 1583. (Pl. 21.8 B)

Measurements : length 83.39 mm, height 55.67 mm, thickness 42.28 mm

 Elephant : fragment of crudely hand modelled figure; vertically shown rounded ear; uneven body surface; truncated small leg; trunk is missing; solid; medium grained clay; moderately backed; smoky core; pale colour. From Gupta Period. DLW, Reg. No. 841.

Measurements : length 78.91 mm, height 52.71 mm, thickness 41.69 mm

#### PL 21.9

 Bull : fragment of a nicely hand modelled figure; prominent hump; pin holed rounded eyes; slit mouth; short legs; it is decorated with multi deep incised lines all over the body. Top of the mouth of toy, there is a hole through which a cord was presumably passed in order to pull the toy (may be the holes for nostril part); solid; fine grained clay; although it is well fired but core is grey; thick reddish ocher slip. From Gupta Period. DLW, Reg. No. 1180.

Measurements : length 57.63 mm, height 52.71 mm, thickness 46.69 mm





Pl. 21.7 Terracotta animal figurines,



EXCAUATIONS AT DIIALEWAN (1998-2000 & 2001-2002)



A



B Pl. 21.8 Terracotta figurines, A - bull and B - pedestalled figure.

Human and Animal Figurines.

2. Bull : fragment of a hand modelled figure; pinching hump; pellet eyes; drooping mouth; it is decorated with multi mild-incised lines around the body and neck; upper part of toy there is a hole through which a cord was presumably passed in order to pull the toy; solid; medium grained elay; well fired; reddish core; red ocher colour. From Gupta Period. DLW, Reg. No. 327.

Measurements ; length 49.21 mm, height 42.12 mm, thickness 20.47 mm

 Horse : fragment of a hand modelled figure; slit mouth; oblique incised lines found on the head; on the neck of toy there is a vertical hole, it may be possible through which a cord was presumably passed in order to pull the toy, fine grained elay; well fired; reddish core; treated with light red slip. From surface, DLW, Reg. No. 379.

Measurements : length 56.19 mm, height 53.88 mm, thickness 49.88 mm

4. Fragment of a nicely hand modelled figure, may be it was a bull (?), its mouth has been marked out by punching, on tip of the mouth of toy there is a hole through which a cord was presumably passed in order to pull (may be the holes for nostril part), pin holed eyes and short incurved horns. It wears a decorated belt on the head; it is a sign of a domestication; solid; fine grained clay; although well fired but core is grey; thick reddish ocher slip. From Gupta Period. DLW, Reg. No. 971.

Measurements : length 30.28 mm, height 25.27 mm, thickness 32.56 mm

5. Head of a horse : fragment of a nicely hand modelled figure, long squarish muzzle; slit mouth; appliqué rounded pin holed eyes; pin holed nostrils; having three vertical incised lines on the head; solid; coarse grained clay; although it is well fired but core is greyish; treated with red slip. From Gupta Period. DLW, Reg. No. 3.

Measurements : length 54.67 mm, height 36.67 mm, thickness 30.82 mm

6. Head of a animal (?): fragment of nicely hand modelled figure, rounded appliqué pin holed eyes; slit mouth, pin holed nostrils; on the head having two pin holes; it wears a decorated helt around the neck; it is a sign of domestication; solid; fine grained clay; well fired; reddish core. Unstratified. DLW, Reg. No. 1127.

Measurements : length 41.48 mm, height 30 mm, thickness 18.34 mm

 Hump of a bull : fragment of a nicely hand modelled sturdy built piece; the entire body is covered with punched circlets enclosed with grooved lines; solid; fine grained clay; well fired; reddish core; treated with bright red slip. From Gupta Period. DLW, Reg. No. 745

Measurements : length 67.56 mm, height 42.40 mm, thickness 38.49 mm



Pl. 21.9 Terracotta animal figurines.

Human and Animal Figuriany

8. Head of a bull : fragment of a nicely hand modelled figure, bilge-ring eyes shown with incised lines; it is highly decorated with multi-incised lines all over the body; it wears a small belt on the neck; solid; fine grained clay; well fired; reddish core; it is treated with red slip. From surface. DLW, Reg. No. 2.

Measurements : length 33.15 mm, height 40.49 mm, thickness 41.99 mm

 Hump of a bull : fragment of a nicely hand modelled figure, prominent hump, decorated neck with oblique incised grooved line; solid; fine grained clay; well fired; reddish core; treated with a thin red slip. From Gupta Period. DLW, Reg. No. 1685.

Measurements : length 65.01 mm, height 51.78 mm, thickness 27.81 mm

#### Pl. 21.10

 Bird : fragment of a partly wheel made and partly handmade figure; thick beak; its wings are indicated by deep grooves; pellet eyes; short neck; hollow; coarse grained clay; although well fired but core is smoky; red colour. From Gupta Period. DLW, Reg. No. 75.

Measurements : length 44.39 mm, height 42.43 mm, thickness 31.80 mm

 Bird : partly broken; hand modelled figure; sitting on a pedestal; thick raised neck; feathers indicated by slightly pinched clay; solid; medium grained clay; almost well fired; reddish core; treated with a dull red slip. Unstratified. DLW, Reg. No. 358.

Measurements : length 69.29 mm, height 50.18 mm, thickness 27.55 mm

 Bird : partly broken; crudely hand modelled figure; pin holed eyes; high neck; damaged beak; solid; coarse grained clay; ill fired; dark greyish core; rough surface; without any treatment. From Gupta Period. DLW, Reg. No. 1330.

Measurements : length 49.21 mm, height 42.12 mm, thickness 20.47 mm

EXCAUATIONS AT DEALEWAN (1999-2000 # 2002-2002)



Pl. 21.10 Terracotta bird figurines.

# Beads and Pendants MADHU BALA



Dhalewan has yielded a large number of carnelian beads both fine as well as coarse, along with the some other material like quartz, amethyst, shell, terracotta, etc. from Kushan Period. The carnelian beads are mostly small to medium in size and light red to dark red in colour. The total number of carnelian beads is sixteen. Shell beads are mainly discular in shape with varying sizes. Collection of 41 beads of various sizes found at one place. It could be a broken garland, The terracotta beads are mainly *ghat* or vase and arecanut in shape.

CHAPTER

22

In the Gupta period, generally small sized spherical terracotta beads have been recovered. These are well fired. The number of beads is ten. In which seven beads are small, other two are medium and remaining one is largest. Latter is rectangular in shape and dark grey in colour. It bears a deep grooved line on its shorter side. It seems like a weaving tool. Besides beads of semi-precious stones, viz. carnelian, lapis lazuli, agate, onex, etc.; ivory and glass have also been found from this period.

Besides this, few pendants also recovered at Dhalewan are from Kushan levels. These are made out of shell, ivory, quartz and terracotta. A flower shaped shell pendant is a beautiful example of this period. One dagger shaped pendant of ivory is also a good specimen of Gupta Period.

#### A. BEADS

#### I. Beads, Kushan Period

Selected specimens are described below : -

#### **Carnelian** beads

# PL 22.1

- Small hoard of 9 carnelian beads : probably it was a part of garland. Five small beads almost same in colour and same in sizes; partly broken; light red colour; roughly spherical. From Kushan Period. DLW, Reg. No. 665. Measurements :
  - Length 7.11 mm, breadth 5.52 mm and diameter of hole 1.8 mm
  - (ii) Length 6.83 mm, breadth 5.68 mm and diameter of hole 1.6 mm
  - (iii) Length 8.14 mm, breadth 6.70 mm and diameter of hole 1.27 mm
  - (iv) Length 8.14 mm, breadth 6.21 mm and diameter of hole 1.12 mm

EXCAUATIONS AT DELALEWAN (1999-2000 & 2001-2002)



Pl. 22.1 Carnelian beads, Period II.

Beats and Pendents

- (v) Length 8.39 mm, breadth 5.56 mm and diameter of hole 1.30 mm
- (vi) Medium size carnelian bead : Blood red colour, truncated spherical. Length 11.27 mm, breadth 9.9 mm and diameter of hole 1.45 mm
- (vii) Small carnelian bead : Red colour with dark red and light reddish patches; roughly cylindrical. Length 12.85 mm, breadth 8.90 mm and diameter of hole 2.8 mm
- (viii) Medium size carnelian bead : Blood red colour; truncated spherical. Length 12.50 mm, breadth 10.50 mm and diameter of hole 1.62 mm
- (ix) Small carnelian bead : Partly broken; dull white colour; truncated and roughly spherical Length 9.5 mm, breadth 6.96 mm and diameter of hole 1.48 mm
- Medium size camelian bead : Partly broken; red colour with blood red patches; spherical. From Kushan Period. DLW, Reg. No. 611.

Measurements: Length 11.62 mm, breadth 10.18 mm and diameter of hole 1.90 mm

 Small carnelian bead : Partly broken; red colour; roughly spherical. From Kushan Period. DLW, Reg. No. 611.

Measurements: Length 7.73 mm, breadth 7.09 mm and diameter of hole 1.68 mm

 Small carnelian bead : Partly broken; light red in colour; roughly disc. From Kushan Period. DLW, Reg. No. 404.

Measurements: Length 5.30 mm, breadth 2.88 mm and diameter of hole 0.76 mm

 Tiny carnelian bead : Light red in colour; thin disc. From Kushan Period. DLW, Reg. No. 377.

Measurements: Length 4.74 mm, breadth 1.16 mm and diameter of hole 0.80 mm

 Small carnelian bead : red colour; small barrel, circular. From Kushan Period. DLW, Reg. No. 78.

Measurements: Length 6.73 mm, breadth 6.82 mm and diameter of hole 2.21 mm

 Small camelian bead : Partly broken; blood red in colour; roughly spherical. From Kushan Period. DLW, Reg. No. 406.

Measurements: Length 10.07 mm, breadth 7.01 mm and diameter of hole 2.12 mm

#### Semi-precious stone beads (Pl. 22.2)

 Medium size stone bead : pale white colour; roughly spherical. From Kushan Period. DLW, Reg. No. 925. Measurements: Length 11.17 mm, breadth 10.51 mm and diameter of hole 2.03 mm

 Medium size stone bead : grey colour, roughly spherical; decorated with white circles with a dot in the centre on the whole surface. From Kushan Period. DLW, Reg. No. 1189.

Measurements: Length 10.48 mm, breadth 10.08 mm and diameter of hole 2.86 mm

 Small stone bead : grey colour, cylindrical. From Kushan Period. DLW, Reg. No. 663.

Measurements: Length 6.24 mm, breadth 5.21 mm and diameter of hole 1.86 mm

 Small stone bead : black colour, roughly rectangular, From Kushan Period, DLW, Reg. No. 399.

Measurements: Length 7.98 mm, breadth 6.32 mm and diameter of hole 1.86 mm

 Small stone bead : black colour; roughly spherical; uneven surface. From Kushan Period, DLW, Reg. No. 184.

Measurements: Length 8.89 mm, breadth 7.41 mm and diameter of hole 1.90 mm

 Medium size amethyst bead : Light purple with dark purples bands; elongated. From Kushan Period. DLW, Reg. No. 661.

Measurements: Length 17.9 mm, breadth 8.12 mm and diameter of hole 1.38 mm

 Small stone bead : Black colour with pale bands; tubular. From Kushan Period. DLW, Reg. No. 739.

Measurements: Length 4.82 mm, breadth 3.18 mm and diameter of hole 1.10 mm

 Small stone bead : brown colour; roughly elongated; tubular. From Kushan Period. DLW, Reg. No. 799.

Measurements: Length 6.97 mm, breadth 3.65 mm and diameter of hole 1.50 mm

 Small stone bead : Pale white colour; roughly tubular. From Kushan Period. DLW, Reg. No. 1286.

Measurements: Length 6.16 mm, breadth 4.11 mm and diameter of hole 1.21 mm





Pl. 22.2 Semi-precious stone beads, Period II.

 Small quartz bead : Water colour; spherical. From Kushan Period. DLW, Reg. No. 60.

Measurements: Length 5.39 mm, breadth 4.27 mm and diameter of hole 1.50 mm

 Small shell bead : Pale white colour; tubular; roughly elliptical. From Kushan Period. DLW, Reg. No. 400.

Measurements: Length 4.27 mm, breadth 2.37 mm and diameter of hole 0.88 mm

 Small shell bead : Dull white colour; roughly triangular. From Kushan Period. DLW, Reg. No. 400.

Measurements: Length 6.25 mm, breadth 3.73 mm and diameter of hole 1.16 mm

 Small stone bead : dark grey colour, short tubular. From Kushan Period. DLW, Reg. No. 397.

Measurements: Length 2.96 mm, breadth 3.13 mm and diameter of hole 1.20 mm

 Small stone bead : Black colour; spherical. From Kushan Period. DLW, Reg. No. 397.

Measurements: Length 2.72 mm, breadth 1.82 mm and diameter of hole 1.11 mm

 Small stone bead : black in colour; roughly spherical. From Kushan Period. DLW, Reg. No. 402.

Measurements: Length 3.28 mm, breadth 3.59 mm and diameter of hole 1.04 mm

 Small stone bead : sea green in colour; tubular. From Kushan Period. DLW, Reg. No. 402.

Measurements: Length 1.96 mm, breadth 2.93 mm and diameter of hole 1.26 mm

 Small stone bead : sea green in colour; tubular. From Kushan Period. DLW, Reg. No. 402.

Measurements: Length 2.29 mm, breadth 2.40 mm and diameter of hole 1.08 mm

 Small stone bead : black in colour; tubular. From Kushan Period. DLW, Reg. No. 402.

Measurements: Length 1.46 mm, breadth 3.29 mm and diameter of hole 1.51 mm

Roads and Pendants

 Small stone bead : black in colour; tubular. From Kushan Period. DLW, Reg. No. 402.

Measurements: Length 2.08 mm, breadth 2.31 mm and diameter of hole 1.36 mm

 Small stone bead : black in colour; roughly spherical. From Kushan Period. DLW, Reg. No. 402.

Measurements: Length 1.76 mm, breadth 2.91 mm and diameter of hole 1.12 mm

 Small stone bead : sea green colour, tubular. From Kushan Period. DLW, Reg. No. 1170.

Measurements: Length 3.29 mm, breadth 2.85 mm and diameter of hole 1.04 mm

# Shell beads

# Pl. 22.3

 Small shell bread : buff colour; short cylindrical cum discular; circular. From Kushan Period. DLW, Reg. No. 608.

Measurements: Length 2.96 mm, breadth 11.94 mm and height 3.48 mm

 Big size shell bead : buff colour; short cylindrical cum discular; uneven surface. From Kushan Period. DLW, Reg. No. 996.

Measurements: Length 4.51 mm, breadth 22.25 mm and height 2.67 mm

 Small shell bread : dull buff colour; roughly short cylindrical cum discular; uneven edge, From Kushan Period, DLW, Reg. No. 608.

Measurements: Length 3.48 mm, breadth 8.46 mm and height 1.48 mm

 Small shell bead i buff colour; short cylindrical. From Kushan Period. DLW, Reg. No. 1115.

Measurements: Length 4.62 mm, breadth 5.22 mm and height 2.34 mm

 Small shell bead : buff colour, roughly crescent shape. From Kushan Period. DLW, Reg. No. 873.

Measurements: Length 6.73 mm, breadth 2.00 mm and height 1.46 mm

Small shell bead : buff colour; tubular. From Kushan Period. DLW, Reg. No. 873.
Measurements: Length 4.86 mm, breadth 3.14 mm and height 1.21 mm

EXCAVATIONS AT DRALEWAN (1999-2000 & 2001-2002)



Pl. 22.3 Shell beads, Period II.

#### Bouds and Pendants

 A lot of 41 shell beads perhaps it is part of garland : buff colour; all are short cylindrical cum discular; uneven surface; roughly circular. From Kushan Period. DLW, Reg. No. 594.

Measurements: Length 5.04 mm, breadth 27.32 mm and height 3.20 mm (Largest in a lot)

Measurements: Length 3.06 mm, breadth 8.16 mm and height 2.21 mm (Smallest in a lot)

#### Ghat shaped terracotta beads

#### PL 22.4 and Fig. 22.1

 Small ghat shaped bead : Concave neck; rounded base; circular; well fired; treated with fine other slip. From Kushan Period. DLW, Reg. No. 729. (Fig. 22.1, No. 2)

Measurements: Length 16.88 mm, breadth 19.33, diameter of hole

 Medium ghut shaped bead : Straight neck; rounded body and base; circular; well fired; without any treatment; dull red colour. From Kushan Period. DLW, Reg. No. 1043. (Fig. 22.1, No. 1)

Measurements: Length 24.20 mm, breadth 14.11 mm and diameter of hole 7.62 mm

 Medium ghat shaped bead : Narrow at the neck; rounded body; flat base; circular; well fired; with out any treatment; red in colour. From Kushan Period. DLW, Reg. No. 916. (Fig. 22.1, No. 3)

Measurements: Length 16.47 mm, breadth 20.52 mm and diameter of hole 6.72 mm

 Small ghat shaped bead : Grooved neck at the middle; squatted and round body; flattish base; circular; well fired; treated with thin light red slip. From Kushan Period. DLW, Reg. No. 495. (Fig. 22.1, No. 4)

Measurements: Length 12.66 mm, breadth 17.94 mm and diameter of hole 5.34 mm

 Medium ghat shaped bead : Narrow at the neck; top part having a mild grooved circle; ocher red slip; ocher colour. From Kushan Period. DLW, Reg. No. 840. (Fig. 22.1, No. 5)

Measurements: Length 12.69 mm, breadth 20.77 mm and diameter of hole 9.15 mm

 Medium ghat shaped bead : Broken; round base; well fired; without any treatment. From Kushan Period. DLW, Reg. No. 952, (Fig. 22.1, No. 6)

EXCAVATIONS AT DIIALEWAN (1999-2000 & 2001-2092)



Fig. 22.1 Ghat shaped terracotta beads, Period II.



Pl. 22.4 Ghat shaped terracotta beads, Period II.

645

Book and Pendamy

Measurements: Length 10.52 mm, breadth 23.71 mm and diameter of hole. 5.28 mm

# Arecanut shaped terracotta beads

#### PL 22.5 and Fig. 22.2

 Big size bead : arecanut shape; concave base; mild grooves on the lower part; moderately backed; treated with dark grey slip; dull grey colour. From Kushan Period. DLW, Reg. No. 25. (Fig. 22.2, No. 1)

Measurements: Length 27.96 mm, breadth 35.43 mm and height 4 mm

 Big size bead : arecanut shape; concave base; ill fired; treated with grey slip; dull red colour. From Kushan Period. DLW, Reg. No. 749. (Fig. 22.2, No. 2)

Measurements: Length 25.55 mm, breadth 29.64 mm and height 4.52 mm

 Big size bead : arecanut shape; concave base; burning marks on the upper part; moderately backed; without any treatment; dull red colour. From Kushan Period. DLW, Reg. No. 1298. (Fig. 22.2, No. 3)

Measurements: Length 25.22 mm, breadth 32.40 mm and height 4.54 mm

 Big size bead : arecanut shape; concave base; mild grooves on the top; moderately backed; treated with dark grey slip; grey colour. From Kushan Period. DLW, Reg. No. 617. (Fig. 22.2, No. 4)

Measurements: Length 25.80 mm, breadth 28.41 mm and height 3.64 mm

 Medium size bead ; arecanut shape; moderately backed; treated with grey colour; dull grey colour. From Kushan Period. DLW, Reg. No. 962. (Fig. 22.2, No. 5)

Measurements: Length 20.65 mm, breadth 25.59 mm and height 2.92 mm

 Medium size bead : arecanut shape; moderately backed; treated with grey colour; dull grey colour. From Kushan Period. DLW, Reg. No. 962. (Fig. 22.2, No. 9)

Measurements: Length 20.65 mm, breadth 25.59 mm and height 2.92 mm

 Medium size bead : arecanut shape; flat base; moderately backed; treated with wash; red colour. From Kushan Period. DLW, Reg. No. 617. (Fig. 22.2, No. 7)

Measurements: Length 16.68 mm, breadth 23.39 mm and height 4.37 mm



Pl. 22.5 Arecanut shaped terracotta beads, Period II.



Fig. 22.2 Arecanut shaped terracotta beads, Period II.

 Medium size bead : arecanut shape; flat base; mild grooves on the surface; well fired; treated with red slip; red colour. From Kushan Period. DLW, Reg. No. 1187. (Fig. 22.2, No. 13)

Measurements: Length 16.22 mm, breadth 24.84 mm and height 3.22 mm

 Medium size bead : arecanut shape; concave base; well fired; without any treatment; dull red colour. From Kushan Period. DLW, Reg. No. 315. (Fig. 22.2, No. 6)

Measurements: Length 20.24 mm, breadth 26.56 mm and height 3.50 mm

 Big size bead : arecanut shape; concave base; moderately backed; burning marks on the lower part; treated with grey slip. From Kushan Period. DLW, Reg. No. 617. (Fig. 22.2, No. 10)

Measurements: Length 68 mm, breadth 22 mm and height 48 mm

 Small size bead : arecanut shape; flat base; well fired; treated with thin red slip. From Kushan Period. DLW, Reg. No. 5. (Fig. 22.2, No. 11)

Measurements: Length 17.90 mm, breadth 23.30 mm and height 4.26 mm

 Medium size bead : arecanut shape; concave base; moderately backed; treated with grey colour. From Kushan Period. DLW, Reg. No. 1042. (Fig. 22.2, No. 12)

Measurements: Length 17.90 mm, breadth 23.30 mm and height 4.26 mm

 Medium size bead : arecanut shape; flat base; mild grooves on the middle part; well fired; treated with faint grey colour. From Kushan Period. DLW, Reg. No. 1187. (Fig. 22.2, No. 8)

Measurements: Length 20.31 mm, breadth 25.36 mm and height 3.52 mm

 Medium size bead : arecanut shape: concave base; moderately backed; treated with dull red colour. From Kushan Period. DLW, Reg. No. 617. (Fig. 22.2, No. 14)

Measurements: Length 17.90 mm, breadth 23.30 mm and height 4.26 mm

#### Other terracotta beads

#### Pl. 22.6 and Fig. 22.3

 Big size bead : spherical, well fired; without any treatment; grey colour. From Kushan Period. DLW, Reg. No. 587. (Fig. 22.5, No. 3)

650



Fig. 22.3 Other terracotta beads, Period II.



Pl. 22.6 Other terracotta heads, Period II.



Measurements: length 21.93 mm, breadth 23.33 mm height 3.74 mm

 Big size bead : short bicone; well fired; without any treatment; grey colour. From Kushan Period. DLW, Reg. No. 662. (Fig. 22.5, No. 1)

Measurements: length 13.44 mm, breadth 27.68 mm height 14.95 mm

 Medium size bead : cylindrical; roughly luted; uneven surface; well fired; without any treatment; grey colour. From Kushan Period. DLW, Reg. No. 1146. (Fig. 22.5, No. 2)

Measurements: length 17.69 mm, breadth 11.35 mm height 3.68 mm

 Small size head : short barrel; well fired; without any treatment; grey colour. From Kushan Period. DLW, Reg. No. 363. (Fig. 22.5, No. 5)

Measurements: length 6.73 mm, breadth 9.23 mm and height 2.82 mm

 Small size bead : short barrel; well fired; without any treatment; grey colour. From Kushan Period. DLW, Reg. No. 396. (Fig. 22.5, No. 4)

Measurements: length 6.78 mm, breadth 9.86 mm and height 1.98 mm

#### II. Beads, Gupta Period

#### Semi-precious stone beads

#### Pl. 22.7 and Fig. 22.4

 Big ivory bead : pale colour; short cylindrical; uneven surface. From Gupta Period. DLW, Reg. No. 862. (Fig. 22.4, No. 6)

Measurements: Length 12:18 mm, breadth 15:04 mm and diameter of hole 2:68 mm

 Medium stone bead : dull white colour with light greenish patches; roughly spherical; uneven surface. From Gupta Period. DLW, Reg. No. 1319. (Fig. 22.4, No. 5)

Measurements: Length 8.82 mm, breadth 12.13 mm and diameter of hole 2.26 mm

 Medium carnelian bead : ocher colour with white patches; spherical. From Gupta Period. DLW, Reg. No. 1237. (Fig. 22.4, No. 4)

Measurements: Length 8.87 mm, breadth 11\_14 mm and diameter of hole 2.06 mm



Fig. 22.4 Semi-precious stone beads, Period III.



Pl. 22.7 Semi-precious stone beads, Period III.

653

 Medium carnelian bead : ocher colour; roughly spherical; truncated. From Gupta Period. DLW, Reg. No. 1061. (Fig. 22.4, No. 3)

Measurements: Length 5.96 mm, breadth 7.52 mm and diameter of hole 1.38 mm

 Small carnelian bead : ocher colour; short bicone; circular. From Gupta Period. DLW, Reg. No. 1063. (Fig. 22.4, No. 2)

Measurements: Length 5.06 mm, breadth 9.62 mm and diameter of hole 3.22 mm

 Medium carnelian bead : ocher colour; roughly spherical. From Gupta Period. DLW, Reg. No. 577, (Fig. 22.4, No. 15)

Measurements: Length 7.58 mm, breadth 9.79 mm and diameter of hole 1.97 mm

 Big carnelian bead : partly broken; ocher colour: spherical. From Gupta Period. DLW, Reg. No. 243. (Fig. 22.4, No. 1)

Measurements: Length 11.97 mm, brendth 14.35 mm and diameter of hole 2.53 mm

 Medium glass bead : black colour; cylindrical; uneven surface. From Gupta Period. DLW, Reg. No. 1060. (Fig. 22.4, No. 16)

Measurements: Length 10.42 mm, breadth 4.64 mm and diameter of hole 2.29 mm

 Small lapis lazuli bead : purple colour; clongated; roughly triangular in section. From Gupta Period. DLW, Reg. No. 507, (Fig. 22.4, No. 13)

Measurements: Length 11.66 mm, breadth 6.46 mm and diameter of hole 1.72 mm

 Medium Iapis Iazuli bead : purple colour, bicone with fluted surface. From Gupta Period. DLW, Reg. No. 205. (Fig. 22.4, No. 14)

Measurements: Length 13.21 mm, breadth 6.19 mm and diameter of hole 1.04 mm

 Medium agate bead : black colour with white bands; cylindrical. From Gupta Period. DLW, Reg. No. 1590. (Fig. 22.4, No. 11)

Measurements: Length 8.53 mm, breadth 4.42 mm and diameter of hole 1.82 mm

 Small glass bead : green colour; tubular. From Gupta Period. DLW, Reg. No. 541. (Fig. 22.4, No. 8)

Measurements: Length 3.33 mm, breadth 2.97 mm and diameter of hole 1.32 mm
Beach and Pundants

 Small lapis lazuli bead : purple colour; roughly spherical. From Gupta Period. DLW, Reg. No. 1135. (Fig. 22.4, No. 7)

Measurements: Length 4.09 mm, breadth 4.34 mm and diameter of hole 1.48 mm

 Small glass beads (two beads attached together) : white and brownish colour; short barrel; grooved. From Gupta Period. DLW, Reg. No. 989. (Fig. 22.4, No. 9)

Measurements: Length 8.16 mm, breadth 3.95 mm and diameter of hole 1.32 mm

 Small agate bead : black colour with white bands; broken; barrel; circular. From Gupta Period. DLW, Reg. No. 1402. (Fig. 22.4, No. 10)

Measurements: Length 7.86 mm, breadth 5.42 mm and diameter of hole 1.97 mm

 Small agate bead : black with dull white colour bands; almost spherical. From Gupta Period. DLW, Reg. No. 1240. (Fig. 22.4, No. 12)

Measurements: Length 6.40 mm, breadth 7.79 mm and diameter of hole 1.88 mm

 Small onex bead : black colour with brownish bands; spherical. From Gupta Period, DLW, Reg. No. 607. (Fig. 22.4, No. 17)

Measurements: Length 7.59 mm, breadth 9.03 mm and diameter of hole 1.48 mm

#### Terracotta Beads

#### Pl. 22.8 and Fig. 22.5

 Biggest size in lot of beads : lenteculated rectangular; deep incised lines on two shorter sides; it may be a weaving tool; well fired; treated with dark grey slip; dark grey colour. From Gupta Period. DLW, Reg. No. 583. (Fig. 22.5, No.1)

Measurements: Length 64.97 mm, breadth 20.88 mm and height 10 mm

 Medium size bead : partly broken; short bicone; truncated; well fired; without any treatment; dull red colour. From Gupta Period. DLW, Reg. No. 224. (Fig. 22.5, No. 3)

Measurements: Length 11.56 mm, breadth 24.68 mm and height 13.88 mm

 Medium size bead : partly broken; convex sides; circular; decorated with three rows of nail marks around the profile; ill fired; without any treatment; pale colour. From Gupta Period. DLW, Reg. No. 1441. (Fig. 22.5, No. 2)

Measurements: Length 14.80 mm, breadth 31.11 mm and height 16.35 mm



Pl. 22.8 Terracotta beads, Period III.





Fig. 22.5 Terracotta beads, Period III.

 Small bead : roughly spherical; well fired; without any treatment; dull red colour. From Gupta Period. DLW, Reg. No. 247, (Fig. 22.5, No. 4)

Measurements: Length 15,70 mm, breadth 14.23 mm and diameter of hole 2.84 mm

 Small bead : spherical; ill fired; treated with grey colour; greyish colour. From Gupta Period. DLW, Reg. No. 1303. (Fig. 22.5, No. 10)

Measurements: Length 11.38 mm, breadth 9.70 mm and diameter of hole 3.22 mm

 Small bead : partly broken; roughly spherical; ill fired; without any treatment; grey colour. From Gupta Period. DLW, Reg. No. 1084, (Fig. 22.5, No. 7)

Measurements: Length 12.72 mm, breadth 12.29 mm and diameter of hole 4.20 mm

 Small bead : roughly spherical; sun baked; mud grey colour. From Gupta Period. DLW, Reg. No. 63. (Fig. 22.5, No. 5)

Measurements: Length 14.86 mm, breadth 11.19 mm and diameter of hole 2.21 mm

 Small bead : spherical; well fired; without any treatment with pale red colour. From Gupta Period. DLW, Reg. No. 1198. (Fig. 22.5, No. 8)

Measurements: Length 11.42 mm, breadth 9.42 mm and diameter of hole 1.82 mm

 Small bead : spherical; sun baked; without any treatment; mud grey colour. From Gupta Period. DLW, Reg. No. 721. (Fig. 22.5, No. 6)

Measurements: Length 12.32 mm, breadth 11.81 mm and diameter of hole 1.63 mm.

 Small bead : spherical; ill fired; treated with grey slip. From Gupta Period. DLW, Reg. No. 576. (Fig. 22.5, No. 9)

Measurements: Length 9.91 mm, breadth 9.79 mm and diameter of hole 2.99 mm

#### B. PENDANTS

## lvory and shell pendants

#### Pl. 22.9 and Fig. 22.6

 Small ivory pendant : long conical tip; short concave neck; semi circular in section; oblique pin hole perforation. Unstratified. DLW, Reg. No. 45. (Fig. 22.6, No. 5)

658





EXCAUATIONS AT DILALEWAN (1999-2000 & 2001-2002)



Fig. 22.6 Pendants.

Bends and Pendants

Measurements: Length 14,48 mm, breadth 3.78 mm and thickness 2.82 mm

 Small flower shaped shell pendant : consisting of six petals; perforation through upper two petals. From Kushan Period. DLW, Reg. No. 1328. (Fig. 22.6, No. 6)

Measurements: Diameter 16.80 to 15.50 mm, thickness 4 mm

 Big size ivory pendant : dagger shaped; decorated on one side with incised running designs of dot in circles around the border and groups of three dots in circles placed at the middle and top; two perforations. From Gupta Period. DLW, Reg. No. 251. (Fig. 22.6, No. 3)

Measurements: Length 51.35 mm, breadth 19.82 mm and thickness 5.14 mm

## Terracotta & Stone Pendants

## Pl. 21.10 and Fig. 22.6

 Small quartz pendant : white colour; conical; truncated; rounded sides. From Kushan Period. DLW, Reg. No. 1188. (Fig. 22.6, No. 4)

Measurements: length 15.29 mm, breadth 8.88 mm and hole 1.52 mm

 Medium size : pendant, elliptical; milky white with dark spotted surface; partly broken; uneven surface. From Kushan Period. DLW, Reg. No. 1227. (Fig. 22.6, No. 7)

Measurements: length 24.68 mm, breadth 15.47 mm and height broken

 Big size terracotta pendant : partly broken; long conical; flat base; transverse hole; well fired without any treatment; red colour. From Kushan Period. DLW, Reg. No. 801. (Fig. 22.6, No. 2)

Measurements: length 47.70 mm, diameter (max.) 12.84 mm to diameter (min.) 6 mm and hole 1.55 mm

 Big size (largest in the lot) terracotta pendant : cuboid; uneven surface; sun backed; without any treatment; grey mud colour. From Kushan Period. DLW, Reg. No. 1544. (Fig. 22.6, No. 1)

Measurements: length 57.61 mm and breadth 21.87 mm



EXCAUATIONS AT DIFALEWAN (1999-2000 & 2001-2002)



Pl. 22.10 Terracotta and stone pendants.



## INTRODUCTION

Amongst the metal objects, about 32 of Iron and 4 of copper have been recovered at the site. Out of 32 Iron objects, 18 belong to Gupta and 14 to Kushan Periods as shown in Table 1. The Iron objects are broadly divided into three categories viz, agriculture equipments i.e. sickles, *khurpa*; weapons i.e. spearhead, hilt of weapon and other miscellaneous objects i.e. nails, ring, door sockets, *kanni* etc.

Periods	Nail	Clamp/ Thin plate	Ring/ Kundi	Kauni/ Khurpa	Spear head	sickle	Hilt of dagger	stug	Uniden- utied	Total
Kushan, Period II	5	1	2	1	1	2		1	2	34
Gupta, Period III	14	2	U.	t	=	1	<u> </u>	<b>1</b> .1	ं 👘	18
Total	.9	2	3	3	Ť	3	1) -	3	9	52

#### Table 1 showing Period-wise occurrence of Iron Objects

Copper objects include an arrowhead, a ring and two unidentified objects. The table 2 presents a stratigraphical data of the copper objects.

Objects	Arrow Head	Ring	Unidentified	Total	
Kushan, Period II	1	=	2	2	
Gupta, Period III	Period III 1			2	
Tittal	ital E		2	4	

Table 2 showing Period-wise occurrence of Copper Objects

In comparison to Iron objects, the copper objects found in very less in numbers. It indicates towards a poor or not so rich economy were there at Dhalewan in Periods II and III.

Selected specimens are described belowi-

#### A. IRON OBJECTS

#### Pl. 23.1 and Fig. 23.1

 Nail : fragmentary; oval head; square section; somewhat tapering sides to a pointed end. From Period III. DLW, Reg. No. 32, (Fig. 23.1, No. 1)

Measurements : Length 77.81 mm and thickness 11.71 mm



EXCAVATIONS AT DRALEWAN (1999-2000 & 2001-2002)

Pl. 23.1 Iron objects.

664





Fig. 23.1 Iron objects.

 Nail : fragmentary; circular cap-shaped head; circular section; lower part is broken. From Period III. DLW, Reg. No. 32. (Fig. 23.1, No. 2)

Measurements : Length 34,04 mm and thickness 13,24 mm

 Thin plates : fragmentary; two thin rectangular-shaped plates with riveted nails at both ends probably used for fastening the wooden door-pans as a clamp or socket. From Period III. DLW, Reg. No. 196. (Fig. 23.1, No. 3)

Measurements : Length 53.31 mm, breadth 25.16 mm and thickness 5.60 mm

 Nail : drooping hooked-head, circular section, tapering sides to a pointed end. From Period III, DLW, Reg. No. 866. (Fig. 23.1, No. 4)

Measurements : Length 38.89 mm, breadth 16.11 mm and thickness 6.44 mm

 Nail : bented rectangular head, rectangular section, tapering sides to a pointed end. From Period III. DLW, Reg. No. 1381. (Fig. 23.1, No. 6)

Measurements : Length 56.82 mm, breadth 11.54 mm and thickness 6.37 mm

 Thin plate : (broken) thin rectangular plate with the evidence of riveted nails at both ends. Plate is similar to Sr. No. 3, From Period III. DLW, Reg. No. 196. (Fig. 23.1, No. 5)

Measurements : Length 64.86 mm, breadth 25.92 mm and thickness 4.90 mm

 Ring : fragmentary, circular with round section, probably a part of a kundi for door. From Period II. DLW, Reg. No. 1594. (Fig. 23.1, No. 7)

Measurements : Diameter 3.7 mm and thickness 9.19 mm

 Small Kanni : fragmentary; mason - instrument for plaster work; lozenge shaped flat plate with thin rectangular-sectioned bented handle at the one end for fixing into wooden handle. From Period II. DLW, Reg. No. 1593. (Fig. 23.1, No. 8)

Measurements : Length 46.92 mm, breadth 86.92 mm and thickness 12.99 mm

 Khurpa : fragmentary; thin squarish section; broad sharp edge at the lower for agricultural operation; tapering sides towards handle. From Period III. DLW, Reg. No. 70. (Fig. 23.1, No. 9)

Measurements : Length 53.18 mm, breadth 71.95 mm and thickness 3.77 mm







Fig. 23.2 Iron and copper objects.

Mend Objects

## B. IRON AND COPPER OBJECTS

## Pl. 23.2 and Fig. 23.2

 Iron spear head : fragmentary; leaf shaped, ovalish section, somewhat tapering sides to pointed tip; tip is broken. From Period II. DLW, Reg. No. 272. (Fig. 23.2, No. 1)

Measurements : Length 127.42 mm, breadth 32.52 mm and thickness 14.90 mm

 Copper arrow head : fragmentary; made of thin plate with the evidence of small pin holes for nailing/riveting. From Period III but belongs to Harappan assemblage. DLW, Reg. No. 22, (Fig. 23.2, No. 5)

Measurements : length 27.9 mm, breadth 13.33 mm and thickness 0.29 mm

 Copper ring : fragmentary; finger ring; moulded lozenge shaped upper part; made of thin plate; decorated with a floral design in relief; connected with a thin flat strip for lower ring. From Period III. DLW, Reg. No. 1403. (Fig. 23.2, No. 6)

Measurements : Upper part; length 27.38 mm, breadth 15.47 mm, thickness 1.34 mm and diameter of the ring 15 mm

 Iron sickle : fragmentary, are shaped fattish blade with sharp edge; thin triangular section; broken handle. From Period II. DLW, Reg. No. 845. (Fig. 23.2, No. 2)

Measurements : Length 104.44 mm, breadth 20.11 mm and thickness 6.15 mm

 Iron sickle : broken; long handled farming tool having a semi-circular flat blade with sharp edge; thin triangular section of the blade and squarish section of the handle; long handle with some what bented end for fixing into a wooden handle. From Period III. DLW, Reg. No. 760. (Fig. 23.2, No. 3)

Measurements : Length 161.46 mm, breadth 33.82 mm and thickness 6.34 mm

 Iron hilt of a weapon : fragmentary; dagger or sword; antennae hilt with tapering sides to pointed ends of the hilt; upper part is broken. From Period III. DLW, Reg. No. 204. (Fig. 23.2, No. 4)

Measurements : Length 46.92 mm, breadth 86.92 mm and thickness 12.99 mm

# Other Important Antiquities VISHINU KANT



## A. TERRACOTTA WHEELS

In all eighteen terracotta wheels have been recovered at Dhalewan from Early Historical level. Few of them, shape wise seem to belong to the Harappan assemblage and found from unstratified from the layers of early historical period. Hubbed, without hubbed and spooked wheels, all three varieties are available in the collection. Incised pattern used for marking the spokes on the wheels are either by incised lines or by pinholed dotted lines.

All wheels are handmade, of well-levigated clay and well fired. An example of ill fired and even another of sun-baked wheels are present.

In the early historical period, wheel cart was of great importance as a land transport. Significance of horse chariot could be discerned at Dhalewan as terracotta horse figurines are found in this period.

Specimens are described below :

## PL. 24.1

 Decorated wheel : fragmentary; remains of hubs on both sides; decorated with same incised design in two registers started with a running zig-zag line around the central hole (?) in between the space of concentric circles in both registers on the exterior, before firing; big central hole; thick and flat rim; solid; well fired; smoky core; treated with a red slip. From surface. DLW, Reg. No. 98.

Measurements : diameter of the wheel 65.00 mm (approx.), diameter of the hole 16.00 mm(approx.) and thickness of the rim 15.66 mm

 Hubbed wheel : fragmentary; gradually projected hub on the exterior with four incised strokes in cardinal direction around the central hole on the hub; plain interior; small central hole for axle; thick and somewhat flattish rim; solid; not so well fired; dull red in colour; devoid of any surface treatment. From Kushan Period (Period II). DLW, Reg. No. 1549.

Measurements diameter of the wheel 63.46 mm, diameter of the hub 25.29 mm, diameter of the hole 6.47 mm, height of the hub 10.02 mm and thickness of the rim 9.07 mm

EXCAUATIONS AT DHALEWAN (1999-3000 & 2001-3002)



Pl. 24.1 Terracotta wheels.

#### Other Important Antiquities

 Hubbed wheel : intact; wheel having both sides gradually projected hubs; small central hole for axle; thick and flattish rim; ill fired; grey in colour; devoid of any surface treatment. From Gupta Period. DLW, Reg. No. 861

Measurements : diameter of the wheel 58.10 mm, diameter of the hub 24.59 and 23.47 mm, diameter of the hole 6.67 mm, height of the hub 9.24 and 7.63 mm and thickness of the rim 9.59 mm

 Hubbed wheel : fragmentary; gradually projected small roughly conical hubs on both sides; small central hole for a axle; rounded rim; solid; well fired; red in colour; devoid of any surface treatment. From Gupta Period (Period III). DLW, Reg. No. 1409.

Measurements : diameter of the wheel 54.95 mm, diameter of the hub 15.92 mm, diameter of the hole 5.47 mm, height of the hub 8.86 mm and thickness of the rim 13.21 mm

 Spoked wheel : partly broken; wheel with both sides small hubs, 12-14 roughly drawn incised spokes in a circle which somewhere intersects the spokes on both sides, before firing; big central hole for a axle; thin and rounded rim; well fired; treated with grey slip. From Kushan Period (Period II), DLW, Reg. No. 369.

Measurements : diameter of the wheel 45.26 mm, diameter of the hubs 14.72 mm, diameter of the hole 7.62 mm, height of the hub 5.46 mm and thickness of the rim 7.12 mm

6. Spoked wheel : intact; small; cone shaped exterior and concave interior, decorated before firing with eight spokes made with the pair of two blind pin holed lines in different directions on the wheel in between the two concentric circles. Pin-holed lined circles made around the central hole and other near the edge under a circle; small central hole for axle; thin and sharp rim; well fired; treated with a fine red slip. From Gupta Period (Period III). DLW, Reg. No. 322.

Measurements : diameter of the wheel 27.87 mm, diameter of the hole 2.29 mm and thickness of the wheel 7.48 mm and thickness of the rim 3.41 mm

 Hubbed wheel : broken; small; small hubs on both the sides; central hole for a axle; thick and flat rim; sun baked; greyish mud colour. From Gupta Period. DLW, Reg. No. 199.

Measurements : diameter of the wheel 43.02 mm, diameter of the hub 15.82 mm, diameter of the hole 5.88 mm, height of the hub 3.87 mm and thickness of the rim 10.15 mm



Pl. 24.2 Terracotta skin rubbers.

thiner Important Antiquities

#### B. TERRACOTTA SKIN RUBBERS (SCRUBBER)

Terracotta skin rubbers are the well-known household items of Early Historical Period for cleaning the skin during daily bath. There are three terracotta skin rubbers in collection of early historical antiquities, of which one belongs to Kushan and other two to the Guptas. All are hand made of medium to coarse-grained clay and well fired. Two specimens have slip treatment. Shape wise Kushan Period's skin rubber is rectangular and other two of Gupta Period are circular. Amongst, a circular skin rubber made of clay with more carbonious material so that, after firing it became porous and somewhat light weighted.

Specimens are described below :

## Pl. 24.2

 Skin rabber : intact; light weighted; solid; circular having rough and porous surface allover with a centre depression for a thumb-grip; solid; clay with more carbonious material; well fired; red in colour; devoid of any surface treatment. From Gupta Period. DLW, Reg. No. 677.

Measurements : diameter 104.45 mm and thickness 31.66 mm

 Skin rubber : partly broken; rectangular is having a criss-cross designed upper surface marked out with a series of oblique and almost parallel incised lines on either directions before firing, so that latter intersect the former for making rough surface as required for cleaning and rubbing the skin during bath; solid; clay; well fired; treated with a red slip. From Kushan Period. DLW, Reg. No. 94.

Measurements : length 100.47 mm, breadth 70.95 mm and height 27.58 mm

 Skin rubber : intact; circular having an additional raised circular platform at the centre like a step with roughen surface allover: solid; coarse grained clay; well fired; treated with a red slip on the upper surface. From Gupta Period. DLW, Reg. No. 1379.

Measurements : diameter of the lower step : 65.13 mm, diameter of the upper step 42.15 mm and thickness 25.61 mm

### C. TERRACOTTA SLING BALLS

Terracotta sling balls have been found from Gupta Period during excavations at Dhalewan. Most of the specimens are beautifully decorated. The decoration work executed before firing generally with pin holed dot in incised circle, incised lines dividing spherical surface in segments like watermelon and running line of nail marks. Specimens are solid, mostly well fired and handmade, treated with a slip. The diameter of the balls varies from 11.80 mm to 31.91 mm.

875

#### EXCAUATIONS AT DILALEHAN (1999-2000 & 2001-2002)

As stated in the chapter 14 Other Important Antiquities of Harappan Period, the sling balls used for hunting the small animal and birds. The mechanism for using it, also mentioned there. Therefore, there is no need to repeat it here. The beautifully decorated small sized sling balls of terracotta may have used for playing by children as marbles.

The selected specimens are described below:-

## Fig. 24.1 and Pl. 24.3

 Sling ball : intact; smallest in the lot; spheroid; solid; well fired; treated with a red slip. From Gupta Period (Period III), DLW, Reg. No. 212.

Measurement : diameter 11.80 mm

 Sling ball : intact; small; spheroid with almost smooth surface; solid; well fired; black in colour; devoid of any surface treatment. From Gupta Period (Period III). DLW, Reg. No. 1376.

Measurement : diameter 18.56 mm

 Sling ball : intact; small; spheroid; solid; not so well fired; dull red in colour; devoid of any surface treatment. From Gupta Period (Period III). DLW, Reg. No. 169.

Measurement : diameter 24.83 mm

 Sling hall : intact; medium; spheroid with smooth surface; solid; well fired; treated with a red slip. From Gupta Period (Period III). DLW, Reg. No. 600.

Measurement : diameter 28.48 mm

 Sling ball : intact; largest; spheroid with uneven surface; solid; not so well fired; dull red and smoky colour; devoid of any surface treatment. From Gupta Period (Period III). DLW, Reg. No. 46.

Measurements : diameter 31.91 mm

 Decorated sling ball ; intact; medium; spheroid; decorated before firing with four + like incised signs at four places on opposite sides; solid; well fired; grey in colour; devoid of any surface treatment. From Gupta Period (Period III). DLW, Reg. No. 886.

Measurement : diameter 23.74 mm

Decorated sling ball : intact, medium; spheroid; decorated before firing with two deep incised lines covering the circumference, the lines intersect each other at Other Important Antiquities



Fig. 24.1 Terracotta sling balls.



Pl. 24.3 Terracotta sling balls.



right angle on either side and divide the surface of the ball in four almost equal sectors, more or less similar to watermelon; solid; not so well fired; treated with a dull red slip. From Gupta Period (Period III), DLW, Reg. No. 320.

Measurement : diameter 22.11 mm

 Decorated sling hall : intact; medium; spheroid; decorated before firing with running lines made of almost parallel thumb nail marks covering the circumference of the ball, the lines intersect each other and divide the surface in more segments of which one segment has a small incised circle; solid; well fired; dark grey in colour; devoid of any surface treatment. From Gupta Period (Period III). DLW, Reg. No. 1340.

Measurement : diameter 21.88 mm

 Decorated sling ball : intact; medium; spheroid; decorated before firing with a group of roughly drawn pin holed dot in circle all over on spherical surface and at one place double dots are shown in a circle; solid; not so well fired; dull red in colour; devoid of any surface treatment. From Gupta Period (Period III). DLW, Reg. No. 1153.

Measurement : diameter 21.23 mm

 Decorated sling ball : partly broken; medium; spheroid; decorated before firing with roughly drawn concentric circles (double) at three places with open ends and some places tried to hatch the space between concentric circles. Only few hatched- strokes are visible; solid; well fired; treated with a red slip. From Gupta Period (Period III). DLW, Reg. No. 1103.

Measurements : diameter 19.76 mm

 Decorated sling ball : intact; medium; spheroid; beautifully decorated before firing with a group of pin holed dot in incised circle on the whole spherical area, at one place similar dot shown in concentric circles (double) and further the space between the concentric circle hatched with incised oblique strokes looking like a sun; solid; well fired; treated with a red slip. From Gupta Period (Period III). DLW, Reg. No. 1175.

Measurement : diameter 19.83 mm

12. Decorated sling ball ; Intact; medium; spheroid; decorated before firing with curved incised lines on spherical surface, these lines intersect each other and divide the surface in sectors but in irregular manner; solid; well fired; treated with a light red slip. From Gupta Period (Period III), DLW, Reg. No. 1158.

Measurement : diameter 17.32 mm

678

Other Important Automines

# D. TERRACOTTA FOOTED PEDESTALS (CHAUKIS)

In all, three terracotta pedestais (chaukis) found at Dhalewan are from early historical level, of which two belong to Kushan Period and remaining one was extracted from surface. All specimens are handmade of medium to coarse-grained clay which are mainly well fired and treated with a slip. Both pedestals of Kushan Period have decoration either with incised lines or with notched designed line. All three examples are fragmentary and parts of short-footed pedestals or low height stools. These were probably used for sitting by a single person at a time.

Specimens are described below :

# Pl. 24.4

 Footed pedestal : fragmentary; pedestal with a square shaped solid foot at the corner and a thick and heavy sitting sheet at the top; made of coarse grained clay; well fired; smoky core between the red; treated with a red slip. From surface. DLW, Reg. No. 1613.

Measurements : maximum available length 68.21 mm, maximum breadth 48.83 mm and height 98.87 mm

 Footed pedestal : fragmentary: pedestal with a short and solid triangular foot at the corner and a thin and concave based sitting-sheet at the top. Decorated with two deep almost parallel-incised lines running all around covering the perimeter of the pedestal just over the foot on the exterior, before firing; made of medium grained clay; well fired; treated with a light red slip. From Kushan Period. DLW, Reg. No. 1614.

Measurements : maximum available length 135:00 mm, maximum available breadth 117.85 mm and height 58:50 mm

# PL 24.5

Footed pedestal : fragmentary; pedestal with a truncated cone shaped foot at the corner and a thin and flat sitting-sheet at the top. Decorated with a horizontal band of a running notched rectangular design showing closely placed semicylindrical objects vertically covering the perimeter of the pedestal on the exterior, before firing; made of medium grained clay; not so well fired; some what smoky core; treated with a light red slip. From Kushan Period. DLW, Reg. No. 403.

Measurements : maximum available length 86.50 mm, maximum available breadth 75.34 mm and height 79.29 mm

EXC.03:CHONS AT DHALEWAN (1999-2000 & 2001-2002)



Pl. 24.4 Terracotta footed pedestals (chaukis).



Pl. 24.5 Terracotta footed pedestal (chauki).

680

Other Important Antiquities

#### E. TERRACOTTA VOTIVE TANKS

Votive tanks, the well-known ritual objects of Early Historical Period have been found in the excavation at Dhalewan. These are hand-modelled miniature tanks in square or rectangular shapes on plan and have walled enclosure. These are made of coarse to levigated clay, mainly well fired and treated with a slip. All specimens are fragmentary, in all four votive tanks are in collection of which one belong to Kushan Period and remaining three Gupta Period. Amongst, this one votive tank consists of floral and faunal incised decoration on the exterior of the enclosure wall, which is noteworthy.

Specimens are described below.

#### Pls. 24.6 & 24.7

 Votive tank : fragmentary; hand modelled; corner part of the squarish/rectangular votive tank having enclosure wall with tapering interior; straight exterior, flat top, gradually projected corner and flat and thick base; made of coarse grained clay; not so well fired; treated with a red slip. From Gupta Period. DLW, Reg. No. 1758.

Measurements : available length 91.19 mm, breadth 75.64 mm and height 92.40 mm

 Votive tank : fragmentary; hand modelled; part of a enclosure wall with a flat top having deeply grooved line and a remains of a circular and shallow lamp at the corner; made of medium grained clay; well fired; smoky core between the red; treated with a red slip. From Gupta Period. DLW, Reg. No. 1757.

Measurements: available length 124.80 mm, breadth 42.60 mm and height 73.90 mm

3. Votive tank : fragmentary; hand-modelled corner part of the squarish/rectangular votive tank having stepped sides on the interior with a flat top of the enclosure wall; the closely attached steps along the enclosure wall are shown by a running line of thump depressions in the tapering manner; made of clay; well fired; red core; treated with a red slip. From Gupta Period. DLW, Reg. No. 1532.

Measurements : available length 102.91 mm, breadth 70.03 mm and height 461.69 mm

4. Votive tank : fragmentary; nicely hand modelled; corner part of the squarish/ rectangular votive tank having decorated low height flat topped enclosure wall and flat base with thick and small foot; the walls decorated with incised designs of flora as well as fauna. One wall consists of a criss-cross pattern vertical border and horizontal border made of closely attached opposite faced hollow triangles and central figure remains with only one leave, other part is found broken suggesting towards flower (?); adjoining wall bears a border made of closely



Pl. 24.6 Terracotta votive tanks.







Pl. 24.7 Close view of a terracotta votive tank.

placed oblique lines like rope design all-around, the central figure shown an evidence of back part of the animal probably a cow/bull in standing posture with a leg and long tail, other part is found broken; made of medium grained clay; well fired; smoky core between the red; treated with a red slip. From Kushan Period. DLW, Reg. No. 353. (Pl. 24.7)

Measurements : available length 52.96 mm, breadth 57.57 mm and height 56.98 mm

# F. TERRACOTTA RATTLES

In all seven terracotta, rattles have been yielded in the excavation at Dhalewan. Out of which two belongs to Kushan (Period II) and three to Gupta Period (Period III). Remaining two is found from surface. Rattle is a kind of musical instrument, which is used for playing by small babies or infant children. It is used for attracting or stopping the weeping babies. The common type of terracotta rattle generally have a flowered topped cylindrical handles luted with a hollow spherical ball. The spherical of the balls parts are found broken. A bird-shaped terracotta rattle is a beautiful example of Kushan Period. It is partly wheel made and partly hand made. Another nicely decorated moulded terracotta circular rattle is a more beautiful example of Gupta Period. Both specimens consist of small kankars or balls inside and produce a musical sound while in movement. All specimens are well fired and a few of them have slip treatment.

Selected specimens are described below.

#### Pls. 24.8 & 24.9

 Bird shaped rattle : almost intact; hollow; partly wheel made and partly handmade. Wheel made main body have decoration with deeply incised vertical strokes at carination, tail and head of the bird luted at carination and other at the top respectively. Broken beak; two deep blind holes showing the eyes and one blind hole at the tail probably representing the anus of the bird; uneven round base; probably small terracotta balls or kankars are used inside the body for producing musical sound; well fired; light red in colour; devoid of any slip treatment. From Kushan Period. DLW, Reg. No. 356. (Pl. 24.9)

Measurements : height 52.78 mm and diameter 62.45 mm

2. Handle of a rattle : fragmentary; cylindrical handle having a pinching bird's mouthed top and part of a spherical rattle. Decorated with blind hole at the fore head of the bird and a horizontal hole showing eye of the bird as well as for suspension purpose by means of a thread; well fired; smoky black interior and red exterior; treated with a red coloured wash. From Gupta Period. DLW, Reg. No. 1669.

Measurements : height 56.36 mm, breadth 48.43 mm



Other Important Antiquities



Pl. 24.8 Terracotta rattles.



PL 24.9 Close view of a rattle.

685

 Handle of a rattle : fragmentary: cylindrical handle has concave sides and slightly projected top with pinched corners looking like a flowered top; smoky black convex bottom consists of evidence of luting with a rattle; well fired; treated with a red coloured wash. From surface, DLW, Reg. No. 559.

Measurements : height 36.85 mm, breadth 25.80 mm

4. Handle of a rattle : fragmentary; cylindrical handle has concave sides, slightly projected pinched flowered top and part of a spherical rattle; the flower of the handle bearing five pinched petals; well fired; smoky black interior and red exterior; treated with a red wash. From Gupta Period, DLW, Reg. No. 1670.

Measurements : height 37.42 mm, breadth (upper) 25.00 and (lower) 50.25 mm

## Pls. 24.10 & 24.11

Decorated moulded rattle : almost intact; hollow; circular; dish shaped moulded pot joined together at the rim; nicely decorated with moulded designs in relief on either side, following same manner under concentric circles in six registers with minor differences in selection of designs. At one side, it starts from the centre with oblique strokes running around the central dot making a flower pattern in a circle. Second register consists of two dotted concentric circles under a circle; followed by third register with running oblique strokes all around; the fourth further having a pair of dotted concentric circles without separating line (circle) between third and fourth: fifth register having a dotted circle between closely placed two concentric-circles, last one ends with running oblique strokes all around. On the other side, more or less similar design starts with running oblique strokes around a small circle with central dot also making a flower pattern in a circle. Second register consists of four double lined triangular shaped hatched leaves placed in cardinal directions and remaining space filled with barbotine design. Third one has only one dotted circle between two circles, fourth having a running oblique strokes all around followed by fifth with two dotted concentric circles and the last one further has running oblique strokes all around but in opposite direction; well fired; red in colour. From Period III (Gupta Period). DLW, Reg. No. 50.

Measurements : height 40.125 mm and diameter 112.12 mm





Pl. 24.10 Terracotta moulded rattle, one side view.



Pl. 24.11 Terracotta moulded rattle, other side view.

## G TERRACOTTA POTTER'S STAMPS AND MOULD

In all eight terracotta, potter's stamps have been recovered in the excavation at Dhalewan from Early Historical levels out of which 4 belong to Kushan and other 4 to Gupta Periods respectively. The terracotta stamp counted as one kind of potter's tool, which was generally used for decorating the pots. The stamps bear the inverse of the design, which was used to impress on the pottery. Shape wise, it has a centrally placed cylindrical handle with or without discular top and large discular base on which designs were made generally in the registers running in the concentric circles. The incised designs made with the use of running closely placed oblique lines, zig-zag lines and blind-holed dotted lines in the concentric circles. Besides, floral design was made with the use of petals of flower. Amongst, a stamp decorated with full-bloomed lotus flower is a beautiful example of Gupta Period. One fragmentary mould specimen bears *mithuna* figures of Gupta character.

Specimens are described below-

#### Pis. 24.12 & 24.13

 Fragment of a stamp : lower disc fragment; bearing an incised decoration with a group of deeply grooved concentric circles allover; well fired; red core; treated with a red slip. From Period II (Kushan Period), DLW, Reg. No. 1679.

Measurements : diameter 90 mm and thickness 9,80 mm

 Fragment of a mould : quarter part of a medallion shaped mould bears inverse figures of mithuna facing each other in a sitting posture under a frame of designed concentric circles; well fired; treated with a red slip on both sides. From Surface. Reg. No. 1681. (PL 24.13)

Measurements : diameter 70 mm and thickness 12.64 mm

3. Fragment of a stamp 1 lower disc part with somewhat concave profile and an evidence of central orifice. Bearing an incised decoration in concentric circles started with closely placed oblique strokes around the orifice, followed by a running also closely placed small oblique strokes in next register; another register consisting of a running design of a zig-zag pattern and enclosed with a group of concentric circles; well fired; smoky core between the red; devoid of any slip treatment. From Period III (Gupta Period). DLW, Reg. No. 1439.

Measurements : available diameter 100 mm and thickness 15.18 mm

4. Fragment of a stamp : lower disc fragment: bearing an incised decoration in concentric circles started from outer closely placed running small oblique strokes making a rope like design in between group of two closely placed concentric circles followed with similar design in next register; well fired; smoky core between the red; faint remains of a red slip. From Period II (Kushan Period). DLW, Reg. No. 1678.

Measurements : diameter 110 mm and thickness 10.14 mm

ENCAPATIONS AT DITALFULN (1999-2000 & 2001-2002)



Pl. 24.12 Terracotta potter's stamps and mould.




Pl. 24.13 Terracotta mould, A - negative and B - impression.

EXCAPATIONS AT DHALEWAN (1999-2000 # 2001-2002)



A



B

Pl. 24.14 Terracotta stamp, A - front and B - back.



#### Other Important Antiquaties

 Fragment of a stamp : lower disc part with concave profile; bearing an incised decoration with a group of closely placed dotted concentric circles in a circle and dotted circle; well fired; red core; faint remains of a red slip. From Period III (Gupta Period). DLW, Reg. No. 1680.

Measurements : diameter 80 mm and thickness 9.28 mm

## PL 24.14 A & B

Fragment of a stamp : part of a circular disc on the both side bearing deeply incised decoration. One side, there is a floral design and other side there is a group of concentric circles. Both designs consist of more gaps as well as deep grooves with smoothness suggesting a children's playing disc for rotating the miniature ball in the grooved spaces; well fired; grey core and grey colour. From Period III (Gupta Period). DLW, Reg. No. 1373.

Measurements : diameter 100 mm and thickness 16.80 mm

### PL 24.15

 Terracotta stamp : fragmentary; thick cylindrical centrally placed handle with a decorated discular base; bearing an incised decoration in concentric circles started from the centre with a six petal flower in a circle followed by a running zigzag pattern in the next register; other part is broken; not so well fired; dull red core; treated with a light red slip. From Kushan Period. DLW, Reg. No. 1205.

Measurements : height 41.21, diameter of the handle 25.17 mm and maximum available diameter of the base 40.74 mm

 Terracotta stamp : intact; long cylindrical centrally placed handle with a small convexly discular base; bearing decoration with a group of blind pin holes in an irregular manner; well fired; treated with a grey slip. From Period II (Kushan Period). DLW, Reg. No. 1648.

Measurements : height 64.39 mm, Diameter at the base 38.55 mm and diameter of the handle 21.37 mm

3. Terracotta stamp : partly broken; centrally placed cylindrical handle having tapering sides and a large discular base. Bearing an incised decoration started from the centre with closely placed running oblique lines around a blind pinhole in a circle followed by a running long petals of lotus which is producing a picture of a nicely made full bloomed lotus flower, well fired; red core; treated with a fine red slip. From Gupta Period. DLW, Reg. No. 1692.

Measurements : height 43.69 mm, Diameter of the handle 32.05 mm and diameter at the base 55.42 mm



Pl. 24.15 Terracotta potter's stamps.

Other Important Antiquities

#### H. TERRACOTTA POTTER'S DABBERS

In all, four terracotta, potter's dabbers have been found in the excavation at Dhalewan from Early Historical Level. The dabbers considered in the category of a kind of tool, which is used in pottery making. The use of dabbers reported right from Harappan times and its use also seen in present time. However, no specimen has been traced at Dhalewan from Harappan level.

As usual, all four specimens are *ghata*-shaped and have a blind hole for inserting into a handle at the top as well as a narrow neck for a firm handgrip for direct use.

Specimens are described below:-

## Pl. 24.16

 Dabber : fragmentary; ghata-shaped with convex top having deep blind hole at the centre for a handle; concave neck; tapering sides, carinated waist and convex base; solid; well fired; smoky red core; treated with a red slip. From Gupta Period. DLW, Reg. No. 9.

Measurements : diameter at the upper : 74.20 mm, height : 95.18 mm and diameter of the hole : 24.79 mm

 Dabber : partly broken; ghata-shaped having flat top with a big blind hole for a handle, concave neck; tapering sides, convex-cum-flattish large base; solid; well fired; treated with a light red wash. From surface. DLW, Reg. No. 1616.

Measurements : diameter at the waist : 103.14 mm, height : 67.71 mm and diameter of the hole : 30.27 mm

 Dabber : partly broken; ghata-shaped having convex top with a blind hole for a handle, slightly narrow neck, tapering sides, mildly carinated waist and convex base; solid; well fired; red core; treated with a red slip. From Kushan Period. DLW, Reg. No. 1528.

Measurements 2 diameter at the waist : 90.28 mm, height : 67.47 mm and diameter of the hole : 18.46 mm

 Decorated dabber : fragmentary; ghata-shaped having convex top with a grooved line on its outer edge and a blind hole at the centre for a handle; straight decorated neck with a running notched rectangles; solid; well fired; red core; treated with a red slip. From Kushan Period. DLW, Reg. No. 1617.

Measurements : diameter at the waist : 52.22 mm, height : 37.64 mm and diameter of the hole : 15.14 mm



Pi. 24.16 Terracotta potter's dabbers.



Other Important Antigutiles

#### 1. TERRACOTTA EAR STUDS

Ear stud falls in the category of car ornaments. Reel/pulley shaped car studs have been recovered in the excavation at Dhalewan from Early Historical Period. All specimens are solid. Most of them are well fired and treated with a slip. An example of sun-baked ear stud is also available in the collection. A few of them bears decoration on their outer face. The ear ornaments of terracotta possibly originated from their similar metal-types for the use of common people of the society. The ear studs were traced from various early historical sites of India. Some of the stone sculptures and terracotta human figures of this period have had the delineation of more or less similar type studs in their ears. The studs possibly hanged with the help of metal wire or thin and strong thread into the hole of earlobes.

Selected specimens are described below:

#### Pl. 24.17

 Ear Stud : fragmentary; medium; short cylindrical with concave rim and plain faces; solid; sun baked. From Kushan Period (Period II). DLW, Reg. No. 783.

Measurements : diameter on the edge 39.67 mm, diameter at the middle 37.44 mm and thickness 25.70 mm

 Ear stud : intact; medium; short cylindrical with deeply concave rim (pully shaped) and plain faces; solid; well fired; treated with a grey slip. From Gupta Period (Period III). DLW, Reg. No. 1497.

Measurements ; diameter on the edge 35,69 mm, diameter at the middle 30.36 mm and thickness 21.61 mm

 Decorated ear stud : partly broken; big; short cylindrical with concave rim and mildly concave faces; outer face has incised decoration with full bloomed lotus by showing upper half petals; solid; well fired; treated with a dark grey slip. From Gupta Period (Period III). DLW, Reg. No. 800.

Measurements : diameter on the edge 47.51 mm, diameter at the middle 46.15 mm and thickness 22.10 mm

 Ear Stud : partly broken; big; short cylindrical with deeply concave rim (pully shaped) and plain faces; solid; well fired; red colour; devoid of any surface treatment. From Gupta Period (Period III). DLW, Reg. No. 49.

Measurements : diameter on the edge 40.12 mm, diameter at the middle 38.56 mm and thickness 11.46 mm



Pl. 24.17 Terracotta car studs.



#### Other Important Antignitics

5. Decorated ear stud - partly broken; medium; short cylindrical with deeply concave rim like pully shaped stud has one plain and other decorated face; outer face has incised decoration starts with a central pin holed dot in full bloomed lotus which is denoted by small incised petals and encircled with spiral style concentric circles; solid; well fired; treated with a red slip. From Gupta Period (Period III). DLW, Reg. No. 111.

Measurements : diameter on the edge (maximum available) 34.49 mm, diameter at the middle 30.64 mm and thickness 13.29 mm

6. Decorated ear stud : partly broken; large; short cylindrical with mildly concave rim, one fully decorated face has a moulded design in low relief. Which starts with a small pin holed dot at the centre in a full bloomed lotus and encircled by two registers of running triangles; solid; not so well fired; dull red colour; evidence of a thick white paste under the grooves. From Gupta Period (Period III), DLW, Reg. No. 836.

Measurements : diameter at the edge 41.55 mm, diameter at the middle 41.07 mm and thickness 17.77 mm

 Ear Stud : partly broken; small; short cylindrical with mildly concave rim as well as mildly concave faces; solid; well fired; remains of a blackish-grey slip. Unstratified. DLW, Reg. No. 116.

Measurements : diameter on the edge 23.75 mm, diameter at the middle 23 mm and thickness 18.28 mm

 Ear Stud : intact; small; cylindrical having concave rim (damaru-shaped) and plain faces; solid; well fired; treated with a light red slip. From Kushan Period (Period II). DLW, Reg. No. 1182.

Measurements : diameter on the edge 23.49 mm, diameter at the middle 21.32 mm and thickness 22.02 mm

 Ear Stud : intact; small; short cylindrical having mildly concave rim and blind pin holed decoration in irregular manner on both faces; solid; not so well fired; dull red colour; devoid of any surface treatment. From Kushan Period (Period II). DLW, Reg. No. 606.

Measurements : diameter on the edge 26.47 mm, diameter at the middle 25.60 mm and thickness 15.07 mm

EXC49 ATIONS AT DRALEBAN (1999-2008 & 2001-2002)



# Pl. 24.18 Terracotta elongated dice.





Fig. 24.2 Terracotta elongated dice showing the numbering system.

#### J. TERRACOTTA ELONGATED DICE

#### Pl. 24.18 and Fig. 24.2

A fragment of terracotta, elongated dice yielded from Gupta Period at Dhalewan. The gambling with a dice is a well-known game right from Harappan Period. Indian literatures also freely mention aksa for dice from Rigveda onwards. About the Harappan dice, we have already discussed in relevant chapters. Shape wise Gupta Period dice is a square-sectioned long rectangular shaped solid rod having a buldge at the centre. It is grey in colour, made of well lavigated elay, well fired and devoid of any slip treatment. The marking of numbers is done with small blind holed, dot in incised circle. The numbers are marked out only on four long rectangular sides. The small sized both squarish ends have no marking. The fragment of the dice does not consist of all numbers. The existing numbers seem to suggest two ways of marking seven, six, five and four or five, four, three and two on four respective sides. From Gupta Period. DLW, Reg. No. 44.

Measurements : available length 44.74 mm, breadth 16.41 mm and height 15.92 mm

#### K. INCISED TERRACOTTA TABLETS

In all five incised terracotta tablets excavated are from Kushan Period at Dhalewan. All are cuboid in shape and consist of incised decoration, either with three vertically straight parallel lines or with three curved lines only on upper surface, before firing. All are handmade, solid, made of well lavigated clay and well fired. Four specimens are treated with a slip or wash.

Similar examples are reported from Kushan Period at Sringaverpura'.

Specimens are described below:-

## Pl. 24.19

 Tablet : partly broken; cuboid shaped having three parallel vertical incised lines on upper surface maintaining almost equal space but less space in comparison to nos. 2 and 3, before firing; solid; well fired; treated with dark red wash. From Kushan Period. DLW, Reg. No. 1619.

Measurements : length 31.20 mm, breadth 30.18 mm and height 17.46 mm

Tablet : intact; cuboid shaped having three parallel vertical deep incised lines on upper surface maintaining almost equal space, before firing; solid; not so well

<sup>&</sup>lt;sup>1</sup> B.B.Lal 1993, Excavations at Sringaverapura (1977-86) Vol. 1, Memoir No. 88, A.S.I. New Delhi pp. 152-53, pl. CLXIII.



Pl. 24.19 Incised terracotta tablets.

fired; dull red and smoky surface; devoid of any surface treatment. From Surface, DLW, Reg. No. 1618.

Measurements : length 29.25 mm, breadth 28.46 mm and height 16.32 mm

 Tablet : partly broken; cuboid shaped having three parallel, vertical and deep incised lines on upper surface maintaining almost equal space, before firing; solid; well fired; treated with a red slip. From Kushan Period. DLW, Reg. No. 792.

Measurements : length 29.45 mm, breadth 28.66 mm and height 14.22 mm

4. Tablet : intact; almost cuboid with concave top and base; decorated with roughly drawn half part of concentric circles made by three incised curved lines on the upper surface, before firing; solid; well fired; treated with a dull red wash. From Kushan Period. DLW, Reg. No. 249.

Measurements : length 33.56 mm, breadth 33.44 mm and height 21.39 mm

 Tablet : intact; cuboid having incised decoration with roughly drawn two incised curved lines meeting at the end and third inner line drawn straight vertical on the upper surface, before firing; solid; well fired; treated with a dull red slip. From Kushan Period. DLW, Reg. No. 794.

Measurements : length 30.99 mm, breadth 30.81 mm and height 14.7 mm

## L. HOPSCOTCHES

Numerous quantities of hopsotches have been found from Early Historical Period in the excavation at Dhalewan. Circular discs of various sizes made of broken pottery and terracotta both have been found at Dhalewan. The shape of the hopscotch-dises remains unchanged from the Harappan Period to the Early Historical Period. The variations in diameter and thickness noticed from 24.05 mm to 88.89 mm and 6 mm to 21.22 mm respectively. The hopscotches made of terracotta mainly found from Gupta Period. The basic purpose of the hopscotches seems for playing children' games of hoping on one foot and pushing the flat circular disc over square marked on the ground and another game like pittu. Both games are popular countrywide among the children, even today.

Selected specimens are described below :

#### Pl. 24.20

 Hopscotch : largest in the lot; circular; made out from pottery. From Gupta Period. DLW, Reg. No. 1702.

Measurements : diameter 88.89 mm and thickness 7.81 mm

Other Important Antiquities

 Hopscotch - large; circular; made out from painted pottery. From Gupta Period. DLW, Reg. No. 1706.

Measurements : diameter 66.76 mm and thickness 7.40 mm

 Hopscotch : large; circular with an evidence of a blind hole at the centre on the exterior; made out from pottery, From Gupta Period. DLW, Reg. No. 1704.

Measurements : diameter 67,66 mm and thickness 7.78 mm

 Hopscotch : larger; circular; made out from pottery. From Gupta Period. DLW, Reg. No. 1703.

Measurements : diameter 79.92 mm and thickness 7.29 mm

 Hopscotch : large; circular; more thick; made out from pottery. From Gupta Period, DLW, Reg. No. 1708.

Measurements : diameter 73.98 mm and thickness 21.22 mm

 Hopscotch : large; circular; made out from painted pottery. Unstratified. DLW, Reg. No. 1707.

Measurements : diameter 61.43 mm and thickness 7.53 mm

 Hopscotch : large; circular; made out from incised decorated pottery. From Kushan Period, DLW, Reg. No. 1705.

Measurements : diameter 62.73 mm and thickness 11.25 mm

 Hopscotch : medium; circular; made out from pottery. From Gupta Period. DLW, Reg. No. 756.

Measurements : diameter 49.55 mm and thickness 12.89 mm

 Hopscotch : small; circular; plano-convex; terracotta; not so well fired; dull red and smoky surface. From Gupta Period. DLW, Reg. No. 1710.

Measurements : diameter 33.37 mm and thickness 9.98 mm

 Hopscotch : medium; circular with somewhat smooth and fairly rubbed rim; made out from painted pottery. From Gupta Period. DLW, Reg. No. 1709.

Measurements : diameter 45.66 mm and thickness 7.69 mm



Pl. 24.20 Hopscotches.

Other Legennant Antiquities

 Hopscotch : small; circular; made out from pottery. From Kushan Period. DLW, Reg. No. 826.

Measurements : diameter 31.70 mm and thickness 9.19 mm

 Hopscotch : medium; circular with perfectly smooth and rubbed rim; made out from pottery. From Gupta Period. DLW, Reg. No. 1342.

Measurements : diameter 41.00 mm and thickness 12.60 mm

 Hopscotch : small; perfectly circular with fairly rubbed rim; made out from pottery. From Gupta Period. DLW, Reg. No. 47.

Measurements : diameter 24.59 mm and thickness 6.00 mm

 Hopscotch : small; circular; roughly plano-convex; terracotta; not so well fired; dull red with smoky surface. From Gupta Period. DLW, Reg. No. 756.

Measurements : diameter 33.46 mm and thickness 8.85 mm

 Hopscotch : smallest in the lot; circular with some what rubbed rim; made out from stampted decorated pottery. Unstratified. DLW, Reg. No. 1712.

Measurements : diameter 24.05 mm and thickness 8.02 mm

 Hopscotch : small; circular; with almost flattish surfaces; terracotta; well fired; dull red in colour. From Gupta Period. DLW, Reg. No. 1711.

Measurements : diameter 28.07 mm and thickness 9.45 mm

 Hopscotch : small; roughly circular; perfectly smooth and fairly rubbed rim; made out from pottery. From Gupta Period. DLW, Reg. No. 963.

Measurements : diameter 28.53 mm and thickness 5.93 mm

## M. STONE QUERNS AND PESTLES

In all, one, legged-stone quern, one small stone quern, two stone pestles and one rubbing stone have been found in the excavation at Dhalewan mainly from Gupta level (Period III).

A legged-quern although fragmentary is a beautiful example of the mobile quern. The top surface of the quern bears flaking marks and an incised borderline. The concave surface of the quern is suggesting a constant use for pounding spices and herbs by

EXCAUATIONS AT DHALEMAN (1999-2000 & 2001-2002)



Pl. 24.21 Legged-stone quern.

Other Important Antiquities



PL 24.22 Stone pestles, quern and rubbing stone.

#### EXCAPATIONS AT DILALEWAN (1999-2008 & 2002-2002)

rotating stone-pestles to-and-fro on the surface. The quern is made of brown coloured medium-grained quartzite stone probably of Kaliyana hills of nearby state Haryana. Pestles are made of coarse to medium grained sand stone. A rubbing stone made of white spotted red sand stone consisting of a feature of Mathura stone too has been discovered. It bears a deep grooved line at the upper side, which is suggesting its use for sharpening the metal tools.

Specimens are described below :-

### Pl. 24.21

Legged-quern : a fragmentary specimen of legged-quern which has slightly concave surface, a round top and semi-circular legs; made of brownish medium grained sand stone; top surface made rough by means of closely placed flaking marks within an incised border line. It is decorated with closely placed oblique incised strokes allover attached to border line on the interior; the top surface showing a concavity due to constant use for pounding spices, herbs etc. by means of pestles; the back part decorated with concentric circles at the middle and consisting of semi-circular legs with tapering profile. The specimen seems fragment of a four to six legged semi elliptical or elliptical quern. From Gupta Period. DLW, Reg. No. 1759.

Measurements : available length 126 mm, breadth 204.60 mm, height 70.95 mm and thickness 23.41 mm

#### Pl. 24.22

 Pestle : partly broken; ovoid with almost smooth surface all over; made of pinkish coarse grained quartzite stone; smooth surface showing its constant use for pounding from all sides. From Gupta Period. DLW, Reg. No. 1760.

Measurements : length 84.06 mm, breadth 54.60 mm and height 43.50 mm

 Pestle : intact; heavy; ovoid with almost smooth surface allover; made of medium grained black banded reddish sand stone; smooth surface showing its constant use for pounding from all sides. From Gupta Period. DLW, Reg. No. 997.

Measurements : length 117.27 mm, breadth 69.62 mm and height 57.57 mm

 Small quern : intact; rectangular with a slightly convex roughen surface; made of medium grained reddish quartize stone; the upper roughen surface made by means of flaking; small size of the specimen suggesting its handy use for pounding small quantity of the material. From Gupta Period. DLW, Reg. No. 1762.

Measurements : length 109.76 mm, breadth 68.63 mm and height 30.80 mm

 Rubbing stone : intact; small; rectangular with a large platform at the lower; triangular section; made of white spotted red sand stone like Mathura stone;





# Pl. 24.23 Shell bangles.

consisting of a deep line on the upper surface suggesting its use for sharpening the metal tools. From Gupta Period. DLW, Reg. No. 1761.

Measurements : length 65.85 mm, breadth 38.37 mm and height 30.81 mm

## N. SHELL BANGLES

Shell bangles commonly yielded in the excavation at Dhalewan in more quantity from Harappan assemblage as well as after a considerable break from early historical period. Shell bangles from Dhalewan are more or less monotonously simple in both periods. The specimens are not perfect circular and most of them bear uneven interior and plain exterior with natural dull-white surface due to their cutting /manufacturing from conch-shells. A few of them shows further workmanship by either leveling the inner side or making grooved exterior. The diameters of the bangles vary 50 mm to 100 mm, the bangles of 60 mm diameter found more in quantity in comparison to other.

Selected specimens are described below.

## PL 24.23

 Shell bangle : fragmentary: medium sized; thin irregular section; natural dull white surface; uneven interior and plain exterior. From Period II. DLW, Reg. No. 1514.

Measurements : inner diameter 60 mm, breadth 19.69 mm and thickness 6.34 mm

 Shell bangle : fragmentary; medium sized; irregular section; natural dull white surface; uneven exterior and interior. From Period II. DLW, Reg. No. 598.

Measurements : inner diameter 60 mm, breadth 21.17 mm and thickness 8.58 mm

 Shell bangle : fragmentary; medium sized; rectangular section; natural dull white surface; plain exterior and interior. From Period II. DLW, Reg. No. 1539.

Measurements : inner diameter 60 mm, breadth 7.45 mm and thickness 6.22 mm

 Shell bangle : fragmentary; medium sized; thin stripped section; natural dull white surface with brownish oblique lines; plain interior and exterior. From Period II. DLW, Reg. No. 853.

Measurements : inner diameter 60 mm, breadth 17.31 mm and thickness 3.96 mm

 Shell bangle : fragmentary; medium sized; elliptical section; natural dull white surface; plain interior and exterior. From Period II. DLW, Reg. No. 569.

Measurements : inner diameter 50 mm, breadth 15.47 mm and thickness 5.75 mm.



Pl. 24,24 Decorated stone piece.

 Shell bangle : fragmentary; big sized; irregular section, natural white surface, uneven interior and grooved exterior. From Period II. DLW, Reg. No. 1304.

Measurements : inner diameter 70 mm, breadth 11.83 mm and thickness 9.31 mm

 Shell bangle : fragmentary; medium sized; irregular section; natural dull white surface with light brown patches; uneven interior and almost plain exterior. From Period II. DLW, Reg. No. 505.

Measurements : inner diameter 60 mm, breadth 11.12 mm and thickness 3.08 mm

 Shell bangle : fragmentary; medium sized; irregular section; natural dull white surface; plain exterior and uneven interior. From Period II. DLW, Reg. No. 1539.

Measurements : inner diameter 60 mm, breadth 12:82 mm and thickness 6.04 mm

 Shell bangle : fragmentary; big sized; irregular section; natural dull white surface; uneven interior and mildly grooved exterior. From Period II. DLW, Reg. No. 1124.

Measurements : inner diameter 80 mm, breadth 14.80 mm and thickness 4.35 mm

 Shell bangle : fragmentary; big sized; thin rectangular section; natural dull white surface; plain interior and grooved exterior. From Period II. DLW, Reg. No. 388.

Measurements : inner diameter 100 mm, breadth 11.12 mm and thickness 3.08 mm

 Shell bangle : fragmentary; medium sized; triangular section; natural dull white surface with brownish patches; plain interior and exterior. From Period II. DLW, Reg. No. 1304.

Measurements : inner diameter 60 mm, breadth 7.11 mm and thickness 4.75 mm

## O. DECORATED STONE PIECE

## Pl. 24.24

 Decorated stone piece : fragment of a *patravali shakha* of red sand stone; carved in low relief; probably a part of a door jamb or lintel. From Kushan Period (Period II). DLW, Reg. No. 143.

Measurements : maximum available height 57,24 mm, breadth 35,29 mm and thickness 26,34 mm



