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Editorial Note

The inaugural volume of ***Pakistan Heritage*** (2009) earned wide reputation among the keen researchers and scholars and well-received world over. We feel pride in hearing from renowned international scholars about the research standard of this journal. This is the outcome of rich celebrity it got within a short span of one year's time. It is reflected by the fact that ten of our papers are being contributed to the present volume by prolific writers and well-known researchers from abroad. One of the objectives of this journal was to provide a forum of high academic standard to our young scholars to contribute to the sundry fields of studies the journal deals with. We are happy to be more than successful in our mission. High recognition of the journal prompted national and international scholars to send their papers for favour of publication, which is a good omen in the history of research journals in Pakistan. This is our success! We keep on striving to take its academic standard to the apogee of quality and excellence.

For the new readers and contributors it is reminded that ***Pakistan Heritage*** accepts papers based on original research in ancient and mediaeval history, art, architecture, archaeology, conservation, cultural heritage, iconography, iconology, tourism industry of Pakistan, palaeo-zoology, palaeo-botany, geomorphology associated with cultural deposits, scientific techniques and their applications in archaeology and cultural heritage of Pakistan. The journal also publishes reports of archaeological investigations (i.e. explorations and excavations) undertaken in the length and breadth of the country. A section of it is reserved for biographies of renowned archaeologists, historians and scholars, and reviews on latestly published books as well. The papers are sent to two reviewers, one from technologically advanced countries and the other from within Pakistan. On receiving favourable reports of the two, the editor informs the contributor of the acceptance of his/her submission. The format of the journal can be obtained from the editor on request.

The editors are grateful to the contributors for taking keen interest in this newly launched journal and for their submitting good quality papers, in addition to very encouraging recommendations and suggestions to make it more attractive in terms of quality and standard. We are beholden to Professor (Dr) Syed Sakhawat Shah, Vice Chancellor of Hazara University (Mansehra), for his kind approval of publishing this volume of ***Pakistan Heritage*** with the financial assistance of Hazara University.

Pakistan Heritage, Volume Two (2010), contains three sections: research articles and notes, archaeological field reports, and book review; each comprising ten, four and one article respectively.

Further suggestions and proposals to improve the journal are warmly welcomed.

Editors

December 2010

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Dental Anthropology of the Madaklasht I: A Description and Analysis of Variation in Morphological Features of the Permanent Tooth Crown

BRIAN E. HEMPHILL, IHSAN ALI and ABDUL HAMEED

Key Words

ASU Dental Anthropology System, Dental Traits, Sex Dimorphism, Tooth-Trait Interactions

Introduction

Little is known of the biological history of ethnic groups occupying the Hindu Kush and Karakoram highlands of northern Pakistan. The inhabitants of Madaklasht live within the Shishi Koh Valley of Chitral District, the most northerly district of the Khyber Pakhtunkhwa Province of Pakistan (Fig. 1). This valley is well-known for its lush green appearance and the fertility of its soils, which yield rich agricultural produce. Much of the valley is inhabited by Gujars, whose traditional occupation is the tending of goats, sheep, and to a much lesser extent, cattle. Various passes connect the Shishi Koh Valley to other valleys, such as Porott Gol and Goreen Gol, which permit communication with populations in Dir Kohistan, while Dokwan, Ghochar and Radghali passes connect Shishi Koh to the Golain Valley.

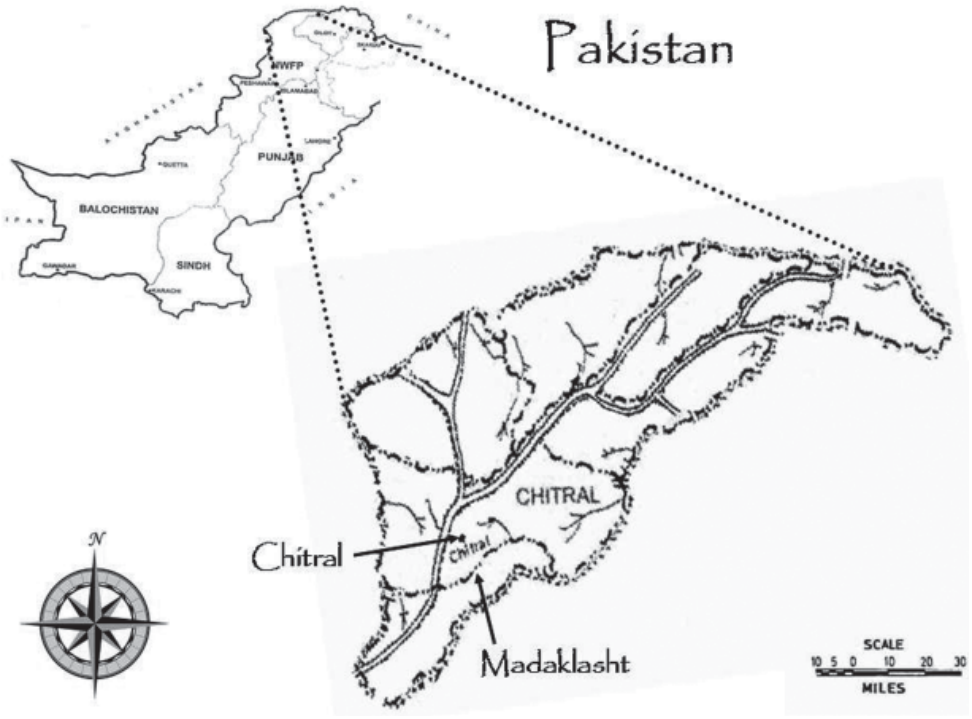

Fig. 1: Location of Madaklasht village within Chitral District, Khyber Pakhtunkhwa, Pakistan

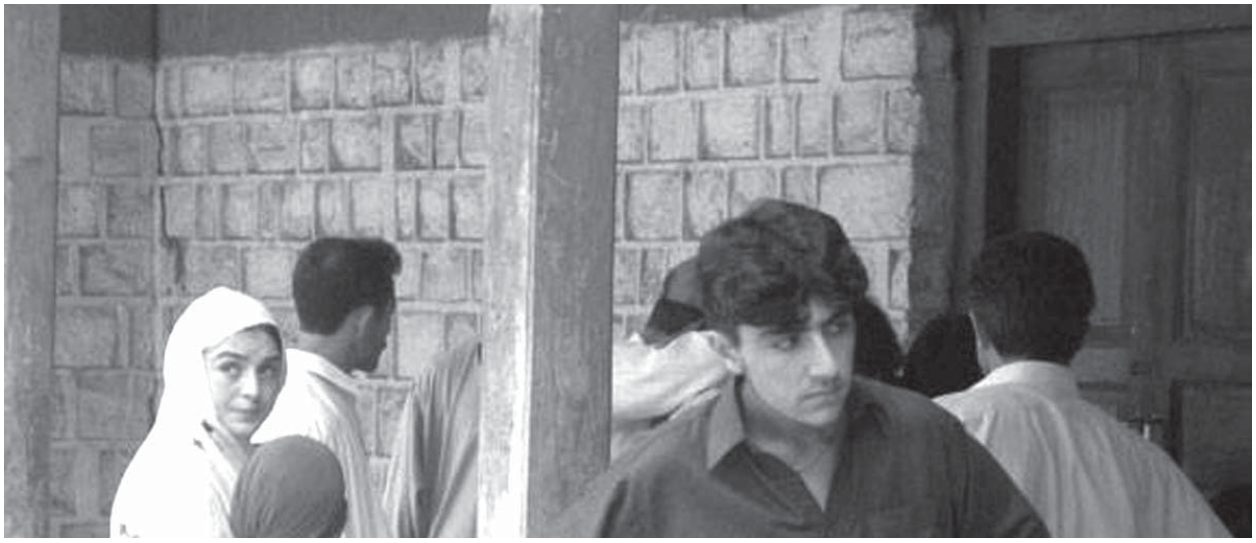

Fig. 2: Some of the volunteer villagers from Madaklasht

The village of Madaklasht is inhabited by one of the most unique ethnic groups in Chitral district the Badakhshis, (Fig. 2). According to oral tradition (Ghufran 1962), the Badakhshi tribe is named after their original homeland (Badakhshan), which is located in the northeastern region of Afghanistan. Oral tradition among the Madaklasht holds that they came to Chitral during the reign of the Katur Family in the 17th century, by whom they were recruited to the area because of their well-known artistry as armourers. Initially, these manufacturers of war material believed they would only remain in the region for a brief period of time, but the Katur ruler of Chitral, realizing their importance for strengthening the strategic position of his state, did not want to release them. So, due to the interest of the then ruler of Chitral, the ancestors of the present Badakhshi of Madaklasht decided to settle here permanently. Wahid Beg (1992:436) claims that it is likely the Sumbola of Garam Chashma, Chitral belong to the same ethnic group as the Madaklasht, for the Sumbola exhibit the same culture, speak the same language, and also have an oral tradition which claims their origins in the Badakhshan region of northeastern Afghanistan, followed by immigration to Chitral District during the 17th century.

The purposes of the current pair of studies are two-fold. First, scientific knowledge of morphological variation in the permanent tooth crown among ethnic groups of the Hindu Kush and Karakoram highlands is virtually unknown, for only two studies have described such variation in a single ethnic group, the Khowar of Chitral city (Blaylock 2008; Hemphill et al in press). Hence, the first study seeks to provide a comprehensive description and analysis of dental morphological variation among the Madaklasht. In the companion study, the pattern of morphological variation in the permanent tooth crown found among the Madaklasht is put into temporal and inter-regional perspective by contrasting a suite of dental morphology variables among the Madaklasht to a battery of prehistoric and living dental samples from western Central Asia, the Indus Valley and peninsular India.

Materials and Methods

The dental casts that form the database of the current study were collected on an impromptu basis in Madaklasht village and at the Aga Khan Diamond Jubilee School within that village over

a two day period in August 2007. The casts were collected by a team from the Department of Cultural Heritage and Tourism Management, Hazara University (Pakistan) under the direction of the author. A total of 205 individuals (101 males, 104 females) provided voluntary consent for plaster casts of their maxillary and mandibular teeth to be taken. Older adolescents and young adults (males: average (avg.) = 18.9, standard deviation (sd) = 6.9; females: avg. = 14.5, sd = 2.2) were specifically targeted for two reasons. First, such individuals have experienced eruption of all permanent teeth, except third molars. Second, these individuals have suffered minimally from dental disease (i.e., caries) or mechanical disorders (i.e., bruxism) that compromise the integrity of the permanent tooth crown.

The dental casts of each individual were assessed for 26 dental traits scored as 71 tooth-trait combinations in accordance with the Arizona State University Dental Anthropology (ASUDA) system (Turner et al 1991). Observations were made on both right and left antimeres. Frequencies of dental traits were calculated for each grade of expression according to the individual count method of Scott (1973; 1977; 1980; see also Scott and Turner 1997). This method not only compensates for the fluctuating asymmetric effects of environmental factors (Van Valen 1962; Staley and Green 1971; Sciulli et al 1979), but also maximizes sample sizes in dental series derived from archaeological sites where remains are often fragmentary or incomplete. While variation in trait morphology was scored along an ordinal scale among the Madaklasht, trait expression was dichotomized into presence/absence only for comparative purposes in both the current and companion study.

Dichotomized trait frequencies are contrasted in the current study by tooth (*i.e.,* trait expression in UM1 vs. UM2 vs. UM3) and by sex (females vs. males). For dichotomization, any degree of expression was considered a positive manifestation. The only exceptions were labial curvature of the central maxillary incisor, in which at least grade 2 curvature had to be present to be considered a positive expression, and hypocone size, where both grades 3.5 and 4 were considered full development of this cusp. Chi-square statistics were calculated to detect significant differences in specific trait frequencies by tooth and by sex among the Madaklasht. Sex-pooled trait frequencies among the Madaklasht were obtained by taking the average of male and female frequencies. This approach ensured that pooled trait frequencies were not skewed in favour of the sex represented by the most observations for a specific tooth-trait combination.

Intraobserver variation in morphological evaluations was assessed by repeated scoring of 35 tooth-trait combinations in a random sample of 50 plaster dental casts. Observation sessions were separated by a period of 18 months and observation differences were assessed according to the method of Nichol and Turner (1986). Intraobserver error was found to be well within acceptable limits (see Hemphill 1991).

Results

Dental Morphology Trait Variation among the Madaklasht as a Whole

Maxillary Anterior Teeth

Trait presence by grade of expression, frequencies and number of observations for each of the 38 tooth-trait combinations in the maxillary dentition are provided in Table 1. The Madaklasht possess maxillary incisors that commonly feature shovelling of the labial margins, albeit at rather low grades

Table 1: Morphological Variations of Permanent Maxillary Teeth among the Madaklasht by Sex

Females								Males						
Shovel Shape (SHOV)								Shovel Shape (SHOV)						
	I1		I2		C				I1		I2		C	
Grade	n	Pct.	n	Pct.	n	Pct.		Grade	n	Pct.	n	Pct.	n	Pct.
0	24	25.3	51	55.4	57	62.6		0	32	38.6	40	49.4	48	63.2
1	29	30.5	19	20.7	25	27.5		1	20	24.1	25	30.9	20	26.3
2	30	31.5	18	19.6	9	9.9		2	20	24.1	13	16.0	8	10.5
3	12	12.6	2	2.2	0	0.0		3	10	12.0	2	2.5	0	0.0
4	0	0.0	0	0.0	0	0.0		4	1	1.2	1	1.2	0	0.0
5	0	0.0	1	1.1	0	0.0		5	0	0.0	0	0.0	0	0.0
6	0	0.0	1	1.1	0	0.0		6	0	0.0	0	0.0	0	0.0
Total	95	100.0	92	100.0	91	100.0		Total	83	100.0	83	100.0	83	100.0

Double Shovel (DSHOV)									Double Shovel (DSHOV)							
	I1		I2		C		P3		I1		I2		C		P3	
Grade	n	Pct.	n	Pct.	n	Pct.	n	Pct.	n	Pct.	n	Pct.	n	Pct.	n	Pct.
0	73	76.8	85	90.4	86	92.5	94	97.9	65	79.3	71	86.6	80	96.4	81	96.4
1	13	13.7	8	8.5	5	5.4	1	1.0	13	15.9	11	13.4	3	3.6	3	3.6
2	8	8.4	1	1.1	2	2.2	1	1.0	3	3.7	0	0.0	0	0.0	0	0.0
3	1	1.1	0	0.0	0	0.0	0	0.0	1	1.2	0	0.0	0	0.0	0	0.0
Total	95	100.0	94	100.0	93	100.0	96	100.0	82	100.0	82	100.0	83	100.0	84	100.0

Interruption Groove (IGRV)				
	I1		I2	
Grade	n	Pct.	n	Pct.
0	94	100.0	75	83.3
1	0	0.0	3	3.3
2	0	0.0	10	11.1
3	0	0.0	0	0.0
4	0	0.0	2	2.2
Total	94	100.0	90	100.0

Interruption Groove (IGRV)				
	I1		I2	
Grade	n	Pct.	n	Pct.
0	83	98.8	59	72.8
1	1	1.2	8	9.9
2	0	0.0	10	12.3
3	0	0.0	1	1.2
4	0	0.0	3	3.7
Total	84	100.0	81	100.0

Median Lingual Ridge (MLR)						
	I1		I2		C	
Grade	n	Pct.	n	Pct.	n	Pct.
0	27	28.7	59	61.5	53	57.6
1	27	28.7	18	18.8	12	13.0
2	27	28.7	15	15.6	20	21.7
3	11	11.7	4	4.2	6	6.5
4	2	2.1	0	0.0	1	1.1
Total	94	100.0	96	100.0	92	100.0

Median Lingual Ridge (MLR)						
	I1		I2		C	
Grade	n	Pct.	n	Pct.	n	Pct.
0	26	31.0	55	67.9	37	48.7
1	13	15.5	12	14.8	7	9.2
2	26	31.0	12	14.8	19	25.0
3	17	20.2	1	1.2	8	10.5
4	2	2.4	1	1.2	5	6.6
Total	84	100.0	81	100.0	76	100.0

Table 1 Continued.....

Females

Labial Curvature (LC) I1		
Grade	n	Pct.
0	11	11.6
1	35	36.8
2	36	37.9
3	13	13.7
4	0	0.0
Total	95	100.0

Distal Accessory Ridge (DAR) C		
Grade	n	Pct.
0	45	47.4
1	15	15.8
2	28	29.5
3	6	6.3
4	1	1.1
Total	95	100.0

Males

Labial Curvature (LC) I1		
Grade	n	Pct.
0	16	18.8
1	25	29.4
2	29	34.1
3	14	16.5
4	1	1.2
Total	95	100.0

Distal Accessory Ridge (DAR) C		
Grade	n	Pct.
0	47	60.3
1	12	15.4
2	13	16.7
3	4	5.1
4	2	2.6
Total	78	100.0

Accessory Buccal Cusp (PCSP)	P3		P4	
Grade	N	Pct.	n	Pct.
0	90	93.8	86	92.5
1	6	6.3	7	7.5
Total	96	100.0	83	100.0

Accessory Buccal Cusp (PCSP)	P3		P4	
Grade	N	Pct.	n	Pct.
0	77	92.8	73	92.4
1	7	7.2	6	7.6
Total	84	100.0	79	100.0

Accessory Ridges (PRDG)	P3		P4	
Grade	N	Pct.	n	Pct.
0	53	55.8	30	32.3
1	42	44.2	63	67.7
Total	95	100.0	93	100.0

Accessory Ridge (PRDG)	P3		P4	
Grade	N	Pct.	n	Pct.
0	50	64.1	31	40.3
1	28	35.9	46	59.7
Total	84	100.0	77	100.0

Metacone Size (META)	M1		M2		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
0	0	0.0	0	0.0	0	0.0
1	0	0.0	1	1.2	1	50.0
2	0	0.0	0	0.0	0	0.0
3	0	0.0	0	0.0	0	0.0
3.5	0	0.0	0	0.0	0	0.0
4	1	1.0	18	21.2	1	50.0
5	95	99.0	66	77.6	0	0.0
Total	96	100.0	85	100.0	2	100.0

Metacone Size (META)	M1		M2		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
0	0	0.0	0	0.0	1	3.7
1	0	0.0	0	0.0	0	0.0
2	0	0.0	0	0.0	1	3.7
3	0	0.0	2	2.6	3	11.1
3.5	0	0.0	0	0.0	1	3.7
4	2	2.4	21	27.6	14	51.9
5	85	97.6	53	69.7	7	25.9
Total	87	100.0	76	100.0	27	100.0

Females Hypocone Size (HYPO)	M1		M2		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
0	0	0.0	22	27.5	2	100.0
1	0	0.0	30	37.5	0	0.0
2	0	0.0	11	13.8	0	0.0
3	0	0.0	9	11.3	0	0.0
3.5	1	0.0	4	5.0	0	0.0
4	95	1.0	4	5.0	0	0.0
Total	96	100.0	80	100.0	2	100.0

Males Hypocone Size (HYPO)	M1		M2		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
0	0	0.0	17	24.3	12	46.2
1	0	0.0	20	28.6	5	19.2
2	0	0.0	1	1.4	5	19.2
3	0	0.0	13	18.6	3	11.5
3.5	2	2.4	8	11.4	0	0.0
4	83	97.6	11	15.7	1	3.8
Total	85	100.0	70	100.0	26	100.0

Table 1 Continued.....

Metaconule Size (MTCLE)						
	M1		M2		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
0	93	96.9	69	89.6	2	100.0
1	2	2.1	7	9.1	0	0.0
2	1	1.0	0	0.0	0	0.0
3	0	0.0	1	1.3	0	0.0
Total	96	100.0	77	100.0	2	100.0

Metaconule Size (MTCLE)						
	M1		M2		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
0	80	97.6	61	87.1	21	80.8
1	2	2.4	7	10.0	4	15.4
2	0	0.0	2	2.9	1	3.8
3	0	0.0	0	0.0	0	0.0
Total	82	100.0	70	100.0	26	100.0

Carabelli's Trait (CARA)						
	M1		M2		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
0	25	26.0	67	75.3	3	100.0
1	15	15.6	12	13.5	0	0.0
2	12	12.5	4	4.5	0	0.0
3	15	15.6	4	4.5	0	0.0
4	3	3.1	0	0.0	0	0.0
5	10	10.4	2	2.2	0	0.0
6	7	7.3	0	0.0	0	0.0
7	9	9.4	0	0.0	0	0.0
Total	96	100.0	89	100.0	3	100.0

Carabelli's Trait (CARA)						
	M1		M2		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
0	22	26.2	68	86.1	28	100.0
1	17	20.2	6	7.6	0	0.0
2	14	16.7	2	2.5	0	0.0
3	12	14.3	1	1.3	0	0.0
4	3	3.6	0	0.0	0	0.0
5	7	8.3	1	1.3	0	0.0
6	4	4.8	1	1.3	0	0.0
7	5	6.0	0	0.0	0	0.0
Total	84	100.0	79	100.0	28	100.0

Parastyle (PARA)						
	M1		M2		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
0	95	100.0	86	100.0	2	100.0
1	0	0.0	0	0.0	0	0.0
Total	95	100.0	86	100.0	2	100.0

Parastyle (PARA)						
	M1		M2		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
0	84	100.0	76	100.0	23	95.8
1	0	0.0	0	0.0	1	4.2
Total	84	100.0	76	100.0	24	100.0

Females Pegging (PEG)				
	12		M3	
Grade	n	Pct.	n	Pct.
Absent	87	90.6	3	75.0
Present	9	9.4	1	25.0
Total	96	100.0	4	100.0

Males Pegging (PEG)				
	12		M3	
Grade	n	Pct.	n	Pct.
Absent	80	94.1	27	93.1
Present	5	5.9	2	6.9
Total	85	100.0	29	100.0

Congenital Absence (CABS)						
	12		P4		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
Absent	95	99.0	93	100.0	5	100.0
Present	1	1.0	0	0.0	0	0.0
Total	96	100.0	77	100.0	5	100.0

Congenital Absence (CABS)						
	12		P4		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
Absent	84	96.6	84	100.0	26	92.9
Present	3	3.4	0	0.0	2	7.1
Total	87	100.0	84	100.0	28	100.0

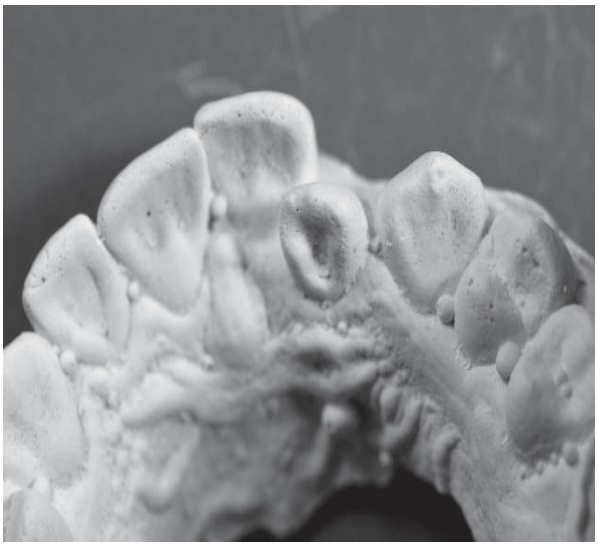

Fig. 3: Shovelling of ULI2, Specimen MDK-184, Grade 5.

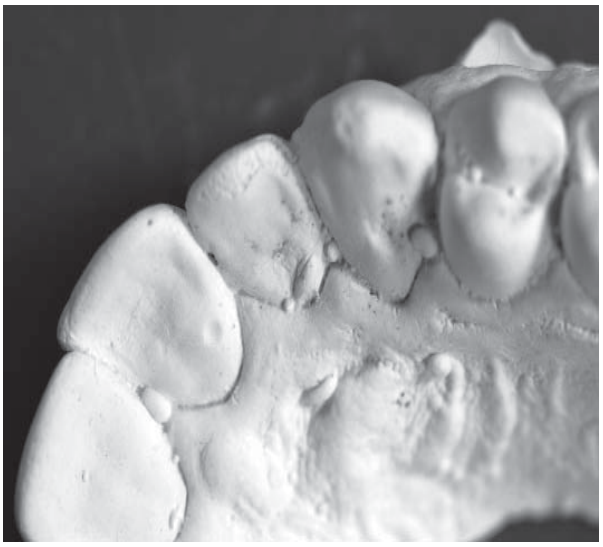

Fig. 4: Interruption groove found on the lingual aspect of ULI2, Specimen MDK-031.

(1-2) of expression. In fact, about half (50.8%) of all maxillary anterior teeth (I1, I2, C) that could be observed for shovelling express this morphological trait. In a few cases, a pronounced degree of shovelling occurs on the lateral incisor (Fig. 3). Shovelling is most common on UI1 (68.5%), is less common on UI2 (48.0%), and is rarest on UC (35.6%).

By contrast, development of labial marginal ridges, or double shovelling, is fairly rare among the Madaklasht, occurring only on 10.4% of all maxillary teeth for which the trait could be assessed. This trait only occurs with any degree of commonality on UI1 (22.0%) and, to a lesser degree, UI2 (11.4%). Like shovelling, double shovelling also exhibits a pattern of decreased frequency as one moves distally from UI1, to UI2, to UC (5.7%), to UP3 (2.8%).

Interruption grooves (Fig. 4), which either divide the mesial or distal aspects of the cingulum or bisect the basal eminence on the lingual aspect of UI1, UI2, and UC are also rather uncommon among the Madaklasht, for such grooves were only found on 10.9% of maxillary incisors that could be assessed for this trait. However, in this case, the pattern of prevalence is reversed relative to that seen for shovelling and double shovelling. Instead of featuring a reduction in frequency from mesial to distal, interruption groves are far more common in UI2 (21.6%: 37/171) than in UI1 (0.6%: 1/178).

Median lingual ridge development, or *tuberculum dentale*, are flame-like, finger-like, or tubercular extensions of the cingulum found on the lingual surface of UI1, UI2 or UC (Fig. 5). Such extensions of the cingulum affect the same proportion of maxillary teeth (50.9%) that could be assessed for this trait as shovelling. However, the patterning of expression is quite different, and this difference is expressed in two ways. First, while shovelling is usually manifested at rather low grades of development, median lingual ridges often occur at more marked levels (>3), especially in UI1 (18.0%). Second, whereas shovelling occurs with less frequency from UI1 to UC, median lingual ridge development features frequencies that are highest for UI1 (70.2%), intermediate for UC (46.4%), and lowest for UI2 (35.6%).

Fig. 5: Medial lingual ridge development on the lingual surface of URI1, Specimen MDK-062, Grade 4

Fig. 6: Distal accessory ridge present on the lingual surface of URC, Specimen MDK-074, Grade 4

Curvature of the labial surface of UI1 is commonly found among the Madaklasht (85.8%), yet in the overwhelming majority of cases (76.7%) of those expressing the condition, the amount of curvature is quite modest (grades 1-2).

The distal accessory ridge occurs on the lingual surface of UC between the medial ridge and the distal marginal ridge (Morris 1965; Scott 1977) (Fig. 6). Such ridges occur among nearly half (46.8%) of the individuals for whom this trait could be assessed. Like shovelling, the preponderance of positive manifestations (68/81= 84%) tend to be low-grade (grades 1-2) expressions.

Maxillary Posterior Teeth

Accessory buccal cusps are rarely found on the maxillary premolars of the Madaklasht and they tend to be slightly more common on UP4 (13/162 = 8.2%) than UP3 (13/180 = 7.2%). By contrast, accessory ridges on the buccal cusps are not only much more common overall (51.3%), but are found much more often on UP4 (64.1%) than UP3 (39.1%).

The maxillary molars of the Madaklasht exhibit very little reduction of the metacone, for both UM1 and UM2 fail to exhibit a single case of such reduction despite sample sizes of 183 and 161, respectively. Only for UM3 is there any substantial reduction of the metacone, but even with sample size limited to 29 observations, such reduction is only seen in roughly one-fifth of cases (6/29= 20.7%).

The hypocone, found in the distolingual quadrant of the crown, exhibits a markedly different pattern of reduction among the Madaklasht (Fig. 7). While UM1 appears resistant to a reduction of this cusp (0/181= 0%), this cusp has been reduced in an overwhelmingly majority of cases on both UM2 (87.3%) and UM3 (89.3%).

The metaconule is somewhat rare among the Madaklasht, for it is only found among 7.6% of the maxillary molars for which observations could be made. The frequency of the metaconule forms an interesting pattern in that it trends in the opposite direction from incisor shovelling. That is, instead of decreasing in frequency from mesial to distal, the presence of the metaconule increases from a low on 2.8% on UM1, to 11.6% on UM2, to highest levels on UM3 (17.9%), despite the limited number of observations for this latter tooth (n= 28).

Fig. 7: Hypocone reduction. Specimen MDK-073, No reduction present on URM1, (Grade 4 development), complete reduction on URM2, (Grade 0 development)

Carabelli's trait occurs with moderate frequency among the Madaklasht (43.8%) and two aspects of its manifestation merit comment. First, in direct opposition to the presence of the metaconule, Carabelli's trait follows the same pattern in reduction in frequency from mesial to distal noted for shovelling; but for Carabelli's, the fall-off in occurrence is much more severe, with Carabelli's being very common on UM1 (73.9%), of low occurrence on UM2 (19.6%), and completely non-existent on UM3. Second, the degree of expression of Carabelli's trait by grade spans the seven grade range of the ASUDA system. Low grade (grades 1-3) expressions tend to be more common (68.7%) than high grade (grades 4-7) expressions (31.3%), but the latter (Fig. 8) are nevertheless well represented, especially on UM1 (21.8% of all positive manifestations).

Parastyles are nearly completely absent from the maxillary molars of the Madaklasht. Out of a total of 367 tooth-trait observations for this feature, it was found only once, on a UM3 (0.3%) (Fig. 9).

Pegging, or marked reduction of the mesiodistal dimension of the tooth crown (Fig. 10), occurs with low frequency (7.9%) among the Madaklasht. Pegging of UI2 was found in 7.7% of cases, while pegging of UM3 occurred in 7.9% of cases.

Congenitally absent teeth appear to be quite rare among the Madaklasht, although it must be pointed out that dental casts can only identify teeth that are missing at the time the cast is made. Consequently, while it is often quite easy to distinguish between antemortem tooth loss and congenital absence of all teeth mesial to M3 in the absence of sophisticated orthodontic intervention, dental casts cannot distinguish between teeth that are missing due to congenital absence from those that have failed to erupt due to impaction. With this caveat in mind, the overall absence of missing maxillary teeth among the Madaklasht is 6.1%. Non-antemortem absence appears highest for UM3 (2/33 = 6.1%), followed by UI2 (4/183 = 2.2%), while no UP4s (0/161) were found to be missing.

Fig. 8: Carabelli's trait on ULM1, Specimen MDK-062, Grade 7

Mandibular Anterior Teeth

Trait presence by grade of expression, frequencies and number of observations for each of the 33

Fig. 9: Paracone development on ULM3, Specimen MDK-015, Grade 5

tooth-trait combinations in the mandibular dentition is provided in Table 2. Only a modest minority of the mandibular anterior teeth among the Madaklasht exhibit lingual marginal development, for such development was found in only 20.7% of individuals and, when found, consisted only of the most minimal grade of expression.

Development of a distal accessory ridge on the mandibular canine is much more rare (9.8%) among the Madaklasht than upon its isomer (46.8%), a finding consistent with that found worldwide by Scott and Turner (1997:33). However, unlike shovelling, development of the distal accessory ridge, when present, is often expressed as stronger grades of development (8/17 positive manifestations= 47.1%).

Mandibular Posterior Teeth

The modal number of lingual cusps on the mandibular incisors is one. However, LP3 often exhibits complete reduction of the lingual cusp and sometimes this tooth and its counterpart, LP4, are marked by two lingual cusps (Kraus and Furr 1953; Ludwig 1957). Assessment of lingual cusp number among the mandibular premolars of the Madaklasht reveals that departures from the modal single lingual cusp occur in 33.7% of mandibular premolars. When considered by tooth, departures from modality occur nearly twice as often in LP3 (44.8%) than in LP4 (22.5%). Further, the nature of the departure differs dramatically between LP3 and LP4. In the former, the overwhelming majority of departures are due to complete elimination of the lingual cusp (91.4%), while very few are due to an accessory lingual cusp (8.6%). By contrast, in the latter (LP4) all departures are the result of two lingual cusps. Not surprisingly, LP3s and LP4s differ markedly in the frequency of lingual cusp fusion to the buccal cusp, occurring far more often in those LP3s that possess a lingual cusp (61/107 = 57.0%) than those LP4s that also possess a lingual cusp (8/178 = 4.5%).

The lingual surface of the mandibular premolars may be divided by a groove. This groove may occur mesial to the apex of the buccal cusp, distal to the apex, or grooves may be found both mesially and distally. Overall, 42.9% (153/357) of mandibular premolars among the Madaklasht feature lingual surfaces marked by grooving. The distribution of grooves by position is most common mesial of the buccal cusp apex (38.6%), followed by a distal position (32.0%), with grooves on both

Fig. 10: Pegging of ULI2, Specimen MDK-103

sides least common (29.4%). Overall, grooves are far more common on the lingual surface of LP3 (69.6%) than LP4 (15.3%). The position of the grooves differs between these two teeth, with LP3s most often featuring a groove mesial to the apex of the buccal cusp (44.4%), with remaining grooves evenly distributed between those mesial to the buccal apex (27.8%) and those featuring grooves both mesial and distal to this cuspal apex (27.8%). In marked contrast, grooves occurring mesial to the buccal cusp apex are *least* common in LP4, grooves distal to the apex are the most common (51.9%), while the frequency of grooves both mesial and distal to the buccal apex occur with intermediate frequency (37.0%).

The anterior fovea is commonly found on LM1 among the Madaklasht, for 88.3% of those teeth for which this trait could be assessed for this trait possessed an anterior fovea.

The presence of the Y-occlusal groove occurs on about half (50.5%) of mandibular molars among the Madaklasht for which an assessment of this trait could be made. Presence of the Y-occlusal groove is highest for LM1 (81.0%) and sequentially decreases in frequency distally from LM2 (26.4%) to LM3 (16.0%).

The most common number of cusps on the mandibular molars of the Madaklasht is five (54.7%), followed closely by four (41.1%), with very few possessing six cusps (4.2%). However, when the molars are considered individually, it is clear there is great variation from one to the next. Five-cusped molars dominate LM1s (84.7%), with rather few possessing four cusps (10.2%) and even fewer with six (5.1%). By contrast, four-cusps are the modal occurrence for LM2 (77.5%), followed by those with five cusps (21.3%), with very few possessing six cusps (1.3%). Yet another pattern emerges among LM3s. Once again, five-cusps are the norm (59.1%), but there is near-parity between four- (22.7%) and six-cusped (18.2%) expressions.

Deflecting wrinkles occur with rather low frequency (17.6%) on the occlusal surfaces of the mandibular molars among the Madaklasht and virtually all of these occurrences are confined to LM1 (37.0% of all LM1s; 93.8% of all positive manifestations).

Protostylids, a cingular derivative found on buccal surface of the protoconid (Fig. 11), occur with low frequency on the mandibular molars of the Madaklasht (12.5%) and the overwhelming majority of occurrences are buccal pits (grade 2: 10.9% of all mandibular molars; 87.5% of all positive manifestations).

The hypocunulid (Cusp 5), when present on the mandibular molars among the Madaklasht, tend to be rather well-developed, for manifestations rated in the three highest grades (3-5) dominate positive expressions of this trait (96.7%). Intriguingly, unlike many other morphological traits, the size of the hypoconulid, when present, does not differ markedly among the mandibular molars, with only LM2 showing a moderate decrease in the frequency of marked expressions (88.9%) relative to LM1 (98.1%) and LM3 (100.0%).

The entoconulid (Cusp 6), a supernumerary cusp found on the distal aspect of the crown interposed between the hypoconulid and the entoconid (Fig. 12), occurs with very low frequency on the mandibular molars of the Madaklasht (15/363 = 4.1%) and when found always occurs at rather low levels (grades 1-2) of development. The presence of the entoconulid is most common on LM3 (4/21 = 19.0%), is less common on LM1 (9/177 = 5.1%), followed by LM2 (2/165 = 1.2%). The

markedly higher frequencies for the entoconulid on LM3 may be a consequence of the small number of observations available for this tooth.

The metaconulid (Cusp 7), a supernumerary cusp found interposed between the metaconid and entoconid on the lingual aspect of the crown (Fig. 13) occurs even more rarely (13/362 = 3.6%) upon the mandibular molars of the Madaklasht than the entoconulid. Like the entoconulid, the metaconulid occurs most frequently on LM3 (2/21 = 8.7%), followed by LM1 (10/176 = 5.7%), with occurrence least common on LM2 (1/163 = 0.6%). Intriguingly, the only moderate degrees of expression (grade 3) of this trait are confined to LM3.

Table 2: Morphological Variations of Permanent Mandibular Teeth among the Madaklasht by Sex

Females

Shovelling (SHOVA) Anterior Teeth		
Grade	n	Pct.
0	80	82.5
1	17	7.5
2	0	0.0
Total	97	100.0

Dist. Acc. Ridge (DAR) C		
Grade	n	Pct.
0	91	93.8
1	3	3.1
2	3	3.1
3	0	0.0
4	0	0.0
Total	97	100.0

Males

Shovelling (SHOVA) Anterior Teeth		
Grade	n	Pct.
0	62	5.6
1	19	3.2
2	1	1.2
Total	82	100.0

Dist. Acc. Ridge (DAR) C		
Grade	n	Pct.
0	65	5.5
1	6	7.9
2	3	3.9
3	1	1.3
4	1	1.3
Total	76	100.0

Lingual Cusp Number (LCSP)	P3		P4	
Grade	n	Pct.	n	Pct.
0	36	37.9	0	0.0
1	55	57.9	75	78.9
2	4	4.2	20	21.1
3	0	0.0	0	0.0
Total	95	100.0	95	100.0

Lingual Cusp Number (LCSP)	P3		P4	
Grade	n	Pct.	n	Pct.
0	38	44.2	0	0.0
1	45	52.3	63	75.9
2	3	3.5	19	22.9
3	0	0.0	1	1.2
Total	86	100.0	83	100.0

Lingual Cusp Fusion (LCF)	P3		P4	
Grade	n	Pct.	n	Pct.
Absent	25	42.4	90	94.7
Present	34	57.6	5	5.3
Total	59	100.0	95	100.0

Lingual Cusp Fusion (LCF)	P3		P4	
Grade	n	Pct.	n	Pct.
Absent	21	43.8	80	96.4
Present	27	56.2	3	3.6
Total	48	100.0	83	100.0

	Lingual Grooves (LGRV) P3		P4		Ant. Fovea (AF) M1		
Grade	n	Pct.	n	Pct.	Grade	n	Pct.
Absent	26	26.8	80	85.1	0	10	10.8
Mesial	33	34.0	2	2.1	1	1	1.1
Distal	20	20.6	7	7.4	2	60	64.5
Both	18	18.6	5	5.3	3	22	23.7
Total	97		94	100.0	Total	93	100.0

	Lingual Grooves (LGRV) P3		P4		Ant. Fovea (AF) M1		
Grade	n	Pct.	n	Pct.	Grade	n	Pct.
Absent	29	34.5	69	84.1	0	9	13.0
Mesial	23	27.4	1	1.2	1	2	2.9
Distal	15	17.9	7	8.5	2	42	60.9
Both	17	20.2	5	6.1	3	16	23.2
Total	84	100.0	82	100.0	Total	69	100.0

Table 2 Continued.....

Y Occlusal Groove Pattern (YGRV)						
	M1		M2		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
Absent	15	19.7	56	70.9	3	75.0
Present	61	80.3	23	29.1	1	25.0
Total	76	100.0	79	100.0	4	100.0

Y Occlusal Groove Pattern (YGRV)						
	M1		M2		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
Absent	12	18.2	50	76.9	18	85.7
Present	54	81.8	15	23.1	3	14.3
Total	66	100.0	65	100.0	21	100.0

Females Cusp Number (CSPN)						
	M1		M2		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
4	12	12.6	67	77.6	0	0.0
5	77	81.1	18	21.2	2	66.7
6	6	6.3	0	0.0	1	33.3
Total	95	100.0	85	100.0	3	100.0

Males Cusp Number (CSPN)						
	M1		M2		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
4	6	7.4	57	76.0	5	26.3
5	72	88.9	16	21.3	11	57.9
6	3	3.7	2	2.7	3	15.8
Total	81	100.0	75	100.0	19	100.0

Deflecting Wrinkle (DWKL)						
	M1		M2		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
0	61	67.0	90	98.9	4	100.0
1	3	3.3	0	0.0	0	0.0
2	21	23.1	1	1.1	0	0.0
3	6	6.6	0	0.0	0	0.0
Total	91	100.0	91	100.0	4	100.0

Deflecting Wrinkle (DWKL)						
	M1		M2		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
0	41	57.7	77	97.5	21	100.0
1	2	2.8	1	1.3	0	0.0
2	18	25.4	1	1.3	0	0.0
3	10	14.1	0	0.0	0	0.0
Total	71	100.0	79	100.0	21	100.0

Protostylid (PROTO)						
	M1		M2		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
0	84	87.5	87	92.6	3	75.0
1	1	1.0	1	1.1	0	0.0
2	11	11.5	5	5.3	1	25.0
4	0	0.0	0	0.0	0	0.0
7	0	0.0	1	1.1	0	0.0
Total	96	100.0	94	100.0	4	100.0

Protostylid (PROTO)						
	M1		M2		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
0	68	80.0	74	88.1	20	95.2
1	2	2.4	0	0.0	0	0.0
2	15	17.6	10	11.9	0	0.0
4	0	0.0	0	0.0	1	4.8
7	0	0.0	0	0.0	0	0.0
Total	85	100.0	84	100.0	21	100.0

Hypoconulid Size (CS)						
	M1		M2		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
0	12	12.6	71	79.8	0	0.0
1	0	0.0	1	1.1	0	0.0
2	0	0.0	1	1.1	0	0.0
3	15	15.8	9	10.1	1	25.0
4	47	49.5	4	4.5	3	75.0
5	21	22.1	3	3.4	0	0.0
Total	95	100.0	89	100.0	4	100.0

Hypoconulid Size (CS)						
	M1		M2		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
0	6	7.4	58	76.3	5	26.3
1	0	0.0	0	0.0	0	0.0
2	3	3.7	2	2.6	0	0.0
3	12	14.8	6	7.9	4	21.1
4	41	50.6	7	9.2	4	21.1
5	19	23.5	3	3.9	6	31.6
Total	81	100.0	76	100.0	19	100.0

Table 2 Continued.....

Females Entoconulid Size (CS)						
	M1		M2		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
0	89	93.7	89	100.0	2	66.7
1	2	2.1	0	0.0	1	33.3
2	4	4.2	0	0.0	0	0.0
Total	95	100.0	89	100.0	3	100.0

Males Entoconulid Size (CS)						
	M1		M2		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
0	79	96.3	74	97.4	15	83.3
1	1	1.2	1	1.3	1	5.6
2	2	2.4	1	1.3	2	11.1
Total	82	100.0	76	100.0	18	100.0

Metaconulid Size (C7)						
	M1		M2		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
0	92	97.9	82	100.0	4	100.0
1	2	2.1	0	0.0	0	0.0
2	0	0.0	0	0.0	0	0.0
3	0	0.0	0	0.0	0	0.0
Total	94	100.0	82	100.0	4	100.0

Metaconulid Size (C7)						
	M1		M2		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
0	74	90.2	80	98.8	17	89.5
1	6	7.3	0	0.0	0	0.0
2	2	2.4	1	1.2	0	0.0
3	0	0.0	0	0.0	2	10.6
Total	82	100.0	81	100.0	19	100.0

Congenital Absence (CABS)						
	I1		P2		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
Absent	98	100.0	96	100.0	6	100.0
Present	0	0.0	0	0.0	0	0.0
Total	98	100.0	96	100.0	6	100.0

Congenital Absence (CABS)						
	I1		P2		M3	
Grade	n	Pct.	n	Pct.	n	Pct.
Absent	87	100.0	85	100.0	27	100.0
Present	0	0.0	0	0.0	0	0.0
Total	87	100.0	85	100.0	27	100.0

Congenital absence was assessed for three mandibular teeth: LI1, LP4, and LM3. Although observations could be made for 185, 181, and 33 individuals, respectively, not a single case of non-antemortem loss was observed among these mandibular teeth.

Dichotomized Trait Frequencies

When trait expressions are dichotomized into categories of presence/absence only, it is clear that marked differences in trait expression occur between the various teeth that express the individual traits. Chi-square analysis reveals that 22 of the 34 maxillary tooth-trait combinations (64.7%) for which multiple teeth may be scored for a specific trait differ significantly by dental element (Table 3). Every contrast in trait frequency by tooth for shovelling, interruption grooves, median lingual ridge, ridging of the buccal cusp on the premolars, and Carabelli's trait is significant. Such results indicate that when maxillary tooth trait frequencies of the Madaklasht are compared, either by sex, or to samples of individuals of other ethnic groups, frequencies of these traits must be considered separately by tooth.

No significant differences in trait frequencies were found by tooth for the parastyle (completely absent among the Madaklasht), for pegging, or for congenital absence (except between UP4 and UM3). Such results suggest these traits are likely to be of little utility for comparative purposes. Remaining maxillary traits not found to differ significantly in frequency by tooth include full hypocone development and the presence of the metaconule on UM2 and UM3. Such results are likely the

consequence of small sample size for UM3, due to the sampling strategy used in the collection of dental casts. The lack of significant differences in buccal cusp number between UP3 and UP4, and in double shovelling between UI2 and UC as well as between UC and UP3, suggests that these traits are also unlikely to be of much use for detecting biological differences between the Madaklasht and other samples.

Chi-square analysis of dichotomized frequency differences in mandibular trait expressions by tooth yield similar results to those obtained for the maxilla. A total of 11 dental traits were scored as 27 tooth-trait combinations in which multiple teeth could be scored for a specific trait. Of these 27 tooth-trait combinations, 18 (66.7%) were found to differ significantly by tooth (Table 3). Every contrast in trait frequency by tooth for lingual cusp number, lingual cusp fusion and grooving among the mandibular premolars is significant. Similar results were obtained for the presence of the deflecting wrinkle, hypoconuild (Cusp 5) and entoconulid (Cusp 6). By contrast, none of the contrasts in frequency by tooth for the protostylid or congenital absence are significant. Remaining contrasts found to yield insignificant differences by tooth include the Y-occlusal groove on LM2 and LM3, cusp number on LM2 and LM3 and the presence of the metaconulid (Cusp 7) on LM1 and LM2.

Taken as a whole, the results obtained from contrasts of dichotomized trait frequencies indicate that trait expression must be considered by tooth to have any biological meaning. This is true for the overwhelming majority of traits considered. Hence, when trait expression among the Madaklasht is compared, either between males and females, or between the Madaklasht and samples of individuals from other ethnic groups, these comparisons must be performed not only by trait, but also by the tooth on which that trait is expressed.

Dental Morphology Trait Variation among the Madaklasht by Sex

It has often been claimed that one of the great advantages of dental morphology variation is that the large number of genes contributing to their manifestation (Nichol 1989; Townsend et al. 1988; 1992; 1994) results in an absence of sex dimorphism in both the degree and frequency of trait expression (Scott and Turner 1997). It is this quality that facilitates use of this system of biological variation for assessment of biological affinities of populations of the past, especially in those areas where extraction of ancient DNA has been rendered impossible due to depositional circumstances (Hemphill 2009).

Maxillary Anterior Teeth

Trait frequencies dichotomized into presence/absence only between males and females among the Madaklasht are presented in Table 4. Females exhibit shovelling more often (74.7%) than males (61.4%) on the lingual margins of UI1, but males (50.6%) have greater frequencies than females (44.6%) for UI2, while the sexes express shovelling with nearly equal frequency on UC (females = 37.4%, males = 36.8%). Chi-square analyses indicate that while the difference in shovelling frequency between males and females for UI1 approaches statistical significance, differences between males and females for shovelling on the other two teeth do not.

Females exhibit slightly higher frequencies of labial marginal ridge development, or double shovelling, than males for UI1 (females = 23.2%, males = 20.7%) and UC (females = 7.5%, males = 3.6%), but males possess slightly greater frequencies for UI2 (females= 9.6%, males= 13.4%) and

Fig. 11: Protostylid on LLM2, Specimen MDK-106, Grade 7

Fig. 12: Presence of the entoconulid (C6) on LRM1, Specimen MDK-039, Grade 2

UP3 (females = 2.1%, males = 3.6%). Not surprisingly, chi-square analyses indicate that none of these differences comes close to approaching statistical significance.

There is little difference in the frequency of interruption grooves by sex for UI1 (females= 0.0%, males= 1.2%), but males exhibit greater frequencies of this trait on UI2 (27.2%) than females (16.7%). Nevertheless, chi-square analyses reveal that neither of these differences is statistically significant.

Median lingual ridge development occurs with somewhat greater frequency among females for UI1 and UI2 than males (UI1: females= 71.3%; males= 69.0%; UI2: females= 38.5%, males= 32.1%), but in UC this relationship is reversed, with males (51.3%) exhibiting ridge development more often than females (42.4%). Chi-square analyses indicate that none of these differences are significant.

Males and females exhibit development of labial curvature of UI1 in nearly the same frequencies (males= 51.8%; females= 51.6%). This is not the case for development of the distal accessory ridge on UC, for expression of this ridge occurs more often among females (52.6%) than among males (39.7%). However, chi-square analysis indicates that neither this trait nor labial curvature of UI1 differs significantly in frequency between the two sexes.

Fig. 13: Presence of the metaconulid (C7) on LLM1, Specimen MDK-001, Grade 2

Maxillary Posterior Teeth

Presence of accessory buccal cusps on UP3 (females= 6.3%, males= 7.2%) and UP4 (females= 7.5%, males= 7.6%) occur with very similar frequencies by sex among the Madaklasht. By conttrast, differences between the two sexes are more marked

for the presence of ridges on the occlusal surfaces of the buccal cusp on these same teeth. In both cases, females exhibit these ridges with greater frequency than males (UP3: females= 44.2%, males= 35.9%; UP4: females= 67.7%, males: 59.7%). Nevertheless, chi-square analyses fail to identify any significant differences by sex for these traits.

Full expression of the metacone occurs with ubiquity and near ubiquity among both males and females for UM1 (males= 100.0%, females= 100.0%) and UM2 (males= 98.8%, females= 97.4%), respectively. By contrast, reduction of the metacone is commonly found on UM3, with males exhibiting somewhat higher frequencies (70.4%) than their female counterparts (66.7%). None of the differences in metacone frequencies between the sexes are statistically significant.

A somewhat different pattern emerges for reduction of the hypocone. Like the metacone, both males and females are marked by ubiquitous retention of a fully developed hypocone on UM1 (males= 100.0%, females= 100.0%). By contrast to the metacone, however, both males and females exhibit a high frequency of hypocone reduction on UM2. This reduction is more common among females, for full expressions of the hypocone nearly three times rarer among females (10.0%) than among males (27.1%). Males and females exhibit near ubiquitous (3.8%) or ubiquitous (0.0%) reduction of the hypocone on UM3. While chi-square tests reveal no significant differences by sex for hypocone reduction on either UM1 or UM3, the much great frequency of hypocone reduction in females on UM2 is statistically significant.

As noted above, metaconules are quite rare among the Madaklasht and this rarity is expressed with near equality by sex, with females (3.1%) exhibiting slightly higher frequencies than males (2.4%) for UM1, but males (12.9%) possessing slightly higher frequencies than females (10.4%) for UM2. However, males and females differ with respect to the presence of this cusp on UM3. The metaconule is universally absent among Madaklasht females (0/2= 0.0%), but is found among nearly one-fifth of males (5/26= 19.2%) among whom this trait could be scored. Nevertheless, despite this disparity, chi-square analysis fails to find any significant differences in metaconule frequency between the two sexes. For UM3, this likely reflects the impact of extremely small sample sizes, especially for females.

Carabelli's trait is very commonly found on the mesiolingual cusp of UM1 and occurs with virtually identical frequency among males (73.8%) and females (74.0%). By contrast, Carabelli's trait is universally absent on UM3s, regardless of sex. It is for UM2, however, that males and females among the Madaklasht differ in Carabelli's trait presence, for females express this trait nearly twice as often (24.7%) as their male counterparts (13.9%). Nevertheless, chi-square analysis fails to identify any significant differences in Carabelli's trait frequencies by sex among the Madaklasht.

The parastyle is extremely rare among the Madaklasht, for this accessory cusp, found on the buccal aspect of the maxillary molars, is entirely absent from the UM1s and UM2s of both males and females. The only example of this accessory cusp was found on a UM3 of a male. Not surprisingly, chi-square analysis fails to identify any significant sex differences in parastyle frequency among males and females from Madaklasht.

Extensive reduction of the mesiodistal dimension of the tooth crown, or pegging, occurs for both UI2 and UM3 among Madaklasht males and females. Pegging of UI2 is more common among females (9.4%) than among males (5.9%), and the same holds for UM3 (females= 25.0%; males= 6.9%). In

Table 3: Chi-square Analysis of Dichotomized Trait Frequencies among the Madaklasht by Tooth

Maxilla							
		T1[1]		T2			
Trait	Contrast	Pres.	n	Pres.	n	X^2	Prob.
SHOV	I1 vs. I2	122	178	84	175	7.227	0.007
SHOV	I1 vs. C	122	178	62	174	38.191	0.000
SHOV	I2 vs. C	84	175	62	174	11.442	0.001
DSHOV	I1 vs. I2	40	177	20	176	7.896	0.005
DSHOV	I1 vs. C	40	177	10	176	20.773	0.000
DSHOV	I1 vs. P3	40	177	5	180	31.827	0.000
DSHOV	I2 vs. C	20	176	10	176	3.644	0.056
DSHOV	I2 vs. P3	20	176	5	180	10.047	0.002
DSHOV	C vs. P3	10	176	5	180	1.859	0.173
IGRV	I1 vs. I2	1	178	37	171	39.926	0.000
MLR	I1 vs. I2	125	178	63	177	42.726	0.000
MLR	I1 vs. C	125	178	78	168	20.183	0.000
MLR	I2 vs. C	63	177	78	168	4.187	0.041
PCSP	P3 vs. P4	13	180	13	162	0.078	0.780
PRDG	P3 vs. P4	70	179	109	170	21.833	0.000
META	M1 vs. M2	183	183	158	161	1.622	0.203
META	M1 vs. M3	183	183	6	29	154.704	0.000
META	M2 vs. M3	158	161	6	29	118.316	0.000
HYPO	M1 vs. M2	181	181	27	150	236.188	0.000
HYPO	M1 vs. M3	181	181	1	28	191.948	0.000
HYPO	M2 vs. M3	27	150	1	28	2.697	0.101
MTCLE	M1 vs. M2	5	178	17	147	9.780	0.002
MTCLE	M1 vs. M3	5	178	5	28	8.828	0.003
MTCLE	M2 vs. M3	17	147	5	28	0.372	0.542
CARA	M1 vs. M2	133	180	33	168	102.498	0.000
CARA	M1 vs. M3	133	180	0	31	61.962	0.000
CARA	M2 vs. M3	33	168	0	31	7.300	0.007
PARA	M1 vs. M2	0	179	0	162	0.000	1.000
PARA	M1 vs. M3	0	179	0	26	0.000	1.000
PARA	M2 vs. M3	0	162	0	26	0.000	1.000
PEG	I2 vs. M3	14	181	3	33	0.000	1.000
CABS	I2 vs. P4	4	183	0	161	1.913	0.167
CABS	I2 vs. M3	4	183	2	33	0.451	0.502
CABS	P4 vs. M3	0	161	2	33	4.814	0.028

Table 3 Continued.....

Mandible							
		T1		T2			
Trait	Contrast	Pres.	n	Pres.	n	X^2	Prob.
LCSP	P3 vs. P4	81	181	40	178	19.936	0.000
LCF	P3 vs. P4	61	107	8	178	107.324	0.000
LGRV	P3 vs. P4	126	181	27	176	100.441	0.000
YGRV	M1 vs. M2	115	142	38	144	85.667	0.000
YGRV	M1 vs. M3	115	142	4	25	43.832	0.000
YGRV	M2 vs. M3	38	144	4	25	1.231	0.267
CSPN	M1 vs. M2	158	176	36	160	155.439	0.000
CSPN	M1 vs. M3	158	176	5	22	55.887	0.000
CSPN	M2 vs. M3	36	160	5	22	0.000	1.000
DWKL	M1 vs. M2	60	162	3	170	67.124	0.000
DWKL	M1 vs. M3	60	162	0	25	13.634	0.000
DWKL	M2 vs. M3	3	170	0	25	7.464	0.006
PROTO	M1 vs. M2	29	181	17	178	3.364	0.067
PROTO	M1 vs. M3	29	181	2	25	0.567	0.451
PROTO	M2 vs. M3	17	178	2	25	0.000	1.000
C5	M1 vs. M2	158	176	36	165	160.350	0.000
C5	M1 vs. M3	158	176	14	23	12.131	0.000
C5	M2 vs. M3	36	165	14	23	15.769	0.000
C6	M1 vs. M2	9	177	2	165	4.114	0.043
C6	M1 vs. M3	9	177	4	21	3.907	0.048
C6	M2 vs. M3	2	165	4	21	13.699	0.000
C7	M1 vs. M2	10	176	1	163	6.924	0.009
C7	M1 vs. M3	10	176	2	23	0.011	0.916
C7	M2 vs. M3	1	163	2	23	3.985	0.041
CABS	I1 vs. P4	0	185	0	181	0.000	1.000
CABS	I1 vs. M3	0	185	0	33	0.000	1.000
CABS	P4 vs. M3	0	181	0	33	0.000	1.000

1. T1 and T2 stand for the first and second members of a tooth contrast by trait, respectively.

neither case is the difference in frequency significant. In the latter case, this is largely a consequence of small sample sizes, especially for females (n= 4).

Non-antemortem missing teeth are generally quite rare in this sample of adolescents and young adults from Madaklasht. Indeed, the sampling strategy was designed to achieve this very end (see also Hemphill 1991; Hemphill et al. 1991; 1994, in press). Nevertheless, likely congenital absence was observed for both UI2 and UM3, but no cases of likely congenital absence of UP4 were observed. Likely congenital absence of UI2, although rare, occurs more than three times more often among males

(5/85= 3.6%) than among females (1/95= 1.0%). Likely congenital absence of UM3 was not observed in this sample of Madaklasht females, but was observed in two cases (2/28= 7.1%) among males.

Mandibular Anterior Teeth

The development of ridges along the lingual surfaces of the mesial and distal margins (*i.e,* shovelling) of mandibular anterior teeth is far less common than among their maxillary isomers (see Scott and Turner 1997). These ridges occur at moderate to low frequency among the Madaklasht and are more common among males (24.4%) than females (17.5%). A similar pattern holds for the distal accessory ridge on the mandibular canine. That is, frequencies are far lower than among their maxillary counterparts and frequencies are markedly higher among males (14.5%) than females (6.2%). Although the difference in the distal accessory ridge frequency approaches statistical significance (X^2= 3.303, p= 0.069), neither this trait nor shovelling of the anterior teeth differs significantly between males and females.

Mandibular Posterior Teeth

As noted for the Madaklasht overall, the model number of lingual cusps for LP3 is one, but often the lingual cusp is completely absent. In a similar fashion, the modal number of cusps for LP4 is also one, but a second lingual cusp occurs regularly, albeit rarely (see Kraus and Furr 1953; Ludwig 1957). Departures from the model number of a single lingual cusp on the mandibular premolars occur quite often among the Madaklasht. Males exceed females in such departures from modality in both teeth (LP3: males= 47.7%; females= 42.1%; LP4: males= 24.1%; females= 21.1%), but these differences are small and are not significant statistically.

A somewhat different pattern emerges for fusion of the lingual cusp apex to the apex of the buccal cusp. Madaklasht males and females exhibit near identity in expression of this trait in LP3 (males= 56.9%, females= 56.8%), but in LP4 females are affected more often (5.3%) than males (3.6%). In neither case do chi-square analyses indicate any significant differences in the expression of this trait by sex.

The presence of a groove, or grooves, on the lingual surface of the mandibular premolars was found on LP3 and LP4 among both males and females from Madaklasht. Females exhibit this trait more often (73.2%) than males (65.5%) on LP3, but for LP4 the relationship is reversed with males exhibiting grooves slightly more often (15.9%) than females (14.9%). Once again, chi-square analyses fail to detect any significant difference in expression of this trait by sex for either LP3 or LP4.

The anterior fovea is commonly expressed on LM1 among the Madaklasht. Trait expression is only slightly more common among females (89.2%) than among males (87.0%). The difference between the two sexes is not statistically significant.

Both males and females among the Madaklasht exhibit decreasing frequencies of the Y-occlusal groove pattern from LM1 to LM2 to LM3. Frequencies of the Y-occlusal groove on LM1 are nearly identical for males (81.8%) and females (80.3%), but females exhibit this groove pattern more often than males on both LM2 (females= 29.1%; males= 23.1%) and LM3 (females= 25.0%; males= 14.3%). Chi-square analyses indicate that none of these differences in Y-occlusal groove frequency are significant between the two sexes.

Table 4. Chi-square Analysis of Dichotomized Trait Frequencies among the Madaklasht by Sex.

Maxilla							
		Females		Males			
Trait	Tooth	Pres.	n	Pres.	n	X^2	Prob.
SHOV	I1	71	95	51	83	3.269	0.057
SHOV	I2	41	92	41	81	0.633	0.426
SHOV	C	34	91	28	76	0.005	0.945
DSHOV	I1	22	95	17	82	0.151	0.698
DSHOV	I2	9	94	11	82	0.641	0.423
DSHOV	C	7	93	3	83	0.629	0.428
DSHOV	P3	2	96	3	84	0.023	0.880
IGRV	I1	0	94	1	84	0.003	0.955
IGRV	I2	15	90	22	81	2.769	0.096
MLR	I1	67	94	58	84	0.105	0.745
MLR	I2	37	96	26	81	0.796	0.372
MLR	C	39	92	39	76	1.333	0.248
LC	I1	49	95	44	85	0.001	0.980
DAR	C	50	95	31	78	2.857	0.091
PCSP	P3	6	96	6	83	0.068	0.794
PCSP	P4	7	93	6	79	0.000	0.987
PRDG	P3	42	95	28	78	1.229	0.268
PRDG	P4	63	93	46	77	1.172	0.279
META	M1	96	96	85	85	0.000	1.000
META	M2	84	85	74	76	0.010	0.922
META	M3	2	3	19	27	0.000	1.000
HYPO	M1	96	96	85	85	0.000	1.000
HYPO	M2	8	80	19	70	7.433	0.006
HYPO	M3	0	2	1	26	0.000	1.000
MTCLE	M1	3	96	2	82	0.000	1.000
MTCLE	M2	8	77	9	70	0.218	0.640
MTCLE	M3	0	2	5	26	0.000	1.000
CARA	M1	71	96	62	84	0.001	0.982
CARA	M2	22	89	11	79	3.090	0.079
CARA	M3	0	3	0	28	0.000	1.000
PARA	M1	0	95	0	84	0.000	1.000
PARA	M2	0	86	0	76	0.000	1.000
PARA	M3	0	2	1	24	0.000	1.000
PEG	I2	9	96	5	85	0.771	0.380
PEG	M3	1	4	2	29	0.064	0.800
CABS	I2	1	96	3	84	0.367	0.545
CABS	P4	0	93	0	84	0.000	1.000
CABS	M3	0	5	2	28	0.000	1.000

Table 4 Continued.....

		Mandible					
		Females		Males			
Trait	Tooth	Pres.	n	Pres.	n	X^2	Prob.
SHOVA	Ant.	17	97	20	82	1.277	0.258
DAR	C	6	97	11	76	3.303	0.069
LCSP	P3	40	95	41	86	0.566	0.452
LCSP	P4	20	95	20	83	0.236	0.627
LCF	P3	42	74	37	65	0.000	0.984
LCF	P4	5	95	3	83	0.028	0.867
LGRV	P3	71	97	55	84	0.799	0.371
LGRV	P4	14	94	13	82	0.031	0.860
AF	M1	83	93	60	69	0.201	0.654
YGRV	M1	61	76	54	66	0.055	0.814
YGRV	M2	23	79	15	65	0.669	0.413
YGRV	M3	1	4	3	21	0.000	1.000
CSPN	M1	83	95	75	81	1.300	0.254
CSPN	M2	18	85	18	75	0.182	0.670
CSPN	M3	3	3	14	19	0.073	0.788
DWKL	M1	30	91	30	71	1.475	0.225
DWKL	M2	1	91	2	79	0.015	0.902
DWKL	M3	0	4	0	21	0.000	1.000
PROTO	M1	12	96	17	85	1.885	0.170
PROTO	M2	7	94	10	84	1.021	0.312
PROTO	M3	1	4	1	21	0.131	0.717
C5	M1	83	95	75	81	1.300	0.254
C5	M2	18	89	18	76	0.288	0.592
C5	M3	3	3	14	19	0.073	0.788
C6	M1	6	95	3	82	0.211	0.646
C6	M2	0	89	2	76	0.682	0.211
C6	M3	1	3	3	18	0.000	1.000
C7	M1	2	94	8	82	3.439	0.064
C7	M2	0	82	1	81	0.000	1.000
C7	M3	0	4	2	19	0.000	1.000
CABS	I1	0	98	0	87	0.000	1.000
CABS	P4	0	96	0	85	0.000	1.000
CABS	M3	0	6	0	27	0.000	1.000

Possession of high cusp number, due to retention of the hypoconulid, follows the same pattern among Madaklasht males and females in which frequencies are lowest for LM2. Males tend to retain the hypoconulid more often in both LM1 (92.6%) and LM2 (24.0%) than females (LM1= 87.4%; LM2= 21.2%), but in LM3 this relationship is reversed (females= 100.0%; males= 73.7%). This reversal is a likely consequence of the low number of observations for this trait on the LM3 of Madaklasht

females. Chi-square analyses reveal no significant differences in cusp number by sex among any of the mandibular molars among the Madaklasht.

Presence of the deflecting wrinkle exhibits the same decline in frequency from mesial to distal members of the mandibular molars as described for the Y-occlusal groove above. However, unlike the Y-occlusal groove, Madaklasht males exceed their female counterparts in deflecting wrinkle frequencies for both LM1 (males= 42.3%; females= 33.0%) and LM2 (males= 2.5%; females= 1.1%). The deflecting wrinkle is completely absent from LM3 among both males and females. Chi-square analyses indicate that there are no significant differences in deflecting wrinkle frequencies by sex among the Madaklasht.

As noted above, the protostylid is rather uncommon among the Madaklasht and, when present, is nearly always expressed as a buccal pit (grade 2). Males feature higher frequencies of the protostylid on LM1 (20.0 %) and LM2 (11.9%) than females (LM1= 12.5%; LM2= 7.4%), but for LM3 this relationship is reversed (females= 25.0%; males= 4.8%). Chi-square analyses indicate that none of these differences between males and females are significant.

Presence of the hypoconulid follows the pattern for mandibular molar cusp number described above. However, since the latter includes all molars that possess *either* a hypocomunlid or an entoconulid as a positive manifestation (but not the metaconulid, see Turner et al 1991), the frequencies for C5 among males and females are somewhat different. The hypoconulid is commonly found on LM1 among both males and females, but is more often absent on LM2. In both cases, males retain the hypoconulid more often than their female counterparts (LM1: males= 92.6%, females= 87.4%; LM2: males= 23.7%, females= 20.2%). The hypoconulid occurs far more often on LM3, reaching unity among females (100.0%), but not among males (73.7%). None of these differences in the frequency of hypoconulid presence are significantly different between males and females.

Development of the hypocone (C5), as reflected by the size of this cusp, exhibits a similar pattern for both sexes for LM1. Both Madaklasht males and females most commonly possess a slightly diminished expression (grade 4) of this cusp (males= 50.6%, females= 49.5%), followed by full expression (males= 23.5%, females= 22.1%), and then by a moderate degree (grade 3) of expression (males= 14.8%, females= 15.8%). Low expressions (grades 1-2) are rare among Madaklasht males (3.7%) and are completely absent among females. Some minor differences distinguish hypocone development in Madaklasht males and females. For males, the most common manifestation is a slightly diminished expression (grade 4= 9.2%), followed closely by moderate expressions (grade 3= 7.9%). By contrast, this relationship is reversed among females (grade 3= 10.1%, grade 4= 4.5%). Both sexes are marked by similar frequencies of full (grade 5: males= 3.9%; females= 3.4%) and low expressions (grades 1-2: males= 2.6%; females= 2.2%). Chi-square tests indicate that there are no significant differences in the frequency of fully developed expressions of the hypocone between Madaklasht males and females.

As noted above for the Madaklasht as a whole, the entoconulid (C6) is rare in this population. Frequencies among both males and females tend to be highest on LM3, but this may be a consequence of the lesser number of observations made for the trait on this tooth. Females tend to exhibit the entoconulid more often on LM1 (6.3%) than males (3.7%), but this relationship is reversed

for LM2 (males= 2.6%; females= 0.0%). None of these differences in entoconulid frequency by tooth are significant between Madaklasht males and females.

The metaconulid (C7) also occurs rarely among the Madaklasht, but unlike the entoconulid described above, the distribution of the metaconulid reflects a distinctive distribution by sex. Frequencies of the metaconulid are higher among males for all three mandibular molars. The metaconulid is found in 9.8%, 1.2%, and 11.1% of LM1s, LM2s, and LM3s, respectively, for which observations could be made among Madaklasht males. By contrast, metaconulid frequencies among females are 21.3%, 0%, and 0% for these same teeth. Although none of these differences in frequency are significant, the difference in metaconulid frequency on LM1 approaches statistical significance (X^2= 3.439, p= 0.064, see Table 4).

Despite nearly 400 observations, not a single example of non-antemortem tooth loss was observed among the Madaklasht for either LI1, LP4, or LM3. Consequently, there is no difference by sex in the occurrence of such absences.

Discussion

Morphology of the Maxillary Teeth

A total of 38 maxillary tooth-trait combinations were scored among the Madaklasht. Traits range in frequency from complete fixation (100%) to complete absence. The most commonly expressed maxillary traits among the Madaklasht are retention of a fully expressed metacone (cusp 3) and hypocone (cusp 4) on UM1, which were found in every individual where these traits could be assessed. Four traits were completely absent among the Madaklasht. These include the presence of Carabelli's trait on UM3, the parastyle on UM1 and UM2, and non-antemortem absence of UP4.

For purposes of discussion, the remaining 32 tooth-trait combinations are trichotomized into high, medium, and low frequency traits. High frequency traits are those found in more than half of the cases available for analysis, medium frequency traits occur in 10 to 49.9% of cases, and low frequency traits occur in less than 10% of cases. When trichotomized in this fashion, the Madaklasht exhibit seven, 13, and 12 high, medium, and low frequency tooth-trait combinations in the maxilla, respectively.

The most commonly non-fixed tooth-trait combination found in the maxillary teeth of the Madaklasht is a fully expressed metacone on UM2 (98.1%). This is followed by the presence of Carabelli's trait on UM1 (73.9%), the median lingual ridge on UI1 (70.2%), and retention of a fully expressed metacone on UM3 (68.5%). However, with respect to the last of these traits, the relatively low number of observations (n= 29) renders the high frequency found among the Madaklasht somewhat questionable. Other traits found in rather high frequencies include shovelling of UI1 (68.1%), accessory ridges on the occlusal surface of UP4 (63.7%) and curvature of the labial surface of UI1 (51.7%).

Tooth-trait combinations found with moderate frequencies among the Madaklasht can be further divided into those found in high-moderate frequencies, defined as those found between one-fourth and one-half of those Madaklasht individuals for whom these traits could be assessed, and those found in low-moderate frequencies, which is defined here as those found among greater than 10%, but less than 25% of the Madaklasht.

A total of six maxillary tooth-trait combinations are found in high-moderate frequencies. The most common are shovelling of UI2 (47.6%), development of the median lingual ridge on UC (46.9%), and the presence of a distal accessory ridge on this same tooth (46.2%). Somewhat less common is the presence of an accessory ridge on the occlusal surface of UP3 (40.1%), shovelling on UC (37.1%) and median lingual ridge development on UI2 (35.3%).

Seven maxillary tooth-trait combinations occur with low-moderate frequency among the Madaklasht. The most common of these are double shovelling on UI1 and interruption grooves on UI2, both of which are found at identical frequencies (21.9%). Somewhat less common is Carabelli's trait on UM2 (19.3%), followed by the presence of a fully developed hypocone and by the presence of the metaconule on this same tooth, the latter of which occur with the same frequency (18.6%) among the Madaklasht. The least common tooth-trait combinations that occur with low-moderate frequency are pegging of UM3 (15.9%) and double shovelling on UI2 (11.5%).

Some 12 tooth-trait combinations are present among the Madaklasht at low frequencies. The most common of these are the presence of the metaconule on UM3 (9.6%), pegging of UI2 (7.6%), the presence of accessory cusps on UP4 (7.6%) and UP3 (6.7%), and double shovelling of UC (5.6%). Somewhat less common are non-antemortem absence of UM3 (3.6%), double shovelling of UP3 and the presence of the metaconule on UM1, both of which affected the same proportion of Madaklast dentitions (2.8%) that could be assessed for these traits. The least common tooth-trait combinations found in the maxillary teeth of the Madaklasht are non-antemortem loss of UI2 (2.3%), the presence of the parastyle (2.1%) and a fully developed hypocone (1.9%) on UM3, and the presence of an interruption groove on the lingual surface of UI1 (0.6%).

Morphology of the Mandibular Teeth

A total of 33 mandibular tooth-trait combinations were scored among the Madaklasht. Unlike their maxillary counterparts, none of these tooth-trait combinations were found to reach fixation in the mandible. However, as seen in the maxilla four tooth-trait combinations were completely absent from the Madaklasht dentition. These include the presence of the deflecting wrinkle on LM3, and non-antemortem absence of LI1, LP4, and LM3. Classification of the remaining 29 mandibular tooth-trait combinations frequencies into the high, medium and low frequency categories defined for maxillary variations yields six combinations that occur with high frequency, 14 that occur at medium frequency and 13 that occur at low frequency.

The most common mandibular tooth-trait combination found among the Madaklasht is retention of the hypoconulid (90.0%) on LM1. This is followed by the presence of the anterior fovea on this same tooth (88.1%), retention of the hypoconulid on LM3 (86.8%), and the presence of the Y-groove on LM1 (81.0%). Somewhat less common in the Madaklasht mandibular dentition is the lingual groove (69.3%) on LP3 and fusion of the lingual cusp to the buccal cusp (56.8%) on those LP3s marked by a free-standing lingual cusp.

As in the maxilla, mandibular tooth-trait combinations found with moderate frequencies can be further divided into those found in high-moderate frequencies, defined as those found between one-fourth and one-half of those Madaklasht individuals for whom these traits could be assessed,

and those found in low-moderate frequencies, defined as those found among greater than 10%, but less than 25% of the Madaklasht. While such a division results in a fairly balanced division of moderately occurring tooth-trait combinations in the maxilla (six, high-moderate, seven low-moderate), this is not the case for mandibular tooth-trait combinations. Instead, only four tooth-trait combinations can be considered to be of high-moderate frequency, while 10 are of low-moderate frequency. The difference reflects the fact that the average of moderate frequency traits is higher for maxillary tooth-trait combinations (29.3%) than for their mandibular counterparts (22.5%).

The four tooth-trait combinations found with high-moderate frequencies among the Madaklasht include deviations from the normative cusp number on LP3 (44.9%) and presence of the deflecting wrinkle on LM1 (37.6%), as well as a Y-groove on LM2 (26.1%) and the presence of the entoconulid on LM3 (25.0%).

The most commonly occurring tooth-trait combinations found at low-moderate frequency among the Madaklasht are full expressions of the hypoconulid on LM1 (22.8%), retention of this cusp on LM2 (22.6%), and shovelling of the anterior teeth (21.0%). Somewhat less common are the Y-groove on LM3 (19.6%), the protostylid on LM1 (16.3%), retention of the hypoconulid on LM3 (15.8%), a groove on the lingual surface of LP4 (15.4%), the protostylid on LM3 (14.9%), and the presence of a distal accessory ridge on LC (10.3%).

Nine tooth-trait combinations are found in rather low frequencies among the mandibular teeth of the Madaklasht. The most common of these is the protostylid on LM2, which is found in nearly one out of ten (9.7%) individuals whose teeth could be scored for this trait. The next most common tooth-trait combinations are the presence of the metaconulid (C7) on LM1 (5.9%) and LM3 (5.3%). These are followed in frequency by the presence of the entoconulid (C6) on LM1 (5.0%) fusion between the lingual and buccal cusps on LP4 (4.4%) and the presence of fully developed hypoconulids on LM2 (3.7%). The least frequent tooth-trait combinations found among the mandibular teeth of the Madaklasht are the presence of the deflecting wrinkle (1.8%), entoconulid (1.3%) and metaconulid (0.6%) on LM3.

Dental Morphology of the Madaklasht in Continental Perspective

Taken as a whole, the dental morphology of the Madaklasht may be described as follows. The Madaklasht possess maxillary teeth that universally retain full expressions of the metacone and hypocone on UM1, almost always possess full expressions of the metacone, but only a minority of cases feature full expression of the hypocone on UM2. By contrast, the metacone is fully expressed on UM3 among a majority of the Madaklasht. The maxillary teeth also commonly express Carabelli's trait on UM1, albeit at rather low grades of expression, but this trait occurs only among one out of five Madaklasht individuals on UM2 and never on UM3. Median lingual ridges and low grades of shovelling are present on UI1 in just over two-thirds of Madaklasht, while these traits are much less common on UI2. Just under two-thirds of UP4s exhibit accessory ridges on the buccal cusp, while about half of the Madaklasht are marked by curvature of the labial surface of UI1 and by distal accessory ridges on UC. A considerable minority of Madaklasht maxillary dentitions feature accessory ridges on the buccal cusp of UP3 and shovelling of UC, while only about one in five are marked by double shovelling of UI1, interruption grooves on the lingual surface of UI2, and by Carabelli's

trait, full expression of the hypocone and the presence of the metaconule on UM2. Metaconules on UM3, pegging of UI2, accessory buccal cusps on UP3 and UP4, double shovelling of UC, and non-antemortem loss of UM3 appear occasionally in the maxilla of the Madaklasht, while double shovelling of UP3, the metaconule on UM1, non-antemortem loss of UI2, the presence of the parastyle and full expression of the hypocone on UM3 and an interruption groove in the lingual surface of UI1 rarely occur among the Madaklasht.

The mandibular teeth of the Madaklasht are marked by retention of the hypoconulid on LM1 and LM3, but not on LM2. Anterior foveae are commonly found on LM1 as is the Y-groove, while Y-grooves are found only in a minority of LM2s and LM3s. Fusion between lingual and buccal cusps, departures from normative cusp number, and grooves in the lingual surface are commonly present on the lingual surface of LP3, but none of these three traits are as common on LP4. Deflecting wrinkles are commonly found on LM1, but not on LM2, and are never present in LM3. Protostylids are not common among the Madaklasht, but when found tend to be more common on LM3 and LM1 than on LM2. About one in ten Madaklasht dentitions is marked by a distal accessory ridge on the canine, while accessory cusps, apart from the entoconulid on LM3 are only occasionally encountered. Deflecting wrinkles on LM3 and non-antemortem tooth loss of LI1, LP4, and LM3 do not occur among the Madaklasht.

Scott and Turner (1997) provide some comparative data on tooth-trait combination frequencies in regional populations throughout the world. These data can be used to place the dental morphological profile of the Madaklasht into world perspective. Comparative data are available for nine tooth-trait combinations, with three from the maxilla and six from the mandible. For brevity, comparative data from only six of these regions is considered here. These include modern Western Europeans, Southeast Asians, Southern Siberians and Chinese-Mongolians from Scott and Turner's dataset, as well as data on modern Indians and Indo-Iranians. The first four dental series were scored by Turner, while frequencies for the latter two were taken from the literature.

Beginning with the maxilla, Scott and Turner (1997) opt to report data for moderate to strong expressions (grades 3 and above) of shovelling on UI1 for comparative purposes. Frequencies across these six comparative samples range from a high of 72.0% among Chinese-Mongolians to a low of 2.7% among Western Europeans. Moderate to strong expressions of shovelling occurs with a frequency of 12.3% among the Madaklasht. This frequency is very similar to that seen among modern Indians (12.6%) and Indo-Iranians (12.7%), but is much more divergent from that seen in modern Southeast Asians (34.9%) and Southern Siberians (34.9%).

Likewise, for comparative purposes, expressions of Carabelli's trait were limited to tubercular and cuspal expressions (grades 5-7). Frequencies across the six comparative samples range from a high of 27.3% among Western Europeans to a low of 14.0% among Southern Siberians. The Madaklasht have a frequency of tubercular and cuspal manifestation of Carabelli's trait of 23.1% As such, they appear most similar to modern Indians (22.8%), followed by Indo-Iranians (17.6%), with Western Europeans (27.3%) and Southeast Asians (20.8%) somewhat more divergent. The Madaklasht are least like southern Siberians and Chinese-Mongolians (16.2%) for Carabelli's trait.

Complete elimination of the hypocone in UM2, resulting in a 3-cusped molar, varies in frequency across the six comparative samples from a high of 27.4% among Indo-Iranians to a low of 10.8% among Chinese-Mongolians. Complete elimination of the hypocone on UM2 occurs with a frequency of 26% among the Madaklasht. As a result, the Madaklasht are most similar to Indo-Iranians, nearly equally divergent from Western Europeans and modern Indians (22.7%), but markedly divergent from Southern Siberians (14.2%), Southeast Asians (11.5%) and Chinese-Mongolians.

Turning now to the mandible, Scott and Turner (1997) provide comparative data for the same six populations (modern Western Europeans, Southeast Asians, Southern Siberians, Chinese-Mongolians, Indians and Indo-Iranians). Unfortunately, this comparative data is limited to traits found on the molars.

Retention of the conservative Y-groove on LM2 varies from lows of 7.0% and 7.6% among modern Indians and Chinese-Mongolians, respectively, to a high of 27.2% among modern Western Europeans. The Madaklasht, featuring a frequency of 26.1% for this trait, are most similar to these Western Europeans, followed by Southern Siberians (22.2%), Southeast Asians (17.5%) and Indo-Iranians (10.0%).

Presence of the deflecting wrinkle on the occlusal surface of LM1 was found to be rather common among the Madaklasht, occurring among 37.6% of individuals for whom this trait could be assessed. This trait is of remarkably greater frequency in this population than reported by Scott and Turner for the six comparative populations. For in these latter samples, frequencies of the deflecting wrinkle range from a high of 16.9% among modern Indians and Southern Siberians to a low of 5.2% among Western Europeans. This strong departure in the occurrence of the deflecting wrinkle among the Madaklasht could be the product of two potential factors. The first is that if Madaklasht origins are as asserted by the Madaklasht themselves, in which a relatively small founding population entered their current location and then embarked on several centuries of reproductive isolation from other groups, this could easily lead to over- and under-representation of specific genetically controlled anatomical features, such as the deflecting wrinkle (Hamilton 2009; Hartl and Clark 2006; Hedrick 2000; Templeton 2006). Alternatively, such high values may merely reflect a difference in scoring between the author and Turner, despite all efforts to adhere to the guidelines set forth in the ASU Dental Anthropology System (Scott and Turner 1997; Turner et al 1991).

Retention of the hypoconulid (C5) on the occlusal surface of the mandibular molars is considered the conservative condition among members of the superfamily *Hominoidea* (Gregory and Hellman 1926; Swindler 1976). However, in the later stages of human evolution, especially after the development of agricultural production, there appears to have been a trend towards mandibular molar cusp reduction and loss of the hypoconulid results in a four-cusped molar (Gregory 1922; Hellman 1928). Scott and Turner report frequencies of hypoconulid loss in both LM1, where such loss is relatively rare, and in LM2, where loss of the hypoconulid is common.

Loss of the hypoconulid on LM1 ranges across the six comparative samples from a high of 15.1% among modern Indians to a low of 0.2% among Chinese-Mongolians. Loss of the hypoconulid on LM1 among the Madaklasht is relatively common, with 10.0% of individuals exhibiting such loss. As such, frequencies of hypoconulid loss among the Madaklasht are most similar to Indo-Iranians

(13.4%) and Western Europeans (7.8%), with modern Indians somewhat more divergent. The Madaklasht differ strongly from Southern Siberians (2.2%), Southeast Asians (0.7%) and Chinese-Mongolians with respect to this trait.

When loss of the hypoconulid on LM2 is considered, frequencies of such loss differ dramatically across the six comparative samples. Loss of the hypoconulid is most common among modern Indians (84.4%), followed closely by Indo-Iranians (82.0%), with frequencies somewhat lower among Western Europeans (71.1%) and lower still among Southern Siberians (54.2%). By contrast, loss of the hypoconulid on this tooth is relatively rare among Southeast Asians (30.3%) and especially Chinese-Mongolians (20.8%). The Madaklasht feature loss of the hypoconulid with a rate of 78.0%, which places them intermediate in frequency between Indo-Iranians on the one hand, with modern Indians somewhat more distantly removed, and Western Europeans on the other.

The entoconulid (C6) is an accessory cusp found on the mandibular molars. Scott and Turner report frequencies of this cusp on LM1. Frequencies across the six comparative samples range from a high of 35.9% among Chinese-Mongolians to a low of 4.0% among Indo-Iranians. The Madaklasht rarely exhibit this trait on any of the mandibular molars and LM1 is no exception (5.0%). Hence, frequencies of the entoconulid on LM1 among the Madaklasht are very similar to frequencies found among modern Indians (6.0%) and Indo-Iranians, somewhat more divergent from frequencies found in Western Europeans (8.3%) and markedly divergent from Southern Siberians (20.5%), Southeast Asians (32.5%) and Chinese-Mongolians.

The metaconulid (C7) is another accessory cusp found on the mandibular molars and for which Scott and Turner provide frequencies on LM1. Less variation in frequency occurs across the six comparative samples for this trait, for frequencies are universally modest ranging from a high of 9.9% among Southern Siberians to a low of 1.6% among Indo-Iranians. The Madaklasht are marked by the presence of the metaconulid on LM1 with a frequency of 5.9%. As such, the Madaklasht possess nearly identical frequencies of this trait as that found among modern Indians (5.8%) and are somewhat more divergent from Western Europeans (4.5%). The Madaklasht are further distinguished from Southeast Asians (7.3%) and Chinese-Mongolians (7.9%), and stand dramatically apart from Indo-Iranians and southern Siberians with respect to this trait.

A rank-order comparison of differences in the maxillary traits for which comparisons could be made between the Madaklasht and the regional data provided by Scott and Turner indicate that modern Indians are most similar, followed by modern Indo-Iranians and Western Europeans. Modern Indians are closest to the Madaklasht for two traits, shovelling of UI1 and Carabelli's trait on UM1, but are only third-most common for the presence of a fully reduced hypocone on UM2. The Madaklasht appear to be equally distinguished from modern Indo-Iranians and Western Europeans. Modern Indo-Iranians are most similar to the Madaklast for expression of hypocone reduction on UM2, but rank second-most similar and fourth most similar for shovelling of UI1 and expression of Carabelli's trait on UM1, respectively. Western Europeans rank second-most common to the Madaklasht for expression of Carabelli's trait and reduction of the hypocone on UM2, but are third-most similar to the Madaklasht for shovelling of UI1.

A comparison of maxillary trait frequencies clearly identifies Chinese-Mongolians as the most divergent of the comparative samples from the Madaklasht, followed by Southern Siberians and then by Southeast Asians. Chinese-Mongolians stand apart as the most divergent in shovelling frequencies for UI1 and presence of a fully reduced hypocone on UM2, and they are next to the most divergent for Carabelli's trait expression on UM1. Southern Siberians are the most divergent sample from the Madaklasht for expression of Carabelli's trait on UM1, next most divergent for shovelling of UI1, and fourth-most divergent in full reduction of the hypocone on UM2. Southeast Asians on the other hand, are next to the most divergent for full reduction of the hypocone on UM2, are fourth-most divergent for shovelling of UI1, and are just third-most divergent for expression of Carabelli's trait on UM1.

Five traits could be compared by rank order between the Madaklasht and the six regional samples provided by Scott and Turner. The deflecting wrinkle was not considered given its markedly higher presence among the Madaklasht (see discussion in text above). Similar to results obtained from the maxillary teeth, it is clear that the Madaklasht share closer affinities to modern Indians, Indo-Iranians and Western Europeans than to Southeast Asians, Southern Siberians or Chinese-Mongolians. In the former group, rank order comparisons identify Western Europeans as most similar to the Madaklasht, followed by modern Indians, and then by Indo-Iranians. This proximity to Western Europeans appears to be fuelled by similarities in the presence of the Y-groove on LM2 and by the presence of the hypoconulid on LM2. Conversely, the more distant position of modern Indians relative to the Madaklasht yielded by this comparison of mandibular features relative to that seen in the maxilla is solely the consequence of the profoundly lower rate of retention of the Y-groove on LM2 (7.0%) relative to that seen among the Madaklasht (26.1%). By contrast, the more peripheral position of modern Indo-Iranians to the Madaklasht appears to be a consequence of both the lower retention of the Y-groove on LM2 (10.0%) as well as a far lower presence of the metaconulid on LM1 (1.6%; Madaklasht= 5.9%).

Once again, Southeast Asians, Southern Siberians and Chinese-Mongolians are identified as possessing the most distant affinities to the Madaklasht. Chinese-Mongolians, are clearly the most different, possessing the most divergent frequencies for three tooth-trait combinations (C5 on LM1, C5 on LM2, C6 on LM1) and next-most divergent for the other two (Y-groove on LM1, C7 on LM1). South Siberians, with a rank order score of 20 are identified as only slightly more similar to the Madaklasht than are Southeast Asians with a rank order score of 20.5.

Overall, such results indicate that it is to peninsular India, to Indo-Iranians and to Western Europeans that the relatives of the Madaklasht are to be found and not to Southern Siberians, Southeast Asians, or to Chinese-Mongolians. However, this is a very crude comparison involving samples of rather broadly defined provenance. It is unknown to what degree interobserver differences between the author, Turner, and those whose work was drawn from the literature by Scott and Turner (1997) for such a comparison.

The companion paper addresses these shortcomings by providing an in-depth examination of the phenetic affinities possessed by the Madaklasht through a multivariate statistical comparison between the Madaklasht and 1,738 individuals from 19 additional samples that include both prehistoric and living individuals from the Hindu Kush highlands, the Indus Valley, southern Central Asia and peninsular

India. Since all of these samples were either scored by the author or were scored by Lukacs, with whom insignificant levels of differences in scoring were found, this comparison is unlikely to suffer any significant ill-effects due to interobserver differences.

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Representing South Asian Art (4th Century CE and Beyond): Some Critical Perspectives

ARCHANA VERMA

Introduction

The period between 4th-7th centuries CE was an important one in the history of South Asian cultural expressions, as during this time many idioms in various cultural fields were evolved that were emulated by subsequent generations. Specifically in the field of South Asian art, certain norms evolved in the delineation of the human figure that remained very influential for several centuries and have captured the attention of the modern scholars for almost a century. For example, in architecture, the Hindu temple evolved its specific features in stone for the first time during this period and it was this form of the temple that was to form the model for the subsequent temples, though elaborations and modifications were made in the basic structure of the temple across the time and space of the Indian subcontinent. This is not to say that this period was perfect or 'golden' in all respects, but in the field of art and architecture it marks an important epoch. Hence, to anyone interested in South Asian art history, studying the ways in which the scholarly writings have represented the evolution of art during 4th-7th centuries CE in the Indian subcontinent is of great relevance, since the study of ancient South Asian art of periods beyond 7th century CE are also influenced by the way people have studied the art of this period. This paper makes an attempt to critically view the various scholarly representations of the art of 4th to 7th century CE and also the way this has influenced the readings of the art of post 7th century CE, that have existed in the historiography of South Asian art for quite some time. Since the writings on this theme are numerous, only some major works have been discussed in this paper.

A number of authors who have studied the South Asian art of 4th-6th centuries CE have used the designation 'Gupta art' for this art form, following the name of the major dynasty that ruled in the subcontinent at this time and controlled a large geographical area in the northern part of the subcontinent, while having marital alliances with the Vakatakas, the rulers of the Western India. Often the art of this period has been regarded as the cultural achievement of the Gupta rulers. While the contribution of the royal patronage in the making of this art and its geographical dispersal cannot be denied, every single specimen of South Asian art that is datable to this period may not have been a product of the royal patronage; local elites, merchants and their family members, Brahmanas holding large pieces of land and having rights to be the officiating priests at temples and various other social groups such as the artisans' guilds that became wealthy may have played a role in the art making process as well. Hence, the term 'Gupta art' should be seen as a general term for the art form that belongs to this period and region controlled by the Guptas and not as a specific allusion to the art directly produced by the Gupta rulers, unless such direct patronage can be proved by corroborative historical evidences.

Style as a Reflection of the Evolution of Spirituality

This paper is by no means the first attempt of its kind to critically review the scholarship of South Asian art of 4th-7th centuries CE and beyond. One of the notable attempts of this kind has been

made by Donald Stadtner in recent times (Stadtner 1990). Stadtner views the Western scholars' interest in South Asia as a continuing interest begun by travellers from Europe at the time of Alexander's conquest of the north-western part of the subcontinent. His appraisal of the scholarship on South Asian art is, however, restricted to only two scholars viz. A. K Coomaraswamy and Stella Kramrisch, both of whom belonged to a common tradition of scholarly approach to South Asian art, which perceived this art as a reflection of spiritual evolution.

After discussing these scholars, Stadtner discusses some of the features of the South Asian art, perhaps by way of illustrating what directions further research in this field can take. Some of these approaches, however, have been explored by other scholars, who do not figure in Stadtner's writing. Stadtner rightly observes that Coomaraswamy interpreted this art form in spiritual terms, thus defining South Asian culture itself as spiritual rather than materialistic as Western civilisation was perceived to be. He also traces this thought to the late 19th century European writings that tended to perceive South Asia as spiritual rather than materialistic in order to show the superiority of the Oriental cultures over Western ones. One aspect that Stadtner has not discussed is that Coomaraswamy was also writing with a nationalistic perspective, with a view to counter the imperialistic colonial discourses on South Asia that were aimed at creating a European hegemony over the region. Stadtner cites Coomaraswamy's work *Transformation of Nature in Art* (Coomaraswamy 1934) as the most representative example of his thought. While this is largely true, an equally significant writing of Coomaraswamy is an article titled *An Approach to Indian Art*, in which he draws perhaps one of the earliest outlines of the evolution of art styles in South Asia that were based on the inner enlightenment of the maker. Thus, early Buddhist art of Sanchi and Bharhut datable to 3rd-2nd centuries BCE are 'primitive in a laudable manner since they are imbued with sensuality and thematic intellectualism' and the 'classical Gupta style' served as the guiding factor for the Hindu and Buddhist art forms of Central and South-East Asia, to which these regions added their own indigenous elements. Because of this, these art forms of Central and South-East Asia cannot be called examples of 'Indian colonialism' (Coomaraswamy 1935: 19). In these passages, he not only outlines the evolution of South Asian art as he sees it but also represents this subcontinent as a region that did not attempt to colonise other cultures even though it may have had the potential to do so. This is an important element in Coomaraswamy's thought that does not reflect in Stadtner's otherwise very insightful writing. There is another major aspect in Coomaraswamy's treatment of spirituality in ancient South Asian art – he considers the element of spirituality to be omnipresent and unchanging. In comparison, the others who followed his idea, used it to argue that Gupta Art was 'more spiritual' than the art that preceded it and the art that followed it. This is of course about iconography, since architecture could not have been studied in this manner to a large extent.[1]

Coomaraswamy's treatment of the art of 3rd-2nd Centuries BCE as primitive in technique and style and a gradual maturing of perspective, technique and style through the early centuries of the Common Era till this art acquires the 'classical' spiritual animation in the Gupta period remained very influential till recent decades. Indeed, there are still a few adherents to this tradition of South Asian art historiography. Stadtner has rightly observed this in his writing, citing Stella Kramrisch as the most important descendant of Coomaraswamy's thought in his own times. Her *Hindu Temple* is a significant example of her treatment of the temple as a spiritual form in architecture (Kramrisch 1976)

However, between the perspectives of Stella Kramrisch and Coomaraswamy – even though they belong to the same school of thought – there is a point of difference not noted by Stadtner. Kramrisch and others, following Alfred Foucher, believed that the Hellenistic influences on South Asian art helped in the emergence of a perfect human figure, to which the Gupta age added its spirituality and classicism to make it an ideal image (Leeuw 1979: 377-400). On the other hand, Coomaraswamy emphatically discounts the influence of an external agency on the indigenous South Asian art. In his famous writing *'The Origin of the Buddha Image'* he lays down differences between the Gandhara Buddha and the Mathura Buddha in their stylistic content. He also argues that images are produced by knowledge and inspiration in South Asian context and not merely by observation (Coomaraswamy 1927: 1-43). This is an especially important aspect for those interested in Buddhist iconography and the divinisation of the Buddha in the early centuries of the Common Era. This is so because recent research shows that actual divinisation of the Buddha seems to have followed a gradual process of a complex symbolic interchange between the meanings of the *stupa* and the image (Verma 2007: 1-14). Moreover, it is hard to accept that the artists of a particular age were less conscious than the artists of a subsequent period. Moreover, one has to ask how the consciousness of an artist stands vis-a-vis the taste of the patron and the demands of the society.

Stadtner perceives the writings of Coomaraswamy and Kramrisch as representing all South Asian art as spiritual, timeless and dissociated from the changing social context of the subcontinent down the centuries – a contention that is well justified. He goes on to cite issues such as political patronage, glorification of royalty through art patronage, community-based art production and the religious context of pre-modern South Asian art as some of the important approaches that should be taken up while studying this art form. He also mentions that in recent years art historians have challenged earlier historiography and have evolved different approaches to study South Asian art (Stadtner Winter 1990: 360). However, though he has made this statement in his writing he has not appraised these new approaches the way he has done Coomaraswamy's approach. In the later passages, the present paper studies some of these different approaches to study South Asian art forms.

Writings on the art of 4th-7th centuries CE have been largely influenced by the debate on the nature of South Asian art itself. These writings have tried to situate the art of 4th-7th centuries CE within the framework of this debate. Some of the common contentions in this trend are, that this period experienced a stable politico-economic climate and hence was suitable for a speeding up of artistic activity, that this society was characterised by a blissful realisation, spiritual harmony and a heightened aesthetic consciousness that are reflected in the art of this period. Another belief is that since this art reflects a culmination of the art tradition's quest for spirituality in South Asia and prescribes the norm of art tradition for subsequent periods, it corresponds to the classical age of the Western world. They have regarded this art form as a high watermark in the evolutionary trend of South Asian art, since it was seen to combine the culminating development in technique with a sense of emotionality and spirituality.

This trend again begins with Stella Kramrisch, who in her writing on the figural sculptures of the Gupta period discusses ways in which the ethereal qualities of the dominant schools of Mathura and Sarnath are reflected in other local schools – of Gandhara, Udaygiri, and Sultangunj for example

(Miller 1983: 181-203). Doris Meth Srinivasan regarded all writings of Kramrisch as pioneering which led scholars of subsequent decades to explore these themes in greater detail (Srinivasan Oct-Dec 1986). While Kramrisch's writing was – and has remained – significant, reading this approach from today's perspective makes it essential to explore such questions as how an artistic expression emanating from two places could have succeeded in creating a homogenised trend of art and what agencies could be responsible for the sustenance of these trends in regions so widely dispersed and situated in such varied socio-cultural context.

This paradigm of Gupta idiom influencing the art activity in the rest of the subcontinent and even to other parts of Asia for several centuries was very popular with scholars studying this art form for many decades. An early example of this is a survey of sculptures in the Metropolitan Museum of Art by Aschwin Lippe (Lippe 1960). He titles his writing *'The Sculpture of Greater India'* but specifically says that by India he does not mean simply the modern nation of India but the geographical expanse from Afghanistan to Vietnam and from Nepal to Cambodia. He asserts that this region was culturally and commercially linked in the pre-modern period and hence the art of the regions surrounding the modern nation of India has received its influences from India and hence this nomenclature has been given in this work that describes many beautiful examples from Gandhara, Afghanistan, Vietnam and Cambodia. This kind of nomenclature has of course been abandoned now, but it shows how important a period was 4th-6th centuries in transmitting the artistic idiom from South Asia to various regions of Asia.

In another example, S.K. Saraswati in *A Survey of Indian Sculpture* makes Sarnath and Mathura the reference indices for all art of this period and has judged all specimens he has studied on the parameters of these two idioms, thus implying that these idioms pervaded everywhere to a greater or lesser degree (Saraswati 1975). Pratapaditya Pal studies the art of 4th-7th centuries as an aesthetic ideal which was the product of a sophisticated urbane culture and which had far and wide influences down the centuries (Pal 1978) – an idea that is echoed in a more recent volume of *Marg* edited by Karl Khandalvala (Khandalvala 1991). Pratapaditya Pal reinforced his writing by another lecture at the Art Institute of Chicago, in which he stressed the excellence in poetic idiom of Kalidasa composed during this period, which he asserted is reflected in the art of this period (Pal 1983). This exercise had been attempted much earlier than him by C. Sivaramamurti (Sivaramamurti 1970). Perhaps the last two works may be seen to assert that artistic activity reflects the socio-cultural expressions of the society. However, there is further scope to explore the underlying social currents which caused these expressions to be simultaneously manifested in art as well as literary forms. So influential was Pratapaditya Pal in his approach that he was invited to curate an exhibition of the art of this period at Asia House Gallery, New York, Art Institute of Chicago and Kimbell Art Museum, Fort Worth in 1979 (Sewell Mar-Apr 1979). Titled *The Ideal Image: The Gupta Sculptural Tradition and its Influence*, the scope of this exhibition is self-evident.

Studying the art of 4th-7th centuries as constituting a particular style that was evolved and transmitted across the subcontinent and to other parts of Asia is the theme of another work by J. C. Harle (1974). As Joanna Williams points out in her review of this work, here the style of this period and region is the singular distinguishing mark of this art form, since the political patronage during 4th-7th centuries across the subcontinent was diverse (Williams 1977). She also contests Harle's

argument of Western influences over this art form (Williams 1977: 120-121), thus showing that Harle's preoccupation with the foreign influence over the art of this sub continent (apart from the Gandhara region) is uncalled for. In another review, Douglas Mc Dougall points out Harle's inability to correctly interpret Buddha's webbed fingers as marks of a great being in South Asian iconography; rather Harle considers the web as a device to support the fingers from breaking away (Mc Dougall 1976:188). One expects a figure of Harle's stature to have taken the care to relate an iconographic feature to its related religious ideal while writing a work of this nature. His preoccupation with the Western influence over this art also shows a tendency to reproduce the arguments already forwarded by various other scholars, and perhaps also a belief in the superiority of the Western art over South Asian art forms.

J. C. Harle's work does not throw much light on the art objects from eastern part of the subcontinent that may be datable to 4th-7th centuries CE. This lacuna is filled by Frederick Asher's work on the art of Eastern India (Asher 1980), in which he begins with the Kushana period and ends by studying the Pala sculptures. He takes into account the region covered by modern Bihar, Bengal and Bangladesh. His approach differs from the scholars studying all art forms of the subcontinent as influences of the Gupta style in that he is concerned with exploring the transition from the Gupta phase to the Pala phase in the making of sculpture. Susan Huntington has said that his subdivision of his chapters according to major sites or regions has given prominence to the regional patterns of artistic production (Huntington 1983: 693). While this may be true to a large extent, the fact that Frederick Asher has titled two of his chapters as *Gupta Age* and *Growth of the Style* shows that he does consider pre-Pala art as an evolution out of the art of the Gupta period. Perhaps this is the reason he does not organise his chapters based on the provenance of the images studied. Hence, a localised artistic production in Asher's work cannot be over emphasised.

Studying the same region and period, Sheila Weiner makes style the basis for assessing the quality of the sculptures from eastern India that may be dated from the Gupta to the Pala period and on this basis she has also revised the chronology of quite a few of these sculptures (Weiner 1962). Characteristic of the ideas prevalent at this time, she regards the experiments done in the first few centuries of the Common Era as stabilising in the Gupta period from the 5th to the 7th centuries. On the other hand, she feels that the Pala sculpture of 8th-11th centuries has the same attitude towards the human body, but its figures are more attenuated and 'adulterated' since the limbs are slimmer and longer and the body is 'stiffer.' She attempts to show this change taking place in her stylistic study of the sculpture from Sarnath, Sanchi, Deogarh, Nalanda and Paharpur. Writing of this nature classifies an art object according to the subjective perceptions of the viewer and attributes to it characteristics that are liable to vary from one viewer to another. Besides, it would be perhaps illuminating to relate these images to their corresponding epigraphical and textual details to show what kind of practices and meanings were associated with these images.

Style as a Reflection of the Evolution of Art

Study of style to ascertain the chronology and place of an art object in the evolutionary timeline of art making process is an approach that has been dominant within the stylistic paradigm. This trend has continued to contemporary times, even though it does not always strongly emphasise the 'spiritual content' in visual form. An early paper of this kind is by Douglas Barrett on three

Gandhara bronzes discovered from Sahri Bahlol in Pakistan. These images are stylistically dated by various authors to 4th-6th centuries and even 8th century for one, as cited by Barrett. He, however, compares them with the Buddha paintings and terracotta heads found at Bamiyan and other images at Hadda, Akhnur, Fondukistan and Ukhnur and revises their dating to 7th-8th centuries on the basis of stylistic comparison (Barrett 1960). He also similarly studies the style of a specimen from Kashmir and another from Manikyala, both of which he dates to 6th-7th centuries CE on stylistic grounds. One can see that many of the undated images have been placed on the chronological line using this approach, which also places these images on the stylistic evolutionary trend in the region.

The most recent example of this approach is the very detailed writing of Ibrahim Shah on some *liṅgas* carved with Shiva-faces on them, found from Pakistan, especially present Khyber Pakhtunkhwa (Shah 2009). His painstaking work must be appreciated considering the difficulties in across-the-border communications and exchanges existing for a scholar who works on such a topic. In the beginning of his writing he has cited certain references from the religious canons like the *Agamas*, but this does not carry through his entire analysis, which is more stylistic-formalistic in nature. Moreover, *Agamas* are quite late developments and more often than not have a regional influence. For the early sculptures he has studied, texts like the *Brihatsamhita*, the epics, the major *Puranas* and the *Vishnudharmottaram* are more appropriate as religious or iconographic sources. All the same, Shah's work makes an important addition to Srinivasan's research discussed below and shows promise of further evolution. While this stylistic-formalistic approach helps the reader to understand the trajectories that the iconography took in its evolution, it still leaves out the possibilities to contextualise the images in their socio-cultural history and to discuss what kind of meanings were imparted to these images and if the meanings changed across a time-span and why.

P. K. Agrawala is another scholar who uses the perspective of temple style to study the Gupta temple architecture, though he has stressed the significance of *Bhakti* in the evolution of iconography and architecture. He discusses the wide royal patronage and the attempt to propagate the influence of the dominant *Madhyadesha* over the local styles – e.g. in placement of the Ganga-Yamuna figures on the door jambs. Thus, he sees architecture as the vehicle that carried Gupta cultural idioms (Agrawala 1968).

Perhaps the most influential work in the field of stylistic and formal study of the Hindu temple architecture is the multi-volume *Encyclopaedia of Indian Temple Architecture* from the American Institute of Indian Studies, under the editorship of Michael Meister, M. A. Dhaky and Krishna Deva. Its Volume II-Part I deals with the period being studied in this paper, focusing on North India, especially in the second chapter. Like the other volumes, the stylistic and formal study of the temples in the region is preceded by a description of political and religious history as it evolved under the dynasties that ruled in various parts of north India during this period. A discussion of the integration of styles patronised by these dynasties is also provided by the volume. The central focus of the study is on the minute details of the temple styles, going into each and every component of the temple and the way these styles spread and synthesise geographically, supported by maps, line drawings and photographs and appended by a glossary of architectural

Sanskrit terms. In effect, it achieves a detailed formal analysis of the *Nagara* i.e. the north Indian temple style and its regional disseminations in the upper half of the subcontinent. Especially for the students of architecture, this painstaking morphological work is of extreme importance.

In the subsequent years, it has generated quite a few researches on the Hindu temples in different parts of India, which more or less follow the pattern of writing in this encyclopaedia and earlier journal articles published by Michael Meister. Klaus Imig working on the Deogarh Temple datable to the 6th century has followed this style, while revising earlier works by Alexander Cunningham and M. S. Vats (Imig 2003; Cunningam 1880/2003; Vats 1952/1999). One interesting example of this approach is a study by Laxman S. Thakur, who integrates this method with a study of the concept of the *Vastupurushamandala* in the Himachal temples – combining the methods of Stella Kramrisch and Michael Meister (Thakur 1990: Notes 1 and 9), the 8th century Shiva temple at Jagatsukh in Kullu district being the earliest in this study (Thakur 1990: 264). This study is especially interesting as Himachal enjoys the special characteristic of having many wooden temples, which have a specific regional character in terms of style, religion and deities and these are not well-known to the people outside Himachal because they are located in the high reaches of the Himalayas. But Thakur chooses to study the temples that fall in line with the *Nagara* temples covered in the encyclopaedia mentioned above. The fact that an 8th century temple is the earliest in this class, shows that the typical *Nagara* style was a late entrant in this region, its earlier temples being in their own local style. But so influential is Meister's method that Thakur's work does not attempt to study this local idiom or even a transition from this idiom to the *Nagara* style or an interaction between the two.

Meister extended his study to the temples in the Salt Range in Pakistan, since he rightfully felt that the partition of the sub continent has cut these temples off from the mainstream scholarship on the Hindu temple, which has mainly focused on India. Following his close stylistic and formalistic method, he argues that contrary to the writings of early scholars like Coomaraswamy, these temples, datable to 6th-11th centuries, do not represent a local variation of the Kashmir temples, but have their own *Nagara* style which he calls as *Gandhara-Nagara* (Meister 1996). His minute analysis of the architectural form and its evolution brings these temples within the mainstream stylistic study of the Hindu temple.

While a stylistic-formalistic approach to the study of temple is useful to understand how a temple-plan and structure are formulated and what kind of influences they have had in their making, these studies could become more meaningful if they were located in their historical context, to understand what kind of ritualistic, social and ideological factors functioned to make the temple meaningful to the society. It is important to remember that a temple is not just a form in stone; it carries a whole range of meanings to the society, which are constructed by their specific historical evolution. Besides, the temple-plan is not just a diagram; the temple fulfils certain socio-religious functions through these plans. A temple becomes 'alive' to the student of art history only if the writings elucidate on these aspects. Especially in the encyclopaedia mentioned above, including chapters on dynastic succession and a religious overview is not enough to help the readers to understand specifically what kind of roles these political and religious developments played in the

building and the use of the temple. There is a need to draw linkages between the polity, religion and social aspects to understand the making and the use of the temple in a more meaningful manner.

Method of an Architect

An important approach evolved by Adam Hardy[2], who combines his skills of an architect with his understanding of the way the Hindu temple was – and is – looked at by the devout population. He combines the devotional, spiritual and architectural approaches together to appreciate the ways in which these temple forms have developed in different periods of South Asian history. His study of the *Karnata* forms of Indian Temple Architecture minutely studies the stylistic evolution of these temples; his usual approach being to study the temples from top to bottom in a vertical fashion, as opposed to the horizontal studies done by many scholars (Hardy 1995). In a later article on the temples of the same region, which he stresses should not be called the usual *Vesara* but rather as *Karnata Dravida*, he says that certain architectural features of these temples may have been borrowed from the Gandhara region in the north-western part of the sub continent (Hardy June 2001). Ajay Sinha who has reviewed Hardy's work feels that Hardy has been able to integrate Stella Kramrisch's spiritual approach with the stylistic-formalistic approach current in his own days (Sinha 1999).

Adam Hardy does say in the beginning and end of his article that it is important to understand a temple the way it was understood by the people who built it and that it carries philosophical, religious and mythological meanings in its form (Hardy June 2001). In some ways, his method, apart from coming from architectural, religious and spiritual currents, also seems to be influenced by that of Krishna Deva in Michael Meister's Encyclopaedia. His recent book titled the *Temple Architecture of India* (Hardy 2007) is really the last word in Indian temple studies, in the field of architectural-spiritual method that Hardy follows.

Image and Text

Within the paradigm of studying iconographic features as the main concern of art history, there has been another trend that attempts to relate these features to the descriptions given in the Sanskrit texts and iconographic treatises, often called the *Pratimalakshana* that forms part of a much larger text. An example of the former approach mentioned here is Doris Srinivasan's work on Para Shiva, Sada Shiva and Mahesha, in which she elucidates religious concepts from the texts about these three forms of Shiva and makes an extensive survey of especially Mahesha *murtis* from different parts of the subcontinent (Srinivasan 1990). Srinivasan's approach throws significant light on the concept of Sada Shiva and Mahesha as it evolved across the subcontinent. The latter of these two approaches may be represented by the survey of ancient and early mediaeval sculptures from Eastern part of the subcontinent, including Bangladesh by Enamul Haque.

In this study, Haque's main concern is to study these images in relation to the iconographic descriptions given in texts like the *Vishnudharmottaram* and the *Brihatsamhita* (Haque 1992). In this process he also categorises these images on their sectarian basis and has separated the rare images from the more common ones, giving an account of how many of each there are. As George Michell, the reviewer of this work has remarked, this is an invaluable work, bringing to light many images not usually accessible to public and some of them now lost (Michell 1993). The difference between the two kinds of writing is that a work like that of Doris Srinivasan's places more emphasis on the

religious concept and attempts to show how this concept is expressed in the visual form. On the other hand, Haque's work places more emphasis on stylistic and formal evolution but relies substantially on the canonical reference to understand this evolution. While this approach throws significant light on the kind of images that were being made in a particular period and their comparison with the injunctions given in the iconographic treatises, it must be borne in mind that image making does not always follow the textual injunctions to the letter. Rather, it is a two-way process – often the textual injunctions reflect an image-making practice in vogue that the text accommodates within its canonical fold. Moreover, even if the sculptor follows a description from a text, he is always free to introduce changes in the images that are not described in the text (Verma 2008).

While retaining this stylistic evolutionary model for the study of the Hindu temple, scholars have perceived the architectural form of the temple in relation to the sculptures that are carved on its walls. Stella Kramrisch has explored the comparative significance of sculpture and architecture against each other. She gives more credence to the architecture as it retains its identity by virtue of its plan and structure, which a sculpture situated in a temple does not. Thus, the temple signifies the emergence of a more powerful form in stone (Kramrisch 1955). In another article, she draws the relation between the wall and the image. She argues that the images in the niches on the outer wall of the temple represent outer manifestation of the deity housed in the sanctum inside. The wall moulding is also called the *ratha* or 'the chariot.' Hence, it is as if the deity is 'coming out' of the shrine to show himself to the devotee going around the temple to do his *pradakshina* (Kramrisch June 17, 1958). She compares the ground plans of some temples with the descriptions given in the architectural treatises. This approach of Kramrisch was followed by scholars later. Alexander Lubotsky in a way reverses this method and attempts to show that the *Sarvatobhadra* iconographic temple-plan as discussed in *Vishnudharmottaram* follows the plan of the 6th century temple at Deogarh, regarded by many scholars as belonging to the later part of the Gupta period (Lubotsky 1996).

Another scholar who has been influential in this field is Devangana Desai, especially because of the study she carried out on Khajuraho. In her religious Imagery of Khajuraho, she makes linkages between religiosity, iconography and texts associated with iconography and religion to show the meanings associated with these images (Desai 1996). Desai is responsible for bringing Khajuraho out of the stereotyping of its significance only as an erotic site. Rather, she shows that this site is an important link in the evolution of Hindu religious imagery in South Asian art.

Paintings

As regards the paintings, three main regions have been considered by the authors – Ajanta, Bagh and Badami. They have tried to study these paintings from different perspectives, though focus on style as a reflection of the overarching 'Gupta classicism' is retained in these writings. Douglas Barrett and Basil Grey in *Indian Painting* have studied these regions as expressions of regional individuality within the context of the classical tradition of art being followed in South Asia (Barret and Grey 1978). Here the term 'classical', according to them, denotes the character of the art of the period till the coming of Islamic rulers. They consider the artistic activity before the coming of Islamic rulers as the autonomous expression of a society – even the borrowing as they say, was by choice as against the one instituted by an alien group in the post classical i.e., the Islamic phase, according

to these authors. There is also a tendency in their writing to draw comparisons between the Indian painting and the European style. This definition of classicism is problematic, since it excludes a large population of South Asia from its historical heritage only on the basis of religion. Islam may have come from elsewhere into South Asia, but a significant population of this region considers it as its own and hence, South Asian art cannot be circumscribed as exclusive and disjuncted from the rich influence that this interaction produced in the region. Though written with the best of intentions, such an approach has created a lot of avoidable conflict in the region. Moreover, to see the reflections of mediaeval European artistic trends in Indian art is perhaps an endeavour to dissociate South Asian art from the influences of classical West as was the earliest practice. However, this takes away from South Asian art its own value and ascribes it value only for the purpose of comparing it with the West. This makes this a value-based cross cultural study that followed a European yardstick.

Two major concepts emerge from Moti Chandra's *Studies in Early Indian Painting*. He traces the evolution of technique from Ajanta to Badami and thinks that plasticity in painting evolves only at Badami and in the Vakataka-period Ajanta. Earlier paintings, according to him, do not use this feature of plasticity. Hence, we can see his argument supporting a 'simple' to 'complex' evolution of painting in the region. His other concept deals with the classical notion of painting. His analogy runs like this – 1) painting technique followed the shift from the colour modelling to linear depiction; 2) *Vishnudharmottaram* is a classical text and is critical of the linear technique; 3) therefore linear technique, which developed in the last phase of Gupta-Vakataka period, shows a rejection of the classical norms of the earlier period (Chandra 1970).

Even if we accept the basic stand of Moti Chandra, we are still left without an explanation about the underlying social needs or values that might have encouraged this rejection, since he does not deal with this aspect. Apart from this, he also considers Ajanta and Bagh as reflecting the art tradition practised in centres like Pataliputra, Ujjayini, Vidisha and so forth. However, he does not give any evidence of the paintings executed in these centres, nor any references to the sources that talk about paintings in these centres, although a general assumption may be made on the basis of sculptural data that the Deccan may be following the Gupta idiom in painting as well.

Unlike Moti Chandra, Krishna Chaitanya in *Mural Tradition* has traced a parabolic evolution of painting at Ajanta and divides Ajanta painting into growth, maturity and fall, coinciding with Satavahanas, Gupta-Vakataka and post-Gupta periods (Chaitanya 1976). This is said to take place in both technique and style. He attributes significance to the Gupta idiom only in terms of its assimilation in Deccan, rather than it being a dictating factor on Deccan art. This is where the contradiction in Krishna Chaitanya's writing comes out. If his contention about the assimilative nature (not influential) is true, then it tends to conflict with the parabolic tracing of the evolution of art, which was supposed to have started with simplicity during Satavahanas, risen to a climax of maturity taking the urbane factor from the Guptas, and started a downslide with the early mediaeval. This obviously relates the mature phase with the Gupta-Vakataka period, thus making this period a 'causative' factor in the maturity of this art, and not just an 'assimilative' one. Since this urbanity is said to come from the Gupta idiom, then it makes this idiom a 'regulating' one and not just an 'assimilative' factor in Deccan art. Moreover, one has to ask the question, why this urbanity factor gained impetus only

during a certain period? A question not answered by Krishna Chaitanya, but explored by many other scholars, who regard this period as a stable one as a result of political unification; which, added to patronage and communication across the empire, facilitated the transmission of cultural ideas across a wide region. Later scholarship however, does not consider this period as politically unified as it is regarded by earlier scholars.

Evidence of painting has been found in other parts of South Asia as well but this has been largely overshadowed in scholarly writings by the 4th-6th century phases of Ajanta. Katherine Caldwell says in her review of W. G. Archer and Paranavitana's *Ceylon: Paintings from Temple, Shrine and Rock* that paintings of Ceylon have mostly been treated as provincial extensions of Indian paintings (Caldwell 1959). Benjamin Rowland's *Paintings of India, Central Asia and Ceylon* treats the Ceylonese painting as evidence of the expansion of the Indian tradition (Rowland 1938). In contrast to this, W. G. Archer and S. Paranavitana acknowledge the influence of the Indian subcontinent on Ceylonese painting but at the same time treat them as invaluable art in their own right, thus departing from the general tendency of treating all South and Central Asian art as extensions of Indian art (Caldwell 1959).

Geo-Cultural and Historical Perspectives

There has emerged a trend of moving away from the historiography detailed above and attempting to contextualise the study of art within its historical context. This shift is significant, since many scholars who have been studying art through the above paradigm, look at it in terms of 'how' it develops. On the other hand, the geo-cultural perspective takes the audience's gaze more towards the society that constructs, uses and assigns meanings to it and explores 'why' this art develops the way it does. In other words, it is a shift from analogy to causality. An example of this is Sheila Weiner's work on Ajanta (Weiner 1977). In this she tried to reassess the chronology of the cave temples and to locate the art and architecture of the site within the stylistic evolutionary graph of the specifically Buddhist art in the Indian region, especially sites like Amaravati and Nagarjunakonda and Hadda in Afghanistan. She also studied the patronage aspect of the site and asserted the interesting proposition that Ajanta's Mahayanist phase emerged despite the Hindu royal patronage of the Vakatakas, not because of it. Though insightful in its vision, Weiner's work made certain controversial assertions, because of which it was criticised by its reviewers. For example, Michael Meister points out that her stylistic descriptions are too short while discussing Krishna Valley's influence on Ajanta and she quickly proceeds to describe changing iconographic forms and to changing Buddhist concepts (Meister Oct-Dec 1978). Perhaps a more detailed discussion on changing iconography in relation to the changing Buddhist concepts would have made this discussion more comprehensive.

However, looking back at Weiner's approach which emerged in a time when stylistic studies were the norm, it does come across as an attempt to redefine Indian art of 4th-7th centuries from a historical perspective. Her work however, was critically reviewed by scholars, who found several of her arguments problematic. Joanna Williams reviewing her work rightfully points out the flaw in drawing the direction of stylistic transmission from Ajanta to Sarnath, which she says should be the other way round. She also disagrees with Weiner's one-to-one correlation between the evolution of Buddhism and the iconography at Ajanta, since as Williams says the interaction between religion and

art is a complex phenomenon and cannot be oversimplified in this manner (Williams March 1980). Doris Srinivasan expresses similar concerns about correlating Buddhism and art of Ajanta the way Weiner has done. Srinivasan shows in a scholarly manner the fluidity in the cultural expressions of various religions of South Asia, which borrow their idioms from each other at this early stage (Srinivasan 1981). Sheila Weiner's work and her reviews show that while she attempted clearly innovative approaches for studying Ajanta, these approaches needed to be further refined on order to appear convincingly academic.

Walter Spink laid a great stress on the political patronage and its influence on the different stages of the making of Ajanta caves (1992). In this process, he also attempted to completely revise the chronology of Ajanta paintings – placing them in a much smaller time-bracket than other scholars had done. His Ajanta chronology has led to a lot of debate in this field, with scholars divided over the chronology he suggested. Although Spink's approach is quite interesting, it leaves little room for the study of paintings themselves – which are visual narratives enfolded in history and society. Spink's method does not tell us what different interpretations of these visual narratives we may arrive at by distinguishing these varied patrons of Ajanta and what possible relationships or differences they may have with similar narratives in other places – in painting or in stone.

The Vakatakas who patronised the Ajanta were called the Vatsagulma branch and there was a collateral branch of this family ruling from Nandivardhana in the Vidarbha region. Because of the prominence of Ajanta, there have not been many significant writings on the art of the region ruled by the Nandivardhana Vakatakas. Hans Bakker's work on the Hindu art of this region is an important step in this direction, especially as it locates this art in its socio-religious and political context (Bakker 1997). As Robert Brown who has reviewed his book shows, Bakker also attempts a conceptual understanding of these images such as interpreting the materialistic, *yogi* and the *Brahmachari* forms of Shiva from the way the heads of an image are depicted (Brown 2001) even though his readers may differ with him in his interpretations. Hans Bakker's study raises some important issues such as the relation of this region with that of the Vatsagulma branch, the issues discussed by scholars about Ajanta and so on.

Apart from Ajanta in Western India, Bagh in Central India was another prominent Buddhist monastery having some fine specimens of art and architecture. It was first studied in the early decades of 20th century by the European scholars (Marshall et al 1927). In this study, this site was considered to be datable to the 6th-7th centuries CE. These scholars made a minute stylistic observation of the art and architecture of Bagh and attempted to place these works within the historical evolution of Buddhism in the subcontinent. For a long time, this work edited by John Marshall remained current for Bagh. In early 1990s, the Archaeological Survey of India excavated a hoard of copper-plate inscriptions at Bagh that threw new light on the geo-cultural, socio-political and religious history of the region in which this monastery is located. A close study of the epigraphs also has brought into fore the possibility that this monastery was in fact coeval with the 4th-5th centuries phase at Ajanta, thus revising John Marshall's dating of the monastery. Besides, the architectural plan of the monastery throws light on the rituals and the form of the organisation of the monastic community that stayed here. The theme of the murals in Cave 4 that was not identified till recently has also been identified

now (Verma 2007). A study of this kind could be made only by attempting to locate this monument in its socio-historical context in the light of new epigraphic findings in the region.

The ill-fated caves of Bamiyan, where the great Buddha images were destroyed by the Taliban in March 2001, also contained significant paintings. Scholars had studied the great Buddha images prior to their destruction as well as the paintings existing in their caves. In contrast to the writings on the sculpture and paintings of other sites in South Asia, researches on Bamiyan did not show an influence of the idea of the spiritual content of the Gupta art. Rather, these studies made a historically balanced analysis of Bamiyan and fortunately so, since it is no longer possible to study this site. One very important feature that emerges from these writings is that the paintings of Bamiyan showed three strands of influences – those in the niche of the 53 metre colossal Buddha image had a South Asian influence, while the paintings in the niche of the 35 metre colossal Buddha had Persian as well as Central Asian influences (Diez 1930). Besides, there was also an evidence of a Sasanid representation on a rock of the Mazdean Hvarnah or the splendour of the Avesta, a Magian attribute of the Persian rulers. This was studied by the French team of scholars led by M. Foucher, along with other images and paintings at Bamiyan, but Ernst Diez who reviewed their work said that they had not understood that this was the first archaeological finding of this concept that was discussed earlier, but no direct evidence had been found till this discovery at Bamiyan (Diez 1930). Diez also felt that the French archaeologists had got the chronology of the colossal Buddhas reversed – the larger one of 53 metres should have been placed earlier, contemporary to Kanishka and the smaller one of 35 metres should have been datable to 4th or 5th century. However, he agrees that the close study of the art of Bamiyan made by the French was valuable and threw significant light on the history, influences and the making of these works of art. Another extensive study of this site was carried out by a Kyoto University Archaeological Mission between 1970 and 1978. They aimed at making a general photogrammatic map of the whole area, attributing numbers to all the caves and documenting their murals. Their study attempted a minute charting out of the entire site and categorises different types of caves, images and paintings made at this vast site (Higuchi 1995).

The most comprehensive study of Bamiyan was made by Deborah Klimburg-Salter in her celebrated work *The Kingdom of Bamiyan*, in which she carefully traced the political, socio-cultural and religious interaction that Bamiyan had with South Asia as well as Central Asia and the nature of iconography and architecture that this interaction produced at the site (Klimburg-Salter 1989). Her work is – and perhaps will remain - the most authoritative work on Bamiyan, as Alexander Bell remarked in his work on the *Jataka* representations in China (Bell 2000). Incidentally, Bell's work was published a year before the Bamiyan Buddhas were destroyed by the Taliban in March 2001, thus his words proving prophetic. Though Alexander Bell's work is about the depictions of the *Jatakas* in China, particularly at Tun Huang, he traces the influences of this art form from South Asia to China, Central Asia and Gandhara (Bell 2000). In this matter, both Bell and Deborah Klimburg-Salter rightfully study the significance of the ancient communication network known as the Silk Route that encompassed these regions before proceeding towards the Mediterranean. Here, it needs to be stressed that this approach of tracing a cultural influence from South Asia to another region with historical evidences is different from the approach studied earlier, which traced this influence with the intention of establishing the superiority of one culture over another. Hence, scholars like Deborah Klimburg-Salter, Alexander

Bell, Ernst Diez and Takayasu Higuchi have moved away from the earlier paradigm to study cultural objects in their historical context.

This approach of studying cultural objects in their historical context rather than within the paradigm of a parabolic evolution of art has also been used by Omachanda Handa, Deborah Klimburg-Salter and Laxman S. Thakur in their respective works on the Tabo monastery in the Spiti region of Himachal in India. Situated at a high altitude in the Middle Himalayas close to Indo-Tibet border, Tabo – known as 'Ajanta of the Himalayas' because of its wall paintings - lies in the Spiti region which falls in the rainshadow area and hence, is an arid snow desert. Spiti River, a tributary of the Sutlej, flows through it but for most parts is inaccessible because of almost vertical gradient of the Himalayan peaks standing on its both sides and its waters are freezing cold. Travelling through Spiti, for miles one sees no sign of life — not even a blade of grass grows there. At great distances, there are seen only small patches of thorny shrubs. The topography that is at once bewitching and intimidating, is uninhabitable for most parts, except on some flat surfaces that exist on top of the mountains. These flat areas have tiny village settlements of Tibetan Buddhists – a village may often contain less than a dozen houses. Snow is their source of water and foraging is their means of sustenance. They store food underground for the long, harsh winters. On my personal visit to Tabo in October 2007, I found the journey from Shimla arduous and full of dangers even in today's circumstances. The hardships faced by travellers approaching this monastery from Tibet, Central Asia or India in pre-modern times are unfathomable for the modern people. Tabo lies on a flat surface at a great height. As one approaches the site, one comes across red grass on the slopes, while emerald green Spiti River flows below. The area around Tabo is cultivated with apple orchards today and poplar trees are grown there for firewood.

The influences of geographical forces on this monastery can be fully comprehended only when one makes this perilous journey to Tabo. Omachanda Handa has fully comprehended this and has justifiably used geo-cultural factors to study this site in his work, apart from situating this monastery within its historical context (Handa 1994). He has traced two routes that criss-cross Spiti along the courses of rivers that flow through it and shown that Tabo is situated within the network of these routes. One of them follows the courses of the Chandrabhaga, Spiti and Sutlej Rivers, while the other follows the courses of the Sutlej and Spiti rivers and goes up to the Indus River in Ladakh, via Rohtang La (La is Tibetan for a mountain Pass). Indeed, even today the roads to Tabo follow these river networks and these routes have also influenced the history of Spiti region as shown by Handa. While studying Tabo, he mentions that though it was established in 996 CE, there was Indian presence in Spiti region in 7th century, as Sena *Mahasamantas* are mentioned in the inscriptions. Ladakhi Buddhist dominance began in Spiti in 8th century when Chetsena was defeated by the Ladakhis on the Rohtang La. Thus, Handa makes the significant point that even though the monastery was established in the 10th century, the cultural idioms in Spiti were drawn from Tibetan, Central Asian as well as from the Indian sub-continent from much earlier times.

Handa's arguments are somewhat different from those of Deborah Klimburg-Salter, who does not mention the existence of the Sena *Mahasamantas* in pre-Buddhist Spiti and regards this monastery as following an Indo-Tibetan Mahayanism under Western Tibetan patronage (Klimburg-Salter 1997; 2005). She argues for the existence of local religious idioms in the pre-Buddhist Spiti that were incorporated into the Buddhism here and are reflected along with the Buddhist paintings at Tabo, such

as in the figures of the Protector Goddess (Klimburg-Salter 2005). She has also shown a later Kashmiri phase at the site, during which many of the cells were repainted. She has made an in-depth study of this site, studying its art in detail and placing it in the context of history, patronage and religious evolution of the site. As compared to these works, Laxman S. Thakur's work on Tabo takes into account the entire temple-complex and minutely studies the architecture, sculpture, painting, history, religion and ecology of the place (Thakur 2001). However, Geri H. Malandra who has reviewed his work remarks that his account of all these aspects is disjointed from each other (Malandra 2002). There is a need for a greater attempt to study these aspects in a holistic and integrated manner, showing the inter-linkages between them. This kind of approach leads to a greater understanding of the evolution of a monastery as a cultural site, as shown by Klimburg-Salter's work.

One of the most extensive studies on the art of 4th-7th centuries was done by Joanna Williams in her *Art of Gupta India* (Williams 1982). She places her work on the grid of time, space and society and considers the 'Gupta' art as not produced under the direct patronage of Gupta dynasty, but as representative of a style pervading beyond the Gupta rule in time and geographical spread. She traces the source of this style singularly to Mathura, which Gary Michael Tartakov who reviewed her work, reasonably found to be problematic (Tartakov December 1983). He rightly argues that 'Gupta art' was not a discreetly distinct phenomenon with impermeable borders, but a temporally and regionally focused phenomenon sharing features and blending in various ways with comparable work surrounding it. While Joanna Williams' work discusses many issues of the art she has studied in close detail, it's not very convincing to first define an art form by one's own yardstick – in this case as reflective of only Mathura idiom and then assign identification and style to all art works from this period by that yardstick. Besides, a lot of debate over this art-form has generated because of the appellation 'Gupta' to it and the attempt to define it in a certain way by each author. Perhaps a more comprehensive work can be done by removing the term 'Gupta' from the art form of 4th-7th centuries and recognising that while certain features may be similar over a wide geographical expanse of the subcontinent and may continue for several centuries, there may be many features that may differ from this group of common features across time and space.

Several decades ago, Frederick Asher had suggested a political allegory in the Varaha and the Trivikrama images from several sites, the Udayagiri Varaha being one of them. He argued in this essay that these images created a symbolic parallel between Vishnu and the Gupta rulers, who professed to be devotees of Vishnu (Asher 1983). This became a popular approach to study South Asian art in periods and regions other than that ruled by the Guptas. Prominent examples of this are the reading of political allegory in the Narasimha image at Badami, the descent of Ganga at Mahabalipuram for Pallavas, Gangadhara image at the Trichy Cave for Mahendravarman Pallava and in the Tripurantaka images at Tanjavur for Rajaraja Chola I (Hirsh 1987; Champakalakshmi 1996; Verma January-June 2006). Now, Udayagiri has come into prominence again with the recent work by Michael Willis called *The Archaeology of Hindu Ritual*. Located in Udayagiri, a royal centre of the Guptas, this is a multi-dimensional work that uses landscape archaeology and archaeo-astronomy, apart from the study of iconography and architecture. Willis relates the seasonal calendar and the astronomical knowledge available to the Guptas to show how they integrated it into political patronage and royal ceremonies such as the consecration. He too uses the idea of the symbolic parallel between the royal and the

divine images, thus extending this historiography in South Asian art further. In this work, Michael Willis has also moved away from the approach used in his earlier *Temples of the Gopakshetra*, which followed the method of Michael Miester's encyclopaedia closely, only rather than giving prominence to dynastic affiliations, he gave more prominence to the geo-cultural provenance while studying these temples (Willis 1997).

This overview of the historiography of South Asian art of 4th-7th centuries and beyond shows the various trajectories these writings have been taking for about a century or so. It is important to remember here that often these different trends have existed together – one does not necessarily follow the other in chronological sequence. Moreover, authors have often shifted and modified their approaches. In recent years, research has shifted to other regions and periods of South Asian art, thus bringing to light materials and their interpretations that were not available to readers earlier. For future research, it would be worthwhile to integrate the study of the evolution of the way an art object looks and what could be the underlying socio-religious practices for the making of this art with what it means to the society it creates and if these meanings change across a period of time. At the same time, it is important to remember that all of these approaches are equally valid and must be given equal prominence by any scholar of South Asian art, without a bias towards one or the other of them. This paper has been only a modest attempt to understand the ways in which scholarly writings take different trajectories.

Notes

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Hidden Agendas: Hoarding within the Indus Valley Tradition

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Introduction

At its largest extent, the Indus Valley Tradition, as defined by Shaffer (1992a; 1992b) incorporated a variety of regional cultural traditions throughout modern day Pakistan and parts of eastern Afghanistan and western India. These regional cultures, although distinct archaeologically, all interacted in a manner to fashion an integrated archaeological community covering up to one million square kilometres, and lasting for several hundred years (c.4600 to ~3900 BP), before evolving into a number of localised archaeological traditions. The exact nature of this 'Integration Era' of the Indus Valley Tradition (Shaffer 1992a) - often referred to as the Indus Valley, Indus-Sarasvati or Harappan Civilisation - has been the subject of intensive scholarly debate.

The lack of traditional indicators of state-level society - depictions of warfare, temples, public architecture and clearly defined internal stratification - has led to intense scholarly debate as to the internal social and political organisation of the Integration Era. The earliest excavators, despite the lack of monumental architecture and royal burials, inevitably drew inferences with Sumerian and other Near Eastern civilisations. Marshall (1931), Piggott (1950), Childe (1954) and Wheeler (1953; 1959) all envisaged an autocratic Priest-King who wielded absolute power over the citizens of the twin capitals of Mohenjo-daro and Harappa. Integral to their argument was the assumption that complexity within the Indus Valley had its origin in the Near East, either through direct colonisation or through trade and exchange. This, however, has been refuted by the discovery of an incipient urban phase within north-western South Asia (Jarrige 1990; Shaffer 1992a). The recognition of internal stimuli in the development of the Indus Valley Tradition has lead to the reinterpretation of its key aspects independent of Near Eastern analogies. Rather than a single unified state or empire, it has been suggested that there were in fact a series of independent, but co-dependent, city-states or domains managed by groups of landowners, merchants and ritual specialists (Kenoyer 1994; 2000; Possehl 1993; 1998). Fairservis has gone as far as to suggest that the Indus Valley was organised along the lines of a developed chiefdom, and that wealth was measured in terms of numbers of cattle, and that the elite were located outside of the urban centres (1986). An intensification of surveys within the Indus Valley has also led to the identification of inter-site hierarchies within key regions (Flam 1976; Chitalwala 1979; Joshi et al 1984; Bhan 1986; 1989; Mughal et al 1996; Mughal 1997), and within the Integration Era itself (Coningham 2005). Intra-site hierarchies, however, are heavily influenced by nationalist goals of identifying early Vedic or Aryan occupations at key Indus Valley sites – e.g. Lal (1993) at Kalibangan and Bisht at Dholavira (Guha 2005). Ongoing excavations at Harappa, Rakhigarhi and sites in Gujarat may provide more comprehensible information regarding this in the future. In terms of warfare, Cork (2005) has demonstrated that communities within the Indus Valley were more than capable of engaging in prolonged periods of war, but that the standing armies and glorification of war found throughout contemporary Near Eastern societies were absent within the Indus.

This suggests that the Mesopotamian-influenced concept of social coercion through military force was either absent within the Indus Valley, or was not a prominent feature of elite authority. Whilst Cork (2005: 411) may disagree, the explanation of social coercion through ideology remains a valid concept, and a number of archaeologists have attempted to model the Indus Valley Tradition within the context of power manipulation and misrepresentation (Shaffer 1982; Miller 1985; Rissman 1988). This paper aims to test whether, as Shaffer has suggested 'it could be that the Indus Valley, a technologically advanced, urban, literate culture was achieved without the usually associated social organisation based upon hereditary elites, centralised political government (states, empires) and warfare' (1982: 49).

Rissman and the Ascetic Model

Whilst not specifically a model of social organisation, a paradigm of Indus Valley archaeology emerged in the 1980s that attempted to interpret the archaeological contradictions present in the material record (see Coningham and Manuel 2009 for more detailed discussion of models of willing and coerced subordination within the Indus). Shaffer was interested in the nature and distribution of 'wealth' objects within the Indus Valley. He inferred that a broad segment of society had access to them, but they were almost entirely absent from burial contexts. He suggests this indicated that either: '(1) such wealth objects were not hereditary; (2) they were not considered particularly important indicators of social status; (3) the objects were redistributed at the time of death; (4) there was an absence of well-defined social stratification; (5) some other cultural rule at present unknown was at work designating their presence or absence in burials' (Shaffer 1982: 49). Developing this final point, Miller went one step further and assumed that 'the prehistoric record can be interpreted not as a mere passive reflection of a past society, but as a process of representation which acted to constitute as well as to reflect social relations' (1985: 34). The critique of ideology that Miller invokes suggests that as well as their utilitarian uses, all artefacts are also forms through which a society creates representations of itself (*ibid*: 35). Consequently, groups of artefactual forms may represent the interests of the dominant group, whilst simultaneously masking those of subordinated elements within the society (Miller 1985: 50-56; Coningham and Manuel 2009). Such an interpretation is supported by Rissman in his examination of hoards and burials. Assuming burials relate to public displays of wealth, he noted that they contained items of 'low secular value', in distinct contrast to the relative wealth of private deposits (1988: 217). As such, Rissman inferred that there was certainly a degree of social and economic inequality present within the Integration Era, though concludes that '*if* the secular domain was characterised by some degree of inequality in value distribution, and by some degree of rigidity in status distinctions, these qualities were *concealed* in the public domain by the ideology of value'(*ibid*: 219).This mirrors Miller suggestion that, 'the people of the Harappan who may be said to have power may not have enjoyed privileged wealth or conspicuous consumption, and indeed are more likely to have been conspicuous through asceticism' (*ibid*: 61), and forms the basis of the Ascetic model of Indus social organisation in which elites willingly subordinated themselves in order to gain political and/or social power (Coningham and Manuel 2009).

Rissman's work was influenced by a growing awareness of the duality of the archaeological record as both the material representations of human culture as well as symbolic indicators of

human consciousness (Shanks and Tilley 1982; Parker Pearson 1984). Following Bourdieu (1979) and Giddens (1979), he assumes that grave goods and other public displays of wealth represent deliberate attempts to misrepresent social relationships in the past (e.g. Shanks and Tilley 1982), and therefore are not objective indicators of value distributions. In contrast to public displays of wealth, Rissman sees hoarding as a private and secular activity, and directly opposed to public displays of wealth, and as such, he considers hoarding a more objective indicator of status distributions (1988: 209) (Fig. 1). However, Rissman's primary distinction between private hoards and public offerings is the intent to recover. Although this is a fundamental distinction between offerings and deposits (Bradley 1990), it does not take into consideration the fact that hoards can be either ritual or secular in nature. Bradley identifies a number of criteria for differentiating between ritual and non-ritual hoards (Fig. 2), and between the opposing concepts of 'offerings' and 'sacrifices' (1990: 37). Sacrifice changes the nature of the victim, and makes it sacred, although this requires a living victim. Conversely, artefacts are inert, and their nature cannot change and as such, they can only be offerings (*ibid.*). The 'votive' versus 'treasure hoard' dichotomy has remained strong in archaeological research, though Randsborg demonstrates numerous alternative processes to account for archaeological hoards, such as the removal of ritually 'dangerous' items or the competitive destruction of artefacts by elites (2002: 417). In addition, Randsborg suggests such equifinality should not only be applied to general definitions of hoards, but

Grave Goods / Public Displays	Hoards / Offerings
Public	Private
Ritual	Secular
Ideological	Personal
Permanent	Temporary
Subjective	Objective

Fig. 1: Dichotomy between grave goods and hoards; after Rissman 1988

	'Ritual' or 'Votive' hoards	'Non-ritual' or 'Treasure' hoards
Locations	Specialised: bogs, springs, wells	Unspecialised: dry land, often with marker stone
Range of items	Restricted; high proportion of weapons; ornaments; ceremonial objects; animal bones; food remains	Less restricted; high proportion of tools; simpler personal ornaments; simpler forms of weapons
Condition of artefacts	Mainly whole objects; formal arrangements	Often damaged and/or broken; metal-working residues; freshly made objects

Fig. 2: Differences between 'ritual' and 'non-ritual' deposits; after Bradley 1990

that single hoards can have numerous interpretations for their deposition (*ibid*: 417). The ritual nature of hoarding, as evidenced by the potlatch ceremonies of the Pacific Northwest or Big Man feasts of Melanesia (Bradley 1987: 380), was completely overlooked by Rissman. He suggested that religious offerings, such as the interment of grave furniture, are public messages, and thus the artefacts in these events 'are... transformed into components of ritual communication, bearing in part upon social strategies of power and prestige' (1988: 209). In contrast, he viewed hoarding as a private and secular act, as there is no purpose in attempting to hide or destroy wealth where no audience is present: 'in this sense, hoarding is the pure opposite of display: there is nothing ideological about' (*ibid*: 209).

Indus Hoards

Rissman identified twenty-nine potential hoards within Indus sites (Rissman 1988: Appendices 5 and 6), all of which will be considered within this paper, along with an additional hoard from Kuntasi (Dhavalikar et al 1996). Figures 3 and 4 demonstrate the diversity of both materials and objects that are encountered within the Indus hoards. A number of trends are apparent from the two figures regarding the presence and absence of objects and materials within Indus hoards. Firstly, there is a wide variety of both materials and objects found within hoards, though many of the materials are in the form of beads. The most commonly occurring material is copper, which is found in 24 of the 30 hoards, whilst

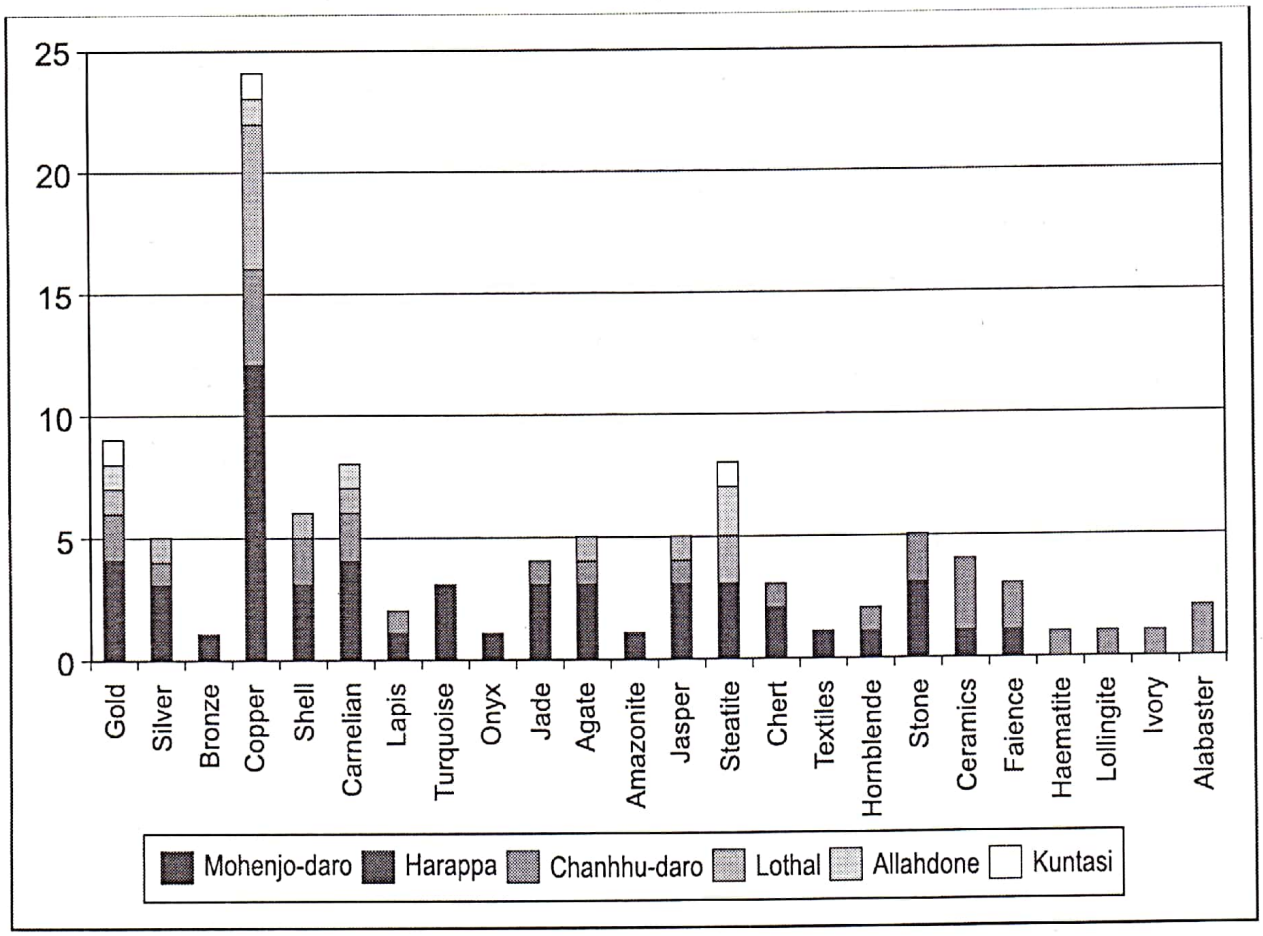

Fig. 3: Materials within the Indus hoards

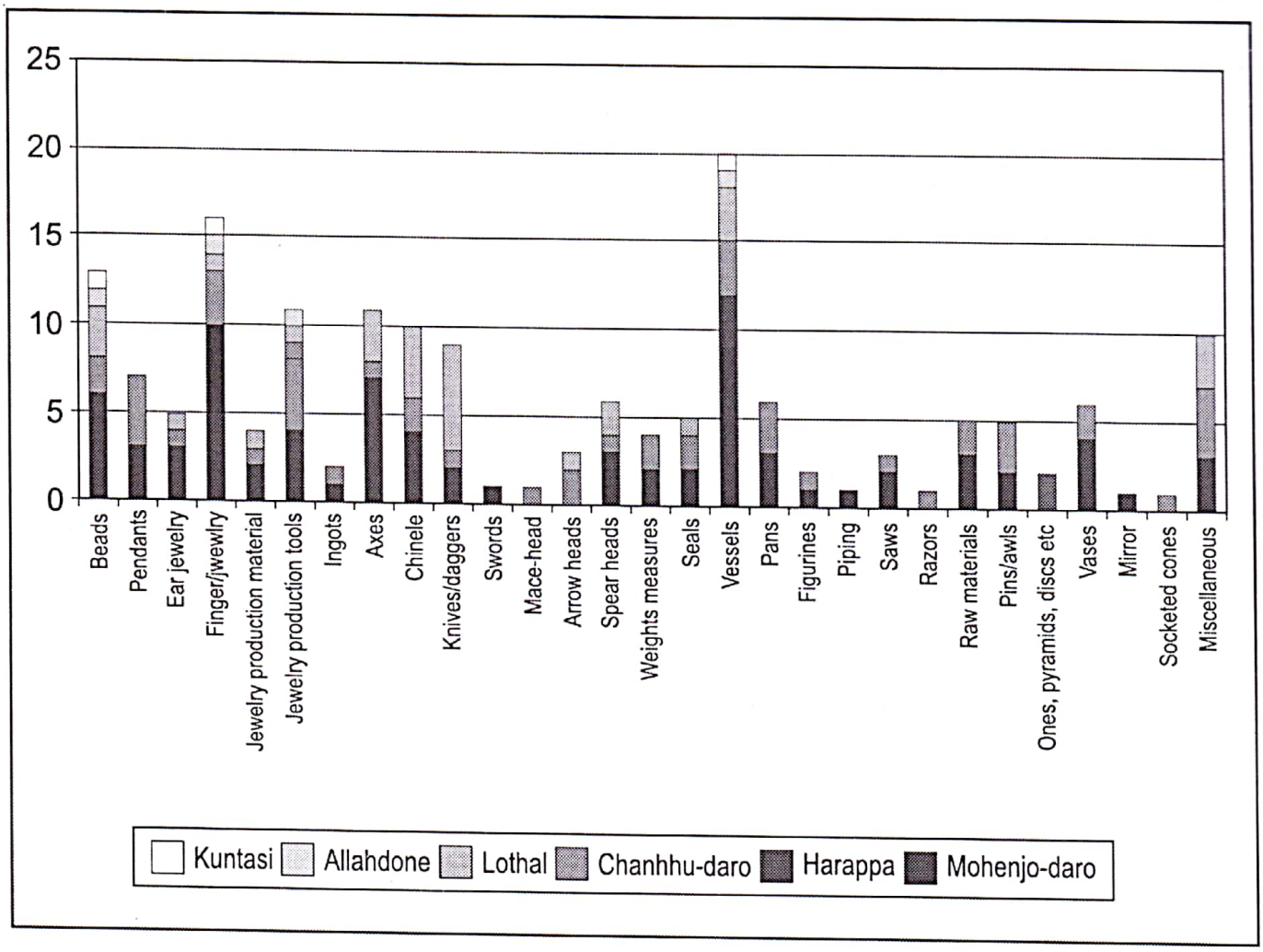

Fig. 4: Objects within the Indus hoards

ceramic objects are found in only four of the hoards. Other commonly occurring materials are gold, silver, carnelian, shell and steatite – all materials that are often termed as 'luxury'.

Regarding objects, the most commonly occurring objects in the hoards are vessels/vases/jars (a total of 41; occurring in 20 of the 30 hoards), within which many of the other objects are placed. Of these vessels, 31 are copper, 2 are ceramic, 1 each of silver and bronze, whilst 5 are of an undefined or unmentioned material. Beads, finger/arm jewellery, jewellery production tools, axes and chisels are all present in ten or more (i.e. a third) of the hoards, and represent both personalised items and objects that are more 'utilitarian'. In addition, some of the Indus hoards contain either raw or unworked material as well as gold, silver or copper personal ornaments (e.g. Mohenjo-daro 1 and 6; Harappa 2 and 7). These deposits would appear to transgress the traditional division of hoards into either ritual or non-ritual (Levy 1982; Bradley 1990) suggesting that such divisions are either not applicable to the Indus due to some influencing factor, or that such a division is only viable in the European Bronze Age. Another striking contrast between European Bronze Age hoards and the Indus hoards is the presence or absence of weaponry. Within European contexts weaponry, particularly swords, are found within nearly all hoards and are the most frequently deposited items (Levy 1982; Bradley 1990; Randsborg 1995; 2002; York 2002). In the Indus hoards, however, weaponry is found infrequently -

1 in 10 hoards contained arrowheads, whilst 1 in 5 contained spearheads, and only 1 hoard contained a sword.

Mohenjo-daro revealed the greatest number of hoards, and the greatest variation within hoards. Of the twelve hoards identified in Mohenjo-daro, not one is located within the 'citadel mound' (see Fig. 5.3), and they are evenly distributed throughout the excavated areas. Regarding the materials and objects found in the Mohenjo-daro hoards, there, again, does not appear to be any identifiable patterns. Nine of the hoards are contained within vessels, and after those vessels the most frequently occurring item are axes (within seven of the twelve hoards), which were not weaponry but served a more utilitarian function. As for materials, all twelve hoards contain copper items, although the next most frequently occurring materials are gold and carnelian, both of which are associated with wealthy and luxury items (Rissman 1988). The most varied hoards in Mohenjo-daro also show little patterning. Hoard numbers 1 and 2 contain wide variety of both materials and objects (sixteen materials and ten objects, and twelve materials and twelve objects respectively). Hoard number 4, however, contains a low variety of materials (copper and stone), but a large variety of objects (eleven) including the only sword recovered from a hoard. Conversely, hoard number 6 contains nine different materials that are used in only six types of objects, mostly decorative jewellery. The impression from Mohenjo-daro is that hoarding was not restricted to any particular area of the city, nor was there any particular object or material that was consistently deposited. The hoards do not, however, appear to be merely temporary depositions of valuable items. On average, the Mohenjo-daro hoards are located 1.96 metres below floor level, indeed hoard number 5 was nearly 7.5 metres below floor level, suggesting that they were of a more permanent nature.

The hoards from Harappa mirror those of Mohenjo-daro in some criteria, although prove contradictory in others. Firstly, concerning their distribution, two of the seven hoards are located within the 'citadel mound' (compared to none at Mohenjo-daro), whilst the remaining five hoards are all found close to the citadel (Mound AB) (see Fig. 5.4). Interestingly, four of the hoards are located within Mound F, the area Piggott (1950) and Wheeler (1959) attributed as 'workmen's quarters' housing servile workers and which Miller (1985) ascribes to willingly subordinated communities (Coningham and Manuel 2009). Their presence, along with Mohenjo-daro hoard number 12 (which was also found within a traditionally assumed subordinated area) suggest that the inhabitants of these regions had equal, if not greater, access to resources as the remainder of the community. As for the variety of materials and objects within the hoards at Harappa, a similar pattern to Mohenjo-daro is evident. Hoard number 1 has five objects made from ten different materials, whilst hoard number 2 contains 14 object types made from only two materials (copper and lollingite). Fewer of the hoards are contained within vessels, and three of the hoards (almost half) do not contain copper objects. The most frequent object types are finger/arm jewellery (five of the seven), followed by jewellery production tools and pendants (both found within four hoards). Again, copper is the most frequently occurring material within hoards (four of the seven), though the next most frequent material is ceramics, which is found within three of the hoards, despite it occurring in only one other hoard outside of Harappa. The hoards from Harappa also contain haematite, lollingite, ivory and alabaster that are not found within any hoards elsewhere. Like Mohenjo-daro, there are no eminently visible trends or patterns to the hoards within Harappa, although unlike Mohenjo-daro hoards are present upon the

'citadel mound'. Both materials and objects are varied, and the average depth of hoards is 2.13 metres, slightly deeper than the hoards at Mohenjo-daro.

The most striking feature of the six Chanhu-daro hoards is that copper is the only material present, despite the fact that the hoards contain anywhere between three and eight object types. Knives/ daggers are the most frequently occurring object, being present in all six hoards, followed by chisels, which are present in four of the hoards; vessels are present in three hoards. Secondly, the hoards at Chanhu-daro are clustered together towards the eastern edge of Mound II (see Fig. 5.5). The original excavator, Mackay, interpreted two of the hoards (numbers 2 and 3) as the property of a metalworker (1943: 40-43), and another two hoards (numbers 5 and 6) as part of a 'bead factory' (*ibid*: 43). Possehl suggests that Chanhu-daro was a regional craft centre, engaged in the manufacture of beads, seals, ceramics, using chalcedony, carnelian, faience and shell (2002: 74). Interestingly, though, none of these materials or objects is found within Chanhu-daro's hoards, despite the fact that beads are one of the most frequently occurring objects within the other hoards. The range of hoarded materials is minimal, although the objects are still varied. In addition, the hoards are clustered within the area identified as a 'bead factory', which is on the opposite side of the site to the 'citadel mound'. Similarly, Possehl (2002: 81-82) interprets Lothal as both a trading entrepot and manufacturing centre similar to Chanhu-daro, primarily engaged in the manufacture of beads. However, whilst the hoards at Chanhu-daro did not contain any of the manufactured items, but rather the manufacturing tools, Lothal is in fact almost the opposite. All of the hoards contain beads of a variety of materials, whilst there are single occurrences of seals, rings and jewellery production tools. As for the location of the hoards, one is located in the 'Acropolis' close to the bathing platforms, another is within the lower town, and the third hoard is of an unknown location!

The two smaller sites of Kuntasi and Allahdino both yielded a single hoard each; though provide valuable information as to the nature and distribution of hoarding. The hoard from Kuntasi, which is generally considered an 'industrial complex and port' (Dhavalikar et al 1996: 60) similar to Lothal, bears many resemblances to the hoards from Lothal. The hoard contained beads of steatite, paste and gold, as well as copper rings and bangles – again the products of manufacture, rather than the production tools themselves, as at Chanhu-daro. Allahdino, on the other hand, is a relatively small Integration Era site, which the excavator interprets as a small agricultural settlement (Fairservis 1993: 112) although with the potential for craft specialisation (Atre 1989: 50).

The pattern of hoarding from the six sites does not suggest any conspicuous approach or rules concerning hoarding. The locations of hoards appear to be arbitrary, and in fact, appear to contradict many of the normative suggestions of wealth distribution. Not only are there very few hoards found within the citadel areas, but, especially at Harappa, there are more hoards located within the so-called 'coolie-lines'. As for distributions within the lower towns of Mohenjo-daro, Harappa, and Chanhu-daro, only the latter shows any sign of clustering. The contents of hoards also do not appear to follow any trends. There are numerous similarities and dissimilarities between the six sites, and taken individually appear to contradict the evidence from the others. The only identifiable pattern appears to be the tendency to hoard items within pots, jars, vases and other vessels – a factor that may be more functional than symbolic especially when dealing with thousands of beads.

Discussion

The shift from notion of the Indus as an empire or state with strict social hierarchies has raised numerous questions over the exact nature of its social organisation (Coningham and Manuel 2009). Rissman and Millers' ascetic model challenges our current interpretation of the archaeological record in protohistoric South Asia, arguing that it represents a distorted view of past society. However, Rissman's imposition of western concepts of hoarding onto the Indus Valley Tradition has not been entirely successful. He also avoids notions of wealth distinctions and conspicuous consumption such as potlatch or feasting that are notoriously difficult to identify archaeologically. Furthermore, Rissman identifies, but neglects to comment on, the two distinct methods of burial within the Integration Era: formal cemeteries outside the city, and informal burials within settlements (1988: 211). This geographic, as opposed to artefactual distinction, may reflect wealth distinctions both within and between different urban centres. However, the lack of well excavated and contextualised human remains makes such an approach problematic.

Of the hoarded deposits identified by Rissman (1988: appendices 1-6), it is Bradley's (1990) distinction of faunal remains equalling 'ritual' hoards, as opposed to 'non-ritual' hoards that takes precedent. Although Rissman identifies the need to understand grave goods and offerings within their symbolic context, he does not consider the possibility that different methods of burial may alter the contextual meaning of inclusions, as Peebles and Kus (1977) demonstrate at Moundville. What differentiation there is within grave goods, Rissman attributes to economic inequality, based along dimensions of age and sex (1988: 214), yet within the hoards there is far less variation of objects, materials and approaches.

Further issues arise from Rissman methodology and terminology. The term 'hoards' suggests the deliberate retention of artefacts for future recovery, even though there is nothing to suggest that any of the deposits were buried with the intention for recovery. The use of the term 'buried' or 'hidden' deposits allows for a much wider scope with regards the ultimate purpose of the artefacts, whether they were personal stashes of wealth, objects that were hidden due to Miller's suggested embargo, or sacred deposits to unknown deities. Additionally, Rissman's presumption regarding items that were considered most valuable is also questionable. He stated that 'the evidence of the hoards is consistent with the suggestion that people categorised gold, silver, copper, semi-precious stone and perhaps shell as items of material wealth' (1988: 26). Yet, recent investigations into the deposition of artefacts within the European Bronze Age has revealed that often the symbolic value of possessions far outweighs the intrinsic value of objects in determining their deposition (Kristiansen 2002; Randsborg 2002; York 2002).

In conclusion, Rissman's methodology attempts to examine Indus social organisation in a more objective manner than previously attempted, and along with Miller (1985) provokes a model that avoids the social evolutionary framework of Service (1962), and normative models of Indus social organisation. However, the methodology could be improved through a more vigorous and comprehensive definition of hoarding (e.g. Randsborg 1995; 2002; Bradley 1985; 1990), as well as considering the variety and symbolic context of different burial methods, and their reflections upon Indus social organisation. What has been demonstrated within the Indus is that hoards do not appear to represent any one function taken either as a group or individually. Until recently such equifinality has not been considered within the hoarding literature (Bradley 1998; Kristiansen 2002; Randsborg 2002; York 2002), and as a consequence its role within ancient societies is only now beginning to be understood.

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Management Plan and Culture Heritage
Local Development

NANCY M. ABD EL MONEIM

Abstract

Management of World Heritage Sites (hereafter WHS) is a critical topic and part of its importance emerges from the economic value that these sites bring to the areas and communities where they are located. This study shows how the management plan of WHS can play a big role in the development of the local community and the surrounding area. It aims to set general guidelines which may help in the assessment of the management plan and see how far or close from 'Sustainable Development' is a plan, which seeks to improve the conservation of the heritage sites as well as the local communities and the surrounding areas.

Introduction

'We must always recognise that change offers the potential not only to protect the existing values of places, but also to enhance and add to them. It is the means by which each generation aspires to create an even richer historic environment than the one it inherited, one that will in its own turn be valued by the generations to whom it is bequeathed.' (*Conservation Principles English Heritage* 2006: 14).

In this sense, management plans for WHS is a critical topic in the world, and its importance emerges from the value assigned to the site itself. To conserve the site value and to keep it in World Heritage List means not only to keep it in the same performance, but also to enhance it with the surrounding and add to it. So, a good management plan can keep the sites on the same track with the same performance. On the other hand, a bad management plan threats that a site may be de-listed. The compulsory periodic reports on WHS bring the issue of management plans to the centre of attention. It has become clear that only sites which have a well designed management plan maintain their required standards. Because of that, recent policies from the World Heritage Convention require that all sites nominated for inclusion on the list must have management plans (Operational Guidelines II. C.23).

A good management plan according to the WHS, which in economic terms will allow a site to reach a point of sustainable success, has to integrate not only old monuments but also the social patrimony (costume, tradition, peoples and so forth), which may have been developed and changed through time but forms an integral part of the cultural assets as well as the buildings and physical stock themselves. The social patrimony refers to the locality, which means the local communities and their development. This paper aims to provide a discussion of the importance of taking into consideration the local development of communities while designing the management plan for a site.

Local Development

Development definitions and its ingredients

Development, from our point of view, is a word which contains many meanings: development of human beings and nature, economic development, the social life, the community development and so forth. All these meanings come into play in the term 'Sustainable Development' where 'Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (Brundtland Commission 1987).[1] In this sense, Sustainable Development focuses on improving the quality of life for all of the Earth's citizens without demolishing natural resources and decreasing their use. Sustainable Development is the need to establish new polices and systems to maintain the harmony and the equilibrium between the environments, the society and the economy which lead to the creation of a 'sustainable community' (*Journal of Systems Science and Systems Engineering* 11).[2]

The 2005 World Summit in New York declared that, to be effective, actions on sustainability must involve cooperation across three sustainability 'pillars': environment, society and economy. Although it is critical that there is cooperation among the three pillars, in practice this often entails negotiation between competing interests (World Summit 2005).

That means that the framework of Sustainable Development includes not only environmental and social responsibility but also economic responsibility.

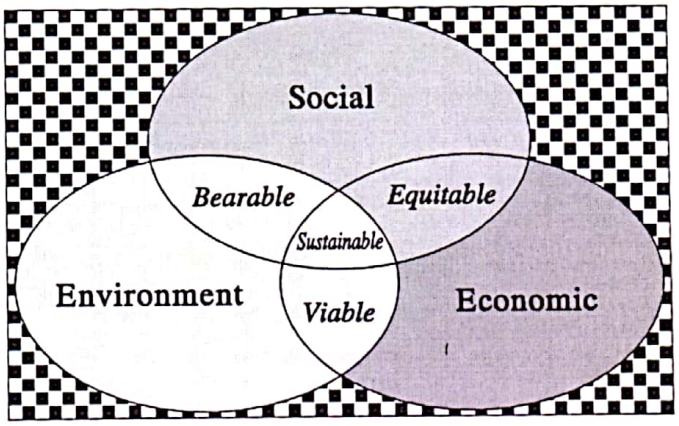

Fig. 1: The three pillars of sustainability
Source: IUCN (The Future of sustainability

Environmental sustainability refers to environmental actions or impacts. The term social sustainability means 'maintaining social capital'. Social capital is the investments and services that create the basic framework for society' (Goodland 2002: 2). Finally, economic development sustainability is 'the process of creating wealth through the mobilization of human, financial, capital, physical and natural resources to generate marketable goods and services. The economic developer's role is to influence the process for the benefit of the community through expanding job opportunities and the tax base' (AEDC: 1984). This paper focuses only on the economic and social pillars, because they are to the point and more related to enhance the development of WHS and the local communities.

Economic sustainability: the three measure of human development

Economic development is a wide concept which 'defines all the factors 'economical, social, political, natural, cultural and so forth' that lead to economic growth'(Cellini 2008). Then the role of economic development is not only to increase per capita income (hereafter GDP) but also to enhance other ingredients such as quality of life, structure change, freedom etc. In order to take into account all these measures of development, the United Nations Development Programme (hereafter UNDP) created an indicator which is the Human Development Index (hereafter HDI). Every year since 1990 the

Human Development Report has published the HDI which looks beyond GDP to a broader definition of well-being. The HDI provides a composite measure of three dimensions of human development: 'Living a long and healthy life (measured by life expectancy), being educated (measured by adult literacy and enrolment at the primary, secondary and tertiary levels) and having a decent standard of living (measured by purchasing power parity, abbreviated as PPP, income). The index is not in any sense a comprehensive measure of human development. It does not, for example, include important indicators such as gender or income inequality and more difficult to measure indicators like respect for human rights and political freedoms' (Yearly Global Human Development Reports, UNDP, 1990).[3] These measures are useful in the assessment of the economic level of the communities, and help in the process towards a sustainable local development.

Social Sustainability: the importance of social capital in improving local development.

A definition of Social Capital considers it as 'the norms and networks that facilitate collective action' (Woolcock 2001). Social capital 'is defined by its function. It is not a single entity but a variety of different entities, with two elements in common: they all consist of some aspect of social structures, and they facilitate certain actions of actors - whether persons or corporate actors - within the structure' (Coleman 1988: S98). According to this perspective, social capital can be a property of a group or a community or an entire nation. Hayami emphasizes the role of social capital as a generator of positive externalities to the community. 'Relationships of mutual trust created through long - term and multiple transactions... would not only be effective in suppressing moral hazards between the contracting parties but would also promote collaborative relationships within the wider community ... In this regard, trust is a kind of 'social capital'...' (Hayami 2001: 291). For him, trust and social harmony are the factors which help the community to overcome opportunism and moral hazard. Only community participation and a strong civil society, which includes government, can achieve trust and transaction costs.

From the above, social capital can be defined as an individual asset or a shared asset which is built on trust. So, to have a cohesive community and connected groups of peoples we need reciprocity, tolerance, patience, fellowship, love, accepted standards of honesty and self-discipline, and accordingly, culture and social norms play a big role as social capital. In this sense the existence of networks such as religious, ethnicity, political, or other types can serve as a basis for the growth of social capital that can be spent in the local development.

Role of culture for local development

Culture refers to features of a cultural environment such as language, history, accepted behaviours and shared beliefs, religion, sport, art, and cultural events (Kaplan and Sadock 2007: 168). These features influence social capital in shaping the cultural and social life of a society. This concept has been confirmed by Moncrieff: 'The social and cultural norms that people observe influence their attitudes and choices. People need not – and in many societies often do not act autonomously. Therefore, by ignoring or underestimating social/cultural norms and values, policymakers can miss potentially fruitful entry points and/or overlook some of the potential blocks to the policies they recommend' (Moncrieff 2004: 2). 'Culture also influences the structures of families, the types of relationships people have and the shared norms in a community. Political, legal and institutional conditions are reflection of

the shared norms and understandings of a particular cultural setting' (*Australian Bureau of Statistics 2004*: *op. cit*).

So, the issue is how to make culture a lever for local development? The contemporary contribution of culture to local economic development is not only to attract tourists but also to increase the socio-economic life through job creation, exports and revenues. The contribution of culture to employment can vary from 3% to 7% or more (OECD 2005). 'Culture has become an essential component in the quality of life, a source of tourist revenue and a 'creativity lever' for new goods and services' (OECD 2005: 18). It is increasingly acknowledged that culture has become a tool to push the people and the communities (social integration) to contribute towards sustainable development.

Therefore, maintaining social capital balance is important for understanding the role of culture in different contexts, how policymakers can and should engage the immediate and long-term prospects for change and the likely directions that change might take. Importantly, balance also requires the integration of culture with other factors that influence identities, such as class, occupation, gender, location and politics (Sen 2004). Of course, policymakers must take into account the stakeholders and the local community while setting the development policies. So, to reach the objective set by the local development plan we need a good management plan which will be the tool of getting people together to accomplish the desired goals.

The concept of 'Sustainable Management'

Management is *'the art of getting things done through people'* (Parker Follett 1941).[4] Attaching sustainability to management refers to managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while (a) safeguarding the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and (b) safeguarding the life-supporting capacity of air, water, soil and ecosystems; and (c) avoiding, remedying, or mitigating any adverse effects of activities on the environment' (*PCE Environmental Management* 1991).

A cultural site management workshop (World Bank Workshop) carried out under the auspices of the international institute for Sustainable Development (April 1999) stated that the aim of sustainable management is to protect and enhance cultural heritage by increasing the commitment of key stakeholders to the integration of culture heritage, stressing on the value of cultural heritage, significant characteristics of cultural heritage and principles for cultural heritage conservation and management. In the UN confeence on environment and development (Rio de Janeiro, 3-14 June 1992: 1), it was stated that 'sustainable management was adopted to achieve and maintain cultural identity, social organization, as well as adequate levels of livelihood and well-being, calling for community contribution'. Hence, what is valuable in the historic environment should not be left to practitioners alone to determine. Everyone should have the opportunity to contribute, understand and manage the historic environment.. On the other hand, practitioners should use their knowledge, skills and experience to encourage people to understand, value and care for their heritage.

What is a management plan for heritage sites?

Heritage site management can be defined simply as 'a document that sets out what is significant in a site or monument as a basis for understanding its important qualities, in order to determine the action necessary to protect and manage it' (*Edinburgh World Heritage Site,* July 2005: 10). Confirming this concept, Castellanos (2007: 8) affirms that management of heritage is 'Everything we do to conserve and promote the significance of a place. It is addressing all aspects related to a place in a holistic and participatory manner.' According to her, management of heritage requires an understanding of values and significance, the interdependency of factors as well as a participatory and comprehensive planning. Hence, a management plan can be a tool for conserving the significance of a heritage place and for managing collaboration among different interest groups in the public and private sectors, to achieve larger commitment and participation in conservation endeavors.

In the last few years, there have been many trials to develop some approaches to site management planning as a guideline for decision making. The approaches most often favoured are those called values-based, where: 'Values-based site management is the coordinated and structured operation of a heritage site with the primary purpose of protecting the significance of the place as defined by designation criteria, government authorities or other owners, experts of various stripes, and other citizens with legitimate interests in the place' (Getty Conservation Institute 2003: 1). The value-based heritage management has been most thoroughly formalized in Australia, where the Burra Charter guides practitioners.[5]

The importance of values-based site management emerges from the systematic way it analysis and distinguishes values of management plans by offering a positive approach in which conservation and development are not mutually exclusive objectives, but part of a single planned process. It accommodates many types of heritage by addressing the threats to which heritage may be exposed and suggesting a longer-term view of management. Values-based site management places great importance on consultation of cultural sites stakeholders and deals with their diversity.[6] Generally values-based site management provides a framework for the conservation of cultural heritage within the site and the community.

The goals of management plans

To identify the main goals and aims of a management plan, it is necessary to identify the risks and threats hanging over the heritage sites, the growing economic, social and territorial relevance of natural and cultural values, tourist exploitation, the growing interrelation and potential conflict between the needs for conservation and the social demands.[7]

So, the role of planning is to conserve the site by promoting sustainable management as part of a dynamic, living and working context. Taking into consideration that cultural sites have multiple management objectives, there are often various activities that take place at these sites at the same time – such as conservation interventions, visitor management, infrastructure development, and interpretation – that are handled separately, without a unifying process that focuses all decisions on common goals. Also, a management plan has to facilitate the coordination among all the parties involved in the process, by increasing the awareness of communities, thereby encouraging all people to enjoy and understand the site.

The assessment of a site management plan

'Management without planning can be counterproductive and dangerous. Without a **significance assessment**, values, authenticity and integrity can be lost' (Castellanos 2007: 8). According to Castellanos, that means cultural heritage loss. Culture is the reality of a place in terms of social, economic, administrative and legal issues, these terms will be essential in defining sustainable projects for heritage management and conservation. Hence, to increase the effectiveness of management plan, a number of assessment tools have been developed to assess these plans. The World Commission on Protected Areas (hereafter WCPA) has developed a 'Framework' for assessment. 'The WCPA framework aims both to provide some overall guidance in the development of assessment systems and to encourage standards for assessment and reporting' (Hocking et al 2000: 1).

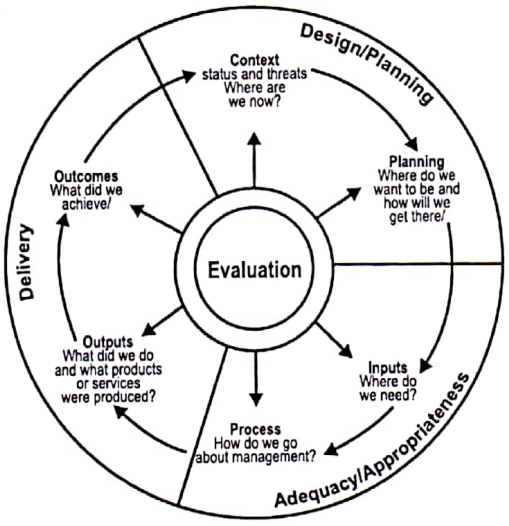

Fig. 2: WCPA framework, Source: WCPA

To maximize the potential of heritage sites, and to improve management processes, we need to understand the strengths and weaknesses of their management and the threats they face. Elaborating from the literature mentioned above, here we develop a specific framework for 'Management Assessment'. This framework, based on that of the WCPA, contains the main characteristics that should exist, from my point of view, in any management assessment. The framework uses the SWOT analysis as a tool in the assessment of the local development management plans of the case studies where 'SWOT analysis is an assessment of Strengths, Weaknesses, Opportunities, and Threats. SWOT analysis is used within organizations in the early stages of strategic and marketing planning. It is also used in problem solving, decision making, or for making staff aware of the need for change. It can be used at a personal level when examining your career path or determining possible career development' (BNET Business Dictionary 2003: 1).

This framework is a matrix between the four elements of the SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats) and the following evaluation elements:

Context: Significance of the place

- Community well-being,
- Recognition of heritage value,
- Participation of community members and increasing stakeholders commitment,
- The existence of Social Capital.

Planning: Design and planning for the place

- Administrative system (Legislation and policy),
- Local development plans,
- Heritage sites management plan.

Inputs: Resources needed to carry out the management

- Resources of the site,
- Resources of the community.

Outputs: Implementations of management programs and actions

- Results of management action plans.

Outcomes: Assessment of the output and future plans

Conclusion

This study was carried out for the purpose of learning how to maintain and manage a WHS with its surroundings (the city and the community). The role of a WHS into local economic development is not only to attract tourists but also to increase the socio-economic life. This paper confirmed that the culture heritage has become an essential component in the quality life, a 'creativity lever' for goods and services. Generally culture heritage and especially WHS, become tools to push people to contribute for a local sustainable development. We should give the chance to the communities to contribute and to participate in the decision making of the management plan, as they are the main stakeholders who benefit from the WHS. The study also attempted to find an applicable model aiming to achieve a better assessment for management plans. The use of the SWOT analysis showed considerable potential for this. The suggested guideline is based on five main points:

1. *Context*: The significance of the place, taking into consideration the community well-being, and the existence of Social Capital.
2. *Planning:* The design and planning for the site, how it is implemented in the local development plans and the heritage sites management plan.
3. *Inputs:* The resources from the site and the community.
4. *Outputs*: Implementations and results of management programmes.
5. *Outcomes:* The assessment of the output and future plans.

Finally, the study concludes that the best method to achieve 'Sustainable Development' is to integrate the local people in the management plan of WHS by providing an environment which encourages the participation of communities.

'Only with proper self identity, we would be able to realize that our heritage is part of us and what we do now will become part of our future and that of our future generations, and then we would endeavor to advocate for a sustainable development' (The Getty Conservation Institute 2002).

Notes

[1] *World Commission on Environment and Development. Our common future.* Oxford, UK: Oxford University Press, 1987:400

[2] Sustainable communities are places where peoples want to live and work, now and in the future. They meet the diverse needs of existing and future residents are sensitive to their environment and contribute to a high quality of life. They are all safe and inclusive, well planned, built and run, and offer equality of opportunity and good services for all (ODPM, UK).

[3] See http://human%20development%20reports%20(undp)/

[4] Whether management is an art or a science, management is a process that is used to achieve what an organization wants to achieve. An organization could be a business, a school, a city, a group of volunteers, or any governmental entity.

[5] The Burra Charter is the popular name for The Australia ICOMOS charter for the conservation of places of cultural significance, which was adopted by Australia ICOMOS in 1979 at Burra, Australia. The charter has since been revised and updated, and the sole version now in force was approved in 1999.

[6] Stockholders in this study are 'individuals or groups who have an interest in a site and who can provide valuable information about the contemporary values attributed to the place' (*Getty Conservation Institute,* 2003).

[7] See also Gambino 2007.

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Notes on the Historical Geography of the Pakistani Panjab

DILIP K. CHAKRABARTI

1. Introduction

In 2007-8, I undertook a field-study of the distribution of archaeological sites in the Indian states of Haryana and Panjab (Chakrabarti and Saini, forthcoming). Three aspects of this distribution, which have some bearings on the distribution of sites and routes of communication in the Pakistani Panjab, are the starting point of the present essay.

The first aspect is that the most important orientation of the distribution of Harappan sites in the Panjab (India) and Haryana lies along the alignment which can be traced between Delhi, Rohtak, Jind, Hansi, Hissar, Sirsa, Abohar and Fazilka. Beyond Fazilka the route enters Pakistan. I shall take up the ramifications of this route after it enters Pakistan. This alignment was important in Haryana and the Indian Panjab not merely in the Harappan context but also in the context of the early historic and later periods.

The second aspect is the alignment which leads from the Delhi area to Amritsar and then, Lahore. This alignment also can be detected easily both in the Harappan and later periods. However, the old alignment did not go up to modern Amritsar. It went up to Ferozepur, beyond which it entered the modern Pakistani territory. What happened to it after it proceeded beyond Ferozepur? This is another theme of my present essay.

The third aspect is the distribution of Harappan and later historic sites in the present Indian Panjab districts of Amritsar and Gurdaspur. An implication of this distribution is that sites of these periods should also be found in the areas across the border. If I remember correctly, no Harappan site has yet been reported in the adjacent Pakistani belt of Lahore, Gujranwala and Sialkot, to mention only the prominent places of this belt. There is however no reason why the distribution of the Harappan sites cannot extend up to the Sialkot zone. In fact, the location of Manda south of Jammu on the Indian side of the border should have alerted us to the probability of the existence of Harappan sites in the area near Sialkot. Further, the area near Sialkot lies in the foothills of the Siwaliks. On the Indian side, the Harappan sites are known to have existed right up to the Siwaliks. Sites like Rupar near Chandigarh have long been known, and I have found sites with the pottery of the Harappan tradition in Hosiarpur and Nawanshahr. There is no reason at all to imagine that the Pakistani side of the Siwaliks did not contain any Harappan site. The painted pottery sites of the Ferozepur district fall in a border area with Pakistan, and again, one can expect such sites south of Lahore. Ferozepur itself easily leads to Pak Pattan on the Pakistani side.

More important than this issue of Harappan distribution is the issue of the early historical route which went from Rajagriha in Magadha (modern south Bihar) in eastern India to Takshashila near Rawalpindi. What could be its alignment in the Pakistani Panjab?

2. The Location of Harappa and Other Issues

In a large tract of Haryana covering Panchkula, Ambala, Yamunanagar, Kurukshetra, Karnal and Panipat, no Mature Harappan site has yet been reported. The broad trajectory of the Mature

Harappan distribution in Haryana seems to be Sirsa, Fatehabad, Hissar, Hansi, Bhiwani, Rohtak and Jhajjar, with only one site - Balu - in the Jind-Kaithal stretch. This was the broad line of movement from Sirsa to the area of Delhi in the historical periods too, and here we can only observe this general similarity without trying to offer any specific explanation. At Badli, east-southeast of Jhajjar, R. C. Thakran (pers. comm. April 2008) has excavated a Mature Harappan level, and the location of this site suggests a Mature Harappan thrust towards the Yamuna.

In the case of this route which goes up to Abohar and Fazilka and then enters modern Pakistan, with its original alignment towards Bahawalpur and Multan, one has to enquire what happens to it after entering Pakistan. The same question has to be asked about the route which goes to Ferozepur from Ludhiana and to Amritsar from Ludhiana via Jalandhar.

If one follows the Delhi-Hissar-Sirsa alignment, one can turn from Hissar in the direction of Bhadra and Nohar in Rajasthan to catch the course of the Hakra. Or, one can go beyond Hissar up to Sirsa and turn in that area to the direction of Bhatnir or Hanumangarh to reach the Hakra course there. The Hakra alignment is followed up to Anupgarh to reach the Bahawalpur segment of Pakistan. This well-marked, although extinct, river corridor can give access from different points along it to Multan (through Bahawalpur) and even Dera Ghazi Khan (through Khanpur). One can reach Bahawalpur either from Mirgarh or Fort Derawar, and for accessing places in the Dera Ghazi Khan sector, Fort Derawar or Fort Marot seems to be convenient. Uchchh or ancient *Uchchapuri* lies on this route in this sector, and so does the Buddhist monastic site of Sui Vihar. The point is that to reach Multan and Dera Ghazi Khan, and even Dera Ismail Khan lower down, from the Hissar-Sirsa zone, the Hakra course up to Fort Derawar and Fort Marot is one of the convenient alignments. The importance of Bahawalpur as a communication hub has been emphasized in the following fashion:

> 'At this juncture, we may note that the historical importance of the Bahawalpur tract need not be seen only in terms of the possibility of a perennial river flowing through this region. Bahawalpur was of great significance in the trade and trade route network also because of its geographical position, connecting the Indus plains with the Punjab and Rajasthan and further south, with Gujarat. In fact, the region, at the end of the nineteenth century, used to enjoy commercial transactions with Karachi, Lahore, Bombay and Calcutta. The chief centres of commerce were Bahawalpur, Ahmadpur East, Allahabad, Khanpur and Hasilpur, and part of the commerce used to go to Afghanistan and Turkestan' (Lahiri 1992: 119).

The spaces which have been specifically mentioned (including Allahabad between Khanpur and Ahmadpur East) are all approachable from the area between Forts Derawar and Marot.

If one does not follow the Hakra alignment and yet try to reach Multan from the Hissar-Sirsa segment, one has at least two alternatives. If one follows the Delhi-Hissar-Sirsa-Abohar-Fazilka alignment up to the modern Pakistan border, the first major place that one gets on the other side, after crossing the Sutlej, is Dipalpur. If one follows the alignment beyond Sirsa up to Ferozepur through Bathinda, there is Kasur on the other side of the Sutlej in this territory. The importance of both these places - Dipalpur and Kasur - in the route network has been emphasized by Cunningham (Majumdar-Sastri 1924) and others. Dipalpur was an important place under Firoz Shah Tughlaq in the 14th century. To the southwest of modern Dipalpur, Cunningham (Majumdar-Sastri 1924: 244-245)

noted 'a high ruined mound' which had also a number of smaller associated mounds. He noted the presence of Indo-Scythian coins in the ruins, and on the whole he thinks that the Dipalpur mounds to be three-quarters of a mile long and half a mile broad. Pak Pattan or Ajudhan lies 28 miles southwest of Dipalpur. Cunningham writes:

> 'For many centuries Ajudhan was the principal ferry on the Sutlej. Here met the two great western roads from Dera Ghazi Khan and Dera Ismail Khan; the first via Mankera, Shorkot and Harappa; the second via Multan' (Majumdar-Sastri 1924: 250).

One may take up the issue of Ajudhan/Pak Pattan and Dipalpur at a greater length on the basis of the *Montgomery District Gazetteer 1883-84*. On Pak Pattan the Gazetteer (pp. 182-186) writes:

> 'Pak Pattan is a place of great commerce, collecting wheat, pulses from surrounding villages, *gur* and sugar from Hoshiarpur and Jalandhar, cloth pieces from Calcutta and Bombay, *majith* and fruits from Afghanistan'.

On Dipalpur, the Gazetteer (p.180) states:

> 'The place is frequented by traders from Dera Ismail Khan and other places towards the frontier, on account of the main road from Okara to Fazilka passing through that place'.

The question of these routes also brings us to the question of the location of Harappa. The *Montgomery District Gazetteer of 1883-84* (pp. 147-148) describes the principal roads of the district and the place of Harappa in that road network:

> '(1) The Customs line road, running from Jamlera on the Multan border, nearly parallel to the Sutlej through Pak Pattan and Haveli to Rohela Ghat, opposite Fazilka in the Sirsa district.
>
> (2) The Lahore and Multan trunk road, running close to the Ravi, on the left bank of the river. Traffic on this road has greatly decreased since the opening of the railway in 1865; many of the *sarais* along it are in a bad condition and others have been closed altogether. But the road itself is in very fair order.
>
> (3) The road leading from Jhang, via Kamalia, Harappa, Kabir and Pak Pattan to the Sutlej. Speaking of it, Lieutenant Elphinstone says:-
>
> > 'Numerous caravans of merchants from Afghanistan frequent this route during the cold weather. They seldom dispose of their merchandise in the district, but, as far as I could ascertain, this route is generally selected by merchants who are anxious to arrive at their principal mart, Delhi, without the delay which would otherwise attend the unpacking of their wares at intermediate stations.
>
> (4) The road from Harappa through Montgomery, Dipalpur and Busirpur to the ferry at Rahela Ghat.
>
> (5) The road from Pak Pattan to Chunian, passing near Dipalpur and through Shergarh.
>
> (6) The road from Jhang through Gugera and Satghara to Wan Radharam, running thence to Ferozepur.
>
> (7, 8, and 9) The roads connecting Montogomery and Pak Pattan, and Gugera and Pak Pattan, and Gugera and Dipalpur'.

It is thus clear that Harappa played a role both in the trade with Multan from the Delhi-Sirsa side and in the trade with Jhang and the frontier from the same direction. Harappa was also linked with Kot Kamalia and Shorkot, both to its west and both possibly important on the road to the Jhang area. Cunningham (Majumdar-Sastri 1924:235-238) calls Shorkot 'a huge mound of ruins' which he dated on the basis of the Indo-Scythic coins of Panjab. Kamalia also is 'a small but ancient town situated on an isolated mound on the right or northern bank of the Ravi'. Cunningham linked both these places to the progress of Alexander's invasion through the Panjab.

It would be fair to emphasize that Raverty (1892: 399, note 421) strongly criticised Cunningham for claiming Pak Pattan to be a traditional ferry point across the Sutlej because of the varying history of the course of this river. This does not take away the fact that Pak Pattan figured significantly in the relevant route network. The Panjab route network in this part has also been highlighted by H. K. Trevaskis (1928) who, as the Inspector General of Registration and Director of Land Records of the province sometime in the last quarter of the nineteenth century, had reasons to be closely familiar with it. Of the three major routes from the frontier, two came from Dera Ismail Khan in the north and Dera Ghazi Khan in the south, along the axis of the frontier hills. They crossed the Indus in their respective areas and crossed the Chenab and Shorkot and Multan. The northerly route or the one coming from Dera Ghazi Khan then crossed the Ravi at Tulamba and Harappa, where it joined the southerly or the Multan route (coming from Dera Ghazi Khan) and crossed the Sutlej at Pak Pattan, and followed the Sirsa-Thanesvar alignment. The third frontier route emanated from the Bannu sector which lies further up the axis of the hills from Dera Ismail Khan. This route crossed the Chenab at Chiniot and entered the Lahore area.

3. Was the Present Lahore-Rawalpindi Alignment an Ancient Alignment?

We have noted that if one follows the Delhi-Sirsa alignment up to Ferozepur via Bathinda, one gets Kasur on the other side of the Sutlej in Pakistan. According to Cunningham, Kasur was an ancient city which occupied about one square mile. From Kasur Dipalpur is easily accessible and thus it was also linked with the trade network running through the area. Through Patti, 'another large brick town of considerable antiquity' (Majumdar-Sastri 1924: 230-233), Kasur was linked with Lahore, but despite Cunningham's suggestion that it was linked in tradition with Lava, one of the two sons of Rama, nothing ancient has yet been associated with Lahore. One is not sure if the modern Amritsar entry to Lahore is ancient or if the modern Lahore-Rawalpindi alignment is a truly ancient alignment.

If this is not an ancient alignment, which alignment towards Taxila from the east was ancient? In the ancient context Ferozepur seems to be a more important communication hub than the Lahore-Amritsar zone. *The Ferozepur District Gazetteer 1883-84* (p.13) has the following on Ferozepur:

> 'Both town and territory of Ferozepur bear every appearance of having been not only long located, but having been at one time rich and populous. The numerous old walls and sites of villages throughout the present waste lands show that they were once cultivated; and the extensive ruins about this town prove it to have been a large and substantially built city'.

There seems to be a problem regarding the antiquity of the present Lahore-Taxila alignment. Lahore is not an ancient place and in Cunningham's account of the region, neither is any place near it convincingly so. The only mound worth consideration is Ransi but this place lies about 25 miles to

the west of Lahore and not on the straight Lahore-Sohdara alignment, Sohdara reputedly representing an ancient crossing of the Chenab. Between Sohdara and Taxila there are major ancient sites such as Jhelum and Manikyala.

It is possible that Sialkot marked a major halting place between the eastern sector of the Panjab, of which Amritsar and Lahore may be said to mark the westernmost fringe, and Taxila. Sialkot's identification with the ancient city of Sakala, celebrated as the capital of Menander in *Milindapanho*, is not in doubt (Law 1969), and Cunningham himself (1882: 44-46) described its ancient ruins measuring more than a mile in length and half a mile in breadth. The citadel on the northern side stands on a 700 ft square and 49 ft high ancient mound. There is a road from Sialkot to Pathankot via Gurdaspur, and that passes by the high mound of Kalanour and a few other mounds that we have noticed in the Gurdaspur area. We suggest that that this route provided access from Pathankot to Sialkot or ancient Sakala, and that this route led further on to Taxila. From the east, the route to Taxila could have gone through Sakala which lies only a short distance to the north-northeast of Sohdara, the ancient crossing of the Chenab.

It may be noted that there was no straight route from Pathankot to Sakala or Sialkot. The reason is that if one proceeds straight to Sialkot from Pathankot, one has to push through the landscape of the Siwalik foothills, which is frequently interrupted by boulder-carrying streams which fan out widely on reaching the plain. The route went via Gurdaspur and Kalanour. The alignment would have been the following: Pathankot > Gurdaspur> Kalanour > Narowal> Pasrur> Sialkot.

That this hypothesis, which we have deduced both geographically and archaeologically, is logical, is suggested by the route taken by Jivaka, the famous physician contemporary with the Buddha, from Taxila to Mathura. From Taxila he travelled through Bhadramkara, Udumbara and Rohitaka, the first two places being Sialkot and Pathankot respectively. Also in the *Ramayana*'s account of the route to the Kekaya territory in western Panjab (Jalalpur near Lala Musa), the route went through Sakala (for these references, see Moti Chandra 1977: 15-16).

4. Concluding observations

The present essay has located the position of Harappa on the vast network of routes between the modern Delhi area and Multan, Dehra Ghazi Khan and Dera Ismail Khan on the other. I have pointed out the traditional importance of this site as a place where the Ravi was crossed and how the route caught the Fazilka-Abohar-Sirsa alignment which, through places like Fatehabad, Hissar, Hansi, Jind, and Rohtak in modern Haryana, led up to the area around Delhi in the Yamuna valley. Having reached the Yamuna valley in this section, it was easy to move down the valley to Mathura in the historical period.

This essay has also stretched the probable distribution of Harappan sites in the Lahore, Gujranwala and Silakot sectors of Pakistan in view of their distribution across the border in India. Equally important is its argument that the old route from east India to Taxila went through Sialkot, the site of the ancient city of Sakala, from the side of Indian Pathankot which also was a major early historic settlement, although the old site has been destroyed now. It, however, existed in Cunningham's time.

For the last three decades I have been trying to understand the basic archaeological geography of vast sections of India and how the different sections were actually integrated into a network of

communications on the ground. My study of the Ganga plain (Chakrabarti 2001; 2007) occupied me for 14 years (1991-2001, 2003-05), and in 2007-08, I extended it up to the Amritsar border. Meanwhile, I examined the routes which linked the Ganga plain with the Deccan (Chakrabarti 2005), and the routes which linked the various parts of the Deccan and the southern peninsula (Chakrabarti, forthcoming). The present essay is my understanding of the alignments of a few of these routes in Pakistan.

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Multiplicity on the Frontier: Imagining the Warrior Goddess

MICHAEL W. MEISTER

Modern Wicca, echoing nineteenth-century sources (Balfour 1873: 277), conflates many outsider goddesses — 'She is known as Kali, Hecate, Cerridwen, Lilith, Persephone, Fata, Morgana, Ereshleigal, Arianhrod, Durga, Inama, Tiamat, and by a million, million other names'.[1] Indological scholarship has been more self-contained, although the possibilities of iconographic assimilations and associations from outside India are an acknowledged part of the search for origins of early Indian representations of divinity (Mukherjee 1969; 1985).

The complexities of South Asia as a 'crossroads' during early years when images of divinities were taking form and beginning to be used in that region have been well framed in a recent article by Suchandra Ghosh in *Studies in History* (Ghosh 2007). She cites Romila Thapar's observation that 'Those who came were initially alien in custom and belief, but the mutations that had occurred among them and among the host societies expanded the cultural experience of both' (Ghosh 2007: 302; Thapar 2002: 223). She illustrates an important type of square coin found at Ai Khanum, Afghanistan, issued by the Greek Bactrian king Agathocles in the second century BCE, which bears the first anthropomorphic representations we have of two Indian divinities, Vāsudeva-Kṛṣṇa and Balarāma-Saṅkarṣaṇa, both two armed and with a single face (Fig. 1). 'It is the oldest depiction of Indian deities that we have, and as such are symbolic of an intermingling of Hellenistic with Indian cultures', according to Ghosh (Ghosh 2007: 304; Narain 1973; Holt 1988: 1-7).

Agathocles 'was indeed a man of two worlds, a Bactrian king of the borderlands between Greek and Indian culture', who had also issued many 'beautiful Greek silver coins on the Attic standard' – including a series of 'pedigree issues' delimiting his claimed lineage (Holt 1984) - as well

Fig. 1: Ai-Khanum, Afghanistan, 'drachm of Agathocles with bilingual legend in Greek and Brāhmī'; Balarāma (obverse), Vāsudeva Kṛṣṇa (reverse), 2nd century BCE. (After S. Ghosh, 'Understanding Transitions,' Fig. 4)

Fig. 2: Pergamon, Turkey, Zeus Altar, goddess Hecate, 2nd century BCE (Pergamon Museum, Berlin). After mlahanas.de/Greeks/Arts/Zeus altar E.htm)

Fig. 3: Pergamon, Hecate, detail. (After mlahanas.de/Greeks/Mythology/ Hecate.html)

as these "coins of a very different world ... square or rectangular in shape, and which portrayed the gods of India rather than Greece. ... This is the money of 'Rajane Agathuklayasa', a monarch whose subjects required a native currency in the local scripts of North-West India" as F. Holt describes (Holt 1988: 1-2). In the coinage of the Kuṣāṇas centuries later coins of diverse divinities of subjects under them were also depicted including Śiva (Bactrian: Oesho), initially shown with two arms but then with four arms and multiple faces (Fig. 6) (Cribb 1997).[2]

Among coins minted for Agathocles in the second century BCE were ones with 'his skilfully carved portrait on one side, and a standing Zeus holding Hecate on the other' (Fig. 5); 'These coins suggest that Agathocles, though ruling a kingdom in Central Asia, was certainly a Greek who governed subjects of Hellenic culture' (Holt 1988: 2). W.W. Tarn in his pioneering study of the Greeks in Bactria and India remarked that 'the important figure on these coins is the three-headed Hecate; she has never been explained, but she is the key to several things'. He equates the image of this tripartite goddess with the crossroads, 'where met the three routes across the Hindu Kush from Bactria. Alexandria-Kapisa stood at the point of junction and doubtless Hecate of the Three Ways was worshipped there.' (Tarn 1938: 158).[3]

Fig. 4: Rome, Capitoline, tripartite Hecate. (After 1911ency-clopedia.org/Hecate.)

Fig. 5: Agathocles tetradrachm, 2nd century CBE; reverse, Zeus holding image of Hecate. (After Numismatica Ars Classica)

Fig. 6: Kuṣāṇa coin, Oesho/Śiva, 3rd c. CE (After mupam.com/kushan1.htmil)

'According to the generally accepted view [Hecate] is of Hellenic origin, but Farnell regards her as a foreign importation from Thrace', according to the *Encyclopaedia Britannica* 11th ed.; 'Hecate was never incorporated among the Olympian gods'.[4] She is associated with crossroads, thresholds, the underworld, magic.[5] Pausanias in his travelogue in the second century CE attributed to the fifth-century BCE sculptor Alkamenes the creation of a triple-bodied sculpture-type for Hecate that stood on the Acropolis in Rome (Fig. 4) (Edwards 1986). Her image among the Gigantomachy of the Pergamon Zeus altar shows her with one body, six arms, and two visible heads (Figs. 2–3).

In this brief exploration of crossing thresholds I wish to address the thorny issue of 'multiplicity' in the representation of deities in southern Asia. The 'multiplicity convention' has been thoroughly studied by Doris Srinivasan, who traces it to origin myths in the *Rig Veda:* "The Rig Veda envisions the birth of the universe as analogous to human birth through labour. In this view, the creator god creates the universe by emitting all forms which lie dormant in his middle. ... Being thus pregnant with the forms of the phenomenal world until he is ready to give birth, the creator god is with multiple bodily parts and/or forms much like mother is 'with child'." (Srinivasan 1997: 5; Meister 2007).[6]

Yet images of anthropomorphic deities are not the focus of early Indic worship. These emerge only by the early centuries BCE and CE and become central to the practice of later Hinduism only as the praxis of temple worship evolved (Davis 1991). How were images perceived? How were they used and assimilated? How integrated and eventually transformed? India's reception of anthropomorphized images makes the Purāṇas possible. The great originality of later Hinduism depends on the development of narrative icons and their mythic variety. Standing in the Pergamon Museum, Berlin, a few years ago, looking at the remarkable second-century BCE reliefs of the east frieze of the Zeus Altar and its representation of the Gigantomachy — the battle of the Olympian gods and titans — I was struck by a familiarity. A marine giant, Klytios, his legs turning into serpents, attacks the Goddess Hecate — six arms, two visible faces — as her dog bites him below (Fig. 2). 'With a burning torch, spear and swords the Goddess with the many hands attacks Klytias' (Fig. 3).[7] How suggestive this seemed of the totemic medieval image of Goddess Durgā slaying demon Mahīṣa from

Fig. 7: Mathura, 'Warrior Goddess' (Bharat Kala Bhavan, Varanasi) (Courtesy: American Institute of Indian Studies)

Fig. 8: Mahamallapuram, Tamilnadu, Durgā slaying the buffalo demon Mahīsa. (Courtesy: author)

later Hinduism, not as a source, of course, but as a shared idea (Fig. 8). That idea is multiplicity, a multiplicity of intercourse as much as of body parts.

Much before medieval images of Durgā as Mahiṣāsuramardinī, there were myths and images of a 'warrior goddess' in South Asia (Yokochi 2004). In her cogent chapter on 'The Enigma of the Multi-Armed Warrior Goddess', however, Srinivasan observed that the 'Kuṣāṇa Warrior Goddess does not have four faces, and, four arms is not her characteristic number of multiple arms. Six is. And that is extremely problematic' (Fig. 6). Her conclusion, argued in detail, was that a 'warrior goddess whose characteristic number of multiple arms are six, raises expectations that her imagery is founded upon concepts significantly different [from] those governing *Śaivite and Vaiṣṇavite* images. Indeed, much of the iconography of the Warrior Goddess reflects foreign sources' (Srinivasan 1997: 293-294). Indeed, much of her multiplicity may have passed through that 'permeable membrane' separating multiple societies (Meister 1994).

What is the problem with our perceptions of such multiplicity? When we perceive it as having 'centres'- Greece, Mathurā, the Vedas, Śivaism, Europe, France — we undermine the creative varieties of 'frontiers'. Scholarly speculation in the 'colonial' period about Apollonian origins of the Buddha image, Malraux's comparisons of Buddhist stucco heads from Hadda with heads from Gothic France, or arguments about the 'influence' of Egypt on Trinitarian Christianity ignore that changes need not be 'centred', canonical; (Rowland 1977; Barthoux 1930; Griffiths 1996) reception is multiplex, a mixture of many communities, and creative reuse is a form of cultural transformation. We may have limited means to trace these structural interactions, yet they permeate the worlds we study. I can end only by echoing Srinivasan's conclusions about the Warrior Goddess: 'A great synthesis took place and

possibly her popularity is because she meant so many (and different?) things to so many (and different?) people.' (Srinivasan 1997: 304).

Notes

[1] See, for example, paganspace.net/profiles/blogs/hecate-2 (accessed on 14 June 2009).

[2] The Metropolitan Museum of Art's ancient near eastern art collections have a rare terracotta with gauche votive panel, ca. 3rd century CE, showing Śiva/Oesho with four arms and three faces. Of this the museum writes 'Here, the rich intercultural style that developed in the Kushan realm is most clearly displayed: Indian divine iconography; the Iranian type of two-figured composition; and Greco-Roman naturalism in the drapery and pose, as well as in the use of light and shadow to suggest modeling': metmuseum.org/works_of_art/collection_database/ancient_near_eastern_art/panel_fragment_with_the_god_sivaoesho/objectview.aspx?collID=3&OID=30006521.

[3] Michael Lahanas, 'The Pergamon Zeus Altar and the Gigantomachy—East Frieze', 'She had a special role at three-way crossroads, where the Greeks set poles with masks of each of her heads facing different directions', mlahanas.de/Greeks/Arts/ZeusAltarE.htm.

[4] 1911encyclopedia.org/Hecate; Lahanas, 'The Pergamon Zeus Altar'.

[5] "Roman mythology also saw her as the goddess of the Trivia 'the three ways', a folk belief, whether Celtic or Roman, that survived into the 7th century CE among the pagans of Flanders. There Eligius was wont to remind his recently converted flock. 'No Christian should make or render any devotion to the gods of the trivium, where three roads meet, to the fanes or the rocks, or springs or groves or corners'" (mlahanas.de/Greeks/Mythology/Hecate.html).

[6] My own discussion of the ambiguities of multiplicity in an image excavated at north Kafirkot can be found in M.W. Meister, "Image Iconopraxis and Iconoplasty in South Asia," *Res: Anthropology and Aesthetics* 51 (2007): 13– 32.

[7] Lahanas, 'Pergamon Zeus Altar'.

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Named Sanctuaries and another Fire-hall in Gandhāra

HARRY FALK

Apart from the standard monasteries with their impressive statue chamber there are also small shrines, uninhabited, sometimes called *vihāra*, which housed a statue of the Buddha or a Bodhisattva. Often, as at the Dharmarājika stūpa at Taxila, such shrines are located close to a centre of devotion. Others may have stood alone and will today hardly furnish enough remnants to indicate their former nature. Adherents of these local shrines may have furnished them with necessary implements like lamps and earthenware. In some lucky cases these items were inscribed and have survived the centuries to be studied today. I present here five such items, two of them not yet published. Their inscriptions suggest that the donations were made either to a very special Bodhisattva or to a monk looking after the shrine.

1. An image lamp stand

Oil lamps usually are cups with a pointed tip to keep the wick from sliding into the oil. Some oil lamps are part of a small statue of a male person holding the lamp proper in his hands. The statue can be given the features of the donor. An impressive example is depicted in Kurita 2003: 205, fig. 594, where we read *dhamadevasa*,'of Dharmadeva', on the sockle below a kneeling shaven monk. Another case is the statue of a kneeling layman, uninscribed, shown in Tanabe 2007: 142. In some other cases the person is standing, about 40 to 50 cm high, holding the lamp in front of his belly. Only the feet remain of the donor in the following case (Fig. 1), where, however, an inscription on three sides (Figs. 2-4) of the pedestal provides important information. The base was found in the Thana valley in the lower Swat area, and is kept today in a private collection. It reads:

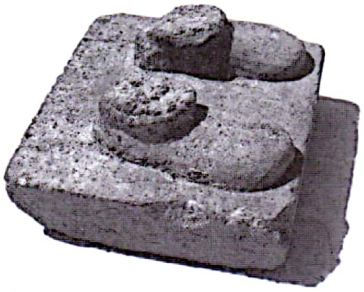

Fig. 1: Pedestal of a lamp holder

lovami kalyaṇaṇe / trami puṣadeṇasa / daṇamukhe

'This is the religious donation of Puśyadinna at Lova, at (the site of) Him, with the friendly eye.'

Fig. 2

Fig. 3

Fig. 4

The three inscribed sides of the pedestal

Lova must be the specific site in the Thana valley, with no possible successor to its name found on any map of the area. Kalyāṇanetra, although not found in Buddhist literature, most likely is the name of a Bodhisattva,'with propitious eyes'. Puśadena I take to be the personal name Puṣyadinna, well-attested, with a common change from *ṣy* to *ś*. The *-e* could be an incomplete *-i*-stroke.

Apart from a new site name in ancient Thana we get the name of a Buddha or Bodhisattva, defining the precise location.

2. A water vessel

It only seems that this kind of designation of small-scale shrines is a novelty. There are, in fact, two similar cases. In 1969 G. Fussman published an inscribed water vessel from the Kabul Museum, probably coming from Haḍḍa. Its inscription is very basic, dedicating the pot to the teachers of the Sarvāstivādins. The only unusual terms in addition are *samaṃtapaśe and mahapriyasaṃñe* in the locative case. Fussman saw that these terms stood where a place-name was expected and that they do not actually look like place-names, but rather like personal names. Cautiously, he proposed to see here the name of the monk who deposited the vessel. Fussman well saw that *samaṃtapaśa* would equal Skt. *samantapaśya,* 'who sees everything', and he points at Pāli *samantacakkhu*, without evaluating the fact that this is an often used epithet of the Buddha. The same applies to Skt. *samantadarśin*, found copiously in the *Lalitavistara*. *Mahapriyasaṃña* looks like a similar case, but has to be read as *mahapriyaraṃñe* (Salomon 1999: 243; Strauch 2008:80), 'in the Mahāpriya-*ārāma*', providing the name of the locality.

Seen by the side of the lamp-holder mentioned above we can again assume the presence of a statue of a very local Bodhisattva who was given a name not occurring in literature.

3. Dhamitra's panel

A beautiful panel was first published by Brough in 1982. It shows the Buddha sitting on a lotus displaying the *dharmacakrapravartanamudrā*. To his left a Bodhisattva in a 'pensive mood' is seen on a wicker chair, pointing the forefinger of his right hand to his forehead; holding a flask in his left hand, which rests on his left thigh. The whole piece is so asymmetrical that it looks as if removed from a larger composition. The pedestal is inscribed in clear letters reading and translating according to Salomon and Schopen (2002: 13) as:

dhamitrasa oloiśpare danamukhe budhamitrasa amridae

Fig. 5

Fig. 6

The oversized lamp seen from above and from one side

'Gift of Dhamitra [sic] at Oloiśpara [?], for the immortality [i.e.] nirvāna of Buddhamitra.'

The doubts as to *dhamitra* can be laid to rest in light of the 'pensive Bodhisattva' in the Hirayama collection (Tanabe 2007: 104-106), inscribed *sariotami aya vakhaliaṇa* x x [*da*]*ṇamukhe* on the cone, followed by a few letters just below on the petals: *dhamitrasa ṇavakarmu///.*[1] Whatever its etymology, *dhamitra* on the panel most likely is neither a mistake nor is it short for *budhamitra* but should rather be taken in its own right.

Fig. 7

Fig. 8

Fig. 9

The inscription on the lamp

Salomon and Schopen have correctly read *amridae,* Skt. *amṛtāya,* thus getting rid of an older *amidaha,* allegedly referring to Amitābha. There remains *oloiśpare,* which was taken by Brough to be Skt. Avalokiteśvara, a Bodhisattva presumably represented on the panel as well. Salomon and Schopen (2002: 26-27) do not rule out the possibility that linguistically *oloiśpare* represents Skt. *avalokiteśvaraḥ,* but rather interpret it as a toponym in the locative, given that other references to the Bodhisattva are always accompanied by a descriptive or honorific title. Fussman (2002-03: 858) objects as he cannot imagine that a term ending in *-īśvara* could be a toponym.

The solution from the scanty material presented above regarding shrines as places of donation could apply here as well, allowing us to recur to the simplest linguistic explanation for oloiśpara and at the same time taking **avalokiteśvare* to be a toponym in the locative, presuming that the place was not a larger locality, but just a shrine known by the name of its most prominent deity.

Fig. 10

The inscription on the lamp

Fig. 11

4. Another large oil-lamp

In 2006 I presented an inscribed oil-lamp of considerable size. Such seemingly oversized lamps are characteristic for Gandhara, being unattested elsewhere in early Buddhist South Asia. I am thankful to John Siudmak who brought one more such lamp to my notice. It measures *ca.* 30 cm in length and height (Figs. 5-6). It shows an inscription on both sides (Figs. 7-11). Since part of the rim has broken away the text is not fully legible. It reads on the right and left side:

thulaatreyami dharmaraiami - ///a a [*gh*?] [?] [?*ṃ*] *e damukhe*

On the second side the name of the donor can be expected. If we take the final *-e* as part of the required genitive, then we have to do with a female donor. *Damul·he* is faulty or abbreviated for

daṇamukhe. The letter *khe* is very elegantly written in one run of the brush, reminiscent of the letters on the Māmāneḍheri relief, commonly dated to the third century.

The term which concerns us most is *thulaatreyami*, locative of *thulaatreya*. The dictionaries show a range of personal names ending in *ātreya*, e.g., Kaniṣṭhātreya, Kṛṣṇātreya, Vṛddhātreya, Śvetātreya, and Svastyātreya. In most cases these terms will be nicknames or epitheta. Our *thulaatreya* represents Skt. **sthūlātreya*, denoting a person of *ātreya* descent with a decidedly fat or bulky body. A figure with this designation will hardly be an object of veneration. Ātreya is a term typical of the brahmin descent system and Bodhisattvas usually do stand clear of that. For the time being it seems safer to assume that the term describes a monk by his lineage and appearance, rather than referring to Bodhisattva. This one monk receives a large lamp, obviously because he is in charge of a locality where such a lamp is needed. The locality can be in the vinicity of Taxila or Butkara, *dharmarājika*, if the locative *dharmaraiami* refers to the site itself. It could also be a secondary formation, Skt. *dhārmarājika*, denoting a monk hailing from *dharmarājika*. This latter case was found on the said large lamp in a phrase *dhamaraiṇa malaśpaṇa*, where obviously a whole group of monks is referred to in the genitive plural. If also here *dharmaraiami* is to be taken as an adjective, qualifying *thulaatreyami*, then the place of the donation can be anywhere, but not in Taxila. I favour this latter solution since it would provide us with two large lamps referring to the same group of monks hailing originally from Taxila but having founded branches away from there, – with a common predilection for oversized lamps.

Therefore I translate:

"(This lamp) is the pious donation of (lady) A.... at (the shrine of) 'the fat Ātreya' who hails from Dharmarājika."

Fig. 12: The inscribed stone-board

5. A Stone Board misread

I take this opportunity to add a fourth item, a small stone board, broken to the right, ending in decorative fringes (Fig. 12). It has nothing to do with small shrines, but provides an interesting parallel to the donation mentioned on the Shah-ji-ki-Dheri perfume box, earlier misnamed 'Kanishka casket' (Errington and Falk 2002). The board was published by Nasim Khan in 2007 who reads:

+aśiravakami+budharakṣidasa kalusarva[*bha*]*++*

'In ...aśiravaka, of Budharakṣita, (to) all the perfect (Buddhas).'

Apart from the personal name, everything is misread and consequently mistranslated. I saw the board in 2004 in the house of the collector. There is one letter partly preserved at the beginning, possibly a *kh*(*e*) from *daṇamukhe*. The rest reads:

ayi ṇavakarmigha-budharakṣidaṣa ṣalu sarva[*ṇa*] *bha*

In *ṇavakarmigha*, Skt. *navakarmika*, the *rmi* with its *r*-bend attached to the vowel-stroke is well-attested. *gha*, not recognized as a letter by Nasim Khan because of its mirror-inverted form, is unique so far in an *-ika*-formation, but can be seen as the last outcome of a development *ka→ga→gha*, with *ka→ga* and *ga→gha* having a series of parallels.

At first *ṣalu* looks enigmatic. If we take *ayi* as a feminine demonstrative pronoun, with *ae* (Konow 1929: 179, *ae pukariṇi*) as a variant spelling, then *ṣalu* should be a feminine nominative. With regard to content, Skt. *śālā*, 'hall', offers itself, posing, however, two problems. One concerns the initial sibilant, the second concerns the ending in *-u*. Fortunately, there are parallels for both changes. A seal in the Aman-ur Rahman collection (GKm 775) belonged to one Gośāla and reads *goṣalakasa* in Kharoṣṭhī.

One feminine nominative in *-u* is already known from the Senavarman gold-plate (von Hinüber 2003, sentence 12b) where Skt. *atyantaniṣṭhā* is rendered as *acataïṭhu*.

The final *bha* after *sarvāṇāṃ* can hardly be anything else but the initial of *bhavatu*.

I therefore translate:

> '(As a donation?) this is the hall of the architect Buddharakṣita. May it be (for the welfare etc.) for all.'

When architect Buddharakṣita presents a 'hall', we are instantly reminded of the Shah-ji-ki-Dheri text where we read: *mahaseṇasa saṃgharakṣidasa agiśalaṇavakarmiaṇa deyadharme sarvasatvaṇa hitasuhartha bhavatu*, 'this is the pious donation of Mahāsena and Saṅgharakṣita, the architects of the fire-hall. May it be for the welfare and happiness of all beings.'

At Shah-ji-ki-Dheri, the two architects cashed in on their work, but on completion donated a skillfully made metal perfume box. Our board, however, testifies to the donation of the whole hall. And the parallelism proposes to regard the *ṣalu* not as any hall, but as a fire-hall.

Acknowledgements

I thank all owners for providing access to their collection and for the permission to publish the pieces. Ingo Strauch and Stefan Baums made valuable comments; thanks go to the latter also for brushing up my English.

Notes

1. The anonymous editio princeps in Tanabe 2007: 295 differs in many points, but not in the name relevant here.

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Metalware from Pakistan in the Los Angeles County Museum of Art

STEPHEN MARKEL

The Los Angeles County Museum of Art is fortunate to contain in its collection seven examples of high quality metalware from Pakistan. The earliest work is a copper alloy censer dating from the Buddhist period (Fig. 1). It was likely made around the fourth century in the region of ancient Gandhāra. The Los Angeles censer (M.91.350.4a-c) is made in three parts: bowl, lid, and handle. The bowl and the lid together form a combustion chamber shaped like a *loṭa*. The lid has a flat flared mouth on a short neck, which functions as the primary escape channel for the smoke. The upper shoulder of the lid features a radiant register of lotus petals with pierced interspaces, which served as subsidiary escape passages for the smoke. Adjoining the lotus petals is narrow band of marching chevrons that serves as the border for a broad register of a scrolling grape vine with alternating bunches of fruit and clusters of leaves. A narrow plain border completes the cast decoration of the lid. The bowl is unadorned apart from a shallow foot. The lid is secured to the bowl by a pendant loop that is locked into place when a tang extending from the bowl is inserted through the loop and into the mouth of a *makara* spout that forms the near end of the handle. The tang cannot be inserted completely, however, which suggests that the current handle may have once belonged to a different but apparently contemporaneous combustion bowl. The handle has four parallel ribs immediately behind the *makara* head, and then a long fluted shaft that terminates in a flared collar and a macelike knob terminus.

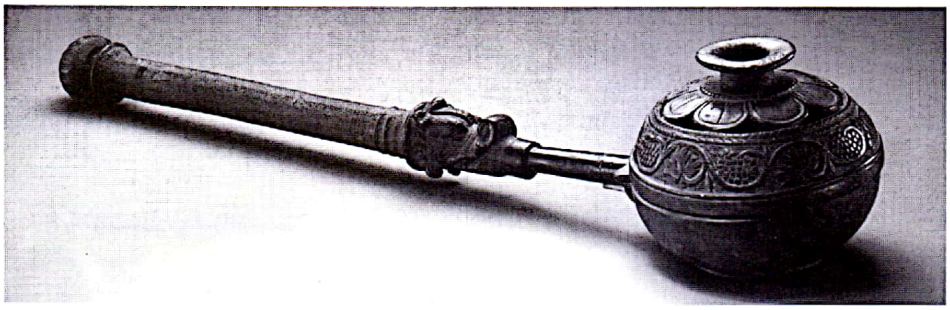

Fig. 1

The Los Angeles censer is previously unpublished. At least six other similar Gandhāran copper alloy censers have survived. Kossak illustrates one censer in the collection of the Metropolitan Museum of Art, New York (1987.218.8a-c) and briefly references four of the remaining ones (Lerner and Kossak 1991: 102-103, no. 71). An additional censer, chiefly distinguished by the presence of small support feet and a different method of hinging the lid, was recently published as a fifth or sixth-century Vietnamese copy of a Gandhāran censer (Pegg 2007: 61, 72-73, no. 28). Alternatively, it may be a slightly variant style of Gandhāran censer that made its way along the pilgrimage and trade routes and was then 'found' in Vietnam.

The remaining examples of metalware from Pakistan in the Los Angeles County Museum of Art all date from the Mughal and Colonial periods. The first work, made probably around 1700 CE in the Lahore region (Fig. 2), is an elegant ewer (*aftāba*) used to dispense water during the traditional cultural practice of washing one's hands at meal time and before ritual prayer. The Los Angeles ewer (AC1995.52.1)[1] epitomizes the fine brassware created in the Punjab during the Mughal period, and represents the culmination of one of the oldest and most important forms of Islamic metalware. The ewer has a teardrop-shaped bulbous body supported by a hexagonal pedestal foot. The hexagonal neck has an everted rim and a band of ring-moulding at the junction to the body. The S-curved handle terminates at the top with a hinge flange for the now-missing cover followed by a 'Mughalized' dragon head – the traditional upper terminal of the handle of Middle Eastern ewers – whose bulging eyes, pointed ears, and gaping mouth have been simulated with flowers for its eyes, leaves for its ears, and forking branches for its mouth (Fig. 3). The long spout has floral scrolls and a flower bud terminal. The foot is embellished with half-palmettes divided from the floral scrolls by a moulding of blossoms in a row.[2] The ewer's cast and incised decoration, which was once highlighted by a now mainly missing black lac resinous ground, consists of a stylized flowering plant in a central teardrop-shaped panel surrounded by borders of floral scrolls. Although the ewer's shape follows established conventions in Islamic and Indo-Islamic metalware, its decoration has been dramatically embellished and 'Mughalized' with numerous depictions of poppy blossoms, which served as the leitmotif of the Mughal Empire.

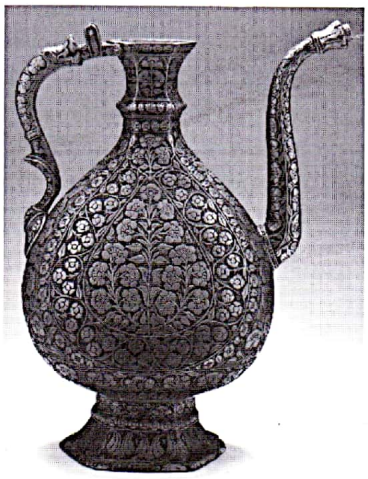

Fig. 2

Fig. 3

Mughal period ewers were typically fashioned in sets with matching basins (*tasht* or *sailābchi*), which were used as a reservoir for the water poured from the ewer over one's hands; however, very few such sets remain intact and basins by themselves rarely survive.[3] Although not part of the same original set as the preceding ewer, a bipartite basin now in the Los Angeles County Museum of Art (M.2000.47) relates well to it in origin and decoration (Fig. 4).[4]

Fig. 4

The Los Angeles basin is distinguished technically in that it is composed of two separate parts of demonstrably different dates riveted together to form the present vessel. The top is a broad sloped rim. The interior bottom edge of the basin rim has a narrow horizontal lip for a decoratively pierced lid (now missing) used to cover the mouth of the basin chamber and support the set's original

matching ewer[5] (present location unknown). The bottom of the basin is a compressed bulbous body with a low foot.

The floral decoration on both the top and bottom parts of the basin consists of various flowering plants set within cartouches formed by the adjoining broad lower leaves of smaller flowering plant motifs. The flowering plants on the exterior sides of the body of the vessel bottom have delicate floral and vegetal forms created by black lac-filled lines incised into the flat surface of the brass. The flowering plants are emphasized and given breathing room by the areas of negative design space surrounding them. There are two decorative borders adjacent to the flowering plant motifs. The top border is a band of scrolling floral motifs. The border above the low foot consists of a series of narrow incised leaf forms with midrib to margin venation. The exterior of the upper neck of the basin's bottom is unadorned and presently serves as the *ad hoc* juncture of the top and bottom parts.

In contrast, the composition of the floral motifs on the rim of the basin is more compact and denser with less negative design space within the cartouches. This subtle compositional difference has the effect of emphasizing the overall pattern of floral motifs rather than the individual flowering plants. In addition, the cast floral motifs on the rim are less finely detailed with sparser and coarser linear incising, and their surface is raised above the lac ground. The underside of the rim is graced by short overlapping incised petal forms.

The dating of the Los Angeles basin is complex due to its current two-part construction. The flowers on the bottom of the basin can be stylistically attributed to c. 1650-1665 CE, probably sometime between late in the reign of the Mughal Emperor Shah Jahan (r. 1628-58 CE) and early in the reign of his successor Aurangzeb (r. 1658-1707 CE). The top rim of the basin, dating stylistically from around 1725-1750 CE and dated by an inscribed *Devanāgari* inscription reading *samvat* 1799 (1741 CE), is most likely a replacement added to repair damage to the basin's original rim. Alternatively, the top was possibly added to convert an earlier vessel, such as a bowl, to a different function; which is a known practice in the cultural history of Indo-Islamic and Islamic metalware (Melikian-Chirvani 1982: 214-215, no. 99). However, the fact that the exterior of the upper neck of the basin's bottom is unadorned argues against the basin bottom originally having been a bowl because the exterior decoration of most bowls continues all the way to the top.

Intriguingly, a *loṭa*-shaped brass vase in the Victoria and Albert Museum (IS.21-1889) is made in horizontal sections with a seam visible across the waist of the vessel. Melikian-Chirvani attributes the vase to 'North Western Hindustan, probably Lahore, c. 1580-1600' CE (Melikian-Chirvani 1982: 348-350, no. 164). On this basis, one could argue that there may have existed in Lahore a tradition of fashioning metal vessels in parts and that the Los Angeles basin represents another example of this tradition with the top rim being fashioned separately by another artist. However, as Zebrowski convincingly reattributes the V&A vase to the 'Deccan, 16th century' (Zebrowski 1997: 209-210, 212, no. 327), the existence of an extensive tradition of composite vessels being manufactured in Lahore cannot be supported at present.

Regardless of why the Los Angeles basin was given a later upper part – which actually makes it all the more interesting – when its two components and the Los Angeles ewer are studied together they facilitate a greater understanding of the technical and artistic progression of Mughal brassware in the leading South Asian centre of its production between the mid-seventeenth and the mid-eighteenth centuries.

The next three examples of metalware from Pakistan in the collection of the Los Angeles County Museum of Art were made in the Colonial period in the northern Punjab districts of Sialkot and Gujrat between 1850 and 1870. They feature the distinctive *koftgari* decoration. The technique involves incising or cross-hatching a design into the surface of an iron or mild steel ground with a hard steel needle or liner chisel. Pure gold wire or gold leaf is then hammered into the engraved pattern and the whole object is heated, re-hammered, and polished. The *koftgari* decorative technique originated in Iran and was subsequently brought to northern India, where it was used at first to embellish fine arms and armour produced for the Rajput and Sikh rulers and warrior nobles. After the British annexed the Panjab in 1849 and banned the indigenous production of firearms, the technique was used chiefly by metalworkers in the northern Punjab districts of Sialkot and Gujrat to make myriad objects that were intended mainly for sale to European visitors and for presentation in the great exhibitions and world's fairs that were held in Europe and South Asia in the late nineteenth and early twentieth centuries.

In contrast to their gold-encrusted tops, the bottom of *koftgari* works made until around 1870 customarily feature a silver sheet hammered over the iron surface. There is usually a design of cross-hatching and/or chevrons overlaid in silver alloy foil, which unless cleaned has typically oxidized to black. This distinctive bottom decoration is significant for helping to date such works, as by 1872 the bottoms of *koftgari* vessels were finished with electro-plating (Baden Powell 1872: 167).

Two of the Los Angeles examples of *koftgari* metalware feature fine gold wire overlay, while the third work incorporates both gold wire and gold leaf. The first work is an oval shaped jewellery box (M.73.5.140)[6] with foliate motifs of lacelike fineness (Fig. 5). The side of the body and the slightly concave sloped top of the lid feature scrolling vegetation while the flat top of the lid has vegetal designs in delicate cartouches. The planes of the vessel are divided by 'braided wire' borders on the lid, *koftgari* borders on the body, and complimenting scalloped rims with *koftgari* ornamentation. Round balls with *koftgari* designs serve as the feet.

The second work is an elegant inkstand (M.2000.125)[7] fashioned in an organic form of a small foliated branch of an apple tree resting on an oval stand (Fig. 6). The apple is hinged on the side so that it opens to reveal the inkwell. The two leaves are elliptical with serrated edges and elaborate venation. They are depicted in a three-dimensional manner, by rising upwards from

Fig. 5

Fig. 6

their stems and curling gracefully down to the top of the inkstand. The *koftgari* decoration is more varied than on the previous example, with both foliate and geometric forms featured. It is also more pronounced, as the gold wire is a thicker gauge. The inkstand may have once been part of a writing set consisting typically of an inkstand, pen tray, candlestick, and portfolio. Such writing sets were a favoured correspondence accouterment of European residents and travellers in South Asia during the Colonial period.

The third and most resplendent example of *koftgari* metalware in the collection of the Los Angeles County Museum of Art is a rectangular casket (M.2001.93)[8] surmounted by a pyramidal shaped lid with a flat crown (Fig. 7). A projecting curvilinear rim accents the bottom of the lid and the base of the vessel body. The former rim facilitates lifting the lid, while the corners of the latter morph into lobed feet. The undulating rhythms of the lid edges are paralleled by the stepped outline of the vessel body, the junctures of which extend into rows of plain gold leaf used to divide the three horizontal registers. The primary *koftgari* decoration on the lid is a flowering tree, with a secondary geometric pattern displayed on the crown. The *koftgari* motifs featured on the horizontal registers are a flowering vine (top), large stylized jackfruit on a scrolling vine (middle),[9] and a series of alternatively inverted lilies with foliate stems (bottom).

The bottom of the Los Angeles casket, made of the customary oxidized silver sheet with cross-hatching and chevrons, is significant not only for its general dating as mentioned above, but also because it has the numerals '1867' painted in what appears to be a nineteenth-century handwritten script (Fig. 8). While this is likely an old inventory number, it is also conceivable that it

Fig. 7

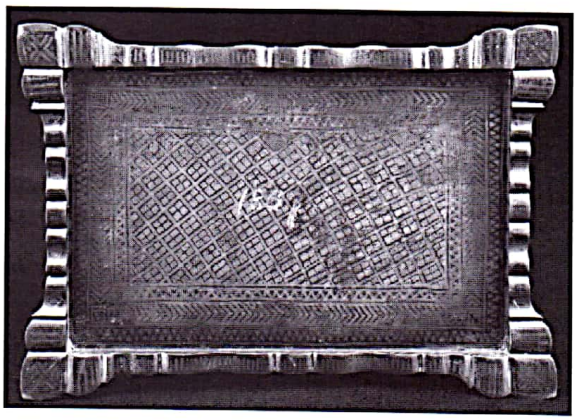

Fig. 8

is the date when the object was acquired and/or manufactured. If the latter possibility were the case, and it should be remarked that 1867 would precisely accord with the attributed period of the casket, then this would be a rare, if not unique, dated *koftgari* work.

The final work to be addressed represents the northernmost tradition of metalware in Pakistan. It is a late eighteenth-century water-pipe (*huqqah*) base (M.82.225.1) made in the form of a yak's horn (Fig. 9), which has been variously attributed to Gilgit or Skardu in Baltistan.[10] The body of the Los Angeles *huqqah*-base is fashioned out of a curved and fluted cylinder of iron. It is embellished with large brass mounts crafted in an openwork design of a flowering vine with various types of blossoms.

The borders of the mounts, which recall the decoration of Iranian and Kashmiri metalware, are a series of pointed lobed forms with pierced geometric and floral designs. A similar *huqqah*-base in the Victoria and Albert Museum (IS.23-1966) still has a faceted brass fitting, which once connected to the combustion bowl or intermediary tube.

The seven works from the Los Angeles County Museum of Art discussed herein present a broad spectrum of metalware from Pakistan ranging from the fourth to the nineteenth century. The major centres of production and the important types of media are all well represented. The Los Angeles County Museum of Art is honoured to be the caretaker of these significant works of art, thereby helping preserve the rich artistic heritage of Pakistan.

Fig. 9

Notes

[1] Previously published in Markel 2002: 31, figs. 9 (right), 10; Peter Marks Gallery 2000: no p.; Markel 1999: 31-34, pls. 11, 11a; *LACMA Annual Report 1994/95*: 24; Zebrowski 1997: 162, no. 227; Zebrowski 1986: 259, note. 23; and *Indian Heritage* 1982: 152, no. 506.

[2] On the underside of the foot is an incised inscription in Arabic letters and numerals. It has so far proved undecipherable, and probably represents an inventory number or perhaps a shorthand code for the weight of the vessel.

[3] For an example of a surviving set attributed to the Deccan, 17th century, see Zebrowski 1997: 168-169, no. 238. For an early 18th century Lahore basin in the Jagdish and Kamla Mittal collection, Hyderabad, India (76.1283), see Zebrowski 1997: 173-174, no. 248a-b.

[4] Previously published in Markel 2002: 31, fig. 9 (left).

[5] The presence of the cover support lip proves that the vessel is a basin rather than a spittoon, which were often made in this same general form but without the lip needed to support the cover. The opening of spittoons is also narrower in order to conceal the spent saliva in the bottom chamber. For examples, see Zebrowski 1997: 179-181, nos. 260-264. For a spittoon attributed to Lahore, late 17th – early 18th century in the Musée Guimet, Paris (MA 6790), see Okada 2000: 93; and Zebrowski 1997: 182, no. 265.

[6] Previously published in Pal 1973: 172, no. 339, but therein attributed to 'Persia, 19th century' and medium identified as 'silver with gold inlay.'

[7] The Los Angeles inkstand is previously unpublished. For a similar *koftgari* inkstand in the Bhai Sikandar Singh Collection, Bagrian, see Goswamy 2000: 63, no. 43.

[8] Previously published in Markel 2002: 33, figs. 14, 15. For a related casket, see Untracht et al 1993: 80, no. 149.

[9] For a recent identification of jackfruit in Indian sculpture, see Meister 2009.

[10] Gilgit: Simon Digby (pers. comm.); Skardu: Zebrowski 1997: 243-244, pl. 418.

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Rock Art on the Ancient Trade Routes of the Northwestern Regions of Pakistan

BADSHAH SARDAR

The term 'rock art' is used for all types of artistic way of expression found on natural rocks and cliffs, caves and shelters, and on the surface of boulders. In other words sketches, graffiti, images, designs engraved or painted on the rock surfaces are generally referred to as rock art. Rock art is a common feature of almost all ancient civilizations of the World. The rock art subject is broadly divided into two forms: engraving and painting. Petroglyphs and epigraphs are generally found on the large boulders and open surfaces of the rocks, while paintings are found on walls of rock shelters formed in cliffs of the mountains.

The most ancient engravings are thought to be those which depict the wild animals in profile, in rather static poses, but executed in great detail. It seems that early rock art was executed by hunter-gatherers and since the Bronze Age also by foragers. Any form of rock art has the capacity to display the unknown panorama of the distant past before our eyes. It should not be simply viewed as events depicting daily life of the remote society. Rock art also renders a spiritual reality before us. Stone has been used since remote past for engraving, paintings and writing purposes. It was an enduring material used by the primitive man and one of his great properties was to make the rock art everlasting.

The paintings, on the other hand, are normally found where caves, shelters or (overhangs) abris are present. They were probably produced in many ways: such as with fingers, animal hair brushes, sticks and feathers. The painted images were drawn with mineral colours collected from the local geological deposits, plants and animals. The rock art of the Swat valley presents continuity from ancient time right to the historic period. This paper emphasizes on the recently discovered rock art (petroglyphs, paintings and epigraphs) of the Swat valley of Pakistan. Following three features of rock art will be highlighted in this work:

(i) petroglyphs (ii) paintings (iii) epigraphs

1. Petroglyphs

In the Swat valley prehistoric petroglyphs found at Gogdara by Tucci in 1955 depict wild and domestic animals and anthropomorphic representations (Tucci 1958: 291-292). Gogdara rock presents some 118 figures incised as graffiti on the cliff surface. Among them 71 animal figures, 17 representations of the objects, 29 unidentified graffiti, while human figures are completely absent (Olivieri 1998: 60-61) In Swat valley prehistoric rock engravings have been found at a place known as Hathiano Kandao (Nazir Khan 1983: 59). Numerous engravings of the site bear technical pecking similarity to the engravings of Gogdara, although the animals depicted are different in both places. Scholars dated them in the second millennium BCE (Nazir Khan 1983: 60). The most successful research study on rock art conducted by IsIAO Mission in Kandak valley reveals rock art sites i.e. rock wall, caves with carvings, cup-marks and tanks sites spread all over the Kandak valley (Olivieri and Vidale 2004:121). Another most exciting discovery of petroglyphs was made in the hamlet of Charai, one kilometre below Madyan. Details of the engraving are given below:

Plate # 01
Petroglyphs of Charai (Madyan)
Orientation: Facing west
Material: Granite
Reference: unpublished

Charai (Madyan) is a famous small hamlet in upper Swat valley, situated on the road side leading to Kalam, about 2 km away from Madyan. The locality is famous for Buddhist (archaeological) vestiges. Charai hamlet is situated on the left bank of the river Swat. The site of petroglyphs is on the left side of the road leading to Madyan.

The boulder of the rock engravings is lying in the middle of cultivated fields and inside an apple orchard. The boulder is partially embedded in the ground and recently blasted by the land owner to get construction materials for a new house. The most outstanding is a group of archaic petroglyphs that distinguish them clearly from historic reliefs. This site of petroglyphs has not been reported earlier. The artistic details of the engravings are given below.

The exposed portion of the boulder reveals a rough outline of two human figures, both in standing position. The natural shape of man is not portrayed by the artist. Anyhow sufficient details are given to represent the forms as human, it looks like that the artist was interested in man's action rather than in his shape. The rough outline of the human body is depicted in rectangular shape with a rounded head, hands extended, and legs straight down. The face could not be reproduced in its true form. These archaic pictures technically reveal a common theme of hunting, which was the chief means of livelihood of the primitive society.

On the other hand, we find solid body made up in a bi-triangular style, well known in metal from Tepe Hissar dating to third millennium BCE. Such a bi-triangular shaping of the body is seen in another example in which the hands look like a bracket. This style is known in the trans-Pamir region and could be dated to fourth or third millennium BCE (Samashev 1993: 36). The artistic details of these petroglyphs show close similarity with carvings of Muhammad-patai, Bang-doghal and Lekha-gata of the Kandak valley (Olivieri and Vidale 2004:134-135). These primitive engravings bear patina on the rock surface due to erosion.

2. Painting

Ancient paintings are found in almost every part of the Indo-Pakistani subcontinent where there are rock shelters or abris, where paintings were applied in different techniques by using fingers or brushes. The painters always used natural substance of red, yellow, black and fine clay for white. Execution of ancient paintings were not done for aesthetic reasons to decorate a shelter. It represents a cultural activity, which existed in the everyday life of the ancient artists. Painting is a key to understand the complex symbolic rituals and ceremonies of the remote past. Although it seems that few paintings may be executed as a record of the occurrence of everyday events. Symbolism and rituals played most important role in the life of the people who knew nothing of written records. Painting is one of the media in which the ancient artist has tried to express his ideas, his desires and aspirations. This medium of expression started in Pakistan much earlier than other continents of the world.

The limited archaeological explorations so far conducted by scholars have now confirmed that shelters bearing traces of Palaeolithic paintings are situated in the province of Baluchistan (Kakar 2005: 21-25). The earliest paintings are discovered in Tor Ghar area of Loralai and Sulaiman Range of Zhob District in Baluchistan. In Tor Ghar, there are 20 shelters, while in the Sulaiman Range 27 shelters of paintings were documented (Kakar 2005: 22). The subject matter of the Tor Ghar and the Sulaiman Range paintings is fighting and hunting representations. They show animals and human beings painted in red or black on the undressed surfaces of rock-shelters. Some of the animals are shown in triangular form, rendering the body by two triangles at one corner. This method is commonly used in the rock-engravings of the Upper Indus Valley (Nasim Khan 2000: 2).

Evidence of the early Bronze Age paintings so far known in Pakistan is recorded from painted pottery (sherds) only. Pottery of remarkable variety has come down to us from the sites of Kili Gul Muhammad (Allchin 1985: 101, fig 5-17), Mundigak (Allchin 1985: 135, figs. 6.2-4), Amri (Allchin 1985: 144, figs. 6.11-12), Kot Digi (Agrawal 1982: 130, fig. 74), Rehman Dheri (Durrani 1988: fig. VI), Harappa (Vats 1940: Pl. LXIII/10,11,14), Bir-kot Ghundai (Stacul 1985: 348) and Ghalegay (Stacul 2005 : 211). The patterns on the pottery of these sites are geometrical and floral such as wavy lines, triangles, lozenges, diamonds, loops, intersecting circles, honey combs, pipal-leaf, fish scale, radiating sun, stylized animal figures (usually bull and ibex) and very rare human figures (Sardar 1992: 114-128). The colour scheme was monochrome, bichrome and polychrome such as red, black, white and chocolate.

Nothing has survived if it ever existed from the time of Alexander's invasion of India in 327 BCE, and from Greek rule till the first century BCE. Only from Philostratus '*Life of Apollonius of Tyana*' we learn that a temple in front of the Taxila city was beautifully decorated with paintings in the style of great Greek painters of the fourth century BCE (Dar 1998: 88). However from Butkara I in Swat a fragment of a fresco was discovered, which is dated in the second century BCE. Once it was considered as the earliest specimen of paintings ever exposed in any part of Pakistan (Faccenna 1981: fig. I and L).

In the Swat valley, painted shelters were reported in Kafirkot area near Thana village. The paintings of Kafirkot represent a Buddhist sacred area with bowed men (Nazir Khan et al 1995: 333). Traces of paintings were also reported from the sites of Hinduanohatai, Shamo and Marano-tangai. Paintings of Hinduanohatai are famous for series of Buddhist stupas. The Shamo site shows men with weapons, a horse and a stupa. Marano-tangai shelter reveals a set of abstract symbols, squares intersected by a cross and square filled with a single dot (Nazir Khan et al 1995: fig. 14). Paintings of all these sites were dated from first to fourth century CE (Nazir Khan et al 1995: 350).

In 2000, the IsIAO Mission discovered three painted rock shelters in the Kandag valley of Swat. They documented painted shelters such as Sargah-sar, Kalkai-kandao and Dwolasmannai-patai (Vidale and Olivieri 2002: 173). The Sargah-sar paintings reveal human figures (some carrying weapons), animals and elaborate geometric symbols. While the paintings of Kalkai-kandao shelter represent crowded designs, vivid compositions of animals, humans and geometric patterns. The Dwolasmannai-patai shelter shows complex, irregular geometric patterns and human carrying weapons. All three shelters are located far from Buddhist sacred areas, and it differs in one important respect

from those already known from sites in the Thana valley. They are dated between first and third century CE (Vidale and Olivieri 2002: 189). Recently a chance discovery of mural paintings from the Buddhist monastery of Jinnan Wali Dheri (Taxila) is stated to be a unique phenomenon in the entire Gandhara region (Ashraf and Hasan 2004: 20). Another important painted shelter is known as Kaferi Smasta near Kukrai village in the Marghuzar sub-valley of Swat.

Plate # 02

Painted shelter of Kaferi Smasta

Orientation: Facing

Material: Granite

Reference: unpublished

In 2000, the present author found a shelter with vestiges of paintings at the site of Charoona Dara to the south of the present Kukrai village, in the Marghuzar sub valley of Swat. This shelter lies about three kilometres south of Kukrai village. Located on the crest of Gishar hill to the west of Mt. Ilam, the site is known as Kaferi Smasta (shelter), with paintings of hunters and human figures. It is a shelter, semicircular in shape, about 1.5m deep and 5m high and opens to the southeast side. No traces of artificial activity-intervention were found.

The paintings are executed inside the natural undressed surface of the shelter. The images are painted with mud pigment on the right wall of the shelter. On the right side wall where the ceiling begins to slope down reveal seven figures and the representation of a monument, most probably a stupa. To facilitate the description of the paintings, it may be divided into two groups although they form a uniform composition. The top register reveals a person standing in front of monument in akimbo position. The stairs like structure/monument, branches out on top, almost like vertical antennae represents a stupa. A vertical monument with a six staged structure and a human figure on top of it reveals close similarity with that of the Upper Indus Valley site of Hodar. This monument, in our opinion, has a marked affinity with the so-called derivative stupa (Jettmar 1985: fig. 13).

Human figures of the lower register are shown standing frontally in different poses. From their outstretched arms and legs quite apart, it seems that they are celebrating a hunting scene. The technique most commonly used for the painting is that of outlined figures, but human figures are more realistic on the wall of the shelter. All anthropomorphic figures carry a weapon, a tool or an attribute: a bow or a club in their hands. The human figures of Kaferi Smasta resemble to the paintings of the Dwolasmane-Patai shelter in the Kandag Valley (Oliveri 2005: 220)

All these images were probably painted with a finger struck using whitish ochre. As already noticed, there is a complete absence of polychrome. The original paintings were in white, and a faint white line remains visible around figures subsequently repainted in yellow. Kaferi Smasta paintings are characteristically in a yellowish cream shade, which, at times, can be made to look pink. Because the shelter was exposed to weathering, this fact is responsible for demolishing many of the paintings. Shepherds have frequently used the site for shelter and the fleece of their flocks thus have rubbed paintings from the walls, or smoke from their fires has eliminated most of their artistic details.

3. Epigraphs

The Swat valley, situated on the crossroad of ancient silk route, remained an active centre for merchants, foreign traders, religious pilgrims and communities. The connection between China and ancient Uddiyana (or the Swat valley) across the hanging passages is well attested to in Chinese sources. In the Swat valley, tremendous concentrations of Buddhist period reliefs, petroglyphs and inscriptions have been documented in successive campaigns by native and foreign scholars (Sardar 2000: 181). Priority was given to a publication of the material to understand comprehensively all inscriptions. It is hoped that it would pave way for further insight into the rich epigraphic data from the valley.

The bulk of epigraphs written in different scripts such as Kharoṣṭhī, Brāhmī, Proto-Śāradā, Nāgari, Persian and Arabic scripts were reported from the Valley. Important among them are the three Buddhist inscriptions from Swat published by Bühler (Bühler 1979: 133-135). The Buddha foot prints with an inscription from Tirath in the Upper Swat valley shows 11 Kharoṣṭhī letters dating to the first century BCE (Konow 1929: 98-99, pl. 1.5). The inscription on a relic vase from Swat relic vase inscription of Meridarkh Theodoros, is one of the most ancient inscriptions after the reign of Aśoka pertaining to the Indo-Greek rule (Konow 1929: 1-3). Other important inscriptions recorded are the Swat rock inscription (Konow 1929: 9-10), Saddo rock inscription (Konow 1929: 9), Loriyan Tangai pedestal inscription of the year 318 (nos. 4860, 4871, 4995, 5095) (Konow 1929).

Similarly the Khazana Gat inscription reveals Brāhmī characters resembling the Śāradā and Arabic scripts (Stein 1930: 55-56; Tucci 1958: 303). Other epigraphic record from the same region also include a Ghaznavid inscription from Udigram, Swat (Nazir Khan 1985), a Kharoṣṭhī inscription from Butkara I (Swat) (Petech 1966: 80-82), the Zalamkot bilingual inscription (Rehman 1997-98), a set of brass bowls from Swat, a relic casket from Swat and a slab from Malakand (Falk 2003).

This paper encompasses three Brāhmī inscriptions in the locality of Jahanabad, previously known as Shakhorai (Stein 1930: 50). Inscriptions, their location, present state of preservation, stylistic details and literary compositions will be highlighted. As a result of this writer's field survey conducted in 2002 and in the following years in the valley, we found three Brāhmī rock inscriptions which are still in situ. Jahanabad hamlet is situated at a distance of about one and half kilometre northeast of Shakhorai village. It is about 5km northeast of Manglaur village on the left bank of Sair *khwar,* and is approachable by a jeep track from the main Malamjaba road. The site is approachable by a steep rise over boulders and through thorny wild bushes. Two gigantic rocks on the hillside, **"Oba Gat",** and **"Khazana Gat",** disclose engravings of three Buddhist period inscriptions. Two inscriptions are carved on 'Oba Gat', meaning the rock of the water and there being a spring below it. The third inscription is engraved on a huge isolated rock of 'Khazana Gat'. Their details are given below:

Plate # 03
Oba Gat Inscription-I
Measurement: length 4 m. 3 lines
Script: Gupta Brahmi
Orientation: facing west
Reference: (Bühler 1979: 135; Stein 1930:50)

Reading: *Line 1: sarvvapāpasyākaraṇa kuśala syopasampada*

Line 2: svacittavyavadānam

Line 3: ca etadbuḍāṇuśaṣanam

Translation: *"Not to commit any sin, to acquire merit, to purify one's mind - that is the teaching of Buddha"*

Oba Gat Inscription-I is a Sanskrit rendering of *Dhammapada*, verse 183 (Bühler 1979: 135). It is engraved on the upper portion of the rock immediately above the cave with deeply incised characters. The inscription contains three lines in north-south direction, carved high up in the centre of the rock face; no one can reach or touch it from the ground surface. This inscription has suffered mostly by weathering.

Plate # 04

Oba Gat Inscription-II

Measurement: length 4 metres, 4 lines

Script: Gupta Brahmi

Orientation: facing west

Reference: (Bühler 1979: 135; Stein 1930: 50)ṃṛḥ

Reading: *Line 1: vācānurakṣt*

Line 2: saṃvṛtaḥ kkāyana caivakuśalanna kurvan

Line 3: tāstrāyinkarmapathānui sokya āraghye

Line 4: nmārgamṛpippraveditam

Translation: *"(Let him be one) who guards his speech, is well restrained in mind, and commits no evil with his body. Keeping these three roads of action clear, one may gain the path taught by the Sages."*

Oba Gat Inscription-II is a rather free Sanskrit rendering of *Dhammapada,* verse 281 (Bühler 1979: 135). It is engraved in bold and deeply incised characters, comprising four lines, extends over a surface of about four metres in length in north-south direction. The lower inscription is carved in the right lower corner of the rock and therefore is easily accessible to human activities. It is exposed to both natural erosion and human vandalism.

Both inscriptions engraved on the western face of the rock contain Sanskrit verses from the Dhammapada. The palaeographic character of their letters, according to Bühler's analysis, seems to date the inscriptions from the early Kushan period (Stein 1930: 50).

Plate # 05

Khazana Gat Inscription-III

Measurement: length 2.5 metres, 3 lines

Script: Gupta Brahmi

Orientation: facing west

Reference: (Bühler 1979: 134; Stein 1930: 50)

Reading: *Line 1: anītyā vava (sic! for vata) saṃskārā utpādavyaya*

Line 2: dharmiṇaḥ utpadya hī nīrud (dh)yante tepā (read teṣāṃ)

Line 3: vyupaśamas sukham

Translation: *'The Samskaras are truly subject to originating and decay. For, after originated they disappear. Calming them is happiness'*

This is the famous verse spoken according the *Maha-Parinibbana-Sutta*, vi. 16, by Indra at the time of Śakyamuni's death, or proclaimed by Buddha himself according to the *Maha-Sudassana-Jataka* (Bühler 1979: 134).

The stone on which the inscription-III exists, is known as 'Khazana Gat', as once some treasure was found near it. According to O. von Hinüber, the inscription is well written in spite of two very obvious mistakes as indicated. The inscription, on the basis of stylistic comparison, can be dated roughly to 6th century CE. It is certainly not younger than about 650 CE at the very latest.

All the three are deeply and boldly incised on rough stones. The letters, varying between two and four inches in height, resemble in many respects the so-called Northwestern Gupta Brāhmī characters. Although all the three inscriptions unfortunately furnish no confirmed date, yet they provide support to the following conclusions:

- The Jahanabad inscriptions of Gupta Brāhmī characters rendering a *Dhammapada,* verses revealing and testifying the fact that Jahanabad was once an active centre of Buddhism. Besides the three inscriptions, the colossal relief of Jahanabad Buddha dating to the 7th century CE, and the rock relief of the seated Avalokiteśvara (7th century CE), in the centre of the orchard are the other living proofs of Buddhism in the Swat valley.
- On the basis of paleographical characters von Hinüber roughly suggests a date in the 6th century CE for these inscriptions. According to him, it is certainly not younger than about 650 CE at the very latest.
- It was generally believed that Brāhmī did not travel towards the Northwest regions of the subcontinent, but the existence of these inscriptions reveal that during the Gupta period Brāhmī remained language of the *Dhammapada* verse.
- It throws light on the fact that engravings and carvings practices were on peak during the 7th century CE in the Swat valley. Those who proposed a theory that Buddhist art was eradicated in fourth-fifth century CE need to revise their theses.

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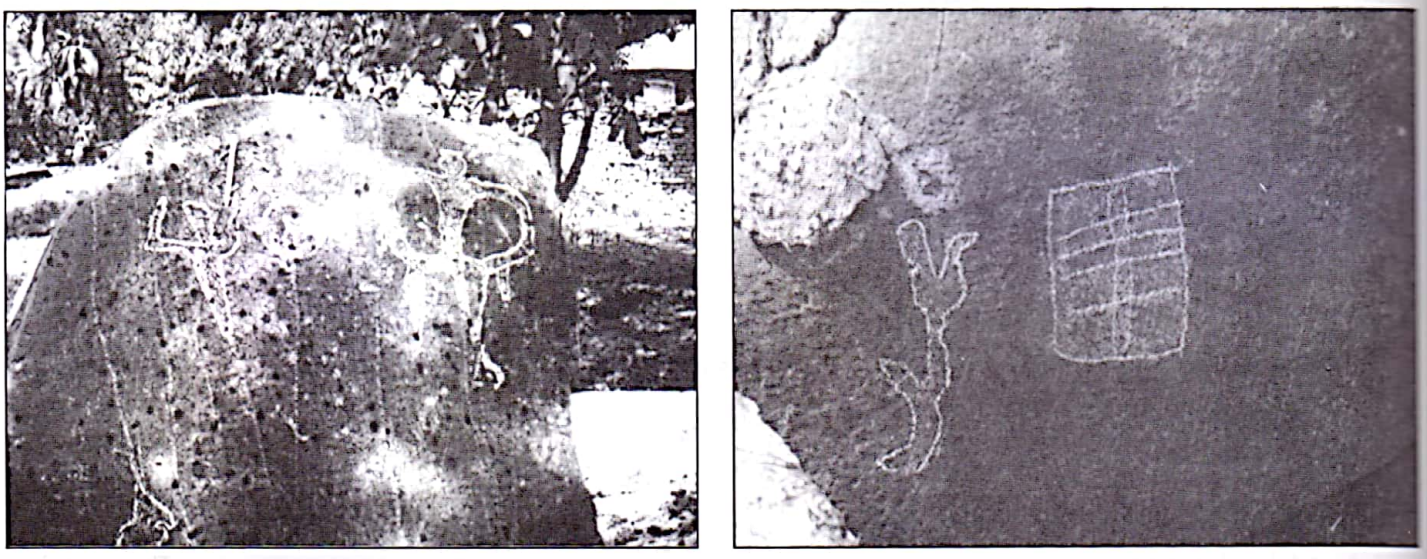

Plate # 01: Petroglyphs of Charai (Madiyan)

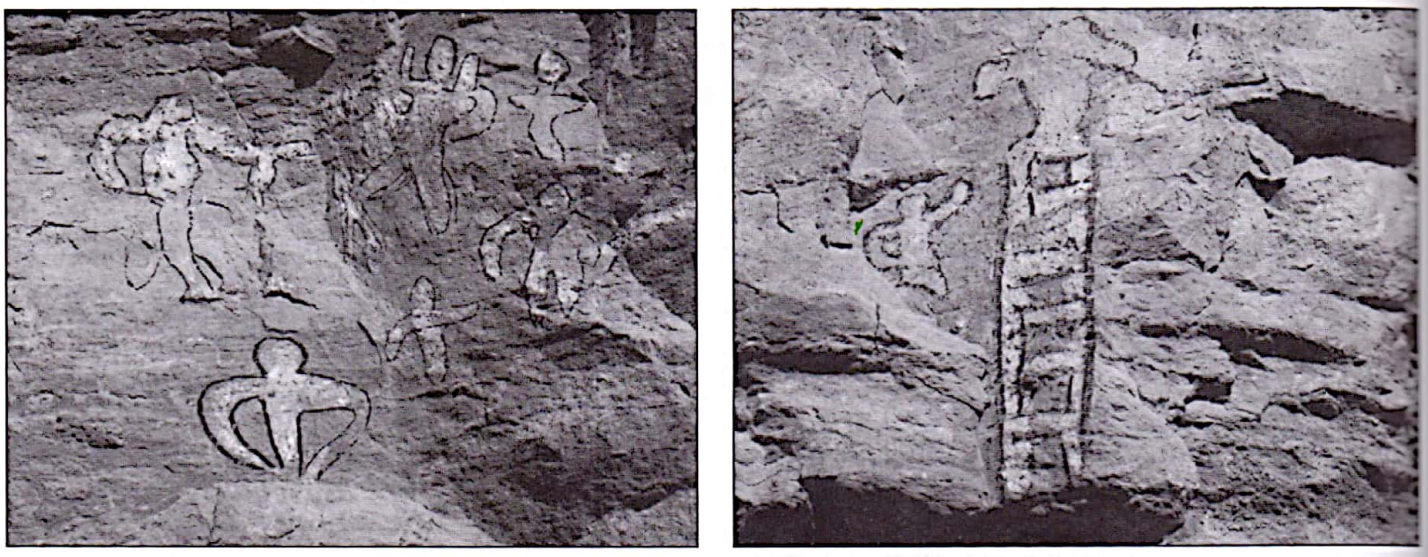

Plate # 02: Painted Shelter of Kafiri Smasta

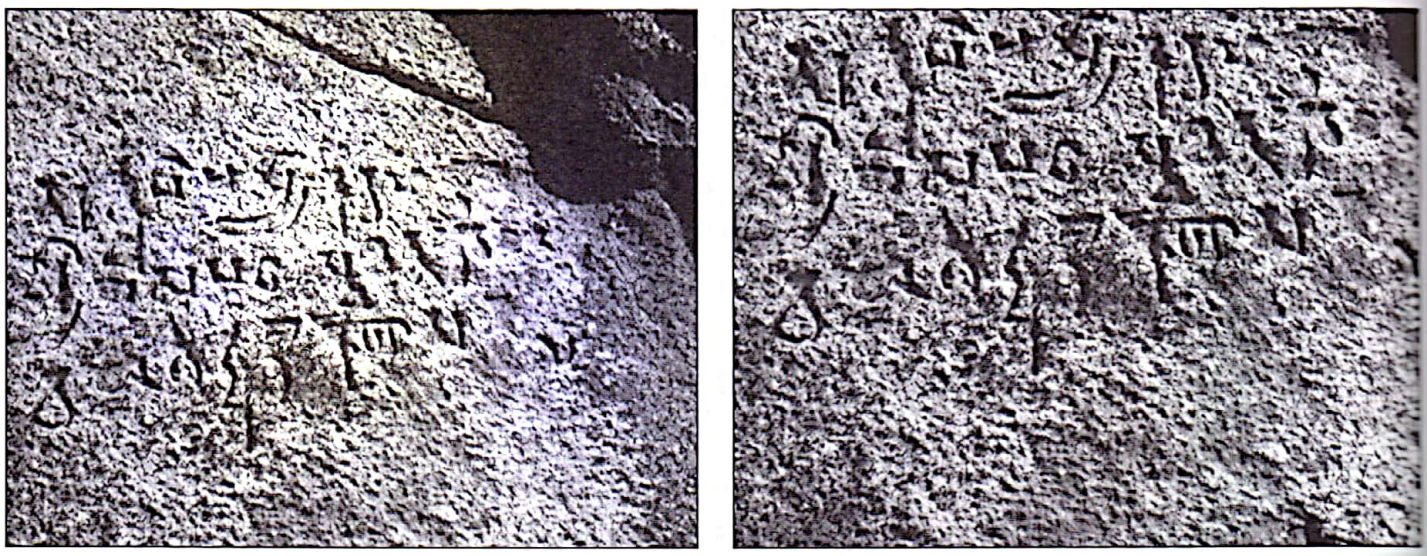

Plate # 03: Oba Gat Inscription-I

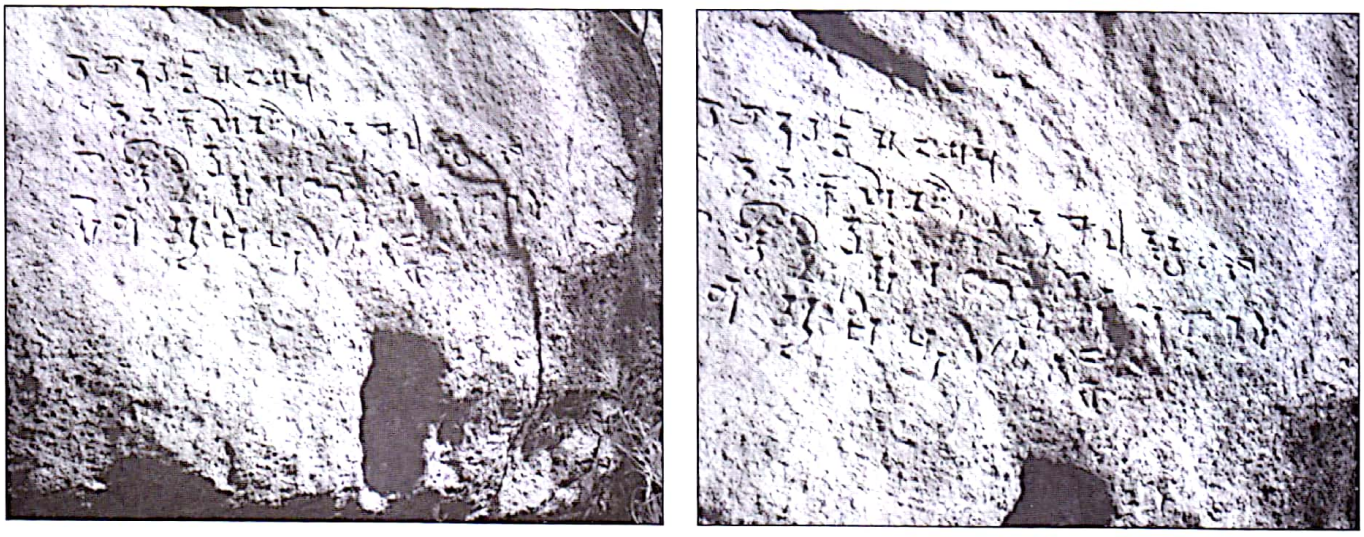

Plate # 04: Oba Gat Inscription-II

Plate # 05: Khazana Gat Inscription-III

The Art of Wood Work in Kashmir

PARVAIZ HUSAIN BHAT

Wood has long been used in Kashmir for making houses (Stein 1900: 451-452)[1], but it was not preferred for the construction of monumental worship architecture for a long time. It was for the first time that large worship buildings were made when Islam arrived there (Hasan 1959: 268).[2] Thereafter, not only wooden structures were constructed either exclusively or in association with stone and/or brick masonry to raise huge monumental buildings that exist till date but also they were decorated with wooden ceilings, walls, doors, cornices, facades on balconies. This time common houses were built of wood and were most beautifully decorated as Mirza Haidar narrates:

> 'In the town, there are many lofty buildings constructed of fresh-cut pine. Most of these are at least five storeys high; each storey contains apartments, halls, galleries and towers. The beauty of their exterior defies description and all who behold them for the first time, bite the finger of astonishment with the teeth of admiration' (Dughlat 1991: 425)

Sultan Zainul Abidin also got built a palace for himself all of wood in Nau Shahr (*Ibid*). It has twelve storeys, some of which contain fifty rooms, halls, and corridors. It was surmounted by a golden dome, and its spacious halls were lined with glass (Srivara 1990: 137). This tradition of wooden architecture and craft seems to have developed and flourished under the Sultans in particular under the fostering care of Sultan Zainul Abidin whose patronage attracted master artisans for various crafts from different parts of the Central Asia. According to Pundit Srivara, the court chronicler of the Sultan, the great king provided all amenities of life to such craftsmen and they popularized their arts and crafts among the Kashmiris (Srivara 1990: 101).

As said above that while all Hindu and Buddhist buildings of ancient Kashmir are built of stone, on the other hand many of the mosques and shrines, that were built subsequently, are either made entirely of wood or decorated finely in this medium. Many such splendid buildings still exist as models of the carpenters' craft such as *Khanqah-i Mu'alla*, Makhdum Sahib's shrine, Jami Masjid in Srinagar, *Khanqah-i Naqashband* Srinagar etc. Their facades, even though partly built of brick masonry, have yet eloquent use of wood in the form of structural material as well as decorative element. The wood has been utilized to build the pyramidal roofs, balconies, verandahs, arcades, porticoes, paneled walls and painted ceilings. The Madani Mosque in Srinagar, a small building but the earliest surviving example, has its roof in the pyramidal wooden style supported on long wooden columns with a paneled ceiling in *khatamband* as is the case in the *Khanqah-i Mu'alla* in Srinagar. Even though this roofing pattern has not been found in Central Asia or Iran, yet the wooden coping on the stone plinth used in the *Khanqah* is quite old in appearance and richly carved carrying Saracenic scrolls (Nicholas 1955).[3] The carved ornamentation allows us to believe that the building, which was damaged on many occasions, has somehow preserved this wooden piece to exhibit the influence of Central Asia/ Persia in the wood craft. Another such example is found in the door of the Madani Mosque, which is carved like that of Ahmad Yasavi's doors at his tomb near Bukhara carrying geometric designs and scrolls. These and many buildings in and outside Srinagar have elaborate carving on the base and

capital of the pillars as well as wooden ceiling in *khatamband* design. Their superstructures in the form of arcades and porticoes, their opening filled with lattice work, *pinjara,* and enriched carved wooden insertions enhance charm and accentuate the stylishness of this architecture.

Pinjara (Akhter 1981: 12)[4], a lattice work on wood (Sarraf 1987: 107)[5], has remained a novelty of decorations in Kashmir and is done on the fences, doors, railings, ventilators, room partitions, screens and windows. All the existing buildings in wood have such work in different geometric designs. There is but one example on stone at the Madani Sahib Tomb (15th century) (Srinagar) (Sufi 1996: 511)[6], which has carved lattice scrolls instead of geometric designs. This work on the tomb built during the reign of Zainul Abidin indicates that the lattice craft was known at that time even though there is no work left in wood of that era and it may have served as a forerunner to the wooden craft. It may have been introduced during the reign of Sultan Zainul Abidin for him, being the founder and architect of many such works in Kashmir and for which he introduced many craftsmen from Central Asia. This craft was already existing there at that time as in some of the buildings like *Tilakari Madrasah* in Samarkand, Bukhara Citadel in Uzbekistan (*Central Asian Art 2003*: 6) and may have therefore reached Kashmir to be used by the carpenters. The 12-storeyed palace of the Sultan in Srinagar was one of the buildings in Kashmir to use windows having wooden screens, either carrying arabesque like the tomb of Madani or geometrical designs as found in the late period buildings like the *Khanqah* in Srinagar or Pampore (Khoyhami 1999: 270-273; Riazuddin 1988: 358). Such a craft was in existence then is testified by Mirza Haidar who finds its existence also at Samarkand and Bukhara (Dughlat 1991: 425). In Central Asia the craft was possibly introduced after the Arabs had mastered the mathematical patterns and created various designs of '*Mashrabiya*' or lattice in a number of simple and complicated designs that were used for the window screens, fences, doors, railings, ventilators, and room partitions. During the Mughal period, stone architecture was reintroduced into Kashmir for monumental architecture and in their buildings stone screens instead of wood have been used on the Mughal pattern as in the *Madrasah* and mosque of Mulla Akhund. However, it seems that wooden screen works did not suffer as Bernier who visited Kashmir during the reign of Aurangzeb (1658-1707 CE) makes a special mention of the latticed doors of the houses of kings and nobles, which screened from view the beautiful ladies of the harem (Bernier 1891: 402). The Jami Masjid in Srinagar rebuilt on the earlier pattern during his time has retained the lattice designs that existed earlier.

Many designs of the *pinjara kari* were made in Kashmir (Zahid 1987: 53).[7] The most popular being those of the rising sun and cobwebs. The best kind of *pinjara* work was known by the Kashmiri names of *posh kandur*, *chaharkhana*, *sadae kandur, shas sitira*, *shah pahlu*, *dwazedh-sar*, *shekh sar*, *juggari, shirin* and *tota shesh temez*. All these designs however do not differ from the mathematical designs of the Arabs or that used by the Central Asians in limited form. What Kashmiri craftsmen added was mastery of the craft in fine form and its survival till date speaks of its popularity in the past and as such figures frequently in the folklore of Kashmir.

'Zaile pinjara tile nazar trav, Bali asimi tamblav'

(Bestow upon me one glance from behind the Pinjara. Oh young beauty, pray do not tantalize me) (*Ibid*).

Like this craft, *khatamband* has survived in Kashmir for centuries but remains secluded among a small group of craftsmen in Srinagar. They piece together small slices of wood to make beautiful geometrical designs without joining them with nails or glue. The art is said to have been introduced by Mirza Haidar Dughlat in 1541 CE (Sufi 1996: 586; Sarraf 1987: 107) when he ruled Kashmir. However, the existing specimens show that in Kashmir certain innovations were made in the craft that replaced the ivory, bone, mother of pearl, brass and silver and in this place pure wooden pieces were painted with floral motifs as in the mosque of the Madani where minute carvings were made to enhance the beauty of the panels. It was also sometimes painted to give different hues to separate geometrical panels or other inscriptions written, as on the panels of the wall in the *Khanqah* at Srinagar. Such innovations even though make the craft different from the *khatamkari* in the outlook yet these make it more beautiful. In the past this craft may have been very popular and has been appreciated for its beauty: '... beautiful ceilings of perfect design, cheap and effective, are made by few carpenters, who with marvelous skill piece together thin slices of pine wood. The result is a charming ceiling in which the various shades of the pine-slips blend together in perfect harmony' (Lawrence 2004: 380).

Besides, Kashmir has remained famous for its production of wood carvings that were used for the decoration of buildings, in particular the decoration of doors, their jambs, cornices, eves, wall paneling, columns, furniture articles, etc. Most often they show variety both in execution and subject matter. The subject matter in most of the cases has been scrolls and flowers set in such simplicity that complicated themes become understandable quite easily. Again it goes to the credit of Zainul Abidin that carving craft was introduced then and the mosque of Madani stands as a testimony. The main door of the mosque is profusely carved with floral motifs. Although now worn out due to age and weathering, it still preserves the excellent workmanship of the bygone days displaying arabesques in seven panels on each door shutter. As said above, it has analogy with Central Asian examples like that of the doors in the Khawaja Ahmad Yasavi's mosque (14th century CE) and may have as such been introduced from there. There is possibility that this craft may have got established quickly in Kashmir as stone carvers of the previous times may have found it quite easier to work on wood than on stone on which they worked for centuries together. The stone carvers now turned carpenters seem to have excelled most in such carving executions in Kashmir and copied the most famous lotus stone carving of earlier times on wood once the wooden carvings were introduced as in the mosque of Madani. These lotus carvings on the ceiling look wonderful and show how purposefully the craftsman changed its complexion and location from that of a ceiling of a temple to the new worship house. The new masters of the wood craft made structural designs of the buildings in such a way that allowed them to show their mastery in making porticos, verandahs, hanging balconies with designed columns and/or wooden screen fittings in harmony and blending them with ornamentation. The carved decoration of cornices, eves, etc was to further make the facades more exquisite as all these things are found in the *Khanqah* at Srinagar. The wood craft and craftsmen may have enjoyed an extended period of luxury to work in Kashmir following their learning from their masters from Central Asia and they busied themselves in creating such wooden structures across the land[8] that within next two hundred years there was left hardly any mason in the land to work on stone structures.[9] In addition, they became famous for making carved furniture, and set up workshops to make other utility things and Bernier, accompanying Emperor Aurangzeb in 1665 CE, noticed the workmanship and beauty of palanquins,

bedsteads, ink stands, boxes and spoons and such daily items were exported and found all over India (Bernier 1891: 402). Such and other articles of wood carvings are still exported and one finds very little difference in their workmanship from those carved in Central Asia except in their traditional patterns and articles in use.

Notes

[1] History tells of the old five storeyed high wooden palace of Srinagar, which was unfortunately set on fire by invaders during the reign of Harsha. From the year 1028 CE onwards wood craft related to architectural intricacies had begun to flourish. This was because the new palace was set up on the bank of river *Vitasta*, were close to the rich forest of Tashwan.

[2] Use of wood became more popular under the Sultans. This is perhaps due to the fact that the change of religion required the hasty erection of buildings for public worship on a much larger scale than had been required by Hindu worshipers.

[3] The consistent use of Saracenic detail and the fact the style was and is still applied to Muhammadan tombs and mosques and not to the Hindu structures, indicates in the first place that much of its character was introduced into Kashmir from abroad and secondly that it came into Kashmir with the arrival of Islam.

[4] *Pinjara* has a story of its own. There is a belief that the wood carvers of Kashmir copied it from the Chalukyan sculptors and stone masons. But since there is no trace of any extant specimen earlier than the Mughal period, it is difficult to say with certainty where the art originated. No doubt the Saracenic influence, which predominated during and after the reign of Zainul Abidin in arts and crafts of Kashmir had a lot to do with the designing and manufacturing of *Pinjara* panels. This form is said to have evolved because of *pardah* system of Islam. The sexes have to be segregated, and yet there were occasions when the women needed to see what was going on in the men's section.

[5] *Pinjara* is a lattice work built of minute lathes arranged in geometric form so as to display edges. They are held in position by the pressure they exert, one against the other, by certain main lines being dwelt together and by the frame of the panel within which it is assorted. They are rarely, if ever glued together and in wood work are so accurately fitted and balanced that they do not fall to pieces even the frame is removed. The *Budlu* or *Kair* wood was used for making Pinjara.

[6] Sayyid Al-Madani came to Kashmir during the reign of Sultan Sikandar (1398-1444 CE), died during the reign of Zainul Abidin (1420-1470 CE). As a token of reverence, Zainul Abidin built beautiful mosque at Madin Sahib for the Sayyid, mostly in stone masonry, collected from a pre-Islamic building. An inscription in Arabic on the lintel above the door records the date 844 H (1444 CE).

[7] The tools used for making *Pinjaras* were those used by the ordinary carpenters and included straight and curved chisels, plane hand saw and piles, both rough and smooth, various kinds of plinners, and woo screw, etc.

[8] Kashmir is full of such buildings where wood has been extensively used such as Naqashband mosque, Shrine of Nund Rishi at Qiamoh, Shrine of Zain-ud-Din Wali, Shrine of Amir-i Kabir at Dooru, Shrine of Sayyid Simnan at Kulgam, Jami Masjid of Srinagar, Shah-i Hamdan mosque, Jami Masjid of Shupiyan, Shrine of Marofi Basri at Srandu, etc.

[9] For the construction of fort, Akbar brought two hundred masons from outside Kashmir; Persian text of the Kathi Darwaza inscription.

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Latest Archaeological Explorations in the Chitral Valley (2009)

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The present report is a summary of recent field investigations conducted jointly by Hazara University (Mansehra), the University of Leicester (UK) and Abdul Wali Khan University (Mardan) as part of a 3-year project titled *Archaeological Investigations and their Link to Heritage Management in District Chitral, Khyber Pakhtunkhwa Province, Pakistan* being funded by the British Council. Archaeologists, students and technical experts from these three institutions participated in the field work that spread over a period of about two months.

The chief aims of this project are to systematically explore the archaeology of the Chitral Valley, Khyber Pakhtunkhwa, Pakistan and to develop ways of presenting and managing this unique heritage. Chitral is one of the most remote areas in all Pakistan, and primarily known to foreign and domestic visitors for natural beauty, mountaineering, hiking and wild life. Preliminary investigations show that Chitral has a wealth of cultural history, which is poorly understood. If this cultural history can be identified, excavated and recorded, it would not only help scholars and residents of the valleys to understand the past in this area, but it could also be used to develop sustainable cultural tourism here. In the first field season (2009), archaeological survey was the primary means of obtaining archaeological data, and in order to remove bias and to begin to obtain a more complete picture of past settlement activity in this region, a systematic approach to survey was taken. This systematic approach consisted of surveying in 24 parallel transects, each one five km long, allowing us to cover an area of 125^2 km in total. This method is in direct contrast to the more usual 'village to village' survey approach, which has been employed in this region to date. Alongside this new survey methodology, sites reported by local people were also recorded, as well as preliminary work on the heritage element of the project, which will be reported separately.

In this first year of the project, survey was focused in the lower part of District Chitral, to the south of Chitral town, and a total number of 17 archaeological sites were documented; most of them attributed to the so-called 'Gandhara grave culture' including one big cemetery of Balasht in the Ayun area. Another interesting grave complex was documented in Muldeh Ayun. Some historic period fortresses such as Chamarkun fortress (Noghorzoom), located at an elevation of about 5500 feet, Noghorgai and Narotek fortresses (all previously known sites) were also explored.

Transect Survey

The area from Chamarkun to Syedabad village, located on the left bank of the river Chitral, was covered in the grid of twenty four transect lines. The extreme topography of Chitral made the survey very difficult in this first season. In almost all transect lines, our teams had to climb up for two to three hours only to reach their starting point, from where they had to mount further five km without any climbing equipments/training etc. Furthermore, to reach finishing transect points, our teams

constantly had to cross high and rigid peaks of 10,000 feet to 12,000 feet. However, this season has provided considerable valuable information towards our understanding of past human settlement, and our testing of models of site location. Our results indicate the absence of settlement on the upper slopes of the foothills of the Hindu Kush range which characterize Chitral, and the survey did not locate any sites indicative of past resource exploitation in these upper slopes, despite the survey team noting various minerals, plants and animals in abundance. The sites noted during transect survey comprised two historic period mosques and one other site of unknown period. Given the location of this latter site and reported nature of the finds thus far removed by local people (see below), this site could be a focus for further exploration in the second field season of the project.

Sites discovered through Transect archaeological survey

Transect No:	**A13-A14**
Site No:	A13-1
Site Name:	Umair mosque in Dhamoon
GPS coordinates:	N 35.74582, E 071.79748
Elevation:	1745m
Location:	Broz (Chitral)
Tentative period:	British period
Material:	Wooden, mud and stone construction

Further remarks

This beautiful mosque (Fig. 1) is located in the centre of *Dhamoon* village. The old name of this mosque was 'Moldeh mosque'. Wall enclosure of the mosque is about one metre high. Two entrances are provided, one in the basement through the northern side, while another (main) entrance on the eastern side. Wood is the main building material used in this mosque. The three aisle deep prayer hall is supported on carved wooden pillars and cusped arches.

Transect No:	**A13-A14**
Site No:	A13-2
Site Name:	Bilal Mosque Dhamoon
GPS coordinates:	N 35.74557, E 071.79927
Elevation:	1769m
Location:	Broz, Chitral
Tentative period:	Mehtar, historical period

Further remarks

Bilal mosque (Fig. 2) is located next to Umair mosque. The old name of this mosque was 'Toldeh mosque'. Architectural similarity of both these mosques tends to suggest that they were built contemporaneously. This mosque is enclosed by two metre high wall with two entrances, both being on the northern side. The wooden pillars are carved with floral and geometrical designs. The courtyard contains a water tank for ablution. Steps are constructed to provide access to the basement of the mosque.

Transect No: **A13-14**

Site No: A13-3

Site Name: Upper Dhamoon

GPS coordinates: N 35.74517, E 071.80326

Elevation: 1889m

Location: Broz, Chitral

Material: Potsherds, bones and stone slabs

Further remarks

The site is located on the high mound near *Dhamoon* village in Broz area of Chitral. The surface of the site is littered with potsherds. Few illegal excavated pits could also be seen. According to the local people, it was from these pits that two big terracotta jars were unearthed. The date and nature of the site could be determined only through proper excavation.

Sites recorded during Village to Village Survey

Further work will take place in season two of this project to determine which of these sites has already been noted by previous surveys in the area; particularly those in the Ayun region, to the north of the first season survey area.

Site Name: **Naghorzoom**

GPS coordinates: N 35.78904, E 071.78412

Elevation: 1744m

Location: Chamarkun

Site size: (L) 45m (W) 24m

Tentative period: Mehtar/ historical period

Material: Potsherds

Further remarks

This small beautiful fortress (Figs. 3-4) is located on a very high hill peak near Chamarkun village. This is the highest fortress in the Chitral valley discovered so far. In the local language, the name *Naghorzoom* means 'Fort on mountain'. This well-fortified structure is located on a considerable strategic point, from where the three valleys of Chamarkun and Chitral city on the north, Broz on the south and *Orgoch* valley on the west could be easily guarded. Noghorzoom is not within easy reach, which lies at two hours tedious march from the Chamarkum village. The only entrance is from the eastern side, which is passable through very perilous creeping. The fortress contains twenty one rooms of different sizes and style. Most of the construction is done in rubble masonry. Large number of potsherds are scattered on the surface.

Site Name: **Tor Deh Cave complex**

GPS coordinates: N 35.80103, E 071.79108

Elevation: 1626m

Location: Chamarkun

Tentative period: Historic

Material: Mud plaster

Further remarks

This cave complex is mostly eroded due to land sliding. We were unable to find any cultural material from here. Located to the left side of Qakdar Gol, it is locally known as *Zooyotek*. These caves are made without any proper planning. We could determine the age of the caves in case of proper excavation and removing the debris. The local people use them as store houses and also as a shelter for their cattle in harsh weathering conditions.

Site Name: Naghoorgai

GPS coordinates: N 35.78503, E 071.77299

Elevation: 1471m

Location: Chamarkun

Tentative period: Mehtar, historic period

Material: Potsherds

Further remarks

This is a small historic period fortress located on the left bank of river Chitral. According to local information, this place was used by the prince as a hunting camp. The fortress can be classified mainly into two parts, upper and lower. The lower part is further divided into five portions, all interconnected by small passages. Each compartment of the lower part is having small room at the centre, facing southwards. All construction is made with rubble masonry. The fortress is protected from erosion from the hill side by a series of parallel walls.

Entrance of the fortress is well guarded through small posts, suggesting a highly secured place. Currently this place is re-occupied by nomadic people, who use to live here during seasonal migration with their cattle.

Upper part of the fortress is accessible only through steps from the lower area. The upper portion still preserves remains of a big hall, facing towards very scenic view of the river Chitral.

Site Name: Kror

GPS coordinates: N 35.76276, E 071.78040

Elevation: 1456m

Location: Broz, Chitral

Tentative period: GGC

Material: Potsherds, bones

Further remarks

Located on the left bank of the river Chitral, this vast area measures (800x500)m, most part of which is still cultivated. According to some reliable local information, large number of human bones,

terracotta jars and other metal implements were recovered during field cultivation. Presently, we could find some grave slabs and scattered potsherds.

Site Name: **Bakarabad**

GPS coordinates: N 35.80549, E 071.78106

Elevation: 1516m

Location: Bakarabad, Chitral

Tentative period: GGC and Historic period graveyard

Material: Potsherds/grave slabs

Further remarks

Bakarabad is a sizeable ancient graveyard. It is also used by the Muslims for their burials. We find here two mains types of graves: with no specific orientation, whose slabs are visible only, the main feature of the Grave Culture site, while the second type of graves are in north-south direction. Limited number of potsherds was collected during our field work.

Site Name: **Muldeh**

GPS coordinates: N 35.73005, E 071.77183,

Elevation: 1449m

Location: Ayun, Chitral

Tentative period: GGC

Material: Stone slabs, bones and potsherds

Further remarks

Divided into two parts, this ancient graveyard of Ayun is presently reused by the Muslims for their burials. Remains of ancient graves in the form of bones and stone slabs were exposed due to erosion caused by water action. The local people frequently find grave materials during digging for construction or cultivation. Potsherds are thickly scattered all over the surface of the site. Currently, most of the site is encroached by the local villagers. The second part of the Muldeh grave complex is located near Ayun Bridge; the site too is very rich in nature. The local people use the site as a quarry for their building materials.

Site Name: **Tolian**

GPS coordinates: N 35.72911, E 071.77074

Elevation: 1451m

Location: Ayun, Chitral

Tentative period: GGC

Material: Potsherds, bones and stone slabs

Further remarks

Some open graves were observed, inside which bones and potsherds could be seen (Fig. 5). The site is mostly occupied by the Muslims for their graves and houses. No other structural remains were found during field walk.

Site Name: **Kashkara-o-Tek**

GPS coordinates: N 35.71101, E 071.76236

Elevation: 1575m

Location: Ayun, Chitral

Tentative period: GGC

Material: Potsherds, bones and stone slabs

Further remarks

This grave culture site is located just outside the main village, and near the small hill basin. Grave pottery and slabs visible on the surface connote to its being an archaeological site. This site is rapidly mouldering due to natural hazards.

Site Name: **Barausht/Balausht**

GPS coordinates: N 35.72496, E 071.76876

Elevation: 1479m

Location: Ayun, Chitral

Tentative period: GGC

Material: Potsherds, bones and stone slabs

Further remarks

This interesting and huge site (Fig. 6) is used for cultivation. Most part of the site is located on the edge of the spur, where during rainy season, erosion is wiping out this peerless grave complex. Because of water erosion one can see few open graves, with huge slab boxes, bones and pottery inside. Houses and tube well is constructed in the middle of the site.

Site Name: **Masjid-i Kalan**

GPS coordinates: N 35.71278, E 071.76662

Elevation: 1461m

Location: Ayun, Chitral

Tentative period: Mehtar/British period

Material: Wood, mud and stone structure

Further remarks

This mosque (Fig. 7) is located on the raised edge of the eastern part of the main Ayun bazaar. There is an ablution tank in the down storey of this beautifully constructed mosque. The wooden architecture of the mosque seems to be the carbon copy of the stone structure of the British period.

Site Name: **Narotek**

GPS coordinates: N 35.7157, E 071.75774

Elevation: 1761m

Location: Ayun, Chitral

Tentative period: British period

Material: Potsherds and cut stones

Further remarks

Remains of a small fortress can be seen on the high peak of the hill (Figs. 8-9). The fortress type structure is built in stone and contains few rooms in the southern end. Potsherds are dotting the whole covered area, which indicates that once the entire structure had been thickly populated. The fortress is located on the key strategically location, where one could guard all the four directions of the valley.

Site Name:	**Karits**
GPS coordinates:	N 35.73657, E 071.77178
Elevation:	1606m
Location:	Ayun, Chitral
Tentative period:	Mehter
Material:	Potsherds, bones and stone slab

Further remarks

This fortress is located near Muldeh archaeological complex, and can be divided into two main parts, upper and lower. Enclosure wall is observed around the structures inside. There are traces of four bastions at each corner of the fortress. Scattered pottery can still be seen in large number. Alongside, one can see outlines of water tank and small cells. This fortress is also located at significant strategic location. According to the locals, there was an ancient route along this fortress, which had been used by the Kalasha people for moving towards Chitral.

Site Name:	**Gumbat**
GPS coordinates:	N 35.72671, E 071.79481
Elevation:	1764m
Location:	Broz, Chitral
Tentative period:	Historic period
Material:	Potsherds

Further remarks

Before reaching the transect starting line of B15, we recorded a small compound, badly disturbed. Some potsherds were scattered in this single room structure.

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Fig. 1: Umair Mosque in Dhamoon

Fig. 2: Bilal Mosque

Fig. 3: Chamarkun Fortress

Fig. 4: Details of Fig. 3

Fig. 5: Tolian Graves

Fig. 6: Balausht Cemetery

Fig. 7: Masjid-i Kalan (Ayun)

Fig. 8: Narotek Fortress

Fig. 9: Detailed view of Fig. 8

A Survey of Lower Dir, Khyber Pakhtunkhwa (former North West Frontier Province), Pakistan (2005)

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Abstract

A survey of Lower Dir was carried out during October and November of 2005 by a team of archaeologists from the Universities of Hazara, Peshawar and Leicester. The main aim of this survey was to collect data about all archaeological sites in this area from prehistoric through to recent historic periods in order to develop a profile of human settlement and activity in this region. In total, 294 sites were located and recorded (including sites already excavated and published), and within this total, the vast majority of sites have been attributed to the Buddhist period.

Keywords: Pakistan, Lower Dir, landscape survey, Buddhist sites

Introduction

There are many well known archaeological sites in the Khyber Pakhtunkhwa (former NWF) Province of Pakistan, such as the UNESCO World Heritage Buddhist monastery Takht-i Bahi and the neighbouring city site of Sari Bahlol. Archaeological exploration in the 20th century has included work at the site of Charsada in the Vale of Peshawar (Coningham and Ali 2007; Wheeler 1962), and survey and excavation at many sites in the Swat Valley (Callieri 2005; Facenna 1980; Stacul 1989). While it is clear that this region is rich in archaeological remains, thus showing its importance in both prehistoric and historic periods, there are areas of Khyber Pakhtunkhwa, such as the valley of Dir, which are less well known. In order to extend our knowledge of the settlement history of Dir, a survey of archaeological sites in Lower Dir was undertaken in October-November 2005 by archaeologists from the Universities of Peshawar, Hazara and Leicester. The results of this survey have already been published (Ali et al 2009) and a discussion of the results in relation to the Gandharan Grave Culture presented. This paper will summarise some of the key trends in the data and is followed by a Gazetteer of sites. Figure 1 shows the location of the survey area.

Previous Archaeological Investigations in Dir Valley

Professor Ahmad Hasan Dani carried out the majority of systematic archaeological exploration in Dir Valley during the 1960s and early 1970s, with his work at Timargarha (Gandharan Grave site) (1968-9a), Balambat (Gandharan occupation site) (1968-9a), Chatpat (monastery and stupa) (1968-9b) and survey (1968-9b) and Damkot (including Chakdara fort) (1968-9b; Rahman 1968-9). An analysis of extant published material and ethnographic interviews have also been synthesised as part of an exploration of urban and rural contact in the period between the Indus and Early Historic urban phases (Young 2003).

The neighbouring valley of Swat is the subject of extensive description within early travellers' accounts, such as Fa-Hien and Xuanzang (Legge 1886; Stein 1928; Xuanzang 1996), who

note the large number of Buddhist settlements and population. Dir, however, receives little, if any mention, which could suggest that Dir was not such an important focus of Buddhist activity. We would argue that the large number of Buddhist sites identified in this survey (some 235, see Table 1) shows that Dir must have been a very important, and densely settled area in terms of Buddhist religious and occupation sites. While this paper presents the data itself, we believe that it would be both interesting and useful to undertake settlement analyses in future in order to begin to model settlement and population over time in Swat, Dir and surrounding areas. This of course would require close phasing of settlements in order to achieve the best results, and this type of phasing information is lacking in our survey results. We believe that the number of sites that have been classified as 'Buddhist' in this survey, and the number of sites recorded in previous activities in Swat and other regions, indicates a wealth of material with which to carry out a range of settlement analyses.

Methodology

In order to cover a representative area of the Lower Dir Valley, a team of local archaeologists and students were trained in the methodology of transect survey, and an area some 20km by 10km was surveyed. In addition to this, known archaeological sites were also visited and recorded, and local informers were interviewed and further sites identified and recorded making use of local knowledge. Sites were defined as a structure, feature, lithic find spot or ceramic scatter of 5 sherds or more per square metre (Coningham et al 2004: 3). Each site was recorded on paper and through digital photography. The location of each site was recorded using a handheld GPS to give co-ordinates and height above sea level, although the co-ordinates will not be included in the Gazetteer due to the major risk to heritage sites from illegal excavation. Looting or other damage such as agricultural or urban encroachment was recorded and this information was passed to the Directorate of Archaeology, Khyber Pakhtunkhwa Province, Pakistan, as part of their Cultural Heritage Management planning process.

Results

A total of 294 sites representing human activity were identified and recorded during the 2005 survey of Lower Dir. Table 2 shows the breakdown of these sites according to estimated chronological period, and Table 3 shows the breakdown of sites according to site type and estimated chronological period. Here we offer a brief summary of the main trends in the chronological periods and some ideas for future research.

Cemetery / Gandharan Grave Culture sites

A number of ancient, i.e. pre-Islamic, cemeteries were recorded in this survey. These have been tentatively classified as potential Gandharan Grave Culture sites on the basis of grave construction and orientation, and where grave goods have been recovered when the sites have been disturbed through agricultural and housing encroachment, or through looting. As many Islamic graves are constructed in a similar way from similar materials, there is potential here for misidentification. However, Islamic graves are oriented so that the body is placed on the right side to face Kaaba (or Makkah), and no grave goods are interred with the body. This means that in Lower Dir we have used the criteria of grave orientation and any knowledge of grave goods from local informants to begin this classification of cemetery sites. There are of course wider issues about the Gandharan Grave Culture and how it is defined that are outside the scope of this paper and this survey; however the data presented here can

contribute to this debate, which will be developed in the context of on-going research by the authors in Chitral and other parts of the Khyber Pakhtunkhwa.

Early Historic / Buddhist sites

The majority of all sites identified and recorded in this survey fall into this category. The Khyber Pakhtunkhwa (North West Frontier) Province is known from both historical and archaeological sources as an important area for settlement and religious activity following the conversion of the Mauryan Emperor Ashoka to Buddhism (c.268 BCE). Art historical analysis in the form of the Gandharan art movement, which recorded the life and events of Gautama Buddha through stone carving, gives us a great deal of information about Buddhist activity and impact, but direct archaeological analysis and interpretation has been the subject of far less study in the Khyber Pakhtunkhwa, and particularly in Dir.

The term 'Early Historic' period also covers pre-Buddhist Mauryan activity, Indo-Greek activity, Kushan activity, and a series of other dynastic rulers up to the Hindu Shahi period. While those sites with structures such as stupas could be designated Buddhist, or those with distinctive diaper masonry designated Early Historic-Buddhist (Marshall 1951), many sites fall into a very broad chronological grouping. This points toward an urgent need for more work on Early Historic sites in this region in order for more precise classification and thus analysis to take place; being able to fine tune the chronology for this period is a crucial part of understanding the processes at work in this region from approximately the middle of the first century BCE through to the middle of the first century CE.

Some 35% or one third of all sites in this category had a mound or structural remains indicative of a stupa, showing the importance of veneration and orthopraxy in this region. Given that this survey has focused on a small area in Dir Valley, this figure suggests that there was a high concentration of formal religious activity here. With greater periodisation of Buddhist sites we would be able to begin to map changes in activity and foci over time. The recording of fourteen rock carvings depicting Buddhist iconography confirms the importance of religious activity in this region.

Hindu Shahi

Thirty five sites were classified as Hindu Shahi; identification was based on the architectural style characteristic of the Hindu Shahi dynasty (late 7th – 10th/11th centuries CE) and associated pottery (Rahman 1979).

Islamic/Mughal

Of the 15 sites in this category, one was the grave of a saint built on an earlier stupa site, and the other was the fort built by Zain Khan Koka, then later occupied by the British, and the others are graves and tombs. We were surprised that we did not find more sites in this category, including such things as pottery scatters of Islamic vessels. This may be the result of the intensive agricultural activity within the survey region, but it is a methodological issue that we would like to re-visit if political conditions in this region permit follow up work.

British

Four sites dated to the British occupation of Dir were recorded in the survey area. Churchill Picket was built in 1897, and the dis-used bridge across the Swat River in Chakdara was built in 1902. Both

the bungalow of the Nawab of Dir, dated to the late 19th century and the Chakdara fort are examples of the re-use of sites and structures.

Conclusion

The preliminary survey of Lower Dir has met the main aim of this project by carrying out systematic survey in this region and locating and recording archaeological sites from all periods in order to characterise settlement and activity here. Having identified and recorded 294 archaeological sites in the survey area, we can say with confidence that this was an area of some importance during the Early Historic period. While research has shown that Swat was a major focus of Buddhist activity (e.g. Callieri 2005; Filigenzi 2005), we know far less about neighbouring Dir. This survey has shown very clearly that Dir also played an important role in the Early Historic and Buddhist periods, and that further study is critical in understanding this role more fully.

We have demonstrated that systematic survey is effective within Lower Dir, but we believe that there could be more sites (particularly small pottery scatters), that we have not identified due to the topography, land cover and the need to move quickly through the landscape in certain places. This issue could be explored through a series of methodological tests, and we would like to return to carry these out at some point in the future, when circumstances permit.

This preliminary survey of a selected area within Lower Dir, the Khyber Pakhtunkhwa Province, has shown that although largely unknown in archaeological terms to date, there is indeed a very rich archaeological heritage. We have many gaps in our knowledge and further work is necessary in order to begin to address these gaps, particularly important given the many physical and cultural threats to sites.

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List of Sites

1. Qala (Gorgorai). Chakdara/Khadakzai/Kamala/Gorgorai. (200 x 180 x 3)m, 660msl. Wall foundations, probably residential. Pottery. Hindu Shahi.
2. Kafiri Manrai (Taudacheena). Chakdara/Khadakzai/Kamala/Taudacheena, GH Secondary School Taudacheena. (10 x 10 x 5)m, 726msl. Fort; a lofty building square in shape. Pottery. Hindu Shahi.
3. Zbarg Khowana (Taudacheena). Chakdara/Khadakzai/Kamal/Taudacheena. (20 x 8 x 5)m, 718msl, Fort; square building. Pottery. Hindu Shahi.
4. Jang Manrai (Taudacheena). Chakdara/Khadakzai/Kamala/Taudacheena. (80 x 50 x 10)m, 718msl. Fort, two lofty buildings, both are square in shape. Pottery. Hindu Shahi.
5. Saparai (Taudacheena). Chakdara/Khadakzai/Kamala/Taudacheena. (20 x 15 x 3)m, 698 msl. A small fort, square room foundations. Pottery. Hindu Shahi.
6. Lwara Kota (Taudacheena). Chakdara/Khadakzai/Kamala/Taudacheena. (31 x 20 x 5)m, 740 msl. A large fort with a number of rooms. Pottery. Hindu Shahi.
7. Zardullah Kota (Taudacheena). Chakdara/Khadakzai/Kamala/Taudacheena. (20 x 10 x 3)m, 693msl. A small fort, wall foundations and a crescent shaped wall foundation. Probably Hindu Shahi.
8. Selma Kota (Taudacheena). Chakdara/Khadakzai/Kamala/Taudacheena. (20 x 15 x 7)m, 737msl. A fort with various rooms; a central room which appears to have no doorways, plus other rooms with entrances. Hindu Shahi.
9. Musafer Kota (Taudacheena). Chakdara/Khadakzai/Kamala/Taudacheena. (100 x 80 x 7)m, 731 msl. A large fort with a central and various small and large rooms having bastions in the corners. Pottery. Hindu Shahi.
10. Kharkai (Taudacheena). Chakdara/Khadakzai/Kamala/Taudacheena. (5 x 5 x 10)m, 716msl. A single room plus one wall. Hindu Shahi.
11. Lasho (Taudacheena). Chakdara/Khadakzai/Kamala/Taudacheena. (15 x 10 x 8)m, 689msl. A fort with some wall foundations, a lofty central room plus walls with bastions. Pottery. Hindu Shahi.
12. Manro Sar (Kamal/Orbaza). Chakdara/Badwan/Khadakzai/Kamala. (100 x 20 x 5)m, 710msl. A large site, various foundations of rooms but not clear whether this is a fort or residential site. Pottery. Hindu Shahi.
13. Khamar Manrai (Kamala/Orbaza). Chakdara/Badwan/Khadakzai/Kamala. (5 x 5 x 1.5)m, 768 msl. The foundations of a small room likely to have been either a small picket or fortress. Hindu Shahi.
14. Khamar Manrai (Taudacheena). Chakdara/Khadakzai/Kamala/Taudacheena. (15 x 10 x 2)m, 712 msl. A one room structure plus further wall foundations. Possibly Hindu Shahi.
15. Jay Manrai (Kamala). Chakdara/ Badwan/Khadakzai/Kamala. (15 x 5 x 3)m, 721msl. A small room and surrounding wall foundations. Hindu Shahi.
16. Obo Tangai Manrai (Kamala). Chakdara/Badwan/Khadakzai/Kamala. (200 x 20 x 5)m, 751msl. A large site, with more than 20 rooms apparent on at least two levels, but not clear if this is a fort or residential site. Hindu Shahi.

Bara Manrai (Kamala). Chakdara/Badwan/Khadakzai/Kamala. (20 x 20 x 5)m, 690msl. This fort is square, with a room and connected rooms, and walls with corner bastions. Possibly Hindu Shahi.

l . Tora Banda (Sogiar). Chakdara/Badwan/Khadakzai/Sogiar. (10 x 5 x 1.5)m, 720msl. A ruined mound; some foundations can be seen inside the mound, while around the mound there are also some wall structures, pottery. Possibly Hindu Shahi.

19. Ghondo (Sogiar). Chakdara/Badwan/Khadakzai/Sogiar. (30 x 15 x 2)m, 671 msl. A residential structure with huge walls, three rooms. Possibly Hindu Shahi.

20. Speena Manrai (Sogiar). Chakdara/Badwan/Khadakzai/Sogiar. 10m x 10m x 5m, 719msl. Square shaped foundations now covered by a mound, with other walls beyond mound. Pottery. Possibly Hindu Shahi.

21. Kofaro Manrai I (Teroona). Chakdara/Badwan/Khadakzai/Teroona. (10 x 10 x 1)m, 708msl. Wall foundations and foundations of four rooms. Pottery. Possibly Hindu Shahi.

22. Kofaro Manrai II (Teroona). Chakdara/Badwan/Khadakzai/Teroona. (25 x 15 x 5)m, 674msl. A modern ruined house over an ancient house with huge wall structures. Hindu Shahi.

23. Lwara Ghondai (Teroona). Chakdara/Badwan/Khadakzai/Teroona. (30 x 15 x 3)m, 654msl. A mound and walls of ashlar masonry; site has been badly looted. Pottery. Buddhist.

24. Landai Shah (Khadakzai). Chakdara/Badwan/Ghargai/Khadakzai/Mayar. (200 x 50 x 8)m, 716msl. A complex of various rooms, possibly a fort, made of local stones. Two further separate rooms for keeping watch behind and above the site. Pottery. Probably Kushan.

25. Eadal Tangai (Khadakzai). Chakdara/Badwan/Ghargai/Khadakzai/ Mayar. (150 x 15 x 4)m, 732msl. A central room and wall foundations, plus various small and large room foundations. Pottery. Possibly Kushan.

26. Samad Shaheed (Khadakzai). Chakdara/Badwan/Ghargai/Khadakzai/Mayar. (30 x 15 x 3)m, 792msl. A fort built on the top of the hill, bastions at each corner of the wall; walls of ashlar masonry. An intact room connects the hall and two rooms in the upper area. Kushan.

27. Baghoona (Khadakzai). Chakdara/Badwan/Ghargai/Khadakzai/Mayar. (400 x 150 x 3)m, 744msl. Large site with various wall structures. Pottery. Buddhist.

28. Sangarghar Cave (Khadakzai). Chakdara/Badwan/Ghargai/Khadakzai/Mayar. (5 x 2 x 3)m, 854msl. A cave located at the edge of the Bachakan Khwar facing west. It is a natural cave with a thick coat of soot on interior ceiling. Period unknown.

29. Zernai Kasai Cave (Khadakzai). Chakdara/Badwan/Ghargai/Khadakzai/Mayar. (15 x 5 x 4)m, 996msl. A large cave located at the edge of the Kasai Khwar. According to the local people this cave was occupied around 50 years ago. A thick coat of soot on ceiling. Modern, otherwise period unknown.

30. Zargaro Banda (Mayar Khadakzai). Chakdara/Badwan/Ghargai/Khadakzai/Mayar. (20 x 10 x 3)m, 773msl. A high fortress with foundations, wall structures and corner bastions. Pottery. Buddhist.

31. Sodam Banda (Mayar Khadakzai). Chakdara/Badwan/Ghargai/Khadakzai/Mayar. (30 x 10 x 5)m, 740msl. Wall foundations, possibly a residential site, now covered by a mound. Buddhist.

32. Shaglana (Mayar Khadakzai). Chakdara/Badwan/Ghargai/Khadakzai/Mayar. (10 x 5 x 1)m, 810msl. A small room, only wall foundations are visible. Probably Buddhist.

33. Shaglana II (Mayar Khadakzai). Chakdara/Badwan/Ghargai/Khadakzai/Mayar. (20 x 10 x 3)m, 827msl. A ruined fort with wall structures and room foundations; some are connected with the central room while some are placed far from the central room. Probably Buddhist.

34. Shaglana III (Mayar Khadakzai). Chakdara/Badwan/Ghargai/Khadakzai/Mayar. (10 x 10 x 3)m, 756msl. A room structure with wall foundations and corner bastions. Probably Buddhist.

35. Mian Bacha (Mayar Khadakzai). Chakdara/Badwan/Ghargai/Khadakzai/Mayar. (30 x 10 x 1.5) m, 733msl. A small mound with some wall structures around it; a small well shape structure to the south; the walls are built of ashlar masonry. Buddhist.

36. Shakoor Kelay (Mayar Khadakzai). Chakdara/Badwan/Ghargai/Khadakzai/Mayar. (100 x 100 x 3)m, 706msl. Diaper masonry wall structures. Pottery. Buddhist.

37. Zara Manrai (Mayar Khadakzai). Chakdara/Badwan/Ghargai/Khadakzai/Mayar. (10 x 8 x 2)m, 862msl. A mound over a fort(?), with wall structures and circular corners still visible. Possibly Buddhist.

38. Sanda Sar Manrai (Mayar Khadakzai). Chakdara/Badwan/Ghargai/Khadakzai/Mayar. (15 x 10 x 3)m, 811msl. A small square fortress with corner bastions and some rooms connected to a central room. Probably Buddhist.

39. Kagan Manrai (Mayar Khadakzai). Chakdara/Badwan/Ghargai/Khadakzai/Mayar. (10 x 8 x 2) m, 772msl. A mound over a fort, with walls still visible in places. Probably Buddhist.

40. Koni Kamar I (Mayar Khadakzai). Chakdara/Badwan/Ghargai/Khadakzai/Mayar. (30 x 10 x 4) m, 780msl. A small residential building divided into three parts; the upper one is a mound with wall structures; the middle has two connected room foundations; the lower one also had wall structures and room foundations. Probably Buddhist.

41. Koni Kamar II (Mayar Khadakzai). Chakdara/Badwan/Ghargai/Khadakzai/Mayar. (30 x 20 x 5) m, 821msl. A high mound with room structures. Probably Buddhist.

42. Kooz Dewalgai (Mayar Khadakzai). Chakdara/Badwan/Ghargai/Khadakzai/Mayar. (100 x 15 x 5)m, 657msl. Wall structures. Pottery. Probably Buddhist.

43. Siro I (Mayar Khadakzai). Chakdara/Badwan/Ghargai/Khadakzai/Mayar. (18 x 12 x 5)m, 709 msl. Structure with a central room and connected walls. Pottery. Buddhist.

44. Siro II (Mayar Khadakzai). Chakdara/Badwan/Ghargai/Khadakzai/Mayar. (10 x 10 x 5)m, 708msl. A residential site, square, with wall structures around a mound. Buddhist.

45. Siro III (Mayar Khadakzai). Chakdara/Badwan/Ghargai/Khadakzai/Mayar. (20 x 10 x 5)m, 759msl. A mound over some wall structures. Buddhist.

46. Siro IV (Mayar Khadakzai). Chakdara/Badwan/Ghargai/Khadakzai/Mayar. (20 x 20 x 3)m, 799msl. Possibly a small residential site later used as a fortress; square in shape and having connected rooms. Probably Buddhist.

47. Siro V (Mayar Khadakzai). Chakdara/Badwan/Ghargai/Khadakzai/Mayar. (10 x 8 x 3)m, 830msl. A mound with some wall structures visible. Buddhist.

48. Siro VI (Mayar Khadakzai). Chakdara/Badwan/Ghargai/Khadakzai/Mayar. (300 x 200 x 3)m, 803msl. A large complex with various mounds and rooms foundations. Buddhist.

49. Nigram (Nigram). Chakdara/Badwan/Ghargai/Khadakzai/Nigram. (150 x 80 x 3)m, 732 msl. A large site consisting of various mounds and rooms and wall structures. Buddhist.

50. Nigram Well (Nigram). Chakdara/Badwan/Ghargai/Khadakzai/Nigram. 3m in diameter x more than 150 feet in depth. This well is still in use; having ashlar masonry inside the well; according to local people this well was used for drinking water but now it is used for irrigation purposes. Buddhist.

51. Nigram Engraving (Trai Nigram). Chakdara/Badwan/Ghargai/Khadakzai/Nigram. (2 x 1 x 0.50) m, 666 msl. This is an engraving on a rock; some parts are clear and look like a man while the meaning of the whole is not clear. Buddhist.

52. Kamargai (Nigram). Chakdara/Badwan/Ghargai/Khadakzai/Nigram. (20 x 15 x 0.5)m, 749msl. This was probably a residential site located on the hilltop; there are two rooms having a path between them, plus two other room foundations. Buddhist.

53. Sandooq Kamar I (Nigram). Chakdara/Badwan/Ghargai/Khadakzai/Nigram. (15 x 5 x 0.50)m, 843msl. This is a two room structure, foundations of the rooms can be seen. Probably Buddhist.

54. Sandooq Kamar II (Degan). Chakdara/Badwan/Ghargai/Nigram/Degan. (150 x 50 x 5)m, 1020msl. This is a large Buddhist stupa and monastery site consisting of various rooms structures, small mounds and a destroyed stupa mound. Buddhist.

55. Salaee Selay (Nigram). Chakdara/Badwan/Ghargai/Nigram/Gularaf. (150 x 30 x 3)m, 750msl. A stupa and monastery site; the stupa mound, wall structures, and room structures can be seen: the stupa has been illegally excavated. Buddhist.

56. Gulatraf I (Nigram). Chakdara/Badwan/Ghargai/Nigram. (10 x 8 x 5)m, 753 msl. A round high mound, probably a stupa but illegally excavated; wall structures around this mound can be seen. Buddhist.

57. Gulatraf II (Nigram). Chakdara/Badwan/Ghargai/Nigram. (10 x 8 x 3)m, 740ml. A small stupa which has been illegally excavated and is now a mound, with wall structures around it. Buddhist.

58. Manrai Tangai (Manrai Tangai). Chakdara/Badwan/Ghargai/Manrai Tangai. (9 x 18)m, 828sml. This is the rock engraving recorded by A.H. Dani; there are six figures on the boulder. In the time of Dani these figures were very clear but now all the figures are damaged. Dated by Dani to 6th - 7th century CE.

59. Dherai (Manrai Tangai). Chakdara/Badwan/Ghargai/Manrai Tanga. (1.50 x 0.5)m, 885msl. A rock engraving with four defaced figures; two are Padmapani while other two are seated Buddha. Dated by Dani to 5th - 6th century CE.

60. Jangi Kall (Manrai Tangai). Chakdara/Badwan/Ghargai/Manrai Tangai. (1.50 x 1)m, 922msl. A rock engraving of two seated figures, one is Padmapani in *lalitasana* and seated on a lotus flower throne while the other one is a seated Buddha. Dated by Dani to 6th-7th century CE.

61. Dherai Manrai (Manrai Tangai). Chakdara/Badwan/Ghargai/Manrai Tangai. (50 x 50 x 5)m, 939msl. This is a huge stupa and monastery site now converted into a mound; wall structures can be seen around the mound. Buddhist.

62. Jangi Kal II (Manrai Tangai). Chakdara/Badwan/Ghargai/Manrai Tangai. (2 x 0.50)m, 930msl. An engraved boulder; four Buddha figures, all the figures have been defaced. Dated by Dani to 6th - 7th century CE.

63. Manro Lower (Manrai Tangai). Chakdara/Badwan/Ghargai/Manrai Tangai. (1.50 x 1)m, 950msl. Engraved boulder with five figures of Buddha; three in preaching pose while the other two are standing Padmapani figures. Dated by Dani to 6th - 7th century CE.

64. Manro Upper (Manrai Tangai). Chakdara/Badwan/Ghargai/Manrai Tangai. (50 x 50 x 2)m, 973msl. A stupa and monastery site, now a mound with some wall structures. Buddhist.

65. Cheenar Manrai (Manrai Tangai). Chakdara/Badwan/Ghargai/Manrai Tangai. (1.50 x 1 x 1)m, 872msl. Rock engraving of two figures; the large one is probably a Padmapani, while the other is small in size and not clear; both figures are defaced. Dated by Dani to 6th - 7th century CE.

66. Manrai Kasai (Manrai Tangai). Chakdara/Badwan/Ghargai/Manrai Tangai. (1 x 0.50)m, 831msl. A rock engraving of a single Buddha figure, now defaced. Probably belonging to 6th - 7th century CE.

67. Shoukay I (ManraiTangai). Chakdara/Badwan/Ghargai/Manrai Tangai. (4 x 3 x 2.50)m, 885msl. A cave facing south located half way up a hill, having a thick coat of soot on interior ceiling. Unknown period.

68. Shoukay II (Manrai Tangai). Chakdara/Badwan/Ghargai/Manrai Tangai. (5 x 4 x 4)m, 885msl. A cave facing south having a thick coat of soot on interior ceiling. Unknown period.

69. Sasan Dandha (Manrai Tangai). Chakdara/Badwan/Ghargai/Manrai Tangai. (200 x 100)m, 1065msl. An area of graves with stone slabs on the top of the hill; according to the local peoples there are graves which have water pitchers and other pots, but on the ground surface the grave layout is not so clear. Pottery. GGC?

70. Dandha Khas (Manrai Tangai). Chakdara/Badwan/Ghargai/Manrai Tangai. (12 x 12 x 1)m, 1133msl. A stupa site. Illegally excavated. Buddhist.

71. Pambazara (Ghargai Payan). Chakdara/Badwan/Ghargai. (30 x 10 x 0.50)m, 850msl. This site is located on the top of the hill, having walls and rooms foundations possibly a residential site. Probably Buddhist.

72. Talasho Manrai (GhargaiBala). Chakdara/Badwan/Ghargai. (30 x 20 x 0.5)m. Probably a residential site located on the top of the hill, the foundations of walls and rooms remain. Probably Buddhist.

73. Banday Sha (Badwan). Chakdara/Jabagai/Badwan/Bandaysha, (100 x 50 x 2)m, 716msl. A mound with some wall structures. Buddhist.

74. Zara Hadira (Bandaysha). Chakdara/Jabagai/Badwan/Bandaysha. (50 x 20 x 0.2)m, 715msl. An ancient graveyard, according to the local peoples it belongs to the Kafirs (non Muslims). In this graveyard some of the graves are directed north south while some of the graves are east-west; all the graves are made by the local river stones. GGC?/Islamic?.

75. Outaar Manrai (Outaar). Chakdara/Jabagai/Badwan/Bandaysha/Outhaar. (200 x 10 x 5)m, 755msl. A very large stupa and monastery. Illegally excavated. Buddhist.

76. Peryano Ghonday I (Outaar). Chakdara/Jabagai/Badwan/Bandaysha/Outaar, (15 x 10 x 5)m, 811msl. A mound with some sections of visible wall structures and rooms. Buddhist.

77. Peryano Ghonday II (Outaar). Chakdara/Jabagai/Badwan/Bandaysha/Outaar. (100 x 100 x 5)m, 720msl. A stupa and monastery site. There are four mounds at the site where wall structures and rooms and some corner bastions can be seen. Buddhist.

78. Paloso Dherai (Bandaysha). Chakdara/Jabagai/Badwan/Bandaysha. (180 x 100 x 5)m, 687msl. A small shallow mound. Illegally excavated. Period unknown.

79. Saparay Barikao (Barikao). Chakdara/Jabagai/Badwan/Barikao. (80 x 15 x 1)m, 819msl. This site has three small mounds, and small portions of the wall structures and foundations of a room can be seen. Buddhist.

80. Sapari Banda I (Barikao). Chakdara/Jabagai/Badwan/Barikao. (10 x 10 x 1.50)m, 841msl. Some wall foundations, large numbers of potsherds and small broken pieces of sculptures can be seen on the surface. Buddhist .

81. Sapari Banda II (Barikao). Chakdara/Jabagai/Badwan/Barikao. (5 x 5 x 0.50)m, 980msl. Room foundations, possibly residential or connected to a stupa. Buddhist.

82. Koee Leeko (Leeko). Chakdara/Jabagai//Badwan/Leeko. (200 x 50 x 2)m, 723msl. This site consists of various mounds, some room structures and wall foundations. Most mounds have been illegally excavated. To the south of the site there is a boulder on which a figure can be seen but this figure cannot be identified as it has been defaced, and towards the east there is another oblong object depicted under a rock shelter. Buddhist.

83. Aba Gat (Swato Banda). Chakdara/Damkot/Jabagai/Swatobanda. (20 x 10 x 3)m, 764msl. small mound,wall structures and room foundations are visible to the north and west of the mound. Illegally excavated. Period unknown.

84. Swato Banda. Chakdara/Damkot/Jabagai/Swatobanda. (50 x 20 x 4)m, 798msl. Two mounds. Pottery and small pieces of stone sculptures, plus dressed stone. Buddhist.

85. Jabagai. Chakdara/Damkot/Jabagai. (80 x 20 x 2)m, 805msl. This site has been excavated and recorded by Dani. Mounds, with foundations and walls of monastery. Buddhist.

86. Traee Ghundai (Jabagai). Chakdara/Damkot/Jabagai. (15 x 5 x 3)m, 818msl. A small mound with wall structures. Pottery. Buddhist.

87. Swato Banda. Chakdara/Damkot/Jabagai. (4 x 1.50 x 2)m, 675msl. A small boulder having nine Buddha figures, the upper two and the lower four are in seated position while the lower remaining three are standing Padmapani. Recorded by Dani. Buddhist.

88. Damkot. Chakdara/Damkot. (2 x 2, and 1 x 1)m, 681msl. Two small boulders on which figures are engraved. Six seated Buddha and Padmapani; four figures on the larger boulder and two on the smaller. Recorded by Dani. Buddhist.

89. Shamlai. Chakdara/Shamlai. (15 x 15 x 0.5)m, 702msl. A mound with river stones and pottery on the surface. Buddhist.

90. Churchill Picket. Chakdara. (16 x 8 x 10)m, 797msl. Military picket used by Sir Winston Churchill when he was in the British Army in 1898. Now suffering earthquake damage. Late 19th C.

91. Damkot. Chakdara/Damkot. (20 x 10 x 2)m, 818msl. Large Buddhist monastic site. Excavated and published by Dani. Buddhist.

92. Chatpat Hill. Chakdara/Damkot/Chatpat hill. (2.50 x 2 x0.5)m, 847msl. Some wall structures remain. Illegally excavated. Excavated and published by Dani. Buddhist.

93. Chatpat. Chakdara/Chatpat. (30 x 20 x 2)m, 774msl. A large Stupa and monastery, with various small cells and votive stupas. Excavated and published by Dani. Buddhist.

94. Ramyal I. Chakdara/Chatpat/Ramyal. (45 x 20 x 1.50)m, 740msl. Walls and structures made of river stones. Pottery. Buddhist.

95. Ramyal II. Chakdara/Chatpat/Ramyal II. (100 x 30 x 50)m, 744msl. An illegally excavated stupa? River stones and pottery. Probably Buddhist.

96. Ramyal. Chakdara/Chatpat/Ramyal. (20 x 15 x 2)m, 774msl. The site is located in Ramyal village. Many walls and wall foundations. Probably Buddhist.

97. Khandaro. Chakdara/Chatpat/Ramyal. (200 x 150)m, 746msl. A very large stupa and monastery. Buddhist.

98. Gharo Shah. Chakdara/Chatpat/Ramyal/Gharo Shah. (100 x 50 x 2)m, 746 msl. Wall structures. River stones and pottery. Buddhist.

99. Chakdara Bridge. Chakdara. (200 x 5 x 6)m, 672msl. Crossing the Swat River, leading to Dir and Chitral. The Bridge was made by Richerdson and Crudaus Engineers of Bombay in 1902, in the time of the British Government. Early 20th C.

100. Chakdara Fort. Chakdara. The fort is located on the right bank of the Swat River, the present fort was built in the British period but an earlier fort was built in the time of Mughal emperor Akbar in 1518 CE. The fort was built by Zain Kahn Koka against the Yusufzais. British Period.

101. Mula Baba. Chakdara Museum/Chakdara Dherai/Distt Hospital Chakdara/Mula Baba. (30 x 30 x 1.50)m, 690msl. The mausoleum of the Muslim saint Mula Baba is built on a Buddhist stupa and monastery. Also modern graves. Buddhist/Islamic.

102. Barorai Koee. Chakdara/Darbar/Ali mast/Gulmuqam/Barorai. (80 x 40 x 10)m, 811msl. Wall structures. Pottery, dressed stone. Buddhist.

103. Barorai Kandao. Chakdara/Darbar/Ali mast/Gulmuqam/Barorai Kandao. (20 x 15 x 1.50)m, 874msl. Four ancient wells which are still supply water to the community, according to the local peoples these wells are pre-Islamic. Buddhist?/Islamic.

104. Kafiri Ghundai (Alimast). Chakdara/Darbar/Alimast/Sharif Abad/Kafiri Ghundai. (10 x 8 x 0.5) m, 828msl. A small mound. Illegally excavated. Pottery. Buddhist.

105. Chinar Cheena (Alimast). Chakdara/Darbar/Alimast/Sharif Abad/Cheenar Cheena. (30 x 30 x 3) m, 767msl. A very large site, with wall structures and room foundations and pathways visible on the surface. Illegally excavated. Buddhist.

106. Khazano Dherai (Alimast). Chakdara/Darbar/Alimast/Sharif Abad/Khazano Dherai. (20 x 20 x 0.5)m, 748 msl. Some evidence of walls made of river stones. Illegally excavated. Buddhist.

107. Dara Kataroo (Dara). Chakdara/Darbar/Alimast/Ramora/Dara. (180 x 30 x 0.5)m, 761 msl. Mostly destroyed. Buddhist.

108. Serai Kelay (Ramora). Chakdara/Darbar/Alimast/Ramora/Dara/Seray Kelay. 50m x (30 x 2)m, 759msl. A mound, largely destroyed. Buddhist.

109. Habib Koroona I (Dara). Chakdara/Darbar/Alimast/Ramora/Dara/Habib Koroona. (100 x 50 x 2)m, 803 msl. Various rooms and wall foundations. Buddhist.

110. Habib Koroona II (Dara). Chakdara/Darbar/Alimast/Ramora/Dara/Habib Koroona. (80 x 10 x 2)m, 932msl. Possibly residential, there are a large number of rooms, but no stupa remains. Buddhist.

111. Habib Koroona III (Dara). Chakdara/Darbar/Alimast/Ramora/Dara/Habib Koroona. (30 x 20 x 1)m, 872 msl. Possibly residential, there are a few rooms, but no stupa remains. Buddhist.

112. Habib Koroona IV (Dara). Chakdara/Darbar/Alimast/Ramora/Dara/Habib Koroona. (100 x 50 x 3)m, 833 msl. Possibly monastic, there are various small and large rooms. Buddhist.

113. Rostam Banda (Dara). Chakdara/Darbar/Alimast/Ramora/Dara/Habib Koroona. (80 x 20 x 3) m, 871 msl. A residential site divided into two parts, one appears to be a complete house, the second has room foundations. Buddhist.

114. Naray Tangay I (Dara, Sharabkoee). Chakdara/Darbar/Alimast/Ramora/Dara/Habib Koroona/ Sharabkoee. (70 x 10 x 3)m, 902 msl. There is a central (?) on top of the hill, while other room foundations can be seen below down the hillside. Buddhist.

115. Naray Tangay II (Dara, Sharabkoee). Chakdara/Darbar/Alimast/Ramora/Dara/Habib Koroona/Sharabkoee. (30 x 10 x 2)m, 975 msl. There is a main stupa mound plus some room foundations. Illegally excavated. Buddhist.

116. Naray Tangay III (Dara, Sharabkoee). Chakdara/Darbar/Alimast/Ramora/Dara/Sharabkoee. (20 x 15 x 3)m, 862 msl. Walls, room foundations, and a short boundary wall. Buddhist.

117. Naray Tangay IV (Dara, Sharabkoee). Chakdara/Darbar/Alimast/Ramora/Dara/Sharabkoee. (120 x 10 x 1.50)m, 949 msl. Four rooms, and possible boundary wall. Buddhist.

118. Naray Tangay V (Dara, Sharabkoee). Chakdara/Darbar/Alimast/Ramora/Dara/Sharabkoee. (80 x 15 x 2)m, 884 msl. There are various room foundations on the hill. Many walls and foundations. Pottery. Buddhist.

119. Shaitan Tangay I (Dara, Shaitan Tangay). Chakdara/Darbar/Alimast/Ramora/Dara/Sharabkoee/ Shaitan Tangay. (30 x 10 x 0.5)m, 865 msl. Wall structures and a mound, possibly a stupa. Illegally excavated. Buddhist.

120. Shaitan Tangay II (Dara, Shaitan Tangay). Chakdara/Ramora/Dara/Sharabkoee/Shaitan Tangay. (15 x 5 x 3)m, 942 msl. One mound which may be a small stupa, plus a room structure. Buddhist.

121. Shaitan Tangay III (Dara, Shaitan Tangay) Chakdara/Ramora/Dara/Sharabkoee/Shaitan Tangay. (20 x 15 x 3)m, 895 msl. Possibly residential, wall structures and room foundations. Buddhist.

122. Shawa Banda I (Shawa). Chakdara/Gulabad/Teendodag/Shawa. (15 x 10 x 0.5)m, 888 msl. Some wall foundations, plus three well shaped structures dug under rocks. Buddhist.

123. Banda Cheena (Shawa). Chakdara/Gulabad/Teendodag/Shawa. (30 x 10 x 0.5)m, 837 msl. Cheena (spring) was an ancient water source for the valley, mound and wall structures. Buddhist.

124. Shawa Banda II (Shawa). Chakdara/Gulabad/Teendodag/Shawa. (150 x 50 x 3)m, 838 msl. A large monastery, various wall structures and room foundations. Pottery. Buddhist.

125. Shawa Banda III (Shawa). Chakdara/Gulabad/Teendodag/Shawa. (15 x 10 x 1)m, 874 msl. A small stupa, wall structures. Illegally excavated. Buddhist.

126. Bandi Khana (Shawa). Chakdara/Gulabad/Teendodag/Shawa. (50 x 20 x 2)m, 915 msl. A small stupa site, plus cells and small rooms. Illegally excavated. Buddhist.

127. Nangray Kotak (Shawa). Chakdara/Gulabad/Teendodag/Shawa. (100 x 100 x 4)m, 864.msl. A mound with wall structures. Pottery. Buddhist.

128. Khoongay Ziarat (Shawa). Chakdara/Gulabad/Teendodag/Shawa. (4.50 x 1.50 x 1)m, 917msl. A large grave. Illegally excavated. Period unknown.

129. Qalagai (Shawa). Chakdara/Gulabad/Teendodag/Shawa/Kamal Khan Cheena. (400 x 100 x 5)m, 1266 msl. A large stupa and monastery located on the top of the hill between Swat and Dir. Illegally excavated. Pottery. Buddhist.

130. Wara Qalagai (Shawa). Chakdara/Gulabad/Teendodag/Shawa/Kamal Khan Cheena. (100 x 50 x 3)m, 1232 msl. Large site. Illegally excavated. Buddhist.

131. Khaza Gat. Chakdara/Gulabad/Teendodag/Shawa/Kamal Khan Cheena. (2 x 1 x 1)m, 1120 msl. An engraved stone, there are various flowers, geometrical designs and unknown figures depicted on the rock. Possibly Buddhist.

132. Dooparay Ghara (Shawa). Chakdara/Gulabad/Teendodag/Shawa/Kamal Khan Cheena. (10 x 10 x 0.5)m, 1085 msl. A small site with ruined wall structures and foundations of small rooms. Buddhist.

133. Dooparay Oba (Shawa). Chakdara/Gulabad/Teendodag/Shawa/Kamal Khan Cheena. (35 x 10 x 1)m, 1071 msl. A small stupa site with wall structures and room foundations. Buddhist.

134. Bukhara Cave (Kamal Khan Cheena). Chakdara/Gulabad/Teendodag/Shawa/Kamal Khan Cheena. (10 x 4 x 4)m, 898 msl. A cave carved into the rock. The entrance to the cave is just like an arch. Wide and large cave, signs of picks on the walls and some niches. Possibly Buddhist.

135. Tezandai I (Kamal Khan Cheena). Chakdara/Gulabad/Shawa/Teendodag/Kamal Khan Cheena. (15 x 10)m, 942 msl. A small mound with wall structures and room foundations. Illegally excavated. Buddhist.

136. Tenzandai II. (Kamal Khan Chenna). Chakdara/Gulabad/Shawa/Teendodag/Kamal Khan Cheena. (12 x 8 x 1.50)m, 972msl. A mound. Illegally excavated. Buddhist.

137. Bukhara Mound (Kamal Khan Cheena). Chakdara/Gulabad/Shawa/Teendodag/Kamal Khan Cheena. (10 x 10 x 2)m, 967msl. A small mound, wall structures and ruined foundations of rooms. Buddhist.

138. Kamal Khan Ghara (Kamal Khan Cheena). Chakdara/Gulabad/Shawa/Teendodag/Kamal Khan Cheena. (150 x 30 x 5)m, 1002msl. A large site, with stupa, wall structures. Stupa illegally excavated, the rest of the site is intact. Buddhist.

139. Duparai Khas I (Kamal Khan Cheena). Chakdara/Gulabad/Shawa/Teendodag/Kamal Khan Cheena, (20 x 15 x 1)m, 1040msl. A small mound, wall structures, room foundations. Illegally excavated. Buddhist.

140. Duparai II (Kamal Khan Cheena). Chakdara/Gulabad/Shawa/Teendodag/Kamal Khan Cheena, (20 x 15 x 1)m, 996msl. A small mound, wall structures and room foundations. Illegally excavated. Buddhist.

141. Peetao Kamar I (Koee). Chakdara/Gulabad/Shawa/Kamal Khan Cheena/Koee (15 x 10 x 5)m, 1040msl. Various wall structures and room foundations. Buddhist.

142. Peetao Kamar II (Koee). Chakdara/Gulabad/Shawa/Kamal Khan Cheena/Koee. (14 x 11 x 3)m, 1050msl. Various room foundations and wall structures. Illegally excavated. Buddhist.

143. Peetao Kamar III (Koee). Chakdara/Gulabad/Shawa/Kamal Khan Cheena/Koee. (18 x 15 x 3) m, 1030 msl. Wall structures and room foundations. Illegally excavated. Buddhist.

144. Paloona (Koee) Chakdara/Gulabad/Shawa/Kamal Khan Cheena/Koee. (1 x 1 x 0.1)m, 942msl. This is a factory site producing *chakras* for the nearby Buddhist sites. There are 12 *chakras* in production, some of them are broken while some are abandoned part way trhough manufacture. Buddhist.

145. Sheikh Ali Baba (Koee) Chakdara/Gulabad/Shawa/Kamal Khan Cheena /Koee. (100 x 15 x 0.5)m, 878msl. An ancient cemetery site, one grave is extra large in size and the other graves are of normal size. According to local people grave goods have been found in graves. GGC?/ Islamic.

146. Sheikh Ali Baba (Koee) Chakdara/Gulabad/Shawa/Kamal Khan Cheena/Koee. (150 x 150 x 5) m, 894msl. A large, rounded mound. Some walls. Pottery. Buddhist.

147. Koee Ghundai I (Koee) Chakdara/Gulabad/Shawa/Kamal Khan Cheena/Koee. (30 x 10 x 3)m, 903msl. A small mound. Illegally excavated. Budddhist.

148. Koee Ghundai II (Koee) Chakdara/Gulabad/Shawa/Kamal Khan Cheena/Koee. (15 x 15 x 5)m, 925msl. A small mound, some wall structures. Illegally excavated. Buddhist.

149. Koee Cheena (Koee) Chakdara/Gulabad/Shawa/Kamal Khan Cheena/Koee. (2 x 1.50 x 3)m, 938msl. This is a natural water resource using since the Buddhist time, there are some wall structures of diaper masonry inside the spring. Buddhist.

150. Kandharey I (Shah Alam Baba) Chakdara/Gulabad/Shawa/Kamal Khan Cheena/Koee/Shahalam Baba. (30 x 15 x 1)m, 1038 msl. A small site, various rooms and wall structures, a small well shape structure. Illegally excavated. Buddhist.

151. Kandharey II (Shah Alam Baba) Chakdara/Gulabad/Shawa/Kamal Khan Cheena/Koee/Shahalam Baba. (10 x 5 x 2)m, 1070msl. Asmall site, two rooms, possibly a stupa. Illegally excavated. Buddhist.

152. Dherai Kandharey (Shah Alam Baba) Chakdara/Gulabad/Shawa/Kamal Khan Cheena/Koee/Shah Alam Baba. 1060 msl. Various rooms and wall structures. Buddhist.

153. Kandharo Ghundai I (Shah Alam Baba) Chakdara/Gulabad/Shawa/Kamal Khan Cheena/Koee/ Shah Alam Baba. (30 x 15 x 3)m, 1013 msl. A small site, possibly a residential site or a small fort. Buddhist.

154. Kandharo Ghundai II (Shah Alam Baba). Chakdara/Gulabad/Shawa/Kamal Khan Cheena/Koee/ Shah Alam Baba. (30 x 20 x 2)m, 1004 msl. A small mound. Buddhist.

155. Kandharo Ghundai III (Shah Alam Baba). Chakdara/Gulabad/Shawa/Kamal Khan Cheena/Koee/ Shah Alam Baba. (50 x 45 x 2)m, 1061 msl. Some wall structures. Buddhist.

156. Brij Manrai (Dope). Chakdara/Gulabad/Shawa/Koee/Shah Alam Baba/Dope. (100 x 100 x 2)m, 1087 msl. A very large, many wall structures and rooms foundations underneath modern village. A model stupa carved onto a nearby rock. Buddhist.

157. Kautar Gat (Dope). Chakdara/Gulabad/Shawa/Shah Alam Baba/Dope. (30 x 20 x 1)m, 1011 msl. A small stupa shape, plus some rooms. Illegally excavated. Buddhist.

158. Kandharo Patey (Dope). Chakdara/Gulabad/Shawa/Shah Alam Baba/Dope. (100 x 100 x 1.50) m, 946 msl. A large site, wall structures. Pottery. Buddhist.

159. Bara Serai (Tazagram). Chakdara/Gulabad/Shawa/Tazagram. (150 x 100 x 1)m, 892 msl. A large site, a lot of wall structures. Illegally excavated. Pottery. Buddhist.

160. Serai Ghundai (Tazagram). Chakdara/Gulabad/Shawa/Tazagaram. 80m x 15m x 2m, 934 msl. Wall structures. Buddhist.

161. Koee Tangai (Keetyarai). Chakdara/Gulabad/Shawa/Tazagaram/Keetyarai. (100 x 70 x 2)m, 930msl. A large site, some wall structures. Buddhist.

162. Chatpat graves (Chatpat). Chakdara/Board of Intermediate and Secondary Education Building. (50 x 30 x 2)m, 724 msl. The site is located behind B.I.S.E.; there are some modern Muslim graves, plus a number of older graves which have very thick local stone cap stones. Excavated and published by Dani. GGC/Islamic.

163. Shamlai graves (Shamlai). Chakdara/Badwan Choke/Shamlai. (30 x 20 x 2)m, 704 msl. A large cemetery of Muslim graves and some ancient graves. GGC?/Islamic.

164. Chatpat mound (Chatpat). Chakdara/B.I.S.E. Building/Chatpat. (30 x 30 x 3)m, 770 msl. A small stupa site and wall structures. Excavated and published by Dani. Buddhist.

165. Bara Shamlai (Shamlai). Chakdara/Shamlai/Bara Shamlai. (15 x 15 x 2)m, 766 msl. A small mound. Illegally excavated. Broken pieces of black schist and broken stucco sculptures. Buddhist.

166. Bara Shamlai Smast (Rock Shelter). Chakdara/Shamlai/Barashamlai. (6 x 4.50 x 2)m, 788msl. A shallow rock shelter site, having a diaper masonry wall structure inside the shelter. A thick smoking coat is seen at the ceiling. It is likely that there has also been modern use of the cave. Buddhist/Modern.

167. Jabagai (graves). Chakdara/Shamlai/Barashamlai/Korsaigat/Jabagai. (100 x 50 x 2)m, 1020 msl. A large cemetery site, with many ancient graves and some Muslim graves. Some wall structures. GGC?/Islamic.

168. Nawabi Bangla (Chakdara). Chakdara/Dir Museum/Tehseeldar Office/OPF Building. (200 x 180 x 0.5)m, 697 masl. A wooden bungalow built in the time of the Nawab of Dir, on an ancient site. Pottery. Animal bones. Buddhist.

169. Chakdara Mandai (Chakdara). Chakdara/Dir Museum/Chakdaramandai. (180 x 80 x 3)m, 682msl. A large mound, some wall structures. Pottery. Buddhist.

170. Keetyarai Graves (Keetyarai). Chakdara/Gulabad/Shawa/Keetyarai. (200 x 100 x 5)m, 929 msl. A large cemetery, with extra large size cap stones just a few inches below the ground surface, re-used in building the village. GGC?/Islamic?

171. Keetyarai Ghundai I (Keetyarai). Chakdara/Gulabad/Shawa/Keetyarai. (80 x 20 x 5)m, 1024 msl. A large site comprising two mounds. Illegally excavated. Buddhist.

172. Keetyarai Ghundai II (Keetyarai). Chakdara/Gulabad/Shawa/Keetyarai. (50 x 50 x 2)m, 1038 msl. Various wall structures and room foundations, and cut stone was used for the buildings. Buddhist.

173. Keetyarai Ghundai III (Keetyarai). Chakdara/Gulabad/Shawa/Keetyarai. (30 x 10 x 3)m, 1055 msl. A small stupa with room foundations and wall structures. Illegally excavated. Sculpture pieces. Buddhist.

174. Shabaan Ghundai I (Shabaan). Chakdara/Gulabad/Shawa/Keetyarai/Shabaan. (80 x 20 x 3)m, 1007msl. Room foundations and wall structures. Buddhist.

175. Shabaan Ghundai II (Shabaan). Chakdara/Gulabad/Shawa/Keetyarai/Shabaan. (10 x 10 x 0.5)m, 1000 msl. A small site, wall structures and room foundations. Buddhist.

176. Dwa Jangai (Keetyarai). Chakdara/Gulabad/Shawa/Keetyarai. (50 x 30 x 0.5)m, 1002 msl. A large site with wall structures and small mounds. Buddhist.

177. Karkano Dherai (Keetyarai). Chakdara/Gulabad/Shawa/Keetyarai. (15 x 10 x 2)m, 1060msl. A small stupa with wall structures. Illegally excavated. Buddhist.

178. Kala Dherai I (Sanaam). Chakdara/Gulabad/Shawa/Keetyarai/Sanaam. (100 x 80 x 2)m, 1064 msl. A large stupa site. Buddhist.

179. Kala Dherai II (Sanaam). Chakdara/Gulabad/Shawa/Keetyarai/Sanaam. (100 x 70 x 2)m, 1080 msl. A monastic site, wall structures and room foundations can be seen on the top of the mound but there is no stupa. Buddhist.

180. Grah (Bara Bambolai). Chakdara/Gulabad/Shawa/Keetyrai/Asban/Bambolai. (100 x 100 x 5)m, 1172msl. A large settlement site, many wall structures and room foundations. Buddhist.

181. Bambolai Dherai (Bara Bambolai). Chakdara/Gulabad/Shawa/Keetyrai/Asban/Bambolai. (250 x 50 x 2)m, 1274 msl. A large site having five small mounds. Buddhist.

182. Wolo Tangai (Bara Bambolai). Chakdara/Gulabad/Shawa/Keetyrai/Asban/Bambolai. (50 x 10 x 0.5)m, 1160 msl. A mound and wall structures. Buddhist.

183. Jalandhar Dherai (Kooza Bambolai). Chakdara/Gulabad/Shawa/Keetyrai/Asban/Bambolai. (80 x 30 x 2)m, 1118 msl. A stupa site, some foundations. Illegally excavated. Buddhist.

184. Shaway Kus (Kooza Bambolai). Chakdara/Gulabad/Shawa/Keetyrai/Asban/Bambolai. (10 x 10 x 2)m, 1130msl. A small mound. Illegally excavated. Buddhist.

185. Bambolai (Kooza Bambolai). Chakdara/Gulabad/Shawa/Keetyrai/Asban/Bambolai. (80 x 50 x 3)m, 1150 msl. Various rooms and walls structures. Excavated and published by Dani. Buddhist.

186. Jabagai (Qala sha). Chakdara/Gulabad/Shawa/ Keetyrai/Asban/Jabagai. (10 x 10 x 2)m, 1125msl. A small mound, some wall structures. Buddhist.

187. Bandasha (Bandasha). Chakdara/Gulabad/Shawa/Keetyrai/Asban/Jabagai/Bandasha. (30 x 30 x 0.5)m, 1165 msl. A large site. Pottery. Buddhist.

188. Gul Dherai I (Asban). Chakdara/Gulabad/Shawa/Keetyrai/Asban. (50 x 50 x 5)m, 1058 msl. A large site, wall structures. Buddhist.

189. Gul Dherai II (Asban). Chakdara/Gulabad/Shawa/Keetyrai/Asban. (30 x 20 x 3)m, 1141 msl. A stupa site, wall structures. Illegally excavated. Buddhist.

190. Gul Dherai III (Asban). Chakdara/Gulabad/Shawa/Keetyrai/Asban. (10 x 10 x 1.50)m, 1173 msl. A small stupa, wall structures. Illegally excavated. Buddhist.

191. Deenga Dherai I (Asban). Chakdara/Gulabad/Shawa/Keetyrai/Asban. (15 x 10 x 0.5)m, 1190msl. A small sitw, some wall structures and a round wall foundation can be seen, possibly for stupa. Buddhist.

192. Deenga Dherai II (Asban). Chakdara/Gulabad/Shawa/Keetyrai/Asban. (100 x 50 x 5)m, 1190 msl. A large site, various wall structures, possibly stupa and monastery sites. Buddhist.

193. Deenga Dherai III (Asban). Chakdara/Gulabad/Shawa/Keetyrai/Asban. (30 x 10 x 1.50)m, 1217msl. A small site, wall structures. Buddhist.

194. Soor Landai (Hamza Banda). Chakdara/Gulabad/Shawa/Keetyrai/Asban. (25 x 15 x 3)m, 1195msl. Some wall structures. Buddhist.

195. Hamza Banda. Chakdara/Gulabad/Shawa/Keetyrai/Asban. (50 x 20 x 5)m, 1272msl. A large stupa, various wall structures and room foundations, plus a large stupa mound. Illegally excavated. Buddhist.

196. Don Kacha Baba (Butqala). Chakdara /Gulabad/Shawa/Khanpur/Asban. (50 x 50 x 0.5)m, 1041msl. A grave site with many ancient graves, plus some modern Muslim graves. Unknown period/ GGC?/Islamic.

197. But Qala (Asban). Chakdara/Gulabad/Shawa/Asban/Butqala. (10 x 10 x 0.5)m, 1188msl. A small mound now occupied by the modern mosque. Pottery. Buddhist.

198. Mashomano Hadira (Butqala). Chakdara/Gulabad/Shawa/Asban/Butqala. (30 x 15 x 0.5)m, 1242 msl. An ancient grave yard locally known as the graveyard of the children. Plus some more modern graves. GGC?/Islamic.

199. Sar Hadira (Butqala). Chakdara/Gulabad/Shawa/Asban/Butqala. (10 x 10 x 1)m, 1314 msl. A small ancient grave site, plus some modern Islamic graves. GGC?/Islamic.

200. Sadar Baba (Butqala). Chakdara/Gulabad/Shawa/Asban/Butqala. (50 x 30 x 2)m, 1495 msl. A Muslim graveyard famous for a Muslim saint, plus various ancient graves at different to the Muslim graves. GGC?/Islamic.

201. Bagh Dherai I (Khanpur). Chakdara/Gulabad/Shawa/Khanpur/Baghdherai. (50 x 30 x 2)m, 1096 msl. Wall structures on a mound. Illegally excavated. Buddhist.

202. Bagh Dherai II (Charg Patay,Khanpur). Chakdara/Gulabad/Shawa/Khanpur/Baghdherai. (50 x x 1)m, 1116 msl. A large site, some wall structures and small mounds. Buddhist.

203. Bagh Dherai III (Khanpur). Chakdara/Gulabad/Shawa/Khanpur/Baghdherai. (20 x20 x 3)m, 1097 msl. A small site, some wall structures. Buddhist.

204. Saleem Shah I (Khanpur). Chakdara/Gulabad/Shawa/Khanpur/Baghdherai/Saleem Shah. (80 x x 2)m, 1124 msl. A large site, possibly a stupa and monstery, wall foundations of many rooms Buddhist.

205. Saleem Shah II (Khanpur). Chakdara/Gulabad/Shawa/Khanpur/Baghdherai/Saleem Shah. (80 35 x 3)m, 1098 masl. A large site, a mound. Pottery. Buddhist.

206. Mora Dherai (Khanpur). Chakdara /Gulabad/Shawa/Khanpur/Baghdherai/Saleem Shah. (20 x 15 x 1)m, 1067 msl. A small mound, some wall structures. Pottery. Buddhist.

207. Kaskay Ziyarat (Bara Teknai). Chakdara/Gulabad/Shawa/Khanpur/Teknai. (40 x 30 x 0.5 1138 msl. Ancient graves, some oriented north-south, while most are east-west in direction Some have been illegally excavated. GGC?

208. Zangal Dherai (Khanpur). Chakdara/Gulabad/Shawa/Khanpur. (30 x 30 x 2)m, 1028 msl. A mound, possibly a stupa base. Some wall structures. Pottery. Buddhist.

209. Zarbaig Ghondai I (Bataan). Chakdara/Gulabad/Shawa/Keetyrai/Maina/Bataan. (65 x 20 x 1.5 m, 1060 msl. Two small mounds, one possibly a stupa, and wall structures. Illegally excavate Buddhist.

210. Zarbaig Ghondai II (Bataan). Chakdara/Gulabad/Shawa/Keetyrai/Maina/Bataan. (50 x 35 x 1017 msl. A small site, a mound with wall structures and room foundations. Buddhist.

211. Zarbaig Ghondai III (Bataan). Chakdara/Gulabad/Shawa/Keetyrai/Maina/Bataan. (30 x 15 x 2 m, 962 msl. A small site, wall structures. Buddhist.

212. Zarbaig Ghondai IV (Bataan). Chakdara/Gulabad/Shawa/Keetyrai/Maina/Bataan. (80 x 20 x _ m, 963 msl. A stupa mound, wall structures. Pottery. Buddhist.

213. Shawa Dherai (Proper Shawa). Chakdara/Gulabad/Teendodag/Shawa. (100 x 100 x 3)m, msl. A large mound. Pottery. Buddhist.

214. Khonano Dherai (Proper Shawa). Chakdara/Gulabad/Teendodag/Shawa. (30 x 30 x 1)m, 835 msl. Some ancient graves, plus modern Muslim graves and one large grave of a Muslim saint. Pottery. GGC?/Islamic.

215. Tapaso Dherai (Khwajal). Chakdara/Gulabad/Teendodag/Shawa/Khwajal. (70 x 35 x 2)m, 861 msl. A large mound, wall structures. Pottery. Buddhist.

216. Zarbaig Patay (Bataan). Chakdara/Gulabad/Shawa/Kityarai/Maina/Bataan. (100 x 40 x 0.5)m. A large site. Wall structures. Buddhist.

217. Andan Dherai (Gulabad). Chakdara/Gulabad/Ouch Road/Gulabad Degree College. (73 x 33.50 x 7)m, 805msl. A large stupa site; main stupa and 10 votive stupas. Excavated and published by Dani. Buddhist.

218. Kaso Sha (Ouch). Chakdara/Gulabad/Andandherai/Kaso sha Ouch. (20 x 20 x 2)m, 867msl. A small mound. Stone pestles and pottery. Buddhist.

219. Pacha Dherai I (Ouch). Chakdara/Gulabad/Andandherai/Bataan Road/Pacha Dherai. (180 x 80 x 2)m, 872 msl. A large site with a diaper masonry wall, structures and small mounds. Illegally excavated. Buddhist.

220. Pacha Dherai II (Ouch). Chakdara/Gulabad/Andandherai/Bataan Road/Pachadherai. (100 x 100 x2)m, 899 msl. A large site, a mound and some structures. Illegally excavated. Buddhist.

221. Soorgolo Koee (Ouch). Chakdara/Gulabad/Andandherai/Bataan Road/Pachadherai. (2 x 2 x 20) m, 893 msl. An ancient well with diaper masonry. Buddhist.

222. Pacha Dherai III (Ouch). Chakdara/Gulabad/Andandherai/Bataan Road/Pachadherai. (60 x 30 x 20)m, 880 msl. A large mound. Buddhist.

223. Eanzar Katkay (Ouch). Chakdara/Gulabad/Andandherai/Bataan Road/Pachadherai. (50 x 50 x 2) m, 896 msl. A small site. Pottery. Buddhist.

224. Spairo Ghondai (Ouch). Chakdara/Gulabad/Andandherai/Bataan Road/Pachadherai. 10m x 10m x 0.5m, 944 msl. A building in the shape of a picket, foundations visible on a mound. Buddhist?/ Hindu Shahi.

225. Kandharo (Ouch). Chakdara/Gulabad/Andandherai/Ouch. (100 x 80 x 3)m, 745msl. A large site. A mound and wall structures. Illegally excavated. Buddhist.

226. Miana (Ouch). Chakdara/Gulabad/to the north east of Andandherai/Ouch. (30 x 30 x 2)m, 816msl. A small stupa plus a small mound, possibly a votive stupa. Wall structures. Illegally excavated. Buddhist.

227. Serai (Kotigram). Chakdara/Gulabad/Ouch/Kotigram. (100 x 40 x 2)m, 1002msl. Wall structures. Buddhist.

228. Shahabad Ghondai I (Shahabad). Chakdara/Gulabad/Ouch/Shahabad. (30 x 30 x 0.5)m, 1175 msl. A small site, a mound, some rooms foundations and wall structures. Illegally excavated. Buddhist.

229. Shahabad Ghondai II (Shahabad). Chakdara/Gulabad/Ouch/Shahabad. (20 x 15 x 0.5)m, 1197msl. A small stupa, some wall structures. Illegally excavated. Buddhist.

230. Shahabad Ghondai III (Shahabad). Chakdara /Gulabad/Ouch/Shahabad. (20 x 20 x 0.5)m, 1157 msl. A small site with room foundations and wall structures. Illegally excavated. Buddhist.

231. Tapaso Garh I (Ouch). Chakdara/Gulabad/Andandherai/Ouch. (15 x 12 x 2)m, 900 msl. A small site, possibly residential. Wall structures and room foundations, a small portion of diaper masonry wall. Illegally excavated. Buddhist.

232. Tapaso Garh II (Ouch). Chakdara/Gulabad/Andandherai/Ouch. (30 x 25 x 0.5)m, 914 msl. A small site, some wall structures. Buddhist.

233. Ghalanai (Shahabad). Chakdara/Gulabad/Andandherai/Ouch/Shahabad. (15 x 13 x 0.5)m, 1013 msl. A small site, wall structures and room foundations. Illegally excavated. Buddhist.

234. Kandharo (Khairabad). Chakdara/Gulabad/Andandherai/Ouch/Khairabad. (35 x 25 x 2)m, 1073 msl. A small site, some wall structures. Pottery. Buddhist.

235. Khairabad (Khairabad proper). Chakdara/Gulabad/Andandherai/Ouch/Khairabad. (200 x 200 x 6) m, 1111 msl. A large site, a mound possibly a stupa. Some wall structures from 1 to 6 m can be seen. Buddhist.

236. Mial Kandao (Khairabad). Chakdara/Gulabad/Andandherai/Ouch/Khairabad. (15 x 15 x 2)m, 1203 msl. A small site, some wall structures of diaper masonry. Buddhist.

237. Nakhtaro Ghondai I (Khairabad). Chakdara/Gulabad/Andandherai/Ouch/Khairabad. (20 x 20 x 0.5)m, 1231 msl. A small site, some wall structures. Pottery. Buddhist.

238. Nakhtaro Ghondai II (Khairabad). Chakdara/Gulabad/Andandherai/Ouch/Khairabad. (25 x 25 x 2)m, 1241 msl. A small site, some ancient walls and modern walls of reused stones. Pottery. Buddhist.

239. Nakhtaro Ghondai III (Khairabad). Chakdara/Gulabad/Andandherai/Ouch/Khairabad. (21 x 15 x 1)m, 1241 msl. A small site, some reused stones can be seen around the site. Buddhist.

240. Barsarawar (Khairabad). Chakdara/Gulabad/Andandherai/Ouch/Khairabad. (250 x 200 x 3)m, 1222 msl. A very large stupa and monastery site. There are various small rooms, cells and wall structures. The stupa has been cleared for agriculture.

241. Kaar Ghondai (Khairabad). Chakdara/Gulabad/Andandherai/Ouch/Khairabad. (50 x 50 x 1)m, 1133 msl. A large stupa, ancient walls and new modern walls of the resued stones. Buddhist.

242. Kafiri Cheena (Khairabad). Chakdara/Gulabad/Andandherai/Ouch/Khairabad. (17 x 12 x 1.50) m, 1137 msl. A small site, with wall structures. The site is famous for a natural spring which is still in use giving supply water for the villagers. Buddhist.

243. Lolako Kamar I (Khairabad). Chakdara/Gulabad/Andandherai/Ouch/Khairabad. (20 x 20 x 2)m, 1098 msl. A small site, some wall structures in diaper masonry can be seen. Buddhist.

244. Lolako Kamar II (Khairabad). Chakdara/Gulabad/Andandherai/Ouch/Khairabad. (60 x 38 x 3) m, 1165 msl. A monastery site wtih various rooms, foundations and wall structures. Buddhist.

245. Mulanwaar (Khairabad). Chakdara/Gulabad/Andandherai/Ouch/Khairabad. (80 x 50 x 2)m, 1258 msl. A large site very rich in room foundations and wall structures, more than 20 rooms small and large rooms can be seen. Buddhist.

246. Shnai Kandai I (Khairabad). Chakdara/Gulabad/Andandherai/Ouch/Khairabad. (40 x 40 x 5)m, 1188 msl. A small monastery site, various rooms foundation and wall structures can be seen. Illegally excavated. Pottery. Buddhist.

247. Eanzer Oba (Khairabad). Chakdara/Gulabad/Andandherai/Ouch/Khairabad. (3 x 3 x 1)m, 1227 msl. A destroyed, dried well. The well is made of diaper masonry, signs of another small well, but it is not clear. Buddhist.

248. Peetao Ghondai (Khiarabad). Chakdara/Gulabad/Andandherai/Ouch/Khairabad. (20 x 15 x 2)m, 1332 msl. A small site, various room foundations and wall structures, but not clear if it is a stupa monastery or a resiedential site. Buddhist.

249. Kaki Shah (Khairabad). Chakdara/Gulabad/Andandherai/Ouch/Khairabad. (10 x 10 x 0.5)m. 1362 msl. A small site, two room foundations. Illegally excavated. Buddhist.

250. Shnai Kandai II (Khairabad). Chakdara/Gulabad/Andandherai/Ouch/Khairabad. (15 x 12 x 0.5) m. 1210 msl. A small monastery site, wall structures. Illegally excavated. Buddhist.

251. Shnai Kandai III (Khairabad). Chakdara/Gulabad/Andandherai/Ouch/Khairabad. (20 x 12 x 1) m, 1193 msl. A small site consisting of the small mound in which some wall structures can be seen. Illegally excavated. Buddhist.

252. Shnai Kandai IV (Khairabad). Chakdara/Gulabad/Andandherai/Ouch/Khairabad. (10 x 10 x 1)m, 1166 msl. A small site, a mound, rooms foundations and wall structures. Illegally excavated. Buddhist.

253. Kobanr Baba I (Teesoo). Chakdara/Gulabad/Talash Road/Teesoo/Kobanr Baba. (400 x 150 x 2)m, 955 msl. A large grave yard. Pottery. There is a very large grave of a Muslim saint, 7m long x 3m wide x 1m high. This grave has been illegally excavated. Islamic/unknown period.

254. Koabanr Baba II (Teesoo). Chakdara/Gulabad/Talash Road/Teesoo/Kobanr Baba. (30 x 30 x 2) m, 996 msl. A small mound, some wall structures. Pottery. Illegally excavated. Buddhist.

255. Teesoo Dherai (Teesoo). Chakdara/Gulabad/Talash Road/Teesoo. (15 x 10 x 1)m, 939 msl. A small site, wall structures. Possibly Buddhist.

256. Katkala Manrai I (Katkala). Chakdara/Gulabad/Talash Road/Katkala. (5 x 5 x 5)m, 993 msl. A fort shaped building which is now in poor condition. It is a solid structure filled with mud and no entrance. Hindu Shahi.

257. Katkala Manrai II (Katkala). Chakdara/Gulabad/Talash Road/Katkala. (15 x 10 x 2)m, 996msl. A two roomed building, both are filled with mud and no entrance. Hindu Shahi.

258. Katkala Manrai III (Katkala). Chakdara/Gulabad/Talash Road/Katkala. (5 x 5 x 2)m, 1018 msl. A fort shaped building, one room and wall foundations. Hindu Shahi.

259. Kalo Manrai I (Katkala). Chakdara/Gulabad/Talash Road/Katkala. (50 x 50 x 5)m, 1002 msl. A mound with various wall structures and small mounds. Unkown period.

260. Kalo Manrai II (Katkala). Chakdara/Gulabad/Talash Road/Katkala. (10 x 10 x 4)m. A small picket shaped building. Possibly Hindu Shahi.

261. Rangi Kot (Katkala). Chakdara/Gulabad/Talash Road/Katkala. (30 x 30 x 5)m, 1161 msl. A small fort with more than 15 room foundations and wall structures. Possibly Hindu Shahi.

262. Radanro Manrai (Katkala). Chakdara/Gulabad/Talash Road/Katkala. (15 x 15 x 1)m, 1061 msl. A small picket shaped structure. Possibly Hindu Shahi.

263. Awaro I (Osakai). Chakdara/Gulabad/Talash Road/Osakai/Awaro. (50 x 20 x 6)m, 1120 msl. A large fort, various rooms with some walls up to 2 to 6m high. Possibly Hindu Shahi.

264. Awaro II (Osakai). Chakdara/Gulabad/Talash Road/Osakai/Awaro. (10 x 10 x 0.5)m, 1092 msl. A small site, two room foundations. Unkown period.

265. Awaro III (Osakai). Chakdara/Gulabad/Talash Road/Osakai/Awaro. (15 x 8 x 3)m, 1045 msl. A small fort site. Hindu Shahi.

266. Awaro IV (Osakai). Chakdara/Gulabad/Talash Road/Osakai/Awaro. (6 x 6 x 1)m, 1000 msl. A small site, one picket shaped building. Hindu Shahi.

267. Osakai Dherai I (Osakai). Chakdara/Gulabad/Talash Road/Osakai. (30 x 30 x 3)m, 891 msl. A small site, wall structures. Illegally excavated. Budhist.

268. Osakai Dherai II (Osakai). Chakdara/Gulabad/Talash Road/Osakai. 20m x 20m x 2m, 929msl. A small site, wall structures. Hindu Shahi.

269. Sro Manrai I (Osakai). Chakdara/Gulabad/Talash Road/Osakai. (25 x 15 x 2)m, 1010msl. A small site consisting of three rooms. Illegally excavated. Hindu Shahi.

270. Sro Manrai II (Osakai). Chakdara/Gulabad/Talash Road/Osakai. (50 x 35 x 3)m, 1042msl. A large monastic site, large number of rooms and walls, with diaper masonry work. Buddhist.

271. Sro Manrai III (Osakai). Chakdara/Gulabad/Talash Road/Osakai. (10 x 5 x 0.5)m, 1085msl. A small picket shaped building, two rooms foundation, the upper room had 50 cm high walls. Hindu Shahi.

272. Sro Manrai IV (Osakai). Chakdara/Gulabad/Talash Road/Osakai. (50 x 20 x 6)m, 1076 msl. A medium size fort, with a large number of small and large rooms. Possibly Buddhist or Hindu Shahi.

273. Sro Manrai V (Osakai). Chakdara/Gulabad/Talash Road/Osakai. (20 x 15 x 5)m, 951msl. A small fort having various rooms and walls, with corner bastions. Hindu Shahi.

274. Kharkanai Dherai (Kharkanai). Chakdara/Gulabad/Talash Road/Kharkanai. (20 x 15 x 1)m, 813 msl. A small mound, wall structures. Pottery. Buddhist.

275. Saproona Ghondai I (Saproona). Chakdara/Gulabad/Talash Road/Saproona. (30 x 30 x 1.50)m, 876 msl. A monastery site, 10 room foundations and many wall structures. Buddhist.

276. Saproona Ghondai II (Saproona). Chakdara/Gulabad/Talash Road/Saproona. (15 x 10 x 2)m, 909 msl. A large number of wall foundations. Illegally excavated. Buddhist.

277. Warsak Ghondai I (Warsak). Chakdara/Gulabad/Talash Road/Saproona/Warsak. (50 x 35 x 3) m, 920 msl. There are a large number of rooms, mounds and wall structures. Buddhist.

278. Warsak Cheena (Warsak). Chakdara/Gulabad/Talash Road/Saproona/Warsak. (10 x 10 x 1.50) m, 870 msl. This is a natural water source which is still in use. There are some wall structures around the spring in diaper masonry. Buddhist.

279. Warsak Ghondai II (Warsak). Chakdara/Gulabad/Talash Road/Saproona/Warsak. (30 x 20 x 2) m, 867 msl. There are a large number of wall structures and room foundations. Buddhist.

280. Jagaa Manrai I (Warsak). Chakdara/Gulabad/Talash Road/Saproona/Warsak. (100 x 50 x 3)m, 900msl. Possily a monastic site with more than 20 rooms. Illegally excavated. Buddhist.

281. Jagaa Manrai II (Warsak). Chakdara/Gulabad/Talash Road/Saproona/Warsak. (80 x 20 x 2)m, 920 msl. A stupa and monastery, with a large number of rooms and wall structures. Illegally excavated. Buddhist.

282. Manro I (Bakandai). Chakdara/Gulabad/Talash Road/Saproona/Bakandai. (25 x 15 x 2)m, 818 msl. A possible stupa and mound with room foundation and wall structures. Buddhist.

283. Bakandai Patay I (Bakandai). Chakdara/Gulabad/Talash Road/Saproona/Bakandai. (30 x 20 x 1)m, 751 msl. This is a small site converted to irrigation land a small portion of the mound existed in which some hidden wall structures can be seen. Buddhist.

284. Bakandai Patay II (Bakandai). Chakdara/Gulabad/Talash Road/Saproona/Bakandai. (20 x 20 x 1)m, 784 msl. A small mound with some wall structures. Buddhist.

285. Manro II (Bakandai). Chakdara/Gulabad/Talash Road/Saproona/Bakandai. (20 x 8 x 2)m, 843 msl. A small mound, possibly a stupa, plus two rooms. There is a diaper masonry wall around the mound. Buddhist.

286. Manro III (Bakandai). Chakdara/Gulabad/Talash Road/Saproona/Bakandai. (25 x 15 x 5)m, 848 msl. A small mound, with possibly a central stupa. Some wall structures. Buddhist.

287. Manro IV (Bakandai). Chakdara/Gulabad/Talash Road/Saproona/Bakandai, (30 x 16 x 4)m, 869 msl. A mound, possibly a stupa. Some wall structures and room foundations. Illegally excavated. Buddhist.

288. Aouchata Manrai (Bakandai). Chakdara/Gulabad/Talash Road/Saproona/Bakandai, (30 x 15 x 2) m, 897 msl. A small mound, rooms still visible. Buddhist.

289. Shanjan Jaba (Bakandai). Chakdara/Gulabad/Talash Road/Saproona/Bakandai, (80 x 50 x 3)m, 964 msl. A large site with walls and room foundations. Illegally excavated. Buddhist.

290. Kwar Jangai (Bakandai). Chakdara/Gulabad/Talash Road/Saproona/Bakandai, (100 x 60 x 1) m, 938 msl. A large size site with wall structures and room foundations. Illegally excavated. Buddhist.

291. Qabla Ghara (Bakandai). Chakdara/Gulabad/Talash Road/Saproona/Bakandai, (30 x 15 x 3)m, 802 msl. Some walls, illegally excavated. Buddhist.

292. Ouchat Picket (Bakandai). Chakdara/Gulabad/Talash Road/Saproona/Bakandai, (10 x 10 x2)m, 860 msl. A small picket which has been illegally excavated. Hindu Shahi.

293. Tangai Koroona (Bakandai). Chakdara/Gulabad/Talash Road/Saproona/Bakandai, (100 x 100 x 4)m, 805 msl. A 30m section of wall can be seen around the modern village, plus water tank in the rock. Buddhist.

294. Tangai Patay (Bakandai). Chakdara/Gulabad/Talash Road/Saproona/Bakandai. (10 x 10 x 5)m, 797 msl. A small mound with some walls visible. Buddhist.

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Preliminary Report on the Archaeological Survey of District Haripur (2007-08)

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Introduction

Soon after its establishment in November 2006, the Department of Archaeology, Hazara University (Mansehra), started its intensive archaeological investigations in Hazara Division under the supervision of the first author. The Department has been able to document more than 800 archaeological sites in Abbottabad, Mansehra and Haripur districts of Hazara Division. Report on the archaeological exploration in district Abbottabad has been published in *Pakistan Haritage*, volume 1 (Ali et al 2009); that of district Haripur is in the hands of the readers (Ali et al 2010), while findings of Mansehra are expected to be accommodated in volume 3 (2011) of this journal.

Haripur is one of the five districts of Hazara Division, which is the northeastern division of the former North West Frontier Province (now Khyber Pakhtunkhwa) and the only territory on the east of the Indus. The district lies between north latitude 33° 44′ and 34° 22′ and east longitude 72° 35′ and 73° 15′ and about 610 metres above sea level. The district has the highest Human Development Index of all districts in the province.

Aims and objectives

The aims and objectives of the survey are; firstly, to record all the archaeological sites in the District Haripur; secondly, to establish a cultural profile of the region; thirdly, to investigate the origin and development of past cultures; fourthly, to provide a base for research for students and scholars at international and national levels and lastly, to select potential sites for excavation in order to enrich the newly established museums of Hazara University at Mansehra and Abbottabad.

Historical Background

Haripur has remained a centre of cultural activities since long due to its important stratigic position. It has been a junction of two main trade routes (the Grand Trunk Road, and the Silk Road) that connect the Indian subcontinent with China and Central Asian countries. The beginning of cultural activities in the region can be traced back to the 9th/10th millinium BCE. The evidences have come form Khanpur cave excavated by Eden Johnson in 1964 and later by Farid Khan (University of Peshawar). These excavations have revealed a large number of microliths, which are datable to the mesolithic period (Ali et al 2009:145, Qazi 1998:10). The present archaeological exploration conducted by the Department of Archaeology, Hazara University (Mansehra), has added four new prehistoric sites to the already known ones. The Prehistoric zone is followed by the Gandhara Grave Culture sites in the region as we have no evidence of the Chalcolithic and Bronze Age cultures so far reported from the entire Hazara division including district Haripur.

The Gandhara Grave Culture sites are generally associated with the Indo-Aryans who entered the region through the northwestern passes during the last quarter of the second millinium BCE. The

Hazara region remaind under the rule of the Achaemenid Persians from 558-327 BCE, who were overthrowned by Alexander the Great in 327 BCE. The Ashokan rock edicts at Mansehra, on either side of the Silk Road, are the most authentic and first hand document of the Mauryan rule in this part of the subcontinent. A silver coin of Menander from Bedadi (Manshra) (Ali et al 2009) and pottery recovered from Pir Manakrai (Khan 2002: 85-89) and Panian in district Haripur (Qamar 1998: 52-72) having close similarity with that from Bhir Mound, Sirkap and other sites of ancient Gandhara provide great deal of information on the political asendency of the Indo-Greeks, Indo-Scythians and the Indo-Parthians.

The Parthians were followed by the Kushans, and then the Kushano Sasanians till the invasion of the White Hunas in the fifth century CE. The Kushans have left cultural legacy in the form of Buddhist monuments (stupas and monastries) recorded from the entire Hazara division. The ancient Silk Route passed through the modern districts of Haripur, Abbottabad, Mansehra, Batagram and Kohistan. It was through this historically and culturally important highway that Buddhism reached China and Central Asia (Dani 1999:17). Shah Jahan, the Mughal emperor, used to stay in this region while going to Kashmir (Jahangir, ii, 2001: 124-128). The latest archaeological investigations of the Department of Archaeology, Hazara University (Mansehra), unfolded hundreds of sites ranging from Prehistoric to the British period showing continuation of cultural activities in the region.

Previous Archaeological Research in District Haripur

Most of the archaeological remains of District Haripur are not known due to limited explorations and excavations ever conducted in the region. The first archaeological investigations conducted by Eden Johnson in 1964 followed by Farid Khan pushed the history of the district back to the prehistoric time. In 1988-89, the Department of Archaeology and Museums, Government of Pakistan, excavated at Garh Mauriyan near Sarai Saleh and exposed an important Buddhist complex. The excavation at the site revealed bases of main stupas, votive stupas, monastary, chapels and temple associated with stone and stucco sculptures, pottery and a large number of small findings (Qamar 1990). The salvage excavation conducted at Panian, 7km from Haripur on the Haripur-Hasanabdal road, unearthed a good collection of antiquities associated with the structural remains dated to first century BCE through to third century CE.

In 2003, the Directorate of Archaeology and Museums Khyber Pakhtunkhwa conducted the first intensive archaeological investigations in the region under the supervision of the senior author. These explorations unfolded 68 sites in Tehsil Khanpur and 41 sites in Tehsil Ghazi (u.p). But this time also the team could not document the archaeological sites in the entire district. And thus credit goes to the Department of Archaeology, Hazara University, that inspite of limited resources was able to discover the hidden archaeological treasures not only in district Haripur but also in the two other districts of Hazara. The details of the newly explored sites are given as under:

Tables showing Names, Codes and Types of Explored Sites

Prehistoric Caves

Sr #	Site #	Site Name	Code
01	211	Mughalabad Cave	MAC
02	212	Surajgali Cave	SGC
03	238	Najafpur Cave	NPC
04	241	Dhunya Cave	DYC

Gandhara Grave Culture Sites

Sr #	Site #	Site Name	Code
01	181	Deen wali qabar	DWQ

Buddhist Sites

Sr #	Site #	Site Name	Code
01	07	Harki	HRK
02	09	Pulwari-II	PRI-II
03	10	Chittha	CTA
04	11	Nari-I	NRI-I
05	12	Nari-II	NRI-II
06	13	Mohra Khalifa	MKF
07	14	Thalla	TLA
08	17	Chenehri	CHR
09	19	Tremer well	TRW
10	20	Tremer Mound	TRM
11	63	Hamlet mound	HMT
12	65	Dedan Dheri	DDND
13	66	Penda-I	PND-I
14	68	School Dheri	SDR
15	69	Mohra Pir Bakhsh-I	MPB-I
16	70	Mohra Pir Bakhsh-II	MPB-II
17	71	Mohra Pir Bakhsh-III	MPB-III
18	72	Kot Sayidan	KSN
19	73	Chamba pind	CPD
20	74	Gherriya-I	GRY-I
21	75	Gherriya-II	GRY-II
22	76	Koklian-I	KKN-I
23	77	Koklian-II	KKN-II
24	78	Koklian-III	KKN-III
25	80	Koklian-V	KKN-V
26	84	Gherria	GRA

27	85	Paro-I	PRO-I
28	86	Parro-II	PRO-II
29	87	Baka-I	BKA-I
30	88	Baka-II	BKA-II
31	89	Kalu pind	KLD
32	90	Eidgah Panian	EDHP
33	91	Muhajir Camp Mound	MCM
34	93	Pandori	PDR
35	94	Basu Mera Mound	BMR
36	100	Pir-Manakrai-I	PMK-I
37	101	Pir Manakrai-II	PMK-II
38	102	Sarai Saleh Mound	SSM
39	120	Garra-I	GRA-I
40	121	Garra-II	GRA-II
41	122	Garra-III	GRA-III
42	123	Bari Dheri	BDR
43	124	Garra-IV	GRA-IV
44	125	Manakrai	MKR
45	128	Akhund bandi-I	AKB-I
46	129	Akhund bandi-II	AKB-II
47	130	Chitti Dhaki-I	CDI-I
48	131	Chitti Dhaki-II	CDI-II
49	135	Borqa Step well	BSW
50	137	Mera Ali Khan-I	MAK-I
51	138	Mera Ali Khan-II	MAK-II
52	140	Monan-II	MN-II
53	142	Shah Maqsood Dheri	SMD
54	143	Kund kahal-I	KKL-I
55	146	Chappar mound-I	CM-I
56	147	Chappar mound-II	CM-II
57	148	Chappar Tairy	CTR
58	150	Makyala	MYA
59	151	Makyala Monastery	MYM
60	152	Parla Makyala	PMY
61	153	Makyala well	MKW
62	157	Kalali well	KLW
63	158	Kota Kalali	KKL
64	159	Bari manri-I	BRM-I
65	160	Bari manri-II	BRM-II

66	161	Choti manri	CTM
67	162	Kot Najeebullah mound-II (Well)	KNM-I
68	172	Parghat mound	PGM
69	175	Salari mound	SRM
70	187	Badalpur-II	BDR-II
71	190	Lal Dheri-I Tofkian	LDR-I
72	191	Lal Dheri-II	LDR-II
73	193	Jandial mound-II	JDL-II
74	210	Showal-II	SWL-II
75	215	Nari graveyard	NGY
76	216	Nara spring	NRS
77	219	Kohi	KO
78	221	Mora gutta	MGT
79	224	Kothera-II	KTR-II
80	225	Kothera-III	KTR-III
81	230	Kharala-II	KRL-II
82	232	Bari wali patti	BWP
83	233	Sanjiala-I	SJL-I
84	234	Sanjiala-II	SJL-II
85	236	Pala kohi	PKH
86	240	Lassan Dheri	LDY
87	258	Dheri Rajgan-II	DRG-II
88	259	Dheri Rajgan-III	DRG-III
89	265	Pura Khan mound	PKM
90	266	Dheri Farman Shah	DFS
91	268	Patniyan	PTY
92	269	Jheel mound-I	JEM-I
93	270	Jheel mound-II	JEM-II
94	272	Kagh Jitti Pind	KGJP
95	273	Ramo pind Dheri	RPD
96	274	Kika parala mound	KPM
97	276	Nara-II	NR-II
98	278	Parba-II	Parba-II
99	279	Angi kot-I	AGK-I
100	280	Angi kot-II	AGK-II
101	281	Shah kot	SHK
102	282	Karmoo	KMO
103	283	Kopri-I	KPR-I
104	284	Kopri-II	KPR-II

105	285	Gali Kandan well	GKW
106	286	Kandan mound	KNM
107	287	Gali mound	GLM
108	288	Devi mound	DWM
109	289	Kali daar mound	KDM
110	290	Charona	CRN
111	291	Mangal Chah mound	MHM
112	292	Shah kot mound-II	SKM-II

Hindu Shahi Period Monuments

Sr #	Site #	Site Name	Code
01	01	Keroch	CRH
02	03	Chollho	COH
03	04	Tangi-I	TNG-I
04	16	Barahia	BRA
05	21	Sangar	SNG
06	67	Tebbi	TBI
07	83	Lambi Dheri	LDI
08	95	Palosi khwar	PSK
09	96	Donyan	DYN
10	99	Denda	DED
11	139	Monan-I	MN-I
12	144	Kund kahal-II	KKL-II
13	154	Tari	TR
14	155	Chajjian Rock Covering	CRC ?
15	203	Darra-II	DRA-II
16	213	Surajgali mound	SJM
17	218	Methly Kohi	MYK
18	231	Kharala-II	KRA-II
19	245	Kamalpur-II	KPR-II
20	249	Manrrey Hira Choti	MYH
21	250	Manrrey Hira Bari	MHB
22	256	Sagola-II	SGL-II

Islamic Period Site

Sr #	Site #	Site Name	Code
01	02	Shaheedon ki qabar	SKQ
02	06	Keroch bali well	KBW
03	08	Pulwari-I	PLW-I
04	15	Ziyarat Rahman Baba	ZRB

05	18	Spring well	SRW
06	97	Mausoleum of Maulana Abdul Qayum Sahib	MAQ
07	156	Chhajjian Water Tank	CWT
08	169	Mosque bazaar	MBZ
09	180	Purana kot	PRK
10	240	Lassan Dheri-II	LSD-II
11	227	Pakkiqad	PKD
12	228	Koker darra kohi	KDK
13	244	Ziyarat Aisaba bin pir qatal	ZAQ
14	246	Bhirrlian	BRI
15	251	Graveyard Takya Pakhshahi-I	GTP-I
16	254	Masta wells	MSW
17	271	Kho mosque	KMQ
18	277	Parba graveyard	PRG

Sikh Period Monuments

Sr #	Site #	Site Name	Code
01	98	Chobhacha Dharamshala	CBHD
02	103	Hindu Temple Sarai Saleh	HTSS
03	104	Temple-II Sarai Saleh	SST-II
04	105	Kanda Temple-III	KNDT-III
05	106	Temple-IV (Lohar Bazar)	TMP-IV
06	107	Devdas Temple-V	DDT
07	108	Kho temple	KTP
08	110	Sheronwala Mandir	SWM
09	111	Sikh Fort (Tehsil)	SKFT
10	164	Kot Najeebullah Mari	KNM
11	165	Kot Najeebullah Gurudvara	KNG
12	166	Kot Najeebullah Temple	KNT
13	167	Bazar Kot Najeebullah	BKN
14	168	Choha Katri	CHT
15	170	Sikh House	SHS

British Period Monuments

Sr #	Site #	Site Name	Code
01	05	Zor Jumat (Mosque)	ZJD
02	64	Dedan Bridge	DNB
03	92	Markazi Eidgah	MEG
04	109	Dar ul uloom Usmania Rehmania	DUR
05	112	Post office	PO

06	113	Wapda office	WO
07	114	Primary School	PS
08	115	Railway Station Haripur	RSH
09	116	Water Tank	WT
10	117	Eidgah	EG
11	118	Railway Bridge	RB
12	119	Regional Institute of Elementary College	REC
13	126	Bridge	BG
14	127	Baldher Bridge	BBG
15	132	Railway bridge	RWB
16	133	Jhangra Railway Bridge	JRB
17	134	Baldher Railway Station	BRS
18	141	Shah Maqsood Railway Bridge	SMRB
19	149	Sarai Saleh Railway Station	SSRS
20	163	Kot Najeebullah Well	KNW
21	171	Railway Bridge	RB
22	173	Dhuriyan Stop Bridge	DSB
23	174	Railway Station Kot Najeebullah	RSK
24	176	Railway Quarters	RQT
25	177	Roshanabad Railway Bridge	RRB
26	178	Kamala Railway Bridge	KRB
27	247	Rajgan Mahal	RNM
28	267	Pura Kohi	PK
29	275	Narra Hujra	NH

Unidentified Sites

Sr #	Site #	Site Name	Code
01	79	Koklian-IV	KLN-IV
02	81	Jabba	JBA
03	82	Bhari Dheri	BRD
04	136	Borqa-II	BRQ-II
05	145	Kund Kahal-III	KDK-III
06	179	Kamala Mound	KLM

Previous Discoveries

Table showing sites explored during the archaeological survey in tehsil Ghazi

Sr #	Site #	Site Name	Code	Period
01	22	Police Station Ghazi	PSG	Buddhist
02	23	Hasanpur-I	HPR-I	Buddhist
03	24	Hasanpur-II	HPR-II	Buddhist

04	25	Qazipur Dheri	QPR	Buddhist
05	26	Umar Khana-I	UKN-I	Buddhist
06	27	Jabai	JBI	Buddhist
07	28	Umar Khana-II	UKN-II	Buddhist
08	29	Umar Khana-III	UKN-III	Buddhist
09	30	Salam kand	SKD	Buddhist
10	31	Sherawal	SWL	Buddhist
11	32	Old Umer Khana	OUK	Buddhist
12	33	Phai	PI	Buddhist
13	34	Thalli Kot-I	TKT-I	Buddhist
14	35	Thalli Kot-II	TKT-II	Buddhist
15	36	Gomatay-I	GMT-I	Buddhist
16	37	Gomatay-II	GMT-II	Buddhist
17	38	Essa	ESA	Buddhist
18	39	Wada Naka	WNK	Hindu Shahi
19	40	Padara-I	PDR-I	Buddhist
20	41	Padara-II	PDR-II	Buddhist
21	42	Parchay Jhamra	PJR	Buddhist
22	43	Tahly Jhamra	TJM	Buddhist
23	44	Khola Jhamra	KLJ	Buddhist
24	45	Lehda Hujra	KHR	Buddhist
25	46	Kotehra mosque	KTR	Buddhist
26	47	Chaha kotehra	CHA	Buddhist
27	48	Shahidin kotehsra	SKR	Buddhist
28	49	Borza	BZA	Buddhist
29	50	Khola	KHL	Buddhist
30	51	Purana Kohi	PKI	Islamic
31	52	Chan gali	CGI	Buddhist
32	53	Imran mound-I	IMN-I	Buddhist
33	54	Imran mound-II	IMN-II	Buddhist
34	55	Imran mound-III	IMN-III	Buddhist
35	56	Imran mound-IV	IMN-IV	Buddhist
36	57	Garhi-I	GRI-I	Buddhist
37	58	Garhi-III	GRI-III	Buddhist
38	59	Garhi-II	GRI-II	Buddhist
39	60	Garhi-IV	GRI-IV	Buddhist
40	61	Khair bara	KBR	Buddhist
41	62	Khair bara tandu	KBT	Buddhist

Table showing Sites explored during the archaeological survey in Khanpur Valley

Sr #	Site #	Site Name	Code	Period
01	182	Bhamala stupa	BMS	Buddhist
02	183	Rajau ki masjid	RKM	Islamic
03	184	Dhobandi	DBI	Buddhist
04	185	Bhamala topi	BMT	Buddhist
05	186	Badalpur-I	BDP-I	Buddhist
06	188	Jinnan wali dheri	JWD	Buddhist
07	189	Sakhidad baba	SDB	Buddhist
08	192	Jandial temple-I	JLT-I	Indo Greek
09	194	Pandora-I	PDR-I	Buddhist
10	195	Pandora-II	PDR-II	Buddhist
11	196	Sirsukh	SRK	Buddhist
12	197	Nikra banglow	NRB	British
13	198	Pipalan	PLN	Buddhist
14	199	Jaulian	JLN	Buddhist
15	200	Chitti mound	CTM	Buddhist
16	201	Kot	KT	Buddhist
17	202	Dara-I	DR-I	Buddhist
18	205	Mamral graveyard	MRL	Islamic
19	206	Mamral Topi	MRT	Buddhist
20	207	Qatrian wala nala	QWN	Buddhist
21	208	Mamral II	MRL-II	Budhist
22	209	Showal I	SL I	Budhist
23	211	Mughalabad Cave	MAC	Mesolithic
24	212	Suraj Gali Cave	SGC	Mesolithic
25	214	Narra I	NRA	Budhist
26	217	Methly	MTY	Budhist
27	220	Vijian	VJN	Budhist
28	222	Choi Samla	CSL	Budhist
29	223	Kotehra–I	KTR I	Budhist
30	226	Gram Toon	GTN	Islamic
31	229	Kharala-I	KRL-I	Buddhist
32	237	Najaf Pur	NJP	Buddhist
33	239	Lassan Dheri	LDR	Budhist
34	242	Dhunya Mound	DMD	Budhist
35	243	Kamalpur I	KPR	Budhist
36	248	Narota	NRT	Budhist
37	252	Pakhshahi II	PSH	Hindu Shahi

38	253	Gojran	GRN	Hindu Shahi
39	255	Sagola I	SGL	Budhist
40	257	Dheri Rajgan-I	DRG-I	Budhist
41	260	Choti Jab	CJB	Budhist
42	261	Nalkum	NKM	Budhist
43	262	Rani Wah	RNW	Budhist
44	263	Rani Wah Cave	RWC	Pre Historic
45	264	Rani Wah II	RNWIII	Budhist

Description of the Sites

1. **Keroch (Sirikot).** 14 km to the north east of Haripur; 36 x 25 x 2m, foundations of wall structure associated with pottrey; Islamic Period.
2. **Shaheedon ki qabar.** Haripur-Panyan-Sirikot-Keroch; 15 x 10 x 2m; structure remains associated with potsherds on eastern and western side while the northern and southern sides are covered with ancient graves.
3. **Chollho (Keroch).** Haripur-Panyan-Sirikot-Keroch. 60 x 15 x 2m; remnants of wall structures and Potsherds.
4. **Tangi-I (Keroch).** Haripur-Panyan-Sirikot-Keroch. 80 x 40 x 2m; the site is comprised of three terraces; the lower and middle terraces reveal wall structure while the upper one, only the foundation of stone wall with potsherds; Hindu Shahi Period.
5. **Zor Jumat (Tangi).** Haripur-Paniyan-Sirikot-Keroch; 10 x 7 x 2m; a well preserved Mosque constructed of stone and mud mortar; multi-foiled decoration.
6. **Keroch Bala Well.** Haripur-Panyan-Sirikot-Keroch Bala; 9 x 2m (dia x depth); made of stone and mortar; Islamic Period.
7. **Harki (Sirikot).** Haripur-Panyan-Sirikot; 15 x 12 x 2m; a settlement site reveals structure remains associated with potsherds; Buddhist Period.
8. **Pulwari-I (Sirikot).** Haripur-Panyan-Sirikot; 13 x 12 x 3m; this site is structure remains and potshers; Buddhist Period.
9. **Pulwari-II (Sirikot).** Haripur-Panyan-Sirikot; 15 x 13 x 3m; Small mound covered by agricultural field; structures and potsherds; Buddhist Period.
10. **Chittha (Sirikot).** Haripur-Panyan-Sirikot-Marofia 10 x 4.50 x 1m; A small mound partially covered by agricultural field; wall structures and potsherds exposed; Buddhist Period.
11. **Nari-I (Sirikot).** Haripur-Panyan-Sirikot; 30 x 13 x 3m; A huge mound comprised of structure remains associated with potsherds; Buddhist Period.
12. **Nari-II (Sirikot).** Haripur-Panyan-Sirikot; 17 x 9 x 1m; badly disturbed and looted by the robbers; reveals thousands of potsherds; Buddhist Period.

13. **Mohra Khalifa (Khairbara).** Haripur-Panyan-Sirikot-Gahzi-Khairbara; 20 x 15 x 3m; partially covered by cultivated fields; Wall structures of daiper masonry and Potsherds exposed; Buddhist period.

14. **Thalla (Khairbara).** Haripur-Panyan-Sierikot-Ghazi-Khairbara; 35x 13 x 3m; the site is covered by modern houses and agricultural fields; Wall structures and potsherds exposed; Buddhist period.

15. **Ziyarat Rehman Baba (Khairbara).** Haripur-Panyan-Sirikot-Ghazi-Khairbara; 15 x 4 x 3m; the site is covered by the mausoleum (recently renovated) and graves made of kanjur stones; wall structures and potsherds exposed; Islamic period.

16. **Barahia (Khairbara).** Haripur-Panyan-Sirikot-Ghazi-Khairbara; 27 x 26 x 1m. The site is badly deteriorated; wall structures and potsherds. Hindu Shahi period.

17. **Chenehri (Khairbara).** Ghazi-Chenehri road; 21 x 15 x 2m; the site is badly damaged and looted by illegal diggers; Wall structures and pottery exposed; Buddhist period.

18. **Spring Well (Khairbara).** Ghazi to Khairbara to site. 1m x 50cm; constructed of kanjur stone; Islamic period.

19. **Tremer Well.** Ghazi-Khairbara road; 1 x 1 x 1.5m; constructed of local stones; Buddhist period.

20. **Tremer Mound.** 9 Km east of Ghazi on Ghazi-Khairbara-Tremer road; 20 x 15 x 2m; The site is partially covered by Primary School and the remaining is badly disturbed and looted; structures and potsherds found; Buddhist period.

21. **Sangar (Sirikot).** Located 3 km south of Siri Kot on Pania-Siri Kot-Sangar road; 10 x 8 x 4m; Wall structures and potsherds found; Hindu Shahi period.

22. **Police Station Ghazi.** 64.5 miles NS?? of Peshawar. 200 x 120x 15m; partially destroyed and renovated; British period.

23. **Hasanpur-I.** Haripur-Ghazi-Hasanpur road; badly damaged and looted by illegal diggers; wall structures and potsherds exposed; Buddhist period.

24. **Hasanpur-II.** Haripur-Ghazi-Hasanpur road; presently covered by the cultivated fields; wall structures and pottrey exposed; Buddhist period.

25. **Qazipur Dheri.** Haripur-Ghazi road; 42 x 40x 6m; huge site partially covered by modern houses; wall structures and potsherds exposed; Buddhist period.

26. **Umar Khana-I.** Haripur-Ghazi-Umar Khan road 52 x 41 x 6m; presently used for cultivation purposes; structures potsherds exposed.

27. **Jabai (Umar Khana).** Haripur-Ghazi-Siri Kot road; 26 x 21 x 6m; disturbed and looted by the illegal diggers, wall structures and potsherds revealed; Buddhist period.

28. **Umar Khana-II.** On the left side of Haripur-Siri Kot road; 20 x 15 x 2m; partially covered by the modern houses; wall structures and potsherds exposed; Buddhist period.

29. **Umar Khana-III.** Haripur-Panian-Sirikot-Umar Khana road; 50 x 25 x 2m; the site is presently used for cultivation; potsherds and wall structures exposed; Buddhist period.

30. **Salam Khand.** Haripur-Panian-Sirikot-Salam Khand road; 200 x 58 x 4m; the site is badly damaged and looted; illegal diggers have revealed foundation of structures and potsherds; Buddhist period.

31. **Sherawal Dheri.** Haripur-Panyan-Sirikot road; 250 x 200 x 7m; presently used for cultivation; foundation of wall structures and potsherds found; Buddhist period.

32. **Old Ummar Khana.** Haripur-Panian-Sirikot-Old Umar Khana road; 232 x 219 x 3m. An intact site comprising of structure remains and potsherds; Buddhist period.

33. **Phai.** Siri Kot-Phai. 120 x 85 x 3m; presently the site is covered by modern houses. Wall structures and potsherds exposed; Buddhist period.

34. **Thali Kot-I.** Haripur-Sirikot Ghazi-to Phai-Thalikot road; 52 x 41 x 3m; the site is partially covered by Government School; wall structures and potsherds exposed; Buddhist period.

35. **Thali Kot-II.** Haripur-Thali Kot road 290 x 219 x 3m; a huge site presently covered by modern houses. Wall structures and potsherds exposed; Buddhist period.

36. **Gomatay-I.** Haripur-Ghazi-Phai-Gomaty road 149 x 101 x 3m; presently used for cutivations crops; wall structures and potsherds; Buddhist Period.

37. **Gomatay-II.** Haripur-Ghazi-Phai road 216 x 107 x 3m. The site is presently covered by agricultural fields; postsherds found; Buddhist period.

38. **Essa.** Located to the left side of Haripur-Ghazi-Essa-Tarbela road. 72 x 35 x 3m; the site is partially covered by modern houses and agricultural fields; the remaining parts reveal wall structures and potsherds; Buddhist period.

39. **Wada Naka.** Haripur-Ghazi-Jhamra road; 300 x 50 x 2m; wall structures and potsherds exposed; Buddhist period.

40. **Padara-I.** Haripur-Ghazi-Jhamra Road-Padara; 215 x 112 x 2m; An intact site comprising wall structures; potsherds and a grinding stone collected; Buddhist period.

41. **Padara-II.** Haripur-Ghazi-Jhamra Road-Padara II; 101 x 53 x 2m; the site is covered by mausoleum (Ziyarat); wall structures and potsherds found; Buddhist period.

42. **Parachay Jhamra.** Haripur to Ghazi to Jhamra road; 53x 53 x 3m; the site is badly damaged by the illegal diggers who have found many stone sculptures; wall structures and potsherds exposed; Buddhist period.

43. **Tahly Jhamra**. Ghazi-Jhamra to Tahly road; 75 x 53 x 4m; badly disturbed and looted; wall structures exposed; Buddhist period.

44. **Khola Jamra.** Ghazee to Jhamra Khola road; 150 x 100 x 8m; the site reveals wall structures associated with potsherds; Buddhist period.

45. **Lehda hujra kotehra.** Ghazi Kotehra link road; 75 x 25 x 1m; a completely deteriorated site; wall structures and potsherds exposed; Buddhist period.

46. **Kotehra Mosque.** Khala Kotehra Link road; 30 x 30 x 8m; the site is presently covered by modern mosque; wall structures and potsherds exposed; Buddhist period.

47. **Chaha Kotehra.** Ghazi Kotehra link road; 107 x 53 x 9.5m; an intact site having wall structures associated with potsherds; Buddhist.

48. **Shahidin Kotehra.** Ghazi Kotehra link road; 15 x 13 x 2m; the site is badly damaged and robbed; wall structures and potsherds exposed; Buddhist period.

49. **Borza.** Ghazi Kotehra link road; 210 x 76 x 1m; presently covered by graves; potsherds found; Buddhist period.

50. **Khola.** Haripur-Ghazi-Jinnan to Khola; 41 x 20 x 1m; the site is partially disturbed by the illegal diggers; wall structures and potsherds exposed; Buddhist period.

51. **Purana Khoi.** Haripur-Ghazi-Salem Kot to Purana road; 70 x 36 x 1m; well made of stone; Islamic period.

52. **Chan Gali.** Haripur-Ghazi-Kotehra to Chan Gali road; 35 x 18 x 1m; the site is presently used for cultivation; potsherds found; Buddhist period.

53. **Imran Mound-I.** Haripur- Ghazi on the right side of Ghazi Topi road; 53 x 19 x 1m; badly disturbed and looted; wall structures and potsherds exposed; Buddhist period.

54. **Imran Mound-II.** Haripur-Ghazi located on the right side of Ghazi Topi road; 300 x 50 x 1m; the site is badly damaged and looted by illegal diggers; wall structures and potsherds revealed by diggers; Buddhist period.

55. **Imran Mound-III.** Haripur to Ghazi - right side of Ghazi Topi road; 50 x 17 x 7m; badly looted; wall structures and potsherds exposed; Buddhist period.

56. **Imran Mound-IV.** Located on the right side of Ghazi Topi road; 40 x 23 x 1m; small site reveals wall structures in diaper masonry associated with potsherds; Buddhist period.

57. **Gharhi-I.** Located on the right side of Ghazi-Topi road; 80 x 50 x 1m; the site reveals wall structures and potsherds; Buddhist period.

58. **Gharhi-II.** Haripur-Ghazi-Topi road; 200 x 125 x 2m; a huge site comprised of wall structures (diaper masonry) associated with potsherds.

59. **Gharhi Mound-III.** Haripur-Ghazi-Phai road; 53 x 21 x 1; Wall structures with stucco fragments and potsherds recovered; Buddhist period.

60. **Gharhi Mound-IV.** Haripur-Gala Gharhi link road; 35 x 16 x 1.5m; remnants of structures are badly deterorated; potsherds found; Buddhist period.

61. **Khair Bara.** Haripur-Ghazi-Khair Bara road; 69 x 51 x 2m; This small site reveals wall structures associated with potsherds; Buddhist period.

62. **Khair Bara Tandu.** Haripur-Ghazi-Khair Bara road; 150x 50 x 2m; wall structures and potsherds exposed; Buddhist period.

63. **Hamlet Mound.** Haripur-Ghazi-Khalo road; 79 x 62 x 2m; Wall structures and potsherds recovered; Buddhist period.

64. **Dedan Bridge.** Haripur-Hasan Abdal on G.T. Road; 25 x 8 x 7m; constructed of dressed stone; 20th century CE.

65. **Dedan Dheri.** Haripur-Hasanabdal Road near Tubewell bazar stop;14 km from Haripur-Hasanabdal road; 20 x 15 x 8m; Huge site reveals wall structures associated with potsherds and bones; Buddhist period.

66. **Penda-I.** Haripur-GT road Sarai Gadai -Penda; 40 x 20 x 9m; a huge mound; wall structures and pottery recovered; Buddhist period.

67. **Tebbi.** Haripur-Sarai Gadai-Dedan-Tebbi; 15 x 5 x 3m; Wall structures and potsherds recovered; Hindu Shahi period.

68. **School Dheri**. Haripur-Sarai Gadai-School Dheri; 45 x 39 x 3m; the site is presently covered by the school; wall structures and potsherds exposed; Buddhist period.

69. **Mohra Pir Bakhsh-I.** Haripur-Panian-Mohra Pir Bakhsh; 25 x 17 x 2m; the site reveals wall structures, graves and potsherds; Buddhist period.

70. **Mohra Pir Bakhsh-II.** Haripur-Sarai Gadai-Mohra Pir Bakhsh-II; 73 x 27 x 3m; wall structures and Potsherds recovered; Buddhist period.

71. **Mohra Pir Bakhsh-III.** 20 km northwest of Haripur-Panian-Gadai Pul Site; 21 x 10 x 1m; the site is presently covered by Islamic graves; potsherds found; Buddhist period.

72. **Kot Sayidan.** Haripur-Panyan-Saraigadai-Kot Sayidan; 21 x 10 x 1m; presently used as a graveyard; potsherds found; Buddhist period.

73. **Chamba Pind.** Haripur-Panian-Gadai Pull-Shaheed Baba; 29 x 20 x 2m; The site is presently used for cultivation of crops; potsherds found; Buddhist period.

74. **Gherriyan-I.** GT Road-Panian-Gherriyan-I; 31 x 20 x 3m; Wall structures and some old graves exposed associated with potsherds; Buddhist period.

75. **Gherriyan-II.** Haripur-Panian Gherryan-II; 25 x 17 x 2m; the site is partially covered with cultivated fields and old graves; potsherds found; Buddhist period.

76. **Koklian-I.** Haripur-Panian-Koklian; 22 x 17 x 3m; wall structures and potsherds exposed; Buddhist period.

77. **Koklian-II.** Haripur-Panian-Koklian-II; 27 x 12 x 2m; wall structures and potsherds recovered; Buddhist period.

78. **Koklian-III.** Haripur-Panian-Koklian III; 32 x 15 x 7m; located to the west of Koklian-II; the site is presently used for cultivation; potsherds found; Buddhist period.

79. **Koklian-IV.** Haripur to Panian to Koklian; 36 x 30m; wall structures and potsherds exposed; Unidentified.

80. **Koklian-V.** Haripur-Panian-Koklian; 35 x 23 x 5m; the site is presently covered with agriculral fields; potsherds; Buddhist period.

81. **Jabba.** The site is located near Koklian village; 23km west of Haripur city; 42 x 32 x 3m; potsherds found; Unidentified.

82. **Bhari Dheri.** Located 23km west of Haripur near Koklian village; 33 x 26 x 4m; potsherds found; Unidentified.

83. **Lambi Dheri (Jabba).** Haripur-Panian-Koklian to Lambi Dheri; 52 x 34 x 7m; Wall structures and potsherds exposed; Hindu Shahi period.

84. **Gherria.** Located 14 km southwest of Haripur on Haripur-Gherria road; 33 x 21 x 4m; potsherds found; Buddhist period.

85. **Paro-I.** Located 11km southwest of Haripur near Panian on Haripur-Panian-Parro road; 41 x 39 x 5m; the site is locally known as Ziyarat Dheri and is covered by ancient graves. Potsherds found; Buddhist period.

86. **Paro-II.** 21 x 19 x 6m; the site is partially covered with graves; potsherds found; Buddhist period.

87. **Baka-I. Purane Baka.** The site is located on Haripur-Panian to Baka Mera road; 42 x 38 x 5m; The wall structures of the are made of Kanjur stones; potsherds found; Sikh period.

88. **Baka-II.** 32 x 21 x 5m; the site reveals wall structures and potsherds; Buddhist period.

89. **Kalu pind.** The site is located some 11km northwest of Haripur on Haripur-Panian road; 53 x 20 x 5m; presently covered by Civil Hospital;Pottery found; Buddhist period.

90. **Eidgah Panian.** Located 11km from Haripur on the left side of Haripur-Hasanabdal road; 57 x 20 x 4m; the site is partially covered by the Eidgah and the remaining portion is used for cultivation; potsherds found; Buddhist period.

91. **Muhajir Camp mound.** Located 11 km to the southwest of Haripur on Haripur-Panian-Ghazi road; 17 x 15 x 3m; wall structures and potsherds found; Buddhist period.

92. **Markazi Eidgah.** Located 11 km from Panian on Grand Trunk Road; 52 x 20 x 1m; An (Eidgah) for offering congregational prayers by the Muslims; Potsherds found; British period.

93. **Pandori.** Haripur-Panian-Ghazi-Pandori road; 22 x 20 x 3m; Wall structures exposed associated with pottery; Buddhist period.

94. **Bassu Mera mound.** Located 13km southwest of Haripur on Haripur-Panian Ghazi-Pandori to Basso Mera road; 41 x 37 x 3m; the site reveals foundation of wall structures and potsherds; Buddhist period.

95. **Palosi Khwar-II.** Haripur-Panian Ghazi-Pandori-Bassu Mera-Palosi Khwar road; 41 x 39 x 1.5m; wall structures and potsherds exposed; Hindu Shahi period.

96. **Donyan.** On Haripur Alam to Donyan road; 56 x 43 x 3m; It is a small site with wall structures and potsherds; Hindu Shahi period.

97. **Mausoleum of Maulana Abdul Qayyum.** On Haripur-Alam to Deenda; 8x 8 x 1.5m; The mausoleum is inside the fortification; the western side wall of the fortification does not exist while the remaining still in good condition; The fortification wall is made of burnt bricks and mortar and is 20 cm thick; Islamic period.

98. **Chobhacha Dharmshala.** Haripur-Alam to Deenda road; 7 x 5 x 5m; originally it was a Hindu temple but presently used as business market; internally decorated with floral designs; Sikh period.

99. **Denda Mound.** Haripur-Alam to Deenda road; 35 x 20 x 2m; presently the site is used for cultivation; potsherds found; Buddhist period.

100. **Pir-Manakari-I.** Situated 4 kilometres North-east of Haripur city; I40 x 30 x 5m; It is a noted Kushan period fort excavated by the Department of Archaeology, University of Peshawar. Rooms, walls and bastions of the site still preserved; Buddhist period (Khan, 2002-2003:113-118).

101. **Pir-Manakari-II.** Situated 4 Kilometres North-east of Haripur city; 35 x 25 x 8m; the site is presently covered by Eidgah; wall structures associated with potsherds; Buddhist period.

102. **Sarai Saleh Mound**. Haripur to Sari Saleh road; 30 x 25 x 5m; the site is covered with graves; potsherds found; Buddhist period.

103. **Hindu Temple (Sarai Saleh).** Haripur-Sarai Saleh-Jander Wala Muhallah; 5x 5 x 10m; the temple is richly decorated both internally and externally with geometrical designs; Sikh period.

104. **Temple-II.** Haripur to Sarai Saleh road; 20 x 10 x 6m; the site is badly disturbed and damaged; only the eastern portion is intact; Sikh period.

105. **Kanda Temple III.** 2 x 2 x 4m; the temple is constructed of burnt bricks; still intact; Sikh period.

106. **Temple-IV.** Haripur-Lohar Wala bazar road; The temple is made of burnt bricks and stucco mortar; intact; Sikh period.

107. **Devdas Temple-V. (Muhallah Darwesh).** 12 x 12 x 8m; octagonal in shape with domical ceiling and arches; Dressed stones and bricks used in construction; Sikh period

108. **Kho Temple.** Located in Mohallah Khoo Haripur city; 10 x 10 x 15m; constructed of dressed kanjur stones and burnt bricks; double domes and lion on the top at each corner; Sikh period.

109. **Dar-ul-Uloom Usmania Rehmania.** Located in Muhallah Qadeem, Haripur city; 70 x 70 x 10m; constructed of burnt bricks and cement; intact; 1928 CE.

110. **Sheron Wala Mandir.** 10 x 5 x 8m; monument in good condition.

111. **Sikh Fort (Tehsil).** Haripur-Fort Road; 110 x 100 x 30; This is a unique fort of its kind in the entire Hazara division with double terraces and sorrounded by moat; the orignal building is demolished and replaced by the British colonial buildings; very few traces of the fort (portion of the lower terrace and water channels) are still visible; the fort is presently occupied by the Police and Revenue departments; Sikh period.

112. **Post Office**. Located on Haripur-Central Prison Road; the monument is made of burnt bricks and is well preserved; British period.

113. **WAPDA Office.** Located on Haripur-Central Prison Road; the building is comprised of rooms, verandah and halls; British Period.

114. **Primary School.** On Haripur-Central Prison Road near Telephonic industrial colony; 20 x 12 x 7m; British period.

115. **Railway Station Haripur.** On Haripur-TIP Colony-Railway Station Road; A complex, comprised of reservation office, waiting rooms, platforms and railway tracks; British period.

116. **Water Tank.** Haripur-Central Prison Road; 10 x 10 x 15m; this water tank is said to have been made by DORMAN and Co MBRO; British period.

117. **Eidgah. (Haripur).** Located on Haripur-Central Prison Road; 130 x 70 x 5m; the building is constructed of burnt bricks; façade richly decorated; two Minarets on eastern corners; British period.

118. **Railway Bridge (Haripur).** Haripur to central Jail Chowk to TIP colony. 48 x 4 x 8m. It is a small Railway Bridge having nine pillars; each pillar is one metre thick. The distance between two pillars is 5 to 6 metres. The pillars were made of the standard bricks while the bridge itself was made of heavy iron and wooden beams.

119. **Regional Institute of Elementary Colleges.** Situated in the main Bazar of Haripur. It is a British period building and in good condition.

120. **Garra-I.** Located on Haripur-Manikrai-Garra (Sarai Saleh) road; 46 x 24 x 6m; An agricultural land; Potsherds found; Buddhist period.

121. **Garra-II.** Located on Haripur-Manikrai-Garra (Sarai Saleh) road; 31 x 15 x 8m; the site is badly damaged and robbed; wall structures and potsherds exposed; Buddhist period.

122. **Garra-III.** Located 9 km North of Haripur; 29 x 17 x 9m; wall structures potsherds exposed; Buddhist period.

123. **Bari Dheri-IV.** On Haripur-Manikrai-Garra (Sarai Saleh) road; 33 x 21 x 8; wall structures potsherds exposed; Buddhist period.

124. **Garra-IV.** The site was located near Manikrai. 20 x 16 x 9m. Some 9km North of Haripur. Walled structures were found. Potsherds were collected.

125. **Manikrai.** On Haripur-Manikrai-Garra (Sarai Saleh) road; 25 x 21x 7m; structure remains and potsherds exposed; Buddhist period.

126. **British Period Bridge.** On Haripur-G.T. road; 7 x 5 x 4m; the bridge is constructed of stones and Iron; British period.

127. **Baldher Bridge.** On Baldher-Cotton Mills road; 10 x 2 x 4m; Made of local stones, bricks and cement; British period.

128. **Akhoon Bandi.** The site is located to the west of Haripur on Baldher-cotton mills-Akhoon Bandi road; 29 x 20 x 1.5m;. Wall structures were recorded. Potsherds were found. Buddhist period.

129. **Akhund Bandi-II.** Located to the west of the Akhund Bandi-I on Haripur-Baldher-Akhund Bandi road; 21 x 11 x 3m; walled structures and potsherds exposed; Buddhist period.

130. **Chiti Dhaki.** Located on Haripur-Chamba Staff Kalag road; 32 x 18 x 4m; wall structures associated with potsherds exposed; portion of stairs also exposed indicates a stupa; Buddhist period.

131. **Chitti Dhaki-II.** Located on Haripur-Chamba Pull-Chitti Dhaki road; 11 x 9 x 2m; Wall structures and potsherds exposed; Buddhist period.

132. **Railway Bridge.** On Haripur-Chamba Pull-Dewan road; 46 x 3 x 4m; the bridge was made in 1911 by Engineer Jessup and C.L Calcutta; solid iron, wood and burnt bricks are used; British period.

133. **Railway Bridge Jhangra.** 40 x 3x 4m; made of Iron, wood while the pillars are constructed of burnt bricks and cement; British period.

134. **Railway Station Baldher.** Located on the right side of Haripur-Baldher road 20 x 10 x 8m;. It has an arched entrance; Bricks and iron used in construction; British period (1925 to 1928).

135. **Borqa Step Well.** Haripur to Chamba Pul to Kalag to Borqa. 3m x 2m x 2m. This step well (or baoli) is still in use. Local stones used in its construction.

136. **Borqa-II.** Located on Haripur-Chamba road; 21 x 9 x 4m; walled structures and potsherds exposed; Unidentified.

137. **Mera Ali Khan-I.** Located on Haripur-Faisal colony road; 45 x 15 x 5m; the site is badly damaged and disturbed by illegal diggers; It reveals structures remains and potsherds; Buddhist period.

138. **Mera Ali Khan-II.** Situated situated 8 km northeast of Haripur on Haripur-Faisal colony-Mera Ali Khan road; 60 x 35 x 2m; An agricural land; potsherds found; Buddhist period.

139. **Monan.** Located on Haripur- Monan road; 20 x 17 x 1m; Graves and wall structures exposed associated with potsherds; Hindu Shahi period.

140. **Monan-II.** Located on Haripur-Monan road; 59 x 27 x 8m; this site is partially covered by modern graves and the remaining portion reveals structural remains and potsherds; Budddhist period.

141. **Shah Maqsood Railway Bridge.** Located on Haripur-Shah Maqsood road; 46 x 3 x 5m; the Bridge is made of iron, wood; the iron plate shows the name of the engineers and date of construction, i.e Jessop and Cele, Calcutta Engineers in 1911; British period.

142. **Shah Maqsood Dheri.** Located on Haripur-Shah Maqsood road; 37 x 26 x 3m; the site reveals walled structures and fine and thin potsherds; Buddhist period.

143. **Kundi Kahal-I.** Situated on Haripur-Khanpur-Mirpur-Kahal road; 1.30 x 18 x 2m; the site is badly damaged and disturbed; wall structures and potsherds exposed; Buddhist period.

144. **Kundi Kahal-II.** Situated on Haripur-Khanpur-Mirpur-Kahal road; 13 x 9 x 50cm; the site reveals structure remains in disturbed condition associated with potsherds; Hindu Shahi period.

145. **Kundi Kahal-III.** Situated on Haripur-Khanpur-Mirpur-Kahal road; 17 x 11 x 2m; wall structures and potsherds; Unidentified.

146. **Chappar mound-I.** located on Haripur-Khanpur-Mirpur-Chappar road; 10 x 10 x 1m; Badly damaged and disturbed by illegal diggers; wall structure and potsherds; Buddhist period

147. **Chappar Mound-II.** Haripur-Sarai Saleh-Rehana-Chappar road; 37 x 20 x 2m; structure remains and potsherds; Buddhist period.

148. **Chappar Tairy.** Haripur-Sarai Saleh-Rehana-Chappar road;. 57 x 31 x 3m; wall structures and potsherds; Buddhist period.

149. **Railway Station Sarai Saleh.** Haripur-Sarai Saleh road; 20 x 13 x 10m; Constructed of burnt bricks; British period.

150. **Makyala.** Haripur-Sarai Serai Saleh-Makyala road; 15 x 3 x 2m; Unirrigated land; wall structures and pottery; recommended for excavation; Buddhist period.

151. **Makyala Monastery.** Haripur-Sarai Saleh-Rehana-Makyala road; 120 x 51 x 5m; Un-irrigated land; structure ramains and pottery; feasible for excavation; Buddhist period.

152. **Parla Makyala.** Haripur-Sarai Saleh-Rehana-Makyala road; 75 x 25 x 2m; badly disturbed and damaged by the local community; structure remains and potsherds; Buddhist period.

153. **Makyala Well.** Haripur-Sarai Saleh-Rehana-Makyala road; 3 x 3 x 10m; made of stone; still contains water and in use; Buddhist period.

154. **Tari.** Haripur-Sarai Saleh-Rehana Tari road; 86 x 30 x 2m; unirrigated land covered with grass and bushes; wall structures and potsherds; intact and feasible for excavation; Hindu Shahi period.

155. **Chhajjian Rock Carving.** Haripur-Sarai Saleh-Rehana-Chapprah Chhajjian road; 4 x 3m; Five different Hindu figures are depicted on the rock; needs further investigations and research; Hindu Shahi period.

156. **Chhajjian Water Tank.** Haripur-Sarai Saleh-Rehana-Chappra-Chhajjian road; 2 x 2 x 2m; This water tank was made of local stones and stucco mortars; still contains water and in use;

157. **Kalali Well.** Haripur-Sarai Saleh-Rehana-Chappra-Kalali road; 3 x 3 x 5m; made of local stones, still in use; Buddhist period.

158. **Kota Kalari.** 120 x 80 x 5m; wall structures and pottery; feasible for excavation; Buddhist period.

159. **Bari Manri-I.** Haripur-Sarai Saleh-Rehana-Chappra-Noordi road; 36 x 13 x 2m; badly damaged and disturbed; structures remains and potsherds are clearly visible; Buddhist period.

160. **Bari Manri-II.** Haripur-Sarai Saleh-Rehana-Chappra-Noordi road; 73 x 17 x 1.5m; the site reveals wall structures and pottery; intact and feasible for excavation; Buddhist period.

161. **Choti Manri.** Haripur-Sarai Saleh-Rehana-Chappra-Noordi road; 27 x 13 x 1m; A large site reveals wall structures and potsherds; Buddhist period.

162. **Kot Najeebullah-I.** Haripur-Hatar road; 31 x 29 x 3m; wall structures and potsherds clearly visible; Buddhist period.

163. **Kot Najeebullah-II (Well).** Haripur-Hatar road; 3 x 15m (dia x depth); made of local stones; still in use; 20th century CE.

164. **Kot Najeebullah Manri.** Haripur-Hattar road; 50 x 45 x 3m; the building is made of bricks; 20th century CE.

165. **Kot Najeebullah-III (Gurudvara).** Haripur-Kot Najeebullah road in main bazar; 21 x 21 x 24m; A double storey building comprised of arches and niches; Local bricks and iron rods used in the construction; Sikh period.

166. **Kot Najeebullah-IV (Temple).** Haripur-Kot Najeebullah in main Bazar; 18 x 16 x 18m; Hindu temple made of local stones; ceiling decorated with fresco paintings (floral designs). Sikh period.

167. **Bazar Kot Najeebullah-V.** Haripur-Kot Najeebullah in the main Bazar; 10 x 10 x 5m; the building is made of burnt bricks; traces of paintings still vissible; wooden doors amd windows decorated with geometrical designs; Sikh period.

168. **Choha Katri.** Haripur-Kot Najeebullah in the main Bazar; 20 x 20 x 15m; Double storey building, comprising more than 50 rooms; The facade is comprised of five blind arches decorated with floral designs; Sikh period.

169. **Mosque Bazar.** Haripur-Kot Najeebullah road; 15 x 15m. The prayer hall is topped by three domes and two towers one on either side; 20th century CE.

170. **Sikh House.** Haripur-Kot Najeebullah; 13 x 13 x 6m; partially damaged and renovated; constructed of burnt bricks;

171. **Railway Bridge.** Haripur-Hattar road; 120 x 3 x 25m; the bridge is made of iron and wood. Three bastions made of burnt bricks provided; British period.

172. **Parghat Mound.** Haripur-Hattar-Dhoris Chowk road; Wall structures potsherds; intact and feasible for excavation; Buddhist period

173. **Dhuriyan Stop Bridge.** Haripur-Hattar road; 20 x 15 x 10m; the bridge is made of dressed stones; 20th century CE.

174. **Railway Station Kot Najeebullah.** Haripur-Hattar road; 40 x 15 x 10m; constructed of burnt bricks with iron beams; British period.

175. **Salari Mound.** Haripur to Kot Najeebullah road; 20 x 15 x 1m; small mound comprised of wall structures and potsherds; Buddhist period.

176. **Railway Quarters (Compartments).** 20 x 8 x 6m; constructed of burnt bricks and iron beams; badly damaged; British period.

177. **Railway Bridge (Roshanabad).** Haripur-Najeebullah road about 2 km from Kot Najeebullah; 130 x 30 x 25m; made of iron, wood and cement supported by four pillars made of burnt bricks; still in use; British period.

178. **Kamala Tunnel.** Harripur- Kot Najeebullah-Kamala; 20 x 3 x 4m; It gives smooth flow to the rain water; Burnt bricks used; 20th century CE.

179. **Kamala Mound.** Haripur-Kot Najeebullah-Kamala; 21 x 15 x 3m; The site is partially destroyed for agriculture purpose; potsherds; Unidentified.

180. **Purana Kot.** 50 x 40x 2m; the site is disturbed by the local field owners for manure agricultural land; potsherds (glazed and un-glazed); Islamic period.

181. **Deen Wali Qabar.** 100 x 51 x 3m; Haripur-Kot Najeebullah road; unirrigated land; potsherds and graves; Gandhara Grave Culture

182. **Bhamala Monastery.** situated at the head of Haro valley about 10 miles to the east of Sirsukh; 400 ft. from east to west and 140 ft. from north to south; The main stupas in the middle

is sorrounded by small stupas and chapels, and to the east of it is the Bhamala monastery; Buddhist period (Marshall 2007: 171).

183. **Rajau ki Masjid.** 30 x 45 x 16m; Haripur-Khanpur road; monumental mosque, constructed on a high platform provided with a flight of steps having 15 steps; the mosque is constructed of local stones and bricks; 19th Century CE.

184. **Dhobandi.** Haripur-Khanpur-Dobandi road; 56 x 50 x 3m; a large site covered with thick bushes; wall structures potsherds; feasible for excavation; Buddhist period.

185. **Bhamala Topi.** 5km south of Main Khanpur; 200 x 30m; a large site; intact and feasible for excavation; wall structures potsherds; Buddhist period.

186. **Badalpur-I.** Situated near the village of Bhera in the open valley of Haro about 1 mile to the east of Lalchak; 80 ft (length) x 20ft (height); excavated by Sir John Marshall and later by the Department of Archaeology, Govt. of Pakistan in 2005; comprising stupa and small cells; diaper masonry; potsherds; Buddhist period (Marshall 2007: 181)

187. **Badalpur-II.** Haripur-Khanpur-Badalpur road; 80 x 60m; another Buddhist complex excavated by the Department of Archaeology, Govt. of Pakistan in 2005; wall structures (diaper masonry) and potsheds; Buddhist period.

188. **Jinnan Wali Dheri.** 1km from Taxila-Bandalpur road; 50 x 50 x 3.5m excavated from 2003-05 by the Department of Archaeology Govt. of Pakistan under the supervision of Ashraf Khan of Quaid-i-Azam University (Islamabad). The excavation has revealed main stupa surrounded by votive and commemorative stupas and a monastery; Buddhist period.

189. **Sakhi Dad Baba.** 120 x 125 x 15m; destroyed by the local owners for cultivation wall structures and posherds; Buddhist period.

190. **Lal Dheri-I Tofkian.** 20 x 10 x 1.5m; structures and potsherds; Buddhist period.

191. **Lal Dheri-II.** Haripur-Khanpur-Garri Sayidan road; 20 x 10 x 3m; the excavations have exposed the structures in diaper masonry; the site is covered with bushes and needs proper maintenance and conservation; Buddhist period.

192. **Jandial Temple-I**. Situated on the top of a large artificial mound some 25 feet above the ground and some 700 yards of northern gatway of the Sirkap city; the temple is sorrounded by a peristyle of columns and is consisting of *pronaos*, *naos* and *opisthodomos*; excavated by Ghulam Qadir in 1912-13. Well-preserved structures; potsherds; Indo Greek; (Marshall 2007: 85).

193. **Jandial Mound-II.** 30 x 20 x 2m; to the east of Jandial temple; excavated by Sir John Marshall; wall structures; Buddhist period.

194. **Pandora.** Haripur to Tofkian to Pandora to site. 75 x 50 x 3m. Presently most of the area of the site is covered by graveyard. Wall structures were found all around the site. Potsherds were collected.

195. **Pandora-II.** Haripur-Khanpur-Tofkian road; 60 x 15 x 4m; badly damaged and disturbed by illegal diggers; wall structures and potsherds; Buddhist period.

196. **Sirsukh.** About a mile on the north-east of Sirkap on Jandial to Khanpur road; 500 x 15 x 4m; Excavated in 1915 by John Marshall, well preserved; the site has been inscribed on the world Heritage List in 1980; Buddhist period (UNESCO World Heritage Sites in Pakistan, 2009:32).

197. **Nikra Bungalow**. Haripur-Taxila road; 16.11 x 9.70 x 4.90m; constructed of cut and dressed stones; the building has two large rooms; British period.

198. **Pipalan.** 100 x 30 x 2.8m; 400 yards south of main Taxila on Haripur road. Excavated by Sir John Marshall, 1923-24. The main stupa and other features of the sites are well preserved; Buddhist period.

199. **Jaulian.** 50 x 25 x 3m; approximately 1km northeast of Mohra Muradu; Excavation by John Marshall in 1923-24. Well preserved; Buddhist period.

200. **Chitti Mound.** 110 x 25 x 3m; on the Haripur to Taxila road; Wall structures and potsherds; intact and feasible for excavation; Buddhist period.

201. **Kot.** 300 x 250 x 2m; 9km southeast of Haripur on the Taxila road; wall structures potsherds; Buddhist period.

202. **Dara-I.** 3km southeast of Haripur on the Taxila road; 32 x 17 x 2m; agricultural land; walled structures and potsherds; Buddhist period.

203. **Dara-II.** Haripur-Taxila road; 100 x 35 x 3m; the site is partially covered by agricultural fields; while the remaining area reveals wall structure and potsherds; Hindu Shahi period.

204. **Graveyard Dara.** Haripur-Mang-Jabb road; 75 x 35; graves made of kanjur stone.

205. **Mamral Graveyard.** Haripur-Khanpur-Mamral; 175 x 125 x 1m; the site is covered by graveyard; old graves made of kanjur stone; potsherds; Islamic period.

206. **Mamral Topi.** The site is located 3km west of Taxila on Haripur-Khanpur road; 75 x 30 x 3m; the site is partially destoyed by illegal diggers; robbers' pits reveal wall structures (diaper masonry) and potsherds; Buddhist period.

207. **Qatrian wala Nala.** Haripur-Khanpur-Mamral road; 300 x 25 x 2m; on the opposite opposite side of Mamral Topi; wall structures were recorded in deteriorated condition; Potsherds; Buddhist period

208. **Mamral-II.** Haripur-Khanpur road; 35 x 21 x 2m; an agricultural land; structures remain and potsherds; Buddhist period.

209. **Showal-I.** Haripur-Khanpur-Showal road; 300 x 230 x 2m; a large site destroyed for agricultural purpose; wall structures and potsherds; Buddhist period.

210. **Showal-II.** 1km south of Taxila on Haripur road.150 x 125 x 2m; on the opposite side of Showal-I near Showal village, agricultural land; wall structures and potsherds; Buddhist period.

211. **Mughalabad Cave.** Haripur-Khanpur road; 8 x 8 x 3m; the cave is located on the opposite side of Khanpur Lake in Savla hills. Excavations at the site were conducted by Eden Johnson in 1964 and later by Farid Khan (University of Peshawar). These excavations have revealed a large number of microliths dated to the Mesolithic period; pre-historic (Ali, Rehman.A and Rehman.M. 145, Qazi 1998:10).

212. **Suraj Gali Cave.** Haripur-Taxila road near Suraj Gali; 3 x 2 x 2m; fire impressions are clearly visible on the ceiling; needs proper excavation; Prehistoric (?)

213. **Suraj Gali Mound.** 200m south of Haripur-Khanpur road near Suraj Gali; 300 x 200 x 1.5m; un-irrigated land; potsherds; Hindu Shahi period.

214. **Nara-I.** Haripur-Khoi road 25 x 30m; un-irrrigated land comprising wall structures and potsherds; Buddhist period.

215. **Nari Graveyard.** Taxila-Khoi road; 21 x 12 x 3m; a large site partially disturbed by modern graves; potsherds; Buddhist period.

216. **Nara Spring.** Taxila-Khoi road; near Nara stop; 6 x 8 x 2m; wall structures and potsherds; Buddhist period.

217. **Methly.** Taxila-Khoi road; near Nara in Methly hill; 500 x 400m; the site is partially damaged by illegal diggers; structure remains and potsherds; Buddhist period.

218. **Methly (Khoi).** 2km southeast of Taxila-Khanpur Khoi bus stop; 30 x 25 x 1m; a large site badly disturbed and looted; wall structures and potsherds; Buddhist period.

219. **Kohi.** Haripur-Kohi road near kohi graveyard; 100 x 70 x 5m; located structure remains and potsherds; Buddhist period.

220. **Vijian.** Haripur-Khanpur road; 65 x 30 x 1m; unirrigated land; partially disturbed; wall structures and potsherds; Buddhist period.

221. **Mora Gutta.** Haripur-Taxila road near Tarnawa stop on Kohala road; 26 x 17 x 1m; un-irrigated land covered with bushes; wall structures and potsherds; Buddhist period.

222. **Choi Samla.** Haripur-Tarnawa-Choi road; 220 x 200m; the site is highly disturbed by the local owners for agricultural purpose; wall structures and potsherds; Buddhist period.

223. **Kotehra-I.** Haripur-Tarnawa-Choi road; 200 x 200m; partially disturbed and converted to agricultural fileds; potsherds and wall structures; Buddhist period.

224. **Kotehra-II.** Haripur-Khanpur road nearTarnawa stop on Morrgutta to Kotehra road; 200 x 150m; un-irrigated land covered with grass and bushes; wall structures clearly visible; potsherd; Buddhist period.

225. **Kotehra-III.** Haripur-Khanpur near Tarnawa stop on Kotehra to Gram Toon road; 72 x 24 x 1m; a large site partially damaged; feasible for excavation; wall structures of daiper masonary and potsherds; Buddhiist period.

226. **Gram Toon (Grave yard).** Haripur-Khanpur road near Tarnawa stop on Kotehra to Gram Toon road; 100 x 150 x .5m; a lagre site disturbed by Islamic graves; potsherds; Islamic period.

227. **Pakiqad.** Haripur-Tarnawa-Grame Toon road on Kanthla road; 35 x i x 4m; wall structures and Potsherds; Islamic period.

228. **Koker Dara Kohi (step well).** Haripur-Khanpur-Tarnawa road 5ft (dia) x 40ft (depth); comprised of 23 steps; still in use; Islamic period.

229. **Kharala-I.** Haripur-Khanpur-Tarnawa-Najafpur-Sardhina-Khorala road; 300 x 200m; a large site partially disturbed comprising wall structures of daiper masonary and potsherds; feasible for excavation; Buddhist period.

230. **Kharala-I.** Haripur-Khanpur-Tarnawa-Najafpur-Sardhina-Khorala road; 20 x 20m; on the bank of Haro River; a large intact site feasible for exacvation; covered with bushes; foundations of wall structures and potsherds; Hindu Shahi period.

231. **Kharala-II.** Haripur-Khanpur-Tarnawa-Najafpur-Sardna road; 30 x 25m; the site is covered with bushes; wall structures and potsherds; Buddhist period.

232. **Bari Wali Patti (Kharala).** Haripur-Khanpur-Tarnawa-Najafpur-Sardna road; 25 x 15m; wall structures and potsherds; Buddhist period.

233. **Sanjiala-I.** Haripur-Khanpur-Tarnawa-Najafpur-Sardna road; 150 x 50m; a large site covered with grass and bushes; wall structure and potsherds; Buddhist period.

334. **Sanjiala-II.** Haripur-Khanpur-Tarnawa-Najafpur-Kharala to Sanjiala road; 20 x 20m; a large mound reveals wall structures and potsherds; Buddhist period.

235. **Sanjiala Cave.** Haripur-Khanpur-Tarnawa-Najafpur-Kharala to Sanjiala road; 4 x 2 x 4m; No cultural material found; needs further investigations.

236. **Pala Kohi (well).** Haripur-Khanpur-Bhamala road; 200 x 150m; wall structures and potsherds; period (?).

237. **Najafpur.** Taxila-Haripur-Tarnawa-Choi to Najafpur; 45 x 12 x 2m; a large site reveals wall structures associated with potsherds; Buddhist period.

238. **Najafpur Cave.** Taxila-Haripur-Tarnawa-Choi to Najafpur; 10 x 2 x 7m; ceiling black sooted; Prehistoric period.

239. **Lasan Dheri.** Haripur-Tarnawa-Najafpur-Lasan road; 42 x 30 x 2m; It is a large site reveals wall structures and potsherds; Buddhist period.

240. **Lasan Dheri-II.** Haripur-Tarnawa-Lasan road; 10 x 10 x 2m; The mound covered with trees and bushes; wall structures and potsherds; Buddhist period.

241. **Dhunya Cave.** Haripur-Khanpur-Tarnawa-Najafjpur-Dhunya road; 13 x 3 x 2m; ceiling black sooted; Prehistoric period.

242. **Dhunya Mound.** 107 x 76 x 3m; a large site covered with bushes and few modern graves; potsherds; Buddhist period.

243. **Kamalpur-I.** Haripur-Tarnawa-Kamalpur road; 18x 18 x 2m; located near the Ziyarat Hazrat Sakhi Baban Pir Qattal; partially covered with old graves; wall structures and potsherds; Buddhist period.

244. **Ziyarat Aisa bin Pir Qattal-II.** Haripur-Tarnawa-Kamalpur road; 15 x 15 x 10m; the orignal tomb is constructed of pebble stones and mud; while bricks are used in restoration; the structure is badly damaged and ruined; Islamic period.

245. **Kamalpur-II.** Haripur-Tarnawa-Kamalpur road; 60 x 20 x 2m; The site is located opposite Masjid Quba near Ziyarat Baban Pir Qattal; agricultural land, structural remains and potsherds; Hindu Shahi period.

246. **Bhirlian Baghpur Dheri.** Haripur-Najafpur-Bakka road; 25 x 17 x 2m; located some 12km southeast of Tarnawa Khanpur; covered with old graves made of kanjur stones; potsherds; Islamic period.

247. **Rajgan Mahal.** Haripur-Najafpur-Bakka road; 200 x 175 x 3m; a historic monument once occupied by the Rajas; constructed of wood and local stones; decorated with geometrical and floral designs; now badly damaged and deteriorated; British period.

248. **Narota.** Haripur-Tarnawa-Najafpur-Narota road; 100 x 70 x 3m; partially disturbed for agricultural purpose; wall structures potsherds; Buddhist period.

249. **Manrey Hirra Choti.** Haripur-Tarnawa-Habib Gali road; 15 x 15 x 3m; wall structures and potsherds; Buddhist period.

250. **Manrey Hira Bari.** Haripur-Taranwa-Najafpur-Bhirlia-Habib Gali road; 50 x 27 x 3m; wall structures in deteriorated condition and potsherds; Buddhist period.

251. **Takya Pakh Shahi-I (Graveyard).** Haripur-Tarnawa-Najafpur-Pakh Shahi road; 40 x 35 x 1m; the graveyard has both modern and old graves in different orientations and a well; Islamic period.

252. **Pakh Shahi-II.** Haripur-Najafpur-Bakka road; 145 x 27 x 2m; wall structures and potsherds; Hindu Shahi period.

253. **Gujran Baghpur Dheri.** Haripur-Tarnawa road 18km form Najfpur; 37 x 31 x 2m; structure remains in scattered position associated with potsherds; Buddhist period.

254. **Masta Wells.** Haripur-Tarnawa road; 1.5 x 1.5 x 5m; two stepped wells, made of local stones, still in use; Islamic period.

255. **Sagola I.** Haripur-Mang-Jabb-Sagola road; 105 x 75 x 2m; a large site comprising wall structures and potsherds; Buddhist period.

256. **Sagola-II.** Haripur-Mang-barilla-Sagola road; 95 x 85 x 2m; an agricultural land; structures remains and potsherds;Buddhist period.

257. **Dheri Rajgan-I.** Haripur-Mang-Jabb-Sagola road; on the opposite side of Sagola-I; 170 x 125 x 2m; wall structures and potsherds; Buddhist period.

258. **Dheri Rajgan-II.** Haripur-Jabb-Dheri-Rajgan road; un-irrigated land comprising structures in deteriorated condition and potsherds; Buddhist period.

259. **Dheri Rajgan-III.** Haripur-Jabb-Dheri-Rajgan road; 170 x 100 x 3m; a large site feasible for excavation; wall structures of diaper masonry and potsherds; Buddhist period.

260. **Choti (Jabb).** Haripur-Mang road; 140 x 105 x 3m; unirrigated land comprising wall structures and potsherds; Buddhist period.

261. **Nalkum.** Located in Jabb village; 140 x 100 x 1m; Wall structures and potsherds; Buddhist period.

262. **Rani Wah.** Haripur-Vijian-Suragah-Rani Wah road; 150 x 100 x 2m; unirrigated land; potsherds; Buddhist period.

263. **Rani Wah Cave.** Haripur-Vijian-Surajgali-Rani Wah road; 3 x 3m; ceiling of the cave black sooted; Pre-historic?

264. **Rani Wah-II.** Haripur-Vijian-Surajgali-Rani Wah road; 40 x 25m; Wall structures and potsherds; Buddhist period.

265. **Purana Khan Mound.** 95 x 65 x 1m; the site is partially covered with agricultural fields; wall structures and potsherds; Buddhist period.

266. **Dheri Farman Shah.** Haripur-Bhamala Board road; 35 x 30 x 6m; wall structures and potsherds;

267. **Purana Kohi.** Haripur-Chappar-Manikrai-Jama road; 3 in diam x 60; made of local stones; still in use; Islamic period.

268. **Patanyan.** Haripur-Cappa-Jama-Patanga road; 37 x 32 x 1m; a large site showing wall structures and potsherds; Buddhist period.

269. **Jheel Mound.** Haripur-Chappar-Jama road; 41 x 40 x 2m; a large site comprising wall structures and potsherds; the site submerges into the lake water during the winter and exposes during the summer when the lake dries up; Buddhist period.

270. **Jheel Mound-II.** Haripur-Chappar-Jama-Khaima Basti road; 101 x 97 x 2m; in Tarbela lake; Mughal period mosque badly damaged; potsherds; Islamic period.

271. **Koh Mosque.** Haripur-Chappar-Jama-Tarbela Jheel road; 10 x 10m; next to the Jheel Mound-II; well made of local stones; Islamic period.

272. **Kagh Jitti pind.** Chappar-Jama-Makhan-Kagn road; 105 x 92 x 2m; a large site comprised of well, structures remains and potsherds; period (?).

273. **Ramo Pind Dheri.** Chappar-Jama-Kagn; to the west of Jheel mound-II; 100 x 30 x 2m;. wall structures and potsherds; Buddhist period

274. **Kika Parala Mound.** Haripur-Chappar-Parala-Kika Parala road; 203 x 142 x 2m; the site is badly damaged and disturbed by illegal diggers who are said to have found many coins; walled structures and potsherds; Buddhist period.

275. **Nara Hujra.** Haripur-Gandaf-Nara road; 9 x 5 x 2; traditional Hujra, constructed of local stones and wood; the traditional leather wooven beds are being used in the Hujra; British period.

276. **Nara-II.** Haripur-Gandaf-Narra-Amazai road; 32 x 18 x 2m; a large site comprised of wall structures associated with pottery; Buddhist period.

277. **Parba Graveyard.** Haripur-Gandaf-Nara-Parba road; 95 x 10 x 2m; the graves are made of kanjur stone; Islamic period.

278. **Parba-II.** Haripur-Gandaf-Nara-Parba; 43 x 27 x 1m; a large site comprising structure remains and potsherds; Buddhist period.

279. **Angi Kot-I.** Located near Angi Kot. 43m x 29m x 1m. Wall and room structures were recorded. Broken grinding stones were also recorded. Potsherds were collected; Buddhist period

280. **Angi Kot-II.** 47m x 29m x 2m; the site reveals walled sructures and potsherds; Buddhist period.

281. **Shah Kot.** 107 x 66 x 3; wall structures and potsherds; Buddhist period.

282. **Karmoo.** 178 Km west of Haripur city in Pani Par; 67 x 37 x 2m; the site is presently covered with agricultural fields; wall structures and potsherds; Buddhist period.

283. **Kopri-I.** 54 x 24 x 2m; Haripur-Ghazi-Gandaf-Nara-Kopri road; badly damaged and looted by illegal diggres; wall structures and potsherds exposed; Buddhist period period.

284. **Kopri-II.** 51 x 30 x 2m; the site reveals wall structures and potsherds; Buddhist period.

285. **Gali Kandan Well.** Haripur-Beat Gali-Kandan road; 15 x 10m; the site is comprised of wall structure and a well made of local stones; the well is still in use; Buddhist period.

286. **Kandan Mound.** Haripur-Gandaf-Beat Gali road; 50 x 37 x 2m; the site reveals wall structures of diaper masonry and potsherds; intact and feasible for excavation; Buddhist period.

287. **Gali Mound.** 77 x 27 x 3m; badly looted and disturbed by illegal diggers; wall structures and potsherds; Buddhist period.

288. **Devi Mound**. 71 x 37 x 3m; unirrigated land; wall structures and potsherds; Buddhist period.

289. **Kali Dar Mound**. Haripur-Ghazi-Amazai road; 77 x 39 x 3m; a large site comprising wall structures of diaper masonry and potsherds; Buddhist period.

290. **Charona**. Haripur-Ghazi-Amazai road; 52 x 25 x 2m; the site is destroyed and disturbed for agricultural purposes; wall structures and potsherds; Buddhist period.

291. **Mangal Chah Mound.** 27 x 20 x 2m; a small mound comprising structure remains and potsherds; Buddhist period.

292. **Shah Kot Mound-II.** 72 km from Ghazi; 92 x 62 x 2m; unirrigated land; wall structures and potsherds; Buddhist period.

Conclusion

The Department of Archaeology, Hazara University, has made 206 new discoveries during the field investigations in district Haripur. A total of 86 sites were explored previously. Thus the total number of the heritage sites unfolded in the region has risen to 292. The newly explored sites ranging from the prehistoric time to the British periods are of great importance as they are helpful to establish an authentic cultural profile of the region. The absence of the Bronze Age sites in the entire Hazara region is alarming that needs to be investigated seriously. It would be wiser to revise the survey along the banks of the rivers Siran and Kunhar to probe into the matter. If explored, and identification revised, then we would recommend to excavate few ones to probe into the missing link in the cultural profile of the Hazara region.

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Pottery Description

Figure: 1

GOMATAY

1. Outcurve rim of medium jar with shoulder, Red ware, medium texture
2. Everted grooved rim of water pitcher with short neck
3. Out curve rim of a medium pot
4. Everted rim of small water pitcher with combed design on shoulder
5. A base of tiny pot, red ware
6. Base of medium pot with tapered body

Figure: 2

CHITI DHAKI

1. Everted grooved rim of water pitcher with short neck, medium texture
2. A flat topped groove rim of water pitcher with carinated neck, red ware medium texture
3. Out curved grooved rim of medium cooking pot, red ware, medium texture
4. Everted rim of water pitcher with neck.
5. A string cut base of tiny pot.
6. A base of medium pot with tapered body.
7. A handle with projected strip and applied stamped on body, red ware.
8. A handle, incised with nail impression, red ware.
9. A string cut broken base.
10. A broken base of tiny pot.

Figure: 3

CHOTI MARI

1. A rim of cooking pot with projected handle and concave neck internally, red ware.
2. A flat topped incurved rim of shallow bowl, red ware.
3. A flat topped rim of water pitcher.
4. Everted grooved rim of water pitcher.
5. Flat topped incurved rim of water pitcher with short neck.
6. Outcurved rim of water pitcher with raised projected band, red ware.
7. Outcurved pointed and grooved rim of water pitcher with neck having grooves on shoulder.
8. Broken lid.
9. Outcurved grooved rim of water pitcher with raised projected band.

Figure: 4

MAKYALA

1. Outcurved rim of water pitcher with raised projected band, red ware
2. Outcurved pointed rim of shallow bowl externally projected.
3. Externally projected a grooved rim of shallow bowl.
4. Outcurved rim of water pitcher with shoulder, red ware.
5. Broken rim of tiny pot, thin texture.
6. A handle with hole at centre, red ware.
7. A flat topped incurved rim of medium jar.
8. Externally projected outcurved rim of shallow bowl.
9. Pointed rim of medium jar having grooved internally.

Figure: 5

PURANA KOT

1. Pointed outcurved and grooved rim of water pitcher.
2. Externally projected grooved rim of shallow bowl having incised bands and stamped impression on body, polished surface.
3. Carinated rim of bowl, with polished surface.
4. Externally projected rounded rim of shallow bowl, red ware.
5. Upraised pointed grooved rim of medium jar, with polish surface.
6. Externally projected carinated rim of water pitcher, red ware.
7. Externally projected grooved rim of bowl, red ware.

Figure: 6

KOTA KALAR

1. A rim of jar with raised band on neck.
2. Upraised pointed rim grooved rim of shallow bowl, red ware.
3. Incurved flat curve of medium jar.
4. An outcurved rim of water pitcher with raised band externally.
5. Everted rim of water pitcher with incised bands internally.
6. Outcurved rim of water pitcher with raised band externally.
7. Outcurved rim of water pitcher with carinated neck.
8. Base of pot.
9. Carinated rim of small water pitcher, having thumb impression on top.

Figure: 7

QAZI PUR DHERI

1. Pointed rim of cooking pot/ possibly with projected handle red ware.

2. Outcurved rim of water pitcher with raised projected band, red ware.
3. Externally projected outcurved rim, small water pitcher, red ware.
4. A flat topped externally projected rim of water pitcher, red ware.
5. Eternally projected incurved rim of bowl, red ware.
6. Outcurved pointed rim tiny pot.

VIJIAN

1. A rim of medium Jar.
2. Externally projected pointed rim of a shallow bowl.
3. Outcurved rim of water pitcher, having vertical slash design externally and white coating on red surface internally.
4. A lid with knob, red ware.
5. Everted rim of water pitcher having grooves internally, red ware.

Figure: 8

SHAH MAQSOOD

1. Externally projected incurved grooved rim of water pitcher, red ware.
2. Incurved rim of shallow bowl, red ware.
3. Pointed rim bowl having thumb impression externally, red ware.
4. Incurved pointed grooved rim, medium jar, red ware.
5. Outcurved rim small water pitcher.
6. A pointed outcurved rim of water pitcher with long neck.
7. A base of tiny pot/ probably vase, red ware.
8. A dish-on-stand with broken handle having concave bottom internally, red ware.
9. A grooved body sherd.
10. A broken handle.

Figure: 9

JHEEL MOUND

1. A thick rim of jar having thumb impression and incised wavy deign externally, red ware.
2. Outcurved pointed rim of water pitcher with grooves externally, red ware.
3. A flat topped rim of medium jar with raised band externally.
4. A lug of mug.
5. A glazed body sherd.
6. An incurved body sherd with black bands and incised small slash design externally.
7. A grooved body sherd with polished surface.

Figure: 10

DOBANDI

1. Outcurved flat topped rim of shallow bowl with grooved on body externally, red ware.
2. Outcurved grooved rim of water pitcher, red ware.
3. An incurved thick rim of jar having grooves on shoulder.
4. Everted rim of small water pitcher having combed design on shoulder.
5. Incurved thick rim of jar red ware.
6. A base of medium pot.
7. A broken thick base of large pot with polished surface.
8. A base of small pot.
9. A base of tiny pot.

Figure: 11

MERA ALI KHAN

1. A grooved pointed rim of water pitcher.
2. Incurved thick rim of jar, red ware.
3. Externally projected grooved rim of bowl, red ware.
4. Outcurved grooved rim of water pitcher.
5. Externally projected grooved rim of water pitcher.
6. Outcurved grooved rim of water pitcher, red ware.
7. A body sherd with incised design.
8. A broken animal figurine.
9. Outcurved externally grooved rim of water pitcher.
10. An outcurved flat topped rim of bowl, red ware.

Figure: 12

CHAPPAR MOUND - I

1. A broken pointed base of jar with grooves on body, red ware.
2. A thick pointed base of jar, red ware.
3. A broken pointed base of jar with grooves on body.
4. A thick broken pointed base of jar.
5. A body sherd with ledge having incised slash design, red ware.
6. A grooved body sherd.

Figure: 13

PANDORA

1. A thick rim of large jar with incised wavy design externally, red ware.

2. A rim of shallow bowl with raised band, having black bands, geometrical and floral design internally, red ware.
3. Externally projected grooved rim of water pitcher, red ware.
4. An incurved flat topped rim of bowl, red ware.
5. Outcurved grooved rim of small bowl.
6. Outcurved rim of water pitcher, red ware.
7. Pointed rim of bowl.
8. A broken lid with knob.

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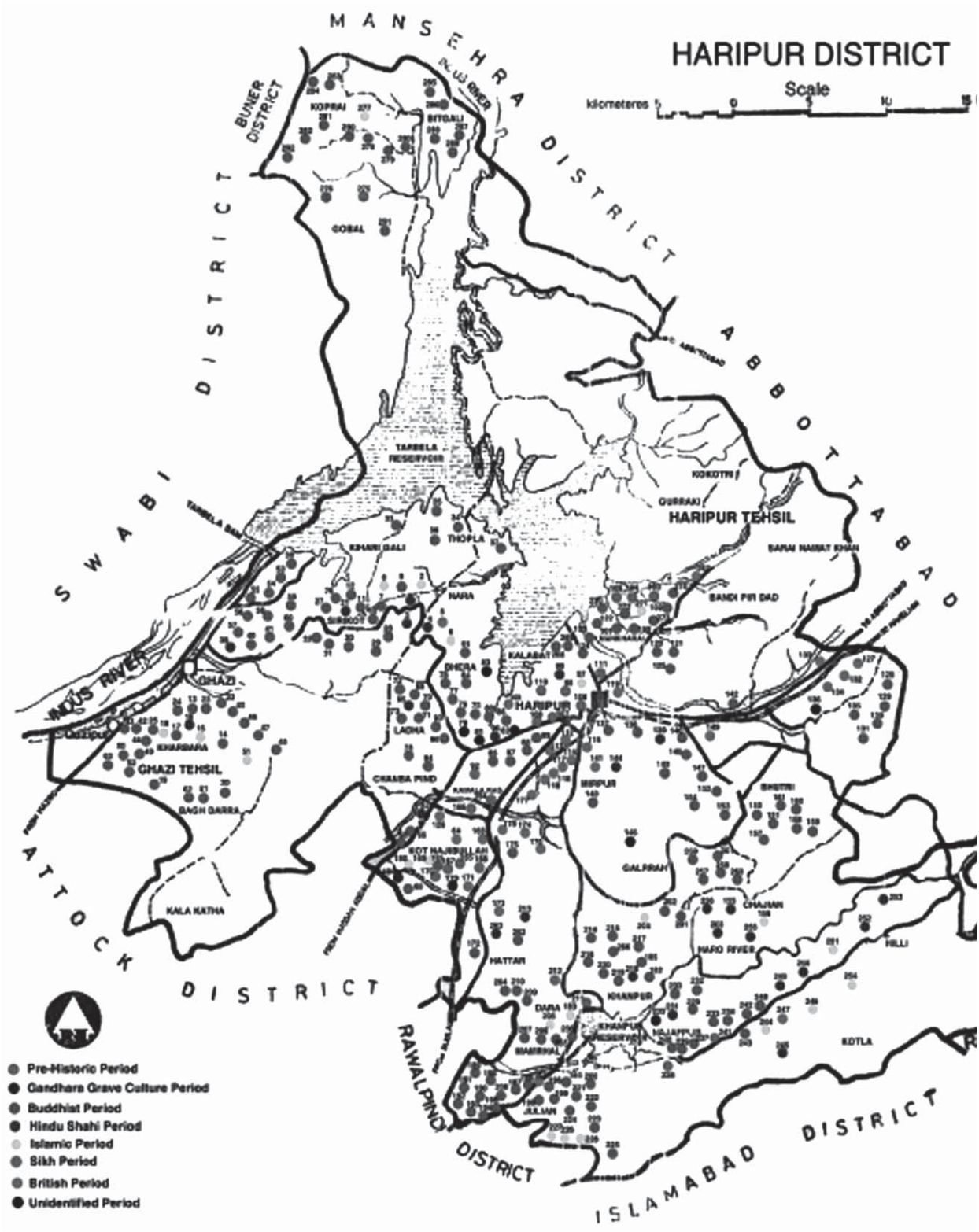
Map showing archaeological sites



1. Gram Toon (# 226)

2. Another view of Gram Toon

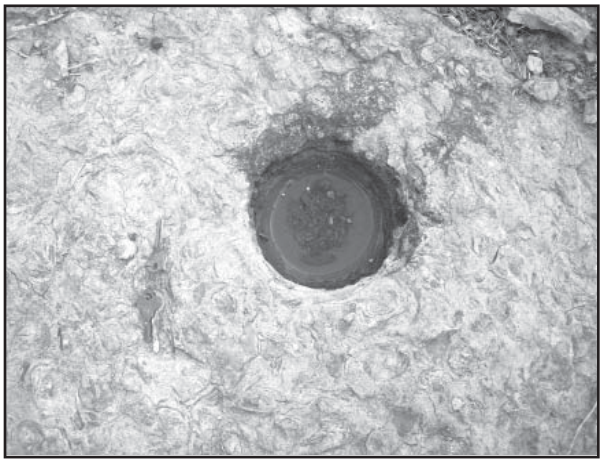
3. Manrey Hira Bari (# 250)

4. Another view of No. 3

5. Umar Khana II (# 28)

6. Umar Khana III (# 29)

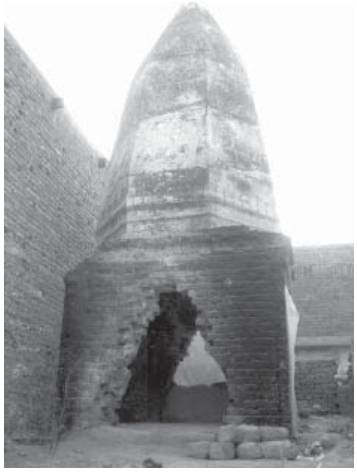
7. Qatrian wala Nulla (# 207)



8. Another view of No. 7

9. Jandial Mound III (# 193)

10. Another view of No. 9



11. Kot Najeebullah Temple (# 166)

12. Makyala Monastery (# 151)

13. Details of Makyala Monastery

14. Temple IV (Haripur) (# 106)

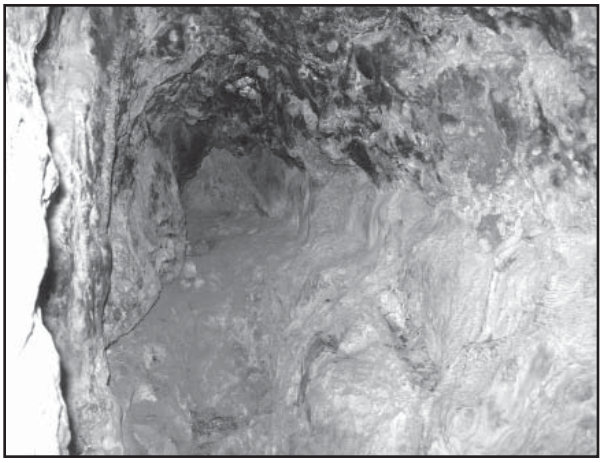
15. Another view of No. 14

16. Pir Manakrai I (# 100)

17. Details of No. 16

18. Najafpur Cave (# 238)

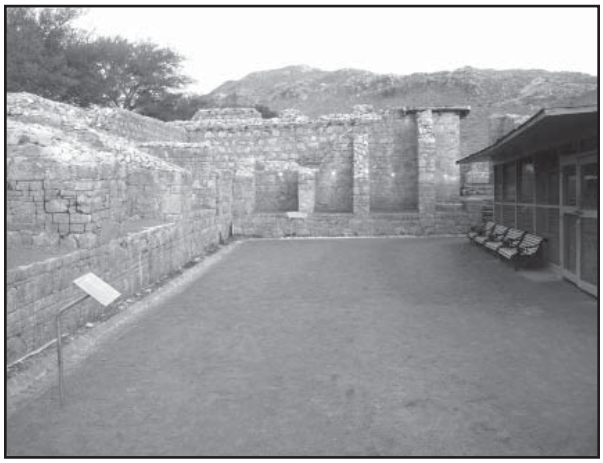
19. Detailed view of Najafpur Cave



20. Inner view of Najafpur Cave

21. Methly (# 217)

22. Details of No. 21



23. Jaulian (# 199)

24. Buddhist Sculptures in Jaulian

25. Jaulian (Monastery)

26. Rani Wah Cave (# 263)

27. Another view of Rani Wah Cave

28. Bhamala stupa (# 185)

29. Another view of the Bhamala stupa

30. Details of the Stupa at Bhamala

31. Chhajjian Water Tank (# 156)

32. Devdas Temple V (# 107)

33. Devdas Temple V (# 107)

34. Mausoleum of Maulana Abdul Qayyum (# 97)

35. Another view of No. 35

36. Tomb near Sarai Saleh

37. Kot (# 201)

38. Details of Kof mound

39. Jandial Temple I (# 192)

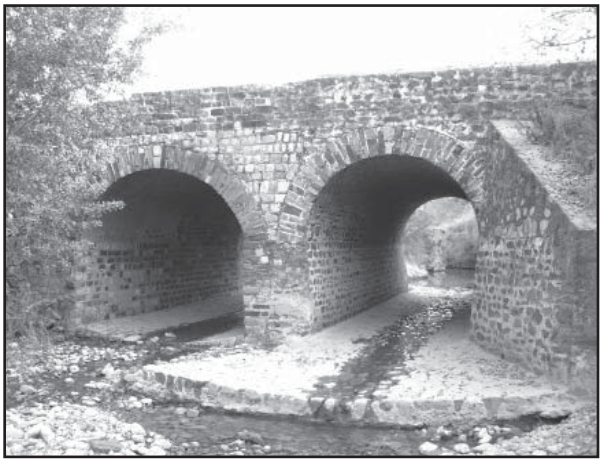
40. Another view of No. 40

41. Steps at Jandial

42. Pillar remains at Jandial

43. Another view of No. 44

44. Another view of No. 44



45. Another view of the Bridge

46. Another view of the Bridge

47. Ceiling details of the bridge

48. Temple II, Sarai Saleh (# 104)

49. Kanda Temple III (# 105)

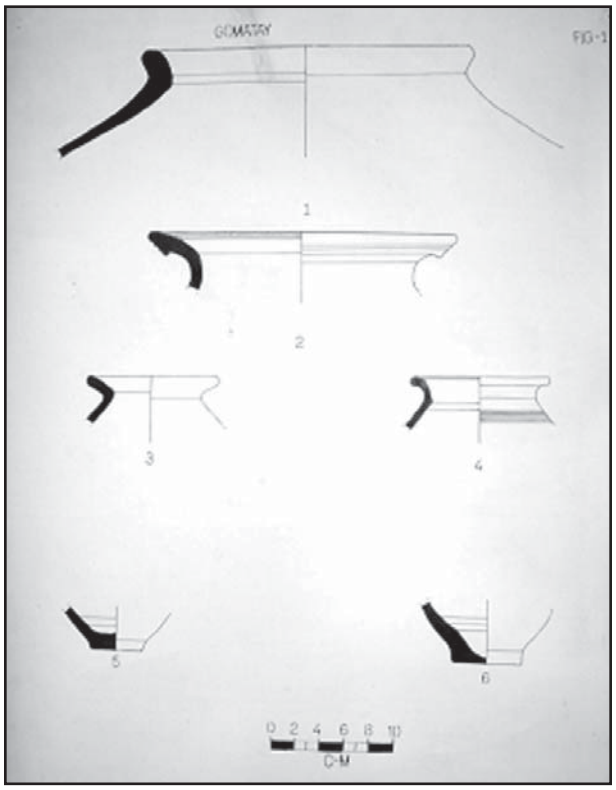
50. Details of the Temple III

51. Another view of No. 51

52. Pipalan (# 198)

53. Details of Pipalan

54. Votive Stupa in Pipalan


GOMATAY
FIG-1
1
2
3
4
5
6
0 2 4 6 8 10
C-M

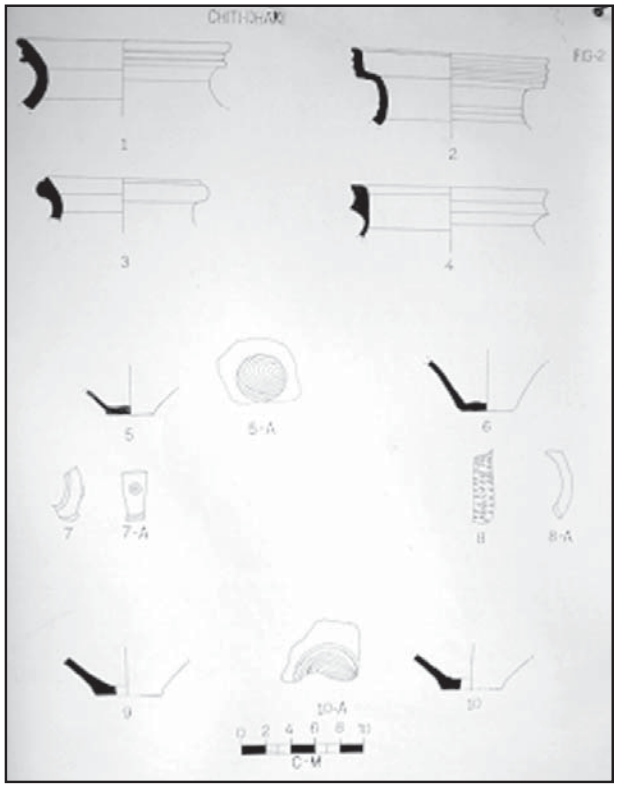


FIG-2
1
2
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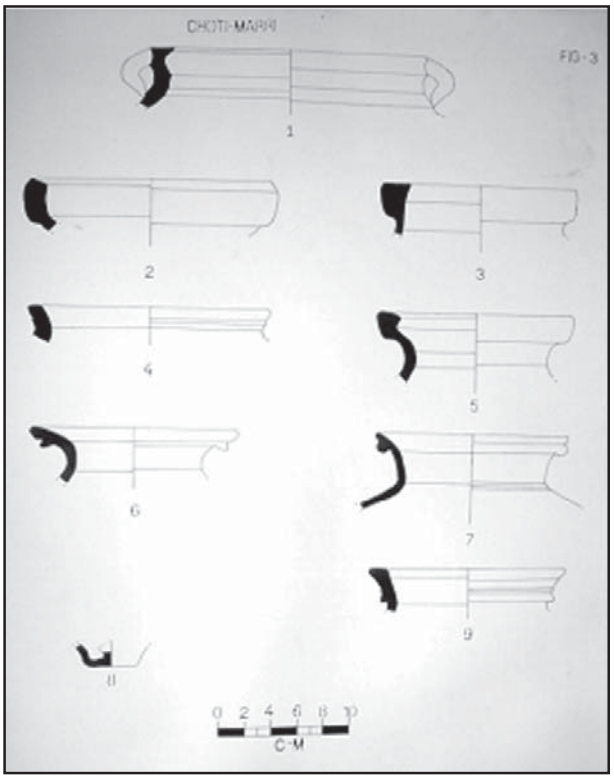
5-A
6
7
7-A
8
8-A
9
10-A
10
0 2 4 6 8 10
C-M


CHOTI-MARI
FIG-3
1
2
3
4
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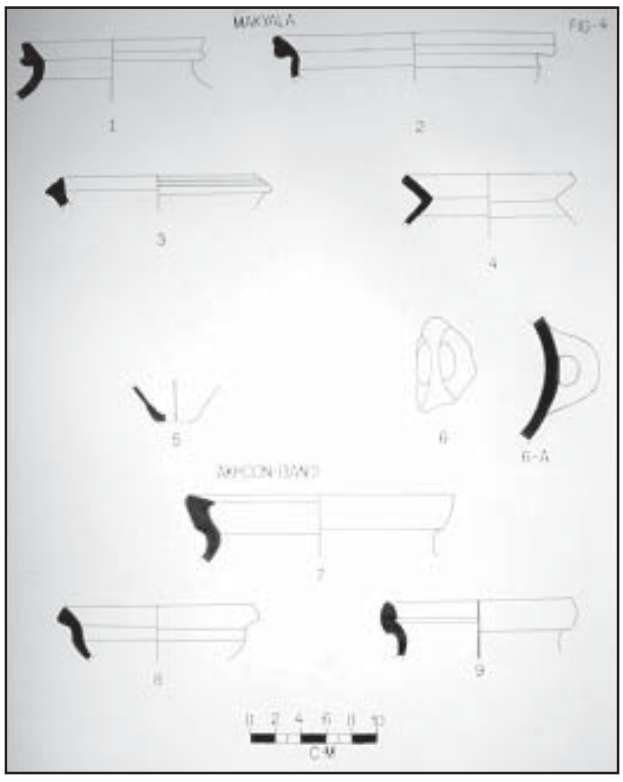
7
9
0 2 4 6 8 10
C-M


MAKWALA
FIG-4
1
2
3
4
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6
6-A
7
8
9
0 2 4 6 8 10
C-M


PURANA-KOT
FG-5
1
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3
4
5
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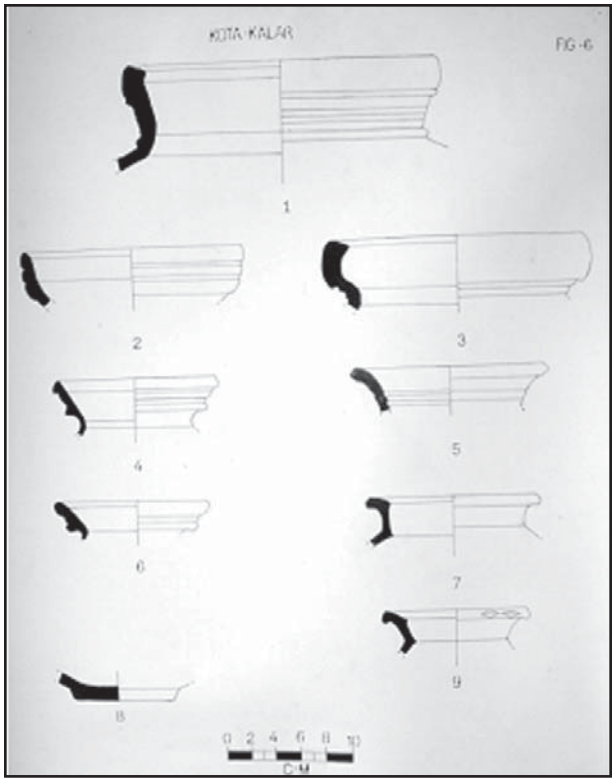
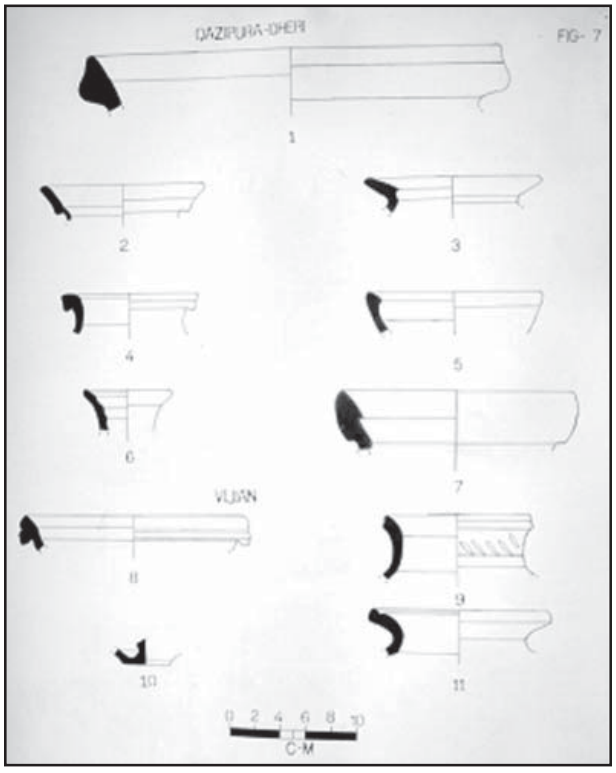
7
8
0 2 4 6 8 10
C-M


KOTA KALAR
FG-6
1
2
3
4
5
6
7
8
9
0 2 4 6 8 10
C-M


DAZIPURA-DHERI
FIG- 7
1
2
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4
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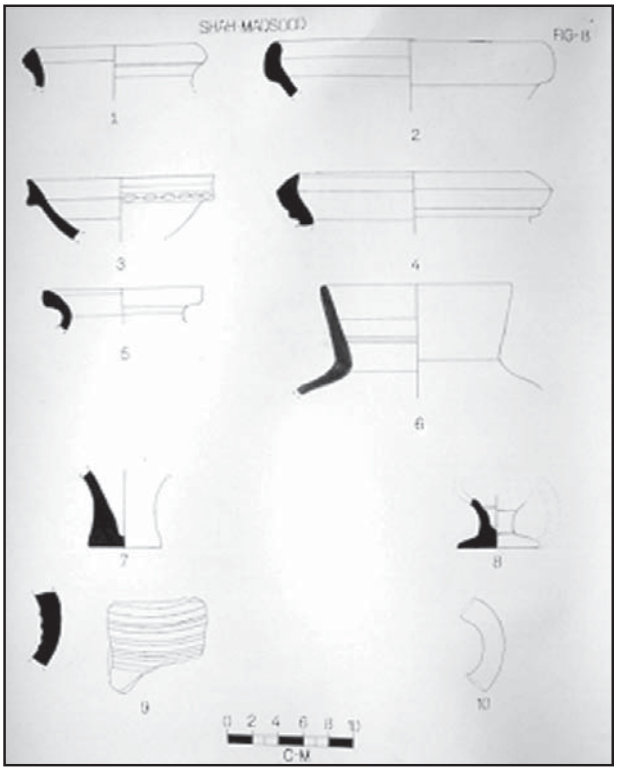
7
VIJIAN
8
9
10
11
0 2 4 6 8 10
C-M


SHAH MASOOD
FIG-8
1
2
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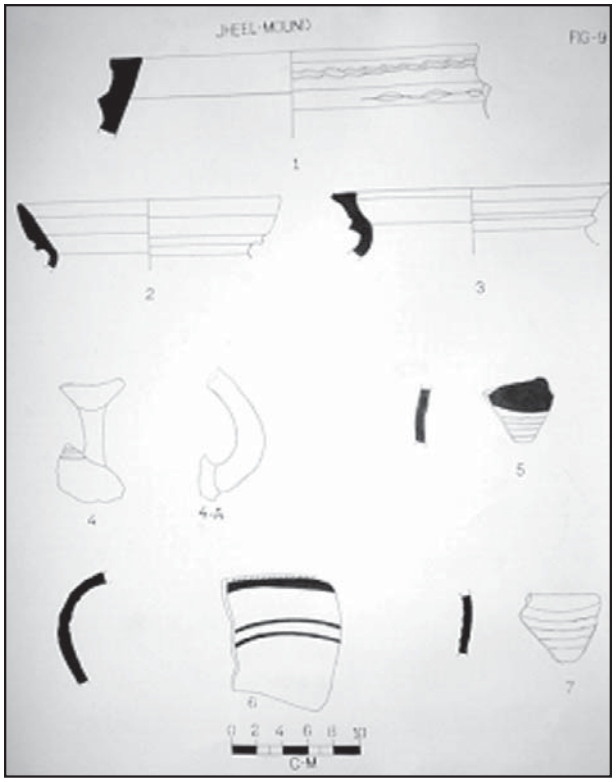
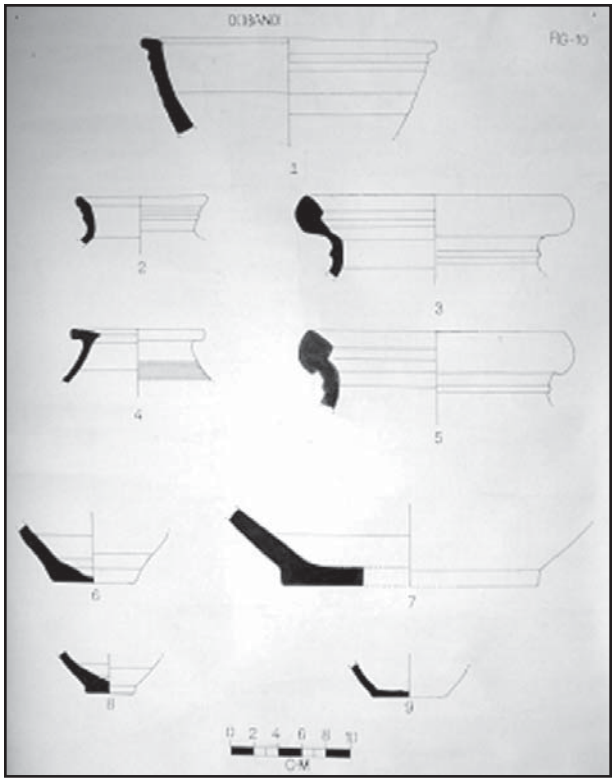
9
10
0 2 4 6 8 10
C-M


JHEEL MOUND
FIG-9
1
2
3
4
4-A
5
6
7
0 2 4 6 8 10
C-M


DOBANDI
FIG-10
1
2
3
4
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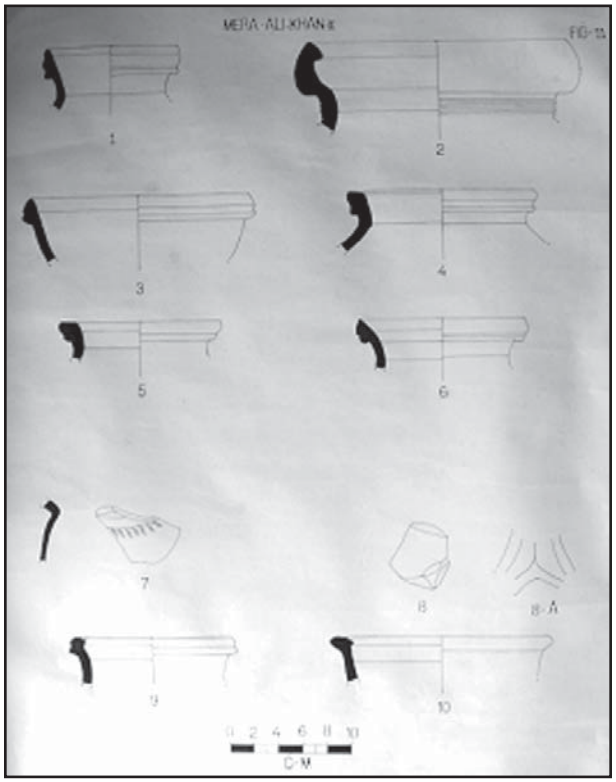
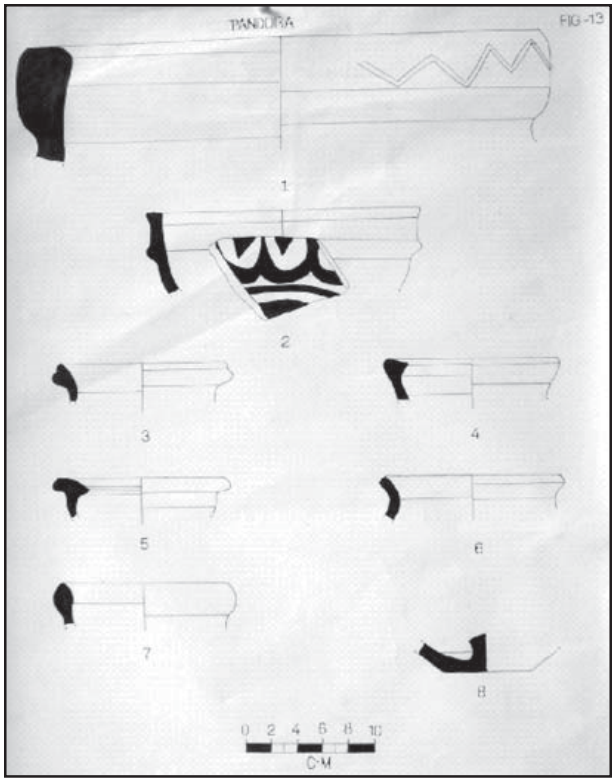
9
0 2 4 6 8 10
C-M


MERA ALLAHYAR
FIG-11
1
2
3
4
5
6
7
8
8-A
9
10
0 2 4 6 8 10
C-M


CHAPRAR MOUND
FIG-12
1
2
3
4
5
6
0 2 4 6 8 10
C-M


PANDORA
FIG-13
1
2
3
4
5
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7
8
0 2 4 6 8 10
C-M

Gankorineotek (Chitral) Excavations, Second Field Season (2008)

IHSAN ALI, IBRAHIM SHAH,
ABDUL HAMEED and ASHFAQ AHMAD

Introduction

1.1 Name

Chitral, also Chitrar or Qashqar (*District Census Report of Chitral 1998*:13), is known to the people of Peshawar, Bajaur and Swat by the same name. While the inhabitants of the region would love to call it Khowistan that means the 'land of Khow' speaking **Khow** language (Khowar), which is spoken in Chitral and some parts of Ghizer district (Ghufran 1962: 12-13). Most historians have mentioned it as Khowistan, some called it Bilor, while others have mentioned it as Naguman that is why the River is also called River Naguman when it enters the Peshawar Plain (*ibid*).

1.2 Geography

Chitral, the northern most district of the Khyber Pakhtunkhwa (former NWF) Province of Pakistan, though isolated from the rest of the region, is known throughout the world for its scenic beauty and rich cultural heritage. It is located between 71º 12′ and 73º 53′ east longitude and between 35º 13′ and 36º 55′ north latitude (Ali and Zahir 2005: 135). It is bounded on the northwest by Afghanistan, on the south by Dir district and Kunar Province of Afghanistan and on the east by Swat district and Ghizer district of the newly established province of Gilgit and Baltistan. The valley is surrounded by snooty mountain ranges. To the west, bordering Afghanistan is the famous Hindu Kush range, to the east is the Hindu Raj and in between the Sandur-Karakuram range that contain numerous peaks of over 20000 feet. Tirichmir (25263 feet) being the highest, dominates the rest (Nasim Khan 2002: 179).

1.3 Historical Background and pervious Research

The Archaeological investigations in Chitral had been limited until 1999. Thence onward the archaeological research conducted in the region opened a new chapter, many archaeological remains were unfolded, which include the Prehistoric sites, Gandhara Grave Sites and the historical remains from second millennium BCE to the late British Period (Ali and Zahir 2005: 135).

The prehistoric sites recovered from the region during the archaeological investigations from 1997-2004 include 11 rock carvings and a cave. A.H Dani contemplated the presence of Gandhara Grave sites and recovered grave goods having great similarities with those found from Timargarha Graves (Dani 1967:36). Stacul (1969) also reported protohistoric cemeteries in Chitral. He excavated a grave in Noghurmuri near Chitral town and found grave-goods along with human skeleton. A comparative analysis on the pottery recovered from Ayun graves was done by Raymond Allchin (1970). In 1972, Israr-ud-Din and Inamullah Jan opened a grave that contained double burials with grave goods (i.e. terracotta pots and human figurine) (Israr 1979). In 1999, the Department of Archaeology, University of Peshawar, in collaboration with Bradford University (UK), recorded 18 new sites in the region (Ali et al 2002). The Directorate of Archaeology and Museums, Government of the Khyber Pakhtunkhwa,

and Bostan University (USA) discovered several new sites in 2003. While Ihsan Ali then the Director of Archaeology and Museums, KPK (presently Vice Chancellor, Abdul Wali Khan University, Mardan) added 26 new sites in 2004 during the Archaeological Survey (Ali and Zahir 2005).

In addition, historic sites were also reported from the entire district. Worth mentioning among them are the Brāhmī inscription in Charun village dated to 4th-5th centuries CE, the Śāradā inscription near Arandu on the left bank of River Kunar belongs to 8th-10th centuries CE and a Sanskrit inscription carved on a rock near Barenis village shows about the year 900 CE (Nasim Khan 2002: 180).

Five major excavations were conducted in the region under the supervision of the senior author from 2003-2009: first at Parwak (upper Chitral) in 2003-04 (Ali and Zahir 2005); the second at Singoor (the lower Chitral in 2005) (report in the press); the third excavation was conducted by the Department of Archaeology, Hazara University (Mansehra) in 2007-08 at the site locally known as Gankorineotek near Singoor in the lower Chitral (report in the press). Keeping in view the archaeological importance of the site and its destruction at the hands of the owner himself for constructional purpose, the fourth excavation was conducted here by the same Department in 2008.

Gankorineotek Excavations, Second Field Season (2008)

2.1 Aims and Objectives

The aims and objectives of the excavations in this season were four fold: firstly to save the site, which was being destroyed by the owner for the sake of some construction work; secondly, to shed light on the Gandhara Grave Culture in the region and its relationship with other known sites; thirdly, to collect antiquities for the newly established Museums of Hazara University, and lastly, to impart field training to the students and graduates of the Department of Archaeology, Hazara University (Mansehra).

2.2 Location of Gankorineotek site

The name of the site is Gankoriniotake, which means ‘a windy place’ as strong wind blows at this place most of the day. It is situated some six kilometre from the Chitral town on the right bank of the River Chitral, 71º 48′377‴ east longitude and between 35º 54′136" north latitude about 1562 metre above mean sea level. The whole area was under cultivation. It is sloping downward and the people had turned it into a terraced field. Apparently the upper layers had mostly been destroyed while levelling the ground for cultivation.

2.3 Pre Excavation explorations

The site was first discovered by the senior author during the Archaeological Survey of District Chitral in 2004. Later in 2007, he and Ruth Young (University of Leicester, UK) opened two graves and collected samples for Radiocarbon dating. In December 2007, a team of archaeologists from the Department of Archaeology, Hazara University (Mansehra) conducted excavation, and the team was able to excavate 41 graves during the first season field work. But the work was suspended due to heavy snow fall. The remaining area was excavated by the same department during June-August 2008.

2.4 Layout of Trenches

The site was divided into 9 grids (i.e A, B, C, D, E, F, G, H & J) during the first season. Each grid measured 30x30m. The excavation in the second season was focussed on two grids (i.e E & H) areas

each having 5 trenches and a balk between two trenches. Eight trenches i.e. E II/2, E III/2, E IV/2, E III/3, E IV/3, E V/3 H I/2, H II/3 were excavated. The datum point was fixed on a huge rock (71º 48´377" east longitude and between 35º 54´136" north latitude) about 1562 metre above mean sea level.

Graves and Findings

3.1 Graves exposed during the excavations

Thirty nine graves of various shapes and sizes were opened during this year's field season. The formations of the graves were similar to those found from Timargarha and Swat regions. During excavation a circular or oval pit was demarcated on the surface of the ground, which was later excavated up to three to six feet, and then in most cases a rectangular pit was marked in the middle of this circular pit. This lower pit was generally dressed with dry stone masonry of three to five courses. The dead body was placed on the floor along with grave goods. The lower pit was covered by stone sealing. Most of the graves were made of rubble masonry without any plaster. While in some cases large stone slabs were used to make the box like graves. Long stone slabs were cut out of the living rock locally available that served the floor for the dead bodies. These box-like graves mostly contained the child/infant burials with or without grave-objects.

3.1.1 Double pit/Bi-Chamber Graves

In this type the burial chamber underlie an upper pit of roughly oval shape, marked by stone slabs in the same outline. The burial chambers itself an oblong pit. Most of the graves were in east-west direction. In these graves, upper pits were made of stone slabs covered with mud. The capstones of these graves were either removed or broken and fallen into the grave chamber causing much damage to the skeletal remains and grave goods. These graves were not rich in terms of grave goods as they contained very few objects like Grave Nos. 71, 82, 111.114, 141 and 151 or without grave goods (i.e. grave nos. 72,73,81,83,84,97,98,101,112,113,122).

While the lower chambers were rich in terms of grave objects as well as more preserved as they were covered with capstones. The lower chambers were either oblong or rectangular in shape.

3.1.2 Single Pit/ Uni-chamber graves

In this category, there was no upper pit but a single oblong/rectangular pit was dug into the ground.

3.2 Types of Burials

Three types of burial were noticed from the graves exposed during the course of excavations i.e. inhumation mostly in flexed and crouched position both single and multiple, fractional burials (single and multiple both in graves and urn burial), Grave no. 143 contained 7 individuals. Cremation was also practised side by side.

No completely cremated burial was found from the site but the people who had practised fractional burial were responsible to reopen the earlier graves disturbing the bones and putting their own dead. The orientation of the dead body was mostly towards east-west facing north or south except for grave nos. 074,113 and 121, where the position was north-east and south-west respectively.

Chart showing details of graves and burials

S. No.	Grave No.	Burial No.	Type of Burial	Remarks
01	71	1	Flexed (single)	Infant
02	72	2.3	Flexed (double)	Infant
03	73	4	Courched (single)	Adult
04	74	5	Crouched (single)	Adult
05	75	6	Flexed (single)	Adult
06	76	7	Crouched (single)	Adult
07	77	8.9	Flexed/fractional (double)	Adult
08	78	10,11,12	One exteded two fractional (multiple)	Adults
09	81	13	Crouched (single)	Child
10	82	14,15	Flexed (double)Adult	
11	83	16	Disturbed (single)	Adult
12	84	17	Crouched (single)	Adult
13	91	18,19	Flexed (double)	Adult
14	92	20	Flexed (single)	Adult
15	93	—	–	Empty Grave
16	94	—	–	Empty Grave
17	95	21,22	Flexed (double)	Adult
18	96	—	—	Empty Grave
19	97	23	Flexed	Child
20	98	24,25	One inflexed and the other not clear (double)	Child
21	99	26	Flexed (single)	Adult
22	100	27,28,29	Flexed (multiple)	Child
23	101	30	Disturbed not clear	—
24	102	31	Distrubed not clear	—
25	103	32,33	Crouched (double)	Adult
26	104	34	Fractional (urn burial)	—
27	111	35,36	One Flexed the other infant but not clear (double)	Adult and infant

28	112	37	Flexed (single)	Adult
29	113	38	Flexed (single)	Adult
30	114	—	—	Empty Grave
31	121	39	Crouched	Adult
32	122	40	Disturbed	Adult
33	123	—	—	Empty Grave
34	124	41	Flexed (single)	Adult
35	125	42	Crouched	Adult
36	141	43,44,45	Fractional (multiple)	Adult
37	142	46	Disturbed	Intermediate
38	143	From 47 to 53	Fractional (multiple)	7 individuals
39	151	54	Flexed (single)	Adult

3.3 Date

The construction of graves, burials and grave goods both from the upper and lower Chitral have great similarities with those recovered from Swat and Dir. It was generally believed that the date would also be the same i.e. 1500 BCE - 500 BCE given by Dani (1967) and Stacul (1969).

In August 2007, a team of archaeologists from Hazara University (Mansehra) and the University of Leicester (UK) selected this site and conducted excavations with the purpose to obtain samples for radiocarbon dating. This time the team opened two graves and collected samples. A single sample of cremated bone from this site along with samples from Singoor and Parwak were sent to the University of Waikato Radiocarbon Dating Laboratory, Hamilton (New Zealand). The scientific dates thus received range from 1000 BCE to 1000 CE (Ali et al 2008).

3.4 Grave Goods

The artefacts recovered during the excavation have been divided into thirteen categories, which are described as under:

3.1.1 Ceramics

Pottery is one of the most important findings especially in grave excavations as it helps in working out the burial types and their dating. The pottery from Timargarha and Thana has been divided into two main categories: red and grey ware. While the pottery recovered from Gankorineotek excavations was made of rough and medium clay mostly handmade and not levigated properly like that found from Parwak 2003-04. But the Gankorineotek pottery consists of both red and grey ware, whereas Parwak yielded only red ware.

A total number of 28 ceramics out of 90 registered artefacts were found during the excavations, which include seven bowls of various sizes, both red and grey mostly medium textured, decorated

with different designs, e.g. incised wavy design, net pattern, incised chain and incised slashed designs **[Fig 1 (i), 2 (i, ii), 3 (i)]**, two neck bottles of medium texture **[Fig 3 (iv)],** nine jars mostly medium texture decorated with geometrical and floral designs, i.e. incised dots and plant motives **[Fig 3 (ii), Fig 4 (ii), Fig 5 (i) Fig 6 (i,ii,iii)**, **Fig 7 (i), Fig 8 (i) and Fig 9 (i)],** six terracotta glasses mostly grey ware with convex body **[Fig 2 (iii, iv)].** Of all, the following four are worth mentioning.

1) A broken jar measuring (W 40 x H 45cm) contained human remains (urn burial) having grooves, convex body, red ware, medium texture (reg. no. GTC 68) recovered from trench H II/3, Grave no. 105.

2) A medium jar, with bulging body having applied trishul (?) design, red ware, medium textured, measuring (D 9 x H 29), found from grave no. 82.

3) A medium jar, with four applied handles two on either side (one of the handles broken and missing) (reg. no. GTC 56). It is grey ware and measures D 12 x H 13cm found from the same grave no. 82 placed near the skull of burial number 14.

3.4.2. Earrings

A total of six earrings made of copper/bronze were found during the excavations. All were made of thin rounded wire bent in the form of circlet, to join at the ends. No decorative work could be seen. Some of the earrings were found very close to the skulls suggesting that the dead were wearing them at the time of burial (GTC 50 and 51). Earring from Gankorineotek can be classified into two categories on the basis of their shape. The first group is represented by (GTC 26 & 86) with ends crossing one another clearly. The second group (GTC 001, 51 & 75) with ends closely connected to each other. Similar earrings have also been recovered from Parwak excavation 2003-04 (Ali and Zahir 2005), Timargarha (Rehman 1967) and Kalibangan I and II representing the Pre- and Mature Harappan phases.

3.4.3. Finger Rings

Five finger rings (GTC 023, 25, 27, 37 & 37) were recovered during the excavation at Gankorineotek, two of which are silver, one iron in rusted condition and three in copper/bronze. All are of medium size with diameters ranging from 1.5 to 2 cm, round in shape but with different head designs. Two of them were spiral shaped and in rusted condition.

3.4.5 Beads

Beads were found from different graves during the excavation. Apart from two glass beads found from the surface very much similar to those from Parwak Lasht during the survey in 2003-04. The Beads from Gankorineotek were made of three materials: stone, ivory and paste. The stone beads are black in colour decorated with incised circles (GTC 022 & 032). The ivory beads, recovered from graves (092, 124) in larger number, dominate the others. Almost all the beads are medium in size, with single string hole. Some ivory beads are of plano-convex-shaped, while the rest are roughly circular. Similar beads were also found from Parwak excavations 2003-04 but, as compared to Parwak, beads found from Gankorineotek were lesser in numbers and no lapis lazuli bead found from the site. Beside these, three long beads of two in stone (GTC 085) and one of copper (?) (GTC 049) were also reported.

3.4.6 Copper/Bronze Mirrors

Copper mirrors constitute the second largest group of findings at Gankorineotek. A total of eight mirrors of various sizes were found during the excavations. The smallest one (GTC 005) measures 3.5 cm in diameter recovered from the balk between H I/1 and H II/I while the largest measuring 6 cm in diameter found from grave no 100. These mirrors were used for the purpose of decoration and having short handle as compared to those from the Northern Areas of Pakistan and almost all the handles have hole in the centre.

3.4.6 Ear Pendants

Apart from the ear ring, ear pendants were also uncovered from different graves. A total six ear pendants were found and almost all are of the same size (5x3 cm). These pendants are decorated with different geometrical designs and have close similarity with those found from the Northern Areas of Pakistan (Dani 2001: 424).

3.4.7 Bangles

Unlike the Parwak excavations (2003-04) very few bangles were recovered at Gankorineotek site, which include a copper bangle (GTC 008) measures 57 cm in diameter decorated with rope design found from Trench E I/2. The second one (GTC 063) single, found from Grave 126 and the third one (074) pair, found from the Balk between E III/2 and E III/3 were made of iron both rusted and broken.

3.4.8 Arrowhead

This category is represented by a single finding from grave no. 77, exposed in Trench E III/2. This small copper arrowhead, measuring 5.9x1.5 cm, was recovered near the skull of burial no. 8.

3.4.8 Hairpins

After ceramics, hairpins constitute the second largest findings at Gankorineotek. A total of eight hair pins of different sizes were reported from the graves during the excavation. Save for one in iron, all hairpins are worked in copper. Three of hairpins (GTC 003,055 & 072) were flat topped while others round topped. Similar hairpins were found from Timargarha excavation (Rehman 1967: 185-190) and also Gilgit region (Dani 2001: 425).

3.4.9 Terracotta figurine/Cake

Terracotta figurine and cake were each represented by a single finding. The headless human figurine was found from E IV/3 during the surface removal. It is decorated with three dots on the chest and pair of incised lines at the lower portion. The upper lines around the wrist are straight while the lower portion is decorated with cross lines. Similar type of figurine was also recovered from Singoor excavation in 2005 (report in the press). The site is located in the Singoor village, one kilometre from Gankorineotek. Besides human figurines, terracotta cake (broken) was also reported during the excavation from the balk area between H I/3 & H II/3, which shows not only links between the Indus Valley Civilization and Aryan culture but also the continuation of cultural traditions. Similar terracotta cakes were also reported from Chansoor Dheri (Mansehra) during the Archaeological Survey of the district conducted by the Department of Archaeology, Hazara University (Mansehra) in 2007-08 under the supervision of the senior author.

3.4.10 Shell Objects

Among the varieties of ornaments the conch shells (GTC 017) recovered from grave 95 and (GTC 036) from grave no. 100 are very informative. This type is different from cowries now used by the Kalasha ladies in the three valleys of the Kalashas (Black Kafirs), yet they bespeak of its availability and use by the Aryans centuries ago. The first shell (GTC 017) is broken while the second one is in good condition. It is roundish in shape with one hole on either side. Similar shells were reported by Dani from Gilgit. He is of the view that the makers of such objects were different from the Aryans as these were never found from the graves excavated in Swat, Dir, Bajaur and the Peshawar valley. According to him, the authors of these objects were most likely the ancestors of the people who now live in the Northern Areas of Pakistan. He further writes: 'the material objects both in bronze and iron as well as ornaments of conch shell distinguish these people from the Aryans who built their graves in Swat, Dir, Bajaur and the Peshawar Valley. The saucer shaped conch shells are the most distinctive and localise them to the northern part of Pakistan (Dani 2001: 426-428). But the discovery of similar shells from Gankorineotek shows that these were also known to the Aryans inhabiting this land.

3.4.11 Copper Buttons

In addition to the artefacts already mentioned, the present excavation also revealed a large number of copper buttons (GTC 002, 029, 031, 041, 089 & 090) recovered from grave nos. 092, 077, 099, 100 & 142 respectively. These types were not found from other Gandhara Grave Culture sites in Chitral. Almost all of them are of the same size measuring 2.1x1.2cm. As they were found closer to the deceased, therefore it can be suggested that they were inserted to the clothes the dead was wearing at the time of burial.

3.4.12 Antimony Rod

This category was represented by a single finding from grave no. 082 exposed in the balk between E IV/3 & E IV/3. It can easily be distinguished from the hairpins as it does not have any decorative pattern on the top as it is also provided with end, which has been carefully rounded off similar to those found from Timargarha excavations (Rehman 1967:190-191).

3.4.13 Other Findings

Apart from the artefacts already mentioned, one knife blade (GTC 006) two sharpeners GTC 010 & 066) were also found during the excavation. The copper knife blade was recovered from grave no. 075. The butt end of the blade is thinned at the base for fixing wooden handles. The blade measures 14 cm longx2.5 cm wide and 0.2 cm thick. Similar knife blades and sharpeners were also reported from Parwak (Ali and Zahir 2005). The two sharpeners both of grey colour were found from grave 075 and 099. They are rectangular and oblong in shape having a punctured hole on one side. In addition, three iron rusted nails were also found at the site.

Conclusion

A total of fifty four human remains were recovered from thirty nine graves along with grave goods. Some of these graves were exposed just below the ground surface while others dug up to a depth of about 90 cm. These graves belong to the so-called Gandhara Grave Culture. Inhumation, cremation and fractional burial were reported from the site. Mostly double and multiple burials were practised

at the site and one of the graves contained seven individuals. The graves were very rich in terms of burial goods. A total of 90 registered objects were found from the graves, which include ceramics, a terracotta figurine, bangles, antimony rod, copper mirror, copper buttons, beads, ear pendants, ear rings, finger rings, hair pins, conch shells, tools and iron nails. These objects have close similarity with Parwak and Singoor findings on one hand and those of Timargarha, Swat, and the Peshawar valley on the other. While some of the findings are comparable to grave objects reported from the Northern Areas of Pakistan and were of great importance that enable us to change some of the previously held theories.

The most important among them were conch shells. Although this type is different from the cowries now used by the Kalasha ladies in Chitral, yet they speak of the existence of the Aryan culture in Chitral. These interesting findings may lead to revise Dani's theory that the users of such objects were different from the Aryans. He found similar shell objects from the Northern Areas of Pakistan for the first time, which, according to him, were not found from the graves excavated in Swat, Dir, Bajaur and the Peshawar valley. He opines that the authors of these cultural objects are most likely the ancestors of the people who now live in the Northern Areas of Pakistan. In the light of the discovery of similar conch shells from Gankorineotek, we may propose that these saucer-shaped conch shells were also known to the Aryans of the Chitral valley.

Other objects worth mentioning are a medium sized jar with *trishul* (?) design on neck and another medium jar with four applied handles found from the same grave are unique of their type. In addition, a broken terracotta cake found from the site shows cultural relations of the Aryans with the Indus Valley people.

Acknowledgements

The present excavation at Gankorineotek was conducted under the supervision of Professor Ihsan Ali, then Vice Chancellor of Hazara University (Mansehra) now Vice Chancellor, Abdul Wali Khan University (Mardan). He extended administrative and financial support that materialized this season's field work at the site. We all extend our gratitude to him for his generous financial support.

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Pottery Description

Fig 1

1. Shallow bowl with incised wavy design externally; red ware medium texture.
2. Broken tiny pot; red ware, thin texture.
3. Tiny pot; black ware thin texture.
4. Lid broken base; red ware, medium texture.
5. Tiny pot with concave profile; black ware, thin texture.
6. Headless flat human figurine with incised strips and punctured dots; medium texture.

Fig 2

1. Bowl with incised chain design; medium texture.
2. Bowl externally incised with net pattern; black ware, medium texture.
3. Small glass with concave profile; buff ware, thin texture.
4. Tiny pot externally decorated with net pattern.
5. Small glass with incised net pattern on outer surface; black ware, medium texture.
6. Small pot with incised chain design externally; thin texture.
7. Tiny pot with carinated body; red ware, medium texture.
8. Tiny pot with incised net pattern externally; medium texture.
9. Tiny pot; black ware, thin texture.
10. Tiny pot with incised design; black ware, thin texture.

Fig 3

1. Shallow bowl with projected band having incised slashed and net pattern design externally; red ware, medium texture.
2. Medium jar with convex body having incised geometrical design externally.
3. Bottle without neck having applied knob on body externally; red ware, medium texture.
4. Bottle neck; upper portion of neck broken, red ware, medium texture.

Fig 4

1. Medium jar with bulging body having applied *trishul* design on shoulder; red ware, medium texture.
2. Medium jar with four handles two on either side, knobs having incised wavy design externally; black ware, medium texture.

Fig 5

1. Large broken jar with urn burial, having grooves, convex body and small hole at the base; red ware, medium texture.

Fig 6

1. A medium jar with projected knobs having incised plant motifs on outer surface; neck broken, red ware, medium texture.

2. Plain broken medium jar with bulging body; red ware, medium texture.
3. Medium jar with projected knobs on body having incised punctured dots, wavy and slash design on body; red ware, medium texture.

Fig 7

1. Medium globular jar with raised band and grooves on shoulder; red ware, medium texture.

Fig 8

1. Medium jar with raised band on shoulder having applied ibex horn design externally, with convex body; red ware, medium texture.

Fig 9

Base of broken large jar with tapered body having grooves on outer surface.

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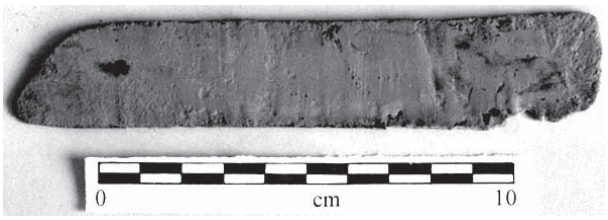
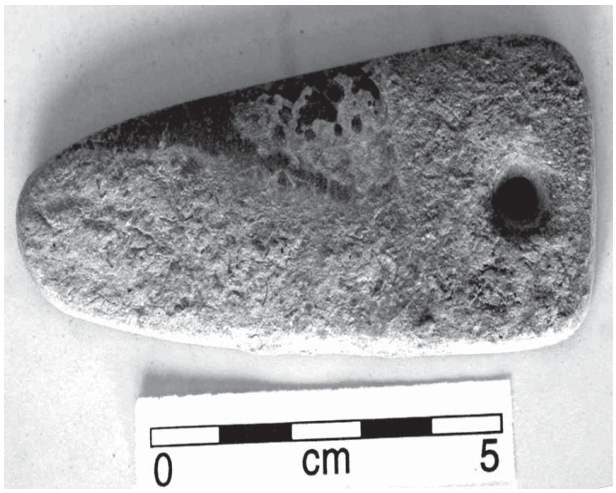


Copper knife recovered from Grave 75.

Copper Mirror from GTC

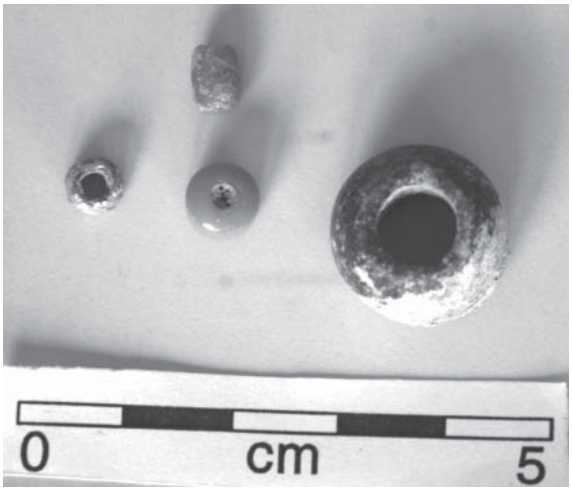


Stone knife sharpner from Grave 75

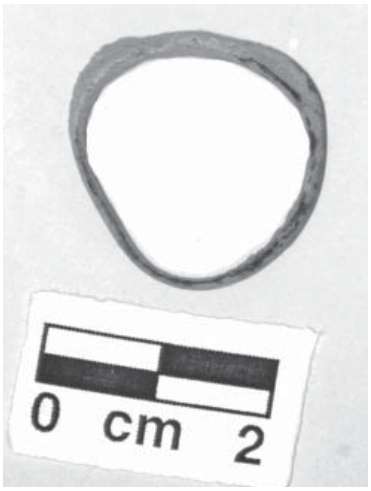
Terracotta figurine from GTC

Tiny pot from GTC

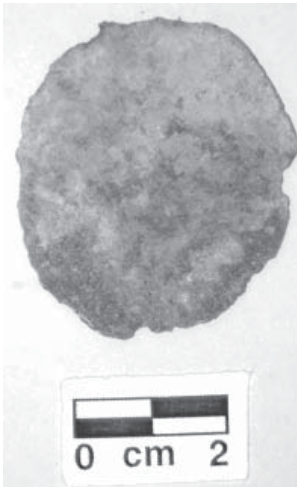
Medium size jar with projected knob from GTC



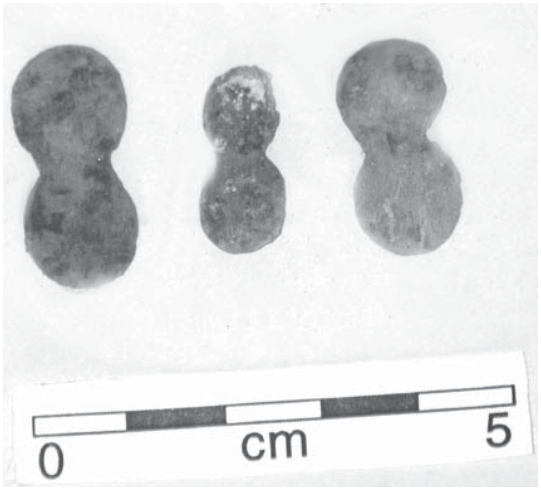
Stone beads from Grave 22, GTC



Silver finger ring from Grave 27, GTC



Copper rusted mirror Grave 28, GTC

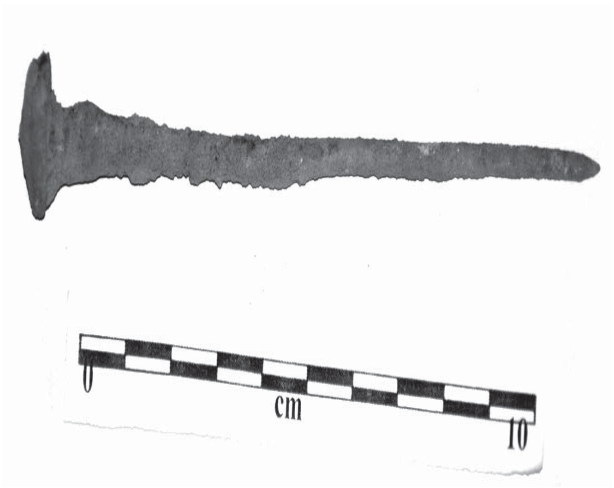


Copper button from Grave 29, GTC

Stone bead from Grave 32, GTC

Stone bead from Grave 32, GTC

Iron rusted finger ring from Grave 37, GTC

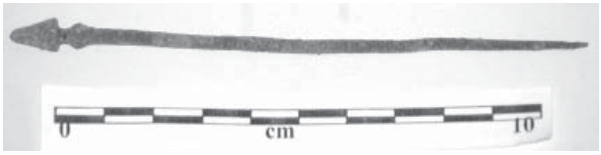


Copper hair pin from Grave 38, GTC

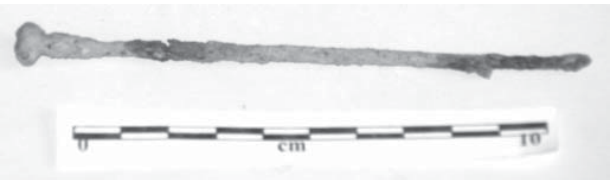
Tiny pot from Grave 40, GTC

Pot burial from Grave 77, GTC

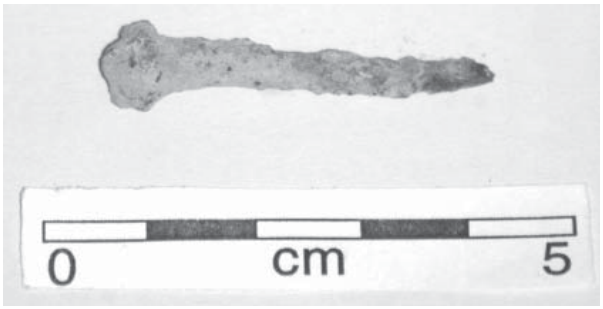
Terracotta jar with raised band on shoulder having applied ibex horn design from Grave 85, GTC.



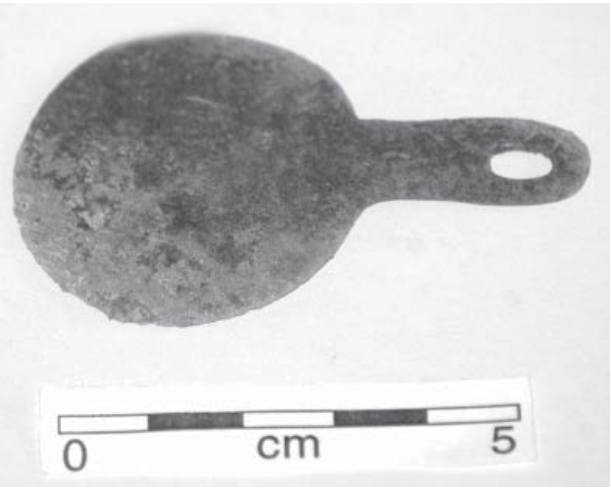
Copper antimony rod from Grave 44, GTC



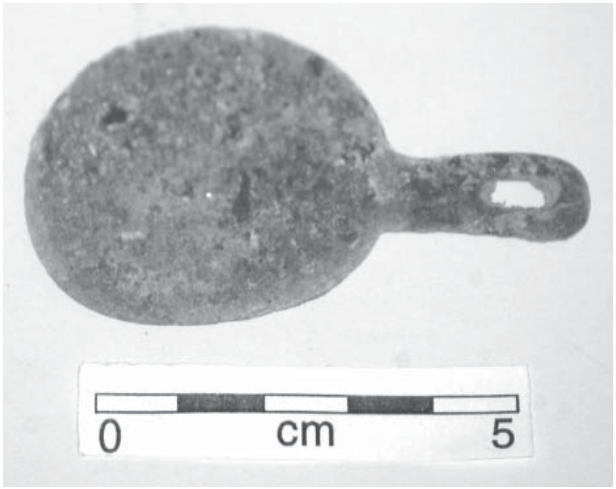
Copper hair pin from Grave 45, GTC



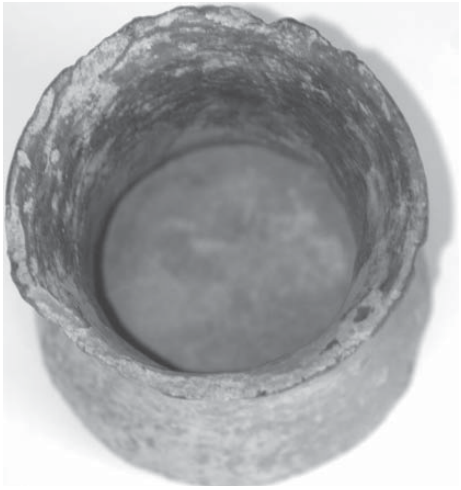
Iron nail from Grave 46, GTC



Copper mirror from Grave 47, GTC



Copper mirror from Grave 48, GTC



Tiny pot from Grave 52, GTC

Tiny glass from Grave 53, GTC

Terracotta medium size jar with bulging body and *trishul* designs from Grave 82, GTC

Terracotta medium size jar with four handles and knobs from Grave 82, GTC

Terracotta tiny glass from Grave 57, GTC

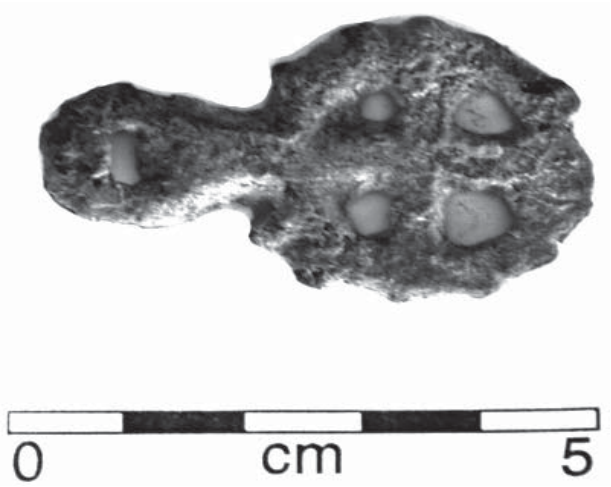
Terracotta tiny pot from, GTC

Terracotta tiny pot from Grave 57, GTC

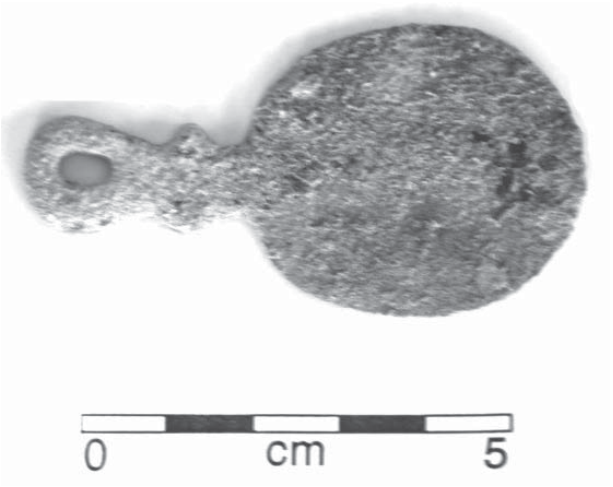
Copper hair pin from Grave 61, GTC

Terracotta glass from Grave 65, GTC

Terracotta globular jar with raised band and grooves on shoulder from Grave 77, GTC



Copper mirror from Grave 76, GTC



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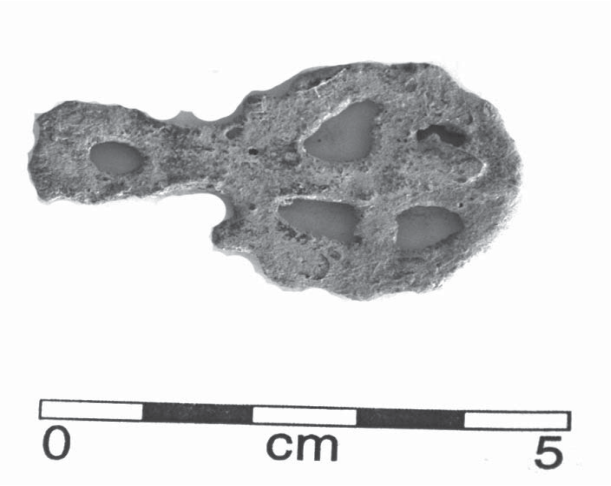
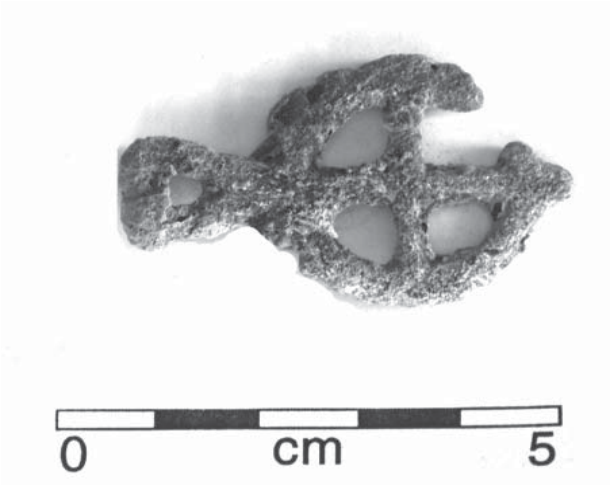


Copper mirror from Grave 78, GTC



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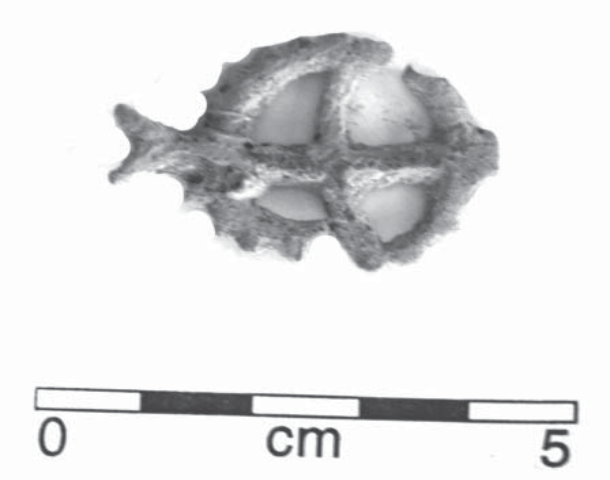
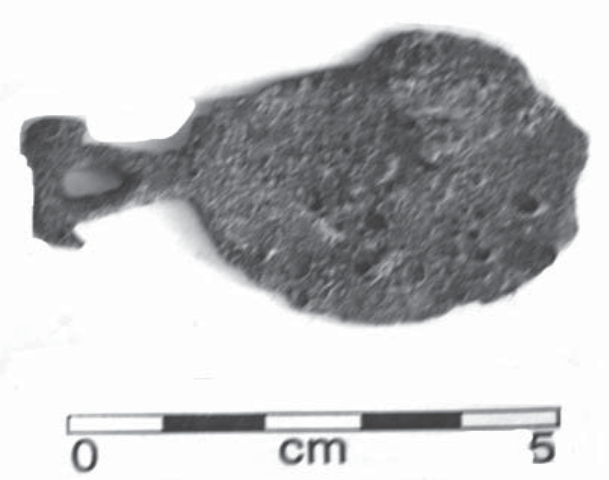
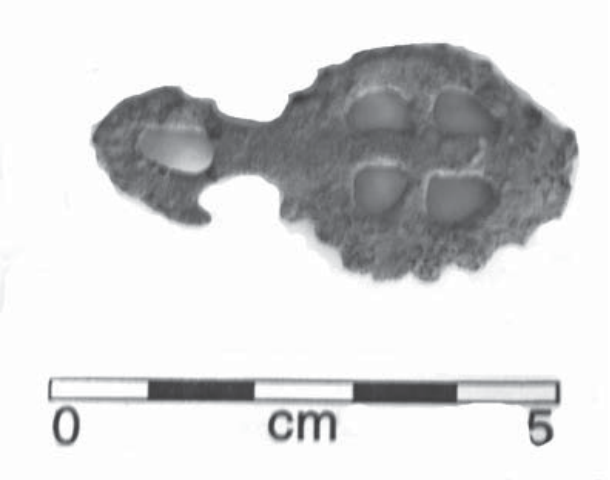


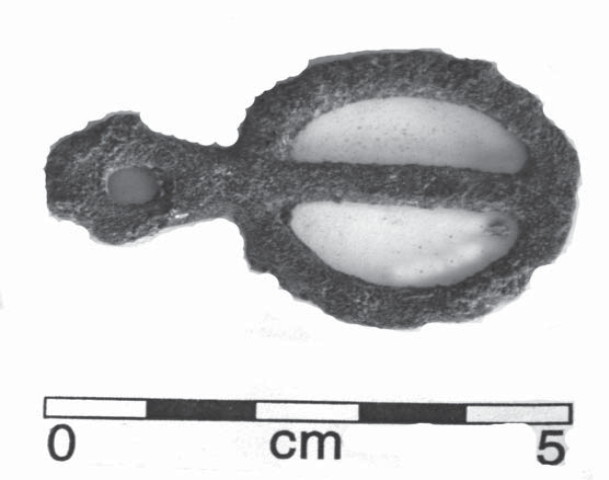
Copper mirror from Grave 80, GTC



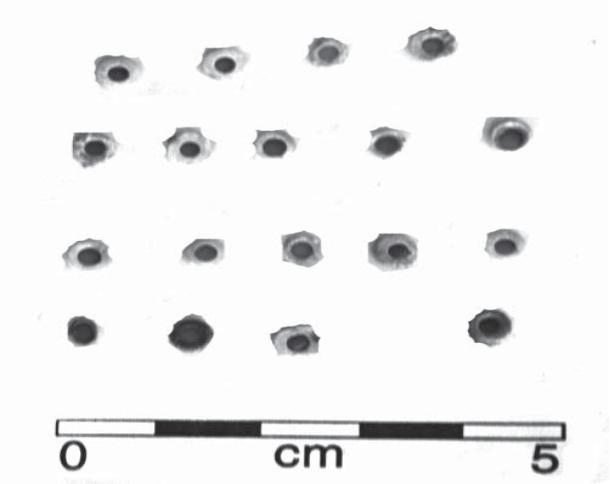
Copper mirror from Grave 81, GTC



Copper mirror from Grave 82, GTC



Copper mirror from Grave 83, GTC



Ivory beads from Grave 84, GTC

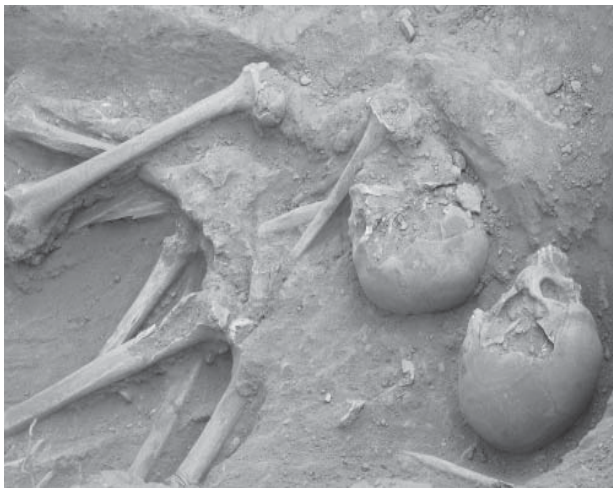
Iron rusted finger ring from Grave 86, GTC

Infant burial from Grave 73, GTC

Crouched burial from Grave 74, GTC

General view of Grave 74, GTC

View of Grave 77, GTC



Multiple burials from GTC

Terracotta medium jar in situ position from Grave 82, GTC

Human skull from GTC

T/C grey ware in situ from GTC

Inflexed burial with grave goods, GTC

Empty grave from GTC

Inflexed burial with grave goods, GTC

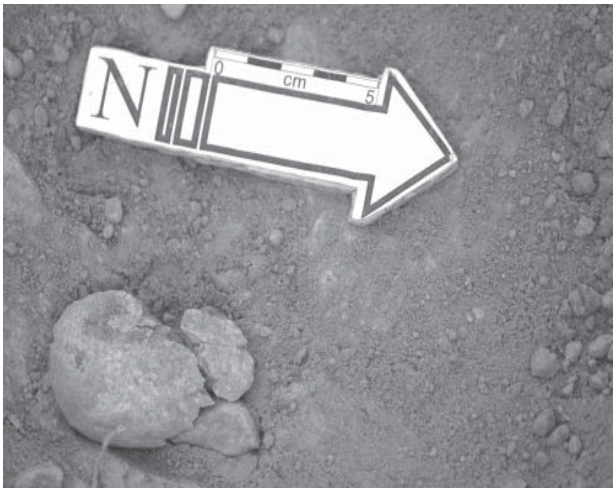
Inflexed burial from Grave 111, GTC

Pot burial from GTC

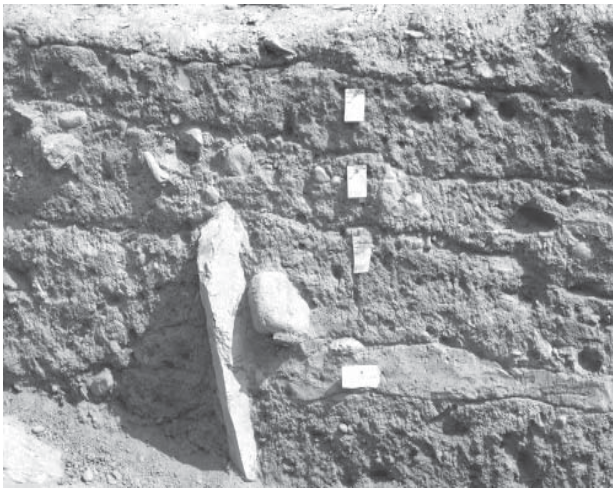
Jar burial from GTC

General view of excavation at GTC

Cremation area, GTC



Terracotta cake from GTC



View of northern section at GTC

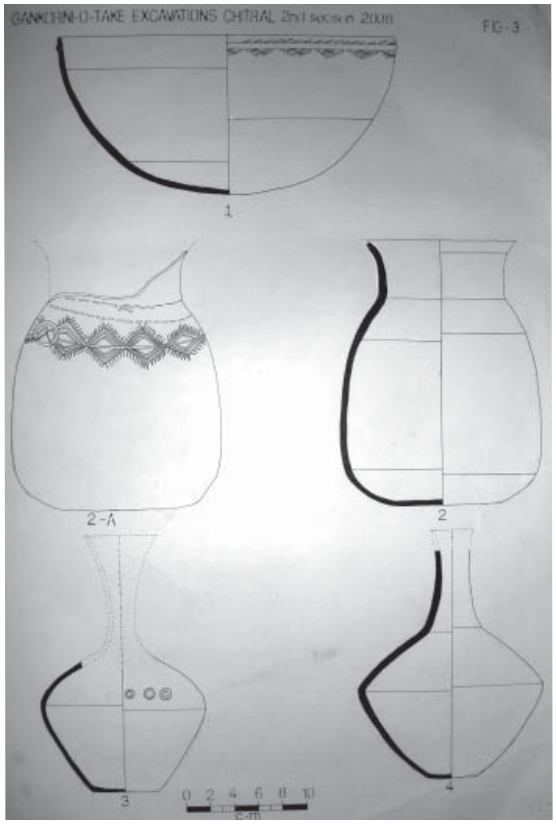
General view of GTC site

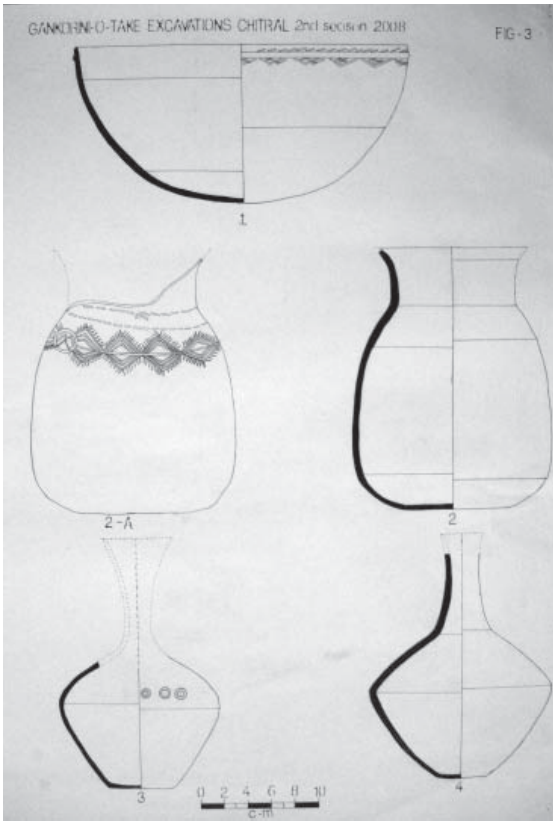
General view of excavation at GTC

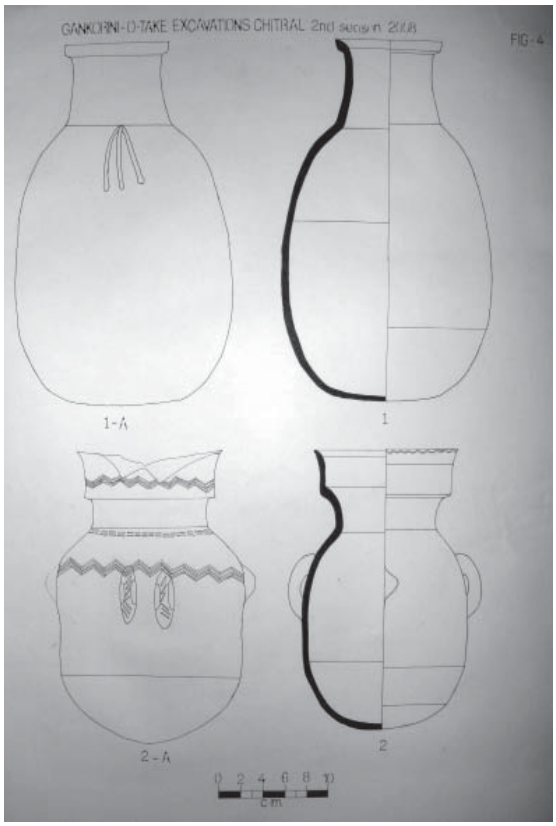
General view of excavation at GTC

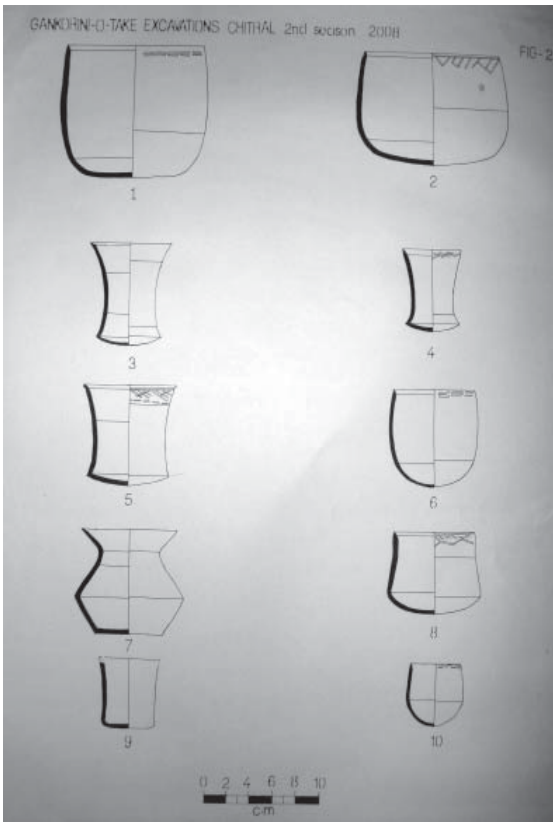
Terracotta fingurine (in situ) from GTC

General view of excavation at GTC


GANKORINI-O-TAKE EXCAVATIONS CHITRAL 2nd season 2008
FIG-3
1
2-A
2
3
4
0 2 4 6 8 10
c-m


GANKORINI-O-TAKE EXCAVATIONS CHITRAL 2nd season 2008
FIG-3
1
2-A
2
3
4
0 2 4 6 8 10
c-m


GANKORINI-O-TAKE EXCAVATIONS CHITRAL 2nd season 2008
FIG-4
1-A
1
2-A
2
0 2 4 6 8 10
cm


GANKORINI-O-TAKE EXCAVATIONS CHITRAL 2nd season 2008
1
2
3
4
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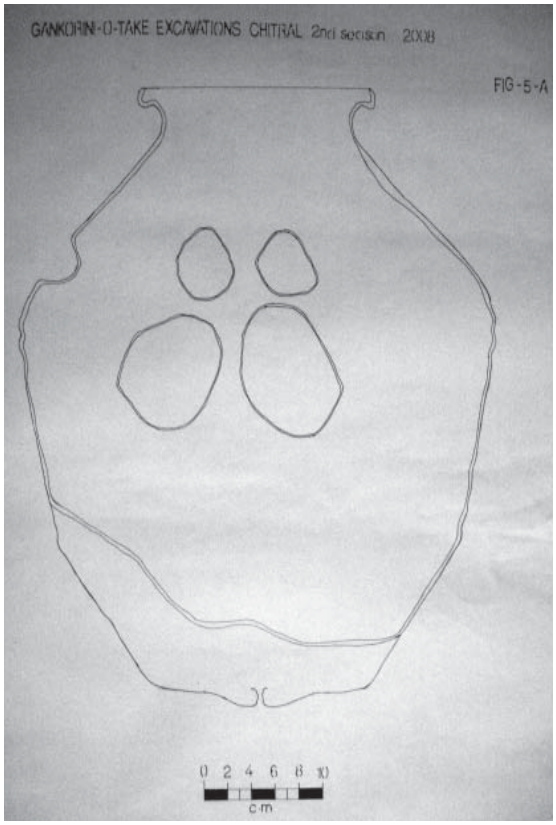
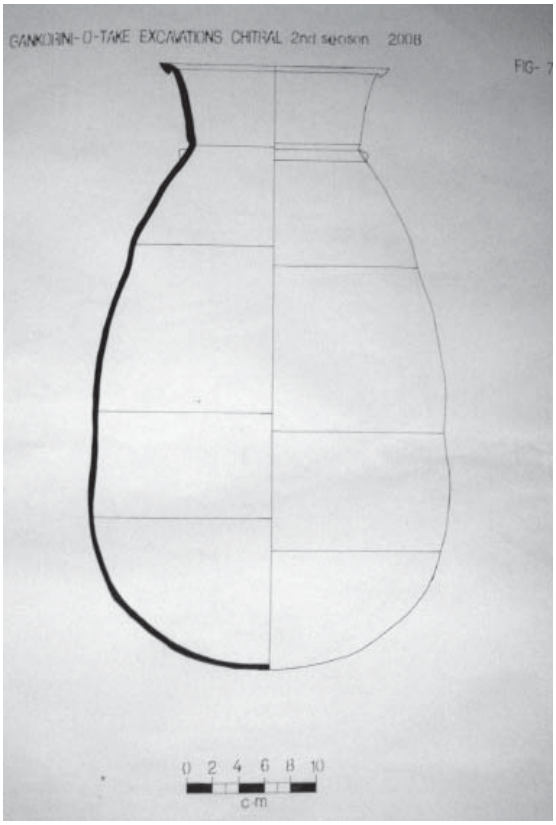
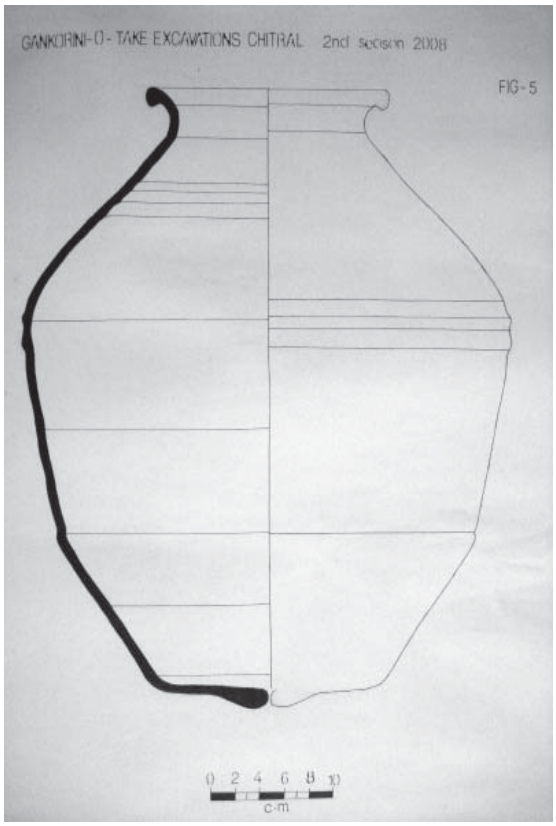
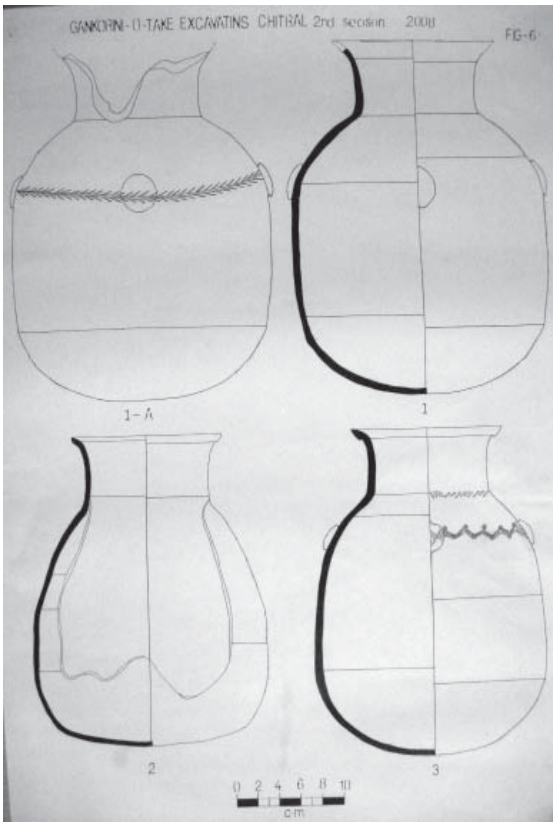
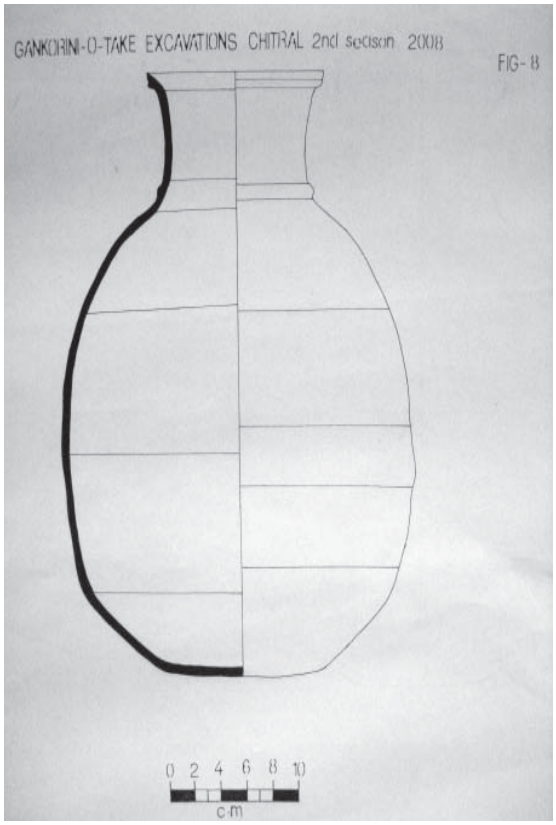
6
7
8
9
10
0 2 4 6 8 10
cm

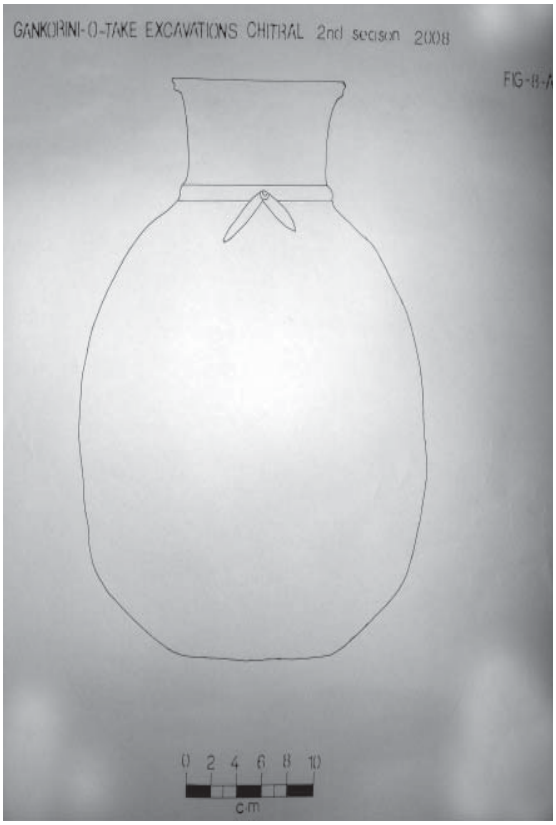

GANKORINI-O-TAKE EXCAVATIONS CHITRAL 2nd session 2008
FIG-5-A
0 2 4 6 8 10
c-m

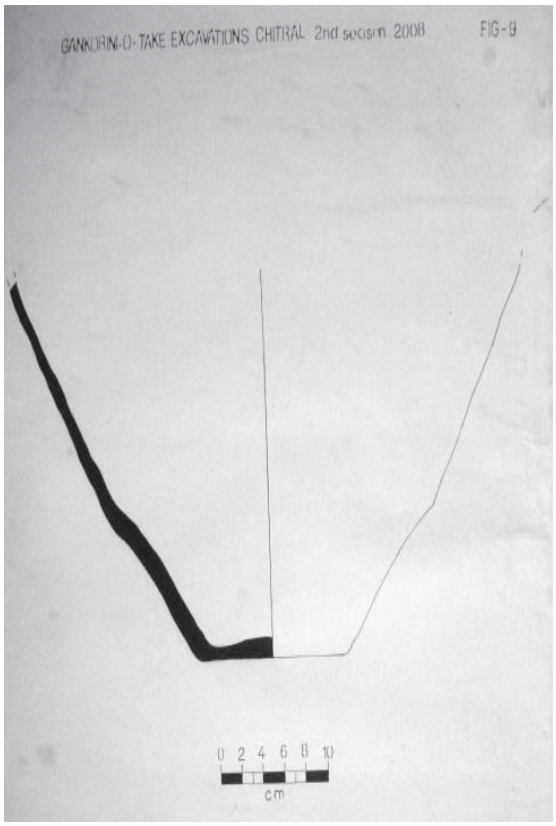

GANKORINI-O-TAKE EXCAVATIONS CHITRAL 2nd session 2008
FIG-7
0 2 4 6 8 10
c-m

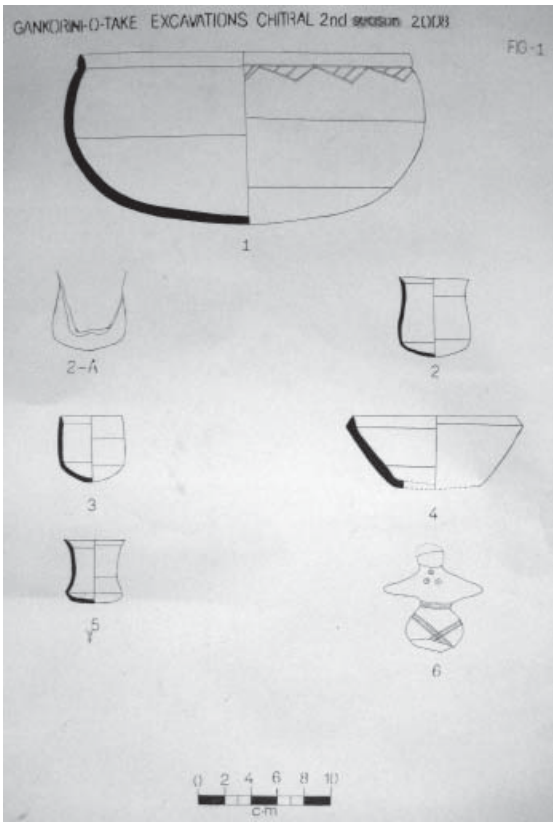

GANKORINI-O-TAKE EXCAVATIONS CHITRAL 2nd session 2008
FIG-5
0 2 4 6 8 10
c-m

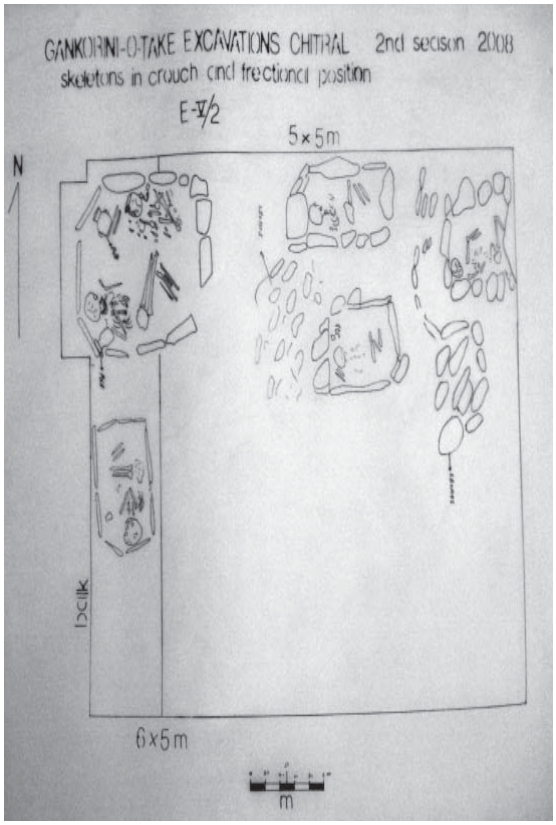

GANKORINI-O-TAKE EXCAVATINS CHITRAL 2nd session 2008
FIG-6
1-A
1
2
3
0 2 4 6 8 10
cm

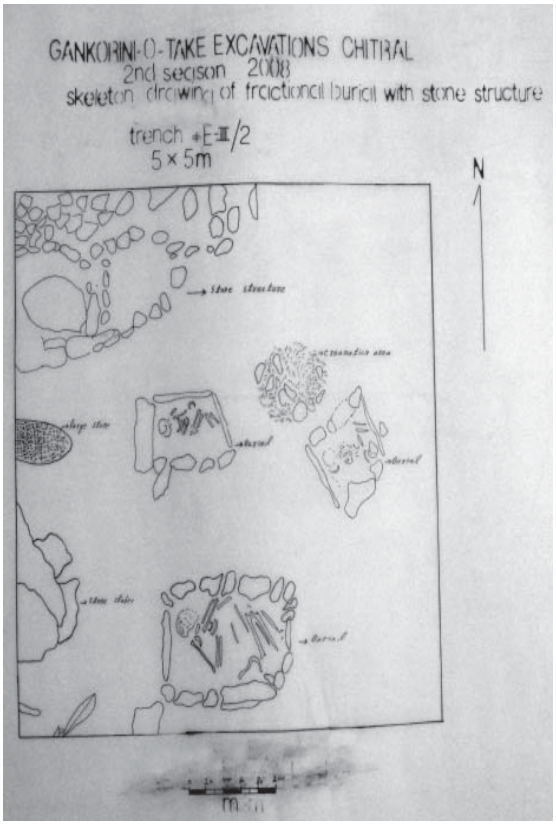

GANKORINI-O-TAKE EXCAVATIONS CHITRAL 2nd secison 2008
FIG-8
0 2 4 6 8 10
c.m

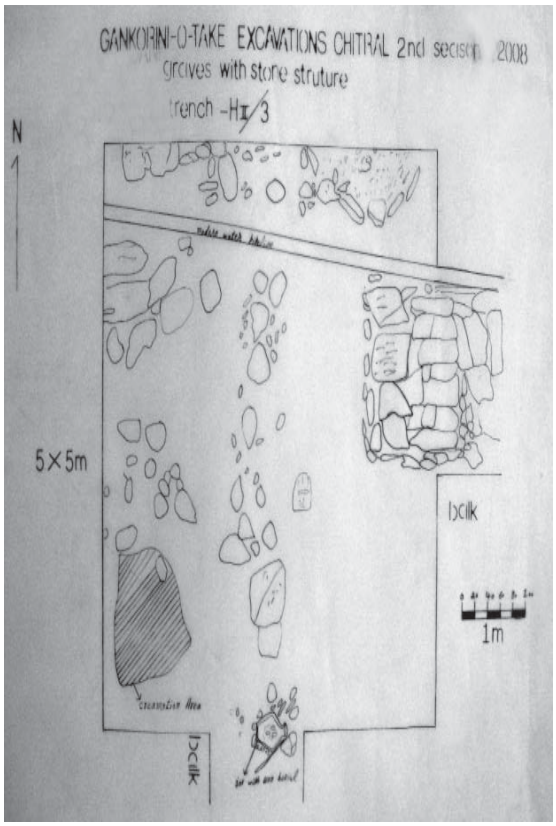

GANKORINI-O-TAKE EXCAVATIONS CHITRAL 2nd secison 2008
0 2 4 6 8 10
c.m

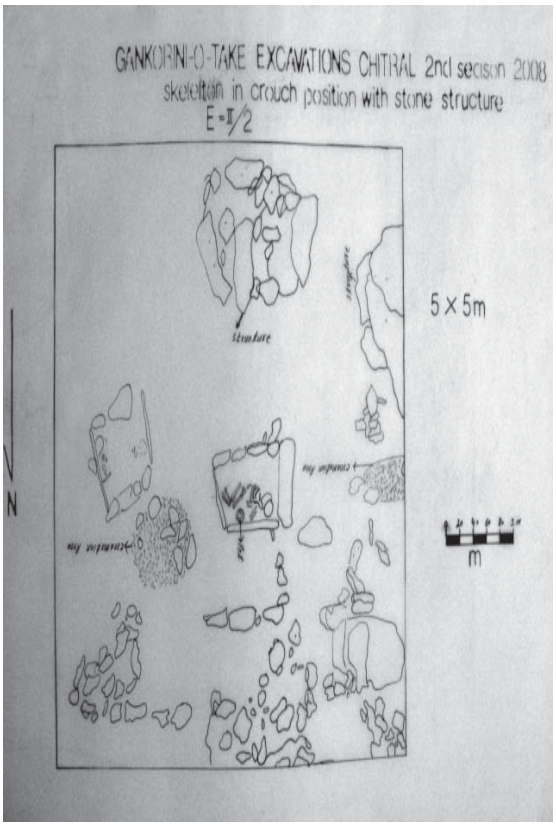

GANKORINI-O-TAKE EXCAVATIONS CHITRAL 2nd secison 2008
FIG-9
0 2 4 6 8 10
cm

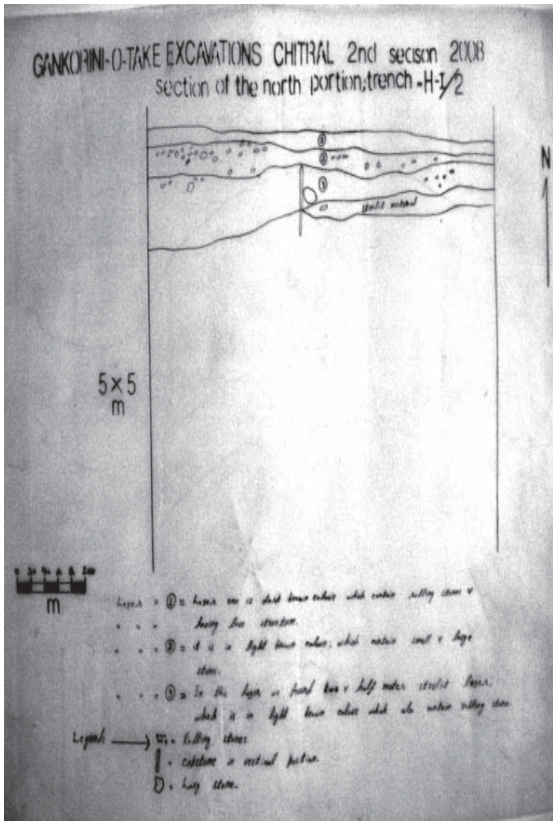

GANKORINI-O-TAKE EXCAVATIONS CHITRAL 2nd season 2008
FIG-1
1
2-A
2
3
4
5
6
0 2 4 6 8 10
c.m

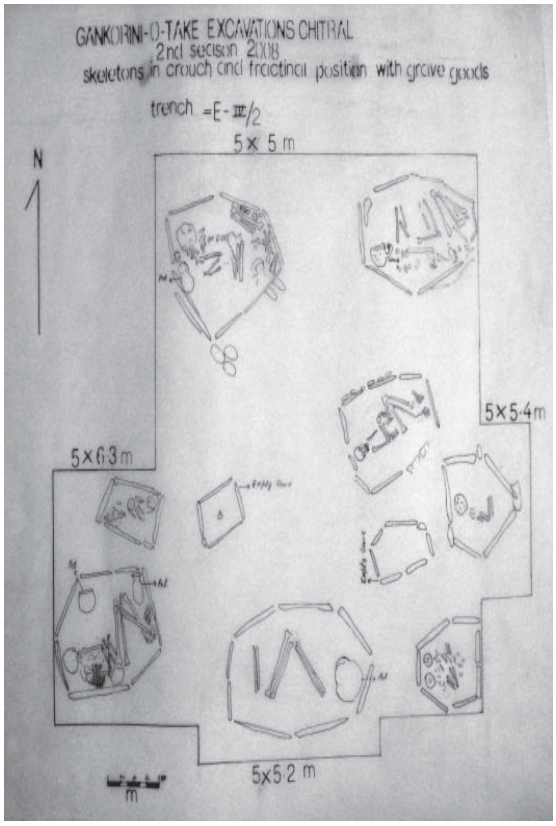

GANKORINI-O-TAKE EXCAVATIONS CHITRAL 2nd secison 2008
skeletons in crouch cincl frectioncl position
E-V/2
5×5m
N
balk
6×5m
m

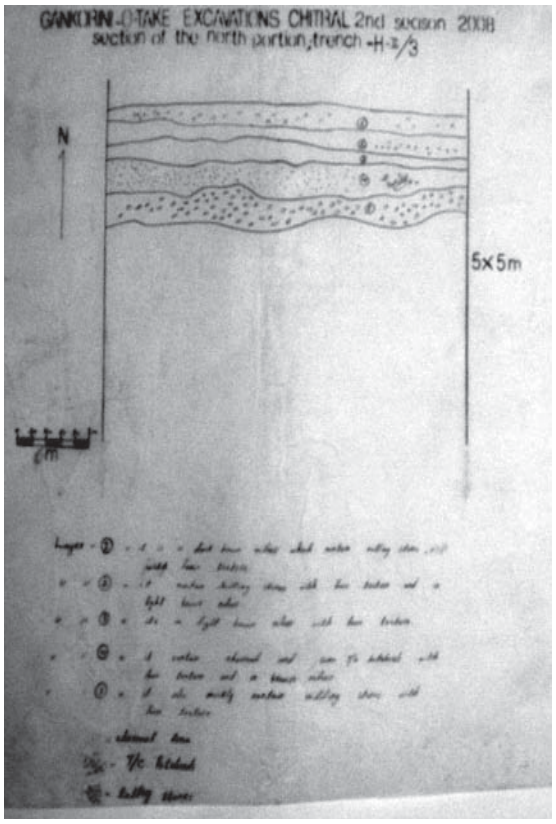

GANKORINI-O-TAKE EXCAVATIONS CHITRAL
2nd secison 2008
skeleton drawing of fraictioncl burict with stone structure
trench -E-III/2
5×5m
N
m

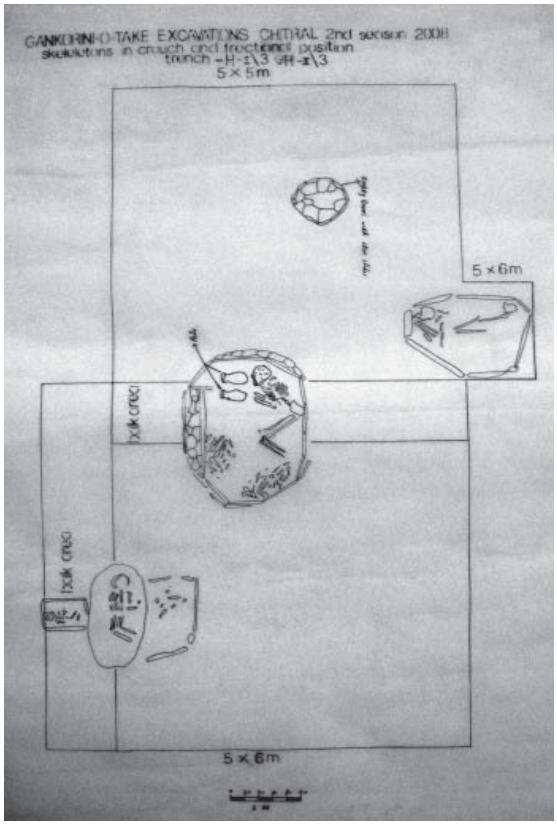

GANKORINI-O-TAKE EXCAVATIONS CHITRAL 2nd secison 2008
grcives with stone struture
trench -HI/3
N
5×5m
balk
1m
balk

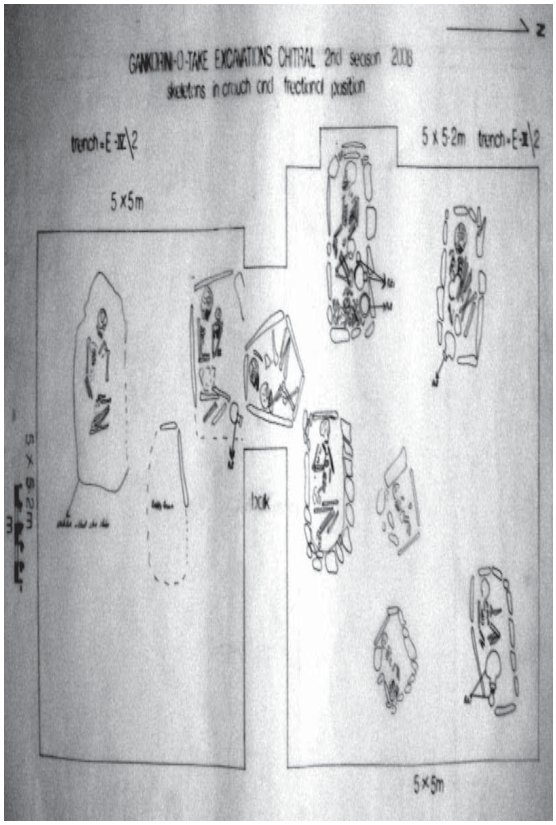

GANKORINI-O-TAKE EXCAVATIONS CHITRAL 2nd secison 2008
skeleton in crouch position with stone structure
E-I/2
5×5m
N
m

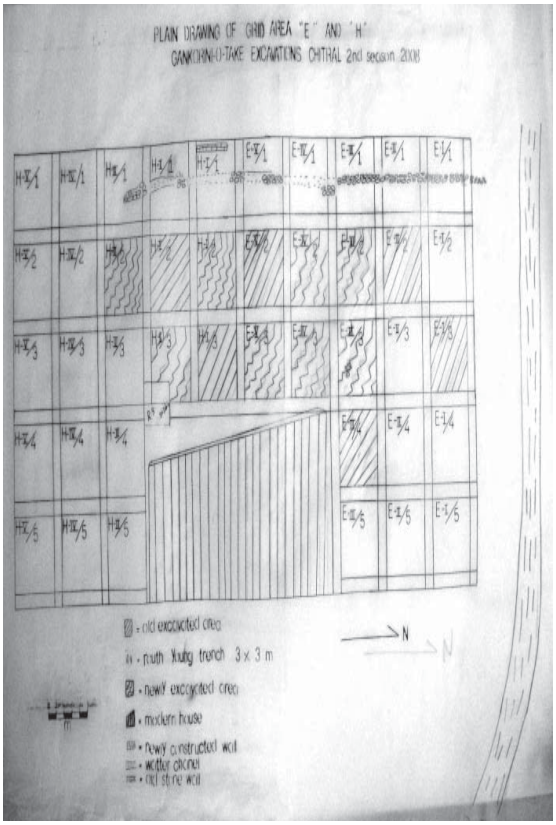

GANKORINI-O-TAKE EXCAVATIONS CHITRAL 2nd secison 2008
section of the north portion, trench -H-I/2
N
5×5
m
m


GANKORINI-O-TAKE EXCAVATIONS CHITRAL
2nd secison 2008
skeletons in crouch and fractional position with grave goods
trench -E-III/2
5× 5 m
N
5×5.4m
5×6.3m
5×5.2 m
m


GANKORINI-O-TAKE EXCAVATIONS CHITRAL 2nd secison 2008
section of the north portion, trench -H-II/3
N
5×5m
6m


GANKORINI-O-TAKE EXCAVATIONS CHITRAL 2nd secison 2008
skeletons in crouch and fractional position
trench -H-II\3 &H-II\3
5×5m
5×6m
5×6m


GANKORINO-TAKE EXCAVATIONS CHITRAL 2nd season 2008
skeletons in crouch and fractured position
trench-E-II\2
5 x 5m
5 x 5.2m trench-E-II\2
5 x 5m
5 x 5m
5 x 5m
N


PLAIN DRAWING OF GRID AREA "E" AND "H"
GANKORINO-TAKE EXCAVATIONS CHITRAL 2nd season 2008
old excavated area
south Khuttig trench 3 x 3 m
newly excavated area
modern house
newly constructed wall
water channel
old stone wall
N

Goddess Durgā, the Power and the Glory

Edited by Pratapaditya Pal (Marg Publications, Mumbai 2009)

DILIP K. CHAKRABARTI

The earliest date of the archaeological evidence of mother-goddess worship in the Indian subcontinent comes from the village of Bagor in the Sidhi district of Madhya Pradesh. There, on the top of a small rubble-built platform dated to c.9000 BCE at the end of the regional Upper Palaeolithic phase, was found a piece of rock which, because of the naturally occurring lamination marks on its surface, looked like the female genital organ or vulva. Its centrally placed position on the flat top of the platform leaves no room for doubt that it was anything but an object of worship. The vulva-mark on the stone further showed that this object of worship was a mother-goddess. What is possibly equally interesting is that even today the local villagers collect pieces of rock bearing vulva-marks from the neighbouring hills, put them on the crude rubble platform-like accumulations and worship them as one *Mai* (mother goddess) or another. Examples of this kind - examples which offer proof of direct continuity of worship from c.9000 BCE - have not been obtained from anywhere else in the world and underline once again the deep prehistoric roots of many features of village-level Hinduism. The work at Bagor was undertaken by a joint team of archaeologists from Allahabad and Berkeley universities and was published with illustrations in *Antiquity* 1983, pp. 88-94.

For those interested in a particular form of Indian mother-goddess worship, known as the worship of Durgā, the volume under review is a treasure-house of information and knowledge. Like its editor, the present reviewer himself is a Durgā-worshipper and aware like him of the close intertwining of the autumnal worship of this goddess with Bengali ethos. The strains of *Sahnai* floating over the sea of ripening paddy during the *Pūjā* (when a Bengali Hindu thinks of 'the *Pūjā*', he thinks of only *Durgā Pūjā*) and the sights of hundreds of simple villagers sitting down to lunches served on banana leaves in the *Pūjā* courtyards are something which the Bengali Hindus of the editor's and the reviewer's generation will not forget.

The contents of the volume cover a lot that is outside Bengal and portray the manifestations of this deity in many corners of the subcontinent including Kerala and Baluchistan. An important part of the book is the essay on 'the fifty-one Shakta Pithas' by Professor Pratapaditya Pal. I have always found the basic distribution of these *Pīṭhas*, sacred spots where different parts of the body of the goddess *Pārvatī* or Durgā are supposed to have fallen when Viṣṇu had to take recourse to cutting down her dead body piece by piece with his *Chakra* from the shoulder of Śiva who was close enough to destroy the universe because of his grief for her death. Professor Pal's 'table-3' which details the 'names of mothers with corresponding *Pithas*, letters and parts of the body', will set any historian of Hindu religion wondering about the identifications of many of these geographical names and more importantly, about the implications of such a pan-subcontinental distribution. 'Uddiyana' is Swat, which along with Kashmira makes her geographical position in the far north secure. Deep in the south, the names seem to be somewhat rare. Srishaila is in Andhra and Malaya in the bordering area between Tamil Nadu and Kerala. Chronology also is an important problem here: by which period

was such a remarkably pan-subcontinental distribution of the mother goddess cult achieved? There are other geographical issues too. For instance, in Professor Pal's chart 'Vindhya' is associated with the goddess Shakambhari, but Shakambhari also happens to be the name of the ancient city-site of Sambar in Rajasthan. In certain cases, people can claim their local cult-spots as one of the fifty-one *Pīṭhas*, although there may not be any textual support for that claim. In the West Bengal district of Birbhum, several places, including *Kankalidanga* in the outskirts of Santiniketan, claim to be *Pīṭhas*. Most of these names do not occur in Professor Pal's chart and do not apparently have any textual sanction.

One cult-spot which never failed to excite this reviewer's imagination is Hinglāj in the Makran coast of Baluchistan, on which Professor Ibrahim Shah has written on the basis of his deep personal knowledge. The Makran coast is closely backed by a range of hills called the Makran range, and the only openings in this range are those provided by the streams coming from the other side of the range and going to the sea. Such openings are in fact rare. The location of a mother goddess cult spot, held in veneration by the Muslims and Hindus alike in this remote and inaccessible area is a matter of surprise. The area, of course, lies on a route coming from the direction of Iranian Baluchistan and going to the area of the Indus mouth around Karachi. One is not surprised at the location of a cult-spot dedicated to the west Asiatic goddess Nānā on this route, but when did she become a part of the Hindu pantheon in this area? In the 1950s (or, was it earlier ?) a Bengali mendicant with the pseudoname *Avadhut* meaning a Tantric mendicant was on a pilgrimage to Hinglāj and wrote a book under the title of *Marutirtha Hinglaj* ('Hinglāj, a pilgrim-place of the desert'). This was later made into a successful film. In Professor Shah's article ('the Hinglāj shrine, Baluchistan') we learn that the goddess *Hinglāj Mātā* is worshipped inside a natural cave, of which there is a good photograph in the article. I find this aspect interesting, because, as far as I recollect, the actual position of the most famous goddess of the Himalayas, *Vaishno Devī* is also at the mouth of a natural cave not far from Jammu. Professor Shah's article on Hinglāj is an invaluable contribution to a proper understanding of this shrine.

From Professor Pal's article on 'Durga in Kashmir' we learn that Sharada is clearly a form of Durgā. This is a fact which is worth remembering also in many areas outside the Kashmir valley. At Maihar in Madhya Pradesh, overlooking an important ancient route is the abode of Sharada Devī on the top of a Vindhyan ridge. This is a major cult-spot of this part of central India and the adjacent Ganga plain up to Banaras. Professor Pal has analysed the iconographic aspects of Durgā in Kashmir with his usual clarity and scholarship.

Four other articles belong to this genre, although their emphasis is more on the current practices and forms. Anne Vergati describes how Durgā is worshipped in the Kathmandu valley. Both in the forms of Goddess Taleju (a form of Bhavati Durgā) and Navadurgā, the influence of this mother goddess tradition runs very deep in Nepal and was possibly associated with the earliest royalty of the region. The painting which shows the 17th century Taleju temple of Kathmandu (picture 4 of Vergati's article) is an object of incredible beauty. Of equal magnificence is the *Toraṇa* of the Taleju temple of Bhaktapur. Gautam Vajracharya's article which dwells on the forms of the cult of children as a part of the conception of the mother herself in Nepal is a very original and thoughtful article, drawing our attention to an aspect of worship, which is usually neglected in the academic discourses. Devī or the

feminine in the Tamil tradition has been studied by Rajeshwari Ghose from whom we learn that in the Sangam literature the main Devī was the goddess of war, *Korravai*. The *Durgamahashimardini* of Mahabalipuram is justly famous, but the earliest Durgā image standing on a buffalo head in Tamil Nadu comes from Karur. As a point of disagreement I may point out that Karur is not a sea-port and although Roman artefacts have been found at the site, that does not have anything to do with *Durga* found there. Karur was possibly the second of the *Chera* kingdom capitals located somewhat east of Coimbatore. Pepita Seth's article on the Muchilottu Bhagavathi cult in Kerala discusses the various forms it takes, especially the detailed rituals associated with them.

The philosophical basis of the feminine in Indian spirituality is considered by G. J. Larson in an introductory article. This is followed by an article by Susan Bean on how the Durgā image is fashioned out of clay in modern Bengal stage by stage. This is something with which all Bengali Hindus are familiar and what has been rather delightful to read is that Ms Bean has not neglected the significance of *Chakshudan*, i.e. the act of putting eyes or rather, the act of putting eye-balls in the eyes, in the image. Tapati Guha-Thakurta has written a detailed article on the forms and sociological character the Durgā Pujā has taken in modern Kolkata, with the lay-out and the structure of Puja pandals reaching a new height of excellence.

The sources of any aspect of Hinduism including its mythology are historically disjointed. Innumerable layers of regional variations and philosophical ideas underlie each and every phenomenon. To bring out something satisfactory and exciting on the basis of such limited and historical sources is a difficult exercise. That this volume on Durga has turned out to be so comprehensive in its scope is a tribute to the scholarship of the editor and the individual contributors.

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