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Chief Editor

Vijay Kumar

Editors

Dr. M.K. Pundhir

Dr. Rakesh Srivastava

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CHIEF EDITOR : **Vijay Kumar**
101, Coleus LanesEldeco Greens Colony,
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Editorial

The 10th issue has nine articles. The first article by *Mohan Singh Chauhan, Anil K. Pokhariya* and *Yachana Bhandari* reviews the pollen and other proxy records of nine lake deposits from central *Ganga* plain which have furnished facts about landscape evolution, vegetation dynamics and lake level fluctuation in response to climatic variations since late Pleistocene. The pollen record also gives evidence about anthropogenic evidences. The second article by *Sudam Deep* gives the result of survey conducted by the author in year 2015-16 on the Lanth stream, a tributary of river *Tel* in *Bolangir* district. In this survey, he identified nine microlith sites in this area. The third article by *Rajesh Kumar Meena* is about drill bits recovered from a Harappan site *Kanmer,* district *Kachchh, Gujarat, India*. This study indicates that shops of people drilling beads were concentrated at the center of the town during Early & Mature Harappan period and in the South-eastern part of the town during Late Harappan & Historical period. The fourth article by *Vijay Kumar* gives the catalogue of stone images kept in Government Archaeological Museum, *Kannauj* U.P. India. It also traces the evolution of (1) door jambs of the temples in Northern & Central India, (2) *chandrashala* motif, (3) sculptures of *Kannauj* and (4) *Buddhist* sculptures of *Kannauj*. The fifth article by *Dr. Maruti Nandan Tiwari* & *Dr. Shanti Swaroop Sinha* traces the development of mythology of *Saraswati,* the goddess of knowledge in *Jain* literature. It also traces the evolution of the iconography of *Jain Saraswati*. The sixth article by *Ashok Kumar* is about *Jama Masjid, Badayun* U.P. India. This mosque was built by *Shamsuddin Iltutmish* in 1223 A.D. and is a fine example of early *Sultanate* architecture. The seventh article by *M. K. Pundhir* is about the Tomb of *Shahpeer* located in *Meerut* U.P. India. It was built by *Nurjahan,* the *Mughal* empress in 1628 A.D. The eighth article by *D. P. Dubey* gives the history of *Bundelas* reconstructed from epigraphs and other sources in the light of the inscription of the *Pratap Rudradeva* found in *Patthar Mahala Masjid, Kalinjar,* district *Banda* U.P. India. The ninth article by Vijay Kumar gives the ramifications of recently found horse chariots in an excavation by *Sanjay Manjul* & *Arvin Manjul* and connects these finds to the harpoon wielding warriors in the rock paintings of *Chitrakoot*.



Vijay Kumar
Chief Editor
Indian Journal of Archaeology

Quaternary vegetation, climate, farming and human habitation in the Ganga plain, based on pollen and macro-botanical remains from lakes and archaeological sites

Mohan Singh Chauhan,
(Formerly Scientist at Birbal Sahni Institute of Palaeobotany, Lucknow-226007)
7 B, Kaushalpuri,
Gomtinagar Extension, Lucknow-226010.
E-mail: mschauhan_2000@yahoo.com

Anil K. Pokharia,
Birbal Sahni Institute of Palaeosciences,
53, University Road, Lucknow-226007.

Yachana Bhandari
77- Saraswati Vihar,
Dehradun-224801, Uttarakhand.

INTRODUCTION

The Quaternary Period is characterized by the frequent and rapid climatic changes, which had extensive impact on the natural resource, human settlement as well as crop economy. It is well known fact that the empirical data on climate are only available for last 150 years i.e. since 1863 CE for the Indian subcontinent. Hence, for the better understanding of[1] spatial and temporal climatic variability beyond the pre-instrumental records, we have been using various proxies such as pollen, isotope, geochemical, organic-inorganic carbon ratios and sediment texture retrieved through investigations of sedimentary deposits from the lakes/swamps from different regions. The climatic models to be evolved with the aid of the proxy signals are supposed to offer prime insights in order to simulate the future course of climate relevant to human society. Further; stress is to be laid on reconstructing the concrete climatic sequence of the past 10 ka yr BP, in particular. Since this time segment is marked by the commencement of the human settlement and agricultural activities in global perspective with the amelioration of climate, though in deviating manner, after the exodus of harsh and prolonged cold climatic phases of Great Ice Age. This approach will certainly ensure the implementation of the new strategy to sustain the crop

economy in order to cope with the food security of the huge and escalating human population of the Ganga Plain as well as to overcome the climate change and inconsistent behavior of Indian Summer Monsoon (ISM). To resolve all the above issues with precision, a concerted reconnaissance involving the proxies viz., pollen, isotope and geochemical analyses of the lake deposits, these appended with a series of AMS dates at close intervals is of utmost need to reconstruct the climate change/monsoon variability of past and its impact of vegetation, landform and arable economy in a definite time frame.

In this pursuit, the Ganga Plain with a large number of natural archives in the form of extant and extinct lakes of variable sizes as well as swamps is the most potential region to pursue the Quaternary palaeo-vegetation and palaeo-climatic investigations. However, this aspect has hitherto not been given desired attention, despite its wider geographical extent with great potiental. Some sketchy pollen-based studies have been executed on some lakes from the Central Ganga Plain only, which include Jalesar Lake, Unnao District[2]; Karela Jheel, Lucknow District[3]; Lahuradewa Lake, Sant Kabirnagar District[4] and Meander Lake, Pratapgarh District[5], divulging the chronicle of vegetation shifts, lake-level changes in relation to climatic variability this region has come across on millennial to century time scales since the Late Pleistocene. Further, the studies have also provided database on the pristine agricultural practice and its later course in context to cultural history of the region, which have been greatly influenced by the deviating trend of SW monsoon during the Holocene. In addition, the pollen analytical studies on some other lakes viz., Basaha Jheel, Unnao District[6]; Misa Tal; Kathauta Tal[7], Lucknow District and Ropan-chhapra Tal, Deoria District have unfolded the short-term climatic alterations on century time resolutions and their impact of the vegetation set ups during the last three millennia or so. Recently, a few multidisciplinary approach involving pollen, isotope, organic-inorganic carbon and geochemical reconnaissance on the lacustrine deposits from Sanai Tal in Raebareli District[8] and Jalesar Lake, Unnao District[9] have brought about significant facts relating to landscape transformation, vegetation shifts & climatic changes and in ascertaining some vaguely understood global events in the region during the Late Quaternary Period. Interestingly, most of the lakes are in the proximity of settlement sites, where extensive archaeological excavations have been executed in order to unfold the cultural history of this fertile alluvial tract. Appending with the generation of archaeological information at these settlements, the palynological approach is rewarding to reconstruct the model of early land use and subsistence strategy as well as changing vegetation scenarios in relation to climatic oscillations. All the above mentioned pollen proxy records from the lake deposits supported with the absolute radiocarbon and AMS dates on correlation have provided concrete implication on the major climatic episodes as well local variations in climatic conditions and their influence on vegetation mosaics and inception and magnitudes of agricultural practice in time and space the Central Ganga Plain.

The Ganga Plain, one of the largest alluvial tracts of India, extends from the Aravalli-Delhi ridge in the west to the Rajmahal hills in the east, the Himalayan foot hills in the north to the Bundelkhand-Vidhyan Plateau-Hazaribag Plateau in the south between latitude 24°-30° N and longitude 77°-88° E, occupying an area of approximately 250,000 sq-km[10]. This alluvial tract measures about 1,000 km long and 200 km to 400 km wide and being wider in the western part and narrower in the eastern part[11]. It is divisible into three parts namely Western Ganga Plain (Delhi to Allahabad), Middle Ganga Plain (Allahabad to Farakka) and Eastern Ganga Plain (Ganga delta region from Farakka to Bay of Bengal). The Middle/Central Ganga Plain, where comprehensive palaeoclimatic studies have been conducted, is marked by the presence of a network of several rivers namely Gomti, Sai, Rapti, Ghaghara, Gandak, etc., in addition to Ganga, which is a trunk river originating in the Himalaya. All the tributaries of Ganga have their provenance in north part of this plain; however, initially they incline southwards and subsequently flow southeasterly before merging with the Ganga River at different places. The southeast flowing rivers separate large uplifted interfluve regions. The interfluves are characterized by the moderately undulating terrains with centripetal drainage. Lakes, ponds and abandoned channels are very common in this region. Yamuna River, which also originates in the Himalaya joined the Ganga River near Allahabad. While the peninsular rivers such as Son which initially flow northwards also join the Ganga in southeast after flowing a short distance in eastwards direction.

The comprehensive archaeological and archaeobotanical studies pursued from the different settlement sites of the Ganga Plain have provided very significant database concerning the cultural succession and contemporaneous subsistence stratergy the dwellers adopted in time and space. In this context, the information from Lahuradewa in the eastern Uttar Pradesh is the prime settlement site, narrating the cultural history and onset of the agrarian activity in the Ganga Plain since Neolithic-Chalcolithic Period[12]. Similarly, the investigation conducted on Jhusi site in the Allahabad District[13] altogether covers the time slice, substantiated the inference on the agricultural activities from Lahuradewa site. In addition, the archaeobotanical reconnaissance from other sites such as Hulaskhera, mound (800-200 BC), Lucknow District[14]; Raja Nal-ka-Tila, Sonbhadra District[15] encompassing the Neolithic-Early historic (2500-200 BC) time period and Tokwa, Mirzapur District[16] belonging to Neolithic Period (3rd-2nd millennium BC) have unfolded the cultural history and crop economy of the Ganga Plain and also validated the findings so far generated from the Ganga Plain. In the present communication, the cultural antiquity and the crops used by the settlers are dealt in details, based on the meticulous investigations of above important sites.

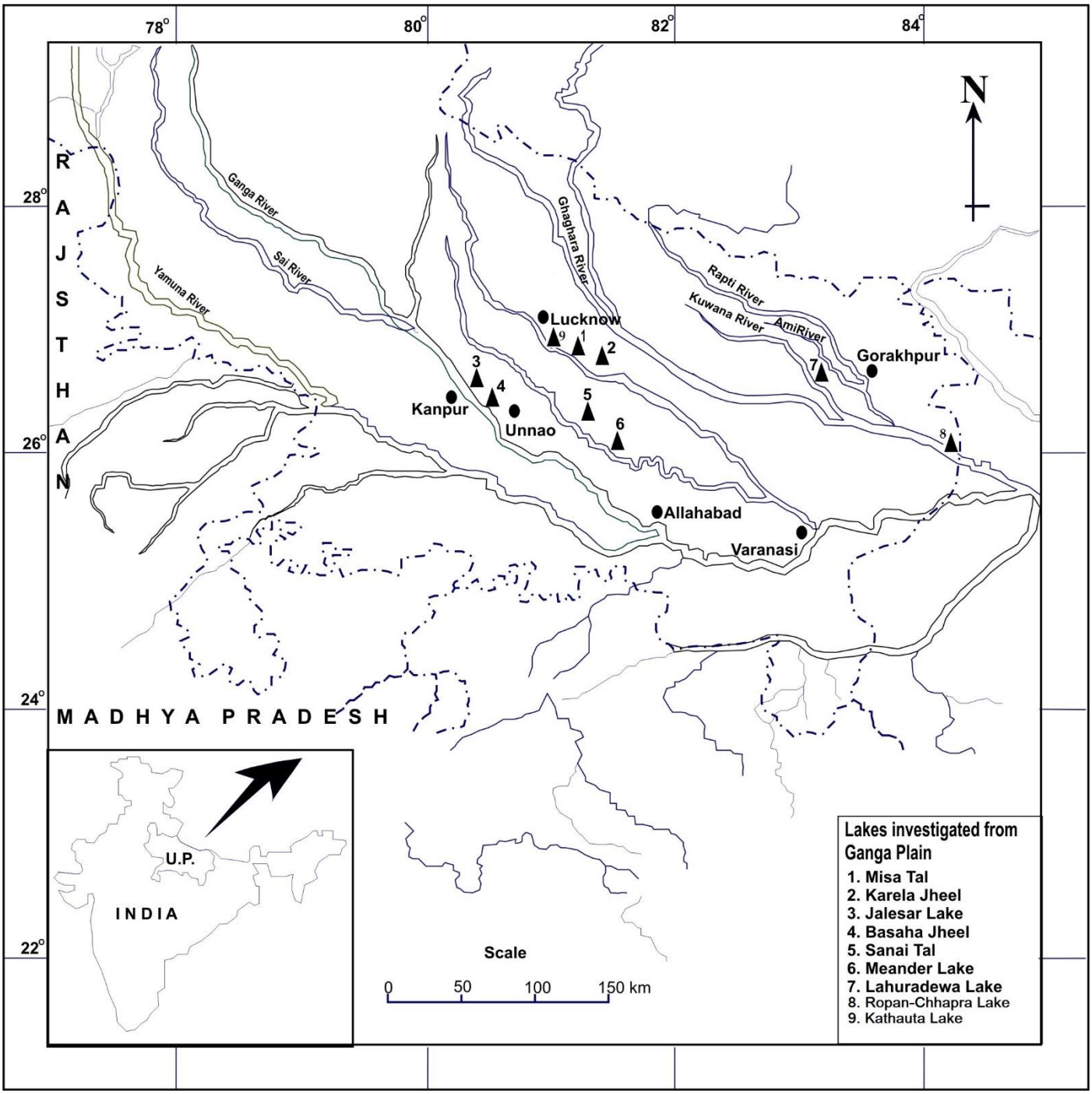


Fig. 01: Map showing studied lakes

GEOLOGICAL SETTING OF REGION

The Ganga Plain encompasses unconsolidated Quaternary sediments underlain by the Precambrian rocks[17]. They chiefly emanate from the weathering and erosion of rocks from the Himalayas in the north and the peninsula in the south, filling the Indo-Gangetic foreland basin[18]. These sediments are exposed in sections along the rivers of the Ganga Plain. The near surface sediments are interlayered 1-2 m thick fine sand and silty mud deposits showing extensive but discontinuous calcrete horizons. The Ganga Plain shows undulating landscape. The magnitude of

undulations differs from one place to another. The present gentle sloping and undulating landscape are the outcome of neotectonic activity along the Faizabad ridge[19]. This is represented by the displacement of the Siwalik Hills, skewness of fan surfaces, escarpments and preferential alignment of the river channels, deflections in river courses, distorted meanders, asymmetrical terraces, and warping at kilometer scale[20]. The Ganga Plain is subsiding since inception ~15ma and has wedge-shaped sediment accumulation, thickest close to the Himalaya and thinnest near the Craton in the south. Numerous lakes and ponds of varying extents are present in the interfluve regions, which are abandoned river channels. The lakes are situated at a relatively high elevations of the Ganga Plain and do not receive any water or sediments from the present major river system. These stagnant water bodies were evolved with the disruption of fluvial channels ~9-8 cal yr BP due to tectonic activity and base-level changes[21]. The dry climate ~5,000 yr BP induced deposition of aeolion sediments in the form of sand (*blur*) ridges over the disrupted channel segments. The higher grounds in the form of extensive mounds in the Ganga Plain are the most densely inhabited regions of the country.

CLIMATE

This region of Central Ganga Plain experiences a subtropical humid climate. It is greatly influenced by the fluctuating trend of southwest (SW) monsoon, which gets activated in early June in Bay of Bengal, advances westwards, extending over the entire Ganga Plain by mid-July. Winter season from November to February is characterized by mean minimum and maximum temperatures of 7.6°C and 21°C respectively. The temperature seldom reaches the lowest of 0°C during the severe cold months of December and January. Summer season from March to June is marked by mean minimum and maximum temperatures of 27°C and 32.5°C respectively. The temperature rises to 46°C in the hottest month of June. The hot blowing winds known as *"loo"* are usual from mid-May to mid-June. High temperature condition prevails over most of the part of the year, resulting into loss of a large quantity of water through evapotranspiration from the natural water reservoirs, creating an acute dry condition from post-monsoon to summer season. Monsoon season begins in the mid-June and continues till mid-September. The weather gets muggy from mid-July to mid-September. The annual average rainfall for the region is 1020-1140 mm. In all, approximately 80% fraction of the total annual rainfall occurs in the months of July to September due to SW monsoon. However, sporadic rainfall takes place in winter season due to western disturbances. The impact of western disturbance is more pronounced in the Western and Central Ganga Plain in contrast to the Eastern Ganga Plain. During the winter months the Ganga Plain, in general, witnesses a widespread thick cover of mist/fog in the morning hours. However, thick fog cover occasionally persists throughout the day.

PLEISTOCENE-HOLOCENE VEGETATION AND CLIMATIC RECORDS

Out of nine sedimentary profiles investigated so far from different lakes of the Central Ganga Plain, six have rendered the seminal database pertaining to climatic variability and consequential vegetation scenarios on the broader intervals with millennial and multi-century resolutions from the Late Pleistocene to Holocene. On the other hand, the rests have facilitated to understand the short-term climatic changes, on century time resolutions, and their impact on the vegetation resource in the region during the last two millennia or so. The inferences drawn have also been seen in relation to cultural shifts, because the human settlements and crop economy have been greatly affected by the deviating climatic conditions during the past.

1. Jalesar Lake, Unnao District

Jalesar Lake is situated in the vicinity of Sachankot village in Safipur Tehsil, Unnao District on Sandila-Bagarmau road on the right bank of Sai River, a tributary of Gomti River. The lake is about 1km in circumstance. It gets filled with water during the monsoon season and remains dry during rest of the part of year. Most of the area contiguous to the lake is under intensive paddy cultivation by the local populace. Physiographically, the area is level plain with average elevation of 117.82 m amsl. In the proximity of lake a mound of Iron and Early Historic settlement has been explored by the Archaeology Department of Lucknow University. The extensive archaeological excavation has revealed the cultural history of the Ganga Plain. The cultural sequence including the Painted grey Ware (PGW), Northern Black Polished Ware (NBPW), Sunga-Kushana, Gupta and Rajput have been inferred from the artifacts recovered. However, the recovery of red-wares and large number of human figurines terracotta from the excavated trench implies that the Kushana Culture existed around the lake during 1000 CE to 00 CE (D.P. Tiwari, personal communication).

A 2.8m deep thick ditch profile was picked up from the dried lake margin for pollen analytical investigations. The sediment profile mainly composed of sand, silt and clay in varying proportions at different depth slots. The uppermost horizon contains mainly sticky silty-clay with sand. The subsequent horizon comprises blackish sticky silty-clay intercalated with sand layers. Underlying this is the lithounit made up of blackish silt with minor fraction of sticky clay, which is also intercalated with layers of sand of variable thickness. The bottommost horizon has increasing sand fraction with silt and clay and it constitutes the thickest unit in the profile. This overlies the coarse sandy horizon of infinite thickness.

Five absolute radiocarbon dates determined for the trench profile are set out in Table 1 below.

Depth (cm)	Lab. Ref. No.	Radiocarbon ages
0.95	BS-3075	3,180±220 yr BP
117.5	BS-3071	3,860 ±400 yr BP

195	BS-3076	4,960±520 yr BP
257.5	BS-3069	25,290±1690 yr BP
268.5	BS-3070	42,490±3550 yr BP

Table 1. Radiocarbon dates of Jalesar Lake trench profile

The multidisciplinary investigation involving pollen, organic/inorganic ratio and clay mineralogical database has facilitated to delineate five phases of vegetation shifts and coeval climatic alterations in the region since Late Pleistocene and they have been designated with the initials (Pollen zone JL-I to Pollen Zone JL-V) after the name of study site-Jalesar Lake.

The pollen sequence generated has demonstrated that prior to 40,490 cal yr BP and up to 13,560 cal yr BP (Pollen Zone JL-I), this region of the Central Ganga Plain supported open herbaceous vegetation largely comprising grasses along with members of Asteraceae, Chenopodiaceae/Amaranthaceae, Caryophyllaceae and Urticaceae in variable proportions. A few trees such as *Syzyzium*, *Prosopis* and thickets of Fabaceae were meagerly dispersed upon the herbaceous vegetation under a cool and dry climatic regime. The prolonged existence of the lake of smaller expanse is surmised from sporadic presence of aquatic elements namely *Typha* and *Potamogeton* and freshwater alga-*Botryococcus*. The lake was encircled with feebly-developed marsh all around as indicated by the retrieval of a few wetland elements including sedges, *Polygonum plebeium* and *Solanum*. The presence of coarse sand horizon of infinite thickness beyond 2.80m depth reveals that the Sai River was an active channel at the Jakesar Lake site, which later got shifted eastwards as seen today. Similar coarse sand deposits have also been noticed at the base of lake deposits from other locations in the Ganga Plain, depicting the river migration as a consequence of neotectonic activities[22]. The lower fraction of sand contrast to silt and clay at the lake-base but with a decreasing grain-size upwards corroborates a transition from river to lake morphology depositing fine-grained sediments in the lake basin in a low energy regime.

For the time bracket of 13,560 to 5,260 cal yr BP covering a depth of 2.5-2.1cm in lithocolumn with predominantly sandy clay sediment, the palaeovegetation and palaeoclimatic implications could not be drawn due to paucity of pollen in the sediments. However, the rising trend of inorganic carbonate carbon at the slot in the profile suggests favourable conditions for oxidation of pollen and spores. The time interval of this deposit also corresponds with the period of neotectonic activities (9 to 5 ka) in the region, which resulted in an interruption in the normal deposition regime[23]. This hiatus in the sequence might have resulted due to regular erosion of the sediments over a larger time interval.

During the time bracket of 5,260 to 4,760 cal yr BP (Pollen Zone JL-II), a reasonable number of moisture-loving elements namely *Holoptelea*, *Barringtonia*, *Dodonea* etc. together with drought-tolerant trees viz., *Acacia*, *Bombax ceiba*, *Aegle marmelos*, etc. invaded the landscape. This enrichment of the vegetation predicts that the restricted forest groves interspersed with grasslands

got established on account of amelioration of climatic conditions with the inception of moderate monsoon precipitation. The clement climatic condition in this phase favoured the development of suitable organic-rich edaphic condition for the invasion of more trees in the region. The maiden appearance of Cerealia pollen signals the initiation of low magnitude incipient cereal-based agrarian practice in the region ~5,000 cal yr BP. The pollen evidence[24] and phytolith records[25] from Lahuradewa Lake in eastern Uttar Pradesh ~7,000 cal yr BP signifies the early setting of congenial climatic conditions. However, AMS dating of carbonized rice (*Oryza sativa*) seeds retrieved from the adjoining archaeological mound has revealed that the cereal-based agricultural practice commenced around 8,259 yr BP[26]. The steep decrease in sand and the corresponding increase in silt and clay for a brief interval imply the deposition of fine grained sediments, probably indicating low intensity erosion in the adjoining area of the lake on account of thick vegetation cover. This is also confirmed by the increased moisture and organic carbon content. The presence of kaolinite, though in small fraction, also indicates a relatively warm and humid climate. The multiproxy records from Sanai Tal, Raebareli District also bring out equivalent climatic episode during mid-Holocene[27]. A warm and wet climate is also inferred ~5,730 to 4,150 cal yr BP by Sm/K ratio and dissolution and precipitation of calcretes from the Ganga-Gomti interfluves[28].

Between 4,760 and 3,200 cal yr BP (Pollen Zone JL-III), owing to further invasion of moist elements viz., *Madhuca indica*, *Adina cordifolia*, *Dalbergia*, *Emblica officinalis*, *Annoa* cf. *squamosa*, *Butea monosperma*, *Capparis*, *Sterculia*, *Combretum* and Meliaceaae with the inception of this phase in addition to *Aegle marmelos*, *Syzygium*, *Butea monosperma* and *Terminalia* occurring since earlier reveal that the forest groves got more profuse in composition most likely as an outcome of setting of a warm and humid climate in the region with the advent of strong SW monsoon. The steady increasing trend of fine grained sediments along with rise in moisture and organic carbon denotes the reduction of influx of coarse sediments, because the thick vegetation cover inhibiting the quick erosion of surface soil. This phase of congenial climate partly falls within the Period of Climatic Optimum, which has been witnessed globally between 9,000 and 4,000 yr BP[29]. The rising trend of Cerealia and concomitant cropland weeds viz., *Artemisia*, Cheno/Am, Brassicaceae, *Cannabis sativa* and *Rumex* signifies the escalation of cereal-based agrarian practice and other human activities in the region. Furthermore, the first encounter of *Trapa* (water chestnut) pollen at the level dated to 4,700 cal yr BP symbolizes that the lake extended up to the present dried investigated part. The *Trapa* fruits would have been consumed in subsistence by the local settlers. The lake acquired a wider expanse as confirmed by the frequent record of aquatic taxa such as *Typha* and *Potamogeton* as well as the freshwater alga-*Botryococcus*.

Around 3,200 to 1,200 cal yr BP (Pollen Zone JL-IV), the diminution of the prominent trees such as *Madhuca indica*, *Terminalia*, *Holoptelea*, Sapotaceae and vanishing of a large number of those existed earlier signal that the forest groves became sparse in composition and got confined into very small pockets separated by wider stretches of grasslands, reflecting a warm and relatively

less-humid climate in response to a weak SW monsoon. However, the agrarian practice sustained at altogether same magnitude, because Cereal and other ruderal plants remain static. The decline in the aquatic flora connotes that the lake attained a shallower status due to deterioration of climate. The relative decrease in kaolinite and a synchronized sharp increase in carbonate content clearly demonstrate the reduction in precipitation, particularly towards the termination of this phase.

Since 1,200 cal yr BP to present (Pollen Zone JL-V), the rapid decline in trees and concurrent expansion of ground flora took place with the availability of more open space in the region. This drastic alteration in the floristic set up implies the further reduction in monsoon precipitation and a warm and dry climate prevailed in the region. The increasing fraction of sand compared to silt and clay in the lake by this time also corroborates that the land surface became more prone to erosion due to paucity of vegetation cover. Similar vegetation scenario has been notice at Basaha Jheel, Unnao District under altogether similar climatic conditions since 1,800 cal yr BP onwards[30]. Due to existing adverse climate, the lake got changed into an ephemeral water-body as seen today. This is well evidenced by the dearth of aquatic flora. The salient features of pollen profile is shown in Table 2.

Period year BP	**Vegetation assemblage**	**Climate**	**Pollen zones**
1,200-Present	• Open grassland dominated the terrain with a few trees exhibiting abrupt declining trend. • Agricultural practice continued with same pace as prior, probably to cope with increasing populace. • Lake got ephemeral and smaller in expanse.	Warm and dry (reduced monsoon rainfall)	JL-VI
3,200-1,200	• Forest groves became less-diversified with the decline in the number and frequencies of trees. • Meagre aquatic flora suggestive of a smaller stretch of the lake.	Warm and less-humid	JL-V
4,760-3,200	• Expansion of forest groves with the immigration of several trees viz., *Madhuca*	Warm and humid	

	indica, *Adina cordifolia*, *Dalbergia*, *Emblica officinalis*, *Annona* cf. *squamosa*, *Butea monosperma*, *Capparis*, *Sterculia*, *Combretum*, etc. • More frequent Cerealia and cropland weeds viz., *Artemisia*, Cheno/Am, Brassicaceae and *Cannabis sativa* signifies the escalation of agrarian practice.		JL-IV
5,260-4,760	• Succession of open grassland with restricted pockets forest groves with the immigration of more trees viz., *Holoptelea*, *Barringtonia*, *Dodonea*, *Acacia*, *Bombax ceiba*, *Aegle marmelos*, etc. took place. • Initiation of agrarian practice as indicated by the debut of Cerealia and other cultural taxa.	Amelioration of climate (prevalence of a moderate monsoon precipitation)	JL-III
1,3590-5,260	• No pollen evidence. • Presence of coarse sandy sediments depicts river migration.	Pronounced fluvial activities	JL-II
40,490-13,590	• Open herbaceous flora encompassing chiefly grasses followed by Cheno/Am, Asteraceae, etc. along with scattered trees viz., *Syzygium*, *Prosopis*, etc. occupied the region. • Intermittent aquatic elements viz., *Typha* and *Potamogeton* implies the existence of a small lake.	Cool and dry	JL-I

Table 2. Salient features of pollen profile from Jaleswar lake

2. Karela Jheel, Lucknow District

Karela Jheel (lake means Jheel in local dialect) lies about 20 km southeast of Lucknow city on the Lucknow-Raebareli road (81°1'38" E Long.; 26°40'54" N Lat.) in the proximity of a far-flung unpopulated corner of Hulaskhera Village. The lake measures roughly 1 km in circumference. It is an oxbow-shaped lake and is supposed to be an abandoned channel of the Sai River, flowing 10 km south of the investigation site[31]. At Present, it is almost dry, except for some water towards the centre. It is filled with water during the rainy season. During the post-monsoon season, it is used as a water reservoir to irrigate the adjoining cultivated land. Thereafter, most of the dry part of the lake is brought under cultivation of winter and summer crops by the local inhabitants. According to the revenue records, around thirty years ago the lake was brimming with water, but subsequently the water-level increased due to siltation as a result of the choking of communication.

The archaeological excavation of a large mound on the southern flank of the lake has unraveled the cultural history of the region[32]. The retrieval of numerous artifacts including pottery pieces, coins & Terracotta images and brick structures from the mound suggests human habitation. Around 1000 BCE (3000 BP), a highly civilized culture came into existence between 200 BCE and 200 CE. By 700 CE the culture declined and ~1000 CE it vanished from the region. The archaeological evidence implies that the settlement was of the community of farmers and artisans. The emerged cultural sequence depicts that from 1000 BCE to 700 BCE, two successive cultures, Black Slipped Ware (BSW) and Painted Grey Ware (PGW) existed there, which were succeeded by Northern Black Polished Ware (NBPW) between 700 BCE and 300 BCE. Subsequently, the region was ruled by the Sunga-Kushana (200 BC-300 CE), Gupta (300-700 CE), Pratihars and Rajput (700-1000 CE) dynasties[33].

A 2.6m thick sediment profile was picked up from the dried southern lake margin for present study. The lithology of the profile exhibits distinction in sediment texture at different depths. The uppermost horizon (0-80cm), composed of sticky grey clay with rootlets and other plant debris of the overgrown vegetation and mollusc shells, is the thickest horizon in the profile. Underlying this are consecutive horizons of sticky greyish clay (80-110cm), brownish clay (110-150cm) and blackish clay (150-210cm) of variable thickness. The lowermost horizon (210-260cm) is third in order of thickness and it is largely constituted of sandy clay. This rests over a coarse sandy horizon of infinite depth. The four absolute radiocarbon ages determined for this trench profile are as below in Table 3.

Table 3. Radiocarbon dates of trench profile from Karela Jheel

Depth (cm)	Lab. Ref. No.	^{14}C age (yr BP)	Calibrated age (yr BP)
30-45	BS-112	1,970 ± 107	1,935
90-105	BS-113	3,660 ± 140	5,610
160-175	BS-114	10,360 ± 110	10,297

245-260	BS-115	13,690 ± 560	16,433

The pollen analytical investigation of a 2.6 m thick sediment profile from Karela Jheel has unraveled the vegetation succession, coeval climatic episodes and lake-level fluctuations in the region of Central Ganga Plain since the last deglaciation in a definite chronological order. Besides, the study has also revealed the inception of incipient agrarian activities and its subsequent pace in this most fertile alluvial tract, which is entirely influenced by monsoon variability. The geomorphic evidence, i.e. the ox-bow shape of the lake and presence of coarse sand at the base-level of the exposed sections[34] suggest the existence of an active channel of the Sai River prior to 14,000 cal yr BP, which presently flows about 10 km south of the lake. This is also substantiated by the presence of coarse sandy stratum of infinite thickness beyond 2.6 m depth, indicating that the sediments were accumulated in a high energy fluvial environment. Hence, no pollen based palaeovegetational implications could be drawn for this period, due to the paucity of pollen in the organic deficient coarse sandy sediments. Sanai Tal, on the interfluve between yr BP coinciding to this phase as substantiated by the similar geomorphic features and base-level sediment texture[35].

The pollen sequence indicates that from ~14,000 to 12,500 cal yr BP (Pollen zone KJ-I) the vicinity of the lake as well as the surrounding area to a wider extent supported open grassland vegetation dominated by grasses (Poaceae) together with the members of Asteraceae (Tubuliflorae) and Cheno/Am. A few trees of *Holoptelea integrifolia* and *Oroxylum* were sparingly distributed upon the open grasslands (**Fig. 2).**

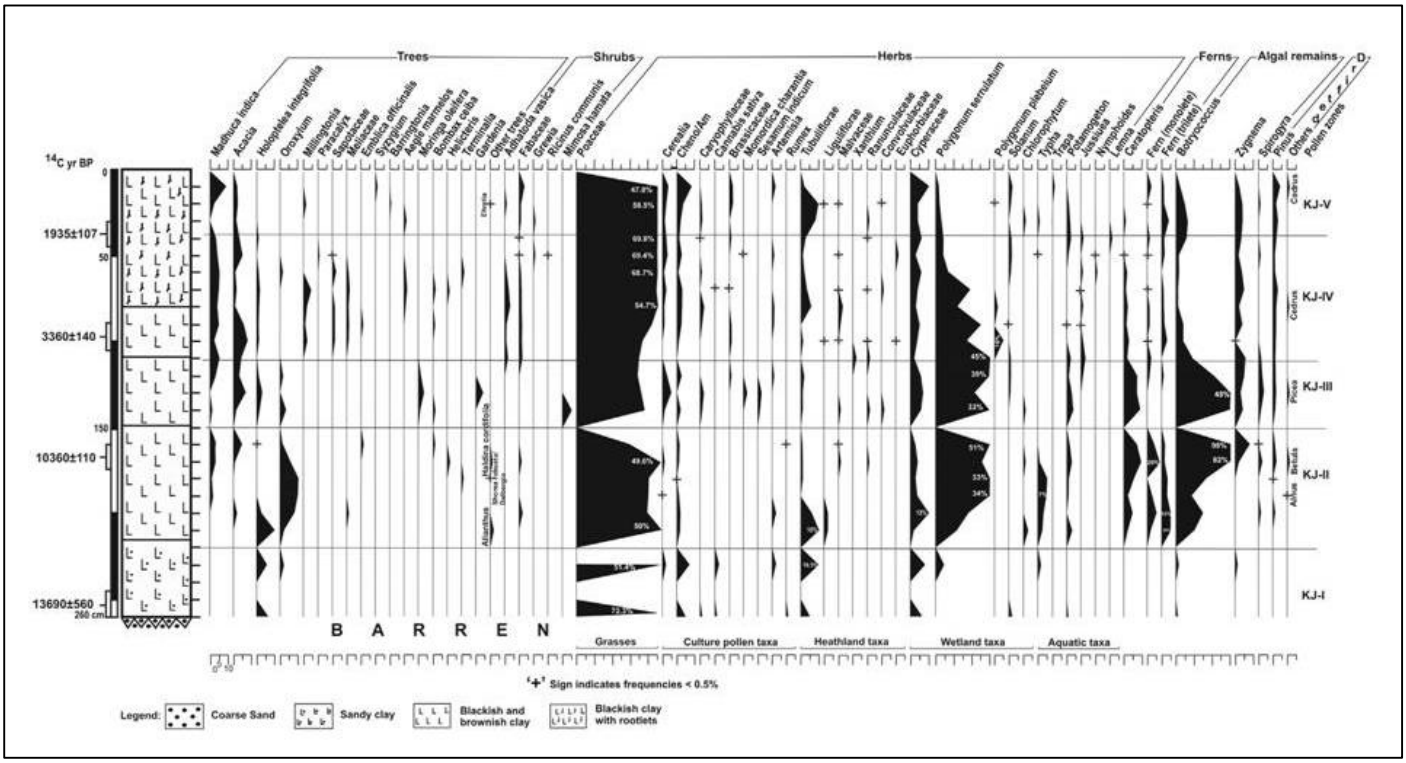


Fig. 02: Pollen sequence from ~14,000 to 12,500 cal yr BP (Pollen zone KJ-I)

On the whole, vegetation scenario implies that the region witnessed a cool and dry climate, most likely due to low monsoon precipitation. Nevertheless, an ameliorating trend of the climate is inferred by the slight increase of the trees in the latter part of this phase. This is also validated by the existence of equivalent vegetation under cool and dry climatic conditions ~13,000 cal yr BP in the area contiguous to Jalesar Lake[36] and ~15,000 to 13,000 cal yr BP in the Sanai Tal area[37], about 100 km west and 90 km south of the present investigation site respectively. This phase corresponds with the last deglaciation event, which has been documented ~14,000 cal yr BP in Kashmir Valley as manifested by the initial expansion of broad-leaved elements[38]. There was also a progressive immigration of oak and other broad-leaved elements in the open grassland vegetation in Eastern Himalaya concurrent to this phase. The development of the lake occurred ~14,000 cal yr BP in the form of a meander cut-off of the Sai River. This is also confirmed by the presence of sandy clay sediment at the level in the lithocolumn encompassing this phase. The lake was small, as indicated by the intermittent retrieval of aquatic *Potamogeton* and *Typha* together with freshwater algae, *Botryococcus* and *Zygnema*. The limited record of wetland taxa namely sedges (Cyperaceae), *Polygonum*, *serrulatum* and *Solanum* indicates that the lake was encircled with weakly-developed marshy fringe. However, the adjoining area would have been influenced by human activities, which is depicted by the prominent occurrence of ruderal plants of Chenopodiaceae/Amaranthaceae (Cheno/Am) along with *Cannabis sativa*, *Artemisia* and *Rumex* from the beginning of the pollen sequence.

Between 12,500 and 8,700 cal yr BP (Pollen Zone KJ-II), the spurt in *Oroxylum*, an element of moist habitat with high ground water level, and gradual increase of *Holoptelea integrifolia* as well as the incursion of numerous trees viz., *Madhuca indica*, *Acacia*, *Bombax ceiba*, *Emblica officinalis*, *Terminalia*, and *Haldina cordifolia* took place in the region. This important change in the arboreals suggests the development of forest groves in restricted pockets interspersed with stretches of open grasslands, especially on the raised land surfaces. The entire Ganga Plain is flood prone due to a dense network of river channels. Hence, because of frequent deluges and shifting of river courses, vast stretches of forests could never be regenerated, except for a few forest groves occurring on interfluves. This important transformation in the vegetation scenario with the establishment of forest groves in restricted pockets elucidates that the region enjoyed a warm and humid climate in response to the active SW monsoon. The expansion of the neighbouring lake Sanai Tal from ~13,000 to 5800 cal yr BP in response to high rainfall is also reflected by the shell-rich muddy sediments and enrichment of aquatic flora[39]. Strong fluvial activity has also been recorded between 13,000 and 8,000 B P in the Ganga-Gomti interfluves, based on geomorphic mapping supported by OSL chronology[40]. This phase of warm and humid climate corresponds with the period of increasing warmth in Kumaon Himalaya[41] and Kashmir Valley[42] as indicated by the expansion of broad-leaved oak forests as well as enlargement of Himalayan rivers ~10,000 to 7000 cal yr BP[43]. The multiproxy data from Lonar Lake, Central India has also illustrated wet climatic

conditions ~11,000 to 6,200 cal yr BP[44]. Interestingly, the first encounter of Cerealia pollen at the level dated to 9000 cal yr BP in lithocolumn as well as consistent presence of the concomitant cropland weeds Cheno/Am, *Artemisia* and *Rumex* denotes the onset of low intensity cereal-based agriculture practice in the region. This superseded the earlier pollen[45] and phytolith[46] records from dried lake-bed and carbonized macro-remains of domesticated rice from the archaeological mound dated to 7000 cal yr BP at Lahuradewa, Sant Kabir Nagar District, about 250 km east, as well as pollen evidence dated to 4500 BP from Meander Lake, Pratapgarh District, about 60 km southwest[47] in the proximity of a Mesolithic (ca. 8000 BC) site[48]. The swampy margin all along the lake was also widened and was overgrown by wetland plants such as *Polygonum serrulatum* and sedges. The record of pollen of subtropical and temperate elements *Pinus*, *Betula* and *Alnus* indicates long distance transport largely through water courses and partly by winds from the Himalayan region, where these plants occur abundantly in pure or mixed formations even today. Their presence also signals the Himalayan connection of the regional wind circulation system.

Around 8,700 and 4,800 cal yr BP (Pollen Zone KJ-III), the groves continued to grow in restricted pockets in the region, interspersed with open grasslands. *Acacia*, *Madhuca indica* and *Holoptelea integrifolia* were major constituents, in addition to *Aegle marmelos* and *Gardenia*, which invaded the region appreciably by this time. However, the forest groves became less diversified, because *Oroxylum*, which was the most prominent forest ingredient earlier, dwindled sharply and subsequently vanished with the termination of this phase. This extermination of *Oroxylum* might have occurred due to erosion of the lake-bed and water courses, where it grew profusely due to availability of locally moist conditions for its regeneration. From this drastic reduction in the forest groves in terms of their quantitative and qualitative composition, it could be deduced that the climatic conditions most likely became warm and relatively less-humid in response to prevalence of a relatively low intensity SW monsoon. This is also confirmed by studies on the lake sediments from eastern Kumaon Himalaya, exhibiting the increase in d13 values (by 3‰) and low trough in magnetic susceptibility ~8200 to 6000 cal yr BP[49]. The marine foraminifer's records from the Arabian Sea[50] also reveal the reduction of SW monsoon during this phase. The lake retained similar status, as the aquatic vegetation remained almost unchanged during this period. The abundance of freshwater alga-*Botryococcus* and *Ceratopteris*, an aquatic fern, suggests the lake contained standing water. The consistent retrieval of Cerealia pollen in numbers along with other associated cropland weeds namely Cheno/Am, Caryophyllaceae, *Solanum indicum* and Brassicaceae with increased frequencies implies some escalation in the agricultural practice in the region. *Momordia charantia* (Karela), at the level dated to 6,770 cal yr BP, is the earliest evidence of the cultivation of this vegetable crop. Due to its frequent cultivation on the dried lake-bed by the local inhabitants, the lake is popularly known as Karela Jheel. Presently, the area along the dried lake-bed is also under cultivation of some other cucurbits by the local populace for subsistence and cash crops.

Around 4,800 to 2,000 cal yr BP (Pollen Zone KJ-IV), forest groves in restricted pockets got profuse and varied as is clearly depicted by the expansion of *Madhuca indica*, *Acacia* and *Holoptelea integrifolia*, immigration of *Millingtonia*, *Aegle marmelos* and *Paracalyx*, and resurgence of *Oroxylum*, *Emblica officinalis*, *Terminalia* and *Helicteris*. Thus, the maximum diversification of the forest groves in this phase documents that the region experienced a warm and relatively more-humid climate with the initiation of a vigorous SW monsoon, which continued for a period of ca. 3,000 years. An equivalent vegetation scenario and climatic condition have also been deciphered in the pollen sequences from Lahuradewa Lake, Sant Kabir Nagar district[51] and Jalesar Lake, Unnao District[52] during almost the same time intervals. In the wider context, the Rajasthan desert also witnessed >50 cm higher rainfall than today ~5,000 to 3,000 yr BP[53]. During this period of congenial climate, the eastern Madhya Pradesh also supported luxuriant mixed tropical deciduous forests, which subsequently transformed into modern Sal (*Shorea robusta*) dominated forests ~2800 yr BP with the arrival of active SW monsoon[54]. The expansion of mixed oak-chirpine forests in Kumaon Himalaya also occurred as a result of prevalence of a warm and humid climate during the same time interval[55]. The ground vegetation was still dominated by grasses; however, the steady presence of Cerealia and associated cropland weeds signifies further augmentation of the cereal-based arable economy in the region. The noticeable rise in Tubuliflorae implies increasing pastoral impact, as the members of this family are inedible to cattle[56], and hence more pollen were encountered in the sediments, besides grasses. The lake would have a bigger expanse and was brimming with water due to frequent inundations. Under such a turbulent lake environment, the aquatic flora could not thrive as they propagate well in the lentic water bodies. Sedges, which occupy the water-logged lake margin, also declined sharply because of the disturbed lake milieu.

During 1000 BCE to 700 BCE, encompassing this phase, two successive cultures viz., Black Slipped Ware and Painted Grey Ware, have been recorded from the Hulaskhera mound[57] contiguous to the southern flank of the lake. The settlers of these cultures practiced cultivation of *Oryza sativa* (rice), *Hordeum vulgare* (barley), *Eleusine coracana* (ragi millet) and *Vigna radiata* (green gram) as the major staple crops[58] as determined from the retrieved charred grains/seeds from the mound. However, between 700 BCE and 300 BCE, the Northern Black Polished Ware culture succeeded. The retrieval of *Hordeum vulgare* (barley) portrays that it was a main staple crop in the subsistence strategy[59].

Since 2,000 cal yr BP (Pollen Zone KJ-V), the arboreal (trees) dwindled very much in contrast to the preceding phase, except for *Madhuca indica* and *Acacia*; which were prominent. Perhaps, the former was conserved by the local people for its multifaceted use, and the latter might have encroached rapidly into the barren space or would have been planted by the Government to reclaim the wasteland. Other trees viz., *Syzygium*, *Barringtonia*, *Millingtonia* etc. occurred sparsely around the water courses or locally in moist habitats. This substantial variation in the floristic pattern denotes the transformation of forest stands with grasslands into open

grasslands with a few trees, which could be the aftermath of onset of a warm and dry climate owing to reduced monsoon precipitation. However, the agrarian practice intensified, despite the adverse climatic conditions, as indicated by the rising trend of Cerealia and cultural pollen taxa. This might have occurred due to extension of cultivated land in order to cope with the food security of the rising human population in the recent past. The lake attained its present ephemeral status with smaller expanse as elucidated by the paucity of aquatic flora. This event of adverse climatic conditions has also been witnessed during the Late Holocene, based on pollen evidence from Basaha Jheel[60], Jalesar Lake[61] and Lahuradewa Lake[62] ~1,800 cal yr BP; 1,200 cal BP and 1,300 cal yr BP respectively from the Central Ganga Plain with similar vegetation scenarios. In the regional context, the Rajasthan desert also experienced a very arid climate since 2,000 cal yr BP, as shown by the decline in arboreals[63]. In western Himalaya, mixed oak-chirpine forests were succeeded by mixed pine-oak forests due to the deterioration of climate[64]. Recently, the Lonar Lake evidence from Central India has also indicated prolonged drought between 2000 and 600 yr BP owing to the weaker monsoon[65]. The archaeological evidence from the adjoining Hulaskhera mound has revealed that during the early part of this phase, the region was under the successive rule of Sunga-Kushana (200 BCE- 300 CE), Gupta (300-700 CE), Pratihars and Rajputs (700-1000 CE) dynasties[66]. The people of these cultures practiced cereals, pulses and oil seed plants as major crops until 1000 CE[67]. The salient features of pollen profile is shown in Table 4.

Period year BP	Vegetation assemblage	Climate	Pollen zones
Present -2,000	• Landscape supported wide spread open grasslands as a result of diminution of trees. • Agrarian practice sustained with increased pace, most likely to cope with the escalating human populace in the region. • Lake transformed into an ephemeral water body with profuse wetland elements-sedges.	Warm and dry (reduced monsoon rainfall)	KJ-V
2,000-4,800	• Proliferation of forest groves witnessed as depicted by frequent presence of trees viz., *Madhuca indica*, *Acacia*, *Holoptelea*, etc. • Increase in aquatic elements	Warm and more-humid (Increased monsoon rainfall)	KJ-IV

	implies the bigger lake expanse.		
4,800-8,700	• Forest grove got less-varied with the sudden depletion in *Oroxylum* and other trees. • Steady presence of Cerealia and concomitant cropland weeds suggests the intensification of agrarian activities. • Lake retained similar status as the aquatic vegetation remained almost unchanged.	Warm and less-humid (Decreased monsoon rain fall)	KJ-III
8,700-12,500	• *Oroxylum* dominant forest groves invaded by several trees viz., *Madhuca indica*, *Acacia*, *Bombax ceiba*, *Emblica officinalis*, *Terminalia*, and *Haldina cordifolia*. • Maiden record of Cerealia reveals the initiation of Cereal-based crop economy. • Lake became wider as indicated by the enhancement in the aquatic taxa, *Typha* and *Potamogeton*.	Warm and humid (Moderate monsoon rainfall)	KJ-II
12,500-14,000	• Open grassland with scattered trees namely *Holoptelea*, *Oroxylum*, etc. • Existence of a small-sized lake is marked by a few sporadic aquatic elements viz., *Potamogeton*, *Typha* and fresh-water algae, *Botryococcus* and *Zygnema*.	Cool and dry (Occasional monsoon rainfall)	KJ-I

Table 4. Salient features of pollen profile from Kareela Jheel

3. Lahuradewa Lake, Sant Kabir Nagar District

Lahuradewa Lake (82°50" E Long. & 26°46" N Lat.) is situated adjacent to a Neolithic-Chalcolithic (9,000 to 3,200 yr BP) settlement site, 5km south of Bhujaini Raiway Crossing in the proximity of Lahuradewa Village, Sant Kabir Nagar district (U.P.). The lake is perennial and holds

enough water throughout the year. However, at present it has receded westwards. The eastern flank of the lake has got dried and this part seldom gets filled with water during monsoon season. The superfluous water of the lake drains out into the Katanalia River, which merges with Kuwano River, a tributary of Ghaghara. The lake encircles the excavation site on the northern, western and southern flanks.

A 2.8 m deep trench profile was gleaned from the dried margin of the lake for pollen analytical studies. The profile exhibits three conspicuous lithozones, based on the sediment texture at different levels. The top zone is constituted of dark mud with rootlets (0-90cm). This is followed by dark mud zone (90-200cm), constituting the thickest stratum in the profile. The bottom zone is composed of black organic mud zone (200-280cm) and it is the thinnest zone. Six absolute radiocarbon ages have been determined for this profile at broader intervals to delineate the vegetation and climate change in the region in a definite time frame since prior to the Holocene. Five absolute radiocarbon dates have been determined for this sediment profile and they are set out below in Table 5[68].

Table 5. Radiocarbon dates of trench profile from Lahuradewa

Depth	Lab. Ref. No.	Radiocarbon ages	Calibrated ages
50-60cm	BS-2300	1040±100 yr BP	950 yr BP
75-100cm	BS-2301	810±100yr BP	1714 yr BP
125-130cm	BS-2299	2180±90 yr BP	2188 yr BP
230-240cm	BS-2981	7010 ±170 yr BP	7822 yr BP
270-280cm	BS-2211	9210 ±170 yr BP	10425 yr BP

Based on the fluctuating frequencies of arboreals (trees) and non-arboreals pollen retrieved at different level, the pollen sequence evolved from Lahuradewa Lake has divided into five clear cut pollen zones (Pollen Zone LRD-I to Pollen Zone LRD-V). The pollen zones are prefixed with the initial as LRD after the name of study site and are numbered from bottom to top.

The pollen sequence evolved from the lake deposit has furnished insights concerning the palaeovegetation and palaeoclimatic changes in and around Lahuradewa region since prior to the Early Holocene. Around 10,600 to 9,250 cal yr BP (Pollen Zone LRD-I), open grassland vegetation mainly comprising grasses together with Chenopodiaceae/ Amaranthaceae, *Artemisia*, sedges, etc. and sparsely distributed a few trees such as *Aegle marmelos* , *Holoptelea*, *Terminalia* as well as thickets of Fabaceae and Tiliaceae occurred under a cool and dry climatic regime in the region[69]. The retrieval of aquatic elements viz., *Potamogeton* and *Typha* coupled with significant presence of freshwater alga-*Botryococcus* suggests the existence of the lake, extending close to the settlement site. Some kind of anthropogenic activity in the surroundings of the lake during the Early Holocene is manifested by the record of pollen of ruderal/culture plants viz., Brassicaceae, Caryophyllaceae, *Artemisia*, *Rumex*, etc..

Subsequently, between 9,250 and 6,340 cal yr BP (Pollen Zone LRD-II), the open grasslands were invaded by a few more trees such as *Bombax*, *Emblica officinalis*, *Syzygium*, *Lagerstroemia* and *Dodonea*, though infrequently, most likely with the amelioration of the climate. The abundance of *Botryococcus* and improved frequencies of other aquatic elements reflect that the lake had a wider spread, which could be ascribed to the increased monsoon rainfall. Amazingly, the first encounter of Cerealia pollen at the level (2.40m depth) dated to 7000 cal yr BP depicts the early activities of man associated with some kind of cereal-based agrarian practice in the region. The record of phytoliths[70] of cultivated rice (*Oryzia sativa*) from the same lake bed and archaeobotanical remains[71] from the adjoining excavated mound also corroborate a close synchronicity with pollen record concerning the pristine agrarian practice in this region of the Central Ganga Plain. The present finding regarding the inception of cereal-based agricultural practice has also superseded the earlier record, dated 4,500 yr BP from the Meander Lake in Pratapgarh District[72].

During the time slot of 6,400 to 4,050 cal yr BP (Pollen Zone LRD-III), an appreciable increase in *Bombax* and better representation of *Holoptelea*, *Ternimalia* and shrubby elements of *Trewia*, *Melastoma*-a riverine element and Fabaceae coupled with arrival of *Madhuca indica*, though, intermittently, implies the establishment of forest groves in restricted pockets interspersed with stretches of open grasslands only on the raised land surfaces free from recurring floods in the region. Such a significant alteration in the floristic set up might have occurred in response to intensification of southwestern monsoon. Interestingly, the first encounter of *Trapa* (chestnut, vernacular name singhara) pollen between 2.00m and 1.50m depths in the lithocolumn, dated to 5,800 to 2,900 cal yr BP, suggests that the lake was possibly deep and perpetually extending in the close proximity of human settlement at the excavation site owing to prevailing favourable climatic conditions. The *Trapa* (singhara) fruits would have been exploited by the settlers in their subsistence. Further, the record of *Trapa* pollen also reflects the lake was wider in expanse, extending to the present dried bed close to the settlement mound in response to vigorous SW monsoon. Chronologically, this event of lake expansion corresponds with the Period of Climatic Optimum, which has been documented between 9,000 and 4,000 yr BP in global perspective. The prevailing favourable climate escalated agrarian practice in the region, which is deduced by the steady presence of Cerealia along with concomitant cropland weeds. Besides, the debut of *Cannabis sativa* ~5,000 yr BP also demonstrates the increasing anthropogenic activities in the region.

Around 4,050 to 1,300 cal yr BP (Pollen Zone LRD-IV), the localized forests groves expanded further and became more diversified as evidenced from the more frequent presence of trees taxa as stated in the preceding phase and appearance of prominent swampy element-*Barringtonia* and concurrent decline in grasses. On the whole, this change in the vegetation confirms the intensification of monsoon and consequently a warm and more humid climate prevailed in the region. The acceleration in cereal-based crop economy is illustrated by the

increase in Cerealia and other cropland weeds. This could have also occurred as result of extension of agricultural practice, besides the arrival of more favourable climatic conditions.

Since 1,300 yr BP to present (Pollen zone LRD-V), the forest groves got less-varied as well elucidated by the apparent dwindling of number and frequencies of the trees and concurrent proliferation of grasses and other accompanying herbaceous elements. The poor vegetation covers during this phase reveals the weakening of southwestern monsoon. This ultimately resulted into the prevalence of dry climatic condition in the region. The exploitation of vegetation by the increasing human population in the region during the recent past cannot be denied. The lake gradually shrank and transformed into a small ephemeral water body on account of extension of swampy condition and increasing sediment input. This is also validated by the severe decline and ultimate disappearance of *Botryococcus* and other aquatic elements. The agricultural practice continued with same pace as earlier. This could be perhaps the result of technological advancement during the recent past in order to cope with the increasing populace in the region. The salient features of pollen profile is shown in table 6.

Period year BP	Vegetation assemblage	Climate	Pollen zones
Present-1,350	• Arboreals (trees) barely represented by *Madhuca indica*, *Holoptelea*, *Syzygium* and *Barringtonia*. • Agrarian practice continued with similar magnitude as earlier, since Cerealia and concomitant culture pollen taxa remained static. • Lake assumed an ephemeral status as surmised by inadequate aquatic elements.	Reduced monsoon precipitation	LRD-V
1,350-4,069	• Forest groves got dense and varied with prominent presence of *Syzygium*, *Holoptelea* and *Barringtonia* and were interspersed with discrete stretches of open herbaceous vegetation. • Further acceleration of agrarian practice is manifested by appreciable increase in Cerealia and accompanying culture	Moderate monsoon rainfall	LRD-IV

	pollen taxa. • Conversion of lake into swamp commenced.		
4,060-6,400	• Establishment of forest groves with considerable rise of already existing trees and maiden invasion of *Madhuca indica*, *Dalbergia*, etc. • Augmentation of cereal-based agrarian practice. • Emergence of *Cannabis sativa* (hemp) *ca.* 5,000 yr BP suggesting increased human activities. • Retrieval of *Trapa* (singhara) pollen *ca.* 5,200 yr BP embodies that singhara fruits would have been used in subsistence by the settlers.	Further increase in monsoon rainfall	LRD-III
6,400-9,250	• Sporadic incursion of open grasslands by more trees viz., *Bombax*, *Emblica officinalis*, *Syzygium*, etc. • Emergence of Cerealia pollen signals the initiation of cereal-based agrarian practice.	Amelioration of climate with the increase in monsoon rainfall	LRD-II
9,250-10,600	• Region supported open grassland dominated by grasses coupled with close allies such as Cheno/Am, Asteraceae, Brassicaceae, etc. • Trees viz., *Holoptelea*, *Aegle marmelos*, *Terminalia*, etc. occurred sparingly. • Scanty aquatic elements namely *Typha* and *Potamogeton* denote the existence of a small lake.	Cool and dry	LRD-I

Table 6. Salient features of pollen profile from Lahuradewa Lake

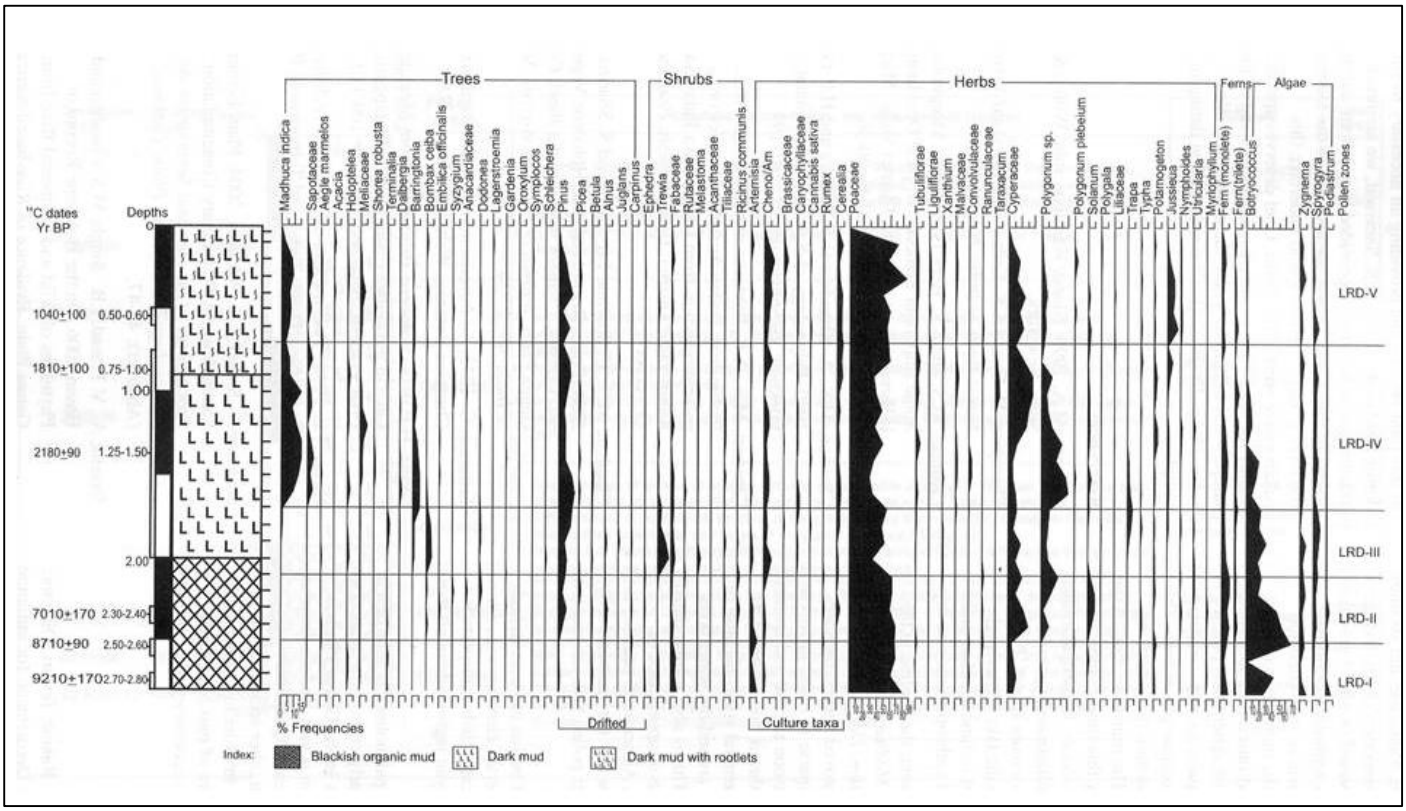


Fig. 03: Pollen diagram of Kareela Jheel

4. Sanai Tal, Raebareli District

Sanai Tal (lake) is a meander cut-off lake of the abandoned channel of the area. This lake, lies on the upland interfluve (T2) surface between rivers Gomati and Sai in the central part of the Ganga Plain. At present, Sanai Tal is dry most of the year, except during the monsoon season, when it gets partially filled with water. The lakes in the Ganga Plain are located at a relatively high elevation and do not get any water or sediment from any major river system. The recharging of the lakes depends mainly on monsoonal rainfall and surface runoff and sediments are derived from local provenance. The impact of changes in evaporation rate is much significant as the lakes are relatively shallow with a large surface area to depth ratio. As a consequence, the lakes are very sensitive to changes in the ratio of precipitation vs. evaporation with some lakes becoming almost dry during the peak summer season.

Subsurface sediments at Sanai Tal show a distinct shell-rich horizon, often known as marl. A 2.3m deep trench dug out for multiproxy study exhibits 10 cm thick bottommost micaceous sand horizon, overlying this are an 80 cm thick mottled silt and clay, a 70 cm thick shell-rich clay and 70 cm thick dark clay respectively.

The radiocarbon dating of the samples was carried at AMS Laboratory, Institute of Physics, University of Erlangen Nuremberg, Germany[73] (Table 7).

Table 7: Radiocarbon dates from Sanai Lake

Sample Name	Lab. No.	^{14}C dates (yr BP)	Calendar age (yr BP) (1 sigma)
SA 2	HOLMONSANAI 07/01-2	14,833± 147	18,054–17,439
SA 5	HOLMONSANAI 07/01-3	14,104±159	17,207–11,626
SA 10	HOLMONSANAI 07/01-4	13,030±114	16,031–15,323
SA 14	HOLMONSANAI 07/01-5	10,120 ±88	11,775–11,550
SA 17	HOLMONSANAI 07/01-6	5,800±65	6,759–6640
SA 19	HOLMONSANAI 07/01-7	2,264±52	2,345–2303
SA 21	HOLMONSANAI 07/01-8	1,705 ±59	1,632–1541

The multiple proxy data from Sanai Lake deposit have enabled the reconstruction of lake vegetation and climatic changes during the Last Glacial-Interglacial transition and Holocene in the Ganga Plain.

It appears that prior ~15,000 yr BP (Zone I) a channel existed, which produced a meander cutoff lake by evolution of a river course. This is apparent from the presence of micaceous sand at the base of trench corresponding to this phase. It is possibly that the wet and humid phase (prior to ~15,000 yr BP) compared with the warming event witnessed during 22,000 to 18,000 yr BP as deduced from palynological records from Kashmir[74] and Tsokar Lake in Ladakh[75] isotopic measurements from Dundi ice core in Tibet[76].

The development of Sanai Lake took place ~15,000 yr BP (Zone II) in the form of a meander cutoff of the active channel. The presence of mottled sandy and silty clays of this phase depicts that the channel was abandoned and got transformed into a lake. The change from a fluvial facies to lake facies is also accompanied by a positive shift in d^{18}O reflecting the initiation of relatively less-humid climate in the region. The stray pollen of aquatic plant, *Potamogeton* along with frequent presence of wetland plants comprising sedges plants and fern decipher the reduction in rainfall, which was adequate to sustain a large water body. Hence, it seems that the lake was shallow and encircled with prominent marshy fringe. This phase corresponds with a decreasing SW monsoon ~14,400 yr BP, based on foraminifera data from Arabian sea[77]. By this time the region perhaps was covered with open scrubby vegetation including chiefly sedges (Cyperaceae) and grasses (Poaceae), which inhabited the areas of lake margins or low levees. A few trees viz., *Holoptelea*, *Aegle marmelos* and members of Meliaceae occurred scantily in the high land studded to the lake. The retrieval of Cerealia pollen with concomitant culture pollen taxa viz., Chenopodiaceae/Amranthaceae, Caryophyllacae, Utricaceae (cf. *Cannabis sativa*), etc. signals some sort of anthropogenic activities in the region.

Around 13,000 to 5,800 yr BP (Zone III) the more frequent presence of aquatic plants viz., *Typha*, *Lemna* and freshwater alga-*Botyococcus* and a contemporary decline in the marshy taxa such

as sedges (Cyperaceae) suggests the expansion of lake as a result of increased rainfall. By this time the predominant fraction of shell-rich muddy sediments at the level corresponding to this phase also support the lake expansion. Therefore, it can be inferred that ~13,000 yr BP rainfall increased, which led to submergence of marshy and adjoining areas, expanding the lake. The arboreals were meagerly represented by *Flacourtia*, members of Meliaceae and Tiliaceae. The onset of active monsoon at ~13,000 yr BP is also documented from northern Indian Ocean[78], subtropical North Africa[79] and eastern China[80]. This is followed by a short event of deterioration of climate as characterized by the decline in trees, herbs and aquatic flora. However, grasses and *Botryococcus* show a rising trend as they withstand the harsh climatic condition and require stagnant water body for respectively. A time bracket of 11,500 to 10500 yr BP has been estimated for this episode, based upon the sediment accumulation rate. This phase of severity of climate fits well chronologically with the Younger Dryas episode noticed in global context. In the upper part of Zone III, i.e. during 10,000 to 5,800 yr BP (Zone IIIb) the lake further enlarged, reaching its maximum development. This phase is characterized by the maximum development of vegetation cover as evidenced by the better representation of most plant taxa. The high prevalence of aquatic elements viz., *Potamogeton* sp. and *Typha* sp., emergence of *Myriophyllum* and a coeval decline in sedges and ferns further imply that the lake assumed a wider stretch. This event of lake expansion elucidates that the region was under a humid climate during this period on account of more active SW monsoon. A reduction in cultural pollen taxa (possibly due to inundation of the marginal areas of the lake) is also documented. This phase could correspond to the early mid-Holocene climatic optimum recorded from different regions in India, like Son valley in north central India[81] and Rajasthan in western India[82]. There are evidences of a high Ganges-Brahmaputra sediment discharge during the early Holocene due to strengthened monsoon[83].

Zone IV (5000 to 2000 yr BP) exhibits a substantial reduction in aquatic elements and a synchronized increase of wetland plants such as sedges (Cyperaceae). This portrays an expansion of swampy condition along the lake margins. The lake area depleted considerably as a consequence of a relatively dry spell and weak monsoon. This is corroborated by a slight positive swing in $d^{18}O$ values. In central Ganga Plain, there is strong evidence of increased aridity around 5,000 yr BP that resulted in disruption of channels and formation of aeolian ridges[84]. The beginning of this event also is synchronous with the mid-Holocene dry phase recorded from Rajasthan desert[85], based on pollen evidence from the lake deposits. A decline in the monsoon precipitation between 4,000 and 3,000 yr BP is recorded from investigations along the Karnataka coast[86], in Son Valley[87], the Western Ghats and the eastern Arabian Sea[88]. A drier climate in this time bracket is also noticed from Tibet[89], western China[90] and Africa[91].

From 1,700 yr BP to the present a climatic amelioration is registered by an enhanced number of warmth loving aquatic plants viz., *Nymphoides*, *Lemna* and *Potamogeton* and better presence of grasses. In this upper part of Zone IV slightly heavier d $^{13}C_{org}$ values is registered,

which may be due to good profusion of grasses and algae. This improvement in climate due to a strong SW monsoon is validated by relatively lighter gastropod shell $d^{18}O$ values. However, the lake attained smaller expanse further and at present it becomes almost dry during peak hot season. This shrinking of lake could be ascribed to increasing anthropogenic activities, as indicated by an apparent rise in Cerealia and other concomitant cultural pollen taxa. An almost corresponding higher humidity around 1,500 yr BP is portrayed from pollen data of Dunde ice cap, Tibet[92] and speleothem evidence from Pokhara Valley Nepal[93]. The salient features of pollen profile is shown in table 8.

Period year BP	Vegetation assemblage	Climate	Pollen zones
1,700-Present	• Increase in warmth loving aquatic elements. • Better presence of grasses. Lighter gastropod shell d ^{18}O value.	Climatic amelioration	ST-VII
5,000-2,000	• Considerable reduction in aquatic elements and coeval increase in marshy elements (sedges) indicating the shrinkage of lake area accompanied by positive shift in $d^{18}O$ values.	Arid	ST-VI
10,000-5,800	• Expansion of terrestrial and aquatic vegetation and a simultaneous dwindling sedges and ferns occurred. This phase is equivalent to Period of Climatic Optimum, registered globally, encompassing the same time bracket. • Proliferation of warmth loving aquatic plants, lower $d^{18}O$ values of gastropod aragonite and heavier $d^{13}C_{org}$ values denote the wider spread of the lake.	Climatic warming (increased rainfall)	ST-V
11,500-10,500	• A dry phase corresponding with the Younger Dryas	Cool and dry	ST-IV

	event, witnessed globally, is marked by the sharp decline in overall vegetation.		
Around 13,000	• Submergence of marshes and creation of a large lake.	Enhanced humidity	ST-III
15,000-13,000	• Channel was abandoned and relics got changed into lake converted into a swamp.	Arid	ST-II
Around 15,000	• Micaceous sandy sediments at the base of the deposit reflect an active channel.	Humid	ST-I

Table 8. Salient features of pollen profile from Sanai Tal

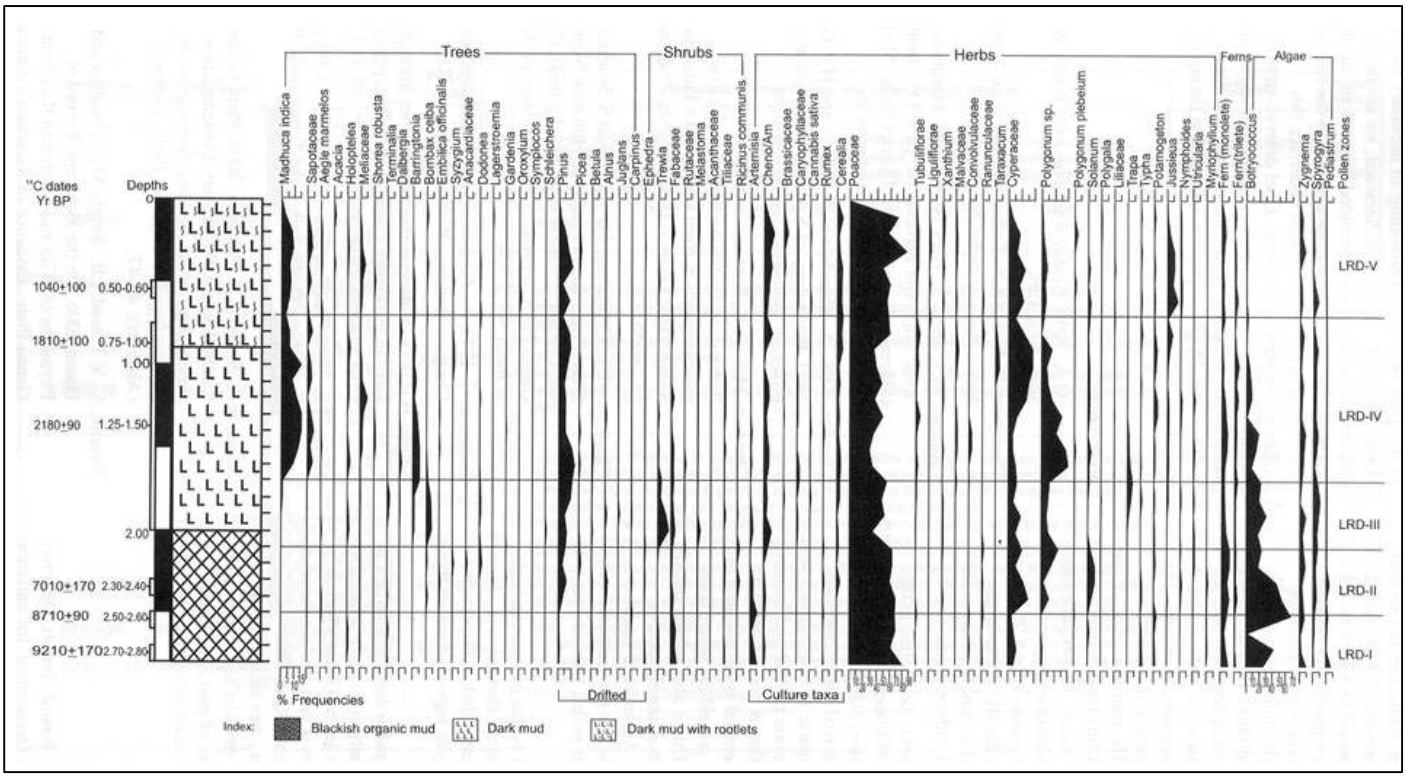


Fig. 04: Pollen diagram of Lahuradewa Lake

5. Meander Lake, Pratapgarh District

This a horse-shoe shaped lake and locally known as Khoalan Jheel lies near the archaeological site of Sarai-Nahar Rai about 15km south-west of Pratapgarh and 65 km southwest of Allahabad city between 81°51' E Long. & 25°48' N Lat. The lake is ephemeral measuring 800m

long and 200m wide. An extensive archaeological excavation conducted at Sarai-Nahar Rai has unfolded Mesolithic cultures. In the past the lake bed held water and its open terrestrial embankment were used as burial ground by the nomads of Mesolithic time (8,000 BC). The retrieval of several microlith tools viz., flakes, blades, scrapers, triangles, lunates, etc. made up of cherts reveals that cherts were transported from the adjoining Vindhyan rocks by the pre-historic settlers.

A 3.3m deep sediment profile pollen anlaysed[94] from Meander Lake is marked by presence of 30 cm thick sand with kankar at the basal part. Overlying this is 60cm thick sticky clay with some kankar nodules. It is succeeded by 180cm thick black mud followed by 70cm thick top grey mud. Solitary absolute radiocarbon date 4,380 yr BP has been determined at 2m depth for this trench profile. Thus, assuming the uniform sedimentation in the lake the beginning of the sediment profile is dated to 7,800 yr BP. The sequential changes in the pollen assemblage in sediment profile have delineated four phases of vegetation shifts and coeval climatic events in the region since the Early Holocene.

Pollen proxy signatures demonstrate that around ~7,800 to 5,325 cal yr BP, the region possessed open herbaceous vegetation with grasses, Chenopodiaceae and Asteraceae were the major ingredients. However, a few trees viz., *Prosopis spicigera*, *Phyllanthus*, etc. were scarcely distributed therein. The lake did exist during this early time as indicated by the record of *Typha*. It held enough perpetual water as evident from the recovery of *Trapa* (water chestnut). From the overall vegetation scenario it is inferred that the region experienced a warm and moderately humid climate.

During the time bracket of ~5,325 to 3,855 cal yr BP, an open grassland steppe still thrived in the region as before. However, prominent presence of *Anogeissus*, *Tecomella undulata* along with *Prosopis spicigera* unraveled that the region was under a regime of warm and humid climate. The maiden encounter of Cerealia ~4,500 yr BP is indicative of the onset of cereal-based agricultural practice. Besides the grasses, *Chenopodium*, Caryophyllaceae and Asteraceae were other associated herbaceous constituents of ground flora. The wetland bordering the lake was profusely overgrown with sedges and *Polygonum plebeium*. A semi-humid climate is inferred from the emerged pollen assemblage in this phase.

~3,855 to 1,545 cal yr BP, the open herbaceous vegetation with the dominance of grasses still flourished along with prominence of close allies such as *Justicia*, Asteraceae, Convolvulaceae, etc. In addition, the trees of *Anogeissus*, *Tecomella* and *Prosopis spicigera* grew very frequently together with *Holoptelea*, *Salmalia* and Myrtaceae (cf. *Syzygium*), though intermittently. This expansion of arboreals especially, took place with the initiation of a warm and more-humid climate in response to increased precipitation. This is also substantiated by the increase in the moist element-*Impatiens* and wetland taxa namely Cyperaceae, *Polygonum plebeium* and Liliaceae as well as the aquatic taxa

viz., *Potamogeton*, *Typha* and *Nymphaea*. The arable economy also intensified as apparent from the better occurrence of Cerealia and culture pollen taxa.

From 1,545 cal yr BP to present the conspicuous decline in grasses and other herbs as well as trees brings out the considerable depletion in the overall vegetation cover in the region with the prevalence of a dry climatic condition as a result of significant reduction in monsoon rainfall. This severity in climate also adversely affected the crop economy as illustrated by the relatively reduced frequencies of Cerealia and associated cultural taxa in this phase.

6. Basaha Jheel, Unnao District

Basaha Jheel, an ancient lake, in Unnao District lies approximately 60km southwest of Lucknow near Sonik Railway Station. The lake is in the proximity of villages-Itkuti and Jamanwa between 80°15" Long. & 26°30" Lat. and supposed to be evolved as an abandoned channel. On the margin of Basaha Lake a single cultural site is present, which was deserted ~2,200 cal yr BP by the settlers.

A 2.6 m deep trench profile comprising three distinct lithological zones viz., subsoil (0-1.08cm), black loamy soil (1.08-1.81cm) and marl (1.08-2.60cm) from top to bottom was pollen analysed from the dried lake margin in order to reconstruct the vegetation succession, climatic variability and human activities in the region during the Late Quaternary Period.

The radiocarbon dating of the samples was executed at AMS Laboratory, Institute of Physics, University of Erlangen Nuremberg, Germany[95] (Table 9).

Table 9. Radiocarbon dates of trench profile from Basaha Jheel

Depth	Lab. No.	Radiocarbon age
0.24m	HOLMOBSSAHA-6	1712±65 yr BP
1.15m	HOLMOBSSAHA-4	2149±56 yr BP
1.79m	HOLMOBSSAHA-3	2736±57 yr BP
2.15m	HOLMOBSSAHA-2	2995± 63 yr BP

The pollen proxy data generated from meticulously analyzed trench profile has elucidated five well-defined phases of vegetation succession and concurrent climatic oscillation, associated lake-level fluctuations and intensity of agricultural practice in the Central Ganga Plain since Late Mid-Holocene[96]. Around 3,300 yr BP (Pollen Zone BJ-I), open vegetation comprising chiefly grasses accompanied with elements of Ranunculaceae, Malvaceae, Chenopodiaceae/Amaranthaceae, etc. and meagerly distributed trees viz., *Bauhinia*, Sapotaceae, *Aegle marmelos*, *Holoptelea* and Malvaceae occupied the region under semi-humid climatic condition. The recovery of Cerealia together with other culture pollen taxa such as *Artemisia*, and Urticaceae depicts the cereal-based agrarian practice and other anthropogenic activities in the

region. The prolonged existence of the lake is confirmed by the retrieval of pollen of aquatic plants viz., *Lemna*, *Nymphoides*, *Myriophyllum* and *Potamogeton* along with fresh-water alga-*Botryococcus*.

In the time period from 3,200 to 2,800 yr BP (Pollen Zone BJ-II), open vegetation dominated by grasses and other non-arboreals continued to thrive in the region, however, a simultaneous overall improvement in the arboreals also took place. Excessive frequencies of *Bauhunia* (kachnar) reflect that it grew abundantly in the environs of the lake. This tree, most likely, would have been selectively grown by the local inhibitants on account of its multifaceted use for fodder, fuel and vegetable (flowers & buds). Further, the increased frequencies of Sapotaceae (cf. *Madhuca indica*), *Aegle marmelos* and Meliaceae as well as maiden incursion of *Acacia*, *Dalbergia* and Anacardiaceae amply denotes the arrival of active SW monsoon and consequently the climate turned warm and more humid. The lake also widened due to enhanced rainfall. This is well-evident from the recurrent record of aquatic elements, especially *Myriophyllum*. The crop economy practiced with same intensity as apparent from the steady presence of culture pollen taxa.

In the period from 2,800 to 2,200 yr BP (Pollen Zone BJ-III), the noticeable decline in arboreals, especially *Bauhinia* and disappearance of some associated trees and a contemporaneous expansion of grasses and other heathland taxa such as Tubuliflorae, Brassicaceae, Chenopodiaceae/ Amaranthaceae, Urticaceae and *Artemisia* reveals the weakening of SW monsoon. The adverse climatic condition is also manifested by the sharp depletion of aquatic flora, including *Myriphyllum* and *Potamogeton*. The lake attained a smaller stretch in response to reduced rainfall.

Subsequently, from ~2200 to 1800 yr BP (Pollen Zone BJ-IV), the trees further dwindled considerably, excepting the scarce presence of *Lagerstroemia* for the first time. The lake transformed into swamp as seen today and it was overgrown with sedges and *Polygonum* spp. The aquatic elements such as *Myriophyllum* and *Nymhpoides* might have been growing feebly in small localized ditches and puddles over the swamp as demonstrated by their stray presence. Thus, the diminution of arboreals and aquatic flora implies that the region experienced a warm and dry climate attributed to reduced monsoon precipitation. No apparent change in the anthropogenic activities related to agrarian activities has been noticed as evidenced from more or less similar presence of the culture pollen taxa as seen in the preceding phase.

During the last phase with the time interval of 1,800 cal yr BP to present (Pollen Zone BJ-V) the arboreals, in general, vanished from the region, barring the scanty trees of Sapotaceae (cf. *Madhuca indica*). However, the grasses and other associated herbs became more prominent due to availability of more open space for their growth. The emerged vegetation scenario indicates the initiation of a dry climatic condition, attributed to weakening of the SW monsoon. The lake transformed into swamp and was profusely grown with sedges. The aquatic elements and freshwater algae occurred meagerly in the small ponds and ditches over the swamp. The absence of Cerealia and poor record of culture pollen taxa indicates that the local populace discontinued

agrarian practice. It has been observed that since 2,000 yr BP onwards the soil turned brackish due to prevailing dry climate, hence was unsuitable for cultivation

The archaeological studies conducted on a mound close to *Basaha Jheel* has unraveled a solitary culture, which existed there ~3,000 to 2,000 cal yr BP. The settlers abandoned the site ~2,000 cal yr BP most likely with the reduction in monsoon precipitation and increased salinity as well. Recently, a large tract of alkaline soil with sparse vegetation occupies the area contiguous to Basaha Jheel. Therefore, it may be surmised that edaphic condition at Basaha Jheel area became brine ~2,200 yr BP and thereafter got severe from 1,800 yr BP onwards.

7. Misa Tal, Lucknow district

Misa Tal in the environs of village Misa is about 15km east-south-east and 6 km south of Lucknow city (Lat. 26^0 48′ 06.09″ N, Long. 81^0 06′ 02.31″ E). It is arch-shaped in outline, measuring 100m and 150 m wide and 1500 m long with the water depth of < 2m. The catchment area of lake is about 7.26 km^2. The excavation of habitation mounds close to the lake has provided information on the human settlement in this area since the last 1,700 years (Wasson et al., 2013). There is no natural vegetation around the lake and most of the adjoining land is under cultivation.

A 1.40m thick trench was exposed near the lake for palynological and geochronological studies[97]. The trench profile is made up of two lithounits. Sediments between 1.40 m and 1.03 m depths are composed of dark brown granular clay loam. The upper 1.03 m thick horizon contains yellow to grey polyhedral clay loam. Solitary OSL date of 2000±500 yr BP has been determined at 1.5 m depth for the earlier profile[98], picked up close to the present one. Presuming the surface modern and a more or less uniform sediment composition with minor variability, the sediment accumulation rate of 1cm/13.5 years has been calculated for the profile. This sediment accumulation rate has facilitated to extrapolate other dates at broader intervals so as a temporal demarcation of the changing vegetation and climate changes in the region could be achieved for the last 2 millennia time slot. Further, the pollen proxy data has also divulged the short-term climatic variability and its impact on the crop economy on century time scale in context to cultural shifts in the region.

The pollen and spore records from Misa Tal have portrayed that from 1,900 to 1,750 cal yr BP (100 CE to 250 CE) the area was occupied by open grassland, upon which a few trees of *Bombax malabaricum* were sporadically distributed. The moderate presence of aquatic elements amply suggests that the lake had standing water and it was encircled by a marsh. Culture pollen is evident from the beginning of this period with reduced frequencies, suggesting the low intensity crop economy. A moderately dry climate prevailed in region.

From ~1,750 to 1,500 cal yr BP (~250 to 500 CE) grasses increased and marsh pollen became infrequent as the aquatic environment was maintained until the very end of this period. At the archaeological site Kalli Pachchhim ~20 km south of Misa Tal, there is evidence of a high lake

stand at this time[99], which is deduced by the moderate frequency of freshwater alga-*Botryococcus*. Thus, the trend of both grasses and marsh taxa denotes increasing available moisture, even though the aquatic taxa percentage changes very little. The reduction of marshy conditions paves the way to more open water resulting into a wider lake area. ~1500 to 950 cal yr BP existing moisture sustained to increase, with a rapid increase in trees ~1400 cal yr BP

The wetter climatic conditions continued to a marsh minimum and a grass near-maximum at 750 cal yr BP (1250 CE). Tree pollen suddenly increased 1,400 cal yr BP (600 CE). From the peak wet conditions at 750 cal yr BP, marshy conditions improved since the sedges became more frequent, while grass and trees reduced appreciably, reflecting a maximum of dryness during 160-250 cal yr BP (1750 CE – 1850 CE). Marshy conditions then declined, aquatic conditions increased and trees re-emerged but largely vanished before the present. The *Botryococcus* record shows two peaks: a small one 1,650 cal yr BP (~350 CE) and a large one 500 cal. yr BP (1500 CE). The ecological requirements of the algae are not well understood, except that it frequently prefers oligotrophic or mesotrophic freshwater and can outcompete eutrophic waters[100]. Wind mixing may bring nitrogen to the surface of a lake thereby increasing algal productivity. The alkaline waters of the lake[101] can increase the biomass of *Botryococcus*[102] and also would be conducive to adsorption of CO_2 from the atmosphere which would support algal proliferation[103]. An input of soluble nutrients could also explain the peaks, possibly as the result of periods of intense rainfall following very strong winds that may have shredded vegetation and increased organic nutrient input to the lake. It is noteworthy that the highest value of aquatic taxa occurred simultaneously with the highest values of *Botryococcus*, but after the evidence of maximum moisture availability as indicated by grass and marsh taxa, suggesting that mixing and vertical movement of nitrogen may be the best explanation rather than evaporation-driven high alkalinity in an arid environment[104]. While speculative, it is possible that the algae is an indicator of windy conditions; an idea that deserves further attention.

The $d^{18}O$ studies on gastropods from the sites Sanai Tal, only 15-20 km southwest of south Misa Tal[105] reveal relatively moist conditions ~1,900 cal yr BP (~100 CE) and drier conditions by ~1300 cal yr BP (~700 CE). They are not in concordance with the inferences from Misa Tal. On the other hand, the speleothem mineralogy investigation[106] of a cave deposit from Pokhara in Nepal ~320 km northwest of Misa Tal, has also brought out abrupt enhancement in monsoon precipitation ~2300 cal yr BP (~300 BCE). Greater precipitation occurred at this site during the last 1,500 years compared with the previous millennium. The dense calcite deposition in the speleothem began 450±5 year BP (~1550 CE) under a cooler and/or moisture conditions. The results from Pokhara are alike to those from Misa Tal, including a sudden increase of trees close to the time of sudden increased precipitation at Pokhara. Also, the cool/moist conditions at Pokhara correspond with the highest values of aquatic taxa and the peak of *Botryococcus* at Misa Tal. This

was the Little Ice Age (LIA). The minor differences in chronology probably are result from the use of different dating techniques with different resolutions.

It is an upwelling record from the Arabian Sea to infer that the southwest monsoon wind (but not necessarily rainfall) rapidly intensified from ~500 CE to a peak ~1200 CE then became less intense to a minimum ~1600 CE. These results are in accordance with those from Misa Tal and Pokhara, with the peak moisture coinciding at ~1200 CE (the Medieval Warm Period, MWP), but do not support the idea of increased windiness based on *Botryococcus* at Misa Tal, unless there was strong atmospheric convection and high local winds that would not be recorded in the Arabian Sea. The driest time coincides in both the Pokhara and Arabian Sea records but is at least 150 years later at Misa Tal. This could be the result of the smoothing of short period signals by the sampling interval used in the lake sediments and/or the limitations of the age-depth relationship at Misa Tal. These results are also consistent with a reconstruction of low Indus River discharge at ~1400 CE.

Kale and Baker[107] identified a period of low magnitude floods in Western and Peninsular India from palaeoflood records that coincides with the LIA when available moisture at Misa Tal was at a minimum and local windy conditions might have prevailed. They also showed that, since this time, the largest floods during the last 2,000 years have occurred, during a time of increased moisture availability at Misa Tal. The salient features of pollen profile is shown in table 10.

Period year BP	Vegetation assemblage	Climate	Pollen zones
Present -1,545	• Conspicuous decline in grasses and other herbs coupled with a few trees reveals the poor vegetation cover. • Decline in the crop economy is marked by low frequencies of Cerealia pollen and associated cultural taxa	Warm and less-humid	ML-IV
1,545-3,855	• Open grasslands with the dominance of grasses still flourished with Asteraceae, Convolvulaceae, etc. • Trees viz., *Anogeissus*, *Tecomella* and *Prosopis spicigera* became more frequent together with *Holoptelea*, *Salmalia* and Myrtaceae (cf. *Syzygium*), though sporadically.	Warm and more-humid	ML-III

3,855-5,325	• Open grassland steppe continued in the region, however, prominent presence of *Anogeissus*, *Tecomella undulata* along with *Prosopis spicigera* denotes the increase in overall vegetation cover in the region. • Maiden record of Cerealia cal. 4,500 yr BP is indicative for the onset of cereal-based agrarian practice.	Warm and humid	ML-II
5,325-7,050	• Region supported open grassland largely comprising grasses, Cheno/Am and Asteraceae occupied landscape with scattered trees viz., *Prosopis spicigera*, *Phyllanthus*, etc. • Lake did exist during this early time as evident from the record of *Typha* and *Trapa* (singhara).	Warm and moderately humid	ML-I

Table 10. Salient features of pollen profile from Meander Lake

8. Ropan-Chhapra Tal, Deoria district

Ropan-Chhapra Tal stands about 42 km southeast of Deoria city on Lat. 26°3' N and Long. 83°58' E in the proximity of Ropan-Chhapra village near Lar. This ephemeral lake, measuring approximately 500m in outline. It is horse-shoe-shaped. The lake has a gentle dip of about 5 - 10 degree. It lies west of river *Chhoti Gandak*. The geomorphological feature of the lake gives the indication of its being a meander cut off and abandoned channel of river *Chhoti Gandak*[108]. The lake gets dried for major part of the year; however, it remains filled with water only during monsoon season and assumes a wider expanse. The adjoining area of the lake is under intensive cultivation.

A 1.2m deep trench was dug in the undisturbed middle part of the dry lake. The sediments of the trench profile exhibit three discernible lithologies of varying thickness. The bottom-most zone (120-65cm) is the thickest and composed of clayey silt. Overlying this is a band of sand (65-50cm). The uppermost zone is constituted of silty clay (50-0cm). Beyond the depth 120cm, further digging of trench was not feasible because of presence of organic deficient coarse sand and oozing of subterranean water. Only two samples have yielded absolute radiocarbon dates and these are

1100±110 yr BP (BS-2649) at 80-120cm depth and 100±90 yr BP (BS-266) at 0-30cm depth from top and bottom lithounits of the sediment profile respectively.

The study has unfolded that ~1,350 to 600 yr BP i.e. 650 CE to 1350 CE (Pollen Zone RCT-1), open grasslands vegetation largely constituted of grasses together with members of Chenopodiaceae/Amaranthaceae, Euphorbiaceae, Malvaceae, Lamiaceae and Asteraceae thrived in the region adjoining to the lake. A few trees viz., *Holoptelea*, *Acacia*, Myrtaceae, Sapotaceae, Meliaceae, *Ficus* and *Mimosa* were either sparingly distributed or occurred in small groves. However, the vegetation diversity was relatively much better than today. Hence, by and large the vegetation scenario envisages that the region experienced a dry climate with moderate monsoon rainfall during this period. The encounter of Cerealia and concomitant cropland weeds viz., Chenopodiaceae/Amaranthaceae, Caryophyllaceae, Urticaceae, etc., suggests that the region was under agricultural practice and some other anthropogenic activity. The frequent occurrence of aquatics element, *Potamogeton* coupled with preponderance of freshwater algae-*Botryococcus* denotes that the lake was shallow, but it was wider in expanse than today.

No inferences could be drawn concerning vegetation composition in the region for a brief time bracket of 600 to 425 yr BP, i.e. 1350 CE to 1525 CE (Barren Zone) on account of scarcity of pollen in the sediments, barring for stray grass pollen. Nevertheless, the presence of coarse sandy layer at 65-50cm depth in the lithocolumn implies that the sediments might have been accumulated intermittently in a high energy pluvial environment.

During the time interval of 425 yr BP i.e. 1525 CE to present (Pollen Zone RCT-2), the region supported open vegetation predominated by grasses. The arboreals (trees and shrubs) decreased sharply as well manifested by the meager trees of *Holoptelea*, *Acacia*, *Emblica*, *Ficus* and members of Myrtaceae, Sapotaceae and Meliaceae. This is also well corroborated by the concurrent expansion of grasses and other heathland taxa such as members of Asteraceae, Lamiaceae, etc. This alteration in the vegetation mosaic occurred in response to reduced monsoon rainfall and consequently a relatively drier climate prevailed in the region. The lake attained an ephemeral status, which is marked by inadequacy of lone aquatic element-*Potamogeton* and freshwater algae-*Botryoccocus*. The improvement in sedges (Cyperaceae) is indicative of the progressive siltation of the lake, leading eventually its transformation into marshy lowland. The climatic implications derived for this time segment are in agreement with the pollen results from *Basaha Jheel*[109] and *Kathauta Tal*[110] from the Ganga Plain. Instead of prevailing inclement climatic condition of reduced precipitation, the agricultural practice continued in the region with almost same intensity as before, probably to cope with the rising human populace in the region. This is well-indicated by a similar representation Cerealia and other cultural pollen taxa as seen in the preceding phase.

9. Kathauta Tal, Lucknow

Kathauta Tal (Long. 81° N and Lat. 26° 50′ E) is located about 10 km east of Lucknow on way to *Chinhat*. It is asymmetrical in shape, measuring about ½km long, 100m wide and about 2.3m deep. The perennial lake is fed by seasonal brooks (nalas) as well as influx of water from the catchment during the rainy season. The geomorphological settings indicates that it is an ox-bow shaped lake, which was created as a consequence of shifting of the course of Gomti River in the past. The adjoining part of the lake is almost bumpy. Presently, it is in the form of a small pond, because most of the area of the lake has been utilized for construction of residential colony.

Pollen proxy data retrieved through the investigation of a 50cm deep core from the northern swampy margin of the lake have divulged the vegetation shifts and climate change in the milieu of Lucknow during the recent past[111]. Around 400 yr BP (1550 CE - 1950 CE), the surroundings of the lake was occupied by open herbaceous vegetation chiefly comprising grasses with meager presence of trees such as *Holoptelea*, *Acacia*, Myrtaceae, Combretaceae, Meliaceae, *Capparis* and *Ficus* as well as thickets of Fabaceae and Oleaceae under a dry climatic regime. However, the improvement in trees viz., *Holoptelea*, *Acacia*, Myrtaceae (cf. *Eucalyptus*), etc. in the upper part of the sequence encircling the time bracket of last 200 years or so (1750 CE to present) could be the result of the recent reclamation programme initiated by Uttar Pradesh Government. The consistent retrieval of Chenopodiaceae/Amaranthaceae, *Alternanthera* pollen as well as sporadic pollen of *Cannabis sativa* (hemp) and Caryophyllaceae depict that the area was under extensive cultivation and other anthropogenic activities. The documentation of Cerealia pollen towards the top of the sequence covering the time span of 100 years (since 1850 CE to present), further infers that the area studded to the lake was under cereal-based agricultural practice instead of multicrop system. The significant presence of *Lemna*, *Potamogeton* and *Nymphaea* and *Nymphoides* signifies the abundant aquatic vegetation in the lake, most likely owing to some short-spelled increase in rainfall. Earlier the lake had a more extensive stretch than its present position**.**

CORRELATION OF POLLEN SEQUENCES AND INFERRED MAJOR CLIMATIC AND VEGETATION CHANGES IN CENTRAL GANGA PLAIN: The pollen sequences along with supporting proxies from some of the above investigated lakes have broadly elucidated converging trends of climate change in the region to a larger extent, excepting some events, which could not be uniformly depicted in all the profiles studied, probably due to the limitation of the proxies used. Hence, pollen in addition to geochemical, isotope and sedimentological reconnaissance from the sediment profiles have definitely provided the significant supplementary as well as complementary database in order to understand precisely changing terrestrial landscape, vegetation scenario, setting up and subsequent pace of agrarian practice and human impact in the region in response to climatic variability since the Late Quaternary Period. However, some differences in time slices for the prevailing identical climatic conditions, even in the closely

located sites in the Ganga Plain could be the result of non-availability of the series of absolute radiocarbon dates at closer intervals and calculations using a few absolute dates only, based on sedimentation rates for the lacustrine deposits analysed so far.

On correlation of pollen sequences evolved through the scrupulous investigation of the above sediment deposits from the Central Ganga Plain, it became possible to discern the changing vegetation scenarios concurrent climatic episodes, this region has come across since the Late-Pleistocene. Furthermore, the studies have also facilitated to define the local climatic variability, attributed to a wider geographical stretch in this region, based largely on pollen records. Only the pollen sequence from Jalesar Lake of Unnao District has rendered the earliest evidence relating to the vegetation and climate changes since the Late-Pleistocene, while the rest of the pollen sequences from lake deposits from other areas cover the time slice of the Late-Quaternary (i.e. 14,000 cal yr BP) to present. The pollen signals from the lake deposit have unraveled that prior to 40,490 cal yr BP and up to 13,560 cal yr BP (Pollen Zone JL-I), this region of the Central Ganga Plain had open herbaceous vegetation in which grasses along with member of Asteraceae, Chenopodiaceae/Amaranthaceae, Caryophyllaceae and Urticaceae were the major ingredients. A few trees viz., *Syzyzium*, *Prosopis* and thickets of Fabaceae were sparsely distributed therein under a realm of cool and dry climate. A lake of small size did exist during this early period, which is evident from the retrieval of aquatic elements such as *Typha* and *Potamogeton* and freshwater algae-*Botryococcus*. The higher fraction of coarse sand horizon of infinite thickness beyond 2.80m depth reveals that the *Sai* River was an active channel at the *Jalesar* Lake site, which subsequently migrated eastwards as seen today. Similarly, coarse sand deposits have also been observed at the base of lake deposits from other locations in the Ganga Plain, indicating the river migration as a result of neotectonic activities[112].

The geomorphic evidence i.e. the ox-bow shape of the lake and presence of coarse sand at the base-level of the exposed section at Karela Jheel[113] amply provide evidence for the existence of an active channel of the Sai River prior to 14,000 cal yr BP, which presently flows about 10 km south of the lake**.** Sanai Tal, on the interfluve between rivers Gomti and Sai in Raebareli District was also formed as a cut-off lake ~15,000 cal yr BP under a warm and humid climate[114]. Likewise, the presence of the coarse sand also signals the river migration at Jalesar Lake site[115]. This almost contemporaneous event based of geological signatures from all above sites is considered to be the outcome of neotectonic activity, which has been noticed in the Ganga Plain[116].

The pollen evidence from terrestrial sources reflects that the landscape supported open grasslands with sprinkle of a few trees[117] between 14,000 and 12,500 yr BP under a cool and dry climate around Karela Jheel (lake). Likewise, scarce record of moist-loving thecamoebian cysts and lack of other terrestrial pollen proxies ~17,000 to 13,000 cal yr BP from the same lake deposit exhibits the presence of shallow water body under a weak winter monsoon[118]. The pollen, geochemistry and isotope analyses from Sanai Tal also validate that the channel was abandoned

during relatively arid conditions due to weak summer monsoon rainfall ~15,000 to 13,000 cal yr BP and the lake transformed into a swamp as indicated by increase in marshy elements, sedges[119].

The terrestrial and aquatic pollen proxies from Karela Jheel have registered warm and humid and warm ~12,500 to 8,700 cal yr BP. This could be attributed to prevalence of a strong ISM. During this phase, the region adjoining to lake had the restricted forest groves interspersed with stretches of grasslands. Similar, climatic conditions have been noticed ~9,250 to 6,400 cal yr BP with altogether identical vegetation scenario in the Lahuradewa Lake area in eastern Uttar Pradesh[120] about 200 km away from the present study site. The pollen, geochemical and isotope analyses of Sanai Tal deposit have also inferred a warm and humid climate ~13,000 to 5,800 cal yr BP. However, this phase was interrupted with a brief dry climatic spell between 11,500 and 10,500 cal yr BP corresponding with the Younger Dryas event witnessed globally[121]. This short-term isotope-based climatic event could not be deciphered by the investigation of Karela Jheel deposit, probably due to limited implication of the pollen proxy used. The sediment texture and total organic/inorganic carbon analyses also confirm the prevalence of a warm and humid climate over a wider time period i.e. ~13,500 to 5,260 cal yr BP in the Jalesar Lake pollen records[122]. However, the limnological proxies such as diatoms, thecamboebians and sponge spicules from Karela Jheel deposit, encircling a wider time bracket of 13,000 to 4,300 cal yr BP, indicates the strengthening of ISM monsoon and consequently the region enjoyed a warm and humid climatic condition[123].

Around 8,700 to 4,800 cal yr BP the forest groves became less-diversified in floral composition as a result of initiation of a warm and less-humid climate, because of reduced monsoon precipitation. A moderately humid climate is also deciphered by the open vegetation with forest groves in the vicinity of Lahuradewa Lake ~9,250 to 6,400 cal yr BP and around Meander Lake, Pratapgarh ~7,050 to 5,325 cal yr BP. The some temporal discrepancies for the existence of almost similar climatic condition could be the result of non-availability of absolute radiocarbon dates at closer intervals for the profiles analyzed. The wider geographic locations of the investigated sites might be the consequence of setting up of almost equivalent climatic condition with some time differences.

The terrestrial pollen proxy signals from Karela Jheel sediment profile unfold a warm and humid climate with an ameliorating trend almost covering the same time interval i.e. ~4,800 to 2,000 cal yr BP[124]. Contrary to this, a distinct increase in the pinnate diatoms, sponge spicules and terrestrially derived thecamoebians from the same profile between 4,300 and 2,900 cal yr BP indicates that the climate turned warm and relatively less-humid in response to reduced monsoon precipitation[125]. The former case may be more acceptable as it represents a picture of the wider landscape. In latter case, most of the proxies have their origin from local source. An equivalent climate has also been surmised in Jalesar Lake profile ~4,760 to 3,260 cal yr BP[126] and Basaha Jheel profile ~3,300 to 2,800 cal yr BP[127], based on pollen evidence. Moderate monsoon rainfall also prevailed ~4,060 cal yr BP in eastern Uttar Pradesh, which is clearly marked by the presence of

forest groves in the pollen sequence from Lahuradewa Lake, Sant Kabirnagar District[128]. Between 6,250 and 2,800 cal yr BP, diversified and dense mixed deciduous forests flourished in Central India on account of prevailing active southwest monsoon[129]. This is also in accordance with the increase of trees and aquatic flora in the lake deposits in Rajasthan ~5,000 yr BP, implying the enhancement of monsoon precipitation by >50 cm than today[130].

Since 2,000 cal yr BP to present, the significant depletion of trees, in particular, at Karela Jheel occurred and grassland with forest groves were succeeded by the open vast stretches of grassland with a few trees. This transformation in the vegetation took place under the influence of warm and dry climate with the weakening of SW monsoon[131]. This is also verified by the reduction in the frequencies of aquatic elements encompassing diatoms and sponge spicules in the lake bed under the similar climatic regime during the time bracket of last 2,000 years[132]. Almost identical vegetation and climatic condition have been noticed at Basaha Jheel ~1,800 cal yr BP[133] and Jalesar Lake ~2,000 cal yr BP[134], Unnao District; Lahuradewa Lake, Sant Kabirnagar District ~1,300 cal yr BP[135] in the Central Ganga Plain. The pollen records from shallow lake deposits from Misa Tal[136], Lucknow District; Ropan-chhapra Tal, Deoria District[137] and Kathauta Tal[138], Lucknow District have also shown weakening of monsoon rainfall with deviating trend during 2,000 cal yr BP, 1,350 cal yr BP and 400 cal yr BP respectively, which fall within the time bracket of this phase. This is apparent from the presence of grassland with very sprinkle of few trees. On the whole, the deterioration of climate synchronizes with that witnessed in Rajasthan desert since ~2,000 yr BP, where a sharp diminution of trees as well as vegetation has been documented[139]. Because of prevailing harsh climatic conditions, most of the settlements either vanished or abandoned around sites of investigated lakes or the settlers migrated elsewhere since 2,000 cal yr BP onwards.

ANTIQUITY OF HUMAN SETTLEMENT AND ARABLE ECONOMY IN THE GANGA PLAIN: The Ganga Plain, one of largest alluvial tracts of the country, is densely inhabited fertile terrain. Because of economic prosperity, this region has been constantly under human settlement right from the advent sedentary civilization, most likely since the commencement of the Holocene and the termination of harsh Great Ice Age i.e. Pleistocene. Despite being the flood prone, this region has been under intensive agricultural practice by the inhabitants so as to cope with the constantly expanding populace. The archaeobotanical investigations from different sectors of this region have rendered valuable database concerning the early crop economies and cultivation approaches during different cultural settlements and the major crops used in subsistence. In addition, the botanical remains retrieved have also unfolded the chronicle of dissemination crops from one region to another in context to cultural shifts as well as alterations in crop strategy in response to climate change/monsoon variability in the past. The results, regarding the cultural

antiquity and crop economy in time and space, based on the meticulous archaeological investigations of some settlement sites are discussed as below:

Mesolithic Culture, Pratapgarh District: Detailed archaeological excavations done at Sarai-Nahar Rai, Mahadah and Damdama have shown the existence Mesolithic cultural in the Ganga Plain[140]. The careful investigation of these sites has yielded bone, artifacts, stone tools, charred plant relics and human skeletons. In the past the lake bed contiguous to the mounds held water and its open terrestrial embankments were used as burial ground by the nomads of Mesolithic Period (8000 BCE). The retrieval of plentiful microlith tools viz., flakes, blades, scrapers, triangles, lunates, etc. made up of cherts reveals that cherts were transported from the adjoining Vindhyan rocks by the pre-historic settlers.

The well-preserved bones, charcoals**,** carbonized seeds/grains and characteristic Cerealia-pollen resembling with *Coix lacryma-jobi* (job's tear) along with artifacts recovered from Sarai Nahar Rai, Mahadaha and Damdama in Pratapgarh District dated back to 7,800 to 2,000 cal yr BP portray the beginning of sedentary human settlement and incipient agricultural practice in the Central Ganga Plain since the Palaeolithic Period.

Neolithic-the beginning of agriculture: Neolithic is characterized by sedentism, characteristic pottery, rounded polished stone objects, bone tools, chert blades, scrappers, and an economy based on domesticated cattle and rice agriculture[141]. Some of the sites studied in the region represent a sequence of transition from the stage of food-gathering and selective hunting through incipient food producing to settled village farming in the Neolithic times[142]. Economy of the Neolithic settlers was based on hunting and farming, as evidenced by the occurrence of both wild and domesticated plants and animals. The early dates of Koldihwa and Mahagara (6570 ± 210 BC and 5440±240 BC[143], Malhar[144] (6570±110 BP: 4620±110 BC), and Tokwa (6850±200 BP: 5976-5561 BC[145]) draws our attention. The archaeobotanical evidences from Neolithic sites namely *Lahuradewa, Tokwa, Jhusi* and *Hetapatti* is as follows.

1. Lahuradewa Mound, Sant Kabirnagar District:

Excavations executed by the Uttar Pradesh State Archaeology Department, Lucknow[146] at Lahuradewa mound, in Sant Kabir nagar District have provided important clues pertaining to the cultural succession in the Central Ganga Plain since the Early Holocene. The artifacts and botanical remains garnered from the excavated mound have furnished a fivefold culture sequence and advent of crop economy in the Central Ganga Plain since the 6th-5th millennium BC as dealt below:

***Period I-I A*:** This period is characterized by coarse variety of handmade red wares and black and red wares often depicting cord-impressions on the external surface. A few sherds also possess

decorations with incised pattern and fine red slip. Charcoals retrieved from the lowermost bed of the deposit have been ^{14}C dated to 6,290±140 yr BP (cal 7,247 yr BP). The record of carbonized grains of rice (*Oryza sativa*), AMS dated to cal 8,259 yr BP, from the mound provides the earliest evidence of beginning of cereal-based agrarian practice in the global perspective[147].

***Period I B*:** This phase encompassing 45 cm thick occupation horizon. The radiocarbon date of this horizon is 2,919 yr BC. It is characterized by the emergence of new pottery shapes viz., beakers, perforated vessels, spouted vessels dish or bowl on stand. The quality of pottery depicts advancement over sub-Period IA.

***Period II*:** This period beginning from *ca* 2,000 BC is marked by the presence of copper artifacts. In continuation to ceramic industries of the Period I, this phase exhibits the appearance of plain and painted slipped and black-red wares. There is an increase in numbers of spouted and lipped vessels and bowls. Earthen storage bins, baked terracotta objects, tiles, legs of some terracotta objects, steatite beads of semi precious stones, socketed and tangoed bone of antler arrow heads with micro decoration, etc. noticed during this period indicate a significant surge in material prosperity.

***Period III*:** This period radiocarbon dated to 2,940±100 yr BP (1,202 BCE) is characterized by the appearance of highly rusted iron artifacts. Important iron objects comprise sickles. The occupation horizons include ceramic industries of earlier period. Earthen floors, hearths, burnt clay lumps with reed and straw impressions suggest extension of earlier structural convention.

***Period IV*:** NBPW occurs in a 1.20m thick deposits. Painting on pottery continued even in this period.

The intermittent record of micro and medium-sized beads during the sub-periods IA & IB are alike to those from early horizons of other sites of Middle Ganga Plain and the Harappan settlements. The steady presence of microcharcoals since 10,000 yr BP from the adjoining lake-bed sediments substantiates the human activity around the settlement site[148]. Furthermore, their occurrence at all the levels/horizons in the Lahuradewa lake-bed amply supports that the catchment of the lake and settlement had plenty dry forest stands favouring the recurrent fire incidences in the area[149]. The relics, of post holes, mud-clods with reed impressions are indicative of wattle-and-daub dwelling and man-made channels at the lowest level of the Sub-period IA. Their presence also confirms sedentary nature of the settlers. This period is characterized by seeds of domesticated rice (*Oryza sativa*) and wild rice (*Oryza rufipogon*) AMS dated to cal 8,259 yr BP along with seeds of foxtail grass (*Setaria glauca*) and job's tear (*Coix lachryma-jobi*). The seeds of cropland weeds such as *Chenopodium album*, *Artemisia* as well as *Silene*, a common weed of wheat fields, in the Neolithic level corroborates that the settlers cultivated the seasonal crops since the Neolithic times. The debut of Cerealia pollen around 7,500 cal yr BP also implies the early setting up of cereal-based arable economy. Thereafter, the frequent presence of such pollen throughout with increasing trend suggests the expanding sedentary settlement in the region.

2. *Tokwa, Mirzapur District:*

Tokwa (lat. 24°54′20″E; long. 83°21′65″N) stands at the confluence of the Belan and Adwa rivers in Mirzapur District (UP) in southeast direction of Mirzapur city. Presently, the ancient settlement mound covers an area of approximately 27,597 sq. m. The western margin of the site looks like the peak of the triangle. Archaeological excavations at this site were conducted by Misra and co-workers (University of Allahabad) during 2000 and 2003. The collective archaeological data from the excavation of trenches H-8, H-9; I-8, I-9 and control pits have unraveled the existence of three cultures i.e. Neolithic, Chalcolithic and Iron Age. The occupational strata measuring 4m thick is divisible into 16 layers. The botanical remnants from the Neolithic culture reveal the occurrence of cereals, pulses, oilseeds and weeds and wild taxa in the environs of cultural site.

The archaeobotanical investigation of Tokwa habitation site has demonstrated the agriculture-based economy during the Neolithic culture i.e. 3rd-2nd millennium BCE[150]. The findings provide direct evidence of plant food staples of the Neolithic settlers at Tokwa, exhibiting similarity with other agricultural settlements in the Vindhyan region and outside. The relics of crop plants of diverse origins illustrate the practice of rotation of crops. The presence of these scanty, charred and distorted remains clearly denotes human activities. Limitations in the data are inevitable, as they have survived the preservation by charring. A good number charred seeds discerned as rice (*Oryza sativa*) and green gram (*Vigna radiata*) of Indian origin are suggestive of frequent cultivation of the warm rainy season crops. The cereals such as Barley (*Hordeum vulgare*) and bread-wheat (*Triticum aestivum*) together with legumes viz., lentil (*Lens culinaris*), field-pea (*Pisum arvense*) and olieferous plants including linseed (*Linum usitatissimum*) and field-mustard (*Brassica juncea*) of Indian origin were grown during winter season by the settlers. Similar status of agriculture has also been recognized from other sites in the Vindhyan region and beyond during Neolithic, followed by transitional Neolithic-Chalcolithic, Chalcolithic and Iron Age cultures. The remains retrieved from Tokwa, thus represent a small fraction of plant resources utilized by the ancient settlers.

Interestingly, recovery of carbonized fruit coats and seeds of American Custard Apple (*Annona squamosa*) provides the early evidence of its presence in India, contrary to the written information, that it was introduced by the Portuguese in the 16th century[151]. The remains of American custard apple (*Annona squamosa*) as fruit coats and seeds have also been recorded from other sites in the Indian archaeological context, during the Kushana Period (100-300 CE) in Punjab and Early Iron Age (1300-700 BCE) in UP. The factual remains of American custard apple, along with other stray finds discussed in the text, favour a group of specialists, supporting with diverse arguments, and the reasoning of Asian-American contacts, before the discovery of America by Columbus in 1498. Further, a few weeds have turned up as an admixture in the crop remains.

3. Jhusi, Allahabad District:

The archaeological site, Jhusi (lat.25°26′10″N; long.81°54′30″E), also known as Pratishthanpur in ancient Indian literature lies on the confluence of the Yamuna and Ganga rivers in Allahabad, Uttar Pradesh. The excavation at Samudrakup mound of this site was executed by Misra and co-workers during five seasons i.e. 1995, 1998, 1999, 2002 and 2003). This ancient habitation deposit at Jhusi overlies on an alluvial geological formation with thickness of more than 10 m. The cultural deposit exposed at Samudrakup mound is about 16.5m thick. It is a multi-culture site showing deposits of Neolithic, Chalcolithic, Early Iron Age (Pre-Northern Black Polished Ware Culture (NBPW) with iron), NBPW, Sunga and Kushana period, Gupta period and Early Medieval period. The earliest habitation deposit at the site is Neolithic and has a thickness of 1.5 m. The artifacts documented from Neolithic levels encompass handmade pottery consisting of cord impressed ware, rusticated ware, burnished red ware, burnished black ware and crude black-and-red ware; microliths, fragments of querns and mullers, bone arrowheads, micro-beads steatite and semi-precious stone beads, and animal bone remains. The radiocarbon dates from Jhusi are shown in table 11.

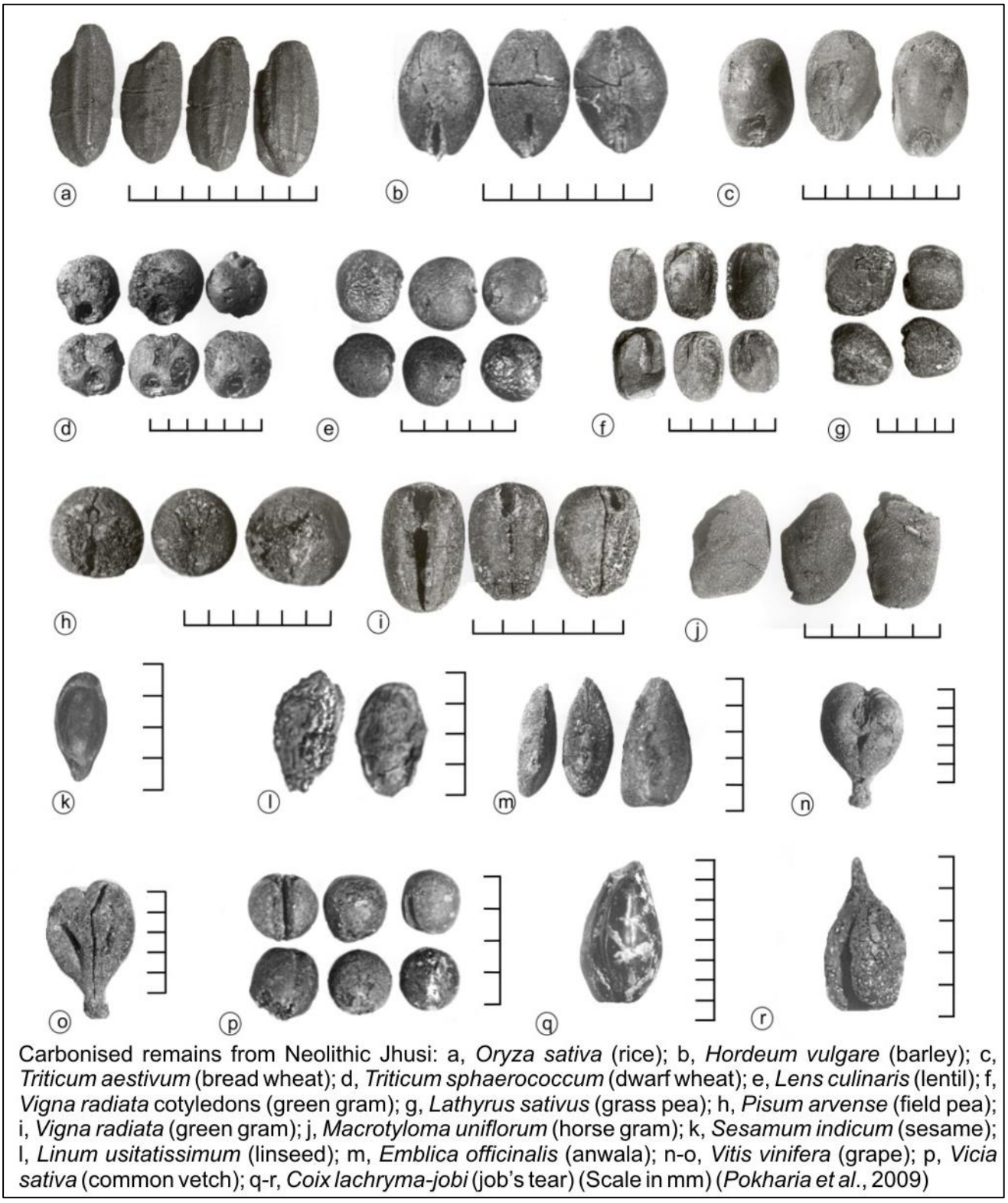
Table 11. Radiocarbon dates of charcoal samples from Jhusi[152]

Trench	Depth (m)	Layer	Lab no. BSIP	^{14}C date yrs BP)	Calibrated date (BP)	Calibrated date (BC)
SF-7	12.99–13.14	47	BS-2526	8140 ±220	9055-9029	7106-7080
SF-7	13.37–13.47	50	BS-2524	6760 ±190	7609-7591	5660-5642
SF-7	13.70–13.80	53	BS-2525	7110 ±170	7939-7881	5990-5932

The cereals comprise rice (*Oryza sativa*), barley (*Hordeum vulgare*), bread-wheat (*Triticum aestivum*) and dwarf-wheat (*Triticum sphaerococcum*). Leguminous crops viz., lentil (*Lens culinaris*), field-pea (*Pisum arvense*), grass-pea (*Lathyrus sativus*), horse-gram (*Macrotyloma uniflorum*) and green-gram (*Vigna radiata*) were registered. Sesame (*Sesamum indicum*) and linseed (*Linum usitatissimum*) were the oleiferous crops. In addition, grape (*Vitis vinifera*), anwala (*Emblica officinalis*), *Vicia sativa* and job's tear (*Coix lachryma-jobi*) recovered are the plants of various domestic uses[153].

Rice (*Oryza sativa*) dominated the other cereals in abundance at Jhusi. It is the principal crop in the development of agriculture in the Ganga Plain, which is a part of natural habitats of wild rice and in this zone, the domestication and cultivation, must have taken place in prehistoric times. The Neolithic site Lahuradewa in Ganga Plain, and Koldihwa and Mahagara in Vindhyan region have produced the earliest finds of rice in India dating back to 7-6th millennia BC. Radiocarbon dates from Jhusi and Lahuradewa in the Ganga Valley, and Tokwa in the Vindhyan region suggest an early beginning of agriculture in the region.

The oldest record of barley (*Hordeum vulgare*) and wheat (*Triticum aestivum*) in the Indian subcontinent is known from Mehrgarh in Baluchistan (7000-5500 BCE). Barley, wheat, rice, lentil, field-pea and grape seeds have been found in Period-III at Leobanr in the sequence of Ghaligai (ca. 2970-2920 BCE) settlements of the Swat valley. Rice, which is the crop of Gangetic plains, possibly moved in competition with these crops through the cultural contacts. Evidence of cultivated rice in the early Harappan context at Kunal, Haryana (ca. 3000-2500 BCE) is also equally important. The presence of winter-cultivated crops such as barley, wheat, lentil, field-pea, grass-pea and flax, into the rice growing zone, spread from the early cultures in the NW regions. We still need to ascertain what kind of cultural set-up led the widespread dissemination of these north-western crops in the Middle Ganga Plain and Gangetic crops in the NW direction, and how it happened at such an early date.



Carbonised remains from Neolithic Jhusi: a, *Oryza sativa* (rice); b, *Hordeum vulgare* (barley); c, *Triticum aestivum* (bread wheat); d, *Triticum sphaerococcum* (dwarf wheat); e, *Lens culinaris* (lentil); f, *Vigna radiata* cotyledons (green gram); g, *Lathyrus sativus* (grass pea); h, *Pisum arvense* (field pea); i, *Vigna radiata* (green gram); j, *Macrotyloma uniflorum* (horse gram); k, *Sesamum indicum* (sesame); l, *Linum usitatissimum* (linseed); m, *Emblica officinalis* (anwala); n-o, *Vitis vinifera* (grape); p, *Vicia sativa* (common vetch); q-r, *Coix lachryma-jobi* (job's tear) (Scale in mm) (*Pokharia et al.*, 2009)

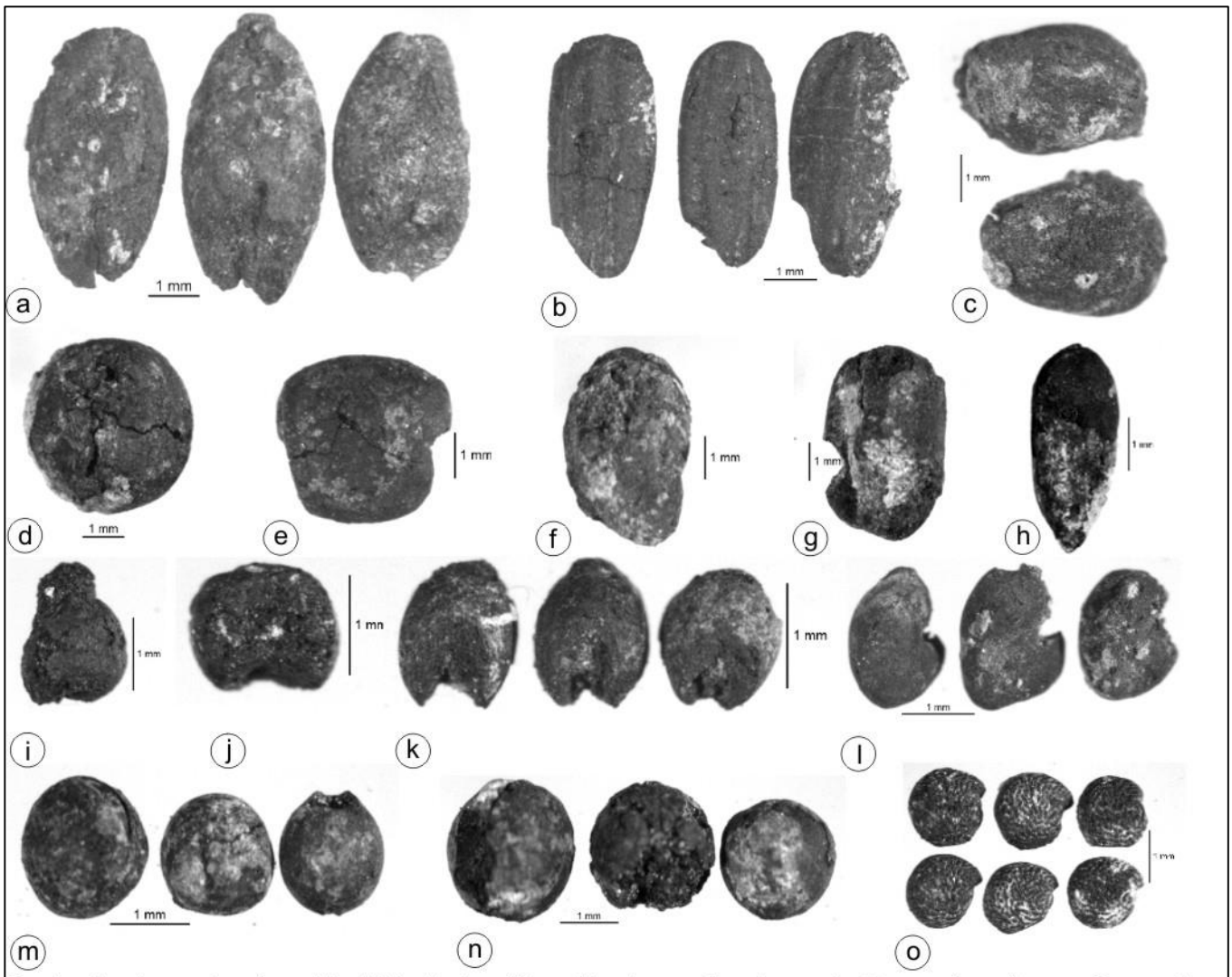
Fig. 05: Hetapatti-Neolithic plant remains

4. *Hetapatti, Allahabad*

The site Hetapatti (lat. 25º29'0" N; long. 81º55'31" E) is located on the left bank of the River Ganga at a distance of about 20 km from Allahabad in north-east direction. Its length along the

river bank (NS) is about 1500 m and width (EW) is about 700 m. The site is divided mainly in three mounds, which have been named as HPT-I, HPT-II and HPT-III. The highest mound, HPT-II measuring about 10 m from the present surrounding surface is the most intact. The other two mounds are about 6 m high. There is extensive exposure of geological formation, especially towards river bank, measuring about 7 m in thickness on which the archaeological deposit is resting.

The cultivated plants during Neolithic includes cereals, pulses, oil seed and fibre crop. The most abundant among the crops was *Hordeum vulgare* followed by *Vigna* cf. *radiata, Oryza sativa*, *Gossypium arboreum/herbaceum*, *Pisum arvense* and *Lathyrus sativus*, *Paspalum scrobiculatum*, *Panicum* sp. and *Linum usitatissimum*. Besides crops, few weed taxa such as *Setaria* sp., *Vicia sativa*, *Vicia hirsuta*, *Zaleya sp.* of cultivated field/wasteland were also encountered in the mixture[154].



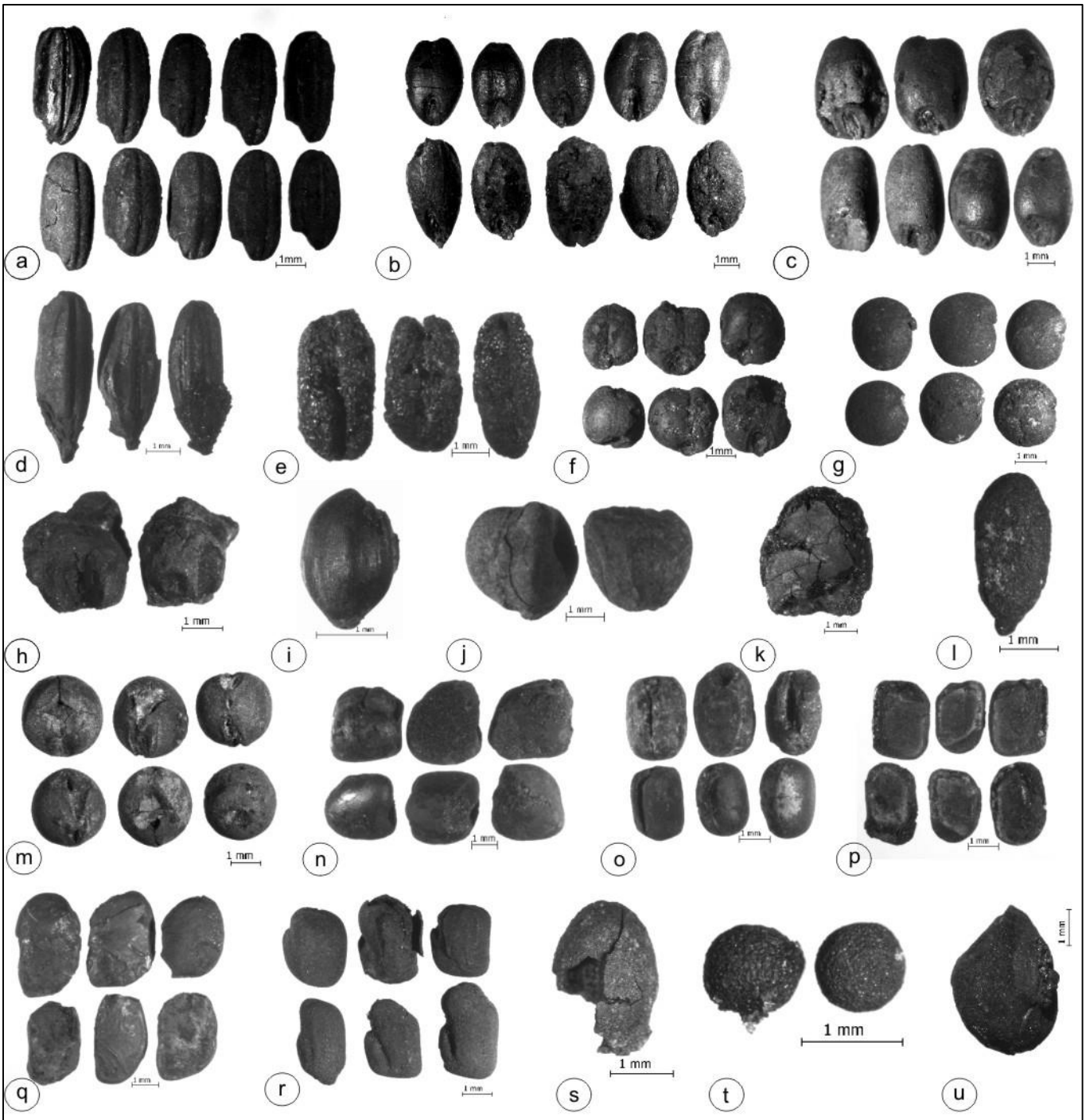
Carbonised remains from Neolithic Hetapatti: a, *Hordeum* cf. *vulgare*; b, *Oryza* cf. *sativa*; c, *Gossypium arboreum/herbaceum*; d, *Pisum arvense*; e, *Lathyrus sativus*; f, *Macrotyloma uniflorum*; g, *Vigna* cf. *radiata*; h, *Linum usitatissimum*; i, *Panicum* sp.; j, *Paspalum* cf. *scrobiculatum*; k, *Setaria* sp.; l, *Desmodium* sp.; m, *Vicia* cf. *hirsuta*; n, *Vicia* cf. *sativa*; o, *Zaleya* sp. (after *Pokharia et al.*, 2016)

Fig. 06: Jhusi-Neolithic Plant remains

Chalcolithic-Agricultural expansion: The Chalcolithic culture is characterized by Black Slipped Wares, Black and Red Wares and Red Wares. It is regarded that the metal technology heralded a new change in the cultural advancement, and accelerated the agricultural development. The record of agricultural remains from a few sites is as –

5. Lahuradewa, Sant Kabirnagar

The remains of crop plants analyzed from thirty-eight samples, of diverse origins in the Chalcolithic occupational phase are demonstrative of the practice of rotation of crops. Rice (*Oryza sativa)*, kodon-millet (*Paspalum scrobiculatum*), jowar millet (*Sorghum bicolor*), green-gram (*Vigna radiata*), horse-gram (*Macrotyloma uniflorum*), cow-pea (*Vigna unguiculata*), til (*Sesamum indicum*) and cotton (*Gossypium* sp.) of Indigenous and African origins were grown in warm rainy season. Barley (*Hordeum vulgare*), bread-wheat (*Triticum aestivum*), dwarf-wheat (*Triticum sphaerococcum*), field-pea (*Pisum arvense*), lentil (*Lens culinaris*), chick-pea (*Cicer arietinum*), grass-pea (*Lathyrus sativus*), fenugreek (*Trigonella foenum-graecum*), linseed (*Linum usitatissimum*) of Near-Eastern complex and Indian mustard (*Brassica juncea*) were grown in winter season. Rice is the most important in the development of agriculture in the Ganga plain, which is a part of natural habitats of wild rice. The crops of African and Near East origins may have spread from north-western region due to direct or indirect contacts[155].



Carbonised remains from Chalcolithic Lahuradewa: a, *Oryza sativa* (rice); b, *Hordeum vulgare* (barley); c, *Triticum aestivum* (bread-wheat); d, *Oryza sativa* with rachis; e, *Triticum* sp.(wheat); f, *Triticum sphaerococcum* (dwarf-wheat); g, *Lens culinaris* (lentil); h, *Sorghum bicolor* (jowar-millet); i, *Paspalum* sp.; j, *Cicer arietinum* (chick-pea);k, *Vigna unguiculata* (cow pea) l, *Linum usitatissimum* (linseed); m, *Pisum arvense* (field-pea); n, *Lathyrus sativus* (grass-pea); o, *Vigna* sp. (green/black gram); p, cotyledons of green/black gram; q, *Macrotyloma uniflorum* (horse-gram); r, *Trigonella foenum-graecum* (fenugreek); s, *Sesamum indicum* (sesame); t, *Brassica juncea* (Indian mustard); u, *Gossypium arboreum/herbaceum* (cotton) (Pokharia, 2011)

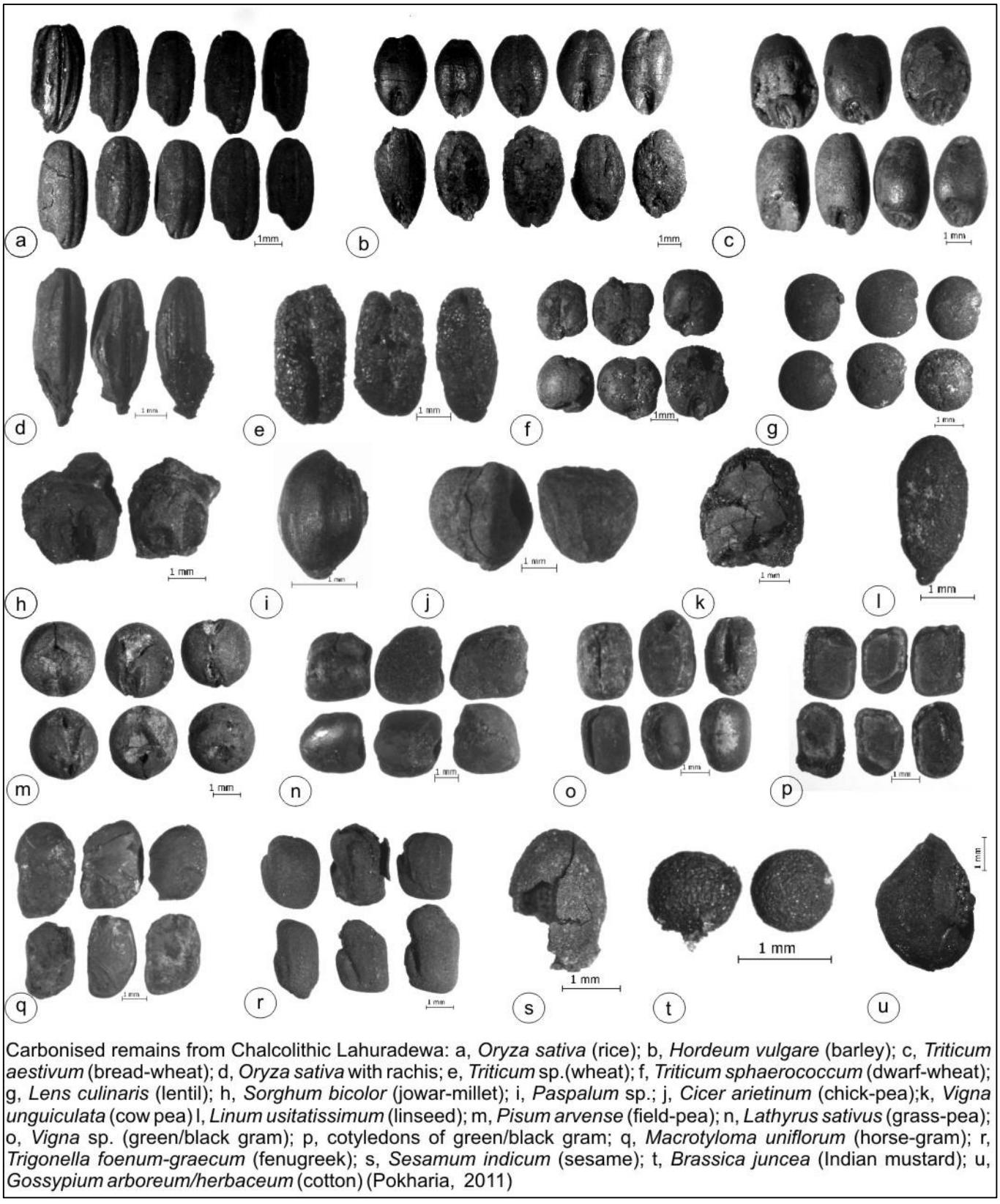
Fig. 07: Lahuradewa Chalcolithic remains

6. Hetapatti, Allahabad

The chalcolithic plant economy is represented by cereals, pulses and fibre crop. No oeliferous seeds were recorded during this phase. The archaeobotanical remains are preserved by

charring. Equal chances of exposure to fire do not necessarily lead to equal chances of preservation; therefore, certain types of remains present in preceding phase could not get carbonized and preserved. Among the cereals *Oryza sativa* and *Hordeum vulgare* represent in equal proportion, whereas among the pulses *Vigna radiata* was found in significant proportion than *Lathyrus sativus* and *Pisum arvense*.

Cannabis sativa which is known since the Mature Harappan (2500-2200 BC) times[156] recorded along with *Gossypium arboreum/herbaceum* as a fibre crop. Among the weeds and wild taxa some are from arable land (*Setaria* sp., *Vicia sativa*, *Scirpus* sp., *Rumex* sp., *Echinochloa* sp.); some are from wet/moist places (*Cyperus* sp., *Polygonum* sp.) and some from wasteland/scrubby vegetation areas (*Andropogon* sp., *Ziziphus nummularia*, *Scleria* sp., *Desmodium* sp., *Zaleya sp.*). The *Bombax ceiba* represents woodland taxa.



Carbonised remains from Chalcolithic Lahuradewa: a, *Oryza sativa* (rice); b, *Hordeum vulgare* (barley); c, *Triticum aestivum* (bread-wheat); d, *Oryza sativa* with rachis; e, *Triticum* sp.(wheat); f, *Triticum sphaerococcum* (dwarf-wheat); g, *Lens culinaris* (lentil); h, *Sorghum bicolor* (jowar-millet); i, *Paspalum* sp.; j, *Cicer arietinum* (chick-pea);k, *Vigna unguiculata* (cow pea) l, *Linum usitatissimum* (linseed); m, *Pisum arvense* (field-pea); n, *Lathyrus sativus* (grass-pea); o, *Vigna* sp. (green/black gram); p, cotyledons of green/black gram; q, *Macrotyloma uniflorum* (horse-gram); r, *Trigonella foenum-graecum* (fenugreek); s, *Sesamum indicum* (sesame); t, *Brassica juncea* (Indian mustard); u, *Gossypium arboreum/herbaceum* (cotton) (Pokharia, 2011)

Fig. 08: Hetapatti-Chalcolithic plant remains

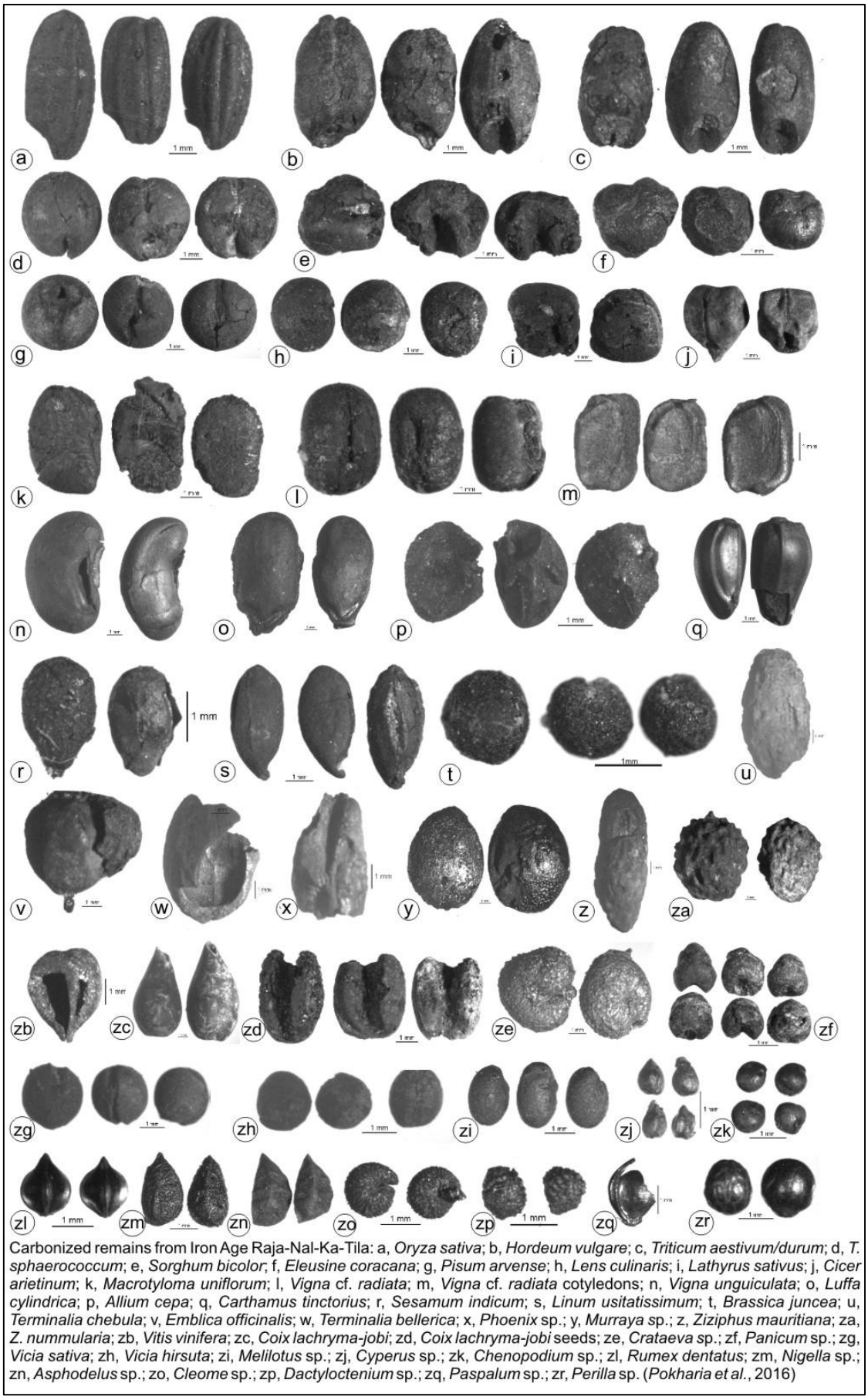
Iron Age culture: Towards the end of second millennium BC, discovery of iron, heralded a new era in the cultural advancement in the Indian subcontinent in general and Vindhyan Plateau in

particular. Food economy of the iron-using cultures is similar as in preceding phases. However, the available records indicate that the settlers were also having knowledge of horticulture and medicinal plants:-

7. Raja-Nal-Ka-Tila

The Iron Age site Raja-Nal-ka-Tila (Lat. 24º41'55'' N, Long. 83º19'26'' E) excavated by U.P. State Archaeology Department, Lucknow from 1995 to 1997 is located in district Sonbhadra of U.P.[157]. The location of the archaeological site is also of considerable importance in respect to those of other well known Neolithic-chalcolithic sites such as Koldihwa, Kakoria and Senuwar. Koldihwa group of sites are located on either sides of the Belan River on the plateau area like Raja-Nal-ka-Tila in the east, Kakoria is in the north-west on foot hills near Chandraprabha River, whereas the Senuwar in the north-east is situated in the alluvial valley of the river Kudra[158]. To understand the agriculture based subsistence economy, the archaeobotanical material was collected from Period II and analysed. The most abundant cereal was *Oryza sativa*, followed by *Hordeum vulgare*, *Triticum sphaerococcum*, *Triticum aestivum/durum*, *Eleusine coracana* and *Sorghum bicolor*, *Paspalum scrobiculatum* and *Panicum* sp.[159].

Besides cereals, a large amount of pulses especially *Vigna* cf. *radiata* and *Lens culinaris* along with *Pisum arvense*, *Lathyrus sativus*, *Macrotyloma uniflorum* and *Cicer arietinum* were also recorded. The oil seeds are represented by *Linum usitatissimum*, *Carthamus tinctorius*, *Sesamum indicum*, and *Brassica juncea*. Vegetable and spices are represented by *Luffa* sp., *Vigna unguiculata*, *Allium cepa*, *Nigella sativa* and *Murraya koenighii*, suggesting probably practice of kitchen gardening. The remains of fruits and medicinal plants includes *Phoenix* sp., *Vitis vinifera*, *Terminalia chebula*, *Terminalia bellerica*, *Emblica officinalis*, *Ziziphus mauritiana*, *Ziziphus nummularia, Crataeva* sp., and *Perilla* sp. suggesting highly advanced system of horticulture and medicinal knowledge was in vogue during 1st millennium BC[160].



Carbonized remains from Iron Age Raja-Nal-Ka-Tila: a, *Oryza sativa*; b, *Hordeum vulgare*; c, *Triticum aestivum/durum*; d, *T. sphaerococcum*; e, *Sorghum bicolor*; f, *Eleusine coracana*; g, *Pisum arvense*; h, *Lens culinaris*; i, *Lathyrus sativus*; j, *Cicer arietinum*; k, *Macrotyloma uniflorum*; l, *Vigna* cf. *radiata*; m, *Vigna* cf. *radiata* cotyledons; n, *Vigna unguiculata*; o, *Luffa cylindrica*; p, *Allium cepa*; q, *Carthamus tinctorius*; r, *Sesamum indicum*; s, *Linum usitatissimum*; t, *Brassica juncea*; u, *Terminalia chebula*; v, *Emblica officinalis*; w, *Terminalia bellerica*; x, *Phoenix* sp.; y, *Murraya* sp.; z, *Ziziphus mauritiana*; za, *Z. nummularia*; zb, *Vitis vinifera*; zc, *Coix lachryma-jobi*; zd, *Coix lachryma-jobi* seeds; ze, *Crataeva* sp.; zf, *Panicum* sp.; zg, *Vicia sativa*; zh, *Vicia hirsuta*; zi, *Melilotus* sp.; zj, *Cyperus* sp.; zk, *Chenopodium* sp.; zl, *Rumex dentatus*; zm, *Nigella* sp.; zn, *Asphodelus* sp.; zo, *Cleome* sp.; zp, *Dactyloctenium* sp.; zq, *Paspalum* sp.; zr, *Perilla* sp. (*Pokharia et al.*, 2016)

Fig. 09: Raja-Nal-Ka-Tila-Iron Age Plant Remains

8. Ahichchhatra, Bareilly District:

Ahichchhatra settlement site lies on latitude 28° 22' N and longitude 79° 7' E, in Bareilly District, Uttar Pradesh. In ancient literature it is known as Adhichchatra and was the capital of Northern Panchala. The extensive settlement, spreading roughly over 5.60 sq. km area is situated prominently above the surrounding agricultural fields and comprises a series of rolling mounds. The highest of which, represents the ruined temple, attaining a height of 23 m above the ground level. The archaeological excavations restarted during 2009-10 and 2010–11 by ASI, Agra Circle depicted cultural sequence from PGW (1500-800 BCE) to late PGW (800-400 BCE) and Early Mitra Panchal Period (300-100 BCE).

The rich assemblage of crop plants was found in the late phase of PGW period (800-400 BCE). In the early phase of PGW culture (1500-800 BCE) and later phase of Early Mitra Panchal Period (300-100 BCE), the food grains were relatively less in numbers and diversity.

Among the food grains encountered at Ahichchhatra, cereals include rice (*Oryza sativa*), hulled barley (*Hordeum vulgare*), bread wheat (*Triticum aestivum*) and dwarf wheat (*Triticum sphaerococcum*). Among pulses, field pea (*Pisum arvense*) was more commonly in the mixture of food grains. Besides, lentil (*Lathyrus culinaris*), grass pea (*Lathyrus sativus*), green gram/black gram (*Vigna radiata/mungo*), and horse gram (*Macrotyloma uniflorum*) were also recorded. From the point of view of agricultural economy, there is adequate rationale to infer that rotation of crops was practiced. Rice (*Oryza sativa*), green gram /black gram (*Vigna radiata/mungo*) and horse gram (*Macrotyloma uniflorum*) are grown in warm-rainy season, while wheat (*Triticum aestivum*), barley (*Hordeum vulgare*), field pea (*Pisum arvense*), lentil (*Lens culinaris)*, and grass pea (*Lathyrus sativus*) are winter crops. As pulses are source of protein and are integrated part of food diet. Hence, they were cultivated in association with summer and winter cereal crops. Further, this group of leguminous crops helps in fixing atmospheric nitrogen and improves the soil fertility, through bacteria present in their root nodules. The oleiferous crops are represented by sesame (*Sesamum indicum*) and linseed (*Linum usitatissimum*), whereas the fibre-crop is represented by cotton (*Gossypium arboreum/herbaceum*) [161].

The presence of charred seeds/nuts of wild plants such as *Ziziphus* cf. *nummularia* (jujube) and *Ficus glomerata* (Indian fig tree/gular) in good number, particularly during the Late PGW, suggests these plants occurred extensively in this part of the Ganga Plain and their ripen fruits would have been consumed by the settlers. *Emblica officinalis* (Indian gooseberry/anwala) fruits, which are good source of vitamin-C, were eaten as pickle as well as raw.

9. Jalesar mound, Unnao District:

In the proximity of Jalesar Lake in Unnao District on Sandila-Bagarmau road, a mound of Iron and Early Historic settlement was explored by the Archaeology Department of Lucknow University. The comprehensive archaeological excavation has brought out the cultural history of

the Ganga Plain since 3,000 cal yr BP (1000 BCE). The emerged cultural sequence depicts that from 1000 BCE to 700 BCE, two successive cultures, Black Slipped Ware (BSW) and Painted Grey Ware (PGW) existed there, which were succeeded by Northern Black Polished Ware (NBPW) between 700 BCE and 300 BCE. Subsequently, the region was ruled by the Sunga-Kushana (200-300 CE), Gupta (300-700 CE), and Rajput (700-1000 CE) dynasties. However, the recovery of red-wares and large number of terracotta human figurines from the excavated trench unravels the existence of Kushana Culture in the area during 200 BC to 100 CE.

The area in the ambit of the mound was under cereal-based agricultural practice in an accelerating manner since 3,000 cal yr BP onwards. This is well evident by the emergence of Cerealia pollen with increasing trend. Further, the record of *Trapa* (singhara) pollen in the lake sediments within the time bracket of 5000-2000 cal yr BP denotes that *Trapa* (singhara) fruits would have also been consumed by the settlers.

10. Hulaskhera mound, Lucknow District

The archaeological excavation of a large mound on the southern flank of the Karela Lake has unfolded the cultural history of the region[162]. The retrieval of numerous artifacts consisting pottery pieces coins, terracotta images and brick structures from the mound suggest human habitation around 1000 BCE (3,000 yr BP). A highly civilized culture came into existence between 200 BCE and 200 CE. Around 700 CE the culture declined and by1000 CE it vanished from the region. The archaeological evidence indicates that the settlement was of the community of farmers and artisans. The emerged cultural sequence indicates that from 1000 BCE to 700 BCE, two successive cultures i.e. Black Slipped Ware (BSW) and Painted Grey Ware (PGW) existed there, which were later succeeded by Northern Black Polished Ware (NBPW) between 700 BCE and 300 BCE. Subsequently, the region was under the successive rule of Sunga-Kushana (200 BCE-300 CE), Gupta (300-700 CE) and Rajput (700-1000 CE) dynasties[163].

The charred grains/seeds retrieved from the mound encompassing two successive cultures viz., Black Slipped Ware and Painted Grey Ware[164] between 1000 BCE and 700 BCE suggest that the settlers practiced *Oryza sativa* (rice), *Hordeum vulgare* (barley), *Eleusine coracana* (ragi millet) and *Vigna radiata* (green gram) as the staple crops[165]. However, between 700 BCE and 300 BCE, the Northern Black Polished Ware Culture came into existence and *Hordeum vulgare* (barley) was a staple crop[166]. During the succeeding periods, i.e. Sunga-Kushana (200 BCE to 300 CE), Gupta (300 to700 CE) and Rajputa (700 to 1000 CE) [167] the settlers practiced the cultivated cereals, pulses and oil seed plants as major crops until 1000 CE[168]. The settlement vanished from the region ~1000 CE, most probably due to severity of climate.

The first appearance of pollen of Cerealia ~9,000 cal yr BP coupled with appreciable number of concomitant cropland weeds viz., Cheno/Am, *Artemisia* and *Rumex* from the lacustrine deposit of Karela Jheel adjoining to settlement mound signifies the much early inception of cereal-based

agrarian practice and other sorts of human activity in the region[169]. However, it could not be possible to ascertain the kind of cereal crops cultivated by the settlers, based on the pollen evidence because of much overlapping in the characters of pollen of cereals.

MAJOR INFERENCES ON ANCIENT CROP ECONOMY IN GANGA PLAIN: The archaeobotanical investigations accomplished on the above cultural sites of the Ganga Plain have delineated the spatial and temporal antiquity of agricultural practice in relation to cultural succession in the region. So far, the existing database in this perspective have divulged that rice (*Oryza sativa*) was the principal staple crop of the Ganga Plain right from the advent of sedentary culture, possibly since the beginning of Holocene. The earliest evidence of rice (*Oryza sativa*) domestication comes from the Neolithic-Chalcolithic cultural site-Jhusi in Allahabad from 7000 to 2000 BCE in the form of charred seeds, based on the radiocarbon dating of bulk material from deposit. However, contemporaneous cultivation of rice (*Oryza sativa*) also commenced in the vicinity of Neolithic-Chalcolithic (6400-3000 BCE) site-Lahuradewa, Sant Kabirnagar District, from where the charred glume pieces of rice (*Oryza sativa*) have been AMS dated to 8,259 yr BP (6409 BCE) for the first time. Hence, it is supposed to be more authentic finding in order to ensure the precise time slot for rice cultivation in the Ganga Plain.

The information from the Lahuradewa site reveals that with the onset of Chalcolithic phase i.e. since 3000 BC, the first appearance of Barley (*Hordeum vulgare*) followed by wheat (*Triticum aestivum*) and dwarf-wheat *Triticum sphaerococcum*) occurred around 2700-2000 BCE and since then they have been practiced in the region. Thus, the settlers initiated the cultivation of winter crops by this time. In addition, field-pea (*Pisum arvense*), lentil (*Lathyrus culinaris*), chick pea (*Cicer arietinum*), grass pea (*Lathyrus sativus*), fenugreek (*Trigonella foenum-graecum*) and linseed (*Linum usitatisimum*) were also grown as winter crops. Along with rice (*Oryza sativa*); millets namely kodon (*Paspalum scrobiculatum*), jowar (*Sorghum bicolor*), together with legumes-green horse gram (*Macrotyloma uniflorum*), green gram (*Vigna indicum*) and cowpea (*V. unguiculata*) were also other summer crops. Til (*Sesamum indicum*), field-brassica (*Brassica juncea*) and cotton (*Gossypium arboreum/herbaceum*), linseed (*Linum usitatissimum*) are known to be in cultivation from 2000 to 1500 BCE.

The rice as principal crop at Tokwa settlement site in Mirzapur District has been documented during the later part of Neolithic-Chalcolithic Period encompassing the time slot of 3000 to 2000 BCE. This is portrayed by the appreciable presence of charred grains compared to other crop remains. During this time, *Hordeum vulgare* followed by *Triticum aestivum* were other prominent cereals of the winter season crops along with pulses such as *Pisum arvense*, *Lathyrus sativus*, *Vigna radiata* and *Lens culinaris*. On the other hand millet-*Panicum miliaceum* and legume-*Macrotyloma uniflorum* were also summer crops cultivated along with rice (*Oryza sativa*),

particularly in the dry and rugged land adjoining the paddy fields, since they withstand well the harsh edaphic conditions. *Brassica juncea* was the sole oil yielding plant during the Neolithic Period (3000 BCE). The inadequacy of other olieferous plants in the assemblage could be ascribed to the partial preservation of seeds/fruits in the deposit.

The investigation of Raja-Nal-ka-Tila mounds divulges the annals of culture and crop economy of Pre-Iron to Early Iron Age within the time slice of 1600-700 BCE. Here, also frequent record of charred grains of rice (*Oryza sativa*) signals that it was a prime crop. However, the millets including *Sorghum bicolor*, *Eleusine coracana*, *Panicum miliaceum* and *Setaria italica* as well as pulse-*Macrotyloma uniflorum*, which thrive well on the rugged and dry land adjoining paddy fields, were the low scale cultivated summer crops. Similar to other sites, cereals such as *Triticum aestivum*, *T. sphaerococcum* were also important winter crops with associated legumes such as *Pisum arvense*, *Cicer arietinum* and *Lathyrus sativus*, which enrich the nitrogen content of soil with the aid of nitrogen fixing bacteria present in their root nodules. The encounter of *Brassica juncea*, *Linum usitatissimum* and *Sesamum indicum* since Early Iron Age (1200 BCE) suggests they were essential ingredients of dietary.

The multicultural site Ahichchhatra in Bareilly District is dated back to 1000 BCE. During the late phase of NBPW Period (800-400 BCE), the crop economy was much prosperous as marked by relatively rich assemblage of food grains comprising the cereals such as *Oryza sativa* (rice), *H. vulgare* (barley) and *T. aestivum* (bread-wheat) and legumes viz., *Pisum arvense*, *Lens culinaris*, *Lathyrus sativus*, *Vigna radiata*, *Macrotyloma uniflorum*. The legumes outnumbered the cereals and others crops. In the early phase of PGW culture (1500-800 BCE) *Oryza sativa* (rice), *H. vulgare* (barley) were the only cereals and legumes were also fewer. While during the later phase of Early Mitra Panchal Period (300-100 BCE), the food grains were relatively less in numbers and diversity. *T. aestivum* (bread-wheat) and *T. sphaerococcum* (dwarf wheat) were the only cereals. Legumes were much scanty. In all, the winter crops were more widespread throughout in contrast to fewer summer crops such as *Oryza sativa* (rice), *Macrotyloma uniflorum* (horse-gram), *Vigna radiata* (green-gram) and *Sesamum indicum* (sesame) most likely in response to more pronounced winter monsoon rainfall.

Thus, the archaeobotanical database from the above sites of the Ganga Plain has manifested that this region was under sedentary settlement since the Neolithic Period (6000 BCE). Rice (*Oryza sativa*) emerged as the earliest and most important crop of ancient settlers in the region dated back to 6000 BCE from Lahuradewa, in Sant Kabirnagar District in Eastern Uttar Pradesh and since then it has continued to be the widely adopted crop. This could be attributed to the availability of suitable climatic conditions with steady arrival of active SW monsoon right from the Early Holocene. On the other hand archaeobotanical evidence of rice (*Oryza sativa*) cultivation in Harappan site-Kunal Haryana has been traced much later i.e. 3000-2500 BCE compared to the Ganga Plain[170]. Hence, it is presumed that it might have reached in the Harappan region from the

Ganga Plain, possibly owing to initiation of cultural contact. Likewise, Barley (*Hordeum vulgare*), the earliest crop of Indus civilization, is noticed since the 7000-5500 BCE from Mehrgarh, Baluchistan[171]. However, it moved to the Ganga Plain around 3000 BCE along with bread-wheat (*Triticum aestivum*) and dwarf-wheat (*T. sphaerococcum*), most likely as a consequence of development of cultural transaction of crops and since then they became prominent crops after rice in this region too.

Regarding the antiquity of olieferous crops, the existing information from the Ganga Plain illustrates that *Brassica juncea*, *Sesamum indicum* and *Linum usitatissimum* are the oldest one since Neolithic-Chalcolithic Period from Tokwa, Hetapatti, Lahuradewa, and Jhusi.

In the Ganga Plain, the earliest evidence of cotton is noticed from Neolithic-Chalcolithic site Hetapatti followed by Chalcolithic Period (2000-1500 BCE) at Lahuradewa (Pokharia, 2011) and Late PGW Period (800-400 BCE) at Ahichchhatra, Bareilly[172]. However, the use of fibres is known from the time of early sedentary human settlements. In this context, *Gossypium arboreum/herbaceum*, the prime source of present day fibres, is traced back to early Neolithic site-Mehrgarh (6000-4500 BCE), Harpappan sites viz., Mohenjodaro (2600-2000 BCE), Balakot (2500-2000 BCE), Kunal (2500–2000 BCE), Banawali (2200–1900 BCE) and Kanmer (2500-1700 BCE), Sanghol (1900-1400 BCE) and Hulas (1800-1300 BCE) [173]. Among the commercial crops, it held a leading place. From the retrieval of textile impressions at Mohenjodaro, Harappa and Kunal, it is inferred that cotton fibres were exercised in preparation of sophisticated textile crafts[174].

Surprisingly, the oldest evidence of South American Custard Apple (*Annona squamosa*) in the form of seeds from the Neolithic (3000-2000 BCE) site-Tokwa, Mirzapur District, Uttar Pradesh (Pokharia, 2008), is an important breakthrough, superseding the written notion concerning its introduction in India from America by Portuguese in 1600 CE[175]. Further, the fruit coats and seeds of South American Custard Apple (*Annona squamosa*) have also been documented from the Kushan Period (100-300 CE) in Sanghol, Punjab and Early Iron Age (740 BCE) Raja-Nala-ka-Tila in Sonbhadra District, Uttar Pradesh[176]. The sculpturing of South American Custard Apple (*Annona squamoa*) fruits on the Sanchi gateway constructed during 100 CE also substantiates the existence of this trees in India much before its supposed introduction by Portuguese. Hence, the all above facts may strongly be considered for its being indigenous to India, rather than it being an introduction by the Portuguese recently i.e. in1600 CE.

In the Ganga Plain, the earliest evidence of *Vitis vinifera* (grapes) in the form of charred seeds have been registered along with the crop remains from the Neolithic site Jhusi (2200-1900 BCE), Allahabad District[177], reflecting there by the settlers practiced viticulture or horticulture in the region. There are also evidences of *Vitis vinifera* cultivation from Narhan, Gorakhpur District (Period I-1300-800 BCE), Khairadih, Ballia District (700/600 BCE-200 BCE) in the Ganga Plain. However, viticulture was in practice since pre-Harappan and Harappan times i.e. ~3000-2500 BCE at Kunal, Haryana[178] and ~2300-2000 BCE at Rohira, Punjab[179] respectively. This is well-manifested

by the retrieval of charred seeds of grapes (*Vitis vinifera*) from these sites. Grape seeds have also been noticed in Period-III at Leobanr in the sequence of Ghaligai (ca. 2970-2920 BCE) settlements of the Swat valley, Baluchistan. Before the factual evidences from archaeological sites, information concerning the grapes and its cultivation was based on the literature and ancient sculptures. In Charak and Susruta grapes were known through the accounts of early medical treaties (5th century BCE). There is almost no information on grapes cultivation, preceding the Muslim invasion of the country.

The documentation of carbonized fruits/seeds of some wild trees namely *Terminalia chebula*, *T. bellerica*, *Emblica officinalis*, *Ziziphus mauritiana*, *Z. nummularia*, and *Crataeva* sp. from the Lahuradeva mound signals that the early settlers were well acquainted of medicinal importance of these plants[180]. Based on the current knowledge of the natural plant resource[181], it is presumed that *Emblica officinalis* fruits were consumed by the settlers as sour and astringent, cooling and diuretic. Its fruits are richest source of natural ascorbic acid. *Terminalia chebula* fruits were taken as laxative, stomachic and tonic. Amalgamation of three fruits i.e. *Terminalia chebula, T. bellerica* and *Emblica officinalis* currently known as "triphala" was vital for the treatment of several ailments as mentioned in Ayurvedic medicine system[182]. *Crataeva* sp. possesses anti-inflammatory, diuretic, demulcent and tonic properties[183] and retrieval of its fruits in the deposit hints its similar uses by the settlers. *Ziziphus mauritiana*, a common wild fruit in the Ganga Plain, would have been edible and also used in medicines as presently it is taken for its cooling, anodyne and tonic effect[184].

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Lithic Assemblages from Lanth River Basin, Bolangir, Odisha: A Preliminary Report

Dr. Sudam Deep
Lect. in History, D.A.V Autonomous College,
Titilagarh, Bolangir, Odisha
Email:sudamdeep85@gmail.com

Introduction: The term 'Microlith' is used to describe small stone blades (bladelets) retouched to create highly standardized shapes (backed blades or segments), or assemblages with high frequencies of small tools[1]. The term microlithic in recent archaeological vocabulary is generally connected with Mesolithic artefacts defined as "inserts, frequently geometric, which size is shorter than 40 mm, and thickness less than 4 mm. If they are very small (length is shorter than 20 mm and width below 10 mm) they are called pygmies"[2]. Recently such artefacts are as well-known from Middle and Lower Paleolithic[3]. Micro-blade technology was important in hunter-gatherer adaptations from the late Pleistocene through the Pleistocene/Holocene transition and beyond. Microlithic technology varies worldwide and is often defined regionally[4]. The repeated invention of microlithic industries indifferent parts of the world is often defined as systematic microblade and/or backed artefact production which has been documented for both modern and archaic humans at different times and in widely separated parts of the world. In other region of the world, for example in Southern Africa, geometric microliths appeared in Howieson's Poort dated to the Middle Stone Age, between 90-50 ka BP. Some pre-historians, like J. Deacon[5] argued that they were produced as inserts to composite tools. Microliths have been also found in quite another environment and period. In South Asia microlithic industries are fairly widespread in Holocene contexts and have been reported from a wide variety of geo-ecological habitats[6]. Microlithic industry has also been reported from Batadoma-lena, in the rainforest of southern Sri Lanka from ca. 36,000BP onwards to the end of the Pleistocene[7]. However, in Indian subcontinent, the antiquity of Microliths have been dated back to 48,000 BP at Mehtakheri in Madhya Pradesh[8], 35,000 BP at 'Jwalapuram 9' in Andhra Pradesh and 34-25,000 BP[9] at Kana and Mahadebbera[10] in West Bengal. These sites throw a new light on technological diversity, ecological situations and human behavior in the Late Pleistocene period. The dates derived by optically stimulated luminescence dating technique provide the earliest chronology of these industries in Bengal and eastern India and give supportive evidence to the antiquity of microlithic industries in the

Indian subcontinent. However Mehtakheri is currently the oldest dated micro-blade site in the Indian Subcontinent.

Previous Study on Microlith: So far prehistoric research is concerned, a systematic study in Orissa was carried out during post-independence period. However, during the last few decades, an extensive and intensive prehistoric research has been carried out in the different parts of the state. The work of Tripathi[11] during 70's in South-western Orissa has made known several Stone Age sites from the Tel basin. He discovered three sites of pebble tool industry, sixteen sites giving flake tool industry of the Middle Paleolithic culture and twenty seven sites of flake blade industry and Mesolithic culture covering the districts of Phulbani, Balangir Kalahandi and Sambalpur. Occurrence of Late Stone Age assemblages in the Tel river valley was also reported by S.B. Ota[12]. In his three years of explorations Ota found 30 open air Mesolithic sites, most of them on the bank of Bagh and Maharani rivers and in the foot hills. Quartz, Chert and Chalcedony are the primary raw materials in this region. In western part of Odisha exploration have been conducted by P.K. Behera and S. Pradhan with the assistance of his students, in the Middle Mahanadi and its major and minor tributaries resulting the discovery of hundreds of Mesolithic sites as well as rock art sites in this region. Behera's intensive survey in the Middle Mahanadi valley has brought to light as many as 35 localities yielding Mesolithic as well as heavy duty pebble tools belonging to Mesolithic phase[13]. Trial digging carried out by him near Burla have confirmed the stratigraphic association of both microliths and pebble tools component. Further, the occurrence of microlithic industry in West Odisha has also been reported from the Jira valley by S.K. Mishra[14], Ong valley by S. Panda[15], in lower Ong and Suktel by S. Gadtia[16], in lower Jira valley by K. Seth[17], Upper Jira valley by S. Mishra[18], in the middle Mahanadi valley by A.K. Sethi[19], lower Bheden valley by J. Naik[20], Girisul valley by S. Mendaly[21], Raul valley by B. Patel and Jira valley and its tributaries like Ranj and Danta by S. Deep[22]. Besides, the above mentioned area, the Microlithic industries were also reported from the Lanth valley, a tributary of the river Tel, in the western part of Orissa. Recently, First season field investigations carried out by author in the Lanth river stream which have brought to light 9 Microlithic sites. Studies of these sites and their material antiquities provide us very important data about the lithic production technology and use of raw materials of prehistoric people. Author has observed certain similarities and variations in cultural remains among the prehistoric settlements of Bolangir region and such variations can be observed on the basis of contexts of a site and preference of raw material used by prehistoric man of this region. Occurrence of these microlithic artefacts proved that Lanth valley was a favorable area for human settlement in palaeolithic and Mesolithic period. The settlements of prehistoric people are not always found in the same geographical setting rather it is varied in nature. Their settlements have been found in four major contexts: in Foot hills, River Banks,

Rocky knobs and Piedmont areas. In this valley also prehistoric settlements have been reported on the river bank and foothill areas.

Geography and Environmental setting of the Study Area: The town of Balangir was founded by Balaram Deo, the 12th Raja of Patna Princely state and constructed it as the capital city of his own kingdom during the middle of 16th century. The Chauhan rule ended with the merger of the state of Patna and Sonepur with Orissa on the 1st January, 1948. Sonepur was carved out as a separate district during 1993. Patna and Sonepur constituted the integrated whole of the Balangir District. Balangir district lies on latitude 20^0 11' 40" – 21^0 05' 08" N and longitude 82^0 41' 15" – 83^0 40' 22" E. The geographical area of the district is 6575 Sq. Kms. The district was formed on 1st Nov, 1949. The district has a unique environmental setting. It is bounded by Sonepur and Boudh in the east, Nuapara in the west, Kalahandi in the south and Bargarh in the north. The Balangir district is flanked in North-west by the Gandhamardhan Hills and in the north east by the rock infested Mahanadi river. Most parts of the district have densely forest areas which is inhabited by many tribal communities such as Kutia, Saora, Khonds, Savara, Binjhals & Gonds. The Tel, Suktel, Rahul, Lanth, Udei and Ong are the principal rivers flowing in the district. The Tel River is a perennial river along the eastern boundary of the district and meets the river Mahanadi at Sonepur. The Suktel, which emanates from the hill ranges of the western part of the district trickles through Patnagarh, Balangir and Loisingha blocks and finally joins the river Tel in Subaranpur district. An interesting feature of the river system of the district is that except for the Tel which flows along the eastern boundary of the district, the course of all other rivers is either towards the northern or north-eastern part of the district. The river Lanth which is another tributary of river Tel has its origin from a plain open scrub near Bander reserve forest in western part of the district. A number of small channels and rivulets originating from *Jhola Dangar* and Bandar Dangar form the river Lanth. To its lower course it is joined by many small seasonal rivulets like *Bhamani Nala, Chilant Nala, Dharlu Jhor* and *Dhobani Jhor* in the right banks and *Laxmi Jhor* in the left bank. After flowing for more than 70 km in eastern direction it joins the left bank of the river Tel near the village Kusmal. The topography of the district is from flat to undulating having hill ranges at north-west boundary and small hillocks at some places. The drainage pattern of the district is sub-dentritic to dentritic mainly controlled by river Suktel, Lanth, Ong, Tel and other small rivulets. The area forms the part of Eastern Ghat Super group of rocks comprising of Khondalite Granite, Calc Granulite, Anorthside, Quartz vein and Pegmatite. The climatic condition of this district is quite extreme. The summer season is too hot and the rainy season is characterized by fairly good rainfall and a high degree of humidity. Rains in the district are caused by the South-west monsoon, which breaks out in the month of June, reaches its peak in August and then retreats in the middle of October. The average annual rainfall is 1443 mm. The soil of Balangir district presents an interesting combination of varieties. It is alluvial and very fertile in the Tel and

Ong basins and is suitable for growing paddy, Sugarcane, Wheat and few cash crops. The rest of the eastern side has a soil ranging from light sandy type to sandy loam. The central part of the district has similar soils but with patches of Black earth, suitable for the cultivation of paddy, millets and pulses. The soil of the southern and western fringes is lateritic in character and productivity is low. The climate of this area supports mostly dry-mixed-Deciduous type of forest, closely resembling that of the semi-arid and sub-tropical zone, with Sal being dominant plant species, with the Sal are found certain of its usual associates. This dry-mixed formation has, in its turn, to fight a stern battle with Bamboos (Dendrocalamus strictus), especially where the underlying rock is granite or a genesis. In fact bamboos, almost pure or mixed with a dry deciduous type of forest, approximate in extent to the more valuable and gregarious Sal. Other important species are *Sahaj* (Terminalia-tormentosa), *Bijasal* (Pterocarpus marsupium), *Arjun* (Terminalia arjuna), and Teak. Among the minor forest products of this region are *Kendu* (Diospyro melanoxylon) leaf, Bamboo, Broom-grass, *Mohua* (Bassia latifola), Antia and Sabai-grass (Eulaliopsis). Timber, Bamboo and *Kendu* leaf are the main exports from this region.

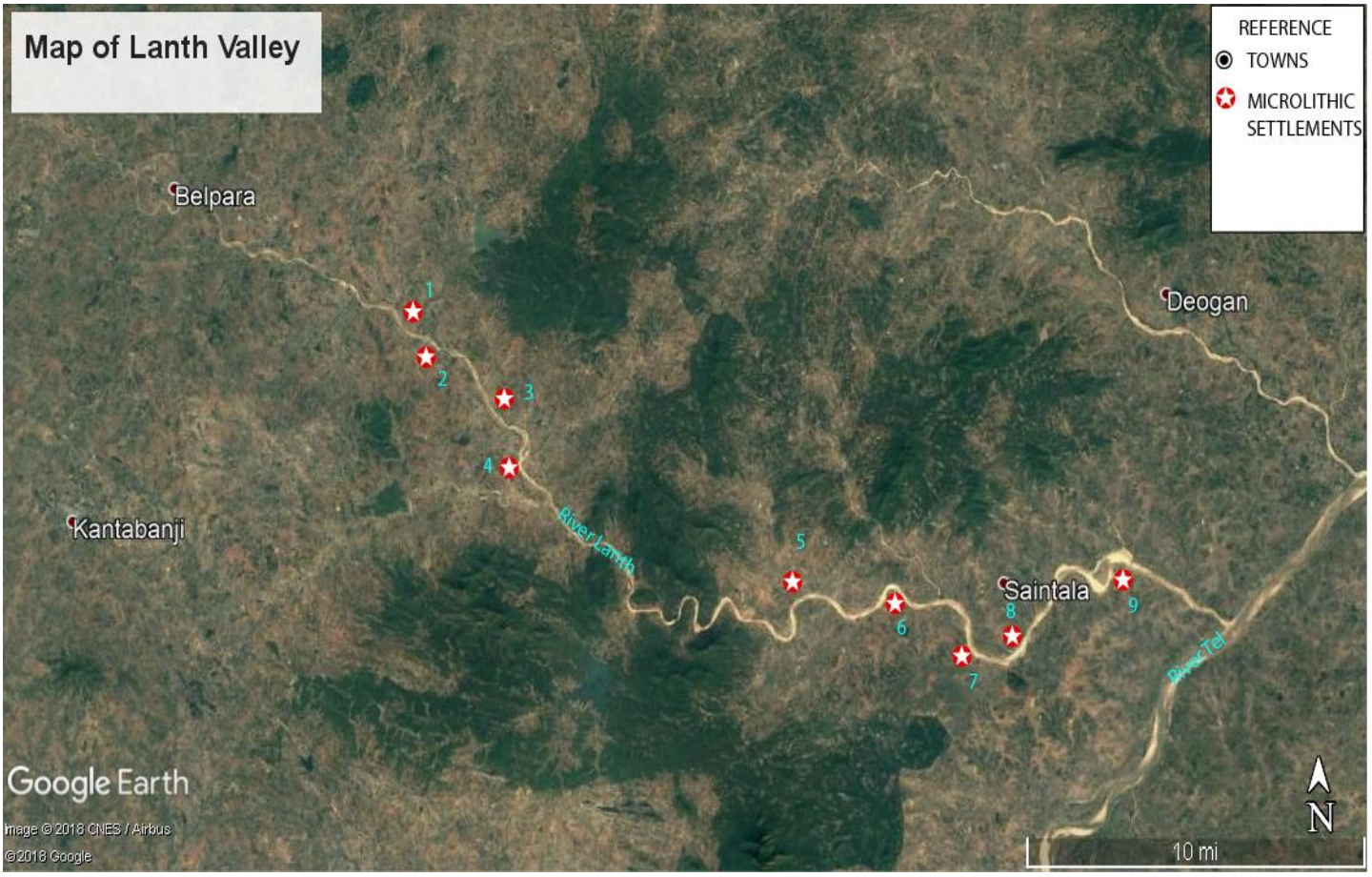


Fig.01: Google image of Lanth valley

Nature and Distribution of Site

1. *Deogaon*: The microlithic site of Deogaon is located near the left bank of river Lanth approximately 100mtrs from right bank. It is about 4 kilometer north-west of the village Tikrapada. It is a foothill site situated near a hillock. The site is found on the eroded surface of a rocky mound near the village. Its lies on latitude 20^0 32' 06.70" N and longitude 83^0 04' 52.20" E. It has an elevation of 743 feet above mean sea level. The artefacts scatter is in the form of small clusters. The eroded surface of this site has exposed a large chunk of area with arte-factual scatters spreading over an area of about 30m x 30m. Weathering of quartz is also seen in many places. Random sampling of artefacts was done from a small area measuring 10m x 10m which yielded a total of 150 specimens. At this site, also artefacts of the microlithic component are made on red chert, chalcedony and quartz fine and milky variety. The macro composition (Table-1) consists of Core (32.79%), Flake (38.17%), Blade (2.68%) and Bladelet (3.22%). Out of total assemblage 31 artefacts are retouched tools and untouched blanks are 61 in number. Among the retouched assemblages Flake is 70.97%, Blade is 6.45% and Bladelet forms only 9.67%. Chunks and Chips make only 19.35% of the total assemblages. In this site flakes have been maximally uses for tool production. Blade and Bladelet tools are equally low here.

Table-01- Deogaon

Artefacts Category	**Total Nos.**	**%**	**Unretouched Blanks no.**	**%**	**Retouched Blanks**	**%**	**% Utilized**
Core	61	32.79	61	52.13	-	-	-
Flake	71	38.17	49	41.88	22	70.97	30.98592
Blade	5	2.68	1	0.85	2	6.45	40
Bladelet	6	3.22	3	2.56	3	9.67	50
Fragments							
A-Distal	2	1.07	1	0.85	1	3.22	-
B-Medial	1	0.53	-	-	1	3.22	-
C-Proximal	4	2.15	2	1.70	2	6.45	
Total	150	80.64	-	-	-	-	-
Chunks	36	19.35	-	-	-	-	-
Grand Total	186	99.97	117	99.98	31	99.97	

2. *Dakara*: The site is situated about one kilometer west of the village Dakara on the right bank of the river Lanth. It lies on latitude 20^0 28' 06.23" N and longitude 83^0 07' 49.81" E. It has an elevation of 622ft. above mean sea level. The site is located on the eroded gravelly surface of a raised mound near the village. The arte-factual scatters spread over an area of about 50mtrs, of which only 15m x 15m surface was selected for random sampling. A total of 216 artefacts made on Chert, Quartz, and Chalcedony raw material were collected from the eroded surface at the site. On-site production of microliths is sufficiently evident from the occurrence of a sizeable number of primary elements and

waste products besides other artefact classes. Almost all the exposed artefacts are in mint fresh condition. The macro compositions (Table-2) consist of Core (32.87%), Flake (36.11%), Blade (3.70%) and Bladelet (9.7%). Out of 78 assemblages 15 artefacts are retouched tools. Among the retouched assemblages Flake is 51.72%, Blade is 10.34% and Bladelet forms only 27.59%. Chunks or debris is only 12.03% of the total assemblages. In this site flakes have been maximally uses for tool production. Retouching has also been observed in the distal and proximal components.

Table-02. Dakara

Artefacts Category	**Total Nos.**	**%**	**Unretouched Blanks no.**	**%**	**Retouched Blanks**	**%**	**% Utilized**
Core	71	32.87	71	44.09	-	-	-
Flake	78	36.11	63	39.13	15	51.72	19.23
Blade	8	3.70	5	3.10	3	10.34	37.51
Bladelet	21	9.72	13	8.07	8	27.59	38.09
Fragments							
A-Distal	4	1.85	3	1.86	1	3.44	-
B-Medial	2	0.92	2	1.24	-	-	-
C-Proximal	6	2.77	4	2.48	2	6.89	-
Total	190	87.96	-	-	-	-	-
Chunks	26	12.03	-	-	-	-	-
Grand Total	216	99.97	161	99.99	29	99.97	

3. ***Tikrapada***: The microlithic industry of Tikrapada is located on the left bank of river Lanth. It is situated near a mount approximately 200 mtrs away from left bank of the river. The exact site is located 1 kilometer south of the village Tikrapada. It has an elevation of 763ft above mean sea level. It lies on latitude 20^0 34' 48.80" N and longitude 82^0 59' 22.07" E. The site is spread over an area of 30 square meters. The arte-factual scatters in the form of small clusters were found exposed on the eroded surface of the compact soil. A total number of 339 specimens were randomly collected from a small area measuring 20m x 20m which are made on Chert, Quartz and Chalcedony etc. The assemblage compositions of microlithic component (Table-3) consist of Core (22.12%), Flake (34.21%), Blade (2.06%) and Bladelet (5.01%). Out of 339 artefacts, 52 are retouched tools. Among the retouched assemblages Flake is 63.46%, Blade is 7.69% and Bladelet forms only 17.31%. Chunks or debris is only 31.85% of the total assemblages. In this site also flakes have been maximally uses for tool production. Retouching has also been observed in the all fragmented components.

Table-3.Tikrapada

Artefacts Category	**Total Nos.**	**%**	**Untouched Blanks no.**	**%**	**Retouched Blanks**	**%**	**% Utilized**
Core	75	22.12	75	41.89	-	-	-
Flake	116	34.21	83	46.36	33	63.46	28.44

Blade	7	2.06	3	1.67	4	7.69	57.14
Bladelet	17	5.014	8	4.46	9	17.31	52.94
Fragments							
A-Distal	7	2.06	5	2.79	2	3.84	-
B-Medial	4	1.17	2	1.11	2	3.84	-
C-Proximal	5	1.47	3	1.67	2	3.84	-
Total	231	68.14	-	-	-	-	-
Chunks	108	31.85	-	-	-	-	-
Grand Total	339	99.99	179	99.98	52	99.99	

4. ***Bandupala***

The village Bandupala is located some 5 kilometers west of Tikrapada township and the site is located near a small stream which joins on the right bank of river Lanth. This site is located at a distance of one kilometer west of the village Bandupala. The site is located on the eroded surface of a rock sheet near the village. It lies on latitude 20^0 28' 6.23" N and longitude 83^0 07' 49.81" E. It has elevation of 720 ft above mean sea level. The arte-factual scatter of this site spreads over an area of about 50 sq. mt. This is very rich microlithic site. At this site the artefacts were found near the cultivated field. In respect of raw material, this industry closely resembles the site of Dakara. Artefacts were randomly collected from the surface of a small portion of the site measuring 10m x 10mwhich yielded 252 artefacts. The collection of microlithic component (Table-4) includes Red chert, Chalcedony and Quartz of oxidized variety. The material composition consists of Core (41.26%), Flake (23.01%), Blade (2.38%) and Bladelet (4.76%). Out of 252 artefacts, 41 are retouched tools. Among retouched assemblages Flake is 65.85%, Blade is 7.13% and Bladelet forms only 12.2%. Chunks and chips consist of only 23.41% of the total assemblages.

Table-4.Bandupala

Artefacts Category	**Total Nos.**	**%**	**Unretouched Blanks no.**	**%**	**Retouched Blanks**	**%**	**% Utilized**
Core	104	41.26	104	68.42	-	-	-
Flake	58	23.01	31	20.39	27	65.85	46.55
Blade	6	2.38	3	1.97	3	7.31	50
Bladelet	12	4.76	7	4.60	5	12.22	41.6
Fragments							
A-Distal	4	1.58	2	1.31	2	4.87	-
B-Medial	4	1.58	3	1.97	1	2.43	-
C-Proximal	5	1.98	2	1.31	3	7.31	-
Total	193	76.58	-	-	-	-	-
Chunks	59	23.41	-	-	-	-	-
Grand Total	252	99.98	152	99.98	41	99.99	

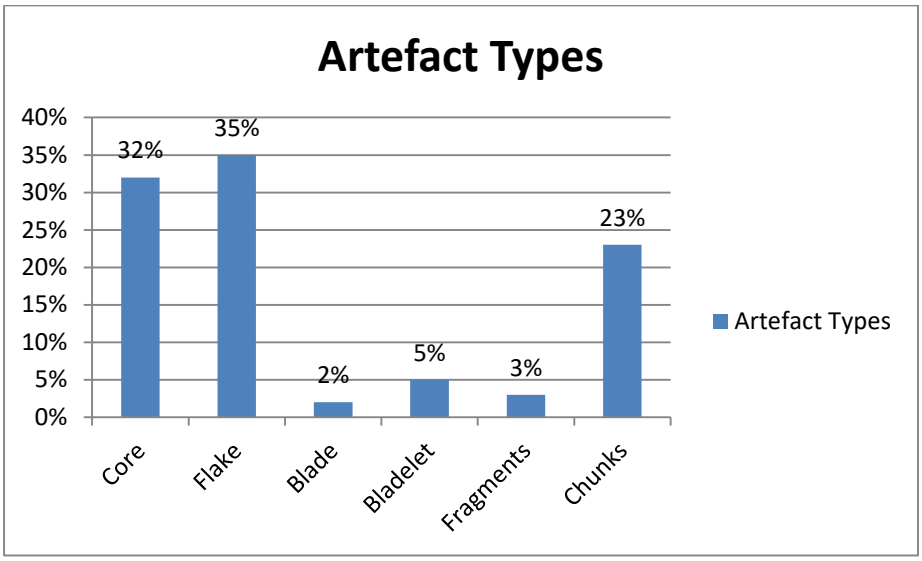


Fig. 2: Overall Lithic Artefact Types of Lanth

Observation on Tool types: During the analysis of cultural assemblages reported from Lanth valley author has noticed a number of retouched tools. Microlithic assemblage shows unusual similarity of flakes, from which mostly bigger had been chosen for retouching. For the purpose of final tool shaping various forms of secondary retouch techniques, with high domination of edge retouch, have been used. As it is evident from the (Table-5) that various tools are made on Flakes, Blades, Bladelets and Blade-bladelets segment, among which a large majority appears on Flake and Bladelet blanks. Among the various finished tool types, more than 30% belong to various backed tools and typical microlithic forms like Triangle, Lunate and Trapeze. This may be regarded as one of the important typological feature of these industries. Though the number of Burin is not very large there are various types on the group. Significantly the group is also represented by a few finely made micro burins and their products. The site Tikrapada and Bandupala are dominated by Notch, Denticulate and Backed points. Typical microlithic forms are represented by 3 Lunate and 3 Isosceles triangles and 2 scalene triangles. Scrappers of different variety are also found in adequate numbers. Although the percentage of Borer and Burin is very low still it bears its own unique characteristics. The raw material employed in the blank detaching and subsequent processes essentially belong to the rocks of crypto-crystalline silica group. A good number of finished tools have also been reported from Dakara and Deogaon. The cultural assemblages contain 216 and 186 artefacts respectively. Among these, a total of 29 and 27 finished tools have been noticed on both sites. Scrappers of different variety have dominated the tool type, which includes Side scrappers, Transverse scrappers and denticulate tools. There are 20 Notch tools in total which occupied first position in tool category. Second position is occupied by marginally retouched and partially retouched tools (10.29%). It is

followed by Side Scrapper (8.08%), Denticulate (8.08%) and partially retouched tools (8.08%). Further classification has been made on the denticulate tool in which Double denticulate form main components.

Table-5

Sl. No	Tool types	Name of the sites				Total	%
		Deogaon	Dakara	Tikrapada	Bandupala		
1	Side scrapper	3	2	2	4	11	8.08
2	End Scrapper		1	2	1	4	2.94
3	Transverse scrapper	1		1		2	1.47
4	Transverse scrapper +Notch	1			1	2	1.47
5	Notch	3	4	8	5	20	14.71
6	Denticulate	2	1	6	2	11	8.08
7	Double denticulate			3	3	6	4.41
8	Denticulated top	1		1	1	3	2.20
9	Awl	1	2	1		4	2.94
10	Borer	1	2			3	2.20
11	Awl+ Marginally retouched	1			1	2	1.47
12	Marginally retouched	2	3	4	5	14	10.29
13	Partially Retouched	3	2	3	3	11	8.08
14	Retouched on butt			1	1	2	1.47
15	Retouched lateral side	1		2		3	2.20
16	Axial Dihedral Burin		2	2	1	5	3.67
17	Offset Burin at butt	1	1			2	1.47
18	Offset Dihedral Burin	1	1	1		3	2.20
19	Scalene Triangle	1		1		2	1.47
20	Backed Bladelet		2		2	4	2.94
21	Isosceles Triangle	1		2		3	2.20
22	Lunate	2			1	3	2.20
23	Retouched top	1	3	1	1	6	4.41
24	Convex baked Point		1	1		2	1.47
25	Baked Lateral side		2	2	2	6	4.41
26	Truncated Blade			1	1	2	1.47
Total		27	29	45	35	136	99.99

Observation on Raw materials: The geological formation in the study area includes the Achaean and Cudappah formations. The main rock formations are Granite, Quartzite, Quartz, Sand stone, Chert and Lime stone. Large number of Quartzite river pebbles, cobbles and boulders are abundantly found in this region. Basically five types of raw material have been observed in the explored area,

Such as Chert, Quartz, Chalcedony, Agate and Quartzite. Therefore, microlithic sites located close to the river were dominated by Chert as the main raw material. Use of quartz as a raw material dominates at the sites located away from the river and near to the granitic rocks, bedrock or hills. It is observed that Quartz is used most abundantly in the developed microlithic phase. Chalcedony was the major raw material on the sites found in the Lanth valley. Its use gradually decreases as one comes to the sites located in upstream area. Jasper, Opaline silica, Limestone and Quartzite are occasionally used at some sites but their number is negligible in comparison to the Chert and Quartz. Quartz has very large crystals which produce sharp edges after breaking. So it is the most dominating material and found all over the river valley. There are two types of quartz common in this area such as crystal quartz and milky quartz. The major raw material sources of this phase were river pebbles and nodules found on hill slopes. The Microlith using community seems to have preferred the river nodules instead of chert outcrops as the use of second one requires not only an understanding of the ways of quarrying the source but also efforts to transport the material from its source region. Chert is the second common raw material utilized in the Lanth stream for microlith production, however at some sites it is the most used material. There are three different forms of Chert nodules which have been utilized in the study area such as: the river pebble, hill slope nodules and outcrop chunks. Majority of the sites have utilized the river pebbles as source of raw material. Chalcedony occurs in the Bolangir-Patnagarh region within the basalt and lime stone area. At the same time it is found in the small hillocks and knobs area but its occurrence and use is quite limited in nature. However Agate as raw material is also rarely found at the sites located in the Lanth valley.

Discussion and conclusion: The Lanth valley is quite significant from archaeological point of view. Like other parts of our country this region of West Odisha is also an important area for human settlement from the Pleistocene period to Holocene period. The stone tool artefacts and other cultural antiquities explored from the study area shows that this area was inhabited by human being from Paleolithic period to early historic period. However the sites occupied by microlithic using communities are numerous and widespread. The exploration in the Lanth valley in Bolangir district reveals that the rocky knobs and foothills found in this part was also preferred for human settlement. The majority of the prehistoric sites in the study area were found on the river banks and along the foothills. The older surfaces, pediments are exposed on the river bank sections of Lanth due to heavy erosion. These exposed sections are helpful in identifying the microlithic artefacts. The rocky outcrops also hold tremendous potential for habitation. Prehistoric people of this region had a mobile lifestyle moving across the landscape in search of various resources starting from raw material procurement to hunting-gathering and collecting of food items. The prehistoric man of this region might have used microlithic tools as these were very effective because of their light weight, durability and razor sharp cutting edges. The pointed tip of tools being more penetrative and causes deadly

injuries to the game, they produced it in large number by using local raw materials. The procurement of raw material and lithic reduction strategy of the prehistoric man in this locality suggests that large flake blanks were brought to the site from the areas where raw materials was available and produced their tools for various purpose. The copiousness, quality and form of raw materials available play a very significant role in the lithic technology. Andrefsky[23] argued that the availability of lithic raw materials might be the most important factor in the organization of technology that influenced the settlement configurations. All the forgoing discussed sites clearly reveal that microliths are fairly common in landscape of Lanth valley and seem to represent a distinct cultural phenomenon in this region. However, Microlithic industry of the Lanth River reveals a developed tool tradition, which certainly adds to the significance of the region. Although all assemblages of Lanth valley have been collected from surface only, by comparative analysis they can be obviously correlated with the stratified findings of the region. The exact chronology of the Microlithic culture in Orissa is not yet established. Although a large numbers of sites have been discovered in different parts, most sites are basically reported from the secondary context. Large scale excavations have not been conducted so far to fix the date of microlith of this region. Further, it is also not possible to identify chronology of microlith on the basis of typological features of the lithic Industry. Although the discussed assemblages do not contain exactly the same characteristic features, it should be noted that they all share many common characteristics. Within the microlithic assemblages, different series of artefacts starting from the raw material nodules to finished tiny backed tools were found. Thus a systematic study of prehistory is essential to understand behavioral pattern of prehistoric people of this region.

Acknowledgement: I am thankful to Dr. P.K. Behera, Reader, P.G. Department of History, Sambalpur University for his encouragement, suggestions and guidance for writing this paper.

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Stone Drill bits from Kanmer, Gujarat-A unique Harappan Site in Kachchh

Dr. Rajesh Kumar Meena
Sahitya Sansthan (IRS),
JRN, Rajasthan Vidyapeeth,
University, Udiapur

Introduction: - More than 170 stone drill bits were recovered during excavations at the Harappan city Kanmer, Kachchh, Gujarat. These kind of implements, which were mainly used for perforating stone beads, have been studied in details before by many scholars[1]. The site of Kanmer (Fig. 1) has five defined occupational stages. Bead making at Kanmer was practiced right from the earliest period. It has humble beginning in period I and was most intense during the Mature Harappan period, which is represented by Stage KMR II a & II b. It continued to stage III, which belongs to Late Harappan period. Stone bits, the cutting tips of the composite tools known as drills, are found throughout the occupation sequence. To date, 172 such artifacts have been recorded. This assemblage can be divided into three main material types. Chert (6.35%), Ernestite (93.06%) and Carnelian (0.578%). Eleven drill bits that have been recorded, are made from chert, a microcrystalline silicate rock frequently used for blade tools. In fact' it is quite likely that there are many more chert drill bits in the Kanmer collection that have been misclassified as blades, bladelets or borers. One example appears to be composed of carnelian, which is a hard, that is typically used for making beads rather than drills. The remaining 160 bits in the assemblage are composed of a type of stone that is informally known as 'Ernestite' (Sillemanite) [2].

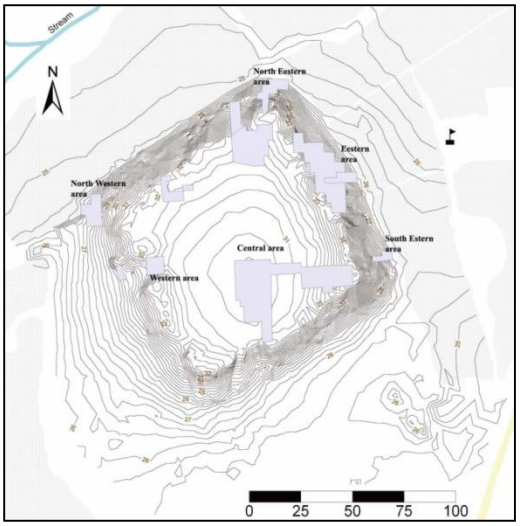


Fig. 01: Contour map of Kanmer

What is 'Ernestine?': 'Ernestine' is an extremely fine grained stone that typically has dark –brown to black patches and dendritic veins in a khaki-colored matrix (Fig. 02). It is hard (easily scratching quartz but not topaz giving it a Mohs hardness of at least 7 but less than 8) very tough (it does not break or fracture easily) and is fairly dense (it has a specific gravity ranging from ≈ 2.8 for the khaki-coloured matrix to ≈ 3.2 for the brown –black portion). Drill bits made from this rock are unique to the Indus Civilization. Ernest Mackay (1937) first described them among bead making materials at the site Chanhu-daro in sindh. Identical drill bits were later identified at Harappa and Mohenjo-Daro[3].



Fig. 02: Ernestite raw material at Kanmer

Recording and Describing Kanmer's Drill Bit Assemblage

The methodology used in this study for recording and describing drill bits is based on procedures and terminology developed by J.M. Kenoyer in the course of his work at Harappa and other sites. Two measurements were taken of each bit's tip width, base width, minimum width and proximal end width. Distal bit length (the drilling end of the bit) and base length (the portion of the bit that was mounted in the drill haft) were taken separately along with the overall maximum length of the preserved drill bit (Fig. 03).

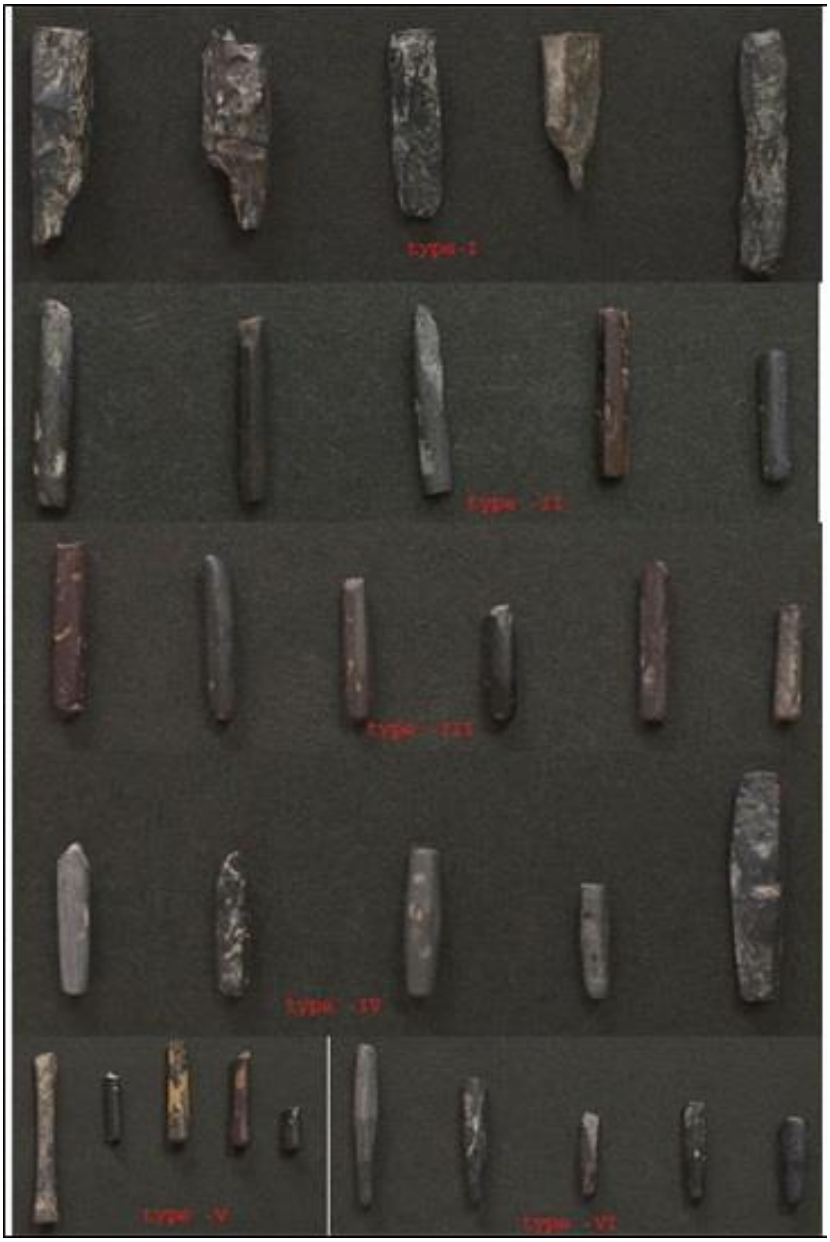


Fig. 03: Six type Ernestite drill bits found at Kanmer

Tapered drill bits

Tapered drill bits are those that have the drilling shaft portion tapered, with the distal end being significantly smaller than the medial portion of the drill bit[4]. At Kanmer, tapered bits made from chert (Fig. 04) were manufactured either from a thin flake or parallel side's blade having a single ridge, which enabled the centering of the bit.

Tapered Ernestite drill bits from Kanmer have a typical tapering on the working edge. Their surface vary according to the amount of drilling to which they were subjected to, of which some are chipped, faceted or ground smooth.



Fig. 04: Tapered Chert drills at Kanmer, Kachchh, Gujarat

Cylindrical drill bits

Cylindrical drill bits (Fig. 05) have a more or less round section, while their surface vary according to how they have been worked



Fig. 05: Example of cylindrical Ernestite drills, Kanmer, Kachchh, Gujarat

Constricted cylindrical drill bits

Constricted cylindrical drill bits (Fig. 06) have a long cylindrical shape that are wide at the tip and constricted at the midsection. These have three defined parts, namely (i) the distal tip, (ii) the constricted medial portion and (iii) the proximal tang portion[5]. Constricted cylindrical drill bits from Kanmer, which are all, composed of 'Ernestite'.



Fig. 06: Example of constricted cylindrical Ernestite drills, Kanmer, Kachchh, Gujarat

Re-used drill bits

Re-used drill bit (Fig. 07) were made from the previously used bits. Broken tips were ground flat and re-used again.



Fig. 07: Example of Reused Ernestite drills, Kanmer, Kachchh, Gujara

Pointed drill bit

A single pointed drill bits (Fig. 08) was found at Kanmer. Its tip portion is sharp and triangular in section but its base retains a cylindrical shape. Working marks have been observed on its surface indicating that it had been used extensively. Although its exact function is unclear, it could have been used to produce conical holes in very small beads.



Fig. 08: Example of pointed Ernestite drills, Kanmer, Kachchh, Gujara

Distribution of the Ernestite drill bits

Distribution of drill bits across various areas of the archaeological site Kanmer (Fig. 09), showed that the majority (42.77%) of the total number recovered came from central part of the mound. This is followed by the south east (26.01%), (eastern side outer side of the fort) 17.91% and less than 4.62% came from other areas. Central part of the mound was clearly the important point where drilling was done at Kanmer, which is consistent with other material indicators of bead making activity at the site. The distribution of the drill bits across the four cultural stages (including two sub cultures) of Kanmer is show in Graph. 1. A handful of these artefacts that first appear in stage I (KMR-I) make up less than (6.35%) of the total number of bits from dateable contexts. The vast majority of the drill bits (50.86%) come from the Mature Harappan level-i.e., stage II (KMR II a & KMR II b). The bead making continued at Kanmer during the Late Harappan Phase. It is attested by the fact that 31.79% of the sub assemblage is attributable to stage III (KMR III). The few bits recovered from the Historic level at the site (stage IV) could have been re- deposited from the earlier levels.

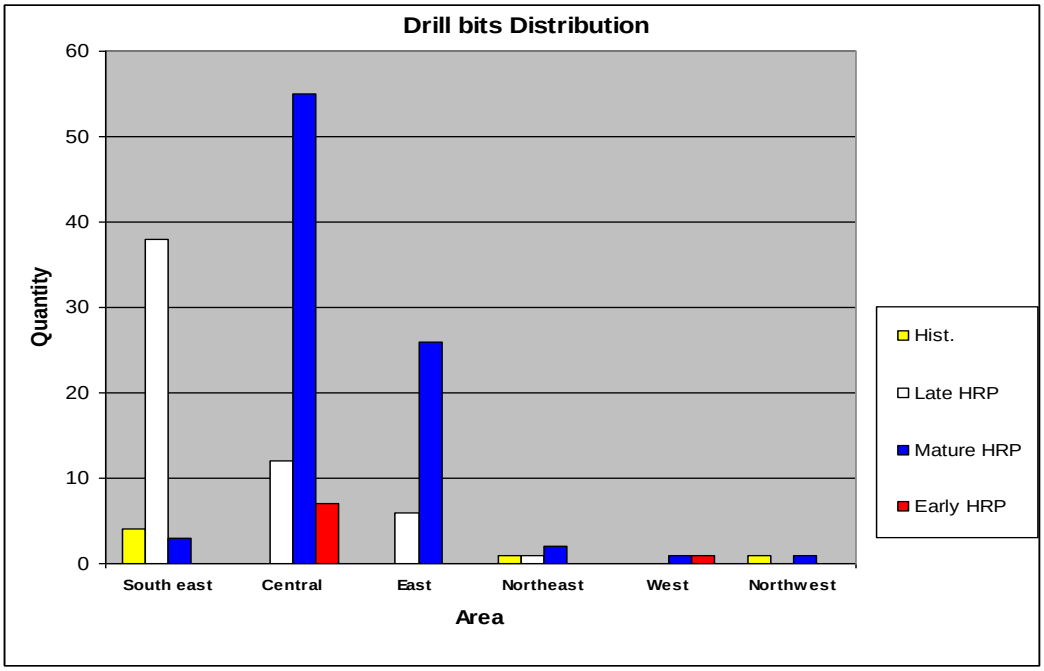


Fig. 09: Distribution of Ernestite drills across various cultural stages of Kanmer

Maximum length of drill bits

The length of all Ernestite drill bits, including those broken or incomplete, varies from a minimum of 6.17 to a maximum of 28.10 mm. The width varies from a minimum of 1.25 mm to 3.37 mm.

Conclusions:-

An attempt has been made for the analysis of the drills of Kanmer in terms of statistics and typology. The methodology developed by Kenoyer has been adopted here for the description of drills bits. In total, 172 drills were recorded and documented out of which 11 are chert, 1 are carnelian and 160 are composed of the stone informally designated Ernestine.

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3. *Ibid*.
4. *Ibid*.
5. *Ibid*.

Antiquities

Of

Government

Archaeological Museum Kannauj,

Uttar Pradesh

Part- II

***By*:**

Vijay Kumar



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Chapter – 1

Introduction

A large number of sculptures are kept in Government Archaeological Museum, *Kannauj*. Among these is a typical piece of *Shunga* period, found from village *Jankhat*. It provides the missing link in the evolution of temple door frames from simple rectangular doors to elaborately carved complex doors. A railing from some *Buddhist stūpa* gives one idea of the early shape of *chaitya* motif i.e. repeatedly carved on later temples. The *Buddhist* antiquities gives one fair idea about the ups and down of *Buddhist* faith in *Kannauj* city. Some master pieces of *Kannauj* clearly show the evolution of sculptural art in North India. These aspects of the antiquities found from *Kannauj* have been discussed in details as follows.

1.1- The Evolution of door jambs of Temples in North and Central India: The two pieces of a door jamb found at *Jankhat* near *Kannauj, U.P.* now kept in Government Archaeological Museum, Kannauj U.P. These are unique architectural pieces and belong to 1st century B.C. It is a fusion between simple rectangular gates of houses & shrines of *Mauryan* period and *Toraṅas* which were erected in the open to the mark the path to a building at the boundaries of the same (Fig. No. 01). This door frame has three *śākhās* namely *puṣpa patra śākhā, stambha śākhā* and *patra śākhā* (See Fig. No. 79). The *stambhaśākhā* reminds one of *Ashokan* pillars with lion capital. The Ashokan pillars had round cross section and were tapering in shape (Fig. No. 02). It was topped with ribbed inverted bell, carved round shaped abacus and an animal figure. These animals probably carried *Dharmachakra* (Fig. No. 03). By the time, *Sanchi Stūpa* was built during *Shunga* period, the pillars became octagonal and tapering in shape as one panel of *Sanchi Stūpa* shows (Fig. No. 04). By this time, the shape of inverted bell becomes more like a flower held upside down. The *Jankhat* pillar has one vertical string of beads on both sides. The bracket is curved and has the image of *Śālabhanjikā* standing on a *Makaramukha* below *Ashoka* tree and holding one of its branches. Such brackets must have been designed to support the over-hanging ends of the beams kept on the supporting pillars of the *Toraṅa*. Later on, these brackets became decorative devices and *Śālabhanjikā's* standing on *Makara* gave way to *Yamuna* standing on *Kurma* and *Ganga* standing on *Makara*.



Fig. No. 01: Door jamb from *Jankhat, Kannauj* U.P.



Fig. No. 02: Ashokan Pillars, district *Vaishali, Bihar*



Fig. No. 03: Bull Capital from Rampurva, Bihar, presently kept in *Rashtrapati Bhawan, New Delhi*



Fig. No. 04: A pillar carrying *Dharmachakra* being worshipped by people, a panel from *Sanchi Stūpa*

The earliest gates of houses and shrines were rectangular in shape. The entrance to the *Lomash Rishi* cave has been carved in the shape of the façade of a hut. It shows a vaulted roof and an arcuate entrance leading to a rectangular gate without any ornamented door frame (Fig. No. 05). The barrel vaulted roof is supported by rafters. We will discuss the original simple rectangular gates of *Lomash Rishi* cave and highly ornamented *Toraṅa* of *Sanchi* which seem to have inspired the door jamb of above type.



Fig. No. 05: Barabar Cave (3rd century B.C.), *Gaya, Bihar, India*

The similar rock cut cave is depicted in one panel of *Toraṅas* at *Sanchi,* M.P. India. This scene depicts the visit of *Indra* to *Buddha* at *Indrashaila* cave at *Sanchi*. It also shows animals peeping from the mountain in which the cave has been dug. The façade of the cave is carved in the form of barrel vaulted roof supported on rafters. Rafters are supported on horse shoe shaped wooden structure tied in the middle with a beam. The gate of this cave is rectangular and there is a high platform in front of this gate (Fig. No. 06-A). It appears that the gates of the residences were generally rectangular. Another gate from *Bedse* caves (1st century B.C.) from *Pune,* Maharashtra India although not from Northern India and made in stone gives closer view of such gates depicted in *Bharhut* and *Sanchi*. It shows a rectangular gate having a wooden lattice or simply carved panel in the shape of arch placed above the rectangular gate. The gate is protected by a small *chaitya* motif shaped projecting portico in the shape of barrel vaulted roof (Fig. No. 06-B). It shows the rectangular gate is flanked by a pillar supporting the portico. The pillar has a peculiar shape. Its lower and upper ends are rectangular and the middle portion is octagonal. In this door, the pillar is placed slightly away from the main door and is shown to be supporting the portico but in later temples, this pillar becomes the integral part of the door jamb and its original function is lost to the people. The *chaitya* motif which is a sort of protection to the door, becomes a motif in the design of door jamb and later on the *chaitya* is carved all over the temple including *śikhara*.



Fig. No. 06-A: ***Indra*** **visiting** ***Buddha*** **at** ***Indrashaila*** **cave at** ***Rajgriha, Sanchi, M.P.*** **India**



Fig. No. 06-B: Door jamb covered with barrel vaulted portico from *Bedse* caves at *Pune, Maharashtra* India

The *Toraṅas* were generally built on the boundaries of houses or religious buildings complex. Commonly these were made of wood. One such *Toraṅa* made in stone survives at *Stūpa* of *Sanchi*. Four *Toraṅas* built at the four cardinal points of the *Sanchi Stūpa* piercing the *Vedika* erected around the shrine were built in open after their wooden prototypes. The low relief carving on the vertical pillars, horizontal beams and short vertical column introduced to support the large beams imitate the carving on wooden beams and columns (Fig. No. 07-A). During *Kuśāna* period, these *Toraṅas* became less ornamented.



Fig. No. 07-A: *Toraṅa* at Sanchi M.P.

and it became fashionable to make the pillars of *Toraṅas* like *Ashokan* pillars. *Ashokan* pillars were round and topped with animals sitting on a disk shaped abacus atop an inverted bell. The early *Buddhist* structures like *chaitya* at *Karle* indicates that these *chaityas* were a place for congregation of lay brothers/ devotees (Fig. No. 07-B). The symbol of *Buddha* was placed in a large hall and everybody

participated in a sort of community worship or mass. The plan of *Karle chaitya* shows an apsidal plan with a large bay flanked by narrow aisles (Fig. No. 07-C). The people of that period must be building large halls with vaulted roof and with multiple floors on both sides of the central hall above the ceiling level of the aisles. The large *chaitya* window must have lighted the large hall. The design of these *chaityas* are just like that adopted by Christian churches. These structures predate their Christian counter parts. The early shrine at *Bodhgaya* as portrayed in panels at *Bharhut* and *Sanchi* make it obvious that the shrine were open to everybody and the people worshipped *Buddha* by simply offering flowers, leaves, garlands to the symbols like *triratna, dharma chakra, uṣṅīśa* and foot prints. Fig. No. 39 clearly shows such a scene. The later shrines like rock cut temples at *Udayagiri* (Fig. no. 11) show a very small sanctum-sanctorum where only two-three people can stand and do worship. This is a major shift in the religious perspective from community worship to a personalized *puja*. This tendency reflects in later architecture where a grand temple doesn't have a space for communal worship. It has a very small cubical where the idol of the deity is kept and people worship it individually. The individual worship could be done at any time of the day and the Buddhist masses must have followed some fixed time schedule for their religious activities.

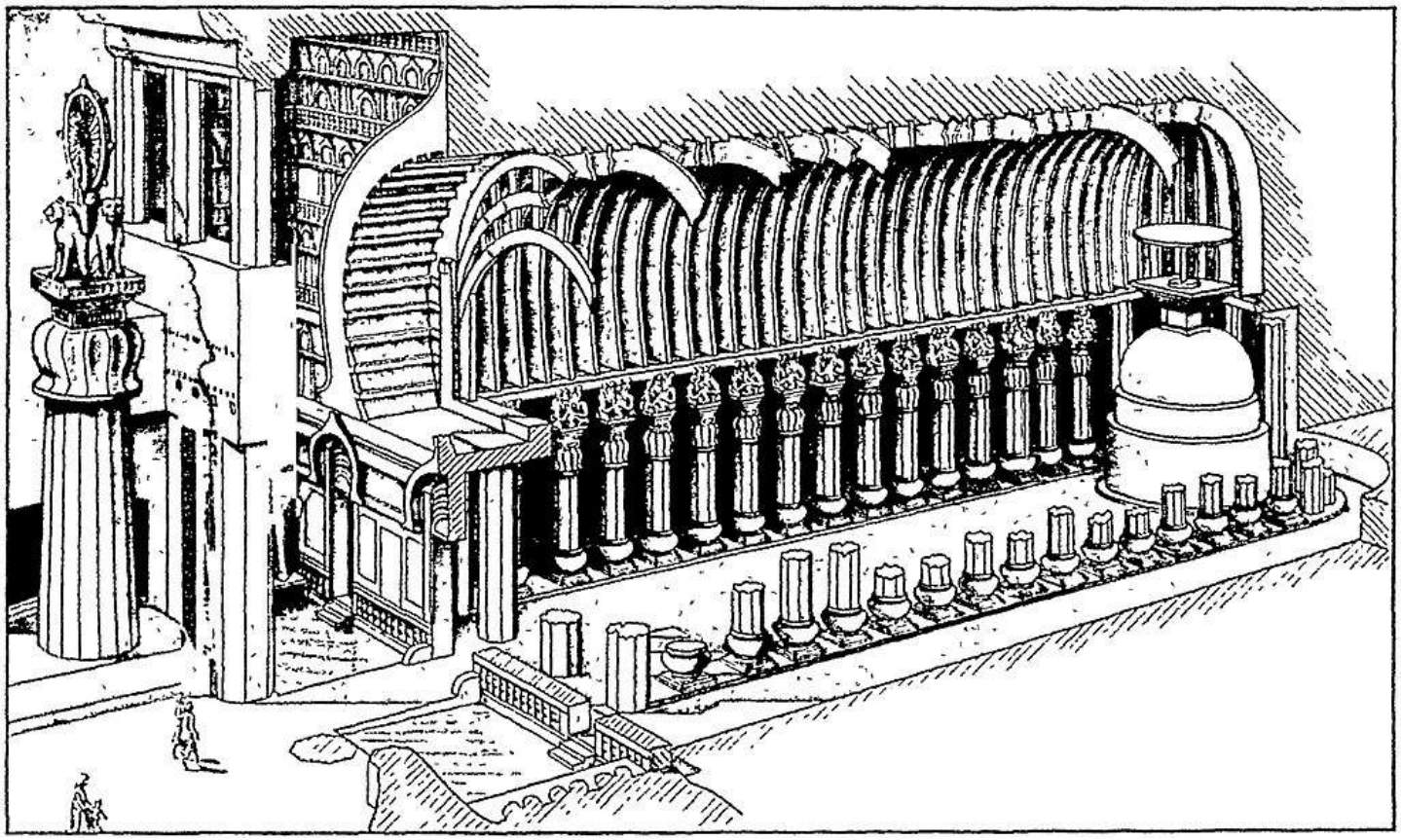


Fig. No. 07-B: *Chaitya* section in Karle caves

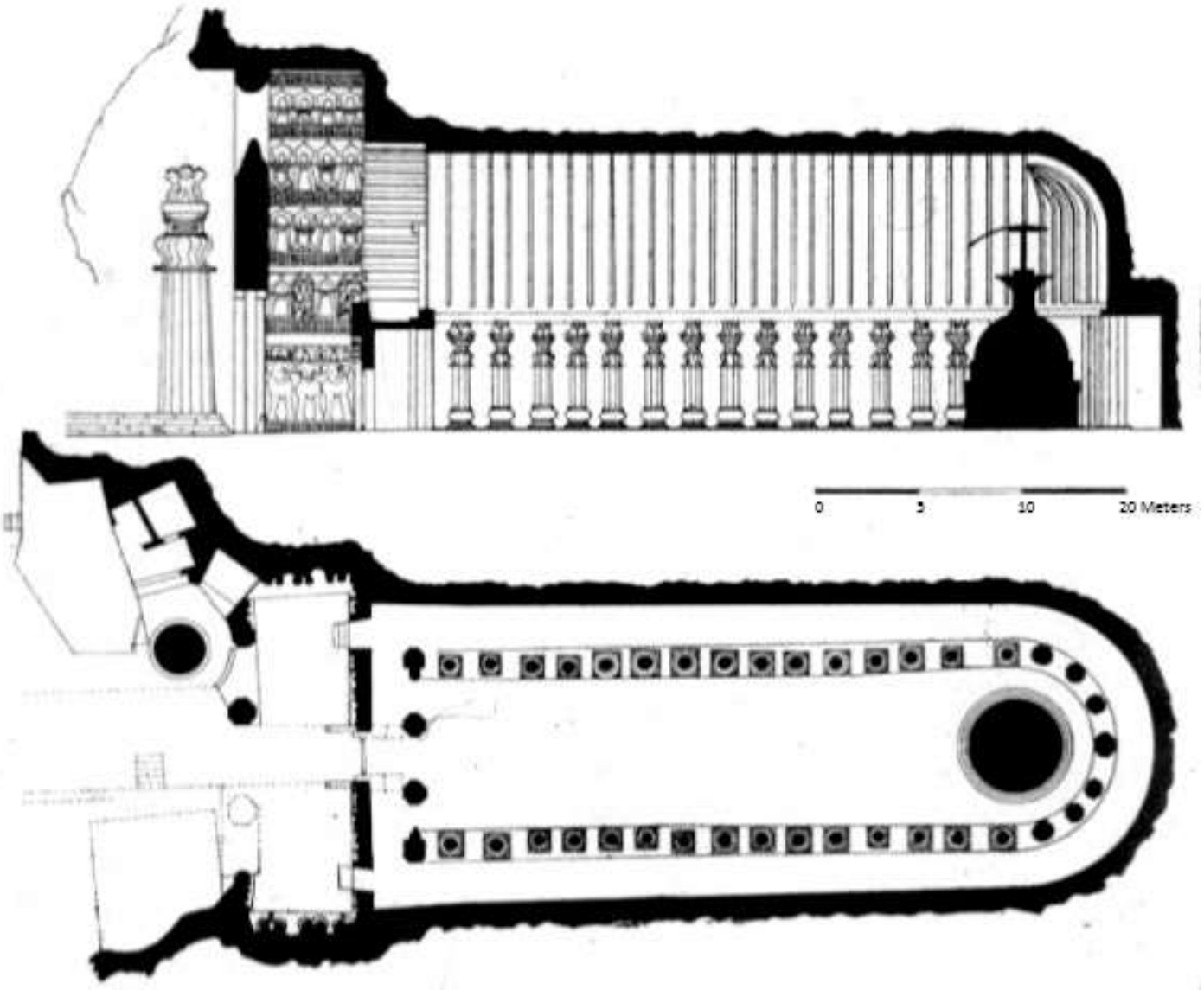


Fig. No. 07-C: Plan of Karle *chaitya*

The following *Kuśāna* pillar has a square base and its shaft is tapering and octagonal in shape. It is also topped with a bell and disk shaped abacus on which sit four lions. The beam is kept over inverted truncated pyramid. Its shape is slightly concave in the middle (Fig. No. 08). The day-to-day scene of ancient period are carved on this beam in low relief. It is made of red sandstone.



Fig. No. 08: *Toraṅa* of Kuśāna period (1st-2nd century A.D.)

A real door jamb of *Kuśāna* period found from *Mathura* and at present kept in State Museum, Lukcnow U.P. India has the rectangular design of *Mauryan* period (Fig. No. 09). It has two *śākhā* namely *Patra Śākhā* and *Mithun Śākhā*. Both the sides of *dwāraśākhā* are carved with domestic scenes framed between tapering hexagonal pillars having a rectangular base and topped with inverted bell. The beam is supporting a barrel vaulted roof decorated with *chandraśālā* motif. There is a low parapet in the shape of *Vedika* in front of this verandah like composition. At the bottom of this door jamb are depicted lotus flowers and lotus leaves. It appears that artists wanted to convey the fact that there is ground water below every structure. The lower end of every structure goes into this ground water. The water is exemplified by the aquatic plants. This feature is repeated later on also. Later on during

historical period, *Toraṅas* were erected at the beginning of *Mukha Chatusaki/ Ardhamandapa* or on *Jagati* near the staircase. These free standing *Toraṅas* and *Toraṅas* integrated into *Ardhamandapa* developed on different lines. The development of these will not be discussed here in details.



Fig. No. 09: Door jamb from Mathura U.P. (2nd century A.D.)

The door frame of late 4th century A.D. temple, namely Temple no. 17 of *Sanchi, Sanchi* town, district *Raisen* M.P. India is as follows (Fig. No. 10). It has *patra śākhā,* undecorated band and *stambha śākhā*. The *Lalātabimba* is simple. At the upper side, the door was flanked by some divine figures but at present, these have been broken and removed. These figures appear to be the continuation of *Śālabhanjikā* of *Toraṅa* of *Sanchi* and door of *Jankhat*. In this temple, there is no beam to be supported at the ends by the brackets but the old functional brackets carved with *Śālabhanjikā* have been adopted as decorative motif in the form of the figure of a deity.



Fig. No. 10: Temple no. 17, *Sanchi* (Late-4th century A.D.)

The 5th century A.D., Cave Temple no. 6 (Early 5th Century AD) of *Udayagiri,* district *Vidisha* M.P. India shows a *tri-śākhā* door jamb which has *patra-śākhā,* twisted thick rope, *danturikā* design and

stambha-śākhā. The *Lalātabimba* has been carved in the form of a beam and it is decorated with human heads and bell shaped depressions. It appears to be the beginning of *Tula* end motifs later used in temple architecture. Above this is a line of three *chandraśālā* motifs containing human figures. The pillar is rectangular at the base, octagonal in the middle and circular in the upper portion. It is topped with an octagonal abacus and four lions carved in a low relief (Fig. No. 11 & 12). The two female deities on the upper sides of the door have also been carved in low relief. Both of them stand on *Makaras*. They are surrounded by foliage. Probably at that time, the vehicles of the two rivers had not been fixed. The total height of the *stambha śākhā* is one-third of that of the door. The door is flanked by *Shaiva Dwārpālas*. The door-sill remained simple during this period also. There is an Early Gupta inscription dated 402 AD of the reign of *Chandragupta* II on the left side of the door.



Fig. No. 11: *Udayagiri* (Early-5th century A.D.)



Fig. No. 12: *Udayagiri* Temple (Early-5th century A.D.)

Another door of the cave at *Udayagiri* has the old T-shape, but it has four bands decorated with floral scrolls. It has slightly projecting *Lalātabimba* and simple door sill (Fig. No. 13).



Fig. No. 13: (Mid-5th century A.D.)

The following door frame (Fig. No. 14) has a *tri-śākhā* door. The three *śākhā* are *patra śākhā, Mithun śākhā* and *stambha śākhā*. The river goddesses have been depicted on both sides of the door at the level of door-lintel. *Patra śākhā* is extended to the lintel. The *Mithun śākhā* has been extended to the lintel. Above this, there is a false beam carved with floral scrolls. Above this, there is also a band depicting *samudra-manthan* scene. There are large sized *Dwārpālas* flanking the door. There are small-sized attendants carved at the base of *stambha śākhā* and *rupa śākhā*. They are standing atop miniature proto *bhāraputrakas*. The door-sill is simple.



Fig. No. 14: *Udayagiri* (Early 5th century A.D.)

The following door jamb (Fig. No. 15) from *Bhumra, Satna* (MP) is dated to Mid-5th Century AD. It has *tri-śākhā* door. These *śākhā* are as follows (moving from inside to outer side): Innermost *śākhā* consists of geometrical and floral designs, *rupa śākhā* and *srivriksha śākhā*. There is the image of lord Shiva in the middle of the lintel which is topped by a slightly large-sized *chaitya mukha* motif. The first *śākhā* extends to the lintel in the same form. The *rupa śākhā* takes the form of a band depicting *Mālādhārī Vidyādhāras* topped with a *chhadya* decorated with three *chandraśālā* motifs. *Srivriksha śākhā*

makes a "T" at the top. The *chhadya* is flanked by *Mithun* figures. The door is topped with *tula* ends which appeared for the first time in the design of the gates. The two river goddesses (Ganga on right side and Yamuna on left side) stand at the base of the door jambs and are attended by two female attendants, one male attendant and a flying figure. They are standing on their vehicles namely *Makara* and *Kurma*. The same design of the door is repeated in the door frame of the temple located in *Sakor,* district Damoh (MP).



Fig. No. 15: *Bhumra* (Mid-5th century A.D.)

This temple from *Nachna Kuthara* district *Panna* M.P. datable to a period late 5th century A.D. (after *Bhumra* and before *Deogarh*). It has four *śākhās* namely *patra śākhā, rūpa śākhā/ Mithun śākhā, stambha śākhā* and *danda śākhā*. *Stambha śākhā* supports vaulted roofed awnings, decorated with *chaitya* motifs. The first two *śākhās* continue in the *lalātabimba*. The divine couple graces the middle of *lalātabimba*. At the bottom of the door jamb, *Shaiva dwārapālas* are visible. *Dwārapālas* are accompanied by male and female attendants. The upper portion of the door is flanked by the two river goddesses. The *dand śākhā* runs around the door jamb and the lintel and makes a 'T' with very short horizontal arms. At the top of *Shaiva dwārapālas* is situated a man holding the lower end of *patra latā*.



Fig. 16-A: Temple from *Nachna Kuthara*

This door jamb (Fig. No. 16-B) from *Viṣnu* Temple, *Deogarh* (datable to beginning of 6th Century) is slightly developed from the temple at *Bhumra*. It has 5 *śākhā*, namely *patra-śākhā, puṣpa-śākhā, rupa-śākhā, stambha-śākhā* and *srivriksha śākhā*. The *Lalātabimba* has the image of Viṣnu in the middle. It is flanked by *Vāman* and *narsingha* and goddess *Lakśmī* is pressing his feet while sitting on the ground. The river goddesses are standing on both sides of the top end of *stambha-śākhā*, wherein Yamuna is standing on the left side mounted on her vehicle *Kurma* and Ganga is standing on the right side mounted on her vehicle *Makara*. But, in this door jamb, Ganga has been shown inside *srivriksha śākhā* making the shape of 'T'. The earlier *Śālabhanjikā* decorated the brackets supporting the horizontal beams of *Toraṅas.* By this time, river goddesses took the place of *Yakshis* and they became decorative motifs adopted in temple designs. At the bottom of the door stands Vaishnav male and female *Dwārpālas. Srivriksha-śākhā* is borne by dwarfs. *Patra śākhā* and *puṣpa śākhā* continue in *Lalātabimba*, *Mithun-śākhā* becomes a band of flying *vidyadharas*. The long *chhadya* decorated with *chaitya* motifs supported on very short pillars are shown resting on *stambha śākhā*, which is topped with a band decorated with key-hole niche, *Bhārputraka* and *kīrtīmukha* motifs. The small *chaitya* motifs have grotesque faces inside the circular window. Above the door lintel are shown *tula* ends and a band engraved with slanting grooves.



Fig. No. 16- B: *Viṣnu* Temple, *Deogarh* (Beginning of 6th century A.D.)

As shown in the following two figures, it appears that this whole motif showing the first storey of a temple resting on pillars, has been lifted from earlier temple architecture as shown in the following figure of Bodhgaya Temple where the barrel vaulted roof of first storey is shown resting on pillars

(Fig. No. 17 & 18). It has three *chaitya* windows which allow light to come into the shrine and also facilitated air circulation. The beginning of this trend is first visible in the door jamb of Udayagiri Temple No. 6, which has a row of three *chaitya mukhas* above something like *tula* ends decorated with human heads.



Fig. No. 17: *Chaitya* motif, *Bodhgaya* temple



Fig. No. 18: *Bodhi* tree, *Bodhgaya* temple

The *Laxman* Temple (Fig. No. 19) of *Sirpur* was built between c. 625-650 AD. It has 5 *śākhā,* namely *srivriksha śākhā, patra lata śākhā, Mithun-śākhā, srivriksha-śākhā* and *rupa śākhā* (showing different incarnations of Viṣnu. *Lalātabimba* is carved with *Sheshasai Viṣnu* flanked by Saraswati and *gandharvas*.

The band above the *Lalātabimba* shows *Krishna-Leela* scenes. At the bottom of *srivriksha and patra lata śākhā* are shown goose *and Makara* with tails in the shape of floral scrolls. Emphasizing the fact that there is ground water below every structure and that water is symbolized by water birds and aquatic plants, as was done in the *Kuśāna* door jamb found from Mathura. At the bottom of *rupa-śākhā* are shown *Vaishnav Dwārpālas.* It has simple door-sills.

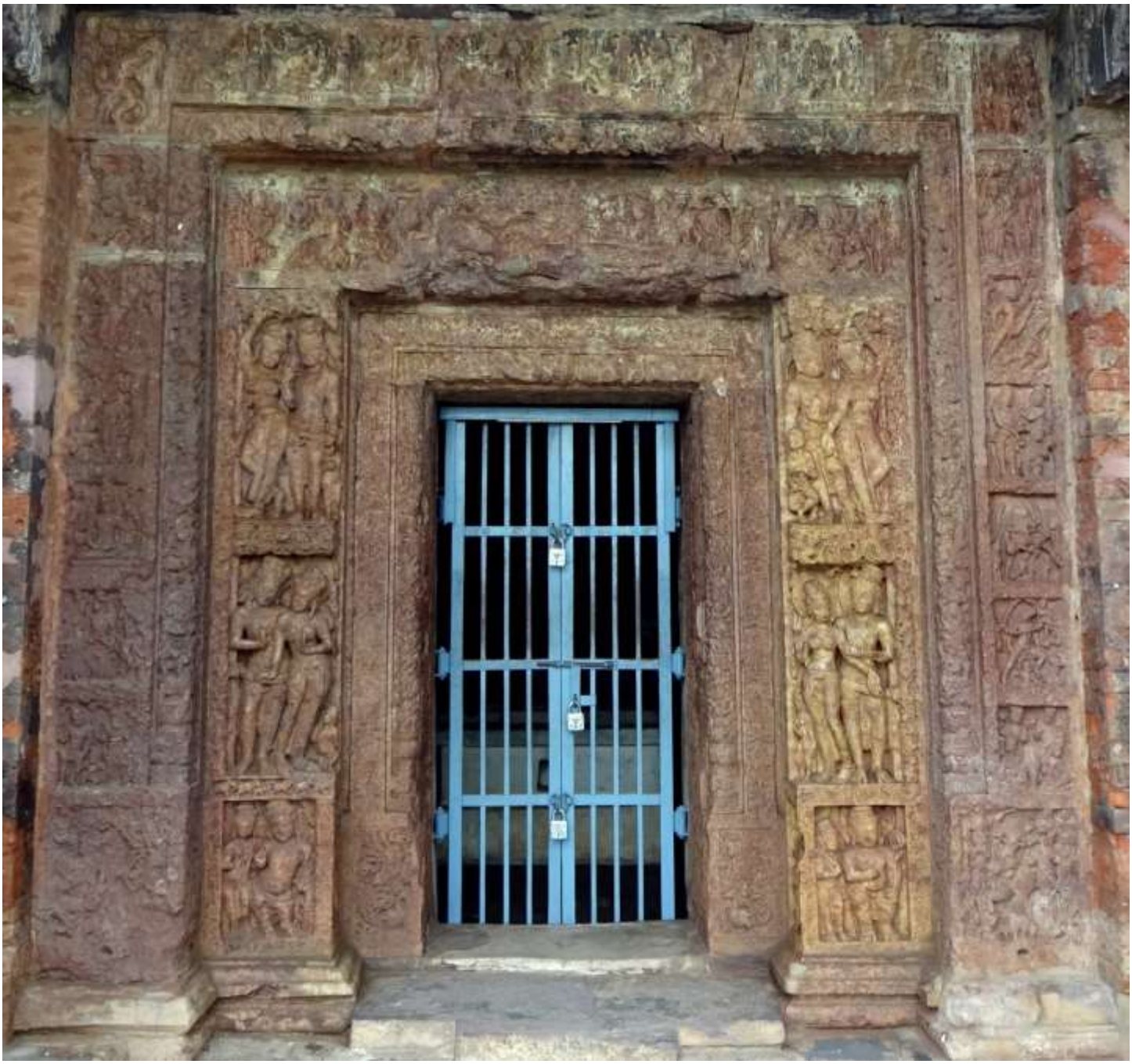


Fig. No. 19: Gate of Laxman temple, Sirpur (700 A.D.)

This temple at *Naresar* (Fig. No. 20) has four surviving *dwāraśākhā,* namely *patra śākhā, nāgaśākhā, stambha-śākhā and srivriksha-śākhā*. One of these *śākhā* has disappeared. In the temples of this period, *nāgaśākhā* appears for the first time. The upper ends of *nāgaśākhā* are held by a *Garuda* figure, who is depicted in the middle of the *Lalātabimba* instead of main deity of the temple. The main deity shifts to the *Suknas* attached to the *shikhar* of the temple. It appears that now the *śikharas* of the temples started getting taller. The river goddesses standing on their vehicles and accompanied by their attendants are depicted on the lower ends of the door jamb. *Patra-śākhā* and *nāgaśākhā* continue on the door jamb. The *stambha-śākhā* supports a band decorated with two full *chaitya* motifs topped with *bhumi amalak,* two half *chaitya* motifs supporting one full *chaitya* motif which in turn is supporting a simple band and *rathika* topped with *chaitya* motif and housing a key-hole niche. The pillars of this period are decorated with chain and bell motifs. The entrance is surmounted by a *chhadya* supported on large pillars and the *Tula* ends become part of the *śikhara.*



Fig. No. 20: Naresar, district *Morena*, M.P. (mid-8th century A.D.)

The temple at Amrol (Fig. No. 21 & 22) has four surviving *śākhā*, which are as follows: *patra-śākhā, puṣpa-śākhā, rupa/Mithun-śākhā and srivriksha-śākhā*. *Patra* and *Puṣpa śākhā* continue in *Lalātabimba* and terminate near the figure of *Garuda* carved in the middle. *Rupa-śākhā* continues in the lintel and is decorated with flying *vidyadharas*. *Rupa śākhā* supports *kapotika* resting on *Tula* ends, which in turn are

supporting two *chaitya mukhas* on elongated *chaitya mukha* carved in front of two *kapotikas* and a *bhumi-amalak* and three *kapotikas* carved with three tiers of *chaitya mukha* motifs. The *kapotikas* are supported by small *Tula* ends. Upper part of the "T" shaped door is flanked by the continuation of *srivriksha-śākhā*. The figure of the main deity is shifted to the *Shuknas* carved in *shikhar*.



Fig. No. 21: Amrol Temple (750 A.D.)



Fig. No. 22: Amrol temple (750 A.D.)

The door jamb of *Teli Ka Mandir* (750 AD) presents the features of Early *Pratihar* Temples (Fig. No. 23). It has five *dwāraśākhā* namely *patra-śākhā, nāgaśākhā, Mithun-śākhā, stambha-śākhā* and *patra lata (srivriksha)-śākhā*. *Patra-śākhā, nāgaśākhā and Mithun-śākhā* continue on the *Lalātabimba*, which is carved with figure of *Garuda*. *Stambha-śākhā* supports *kapotika* resting upon *Tula* ends, which in turns supports three *śikharas*. The side *śikharas* consist of *Madhya lata* decorated with a large *chandraśālā* resting upon half *chandraśālā*. *Śikhara* has five *bhumi-amalakas*. These are topped with *amalaka*, *beejpuraka* and finial. The middle *śikhara* has been destroyed. The river goddesses each attended by their three attendants stand at the bottom of the *dwāraśākhā*. A mutilated *Nāga* figure can also be seen above each of them.



Fig. No. 23: *Teli* temple, Gwalior (750 century A.D.)

The *Kurraiyabir* Temple, *Deogarh*, *Lalitpur*, U.P. belongs to Mid-8th Century (Fig. No. 24). It has five *dwāraśākhā* namely *srivriksha śākhā, puṣpa-śākhā, rupa/ gana śākhā, stambha-śākhā,* and *patra-śākhā. Srivriksha-śākhā, puṣpa-śākhā and rupa śākhā* continue on *Lalātabimba* which is carved with the figure of flying *Garuda* in human form. *Stambha-śākhā* extends the door lintel in the form of a band carved with floral scrolls. *Patra latā-śākhā* also extends similarly in the form of a band carved with floral scrolls. This band also has two standing human figures on both sides near the corners of the gate. The river goddesses stand at the base of the *dwāraśākhā*. They are accompanied by three attendants each and are standing on their vehicles. In this temple, there is a door-sill also which consists of a piece of stone decorated by a band of lotus petals at the bottom. The central portion is flanked by two lions at both sides. It appears that around mid-8th century, the concept of *udumbara* started taking shape.



Fig. No. 24: *Kuraiyabir* Temple, *Lalitpur*, U.P (Mid-8th century)

The door jamb of *Jarai Ka Math* (Fig. No. 25 & 26) has nine *śākhā*, namely *patra śākhā, puṣpa śākhā, rupa śākhā, gana śākhā, stambha śākhā, gana śākhā, pattikā* carved with chess-board pattern, *Mithun śākhā* and *gandharva śākhā. Patra śākhā* and *Puṣpa-śākhā* continue on the *Lalātabimba. Rupa śākhā* terminates into two deities and its continuation in *Lalātabimba* is carved with *navagrahas* and *Saptamatrikās* as we move from right to left. The next *pattikā* has six goddesses housed in *rathikas* and having four dancing *ganas* in between them. The *Lalātabimba* is carved with twelve armed goddess housed in a *rathika*. This is surmounted by a *pattikā* decorated with *Narayana* in the middle who is flanked by *Brahmā* on the right side and *Mahesh* on the left side. Several female and male attendants are also shown standing in rest of the space. *Stambha-śākhā* are surmounted by miniature temples. A standing divine figure is carved on *bhadra* portion of this miniature shrine. The fourth *pattikā* above *lalātabimba* depicts a lotus flower being worshipped by two *varahis* and two *Mālādhārī Vidyādhāras* are holding a garland below this. Rest of the *pattikā* is carved with *aṣtadikpālas*. The fifth *pattikā* consists of *gandharvas* housed in round-pillared *rathikas*.



Fig. No. 25: Jarai ka math (Late 9th century A.D.)



Fig. No. 26: Gate, Jarai ka math

Brahmā temple, *Khajuraho* is of 9th century A.D. (Fig. No. 27). The door jamb of this temple has seven plain *śākhā* and a four armed *Viṣnu* on the *Lalātabimba* flanked by *Brahmā* and *Śiva* sitting at the top of *Stambhaśākhā*. At the bottom of the door jamb stands river *Ganga* and *Yamuna* with their mounts and attendants. *Nagas* are also shown above their heads. Door sill is carved with half lotus flowers enclosed within flattish *chaitya* motifs.



Fig. No. 27: Brahma Temple, Khajuraho (925 A.D.)

Laxman temple was completed in 954 A.D. (Fig. No. 28). It has seven *dwāraśākhā* namely *patra lataśākhā, vyāla śākhā, gana śākhā, stambha śākhā* (decorated with different incarnations of *Viṣnu*), *rupa śākhā, gana śākhā, Padma śākhā (vahya śākhā)*. First two *śākhā* continue on the lintel which is carved with the figure of *Garuna*. Above this is situated a band carved with the figure of *Lakśmī* (above *Garuna*) flanked by *Brahmā* (on the right) & *Śiva* (on the left) and the intervening space with the images of female and male musicians. The top *pattikā* is decorated with *Navagrahas* housed in round pillared *rathikas*. The *navagraha pattikā* also has *Mithun* figures at the level of the *śikharas* of *rathikas*. At the bottom of the door jamb are carved river *Ganga* and *Yamuna* with their mounts and attendants. The *Chandraśilā*/ door sill is decorated with lotus petals flanked by niches containing musicians, dancers and four armed deities. They are located at the center & below the *stambha śākhā* and housed inside round pillared *rathikas* topped with *Udgamas*. The middle *pattikā* is decorated with musicians only. The lowest part of *Chandraśilā* is slightly projected and plain. It is flanked by blocks carved with floral scrolls.



Fig. No. 28: Laxman temple, 954 A.D.

Vishwanatha temple is dated to 1002 A.D. (Fig. No. 29). It has nine *śākhā* namely *patra lata śākhā, puṣpa śākhā, vyāla śākhā, gana śākhā, stambha śākhā (Mithun śākhā), gana śākhā, vyāla śākhā, Padma patra śākhā (vahya śākhā)* and plain *śākhā*. The first four *śākhā* continue on the *Lalātabimba* having the figure of *Ganeśa* in the middle. *Stambha śākhā* is topped with a *pattikā* decorated with the figure of *Śiva* sitting on his mount Bull inside a round pillared *rathika* topped with *Udugama* in the middle. Right above the *stambha śākhā* are located similar *rathikas* housing *Brahmā* (right) and *Viṣnu* (left) sitting mounted on their vehicles. Intervening space is carved with the standing figures of Gods, *Apsaras* and *vyālas*/ Warriors. The two river goddesses stand at the bottom of the door jamb. They are accompanied by their mounts and her attendants. *Chandraśilā* is decorated with *shankha,* lotus petals and stenciled floral scrolls. *Udumbara* is in the form of two tiers. The upper tier has *mandaraka* in the middle. It is carved with aquatic plants and *Udadhi Kumaras*. *Ganeśa* and *Lakśmī* are carved inside round pillared *rathikas* topped with *Udugama*. The space between *rathikas* and on both sides of these is decorated with musicians and dancers. Its lower tier is decorated with niches housing divine figures and stenciled floral scrolls.

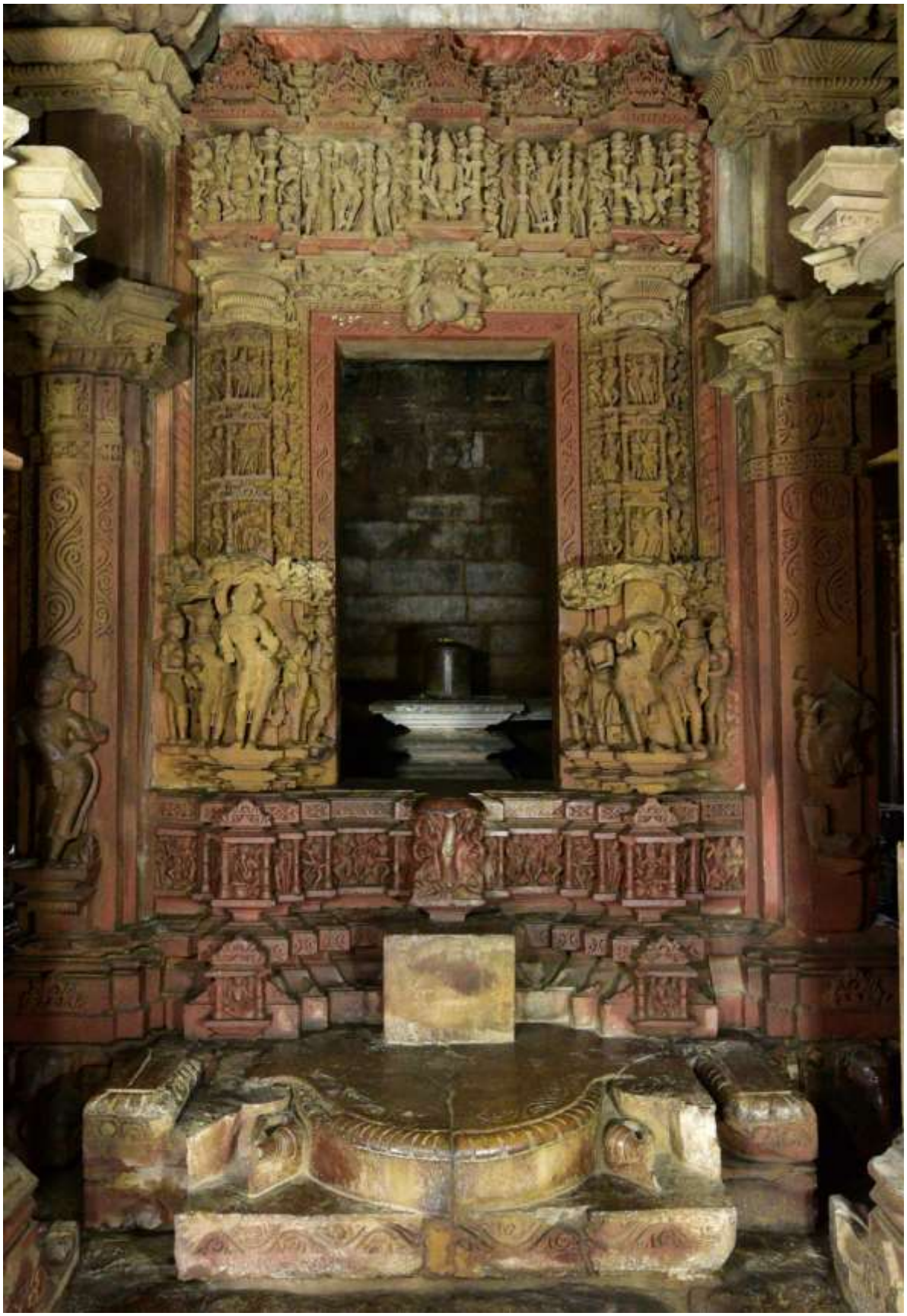


Fig. No. 29: *Vishwanath* temple, 1002 A.D.

Chitragupta temple is dated to early 11th century A.D. (Fig. No. 30). It is decorated with ten *śākhā* namely *patra śākhā, puṣpa śākhā, gana śākhā, vyāla śākhā, stambha/ Mithun śākhā, vyāla śākhā, gana śākhā, Padma patra śākhā, puṣpa patra śākhā* and *puṣpa śākhā*. First three *śākhā* continue on *Lalātabimba* which is carved with *Garuna* carrying the figure of four armed *Sūrya* in the center and two more figures of *Sūrya* above *dwāraśākhā*. *Sūrya* images are flanked by *vyālas*. The space between the images is decorated with six standing attendants of the deity. The deity and his attendants standing in round pillared *rathikas* topped with *Udgamas*. The last three *śākhā* namely *padma śākhā, puṣpa patra śākhā* and *puṣpa śākhā* continue on the *Lalātabimba*. The figures of river goddess *Ganga* and *Yamuna* accompanied by their mounts and attendants are carved at the bottom of the doorjamb. On their left and right stand two standing figures of *Nagas.* By this time, the location of *Nag* above the head of goddesses is changed to this new position. The door sill has *mandaraka* carved with lotus stack flanked by *Chauri* bearer, musicians, *Śiva-Pārvatī* with their attendants and *Mithun* figures. Lower tier of is decorated with a band carved with flowers.



Fig. No. 30: *Chitragupta* temple, 1023 A.D.

Jagdambi temple (Fig. No. 31) has ten *śākhā* namely *patra śākhā, puṣpa śākhā, gana śākhā, vyāla śākhā, stambha śākhā / Mithun śākhā, vyāla śākhā, gana śākhā, padma patra śākhā, patra puṣpa śākhā* and *puṣpa śākhā*. Three *śākhā* continue on the *Lalātabimba* carved with the figure of flying *Garuna*. Above this exists, a *pattikā* decorated with four armed *Viṣnu* standing inside round pillared *rathikas* topped with *Udgamas* and flanked with *vyālas*/ warriors and topped with *Udgamas*. The intervening space is decorated with similar *rathikas* showing standing male divinities flanked by female divinities. The river goddess are carved at the base of door jambs. They are accompanied by their male & female attendants. The figures of *Nagas* stand on the outermost site of the lower portion of the door jamb like *Chitragupta* temple. *Mandaraka* is carved with lotus stacks and lotus in the middle of *Udumbara*. Below *dwāraśākhā* are carved the figures of *Saraswatī* and *Lakśmī* sitting in pillared niches topped with *chhadya.* They are flanked by two female attendants. On their outer side are shown male deities with a female attendant housed in similar niche. The space between *mandaraka* and these deities & their attendants is decorated with musicians and dancers. *Chandraśilā* has been restored.



Fig. No. 31: *Jagdambi* Temple, 1023 A.D.

Kandariya Mahadeva temple can be dated to mid-11th century A.D. (Fig. No. 32). It has eleven *śākhā* namely *patra śākhā, puṣpa śākhā, rupa śākhā, vyāla śākhā, Mithun/ stambha śākhā, vyāla śākhā, rupa śākhā, patra śākhā, padma patra śākhā, puṣpa śākhā* and *mrinal śākhā*. First four *śākhā* continue on the *Lalātabimba* which is carved with the figure of *Garuna* at the bottom of *Lalātabimba*. Above this band exists four armed *Śiva* in sitting posture in the middle (above *garuna*), flanked by *Brahmā* and *Viṣnu* in similar posture. Intervening space is carved with standing deities. All of them are housed in round pillared *rathika* flanked with *vyāla/* warrior figures and topped with *kuta chhadyas* and *Udgamas*. *Padma patra śākhā* and *Mrinal śākhā* continue on *Lalātabimba*. *Udumbara* shows *Saraswatī* in the central niche. She is accompanied by female attendants. The central figure is flanked by figures of *Umā-Maheśa* accompanied with attendants. The intervening space is carved with devotees. On the outer most sides of this band are carved dancers and musicians. The divinities are housed within round pillared *rathikas* with two projections. The *rathikas* are topped with *udgamas* in the middle and a band decorated with floral motifs on projections other than middle projection. *Chandraśilā* is three stepped and is decorated with lotus petals and *shankha* motif. The middle step has been made in the form of simple square slab on the lower side. *Ganga* and *Yamuna* are carved at the bottom of the door jamb. They are accompanied by their attendants. On the farthest side, there stand *Nagas* slightly larger than the river goddesses.



Fig. No. 32: ***Kandariya Mahadeva,*** **Mid-11th century A.D.**

Vāman temple is dated to late 11th century A.D. (Fig. No. 33). It has got nine *śākhā* namely *patra śākhā, puṣpa śākhā, gana śākhā, Mithun śākhā, gana śākhā, puṣpa śākhā, patra śākhā, padma patra śākhā* and *mrinal śākhā*. First three *śākhā* continue to the *Lalātabimba* in horizontal position. A figure of flying *Garuna* is carved in the middle of this band. The *stambha śākhā* and two *rupa śākhā* support a band of standing deities housed in pillared niches topped with *kuta chhadyas* and *udgamas*. The central deity is flanked by *vyāla*/ warrior figures. The *rathika* situated above *Garuna* in the middle houses *Viṣnu* accompanied by divine attendants. Right and left *rathikas* house standing figures of *Brahmā* and *Śiva*. The intervening space is carved with divine attendants in standing posture. The last three *śākhā* namely *patra śākhā, padma patra śākhā* and *mrinal śākhā* continue in the *Lalātabimba* in horizontal position. The two river goddesses stand at the bottom of the door jambs with their attendants and *Nagas* on the outermost side. In place of *mandaraka* in the middle of *Udumbara,* there exists the figure of *Lakśmī (?)* housed in a niche having two projections. The projections other than the central one house the figures of standing attendants. The central niche is flanked by a band of dancers and musicians which has been moved towards outside are in their turn are flanked by standing divine couples. The niches below *stambha śākhā* house two goddesses flanked by their divine attendants and housed inside round pillared *rathikas* topped with *kapotika* and a band decorated with flower motifs. There is no *Chandraśilā* below *udumbara*. Lower portion of *udumbara* is decorated with stenciled floral scrolls.



Fig. No. 33: *Vāman* temple, late 11th century A.D.

Chaturbhuja temple is datable to beginning of 12th century A.D. (Fig. No. 34). It has nine *śākhā* namely *patra śākhā, puṣpa śākhā, gana śākhā, Mithun/ stambha śākhā, gana śākhā, puṣpa śākhā, puṣpa śākhā, padma patra śākhā* and *vyāla śākhā*. First three *śākhā* continue in *Lalātabimba* in horizontal position. *Dwāraśākhā* support a *pattikā* having *Viṣnu* sitting in *lalitasana*. He is flanked by *Brahmā* and *Mahesh*. All the divinities are housed in round pillared *rathikas* topped with *kuta chhadya* and *udgamas.* They are flanked by female attendants. The intervening space houses *navagrahas* and this band is topped with *kuta chhadyas* and *udgamas*. *Vyāla* and *padma patra śākhā* continues in the *Lalātabimba* in horizontal position. The two river goddesses are carved at the base of the door jamb. They are accompanied by their attendants and *Nagas*. Beyond *Nagas* on right and left stand two *Shaiva Dwārpālas. Udumbara* has a *mandaraka* in the middle. It is carved with lotus stacks. Its lotus portion is missing. The lotus stack is flanked by two standing females. This *mandaraka* and females are flanked by six *Udadhi Kumaras*. Below river goddesses, *udumbara* is decorated with *Gaja Vyāla* figures housed in round pillared niches. The top of the *mandaraka* is decorated with a band carved with flower motif. There exists a very thin heavily damaged *Chandraśilā*. It appears that multi-stepped *Chandraśilā* gradually went out of fashion and it became very thin.

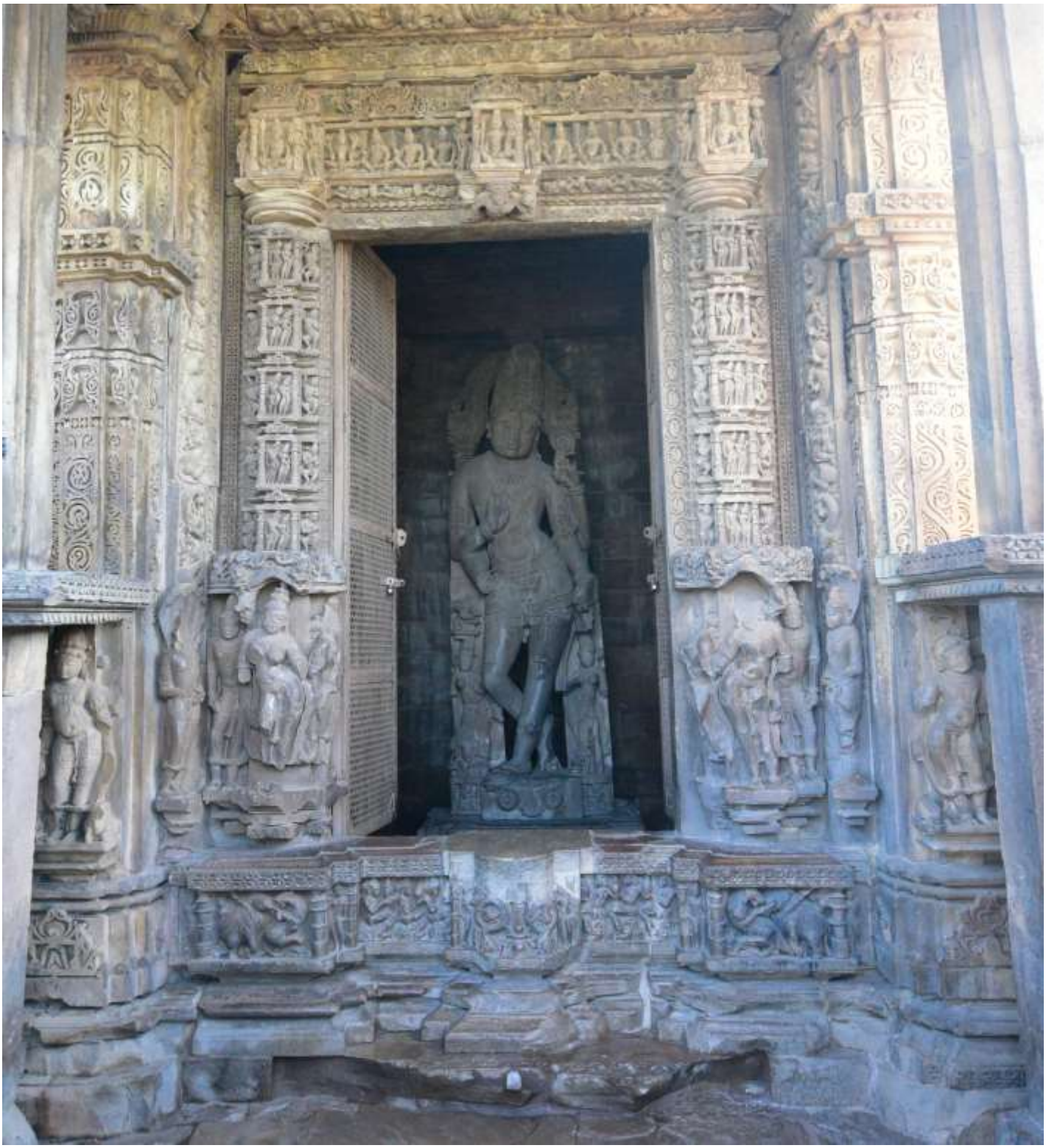


Fig. No. 34: *Chaturbhuja* Temple, 1125 A.D.

Kardameshwar Mahadeva temple, *Varanasi* U.P. (Fig. No. 35) belongs to late 12th-early 13th century A.D. It has seven *śākhā* namely *patra śākhā, puṣpa śākhā, stambha śākhā* (decorated with stenciled floral scrolls), *puṣpa śākhā, dand śākhā,* plain *pattikā* and *ratna/ Puṣpa śākhā*. The first three *śākhā* continue in

Lalātabimba. In place of *Garuna,* there is a round pendantive projection supporting the figure of some deity which has now been defaced. *Dand śākhā* continues in the *Lalātabimba* in horizontal position. The round pillared niches above *stambha śākhā* are topped with stylized *udgamas*. The figures of deity sitting inside the niches are in low relief and have been defaced. Topmost *pattikā* is carved with chess board pattern. It is flanked by pendulous brackets. River goddesses are shown standing at the bottom of the door jamb. They are accompanied by their attendants. The door sill is damaged and it appears to be a simple block of stone.

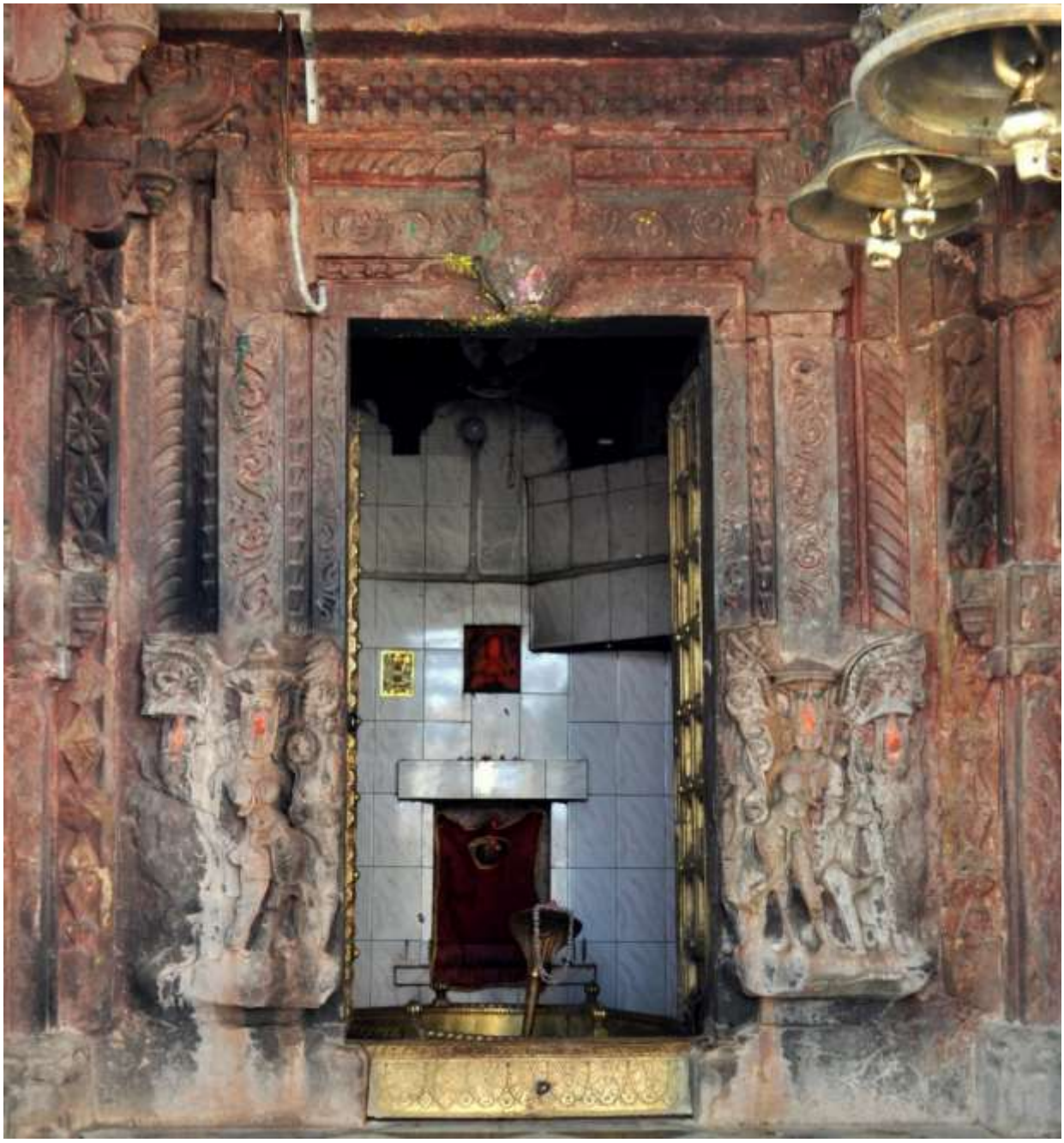


Fig. No. 35: *Kardameshwar Mahadeva* Temple, Varanasi (13th century A.D.)

1.2- The Evolution of the *Chaitya* motif in North and Central India: The *Chaitya* motif originated from the façade of shrines covered with barrel vaulted roofs. It appears that doors and windows were also covered by ribbed & horse shoe shaped structures, for example, the following view of a shrine in *Trāyastriṃsa* heaven from *Bharhut* M.P. housing the turban of *Buddha* shows a shrine attached to a three storey annexe (Fig. No. 36). The main shrine has a door way covered with ribbed horse shoe shaped roof. All the three storeys of annexe have doors covered with similar but small sized structures. In front of the shrine, four ladies are dancing with musicians playing their instruments on the left side. The later used *chaitya* motif originated from such door coverings/ window coverings.

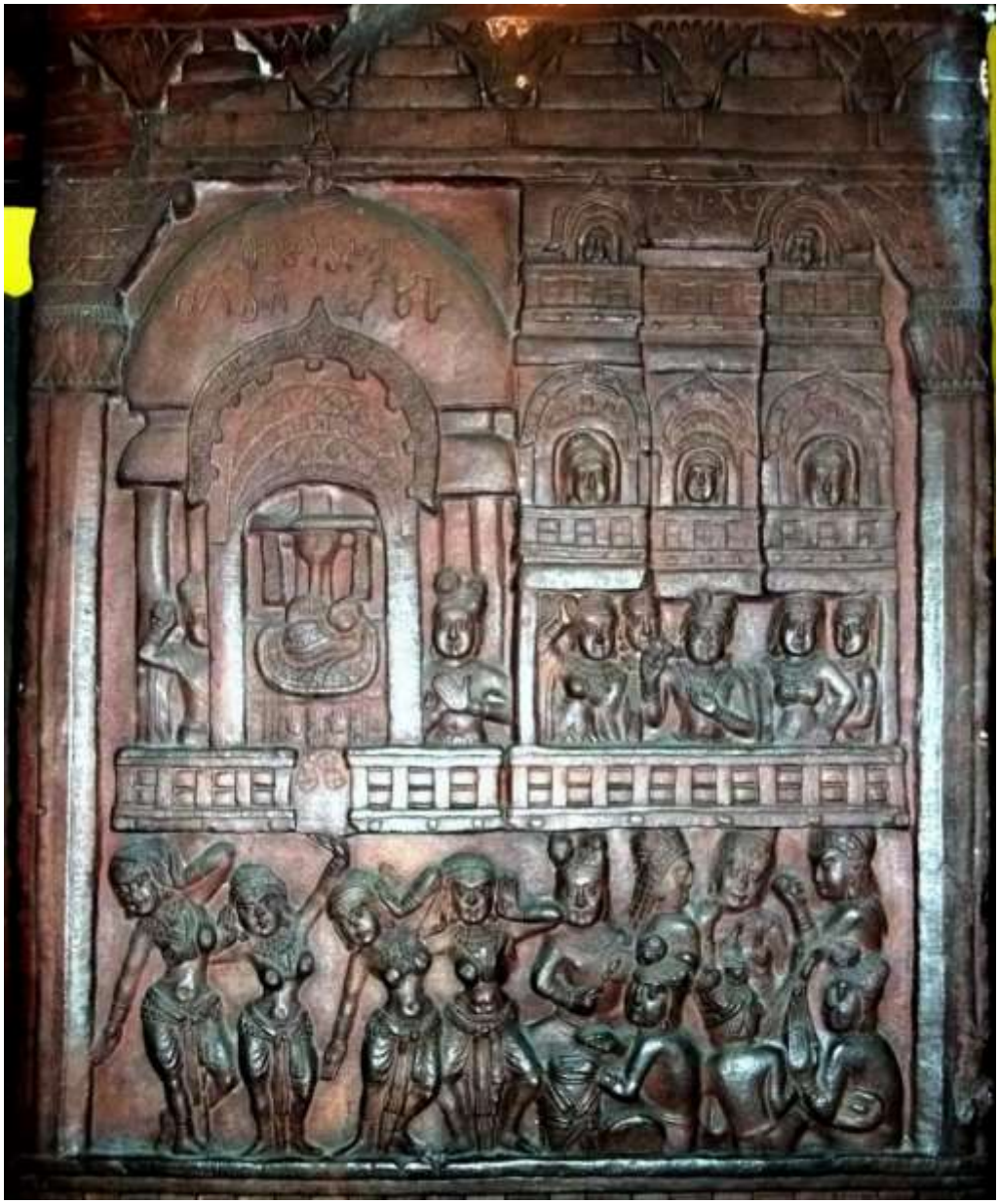


Fig. No. 36: *Bharhut*

The following panel from *Sanchi* shows the turban of *Buddha* being worshipped by Gods inside a temple (Fig. No. 37). This temple shows a two storeyed pillared shrine. The first floor has open space. The second storey has a rectangular gate topped with lattice covered with *chaitya* motif. The roof of this storey is barrel vaulted. There is a projected balcony having a parapet of *Vedika* variety. The two extreme ends have two umbrellas. Garlands or flags are attached to the pole bearing the umbrella. There is a *Vedika* type railing at the ground floor of this shrine. The gods can be seen filling the space inside and outside the shrine. Four female dancers and four musicians are putting up their show.



Fig. No. 37: ***Sanchi***

The following panel shows a two storey shrine (Fig. No. 38). Its first storey houses the wheel of *Dharma* symbolizing *Buddha* covered with an umbrella. The two garlands are hanging from umbrella and two garlands are hanging from the axel of the wheel. The first floor is a pillared open sighted hall having a parapet. Important persons riding four horses chariot, horse and elephants have come to visit the shrine. The second storey has two gates covered with ribbed vaulted roofs and having arcuate doors. The roof of first storey is barrel vaulted and has eight finials at the topmost ridge of the roof.



Fig. No. 38: ***Bharhut***

It appears that the following scene of *Bodhgaya* temple depicts a real shrine at this place (Fig. No. 39). This shrine also is two storeyed. The ground storey consist of a large open hall housing a diamond throne. Two *triratna* symbols are placed on this throne. One female and three males are in different stages of worshipping *Buddha* in the form of symbols. The first floor is covered with barrel vaulted roofs and the doors are covered with horse shoe shaped porticos. The doors are arcuate. The umbrellas decorated with garlands are visible through the gates. A *Vedika* type parapet covers the floor level of the first floor. Large sized divine figures are holding the ends of their *Uttariya* and fanning the tree. It is an obvious pre-cursor to the *Indra* and *Upendra* fanning *Tirthankaras* in *Jain* images. Winged *Mālādhārī Vidyādhāras* are hovering above the tree obviously a pre-cursor to the similar figures of later period. The tree has a double umbrella. It is obviously a pre-cursor to the *Trichatras* of *Jain* images and single *Chatras* of the images of different deities. The flags are tied to the branches of the tree. The *Bodhi* tree itself appears in *Jain* iconography as *Kaivalya Vriksha*. A pillar topped with inverted bell and an elephant stand on the left side of the shrine obviously a representation of *Ashokan* pillars at *Bodhgaya*. The elephant is holding a garland in his trunk. The pillars of the shrine are hexagonal. They are topped with inverted bell supporting a bracket which in turn carries the load of the first storey. The front view of the shrine shows two large horse shoe shaped porticos covering two doors and similar smaller openings on the right and left sides.



Fig. No. 39: ***Bharhut***

The following panel from *Sanchi* shows the scene of *Bodhgaya* shrine (Fig. No. 40-A). The ground floor is an open pillared space without walls having a diamond throne on which is placed a *triratna* symbol. The garlands are hanging from the roof of this wall. The first floor has three square doors covered with ribbed barrel vaulted porticos. The branches of *Bodhi* tree are coming out of the skylights at the top of the rectangular doors. The barrel vaulted roof covers the first storey. It is topped with four finials. There is an umbrella at the top of the tree from which two garlands are hanging down. The two winged *Mālādhārī Vidyādhāras* carrying the garland in one hand and a platter covered with flowers in the other hand are shown hovering above the tree. The tree is flanked by two fruiting trees on both sides. One of these appears to be *Lychee* tree.



Fig. No. 40-A: ***Sanchi***

The example of *Bhima Ratha* monolithic temple, district *Kanchepuram, Tamilnadu* dated to late 7th century A.D. although coming from deep south and made in stone, gives a fair idea of how the *chaitya* motif which was earlier a functional unit in the architecture of early religious shrines (Fig. no. 40-B), later on became a decorative feature which was repeated endlessly on the barrel vaulted roof and shades made at the roof level of every storey to prevent the rain water getting into the house through the openings. In this example, the architect has created a miniature storey by carving a barrel vaulted roof studded with *chaitya* motifs and being supported by pillars having square cross-sections. This storey has a railing in the front above the level of the lower barrel vaulted *chhadya*. The pillar supporting the false portico, later on merged into the door jambs when this type of architecture disappeared and people started making stone temples. Such barrel vaulted roofs can still be seen in the thatched huts of *Todas* of *Nilgiri* district *Ooty* Tamilnadu (Fig. 40-C). In these huts, the barrel vaulted roof is directly resting on the ground level.



Fig. No. 40-B: ***Bhima Ratha, Kancheepuram, Tamil Nadu*** **India**



Fig. No. 40-C: ***Toda Hut, Ooty, Tamil Nadu*** **India**

This railing pillar from *Kaushambi* U.P. now kept at State Museum, Lucknow U.P. shows the roof and door of a shrine (Fig. No. 41). The door is covered with horse shoe shaped portico supported on rafters. The door has arch shape. The garland hanging from the roof indicates that it is a religious shrine. The figure of a lady is carved in front of the shrine.



Fig. No. 41: *Kaushambi* (1st century B.C.)

This piece of railing from *Kannauj* is from 1st century A.D. (Fig. No. 42). The pillar shows the figure of standing *Buddha* (Accessesion no. 79/193). To his right is carved the figure of a devotee. The stylized *chaitya* motifs cover both the figure. It appears that by *Kuśāna* period, *chaitya* motif was adopted as a popular decorative motif having some sort of religious connotation.



Fig. No. 42: Piece of a railing from Kannauj (1st-2nd century A.D.)

This pillar from 2nd century A.D. is carved with the figure of a female carrying a water vessel on her head (Fig. No. 43 & 44). At the top of this pillar is shown a lady peeping from the *chaitya* motif shaped window. There is a railing in front of the lady. It appears that this window was a sort of a full stop for the scenes being depicted below.



Fig. No. 43: Pillar from 2nd century kept at Lucknow museum



Fig. No. 44: Par of the pillar from 2nd century kept at Lucknow museum

This *chaitya* motif found from *Bhumra, Satna* M.P. now kept in Allahabad Museum, Allahabad U.P. shows decorative *chaitya* motif housing *Mahisāsuramardinī* (Fig. No. 45). The *chaitya* motif has ears which are raised upward. The window is outlined with a band of cylindrical beads. Above the ears, two small wing like protrusions. A flower is hanging from the top. At the base, the motif is turned upward.



Fig. No. 45: *Bhumra* (late 5th century A.D.), Allahabad Museum

There is another *chaitya* motif found from *Bhumra, Satna* M.P. now kept in Allahabad Museum, Allahabad U.P. (Fig. No. 46). It is similar to the above *chaitya* window except the fact that the inside space has been carved with floral scrolls and flowers are also carved between the ears and the body.



Fig. No. 46: *Bhumra* (late 5th century A.D.), Allahabad Museum

The following *chaitya* motif belongs to a temple of early 6th century A.D. from *Deogarh* U.P. It is almost similar to *Bhumra* type but between the ears and the window, one can see two conch shells carved (Fig. No. 47). The ends of the base line of *chaitya* motif terminate into floral scrolls instead of angular raised ones.



Fig. No. 47: *Chaitya* motif (early 6th century) Deogarh Museum

The 8th century *Shuknasa* from temple at *Naresar,* M.P. shows beaded outline of *chaitya* window (Fig. No. 48). The central portion is circular and houses the main deity namely *Lakuliśa*. The ears are elongated in the vertical direction. The ears terminate into depression. The ends of the base of the *chaitya* window terminate into huge floral scrolls. The top end also blooms into floral scrolls and the scrolls from there extend up to the ears. The outline of the window is marked by *pattikā* consisting of simple and beaded bands.



Fig. No. 48: *Chaitya* motif, *Naresar* (mid-8th century A.D.)

This *Shuknasa* at *Jarai ka Math* has a typical *chaitya* window having the central horse shoe shaped portion becoming depressed in the middle at the top (Fig. No. 49 & 50). The ears are extended horizontally. The base of the *chaitya* motif becomes very short and terminates into huge mass of foliage. The space between the ears and the horse shoe become very narrow and a human figure can be seen sitting on the ears.



Fig. No. 49: *Shuknasa* of *Jarai ka Math* (mid-9th century A.D.)



Fig. No. 50: *Shuknasa* of *Jarai ka Math* (mid-9th century A.D.)

This *Shuknasa* from late 9th century A.D. from *Deogarh* temple shows *chaitya* motif with horizontally extended ears having two conch shells standing in inverted positions above ears (Fig. No. 51). The horizontal base line of *chaitya* window terminates into mass of foliage. The window is outlined by a *pattikā* consisting of a simple band and string of rounded beads. There is almost no space between the inner *pattikā* and outer *pattikā*. There is a foliage emanating from the top of the window. The window has a trifoliated top.



Fig. No. 51: *Shantinatha* temple, *Deogarh* (late 9th century)

This *chaitya* motif design from *Laxman* temple, *Khajuraho* M.P. becomes highly stylized by mid-10th century A.D. (Fig. No. 52). The shape of *chaitya* motif is stenciled on a flat slab.



Fig. No. 52: *Laxman* temple, *Khajuraho* (mid-10th century A.D.)

This *chaitya* motif design from *Chaturbhuja* temple, *Khajuraho* M.P. from the beginning of 12th century A.D. shows a *chaitya* motif which is elongated in the vertical direction (Fig. No. 53). Its ears are plain on outside and have many curves on inside towards the window. The window itself is shown by two openings.



Fig. No. 53: *Chaturbhuja* temple, *Khajuraho* (early 12th century A.D.)

1.3- *Buddhist* Antiquities from *Kannauj*: Following is the description of *Buddhist* antiquities recovered from *Kannauj.* These fall in the time span of 1st century B.C. to 9th century A.D.

The inscription on *Jankhat* doorjamb of 1st century B.C., has two *triratna* symbols flanking a lotus. Below this picture is a seven line inscription (Fig. No. 54). Its translation is as follows: "In the year 10 (and) 3 of *Swami Virsena,* in the fortnight 4 of the hot season, on the day 8 . . . . . ". The person who got this inscribed was *Buddhist* as two *triratnas* flanking a single lotus indicate. Here the two *triratna* symbols stand for *Buddha, Dhamma* and *Sangha*. The lotus in between stands for *Buddha*. It appears that the door jamb belonged to a Buddhist shrine. Another piece of railing made of spotted red sandstone from *Mathura* shows standing *Buddha* covered by a *chaitya mukha* and a devotee on right side pillar indicates that it belongs to a Buddhist shrine of 1st-2nd century A.D. (Accessesion no. 79/193) (Fig. No. 55).



Fig. No. 54: *Jankhat* inscription



Fig. No. 55: Railing of a shrine depicting *Buddha* (1st-2nd century A.D.)

Another image of preaching *Buddha* (Accessesion no. 179) belonging to 2nd century A.D. was also discovered in *Kannauj*. It shows him sitting between two octagonal pillars having inverted bell, circular disk supporting a short bracket (Fig. No. 56).



Fig. No. 56: Preaching *Buddha,* 2nd century A.D.

Another headless image of *Buddha* (4th-5th century A.D.) (Accessesion no. 11) from *Kannauj* shows *Buddha* sitting in *dhyana mudra* on a carpet (Fig. No. 57). Below him is depicted a scene in which is preaching his disciples.



Fig. No. 57: Headless image of *Buddha,* 4th-5th century A.D.

Another image of *Buddha* head of 5th century A.D. (Accessesion no. 387) from *Kannauj* is shown below (Fig. No. 58). There are curly hair on his head. The eyebrows are made in the shape of a bow. The eyes are half closed and the eyelids become convex near pupil. The lips are thick. The lower lip is thicker than the upper lip.



Fig. No. 58: *Buddha* head, 5th century

This image is the middle part of the standing figure of *Buddha* (Accessesion no. 75/195) now kept in *Kannauj* museum (Fig. No. 59). It shows folds of *chivar* carved in realistic manner and slightly thicker. The cloth doesn't cling to the body very closely as happens in mature *Gupta* art.



Fig. No. 59: 5th century

Another middle portion of the *Buddha* (Accessesion no. 87) image kept in *Kannauj* museum shows folds of *chivar* but the folds are very fine and the cloth is almost transparent. In the art of this period, the cloth reveals the real shape of the body (Fig. No. 60).



Fig. No. 60: 5th-6th century

Another image of *Buddha* in standing *mudra* belongs to 8th-9th century A.D. (Accessesion no. 198) (Fig. No. 61). It is inscribed with *Buddhist* formula *"ye dhamma hetu prabhavo hetu tesam tathagato havada tesam cha yonirodha evam va di mahasramaṇah"*. The cloth worn by *Buddha* doesn't show any folds. The cloth very closely fits the body. The lower portion of *chivar* has very heavy folds.



Fig. No. 61: 8th-9th century A.D.

Thirty eight *Buddhist* sealings bearing above mentioned *Buddhist* formula had been recovered from different places from *Kannauj* U.P. These are datable to 9th century A.D. The details regarding these have already being published in the first part of this narrative. It appears that *Buddhism* started picking up popularity in 9th century A.D. This upward trend must have started with the coming of *Harshavardhana*. It appears that with the end of *Gurjar-Pratihar* rule and the regimentation of the society on strong *Varna*/ caste lines, *Buddhism* starting losing popularity in this part of the country. The transformation of ruling tribes/ castes into blue-blooded *Rajputs* marks the beginning of hardening of caste system. It appears that the hardening continued till the time, all the *Hindu* rulers lost to invading *Afghan* tribes. These North-western tribes had recently moved from *Buddhism*/ *Shaivism*/ *Shaktism*/ *Vaishanavism* to *Islam*.

1.4- The Evolution of iconography in *Kannauj*: In 1st century B.C., the human figures are sturdy and are carved on stones (Fig. No. 62). The back side is flat. The ladies wear arm full of bangles sandwiched between two thick *Kara* (bracelet). The fold of the clothes are thick. The ladies wear *Kamarband* (waist band) above *Kardhanī* (waist belt) made of large sized pieces of semi-precious stones. The folds are visible only on that part of cloth which is hanging from the body. The ladies also wear *Uttariya* which is generally held by both hands. The thick folds of this *Uttariya* are carved in details. The *yakshi* shown in the following doorjamb wears *ekāvalī,* a garland and a thick *Shash*. In *Bharhut* sculptures, the depth of carving is more flattish than this example. The ladies also wear a series of *ekāvalīs*. In *Sanchi* sculptures, the men wear a broad flattish *har* made of many strings of small beads.



Fig. No. 62: *Dwāraśākhā* from *Jankhat* (1st century B.C.)

This sculpture is of 1st century A.D. (Accessesion no. 187). Its back is flat but carvings has more depth than *Jankhat* example (Fig. No. 63). The girl is wearing a very broad waist belt made of multiple strings of very large stones. The thickness of cloth visible on the right side increases and the folds become very prominent. The folds/ patterns on the cloth covering the body are also depicted. The waist of the female is very narrow and the folds on the stomach are also shown.

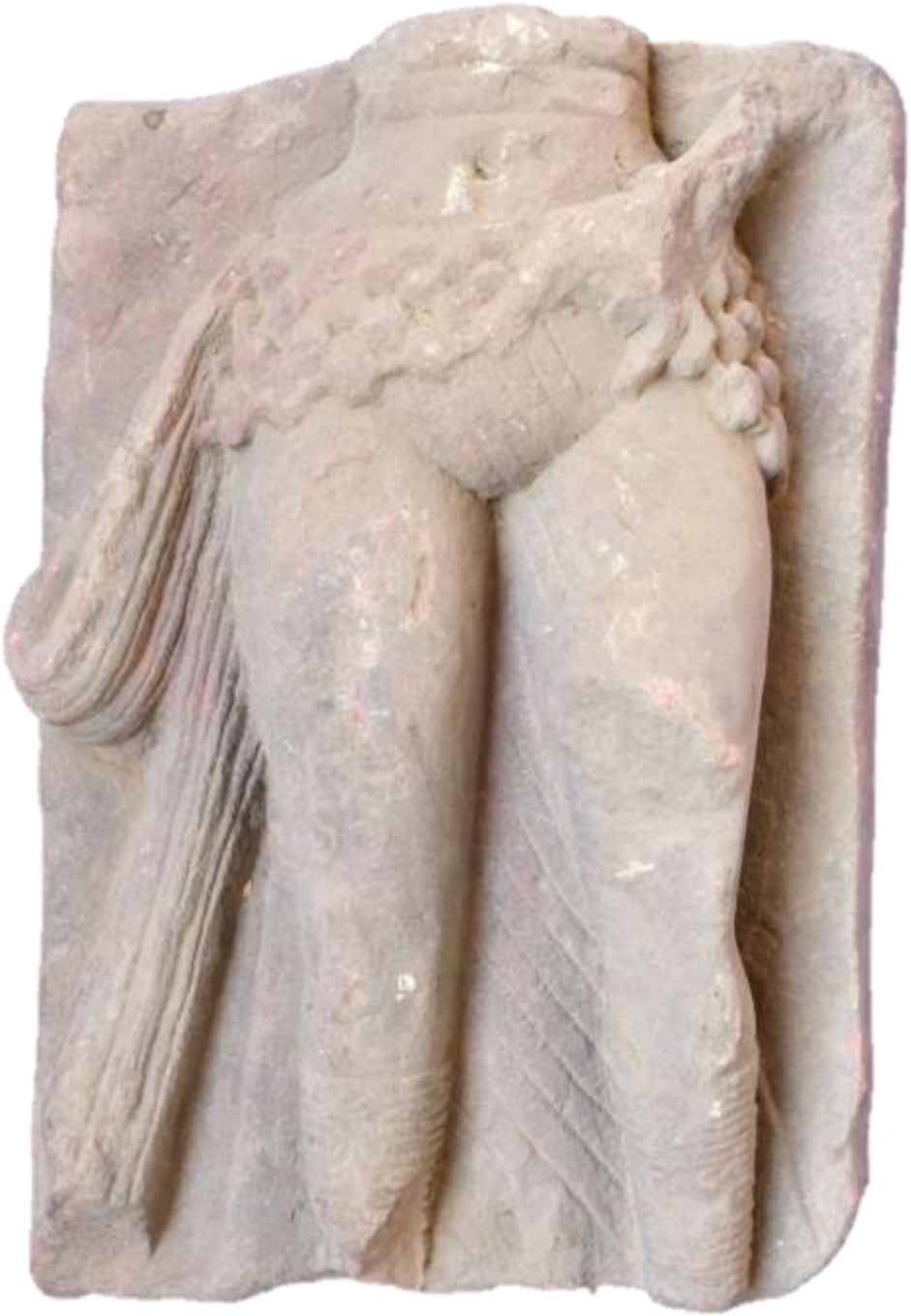


Fig. No. 63: 1st century A.D.

The middle portion of the lady is of 2nd century A.D. (Fig. No. 64). She is wearing a broad waist belt. It is made of horizontal bands of large stones and flat metallic clasp in the middle. Above this waist band, she had tied a thin waist band/ *Shash* (*Kamarband*). The ends of this waist band don't have any folds. This waist band appears to be made of very thick cloth. The waist and navel have been carved in a more naturalistic way.



Fig. No. 64-A: 2nd century A.D.

The stone sculpture of *Buddha* found from *Kannauj* U.P. is a typical example of early *Kuśāna* sculpture (Fig. 64-B). Body of *Buddha* is sturdy and arm makes less than 45^0 angle with the horizontal line. The four arm is almost vertical.



Fig. No. 64-B: Fragment of a Male

This fragment of the sculpture shows *Buddha* still having the characteristics of sturdy figures of *Kuśāna* period (Fig. 65-A). His gap between his body and the arm is more. This indicates its age between 3rd-4th century A.D.



Fig. No. 65-A: ***Buddha***

Another image of *Buddha* head of 5th century A.D. from *Kannauj* is shown below (Fig. No. 65). There are curly hair on his head. The eyebrows are made in the shape of a bow. The eyes are half closed and the eyelids become convex near pupil. The lips are thick. The lower lip is thicker than the upper lip.



Fig. No. 65-B: *Buddha* head (5th century A.D.)

These two pieces of door jamb kept in *Kannauj* museum are typical example of 5th century A.D. architecture (Fig. No. 66). The hair of male figures fall down on both sides in multiple tiers. The ear ornaments become asymmetrical. The necklace in the beginning is in the form of *ekāvalī* and later it becomes flat and elaborately carved. In the beginning, the human figures are proportionate and of

strong built. The *keyura* worn by them is in the shape of helix having one round or two rounds. The earlier thick waist band is replaced by a thin belt worn around navel. The folds are prominently made on the cloth covering the body. The twisted & rounded portions of the cloth are shown prominently.



Fig. No. 66: Pieces of a door jamb (5th century A.D.)

The following sculpture of 6th-7th century A.D. is of *Viṣnu* (Accessesion no. 69) (Fig. No. 67). He is wearing a truncated pyramidal cap. The cap is elaborately carved and studded with jewels. The hair fall from his head in the form of different tiers of the coils. The *keyura* remains shaped like a helix. The

har worn by the deity becomes thick. The ear ornaments remain very large and asymmetrical. The navel becomes small and the body is not as sturdy as before.



Fig. No. 67: 6th-7th century A.D. *Viṣnu*

The following 7th-8th century A.D. sculpture of *Kārtikeya* (Accessesion no. 21) shows flattish and simple *keyuras* (Fig. No. 68). The *graiveyaka* becomes broad and flat. Its middle portion becomes more

elaborate. The folds of clothes are flattish and elaborate. Navel is shallow. The thin waist belt goes much below. The upper end of *dhoti* tied around the waist. The body is proportionate.



Fig. No. 68: *Kārtikeya* (7th-8th century A.D.)

The following piece of 8th-9th century A.D. *Saptamatrikā* panel now kept in *Kannauj* museum is a typical example of *Pratihar* art (Fig. No. 69). The deities wear truncated pyramidal crowns. The crown fits well on the hair shown below. The ear ornaments become asymmetrical. The *graiveyaka* becomes thin. Sometimes it is made in the form of twisted strings of beads and sometimes it is in the form of a necklace having a large jewel fixed in the middle. *Stanahār* hanging up to the waist is also introduced during this period. The waist band similarly becomes thin. Usually the middle strip is flanked by two strings of beads and there is a clasp in the middle which is set with a very large stone. Single tier *Katijālakas* of two varieties are found. One is fixed to the belt and small bells are attached to it. The other variety consist of a chain attached to the central portion is used to make loops above thighs and taken from inside the belt, it is allowed to hang free on both the thighs. The *keyura* of this period are simple flat bands having an elaborately carved triangular portion in the front. The bracelets of this period are studded with round gems. The stomach is shapely and navel is shallow. The folds between the navel and the breasts are shown prominently. The printed design on *Saris* are shown on the sculpture which are mostly parallel lines on the cloth. The fold between the legs becomes thin and the deities are shown wearing anklets. The folds of the clothes become very shallow.



Fig. No. 69: *Saptamatrikā* panel (8th-9th century A.D.)

This fragment from the image of a lady is of 8th-9th century A.D. (Accessesion no. 194) (Fig. No. 70). The waist belt shows vertical pendantive and loop in front of both the thighs. A large square jewel is set in the middle of the waist belt. A fold of cloth probably *Uttariya* is thrown across the thighs. It is flattish but slightly more-thicker than the images of this period. The navel is very shallow and small.



Fig. No. 70: Fragment of the image of a lady (8th-9th century A.D.)

This *Kalyansundar* panel showing the marriage of *Śiva* and *Pārvatī* is a typical piece of *Pratihar* art. It is at present kept in the house of *Harinarayan Tandon mohalla Farsha, Kannauj* City U.P. (Fig. No. 71). Sculptures in this phase also show the continuation of features in *Saptamatrikā* panel. But in this period, the beauty of mature *Gupta* period is fading out although the ornaments are flattish and studded with jewels. The *Keyura* is a helix with two rounds and a jewel fixed in the front side. The other type of *keyura* with a large jewel fixed in the front side of the band also continues. The body is proportionate but loses the dynamic quality of mature *Gupta* period. The waist belt worn over lower garment has three strings and the single looped *Katijālaka* consisting of a beaded string and a string of small bells. Another long string hangs out from the waist belt in front of thighs. The *graiveyaka* are flattish and studded with large stones. The goddess is also wearing a long *Stanahār*. *Uttariya* of *Pārvatī* has not been carved well. The goddess wears an anklet with a large stone studded in front. The folds of the lower garment of *Śiva* are carved in very low relief.

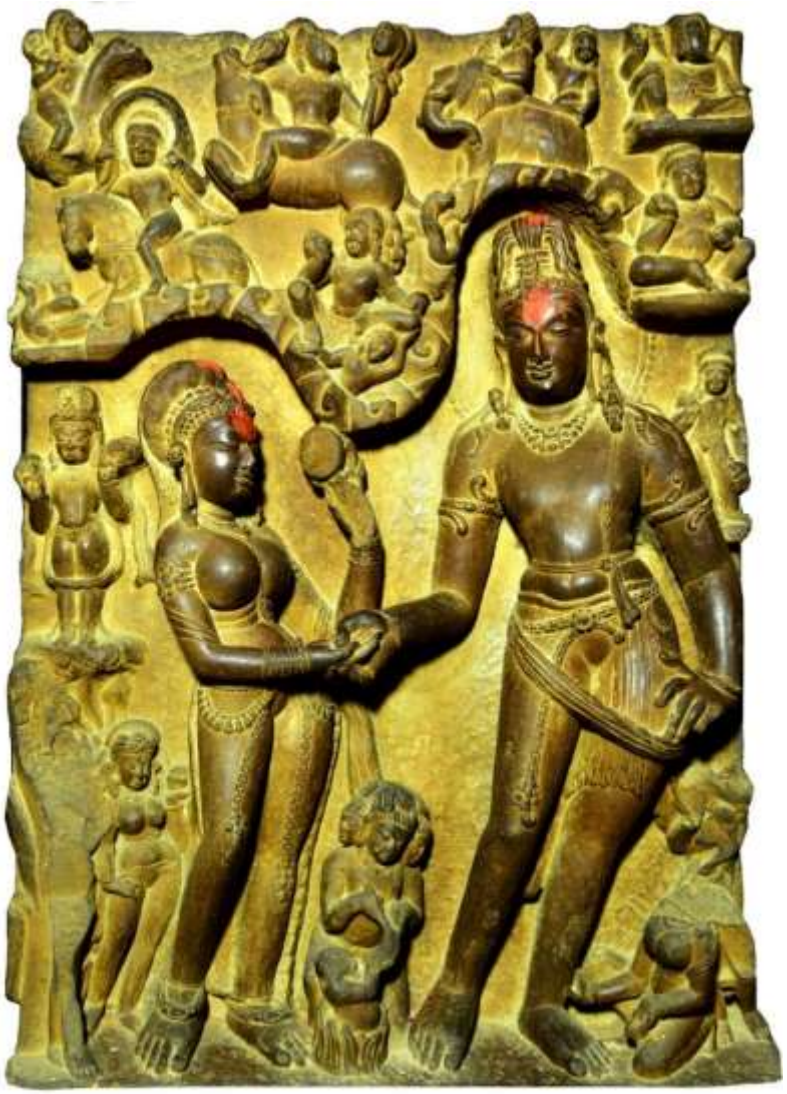


Fig. No. 71: *Kalyansundar* figure (8th-9th century A.D.)

This image of *Ganeśa* is of the same period and has similar features (Fig. No. 72). It is also kept in the house of *Harinarayan Tandon mohalla Farsha, Kannauj* City U.P. The short lower garment made of skin of some animal is worn by *Ganeśa*. The head of *Ganeśa* is long and imitates that of real elephant. *Keyura* is a band having studded with rounded gems and a large square gem in the front.



Fig. No. 72: Dancing *Ganeśa* (8th-9th century A.D.)

This is an 8th-9th century A.D. *Varāha* image (Fig. No. 73). It is at present kept in a small temple in *Mubarakpur Tila, Kannauj* City U.P. It shows a flat *Kayabandha* above the navel of the boar. The lower garment is tied below the navel and the short free end is visible. It is carved in low relief. A fold of twisted clothes passes in front of his pelvic area. He is wearing a *keyura* in the shape of a band studded with a large jewel in front. He is wearing a bracelet of round cross-section.



Fig. No. 73: *Varāha* figure (8th-9th century A.D.)

This sculpture is of 9th century A.D. showing *Śivalinga* carved with the standing images of *Śiva, Sūrya, Brahmā* and *Viṣnu* on all four sides presently kept in the factory of *Ram Kapur, Tirwa* crossing G. T. Road, *Kannauj* (Fig. No. 74-A).



Fig. 74-A: ***Śivalinga*** **carved with the standing images of** *Śiva,* ***Sūrya,*** *Brahmā* **and** ***Viṣnu*** **on all four sides (9th century A.D.)**

This late 9th century A.D. image of *Sūrya* shows the god wearing stylized armor (Fig. No. 74-B). It has been made in the form of a thin strip placed in front of the body. The necklace is broad flattish and elaborately carved. The waist belt has two loops and a pendantive. The string is in the form of three simple bands. The clothes below the waist belt are very flatly carved. The cloth worn by the deity clings to the body and is shown with very shallow carving.



Fig. No. 74-B: Image of *Sūrya* (late 9th century A.D.)

This is the 10th century image of *Viśwarūpa* (Fig. No. 75). This image is placed in *Ram Laxman* temple, *Qutalupur, Kannauj* City U.P. In this image, he wears a closely fitting lower garment above which a waist belt has been tied. The waist belt is very thin. He wears a sacred thread in the form of three stringed belt. His *graiveyaka* is very flat but highly ornamented. He wears similar ear ornaments in both the ears. His *keyuras* are helix having two rounds. An ornamented string hangs in front of the folds of clothes between the legs. Folds of clothes are carved in very low relief and the ends of the clothes are shown by a ridge between two incised lines.



Fig. No. 75: *Viśwarūpa* Image (10th century A.D.)

The following image belongs to the same period and having same features (Fig. No. 76). This image is also placed in *Ram Laxman* temple, *Qutalupur, Kannauj* City U.P.



Fig. No. 76: *Viśwarūpa* Image (10th century A.D.)

The following image of owl riding *Chāmundā* of 10th century A.D. shows a *graiveyaka* with a string of jewels hanging from it and a *Stanahār* (Fig. No. 77). She is wearing two thick bracelets and a third bracelet made of chain. She is shown wearing a waist belt made of three strings of beads and a single looped *Katijalaka* hanging from it. Her lower garment is shown with very shallow carving. She is wearing three stringed anklets. The navel is deep.



Fig. No. 77: *Chāmundā*, 10th century A.D.

This is a fragment of the image of *Viṣnu* being carried by flying *Garuna* mid-11th century A.D. (Fig. No. 78). It bears an inscription of the date of *samvat* 1077. The waist belt consists of stylized bells. He wears double *Katijalaka* and a single string in front of every thigh. The fold and design on clothes is not visible. The lower garment can't be seen. The ear ornament is in the form of a large disk. He wears bracelets divided in bold sections. He wears a broad *Graiveyaka* with bells hanging from the top string. He also wears a three stringed *har*.



Fig. No. 78: *Viṣnu* riding *Garuna* (11th century A.D.)

Chapter – 2

Catalogue of Stone Sculptures kept at Government Museum, Kannauj

Following is the catalogue of stone sculptures kept at Government Museum, *Kannauj* U.P.

2.1 Sculptures of period 200 B.C.-0 B.C.-



Fig. No. 79: ***Dwāraśākhā***

1. It is a piece of *dwāraśākhā* of a temple. It is of 1st century B.C. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*. It shows a *śālabhanjikā* standing on a *makara* holding the branch of *Ashoka* tree and leaning towards left side. The early form of *dwarśākhā* consists of a vertical band decorated with flower and curling leaf motifs, a vertical band in the form of a pillar topped with the figure of a lion and one string of beads on each side and a band decorated with floral motifs[1]. *Kannauj* have been dated to 1st century B.C. on the basis of inscription on the door jamb. This area was under *Virsena,* a *Naga* ruler during 1st century B.C. as revealed by *Jankhat* inscription[2]. It is a seven line inscription and reads (1) *Svāmīsā Vīrasenāsa,* (2) *saṁvatsare 10 3 gishmā,* (3) *naṁ pakşe 4 divase 8,* (4) *.. mi me .. .. [y]ikā [vā]-,* (5) *.. ya .. .. .. tata ..* (6) *.. vi .. .. .. n[a]ya* (7) *epru[sa] .. .. .. nima*[3].



Fig. No. 80: *Jankhat* inscription

Its translation is as follows: "In the year 10 (and) 3 of *Swami Virsena,* in the fortnight 4 of the hot season, on the day 8 . . . . . ". At the top of the inscription a lotus flower flanked by two *triratna* symbols has been engraved. The person who got this inscribed was *Buddhist* as *triratna* flanking lotus indicate. Here the two *triratna* symbols stand for *Buddha, Dhamma* and *Sangha*. The lotus in between stands for *Buddha*.



Fig. No. 81: An architectural fragment

2. The accessesion number of the antiquity is 79/219. It is an architectural fragment. It is of 1st century B.C. It is made of buff colored sandstone. The size of the antiquity is 96x22 cm. The provenance of the antiquity is *Kannauj*[4].

2.2 Sculptures of period 0 B.C. - 300 A.D.-

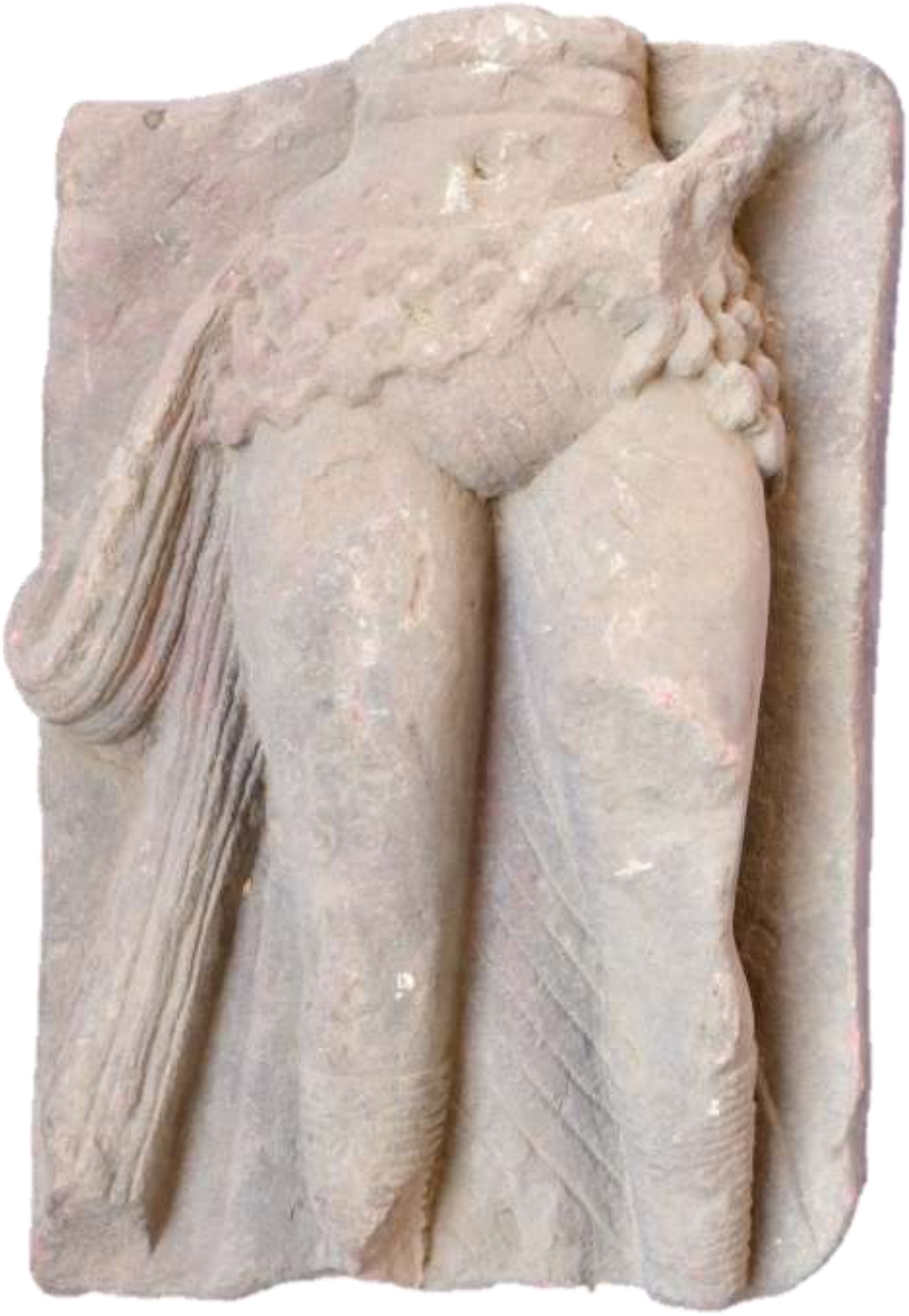


Fig. No. 82: Female Figure

3. The accessesion number of the antiquity is 187. It is the lower portion of a female figure. It is of 1st century A.D. It is made of buff colored sandstone. The size of the antiquity is 30x29 cm. The provenance of the antiquity is *Kannauj*. She is wearing a girdle. Her hand is resting on her waist. A thick fold of cloth is hanging on her right side.



Fig. No. 83: Railing of a shrine depicting *Buddha*

4. The accessesion number of the antiquity is 79/193. It is a piece of railing of a *Buddhist* shrine. It is of 1st-2nd century A.D. It is made of red colored sandstone. The size of the antiquity is 18.6x18 cm. It is made of red colored sandstone. The provenance of the antiquity is *Kannauj*. It shows standing *Buddha* on one pillar and a kneeling devotee on the right side pillar.



Fig. No. 84: Female

5. It is a sculptural fragment showing the middle portion of a female. It is of 2nd century A.D. It is made of buff colored sandstone. The size of the antiquity is 17.3x11 cm. The provenance of the antiquity is *Kannauj*. The bejeweled girdle and a cloth tied around her waist and its hands hanging down are also shown.



Fig. No. 85: Fragment of a Male

6. The accessesion number of the antiquity is 179. It is a sculptural fragment showing a male. It is of 2nd century A.D. It is made of red colored sandstone. The size of the antiquity is 65x20 cm. The provenance of the antiquity is *Kannauj*. The left hand of the male is resting on the folded knee and right hand is raised in *vyakhyana mudra*. This image is made of red sandstone.

2.3 Sculptures of period 300 A.D. - 600 A.D. -



Fig. No. 86: ***Buddha***

7. The accessesion number of the antiquity is 11. It is the broken image of a *Buddha* sitting in *dhyana mudra*. It is of 3rd-4th century A.D. It is made of buff colored sandstone. The size of the antiquity is 28x22 cm. The provenance of the antiquity is *Kannauj*. Below his seat can be seen a man delivering sermons to devotees[5].



Fig. No. 87: Male figure

8. It is a sculptural fragment showing a male figure standing in a rectangular niche. It is of 4th-5th century A.D. It is made of red colored sandstone. The size of the antiquity is 28x16 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 88: Buddha Head

9. The accessesion number of the antiquity is 387. It is *Buddha* head. It is of 5th century A.D. It is made of red colored sandstone. The size of the antiquity is 24x21x14 cm. The provenance of the antiquity is *Kannauj*. It shows the head covered with curly hairs and half closed eyes with thick lips.



Fig. No. 89: Buddha Head

10. The accessesion number of the antiquity is 75/31. It is *Buddha* head. It is of 5th century A.D. It is made of red colored sandstone. The size of the antiquity is 14.5x8 cm. The provenance of the antiquity is *Kannauj*. The head is covered with curly hairs. There is a protrusion at the top of his head[6].



Fig. No. 90: Fragment of Buddha

11. The accessesion number of the antiquity is 75/195. It is a broken piece of the standing figure of *Buddha*. It is of 5th century A.D. It is made of red colored sandstone. The size of the antiquity is 17x10 cm. The provenance of the antiquity is *Kannauj*. It shows chest and shoulders of *Buddha* wearing *kopin'*. Folds of *kopin'* are shown in realistic manner[7].



Fig. No. 91: Sculptural fragment

12. It is a sculptural fragment showing a female figure standing on the right side of a standing male figure. It is of 5th century A.D. It is made of red colored sandstone. Its size is 18x17x7 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 92: ***Dwāraśākhā***

13. It is the fragment of a *dwāraśākhā*. It is of 5th century A.D. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*. It shows a male figure standing at the bottom accompanied by a dwarf and a celestial figure is hovering above his head. The *dwarśākhā* consists of a vertical band decorated with diamond and flower motif. It is sandwiched between two vertical bands decorated with floral motif. These bands are precursors of later *patraśākhā* and *puṣpasakha*.



Fig. No. 93: Figure of a deity

14. It is the image of a standing deity accompanied by a dwarf. It is of 5th century A.D. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*[8]. Above his shoulders, two *Bhārputrakas* supporting the small brackets are visible.



Fig. No. 94: Dancers and Musicians

15. The accessesion number of the antiquity is 52. It is a sculptural fragment showing dancers and musicians. It is of 5th-6th century A.D. It is made of buff colored sandstone. The size of the antiquity is 23.5x13.9 cm. The provenance of the antiquity is *Kannauj*. It shows a female dancer, a drum player and a *cymbal* player as we move from right to left.



Fig. No. 95: Human Bird

16. The accessesion number of the antiquity is 75/71. It is a sculptural fragment showing a human-bird couple. It is of 5th-6th century A.D. It is made of buff colored sandstone. The size of the antiquity is 16x15 cm. The provenance of the antiquity is *Kannauj*. They are in amorous posture.



Fig. No. 96: Sculptural Fragment

17. The accessesion number of the antiquity is 151. It is a sculptural fragment. It is of 5th-6th century A.D. The size of the antiquity is 34x13 cm. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*. It shows floral scrolls and a *makara vyāla* inside a semi-circle.



Fig. No. 97: Buddha Head

18. The accessesion number of the antiquity is 79/173. It is a *Buddha* head. It is of 5th-6th century A.D. The size of the antiquity is 15x11.5 cm. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*. *Buddha* head is covered with curling hair. A small protrusion is shown at the top of his head.



Fig. No. 98: Buddha

19. The accessesion number of the antiquity is 87. It is broken image of *Buddha*. It is of 5th-6th century A.D. The size of the antiquity is 21x28 cm. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*[9].



Fig. No. 99: Figure of a dwarf

20. The accessesion number of the antiquity is 65. It is figure of a dwarf. It is of 5th-6th century A.D. The size of the antiquity is 21x13.5 cm. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*. The dwarf is smiling and his right hand is raised. His hands and portion below the waist are missing.



Fig. No. 100: An architectural fragment

21. The accessesion number of the antiquity is 119. It is an architectural fragment. It is of 5th-6th century A.D. The size of the antiquity is 16x16 cm. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*. It is carved with floral scrolls contained in a roughly rectangular niche.

2.4 Sculptures of period 600 A.D. - 800 A.D. -



Fig. No. 101: ***Viṣnu***

22. The accessesion number of the antiquity is 69. It is the image of *Viṣnu (?)*. It is of 6th century A.D. The size of the antiquity is 27x13 cm. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*. *Vanamālā* is visible on his shoulders and hands. His locks are falling down on his shoulders. He is wearing a necklace and a *Kirītamukuta*. The *Abhamandala* decorated with lotus petals is visible behind his head.



Fig. No. 102: Male figure

23. The accessesion number of the antiquity is 302. It is a sculptural fragment showing a standing man. It is of 6th century A.D. It is made of buff colored sandstone. The size of the antiquity is 12x8.5x6.5 cm. The provenance of the antiquity is *Kannauj*. His hair are arranged to look like a basket kept upside down on his head.



Fig. No. 103: Sculptural fragment

24. The accessesion number of the antiquity is 79/176. It is a sculptural fragment showing the lower part of the standing male figure. It is of 6th-7th century A.D. It is made of buff colored sandstone. The size of the antiquity is 15x7 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 104: Torso of a deity

25. The accessesion number of the antiquity is 21. It is a sculptural fragment. It is of 6th century A.D. It is made of buff colored sandstone. The size of the antiquity is 44x40 cm. The provenance of the antiquity is *Kannauj*. It shows a torso of a deity sitting in *lalitasana*. He is wearing a *yajnopavita, keyura* and *graiveyak*.



Fig. No. 105: Broken Pilaster

26. The accessesion number of the antiquity is 328. It is a broken pilaster. It is of 6th-7th century A.D. It is made of buff colored sandstone. The size of the antiquity is 18.5x19x13 cm. The provenance of the antiquity is *Kannauj*. It is decorated with *ghātapallava* and floral motifs.



Fig. No. 106: Image of a deity

27. It is the broken image of a standing deity. It is of 6th-7th century A.D. It is made of buff colored sandstone. The size of the antiquity is 16x7 cm. The provenance of the antiquity is *Kannauj*. He is wearing a *Vanamālā*, necklace, ear ornaments and *Kirītamukuta*. There is a broken *Abhamandala* behind his head.



Fig. No. 107: Human Head

28. It is the human head. It is of 6th-7th century A.D. The size of the antiquity is 8.5x8 cm. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*. The head is covered with curly hair.



Fig.108: ***Sūrya***

29. The accessesion number of the antiquity is 22. It is the broken image of *Sūrya*. It is of 7th century A.D. It is made of buff colored sandstone. The size of the antiquity is 65x40 cm. The provenance of the antiquity is *Kannauj*[10].



Fig. No. 109: ***Kārtikeya***

30. The accessesion number of the antiquity is 75/74. It is a sculptural fragment showing the image of *Kārtikeya*. It is of 7th century A.D. It is made of buff colored sandstone. The size of the antiquity is 18x14.5 cm. The provenance of the antiquity is *Kannauj*. He is wearing a necklace and hair in *trishikha* style.



Fig. No. 110: Image of a lion & an animal

31. The accessesion number of the antiquity is 298. It is the image of lion and an animal in front of a *chakra* carved on the slab. It is of 7th-8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 18x17x7 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 111: An architectural fragment

32. It is an architectural fragment. It is of 7th-8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 48x14x12 cm. The provenance of the antiquity is *Kannauj*. It shows the fragment decorated with diamond and flower motifs and a human figure holding a linear object in his hands.



Fig. No. 112: An architectural fragment showing a couple

33. The accessesion number of the antiquity is 84. It is an architectural fragment showing a couple in amorous posture. It is of 7th-8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 38x45 cm. The provenance of the antiquity is *Kannauj*[11].



Fig. No. 113: ***Chaturamukha Śivalinga***



Fig. No. 114: ***Chaturamukha Śivalinga***

34. It is the image of *Chaturamukha Śivalinga*. It is of 7th-8th century A.D. It is made of buff colored sandstone. It shows *Śiva* wearing *graiveyak, kundals* and *Jatamukuta*. All the four faces show different hairdo and different expressions on the face of the deity[12].



Fig. No. 115: *Śiva* head

35. It is *Śiva* head. Its size is 19x10x8 cm. It is of 7th-8th century A.D. It is made of red colored sandstone. The provenance of the antiquity is *Kannauj*.

2.5 Sculptures of period 800 A.D. - 900 A.D. -



Fig. No. 116: *Śiva**linga* & *Mukhalinga***

36. The accessesion number of the antiquity is 376. It is a sculptural fragment showing a *Śivalinga* and a *Mukhalinga*. The size of the antiquity is 11x13x5.5 cm. It is of 8th century A.D. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*.



Fig. No. 117: ***Kuber***

37. The accessesion number of the antiquity is 106. It is the mutilated image of *Kuber*. It is of 7th-8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 18x5.5 cm. The provenance of the antiquity is *Kannauj*. The deity is sitting in *lalitasana* and holding the vine cup in his right hand. His left hand is broken. He is wearing a necklace and ear ornaments.



Fig. No. 118: ***Tirthankara***

38. The accessesion number of the antiquity is 324. It is the broken image of a *tirthankara* sitting in *dhyana mudra*. It is of 7th-8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 12.5x19x10 cm. The provenance of the antiquity is *Kannauj*. The *tirthankara* is sitting on a pedestal kept on a *singhasana*. The lions and the *Dharma Chakra* have been defaced. He is flanked by *Indra* and *Upendras* whose lower portions are visible.



Fig. No. 119: Torso of a human body

39. The accessesion number of the antiquity is 204. It is the torso of a human body. It is of 7th-8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 18x17.5 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 120: An architectural fragment

40. The accessesion number of the antiquity is 209. It is an architectural fragment. It is of 8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 40x11 cm. The provenance of the antiquity is *Kannauj*. It shows *ghatapallava* and a defaced female figure.



Fig. No. 121: Head of a deity

41. The accessesion number of the antiquity is 313. It is a sculptural fragment. It is of 8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 16.5x11x11.5 cm. It is made of buff colored sand stone. The provenance of the antiquity is *Kannauj*. It is a mutilated head of some deity with *Kiritamukuta*.



Fig. No. 122: Lady carrying a water vessel

42. The accessesion number of the antiquity is 75/120. It is the image of a lady carrying a water vessel. It is of 8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 18x8 cm. The provenance of the antiquity is *Kannauj*. She is wearing a necklace, large ear ornaments and bangles.



Fig. No. 123: *Ganeśa*

43. The accessesion number of the antiquity is 79/211. It is the upper part of the image of *Ganeśa*. It is of 8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 23x15 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 124: *Ganeśa*

44. The accessesion number of the antiquity is 272. It is the broken image of two handed *Ganeśa*. It is of 8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 54x41 cm. The provenance of the antiquity is *Kannauj*[13].



Fig. No. 125: Kuber

45. The accessesion number of the antiquity is 79/185. It is the image of *Kuber*. The size of the antiquity is 18.5x11.5 cm. It is of 8th century A.D. It is made of red colored sandstone. The provenance of the antiquity is *Kannauj*. He is sitting in *lalitasana* on a low height throne. He is holding *Nakuli* in his left hand a cup of vine in his right hand, a necklace and ear ornaments. Two small pitchers are kept on both sides of his feet. There is *Abhamandala* behind his head[14].



Fig. No. 126: Kuber

46. It is the corroded image of *Kuber (?)*. It is of 8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 10.5x8.5x4.5 cm. The provenance of the antiquity is *Kannauj*. He is holding a vine glass in his right hand and a thick staff in his left hand.



Fig. No. 127: Kuber

47. The accessesion number of the antiquity is 80/274. It is a mutilated the image of *Kuber*. It is of 8th century A.D. (?).It is made of buff colored sandstone. The size of the antiquity is 12x10 cm. The provenance of the antiquity is *Kannauj*. His hands and left foot are broken. He is sitting on a low height throne.



Fig. No. 128: Female head

48. The accessesion number of the antiquity is 280. It is a female head. It is of 8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 12x18x12 cm. The provenance of the antiquity is *Kannauj*. She is wearing a tiara and a head dress from which drop like structures are emanating.



Fig. No. 129: Male head

49. The accessesion number of the antiquity is 229. It is a male head. It is of 8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 13x12 cm. The provenance of the antiquity is *Kannauj*. It is having a *Jatabhara* on the head. Ear ornament in his left ear is also visible.



Fig. No. 130: Two heads of a deity

50. The accessesion number of the antiquity is 286. It is two heads of a deity having *Jatabhara*. It is of 8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 7x5.5x3 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 131: Male Figure

51. The accessesion number of the antiquity is 79/252. It is a male figure. It is of 8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 17x10.5 cm. The provenance of the antiquity is *Kannauj*. He is holding a long object in his left hand. His right hand is raised.



Fig. No. 132: Head of a deity

52. The accessesion number of the antiquity is 26. It is the head of a deity. It is of 8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 21.5x8.5 cm. The provenance of the antiquity is *Kannauj*. The deity is wearing a tall *Kiritamukuta*[15].



Fig. No. 133: Defaced head of a deity

53. It is the defaced head of a deity. It is of 8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 9x7.7 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 134: Headless Musician

54. The accessesion number of the antiquity is 44. It is a sculptural fragment showing a headless figure of a musician playing *dholaka,* the Indian drum. The size of the antiquity is 15x12.5 cm. It is of 8th century A.D. It is made of red colored sandstone. The provenance of the antiquity is *Kannauj*.



Fig. No. 135: Image of a lady

55. The accessesion number of the antiquity is 79/250. It is a sculptural fragment showing the image of a lady serving the vine. It is of 8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 29.5x18 cm. The provenance of the antiquity is *Kannauj*. She is holding a vine jar in her left hand and a glass in her right hand. She is wearing a girdle over fine *dhoti*, a large *Stanahār,* two bangles in both hands, *keyura* and *graiveyak*. She is sporting a flat bun at the top of her head.



Fig. No. 136: Head of Parvati

56. The accessesion number of the antiquity is 357. It is a head of *Pārvatī (?)*. It is of 8th century A.D. The size of the antiquity is 19.5x9x10.5 cm. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*. She is wearing *Jatamukuta*[16].



Fig. No. 137: Human figure

57. The accessesion number of the antiquity is 79/170. It is a sculptural fragment showing a human figure holding a pole. It is of 8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 18x8 cm. The provenance of the antiquity is *Kannauj*. The legs of the man is broken. Upper end of the pole is also broken.



Fig. No. 138: Defaced Human figure

58. The accessesion number of the antiquity is 75/45. It is a sculptural fragment of a defaced male figure. It is of 8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 17x9.5 cm. The provenance of the antiquity is *Kannauj*. The face is mutilated. Hands and the portion below the waist are missing.



Fig. No. 139: Fragment of a mother & a child figure

59. It is the image of a hand (hand of a mother) with holding a child from running away. Its size is 8x7x4 cm. It is of 8th century A.D. It is made of red colored sandstone. It is made of red colored sand stone. The provenance of the antiquity is *Kannauj*.



Fig. No. 140: *Nāga* figure

60. The accessesion number of the antiquity is 79/243. It is a mutilated figure of *Nāga*. It is of 8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 13x14 cm. The provenance of the antiquity is *Kannauj*. The deity is standing with folded hands. He is wearing *keyura*, a necklace and ear ornaments. Hood of a snake is visible behind his head.



Fig. No. 141: ***Mālādhārī Vidyādhāra***

61. The accessesion number of the antiquity is 79/171. It is a sculptural fragment showing a flying *Mālādhārī Vidyādhāra*. It is of 8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 18x10.5 cm. The provenance of the antiquity is *Kannauj*. It appears to be a part of some larger image. *Mālādhārī Vidyādhāra* is wearing a necklace and large ear ornament in his left ear. He is holding a *mala* in both his hands.



Fig. No. 142: Part of the image of some deity

62. The accessesion number of the antiquity is 86. It is a part of the image of some deity. It is of 8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 28.5x23 cm. The provenance of the antiquity is *Kannauj*. It shows a figure of *vyāla* and *Mālādhārī Vidyādhāra* couple.



Fig. No. 143: Human head (Buddha)

63. The accessesion number of the antiquity is 75/36. It is a human head (*Buddha (?)*). It is of 8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 13x8.5 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 144: ***Rishabhnatha***

64. It is the broken image of *Rishabhanatha*. It is of 8th-9th century A.D. It is made of red colored sandstone. The size of the antiquity is 25.5x15 cm. The provenance of the antiquity is *Kannauj*. His hair are falling on his shoulders. *Srivatsa* symbol is visible on his chest.



Fig. No. 145: Female deity

65. It is a sculptural fragment showing the head of a female deity. It is of 8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 11x12 cm. The provenance of the antiquity is *Kannauj*. She is wearing ear ornaments and has *Abhamandala* behind the head.



Fig. No. 146: Male figure

66. The accessesion number of the antiquity is 369. It is a sculptural fragment showing a male figure sitting on a cushion in *lalitasana*. It is of 8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 13x11x5 cm. The provenance of the antiquity is *Kannauj*. The man is holding a water vessel and *bijapuraka* in his left hand. His right hand is broken. He is wearing a girdle, *yajnopavita* and *hara.* His hair are tied in the form of *Jatabhara*.



Fig. No. 147: Image of a deity

67. The accessesion number of the antiquity is 237. It is a sculptural fragment showing a deity. It is of 8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 14.5x10.5 cm. The provenance of the antiquity is *Kannauj*. The portion below the chest is missing. *Abhamandala* is visible behind the head. He is wearing ear ornaments.



Fig. No. 148: Damaged figure of a male

68. The accessesion number of the antiquity is 79/167. It is a sculptural fragment showing a damaged figure of a male. It is of 8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 27.5x18 cm. The provenance of the antiquity is *Kannauj*. The left hand of the man is resting on his thigh and his right hand is raised in *Abhaya mudra*. He is wearing bangles, *keyuras* and necklace.



Fig. No. 149: Sculptural fragment

69. The accessesion number of the antiquity is 379. It is a sculptural fragment. It is of 8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 11x5x4 cm. The provenance of the antiquity is *Kannauj*. It shows left half of a human head.



Fig. No. 150: *Saptamatrikā* panel

70. The accessesion number of the antiquity is 8. It is part of the *Saptamatrikā* panel. It is of 8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 48x43 cm. The provenance of the antiquity is *Kannauj*. On the extreme right side *Vinadhari Śiva* can be seen. Four of the goddesses are visible to his left. The four right side figures are defaced. Above the *Abhamandalas* of the deities are shown five *Mālādhārī Vidyādhāras*[17].



Fig. No. 151: ***Dwāraśākhā***

71. The accessesion number of the antiquity is. It is a *dwāraśākhā*. It is of 8th century A.D. It is made of buff colored sandstone. The size of the antiquity is 87X24 ½ x14 cm. The provenance of the antiquity is *Kannauj*. It shows an ascetic standing and leaning on a staff. He is housed inside a *rathika*. The pilaster is decorated with *ghatapallava* motif. On the right side is a vertical band decorated with male and female figures in different postures and floral scrolls designs.



Fig. No. 152: Female head

72. The accessesion number of the antiquity is 79/228. It is a female head. It is of 8th- 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 15x8 cm. The provenance of the antiquity is *Kannauj*. She is wearing a crown.



Fig. No. 153: Female head

73. The accessesion number of the antiquity is 75/37. It is a female head. The size of the antiquity is 12.5x8.5 cm. It is of 8th-9th century A.D. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*. The lady is wearing her in the form of a flat bun tied at the base with the help of a string of beads. She is wearing a large jewel in the middle of her forehead[18].



Fig. No. 154: Figure of *Balrama*

74. The accessesion number of the antiquity is 344. It is the mutilated figure of *Balrama*. It is of 8th-9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 19x19x10.5 cm. The provenance of the antiquity is *Kannauj*. He is standing and holding a vine cup, *musala*, plough in his three hands. The fourth hand is resting on his thigh. Hood of a snake is visible behind his head[19].



Fig. No. 155: Image of *Gajalakśmī*

75. The accessesion number of the antiquity is 339. It is the image of *Gajalakśmī*. It is of 8th-9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 25x15x9 cm. It is made of *Kankar* stone. The provenance of the antiquity is *Kannauj*. Two devotees, four attendants and two elephants can be seen in her *parikar*. The deity is holding two different flowers in her two hands.



Fig. No. 156: Image of a deity

76. It is the image of a deity. It is of 8th-9th century A.D. Its size is 34x13x19 cm. The provenance of the antiquity is *Kannauj*. It is made of *Kankar* stone.



Fig. No. 157: A male figure

77. It is a sculptural fragment showing a male figure. It is of 8th-9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 7.5x3.5 cm. It is made of buff colored sand stone. The provenance of the antiquity is *Kannauj*.



Fig. No. 158: Male figure

78. It is a sculptural fragment showing the upper portion of a male wearing a necklace and ear ornaments. It is of 8th-9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 11x10.6 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 159: A man riding a *Vyāla*

79. The accessesion number of the antiquity is 113. It is a sculptural fragment showing the mutilated figure of a man riding a *vyāla*. The size of the antiquity is 16x10.5 cm. It is of 8th-9th century A.D. It is made of buff colored sand stone. The provenance of the antiquity is *Kannauj*.



Fig. No. 160: Buddha Image

80. The accessesion number of the antiquity is 198. It is an inscribed *Buddha* image. It is of 8th-9th century A.D. It is made of red colored sandstone. The size of the antiquity is 13.5x7.7 cm. The provenance of the antiquity is *Kannauj*. The head and feet of the image are missing. He is wearing a cheavar. It records a Buddhist formula and reads *"ye dhammahetu prabhavohetu tathagato. vadite saṁ chayonirodha vādī mahasr ma ☐ah"*.



Fig. No. 161: Buddha image

81. The accessesion number of the antiquity is 79/183. It is upper portion of the *Buddha* image. It is of 8th-9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 8.5x6.5x4 cm. The provenance of the antiquity is *Kannauj*. His face is damaged. His head is covered with curly hair and there is a protrusion at the top of his head[20].



Fig. No. 162: Buddha head

82. The accessesion number of the antiquity is 27. It is the *Buddha* head. It is of 8th-9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 18.5x14 cm. The provenance of the antiquity is *Kannauj*. The head is covered with curly hair and a protrusion at the top[21].



Fig. No. 163: *Saptamatrikā* panel

83. It is the part of a *Saptamatrikā* panel showing *Vaiṣanavī, Vārāhī, Aindrī* and *Chāmundā* with their usual attributes. It is of 8th-9th century A.D. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*[22].



Fig. No. 164: Figure of a standing Male and a female

84. The accessesion number of the antiquity is 287. It is a sculptural fragment showing a two standing male and female deity. It is of 8th-9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 22x14x9 cm. The provenance of the antiquity is *Kannauj*. It shows a female deity standing in *tribhanga mudra* inside a *rathika*. On her right a male deity is standing.



Fig. No. 165: Sculptural fragment showing a male and a female

85. The accessesion number of the antiquity is 75/47. It is a sculptural fragment showing male and female dancers. It is of 8th-9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 24x13 cm. The provenance of the antiquity is *Kannauj*. It shows two male dancers, one female dancer and one female playing some instrument.



Fig. No. 166: *Nagi* figure

86. The accessesion number of the antiquity is 75/42. It is a sculptural fragment showing the head of a *Nagi*. It is of 8th-9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 11x13 cm. The provenance of the antiquity is *Kannauj*. Seven hooded snake head is visible behind her head.



Fig. No. 167: Seven hooded *Nagi*

87. The accessesion number of the antiquity is 372. It is the image of a seven hooded *Nāgai*. It is of 8th-9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 54X36x14 cm. The provenance of the antiquity is *Kannauj*. She is sitting in *lalitasana* on a *simhasana*. She is wearing a *Stanahār, graiveyak,* girdle and large ear ornaments.



Fig. No. 168: Mutilated female figure

88. The accessesion number of the antiquity is 374. It is a sculptural fragment showing a mutilated female figure. It is of 8th-9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 11.5x8.5x6 cm. The provenance of the antiquity is *Kannauj*. She is wearing a *graiveyak* and very large ear ornament.



Fig. No. 169: Sculptural fragment

89. The accessesion number of the antiquity is 75/216. It is a sculptural fragment showing the lower part of an image. The size of the antiquity is 24x5 cm. It is of 8th-9th century A.D. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*.



Fig. No. 170: A human figure

90. It is a sculptural fragment showing a human figure. It is of 8th-9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 13.5x14 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 171: Mutilated Human figure

91. The accessesion number of the antiquity is 146. It is a mutilated human head. It is of 8th-9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 17x14 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 172: Mutilated Human head

92. The accessesion number of the antiquity is 382. It is a sculptural fragment showing a mutilated human head. It is of 8th-9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 8x6x7.5 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 173: *Pārvatī* head

93. The accessesion number of the antiquity is 378. It is a sculptural fragment showing the head of *Pārvatī*. It is of 8th-9th century A.D. It is made of red colored sandstone. The size of the antiquity is 11x6x6 cm. The provenance of the antiquity is *Kannauj*. She is wearing a *Jatamukuta*.



Fig. No. 174: *Śiva* **with** ***Pārvatī***

94. The accessesion number of the antiquity is 121. It is a sculptural fragment showing the scene of the marriage of *Śiva* with *Pārvatī*. It is of 8th-9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 24x19 cm. The provenance of the antiquity is *Kannauj*. It is the scene of *Parigrahana* in which *Śiva* is holding the right hand of *Pārvatī* in his left hand. *Śiva* is holding *trishula* and *snake* in his raised hands. He is resting his third hand on his thigh. *Abhamandala* is visible behind the head of the deity.



Fig. No. 175: ***Tapasvini Pārvatī***

95. The accessesion number of the antiquity is 4. It is the image of *Tapasvini Pārvatī*. It is of 8th-9th century A.D. It is made of red colored sandstone. The size of the antiquity is 95x28 cm. The provenance of the antiquity is *Kannauj*. *Abhamandala* is visible behind her head and she is wearing a *Jatamukuta*[23].



Fig. No. 176: Male Head

96. The accessesion number of the antiquity is 401. It is a male head. It is of 8th-9th century A.D. It is made of red colored sandstone. The size of the antiquity is 6x6x3.5 cm. The provenance of the antiquity is *Kannauj*. He is sporting a moustache and there is a small bun of hair at the top of his head. There is a dot in the middle of his forehead.



Fig. No. 177: Female figure

97. The accessesion number of the antiquity is 194. It is a sculptural fragment showing broken middle portion of a female figure. It is of 8th-9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 70x19.5 cm. The provenance of the antiquity is *Kannauj*. It shows the woman wearing an elaborately ornamented waist band.



Fig. No. 178: Image of a deity

98. The accessesion number of the antiquity is 329. It is broken part of the image of a deity. It is of 8th-9th century A.D. The size of the antiquity is 18.5x19x13 cm. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*. He is wearing *keyura, yajnopavita* and necklaces.



Fig. No. 179: Couple with a child

99. The accessesion number of the antiquity is 323. It is a couple with their child. It is of 8th-9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 31x28x8 cm. The provenance of the antiquity is *Kannauj*. Face of a lion is visible below the knee of male.



Fig. No. 180: Sculptural fragment

100. The accessesion number of the antiquity is 154. It is a sculptural fragment. It is of 8th-9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 33x18 cm. The provenance of the antiquity is *Kannauj*. It shows a mutilated male and female figure standing on a pedestal.



Fig. No. 181: Image of a male

101. It is an image of a male walking towards left. It is of 8th-9th century A.D. The size of the antiquity is 45x19.5 cm. It is made of *Kankar* stone. The provenance of the antiquity is *Kannauj*. He is carrying a short sword. It is made of *Kankar*.



Fig. No. 182: ***Mahisāsuramardinī***

102. The accessesion number of the antiquity is 165. It is the eight handed broken image of *Mahisāsuramardinī*. It is of 8th-9th century A.D. It is made of red colored sandstone. The size of the antiquity is 48x28 cm. The provenance of the antiquity is *Kannauj*. It shows goddess holding the buffalo by mouth and piercing its body with her trident. Her right foot is resting on the buffalo and left foot is resting on the ground. The lion is biting the tail of the animal[24].



Fig. No. 183: Parikar of *Viṣnu*

103. The accessesion number of the antiquity is 130. It is part of the *parikar* of *Viṣnu* image. It is of 8th-9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 43x20 cm. The provenance of the antiquity is *Kannauj*. It shows a divine female & a male attendant, a kneeling female devotee, two divinities and *Kalki*.



Fig. No. 184: Architectural Fragment showing *Krishna Leela*

104. The accessesion number of the antiquity is 52. It is an architectural fragment showing the scene of *Krishna Leela*. It is of 8th-9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 23x50x13.5 cm. The provenance of the antiquity is *Kannauj*. It depicts *Putana vadha* and other scenes from the life of *Krishna*.



Fig. No. 185: *Bhairava* accompanied by *Dakinī & Śākinī*

105. The accessesion number of the antiquity is. It is a sculptural fragment showing four handed *Bhairava* accompanied by *Dakinī, Śākinī* and other beings in different postures. It is of 8th-9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 100x46x18 cm. The provenance of the antiquity is *Kannauj*. *Bhairava* is shown holding *vajra* and a cup in his two undamaged hands.



Fig. No. 186: Image of a deity

106. The accessesion number of the antiquity is. It is a part of the image of a deity. It is of 8th-9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 65x29x10 cm. The provenance of the antiquity is *Kannauj*. It shows a female and a male *Shaiva* deities standing under a tree.

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Fig. No. 187: ***Mahisāsuramardinī***

107. It is the image of *Mahisāsuramardinī*. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 75x58 cm. The provenance of the antiquity is *Kannauj*. The goddess is killing *Mahisasura.* She is carrying her usual attributes. Her lion is attacking the buffalo from behind. She is flanked by smaller figure of a female and a sitting male devotee. The *Mahisasura* has come out of the body of the buffalo. Two *Mālādhārī Vidyādhāra* couples are shown on the upper side of the image. *Abhamandala* is shown behind the head of the deity[25].



Fig. No. 188: ***Mahisāsuramardinī***

108. The accessesion number of the antiquity is 166. It is the lower part of the broken image of *Mahisāsuramardinī*. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 45x45 cm. The provenance of the antiquity is *Kannauj*. It shows lion biting the buffalo, buffalo *Mahisasura* coming out of its neck, left foot of the goddess, right foot of the goddess, *trishula* piercing the animal and the girdled waist of the goddess[26].



Fig. No. 189: Image of *Pārvatī*

109. The accessesion number of the antiquity is 354. It is a sculptural fragment showing the figure of *Pārvatī (?)* in *Abhaya mudra*. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 21.5x12.5x8.5 cm. The provenance of the antiquity is *Kannauj*. She is wearing bangles, *har*, large ear ornaments and *Jatamukuta*.



Fig. No. 190: Umā-Maheśa

110. The accessesion number of the antiquity is 05. It is the image of *Umā-Maheśa* seated on a bench. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 84x57 cm. The provenance of the antiquity is *Kannauj*. Below the seat are visible the image of *Ganeśa, Nandī,* lion, *Bhringi Rishi* and a badly broken image of peacock as we move from right to left. *Kārtikeya* (?) is sitting on the lap of *Pārvatī*. On the left side of *Pārvatī* stands female attendant of the goddess[27].



Fig. No. 191: Umā-Maheśa

111. It is the image of *Umā-Maheśa* with other deities shown in *parikar*. It is of 9th century A.D. It is made of red colored sandstone. Its size is 28x30x14 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 192: ***Viṣnu***

112. The accessesion number of the antiquity is 79/186. It is a mutilated four handed image of *Viṣnu*. It is of 9th century A.D. It is made of red colored sandstone. The size of the antiquity is 25x18 cm. The provenance of the antiquity is *Kannauj*. Two female attendants, two male attendants, two *vyālas*, two heads of *makara vyālas* and two *Mālādhārī Vidyādhāras* are shown in his *parikar*[28].



Fig. No. 193: Part of Viṣnu image

113. The accessesion number of the antiquity is 203. It is a sculptural fragment showing part of *Viṣnu* image. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 19x11.5 cm. The provenance of the antiquity is *Kannauj*. It shows right hand of the deity holding *gada*. A human figure squatting on the ground. A portion of *Vanamālā* is also visible on the left side.



Fig. No. 194: Lower portion of *Varāha* image

114. The accessesion number of the antiquity is. It is an architectural fragment showing lower portion of *Varāha* standing on lotus held by two figures. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 49x39x15 cm. The provenance of the antiquity is *Kannauj*[29].



Fig. No. 195: Viṣnu

115. The accessesion number of the antiquity is 389. It is the broken image of *Viṣnu*. It is of 9th century A.D. It is made of red colored sandstone. The size of the antiquity is 44.5X33.5x16 cm. The provenance of the antiquity is *Kannauj*. He is accompanied by his female and male *Ayudhapurushas*, two kneeling devotes sitting and doing *Namaskara,* two male attendants, two *vyālas,* two *makara vyāla* heads and two *Mālādhārī Vidyādhāras*. *Abhamandala* is shown behind his head.



Fig. No. 196: Mutilated Viṣnu Image

116. The accessesion number of the antiquity is 149. It is a sculptural fragment showing the part of a mutilated *Viṣnu* image. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 17x17.5 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 197: Śeṣasāyi Viṣnu

117. The accessesion number of the antiquity is 89. It is a part of the image of *Śeṣasāyi Viṣnu*. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 14x13.5 cm. The provenance of the antiquity is *Kannauj*. The deity is sleeping on the coils of *Śeṣanāga* who has formed an umbrella over his head. Below his bed can be seen the nine jewels produced by churning the ocean.



Fig. No. 198: Viṣnu

118. The accessesion number of the antiquity is 310. It is the broken image of standing *Viṣnu (?)*. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 76x42x10 cm. The provenance of the antiquity is *Kannauj*. He is accompanied by his *Ayudhapurushas* and two devotees kneeling near his feet. Two *Mālādhārī Vidyādhāras* are shown above his head. *Abhamandala* is also visible behind his head.



Fig. No. 199: ***Narsingha Avatara***

119. The accessesion number of the antiquity is 363. It is a broken figure of *Narasingha Avatara*. It is of 9th century A.D. It is made of red colored sandstone. The size of the antiquity is 13x12x6.5 cm. It is made of buff colored sand stone. The provenance of the antiquity is *Kannauj*. It shows *Narasingha* ripping open the stomach of *Hiranyakashipu*.



Fig. No. 200: Bust of a Naag

120. The accessesion number of the antiquity is 164. It is a sculptural fragment showing the bust of a *Nāga*. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 14.5x10x13 cm. The provenance of the antiquity is *Kannauj*. The figure is defaced. *Nāga* is standing with folded hands. He is wearing large ear ornaments and *graiveyaka*. Broken hood is visible behind his head.



Fig. No. 201: Ganeśa

121. The accessesion number of the antiquity is 201. It is a part of the image of *Ganeśa*. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 20x16 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 202: Ganeśa

122. The accessesion number of the antiquity is 391. It is the broken image of *Ganeśa*. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 28x21x11 cm. The provenance of the antiquity is *Kannauj*. It shows the image of *Ganeśa* curling in clockwise direction. He is wearing bangles, *keyura*, necklace and head ornaments. His battle axe is visible on lower side of his body.



Fig. No. 203: Ganeśa

123. The accessesion number of the antiquity is 347. It is a broken image of *Ganeśa*. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 30.5x19x10 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 204: Dancing Ganeśa

124. The accessesion number of the antiquity is 06. It is the four handed image of dancing *Ganeśa*. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 35x28 cm. The provenance of the antiquity is *Kannauj.* He is holding his usual attributes. Two *Mālādhārī Vidyādhāras* are shown above his head. His hands are badly mutilated. He is wearing snake *yajnopavita*[30].



Fig. No. 205: An Elephant

125. The accessesion number of the antiquity is 79. It is an elephant scene from the front. It is of 9th century A.D. The size of the antiquity is 43x27 cm. The provenance of the antiquity is *Kannauj*. It is made of *Kankar* stone.



Fig. No. 206: An Elephant

126. The accessesion number of the antiquity is. It is the front view of an elephant image. It is of 9th century A.D. The size of the antiquity is 46x26.5x14 cm. The provenance of the antiquity is *Kannauj*. It is made of *Kankar* stone.



Fig. No. 207: Dwarashakha

127. It is an architectural fragment showing part of a *dwāraśākhā*. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 40x21 cm. The provenance of the antiquity is *Kannauj*. *Nāgaśākhā* is visible on the lower right side and part of the panel showing *Saptamatrikās* at its top. As we move from right to left, one can see *Ganeśa, Chāmundā* and three other *matrika* figures.



Fig. No. 208: *Saptamatrikā* panel

128. It is an architectural fragment showing the part of *Saptamatrikā* panel with dancing *Ganeśa* & sitting *Chāmundā* as we move from left to right. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 29.5x15.7 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 209: ***Dwāraśākhā***

129. The accessesion number of the antiquity is 13. It is a *dwāraśākhā* of a temple. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 65x21x11 cm. The provenance of the antiquity is *Kannauj*. It shows a male and a female standing in *tribhanga mudra*.



Fig. No. 210: *Dwāraśākhā*

130. The accessesion number of the antiquity is. It is a *dwāraśākhā*. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 66x23x7 cm. The provenance of the antiquity is *Kannauj*. It is decorated with a standing male figure, a female and a male figure[31].



Fig. No. 211: *Dwāraśākhā*

131. The accessesion number of the antiquity is 159. It is a corroded *dwāraśākhā* of a temple. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 64x16 cm. The provenance of the antiquity is *Kannauj.*



Fig. No. 212: Image of a female and a male

132. The accessesion number of the antiquity is 128. It is a sculptural fragment showing the defaced image of a female and a male. Both the standing below a tree. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 42.5x18 cm. The provenance of the antiquity is *Kannauj*. A small human figure is shown standing in between them[32].



Fig. No. 213: Image of a female and a male

133. The accessesion number of the antiquity is 360. It is a sculptural fragment. It is of 9th century A.D. It is made of red colored sandstone. The size of the antiquity is 15x12.5x10 cm. The provenance of the antiquity is *Kannauj*. It shows a female and a male standing in close proximity.



Fig. No. 214: Female torso

134. The accessesion number of the antiquity is 79/168. It is a female torso. It is of 9th century A.D. It is made of red colored sandstone. The size of the antiquity is 19x14 cm. The provenance of the antiquity is *Kannauj*. She is standing in *tribhanga mudra*. Her *Uttariya* is coming down from her right shoulder.



Fig. No. 215: Fragment of a lady

135. The accessesion number of the antiquity is 79/227. It is a sculptural fragment showing a lady standing with a deer. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 19x12 cm. The provenance of the antiquity is *Kannauj*. The deer is eating leaves and the lady is standing. Her left hand is raised and her right hand is resting on her waist.



Fig. No. 216: *Parikar* of a deity

136. It is the part of the *parikar* of a deity. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 26x17.5 cm. The provenance of the antiquity is *Kannauj*. It shows the mutilated figure of a female attendant accompanied with a male attendant of smaller size.



Fig. No. 217: Mutilated female figure

137. The accessesion number of the antiquity is 69. It is a sculptural fragment showing a heavily mutilated female figure. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 27x13 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 218: *Tirthankara*

138. It is the image of a *tirthankara* standing in *kayotsarga mudra* on a pedestal. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 42x20x14 cm. The provenance of the antiquity is *Kannauj*. He is flanked by his *Indra* and *Upendra*. *Abhamandala* is shown behind his head. Two *Mālādhārī Vidyādhāra* is shown above his shoulder. *Trichatra, Dev Dundubhi* and *Kaivalya Vriksha* is also seen above his head.



Fig. No. 219: ***Rishabhanatha***

139. It is the image of *Rishabhanatha*. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 11.5x13 cm. The provenance of the antiquity is *Kannauj*. Lower portion of the image is missing. Two *Mālādhārī Vidyādhāras, Dev Dundubhi, Kaivalya Vriksha* and *Upendra* wearing fly whisk can be seen in the *Parikar. Srivatsa* symbol is visible on his chest. His hair are falling on his shoulder. *Abhamandala* is present behind his head.



Fig. No. 220: Female figure

140. The accessesion number of the antiquity is 316. It is a sculptural fragment showing a female figure. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 20x9.5x8 cm. The provenance of the antiquity is *Kannauj*. She is standing in *tribhanga mudra* and holding something in her right hand. A male figure is visible on the left side of her shoulder.



Fig. No. 221: Image of a deity

141. The accessesion number of the antiquity is 343. It is a part of the image of a deity. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 18x16x9 cm. The provenance of the antiquity is *Kannauj*. The deity is holding a rosary in his right hand. Below the hand, the heads of two female attendants are visible.



Fig. No. 222: A sculptural fragment

142. The accessesion number of the antiquity is 239. It is a sculptural fragment. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 13x8 cm. The provenance of the antiquity is *Kannauj*. It shows a female standing with another smaller human figure standing near her. A female devotee is sitting to her left.



Fig. No. 223: A Sculptural fragment

143. The accessesion number of the antiquity is 384. It is a sculptural fragment. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 8x5.5x5.5 cm. The provenance of the antiquity is *Kannauj*. It shows a female standing along with her attendant. A male figure is standing to her right.



Fig. No. 224: Female figure

144. It is a sculptural fragment showing a female feeding a man. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 10x12.3 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 225: Female figure

145. It is a sculptural fragment showing a standing female figure. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 30x12 cm. The provenance of the antiquity is *Kannauj*. She is wearing necklace, *stanahār,* ear ornaments and a large bun of hair at the back of her head. Her left hand is resting on her waist and she has raised her right hand and holding something in it[33].



Fig. No. 226: Female head

146. It is a female head. It is of 9th century A.D. The size of the antiquity is 18x11 cm. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*. She is wearing a bejewel crown.



Fig. No. 227: Four handed Goddess

147. The accessesion number of the antiquity is 79/200. It is a sculptural fragment showing a standing four handed goddess. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 29x19 cm. The provenance of the antiquity is *Kannauj*. She is holding weapons in her hands. She is wearing a *graiveyaka,* large ear ornaments and a crown on her head. She is sporting a flat bun on her head.



Fig. No. 228: Six handed male deity

148. The accessesion number of the antiquity is 282. It is the image of a six handed male deity. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 8x10x3.5 cm. The provenance of the antiquity is *Kannauj*. He is wearing a crown and a necklace. His hair are falling on his shoulders. He is holding something in his right hand[34].



Fig. No. 229: Torso of a male

149. It is a sculptural fragment showing the torso of a male. It is of 9th century A.D. It is made of buff colored sandstone. Its size is 35x24x9 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 230: Mutilated male head

150. The accessesion number of the antiquity is 384. It is a sculptural fragment showing a mutilated male head. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 6x3x1.5 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 231: A sculptural fragment

151. The accessesion number of the antiquity is 289. It is a sculptural fragment showing a male figure standing and holding a water vessel in his right hand. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 37x12x8 cm. The provenance of the antiquity is *Kannauj*. A female is standing to the right of the male figure and a smaller human figure is standing in front of her.



Fig. No. 232: Male head

152. The accessesion number of the antiquity is 79/213. It is a male head. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 18x8.5 cm. The provenance of the antiquity is *Kannauj*. He is wearing a *Kirītamukuta*.



Fig. No. 233: Male figure

153. The accessesion number of the antiquity is 318. It is a sculptural fragment showing the middle portion of a male figure. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 15.5x11x8.5 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 234: Male figure

154. The accessesion number of the antiquity is 79/177. It is a sculptural fragment showing the mutilated body of a standing male figure. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 27x18 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 235: Mutilated sculptural fragment

155. The accessesion number of the antiquity is 175. It is a mutilated sculptural fragment showing a male and a female in *lalitasana*. The size of the antiquity is 13x8.5 cm. It is of 9th century A.D. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*.



Fig. No. 236: Image of a deity

156. The accessesion number of the antiquity is 156. It is part of the image of a deity. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 21x20 cm. The provenance of the antiquity is *Kannauj*. It shows a male and a female in standing posture.



Fig. No. 237: Male accompanied by his wife

157. It is the image of a male accompanied by his wife. It is of 9th century A.D. It is made of red colored sandstone. Its size is 33x7x11 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 238: Goddess *Lakśmī* (Obverse)



Fig. No. 239: Goddess *Lakśmī* (Reverse)

158. It is the image of goddess *Lakśmī*. It is of 9th century A.D. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*[35].



Fig. No. 240: *Daśāvatār* Image

159. The accessesion number of the antiquity is 75/89. It is a sculptural fragment of a *Daśāvatār* image. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 14x13.5 cm. The provenance of the antiquity is *Kannauj*. It shows *torana* motif at the top. Four *Veda's* riding *Matsyavatar* showing in the right side of the image. On the left side is shown an ascetic sitting in *padmāsana*.



Fig. No. 241: ***Mālādhārī Vidyādhara***

160. The accessesion number of the antiquity is 79/230. It is a sculptural fragment showing an *Mālādhārī Vidyādhara*. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 24x12 cm. The provenance of the antiquity is *Kannauj*. His face, hands and legs are damaged. He is holding a garland.



Fig. No. 242: *Mālādhārī Vidyādhara* couple

161. The accessesion number of the antiquity is 75/48. It is the image of *Mālādhārī Vidyādhara* couple. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 19x15 cm. The provenance of the antiquity is *Kannauj*. The couple are shown in flying posture and carrying a *mala* in their hand.



Fig. No. 243: ***Kartīkeya***

162. It is the broken fragment of the image of *Kartīkeya*. It is of 9th century A.D. It is made of buff colored sandstone. Its size is 36x20x10 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 244: Inscribed sculptural fragment

163. The accessesion number of the antiquity is 197. It is a sculptural fragment showing an inscribed but defaced figure of a deity. It is of 9th century A.D. It is made of red colored sandstone. The size of the antiquity is 12x13.5 cm. The provenance of the antiquity is *Kannauj*. It records a Buddhist formula and reads *"ye dhammahetu prabhavohetu tathagato. vaditesaṁ chayonirodhavādī mahasrma ⁊ah"*.



Fig. No. 245: Broken figure of *Chamundā*

164. The accessesion number of the antiquity is 353. It is a sculptural fragment showing the middle portion of *Chamundā (?)*. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 13x22.5x7.5 cm. The provenance of the antiquity is *Kannauj*. She is holding a bowl and wearing a snake necklace.



Fig. No. 246: *Śiva* head

165. The accessesion number of the antiquity is 348. It is a mutilated *Śiva* head. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 28x18x12.5 cm. The provenance of the antiquity is *Kannauj*. The deity is wearing a necklace, large ear ornaments and *Jatāmukuta*.



Fig. No. 247: *Śiva* head

166. It is the mutilated *Śiva* head. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 14.5x9 cm. The provenance of the antiquity is *Kannauj*. Third eye is visible on the forehead and wearing *Jatāmukuta*.



Fig. No. 248: Umā-Maheśa

167. The accessesion number of the antiquity is 92. It is the mutilated image of *Umā-Maheśa*. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 13.5x10 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 249: *Śiva* head

168. The accessesion number of the antiquity is 75/31. It is the head of *Shiva*. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 14.5x8 cm. The provenance of the antiquity is *Kannauj*. She is wearing a *Jatāmukuta* on her head. Third eye is shown on her forehead.



Fig. No. 250: Inscribed stone

169. The accessesion number of the antiquity is 79/267. It is an inscribed stone. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 20x15 cm. The provenance of the antiquity is *Kannauj*. There is a two line inscription on the stone piece. It reads *" (1) . . . ka . . nta. . (2) bhayatijalam*.



Fig. No. 251: Female riding a lion

170. The accessesion number of the antiquity is 79/172. It is a sculptural fragment showing a female riding a lion. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 15x12.5 cm. It is made of buff colored sand stone. The provenance of the antiquity is *Kannauj*.



Fig. No. 252: Unidentified sculptural fragment

171. The accessesion number of the antiquity is 350. It is an unidentified sculptural fragment. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 18x17.5x12 cm. It is made of buff colored sand stone. The provenance of the antiquity is *Kannauj*.



Fig. No. 253: Broken *Kīrtimukha*

172. The accessesion number of the antiquity is 245. It is a broken *Kīrtimukha*. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 10x9 cm. It is made of buff colored sand stone. The provenance of the antiquity is *Kannauj*.



Fig. No. 254: Semi-finished image of a deity

173. The accessesion number of the antiquity is 358. It is a sculptural fragment showing a semi-finished image of a deity. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 19.5x10.5 cm. It is made of buff colored sand stone. The provenance of the antiquity is *Kannauj*.



Fig. No. 255: Defaced figure of a man

174. The accessesion number of the antiquity is 241. It is a sculptural fragment showing the defaced figure of a man. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 17x15 cm. It is made of buff colored sand stone. The provenance of the antiquity is *Kannauj*.



Fig. No. 256: Broken image of a horse rider

175. It is the broken image of a horse rider. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 12.2x16 cm. It is made of buff colored sand stone. The provenance of the antiquity is *Kannauj*.



Fig. No. 257: Mother a child

176. It is broken mutilated figure of mother with child. The size of the antiquity is 5.5x5.5 cm. It is of 9th century A.D. It is made of buff colored sandstone. It is made of buff colored sand stone. The provenance of the antiquity is *Kannauj*. She is breast feeding the child.



Fig. No. 258: Cylindrical *Mandrachal*

177. It is the image of cylindrical *Mandrachal* placed on tortoise (*Kachchhapa*) between two standing male figures representing *Devas* and *Asuras*. Its size is 6x7x4 cm. It is of 9th century A.D. It is made of buff colored sandstone. It is made of buff colored sand stone. The provenance of the antiquity is *Kannauj*.



Fig. No. 259: Lower part of a pillar

178. It is the lower part of a pillar decorated with standing human figures. It is of 9th century A.D. It is made of buff colored sand stone. The provenance of the antiquity is *Kannauj*[36].



Fig. No. 260: Goddess *Durgā*

179. The accessesion number of the antiquity is 256. It is the upper part of the image of goddess *Durgā*. It is of 9th century A.D. The size of the antiquity is 26x18 cm. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*. Goddess is holding her usual weapons in her hands[37].



Fig. No. 261: Broken image of *Sūrya*

180. It is broken image of *Sūrya*. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 37x24 cm. The provenance of the antiquity is *Kannauj*. He is wearing shoes and a small *Bhudevi* is standing between his legs[38].



Fig. No. 262: Broken image of *Sūrya*

181. It is the image of *Sūrya*. It is of 9th century A.D. It is made of buff colored sandstone. Its size is 38x28x37 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 263: Torso of a lady

182. It is the broken sculptural fragment of the torso of the lady. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 84x38x16 cm. The provenance of the antiquity is *Kannauj*. She is wearing necklace, *har* and girdle.



Fig. No. 264: Head of a deity

183. The accessesion number of the antiquity is 145. It is the head of a deity. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 15x6 cm. The provenance of the antiquity is *Kannauj*. He is wearing a crown[39].



Fig. No. 265: A sculptural fragment

184. The accessesion number of the antiquity is 352. It is a sculptural fragment. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 22.5x16x10 cm. The provenance of the antiquity is *Kannauj*. It shows a goddess sitting in *lalitasana* on a lotus seat. The figure is heavily mutilated.



Fig. No. 266: Lower portion of some deity

185. The accessesion number of the antiquity is 75/46. It is the lower right portion of the image of some deity. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 25.5x10.5 cm. The provenance of the antiquity is *Kannauj*. It shows an attendant standing with folded hands and a devotee kneeling in front of him. Both the figures are heavily mutilated.



Fig. No. 267: Part of an image of a deity

186. The accessesion number of the antiquity is 292. It is part of an image of some deity. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 79x27x18 cm. The provenance of the antiquity is *Kannauj*. It shows a standing attendant, a devotee and two human figures can be seen in the remaining *parikar*.



Fig. No. 268: Part of an image of a deity

187. The accessesion number of the antiquity is 314. It is a portion of the image of a deity. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 30x27.5x10 cm. The provenance of the antiquity is *Kannauj*. It shows three headed deity *Brahmā* (?). A lady sitting on a lotus seat and four circular objects kept in a line at the top.



Fig. No. 269: Human head

188. The accessesion number of the antiquity is 75/29. It is a human head. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 18.5x15.5 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 270: Male standing in a *rathika*

189. The accessesion number of the antiquity is 79/191. It is an architectural fragment. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 24x17 cm. The provenance of the antiquity is *Kannauj*. It shows a male deity standing in a round pillared *rathika* and a broken *vyala*.



Fig. No. 271: An ascetic sitting inside a rathika

190. The accessesion number of the antiquity is 115. It is a sculptural fragment. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 23x17 cm. The provenance of the antiquity is *Kannauj*. It shows an ascetic is sitting in *padmāsana* inside a *rathika*. He is flanked by two *vyalas*.



Fig. No. 272: A sculptural fragment

191. The accessesion number of the antiquity is 248. It is a sculptural fragment. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 15x9 cm. The provenance of the antiquity is *Kannauj*. It shows the deity sitting on his knees and holding the bowl full of *laddus* in his left hand. As usual his trunk is resting on the bowl.



Fig. No. 273: Image of Pilaster

192. The accessesion number of the antiquity is 75/70. It is made of buff colored sandstone. It is a pilaster of *Pratihar* period. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 27x9 cm. The provenance of the antiquity is *Kannauj*. The pilaster is decorated with a devotee kneeling with folded hands, *ghatapallava* motif, standing female figure and figure of *vyala*[40].



Fig. No. 274: Female housed inside a *chhadya*

193. It is a sculptural fragment showing a female attendant housed inside a *chhadya* supported by two circular pillars. It is of 9th century A.D. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*. On both sides of this *rathika*, the vertical bands are decorated with floral scrolls designs.



Fig. No. 275: *Ābhāmandala* part of a sculpture

194. The accessesion number of the antiquity is 205. It is the *Ābhāmandala* part of a sculpture. The size of the antiquity is 16x14 cm. It is of 9th century A.D. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*.



Fig. No. 276: Part of a sculpture

195. The accessesion number of the antiquity is 124. It is a sculptural fragment. The size of the antiquity is 17.5x32 cm. It is of 9th century A.D. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*[41].



Fig. No. 277: A sculptural fragment

196. The accessesion number of the antiquity is 54. It is a sculptural fragment. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 23.5x14 cm. The provenance of the antiquity is *Kannauj*. It shows four handed *Śiva* sitting in *dhyana mudra*. He is flanked by two *vyalas* and two *Mālādhārī Vidyādharas*.



Fig. No. 278: Standing female figure

197. The accessesion number of the antiquity is 79/81. It is a sculptural fragment showing a standing female figure wearing a short sword. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 28.5x16 cm. The provenance of the antiquity is *Kannauj*. She is wearing a crown, a necklace and her face is partly broken.



Fig. No. 279: A sculptural fragment

198. The accessesion number of the antiquity is 346. It is a sculptural fragment showing a female attendant of a deity accompanied with an attendant standing in front of her and a male standing to the right of her. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 22.5x12.5x2.5 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 280: Image of a man

199. It is the image of a male deity in standing posture. It is of 9th century A.D. It is made of red colored sandstone. Its size is 36x12x9 cm. The provenance of the antiquity is *Kannauj*. On the right side of the male figure is another female deity with a horse riding figure near her feet.



Fig. No. 281: Broken image of a couple

200. It is the lower portion of the broken image of a couple located on a seat. It is of 9th century A.D. It is made of red colored sandstone. Its size is 35x12x21 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 282: A sculptural fragment

201. The accessesion number of the antiquity is 365. It is a sculptural fragment. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 9x13.5x10 cm. The provenance of the antiquity is *Kannauj*. It is decorated with lotus petal motifs and the head of a *vyala*.



Fig. No. 283: An architectural fragment

202. It is an architectural fragment. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 12x13.5 cm. The provenance of the antiquity is *Kannauj*. It is decorated with *Kīrtimukha* and half flower motifs.



Fig. No. 284: An architectural fragment

203. The accessesion number of the antiquity is 69. It is an architectural fragment. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 61x38 cm. The provenance of the antiquity is *Kannauj*. It shows half *chaitya* motif flanking a *rathika* housing a divinity sitting in *lalitasana*. The lower part is decorated with bracketed pilaster and arched niche motif[42].



Fig. No. 285: An architectural fragment

204. The accessesion number of the antiquity is 400. It is an architectural fragment. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 32x18x3.5 cm. The provenance of the antiquity is *Kannauj*. It is decorated with *Kīrtimukha* motifs and floral scrolls.



Fig. No. 286: An architectural fragment

205. It is an architectural fragment. The size of the antiquity is 48x48x27 cm. It is of 9th century A.D. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*. It is the part of the roof of a temple[43].



Fig. No. 287: Image of a goddess

206. It is the upper portion of the image of a multi-handed goddess. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 7.1x12 cm. The provenance of the antiquity is *Kannauj*. She is holding a flower in her upper right hand and there is an elaborately carved *Ābhāmandala* behind her head[44].



Fig. No. 288: Image of a *Shiava* deity

207. It is the image of a *shaiva* deity (*Shaiva Dwarpal*) with *Urdhapingal* hair style. Its size is 23x14x10 cm. It is of 9th-10th century A.D. It is made of red colored sandstone. The provenance of the antiquity is *Kannauj*.



Fig. No. 289: ***Mālādhārī Vidyādhara***

208. The accessesion number of the antiquity is 79/174. It is a sculptural fragment showing a flying *Mālādhārī Vidyādhara*. The size of the antiquity is 14x11.5 cm. It is of 9th-10th century A.D. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*. He is holding a garland.



Fig. No. 290: Sūrya

209. The accessesion number of the antiquity is. It is the part of a *Sūrya* image. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is xx cm. The provenance of the antiquity is *Kannauj*. It shows three divine figures housed inside round pillared *rathikas*. On the left side as we move from bottom to top, one can see *Ashwani Kumar*, a devotee, a *vyala* standing on an elephant and a divinity sitting in *lalitasana* inside a *rathika*.



Fig. No. 291: ***Tīrthankara***

210. It is the image of a *Tīrthankara* standing in *Kayotsarga mudra* on a pedestal. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 70x32x10 cm. The provenance of the antiquity is *Kannauj*. He is flanked by *Indra* and *Upendra*. *Ābhāmandala* is shown behind his head. *Srivatsa* symbol is visible on his chest. On his right can be seen two devotees sitting in *lalitasana, gaja vyala, vyala* and a *Tīrthankara* sitting in *dhyana mudra* as we move up[45].



Fig. No. 292: ***Rishabhanatha***

211. The accessesion number of the antiquity is 75/93. It is a sculptural fragment showing upper part of the image of a *Rishabhanatha*. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 10.5x12 cm. The provenance of the antiquity is *Kannauj*. *Ābhāmandala* is visible behind his head[46].



Fig. No. 293: Śiva-Pārvatī

212. The accessesion number of the antiquity is 283. It is a corroded image of *Śiva-Pārvatī*. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 14x10.5x4 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 294: *Ganeśa*

213. The accessesion number of the antiquity is 75/79. It is a sculptural fragment showing the figure of *Ganeśa*. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 3.1x15.5 cm. The provenance of the antiquity is *Kannauj*. *Ganeśa* is wearing snake *yajnopavita*. His hand holding *Akśamālā* is shown above his head. He is holding something in his trunk. A celestial being is hovering above his head[47].



Fig. No. 295: *Ganeśa*

214. The accessesion number of the antiquity is 356. It is a broken image of *Ganeśa*. The size of the antiquity is 16x18.5x9 cm. It is of 9th-10th century A.D. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*.



Fig. No. 296: Dancing *Ganeśa*

215. It is the image of dancing *Ganeśa*. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 20x16 cm. The provenance of the antiquity is *Kannauj*. He is holding his usual weapons and is flanked by two kneeling devotees.



Fig. No. 297: Dancing *Ganeśa*

216. The accessesion number of the antiquity is 8. It is the eight handed image of dancing *Ganeśa*. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 66x55 cm. The provenance of the antiquity is *Kannauj*. He is holding his usual attributes.



Fig. No. 298: Four handed *Viṣnu*

217. It is the corroded image of four handed *Viṣnu*. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 14.5x8 cm. The provenance of the antiquity is *Kannauj*. He is holding his usual weapons in his four hands. He is wearing a *Vanamālā,* a large necklace, ear ornaments and *Kirītamukuta*. He is flanked by two kneeling devotees doing *Namaskara*.



Fig. No. 299: Semi-finished image of *Narsingha*

218. It is a semi-finished image of *Narsingha (?)*.It is of 9th-10th century A.D. The size of the antiquity is 18x10 cm. It is made of buff colored sand stone. The provenance of the antiquity is *Kannauj*.



Fig. No. 300: *Parikar* of the image of *Viṣnu*

219. The accessesion number of the antiquity is 80/277. It is a fragment of *parikar* of the image of *Viṣnu*. It is 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 13x10.5 cm. The provenance of the antiquity is *Kannauj*. The image shows *Balrama* holding *musala, hala* and *chashaka*. The horse riding *Kalki* is holding a sword and a shield[48].



Fig. No. 301: *Parikar* of the image of *Viṣnu*

220. The accessesion number of the antiquity is 75/49. It is a mutilated sculptural fragment of the *parikar* of a *Viṣnu* image. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 26x5x5 cm. The provenance of the antiquity is *Kannauj*. It shows *Vāmana* standing in *tribhanga mudra* and a devotee sitting on the ground. Above these figures are shown two standing male figures.



Fig. No. 302: Part of the image of *Viṣnu*

221. The accessesion number of the antiquity is 353. It is the part of an image of *Viṣnu*. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 21x6.5x13.5 cm. The provenance of the antiquity is *Kannauj*. It shows the hand of deity holding *shankha.* Below this, a lady and a male attendant sitting in front of her are shown.



Fig. No. 303: ***Varāha-Viṣnu***

222. The accessesion number of the antiquity is 15. It is the portion of *Varāha-Viṣnu* image. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 48x30 cm. The provenance of the antiquity is *Kannauj*. It shows one standing female attendant, one *vyala,* two *Mālādhārī Vidyādharas* in his *parikar*. He is wearing *Vanamālā.*



Fig. No. 304: ***Varāha-Viṣnu***

223. The accessesion number of the antiquity is 161. It is a sculptural fragment showing the broken image of *Varāha avatar*. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 20.5x13 cm. The provenance of the antiquity is *Kannauj*. The deity is lifting the earth with his snout. His lower left and upper portion is missing.



Fig. No. 305: *Parikar* of the *Viṣnu*

224. The accessesion number of the antiquity is 132. It is the part of the *parikar* of a *Viṣnu* image and shows a deity sitting inside a *rathika* and holding water vessel in his left hand. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 22.5x41 cm. The provenance of the antiquity is *Kannauj*. On the right side is the image of *Narasingha* killing *Hiranyakashipu*[49].



Fig. No. 306: *Viṣnu*

225. It is the image of *Viṣnu (?)*. It is of 9th-10th century A.D. It is made of buff colored sandstone. Its size is 38x24x14 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 307: Part of the *Viṣnu*

226. It is the lower part of the image of a deity (*Viṣnu?*). It is of 9th-10th century A.D. It is made of buff colored sandstone. Its size is 26x7x17 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 308: *Viṣnu*

227. It is the image of four handed standing *Viṣnu*. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 14x7.5 cm. The provenance of the antiquity is *Kannauj*. He is carrying his usual weapons in his hands. He is accompanied by a female and a male *Ayudhapurushas*.



Fig. No. 309: A sculptural fragment

228. The accessesion number of the antiquity is 279. It is a sculptural fragment. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 16x15x5.5 cm. The provenance of the antiquity is *Kannauj*. It shows a female and a male figures housed inside *rathikas* and holding musical instruments.



Fig. No. 310: Image of a lady

229. The accessesion number of the antiquity is 297. It is a sculptural fragment showing the upper portion of a lady. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 12x11x9 cm. The provenance of the antiquity is *Kannauj*. She is wearing necklace and ear ornaments. It is probably part of a *Mithun* figure.



Fig. No. 311: Lower part of the *Kartīkeya* image

230. The accessesion number of the antiquity is 325. It is a sculptural fragment showing the lower part of the image of *Kartīkeya*. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 18.5x7.5 cm. The provenance of the antiquity is *Kannauj*. He is feeding peacock and also riding the bird. On his left side, lower portion of a kneeling man is visible[50].



Fig. No. 312: Lower part of the *Kartīkeya* image

231. It is the lower part of the image of *Kartīkeya*. It is of 9th-10th century A.D. It is made of buff colored sandstone. The accessesion number of the antiquity is 327. The size of the antiquity is 22x25x10 cm. The provenance of the antiquity is *Kannauj*. *Kartīkeya* is sitting in *lalitasana* and feeding his peacock.



Fig. No. 313: Image of a deity

232. The accessesion number of the antiquity is 79/238. It is a fragment of the image of a deity. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 13x10 cm. The provenance of the antiquity is *Kannauj*. Only the left hand of the deity above the elbow is visible. The deity is wearing a *bhujbanda*. There is a headless figure of a female devotee offering a flower stands on the left side. She is wearing a necklace.



Fig. No. 314: Female head

233. The accessesion number of the antiquity is 79/260. It is a sculptural fragment showing a female head. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 22x16 cm. The provenance of the antiquity is *Kannauj*. The lady is wearing graiveyaka and two different ear ornaments in her ears. She is wearing a horse shoe shaped head gear[51].



Fig. No. 315: Female figure

234. The accessesion number of the antiquity is 362. It is a sculptural fragment showing a female figure. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 11.5x18.5x8 cm. The provenance of the antiquity is *Kannauj*. She is wearing a large ear ornament.



Fig. No. 316: Female figure

235. The accessesion number of the antiquity is 234. It is a sculptural fragment showing a defaced female figure. It is 10th century A.D. It is made of red colored sandstone. The size of the antiquity is 19.5x17.5 cm. The provenance of the antiquity is *Kannauj*. She is wearing a graiveyaka and *stanahār*.



Fig. No. 317: Female figure

236. The accessesion number of the antiquity is 75/79. It is a sculptural fragment showing a mutilated female figure. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 29x14.5 cm. The provenance of the antiquity is *Kannauj*. She is wearing *graiveyaka, stanahār* and large ear ornaments.



Fig. No. 318: Female figure

237. The accessesion number of the antiquity is 75/90. It is a sculptural fragment showing a figure of female and a smaller figure of *Viṣnu* at above her. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 15.5x9.7 cm. The provenance of the antiquity is *Kannauj*. The female is wearing *graiveyaka, har* and large ear ornaments. She has got a horse shoe shaped hairdo. *Viṣnu* is sitting in *lalitasana* and is holding *chakra* and *gada* in his left and right hand[52].



Fig. No. 319: Female figure

238. The accessesion number of the antiquity is 75/148. It is a sculptural fragment showing a mutilated female figure. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 26x13 cm. The provenance of the antiquity is *Kannauj*. It shows stylized bun tied behind her head. She is wearing *graiveyaka, stanahār* and large ear ornaments.



Fig. No. 320: Female figure

239. The accessesion number of the antiquity is 79/192. It is a sculptural fragment showing a heavily mutilated middle portion of a female figure. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 19x13 cm. The provenance of the antiquity is *Kannauj*. She is wearing a necklace.



Fig. No. 321: Female figure

240. It is a sculptural fragment showing a defaced image of a standing lady. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 16x7.5 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 322: Female figure

241. The accessesion number of the antiquity is 75/88. It is a sculptural fragment showing a standing female figure. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 15x10.5 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 323: A sculptural fragment

242. It is a sculptural fragment showing a male deity sitting on a throne and a female deity standing on his right. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 36x16.5 cm. The provenance of the antiquity is *Kannauj*. *Ābhāmandala* can be seen behind the heads of both the deities.



Fig. No. 324: Female figure

243. It is head of a female *Shaiva* deity. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 9.5x5.8 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 325: Sculptural fragment showing Female figure

244. It is a sculptural fragment showing a lady standing and holding a fly whisk and water vessel. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 65x44x15 cm. The provenance of the antiquity is *Kannauj*. Another female attendant stands to her left and an animal is standing in front of her.



Fig. No. 326: Female head

245. It is a sculptural fragment showing a female head. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 8x6.2 cm. The provenance of the antiquity is *Kannauj*. The lady is wearing large ear ornaments and a head ornament. She is sporting a *bindi* in the middle of her forehead.



Fig. No. 327: Female head

246. The accessesion number of the antiquity is 79/244. It is a female head. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 13x10.5 cm. The provenance of the antiquity is *Kannauj*. Her hairdo is in the shape of a semi-circular fan sitting over her head.



Fig. No. 328: Female figure

247. The accessesion number of the antiquity is 75/147. It is the image of a lady. The size of the antiquity is 16x17 cm. It is of 9th-10th century A.D. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*. The image is made of buff colored sandstone. The lady is wearing a necklace and large ear ornaments. She is sporting a *bindi* in the middle of her forehead.



Fig. No. 329: *Ravāṅanugraha* figure

248. It is the defaced image of *Ravāṅanugraha*. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 28x24x8.5 cm. The provenance of the antiquity is *Kannauj*. Below the seat of headless divine couple can be seen *Nandi, Bhringi Rishi* and *Kartīkeya* as we move from right to left.



Fig. No. 330: Male figure

249. The accessesion number of the antiquity is 125. It is a sculptural fragment showing a broken male figure. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 27x21 cm. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*.



Fig. No. 331: Image of a Musician

250. It is image of a musician. It is of 9th-10th century A.D. The size of the antiquity is 40x18x12 cm. The provenance of the antiquity is *Kannauj*. It is made of *Kankar*[53].



Fig. No. 332: Durgā

251. The accessesion number of the antiquity is 126. It is the broken image of the goddess *Durgā*. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 24x24 cm. The provenance of the antiquity is *Kannauj*. The sword and shield can be seen at the level of her head. Two *Mālādhārī Vidyādharas* couples are hovering above her head.



Fig. No. 333: A sculptural fragment

252. The accessesion number of the antiquity is 50. It is a sculptural fragment showing an ascetic who is being worshipped by two female devotees. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 13.5x13.5 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 334: An elephant

253. The accessesion number of the antiquity is 75/281. It is broken figure of an elephant. The size of the antiquity is 7.5x17.5x5 cm. It is of 9th-10th century A.D. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*. The cloth spread over the back of the animal is tied to his body with three ropes.



Fig. No. 335: A sculptural fragment

254. The accessesion number of the antiquity is 150. It is a sculptural fragment showing a hand holding a small vessel and a human head on its left side. It is of 9th-10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 23x14 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 336: Mutilated human head

255. The accessesion number of the antiquity is 79/190. It is the upper part of a mutilated human head. It is of 9th-10th century A.D. The size of the antiquity is 18x13 cm. It is made of red colored sand stone. The provenance of the antiquity is *Kannauj*.



Fig. No. 337: *Rishabhanatha*

256. The accessesion number of the antiquity is. It is the image of *Rishabhanatha* sitting in *dhyana mudra*. It is of 10th century A.D. It is made of red colored sandstone. The size of the antiquity is 39x23x8 cm. The provenance of the antiquity is *Kannauj*. It shows the *simhasana* is carved with two bulls, one kneeling devotee and *dharma chakra*. It bears an inscription. It reads *"Bhaval"*. The *simhasana* is flanked by *yaksha* and *yakshi* of *Tīrthankara*. *Indra* and *Upendra,* two *Mālādhārī Vidyādhara, Trichatra, Dev Dundubhi* and four miniature *Tīrthankaras* are shown in his *parikar*. *Ābhāmandala* is visible behind his head. At the bottom is the *Navagrahas* forming a band.



Fig. No. 338: River Yamuna

257. It is the part of a door-jamb showing the female attendant of river goddess *Yamuna* and a male attendant accompanied with a small man. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 67x44x11 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 339: *Ganeśa*

258. It is a sculptural fragment showing the head of *Ganeśa*. The size of the antiquity is 5x3.5 cm. It is of 10th century A.D. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*.



Fig. No. 340: Dancing *Ganeśa*

259. The accessesion number of the antiquity is 79/182. It is the broken image of dancing *Ganeśa*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 19x12 cm. The provenance of the antiquity is *Kannauj*[54].



Fig. No. 341: *Ganeśa*

260. It is the image of dancing *Ganeśa*. It is of 10th century A.D. It is made of red colored sandstone. Its size is 19x15x5 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 342: *Lakśmī & Ganeśa*

261. It is the image of seated *Lakśmī* and *Ganeśa*. It is of 10th century A.D. It is made of red colored sandstone. Its size is 36x33x13 cm. The provenance of the antiquity is *Kannauj*. *Lakśmī* is sitting on a lotus seat. On her left side near the head stands an elephant.



Fig. No. 343: *Ganeśa*

262. The accessesion number of the antiquity is 388. It is a broken image of four handed *Ganeśa.* It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 32.5x23x17 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 344: *Ganeśa*

263. The accessesion number of the antiquity is 255. It is the image of four handed dancing *Ganeśa*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 31x20 cm. The provenance of the antiquity is *Kannauj*. The trunk of the deity is resting on a bowl of *laddus*.



Fig. No. 345: *Ganeśa*

264. The accessesion number of the antiquity is 85. It is the broken image of dancing *Ganeśa*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 42x14.5 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 346: *Umā-Maheśa*

265. The accessesion number of the antiquity is 13. It is a mutilated image of *Umā-Maheśa*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 36x20 cm. The provenance of the antiquity is *Kannauj*. It shows *Śiva* and *Pārvatī* sitting on a throne. Below the seat can be seen *Ganeśa, Bhringi Rishi, Nandi,* peacock and *Kartīkeya*. Above their heads, three *Mālādhārī Vidyādharas* can be seen[55].



Fig. No. 347: *Umā-Maheśa*

266. The accessesion number of the antiquity is 340. It is the part of the image of *Umā-Maheśa*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 22x17x16 cm. The provenance of the antiquity is *Kannauj*. It shows the defaced head of *Pārvatī* with *Ābhāmandala* visible behind his head.



Fig. No. 348: ***Rāvaṅanugraha***

267. The accessesion number of the antiquity is 270. It is the lower part of *Śiva's Rāvaṅanugraha* image. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 47x29 cm. The provenance of the antiquity is *Kannauj*. It is the lower most part showing *Ravana* and his followers trying to lift mound *Kailash*[56].



Fig. No. 349: ***Rāvaṅanugraha***

268. The accessesion number of the antiquity is. It is the broken fragment of the *Rāvaṅanugraha* image of *Śiva*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 52x41x14 cm. The provenance of the antiquity is *Kannauj*. The upper part of the image is damaged. At the bottom of the image *Ravana* accompanied by associates can be seen lifting the mount *Kailash*.



Fig. No. 350: ***Tapasvinī Pārvatī***

269. The accessesion number of the antiquity is 98. It is the corroded image of *Tapasvinī Pārvatī*. The size of the antiquity is 11.9x8 cm. It is of 10th century A.D. It is made of *Kankar* stone. The provenance of the antiquity is *Kannauj*. The four handed goddess is shown doing *panchagni tapa*.



Fig. No. 351: ***Pārvatī***

270. The accessesion number of the antiquity is 79/223. It is the head of *Pārvatī (?)*. It is 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 19x13 cm. The provenance of the antiquity is *Kannauj*. The deity is wearing three tiered *Jatāmukuta* and a jewel hanging with a string of beads in the middle of the *Jatāmukuta*.



Fig. No. 352: ***Chamundā***

271. It is the image of four handed *Chamundā* riding an owl. It is of 10th century A.D. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*. Her feet are resting on lotus flowers emerging from pedestal. The flower pedestal are flanked by a male and a female devotees. She is holding a sword and a shield in her two hands. She has inserted fingers of other two hands into her mouth. She is wearing anklets, *hara, stanahār, graiveyaka,* wristlets, *waistband* and ear ornaments. A *Kirītamukuta* is placed on her head. Two *Mālādhārī Vidyādhara* couples are hovering above her. *Ābhāmandala* is shown behind her head[57].



Fig. No. 353: ***Chamundā***

272. The accessesion number of the antiquity is 79/225. It is a sculptural fragment showing the upper portion of *Chamundā*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 18x11.5 cm. The provenance of the antiquity is *Kannauj*. The figure shows emaciated body of the goddess. She is wearing a *har,* and ear ornaments. Her breasts are also shown.



Fig. No. 354: *Chamundā*

273. The accessesion number of the antiquity is 268. It is the lower portion of the broken figure of *Chamundā*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 55x47 cm. The provenance of the antiquity is *Kannauj*. She is standing on a lotus pedestal kept on a male lying in the ground. She is accompanied with grotesque followers. She is wearing a garland of human head[58].



Fig. No. 355: ***Kartīkeya***

274. It is the image of *Kartīkeya*. It is of 10th century A.D. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*. He is *accompanied* by his wife *Yagyasena,* peacock his vehicle and two small sized male attendants. Above the level of waist, he is flanked by two *vyalas*. His head is flanked by *Ganeśa* and *Pārvatī*[59].



Fig. No. 356: *Viṣnu*

275. The accessesion number of the antiquity is 359. It is a sculptural fragment showing part of a *Viṣnu* image. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 82x3x9.5 cm. The provenance of the antiquity is *Kannauj*. The hand of the deity holding *chakra* is shown in addition to the figure of a *vyala* and a *Mālādhārī Vidyādhara* on the left side.



Fig. No. 357: Parikar of *Viṣnu*

276. It is a sculptural fragment showing the part of *parikar* of *Viṣnu* image. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 37x20 cm. The provenance of the antiquity is *Kannauj*. As we move from bottom, one can see the image of *Balrama* housed in a *rathika, vyala,* another *avatar,* head of a *makara vyala* and *kurma avatar*.



Fig. No. 358: ***Vāman***

277. It is the image of *Vāman* standing on a lotus pedestal. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 41.5x31x1 cm. The provenance of the antiquity is *Kannauj*. His *parikar* has his male and female attendants, two devotees, two male attendants, one *vyala* and a *Mālādhārī Vidyādhara* couple. *Ābhāmandala* is also visible behind his head.



Fig. No. 359: Pat of *Viṣnu* image

278. The accessesion number of the antiquity is 393. It is the part of *Viṣnu* image. The size of the antiquity is 12.5x10.5 cm. It is of 10th century A.D. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*. It shows the left hand of the deity holding *Chakra*.



Fig. No. 360: ***Viṣnu***

279. The accessesion number of the antiquity is 220. It is the broken image of *Viṣnu*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 39x33 cm. The provenance of the antiquity is *Kannauj*. He is holding a *Chakra* in his right hand. He is wearing a graiveyaka, *har,* ear ornaments and *Kirītamukuta*. Above his head on his right sits bearded *Brahmā* holding a water vessel covered with *Bijapuraka*. On the left side stands another figure sitting in *lalitasana*.



Fig. No. 361: ***Viṣnu***

280. The accessesion number of the antiquity is 79/189. It is a broken image of *Viṣnu*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 12.5x11.5 cm. The provenance of the antiquity is *Kannauj*. He is flanked by two female attendants, two divine beings and two kneeling figures of devotees. He is holding the club in his right hand. He is wearing *Vanamālā*[60].



Fig. No. 362: *Viṣnu*

281. The accessesion number of the antiquity is 60. It is a broken image of *Viṣnu*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 32x25.5 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 363: Parikar of *Viṣnu*

282. The accessesion number of the antiquity is. It is part of a large *Viṣnu* image. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 44x52x9 cm. The provenance of the antiquity is *Kannauj*. It shows three headed three headed *Brahmā* & *Viṣnu* sitting in *padmāsana* and holding their usual attributes. They are housed in round pillared *rathikas*. In between the *rathikas* stand *Rama* & *Sita*. Near the bottom are shown an array of divine beings. Near the feet of *Rama* is shown *Mālādhārī Vidyādhara* couple. At the top are carved the figures of *Mālādhārī Vidyādharas*.



Fig. No. 364: *Viṣnu*

283. The accessesion number of the antiquity is 341. It is the top right portion of the image of *Viṣnu*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 33x24x16 cm. The provenance of the antiquity is *Kannauj*. It shows *Narasingha* killing *Hiranyakashipu*, a tortoise and a broken figure of *Mālādhārī Vidyādhara*.



Fig. No. 365: *Viṣnu*

284. The accessesion number of the antiquity is 79/222. It is a *Viṣnu (?)* head. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 19x16 cm. The provenance of the antiquity is *Kannauj*. The deity is wearing a *Kirītamukuta*.



Fig. No. 366: Semi-finished image of *Viṣnu*

285. It is a semi-finished image of *Viṣnu*. It is of 10th century A.D. The size of the antiquity is 18.5x12.2 cm. It is made of buff colored sand stone. The provenance of the antiquity is *Kannauj*. He is holding his usual attributes and accompanied by his *Ayudhapurushas*.



Fig. No. 367: *Viṣnu*

286. The accessesion number of the antiquity is 75/25. It is the head of *Harihar*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 11.5x13.5 cm. The provenance of the antiquity is *Kannauj*. He is wearing a *Kirītamukuta* on the left and *Jatāmukuta* on the right.



Fig. No. 368: ***Brahmā***

287. The accessesion number of the antiquity is 110. It is the image of a three headed *Brahmā (?)*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 18x18 cm. The provenance of the antiquity is *Kannauj*. He is sitting in *lalitasana* and holding a *Kamandala* in his left hand[61].



Fig. No. 369: ***Brahmā & Saraswatī***

288. The accessesion number of the antiquity is 75/18. It is the image of bearded *Brahmā* and *Saraswatī*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 27x20 cm. The provenance of the antiquity is *Kannauj*. The couple is sitting in amorous pose. Two swans are sitting below their seats. Flower in the left hand of *Saraswatī* and *Chamas* in the right hand & a book in left hand of *Brahmā* are visible[62].



Fig. No. 370: ***Brahmā***

289. The accessesion number of the antiquity is. It is part of a panel having the images of *Brahmā, Viṣnu* and *Mahesh*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 56x37x16 cm. The provenance of the antiquity is *Kannauj*. It shows three headed & four handed *Brahmā* and right part of the *parikar* of another deity. *Brahmā* is holding his usual attributes. He is attended by two divine attendants, two female devotees are sitting near his feet. Two *Mālādhārī Vidyādharas* are hovering above his head[63].



Fig. No. 371: ***Saraswatī***

290. It is the upper part of the image of goddess *Saraswatī*. It is of 10th century A.D. It is made of red colored sandstone. Its size is 33x31x28 cm. The provenance of the antiquity is *Kannauj*. She is holding *Chamas* in her right hand and a book in her left hand.



Fig. No. 372: ***Mahiṣāsuramardinī***

291. The accessesion number of the antiquity is 79/233. It is the lower part of an inscribed image of *Mahiṣāsuramardinī*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 13.5x5x7.5 cm. The provenance of the antiquity is *Kannauj*. It shows the *Mahisasura* emerging from the body of the headless buffalo. The two feet of the goddess are also visible. There is a short inscription on the pedestal of the image. It reads *"Yavaharu"*.



Fig. No. 373: ***Mahiṣāsuramardinī***

292. The accessesion number of the antiquity is. It is the small broken image of *Mahiṣāsuramardinī*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 52x39x8 cm. The provenance of the antiquity is *Kannauj*. She is killing *Mahisasura,* the demon. The demon is shown in the form of buffalo only. The goddess has put her right feet on his head. Her left foot is planted on the ground. Lion is attacking the demon from behind. At the lower side, three more human figures are visible in different postures. She is holding her usual attributes in her hands. A broken *vyala,* two *Mālādhārī Vidyādhara* couples and two *Mālādhārī Vidyādharas* are still shown in her *parikar*.



Fig. No. 374: ***Mahiṣāsuramardinī***

293. The accessesion number of the antiquity is 78. It is part of the *Mahiṣāsuramardinī* image. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 31x15.5 cm. The provenance of the antiquity is *Kannauj*. It shows the severed head of *Mahisasura* and left feet of the goddess.



Fig. No. 375: ***Mahiṣāsuramardinī***

294. The accessesion number of the antiquity is 79/224. It is a sculptural fragment of the image of *Mahiṣāsuramardinī*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 15x11 cm. The provenance of the antiquity is *Kannauj*. The fragment shows a lion attacking the buffalo. The *Mahisasura* emerging from the headless buffalo whose head is lying below. The right leg of the goddess resting on the buffalo is visible[64].



Fig. No. 376: Part of the *Mahiṣāsuramardinī* image

295. The accessesion number of the antiquity is 75/99. It is a sculptural fragment showing the lower part of the image of *Mahiṣāsuramardinī*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 11.5x9.5 cm. The provenance of the antiquity is *Kannauj*. The beheaded body of buffalo, its head, lower part of the *Mahisasura*, right and left legs of the goddess and her *trishula* piercing the body of the demon can be seen in the broken image.



Fig. No. 377: Mother goddess

296. The accessesion number of the antiquity is 368. It is a sculptural fragment showing a decade upper portion of an image of a mother goddess. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 11.5x15x6 cm. The provenance of the antiquity is *Kannauj*. Two hands of mother goddess are raised and holding some objects. She is flanked by two *vyalas.* On the upper left side, the head of a *makara vyala* is visible. A deity is shown sitting in *lalitasana*.



Fig. No. 378: *Tīrthankara*

297. The accessesion number of the antiquity is 75/96. It is a sculptural fragment showing a *Tīrthankara* sitting in *padmāsana* inside a *rathika*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 12.5x10.3 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 379: ***Tīrthankara***

298. The accessesion number of the antiquity is 386. It is a sculptural fragment showing a *Tīrthankara* sitting in *dhyana mudra* above another human figure. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 11.5x7.5x6 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 380: ***Tīrthankaras***

299. The accessesion number of the antiquity is 79/178. It is a sculptural fragment showing three *Tīrthankaras*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 24x14.5 cm. The provenance of the antiquity is *Kannauj*. One *Tīrthankara* is sitting in *dhyana mudra* inside a *rathika*. He is flanked by two *Tīrthankaras* standing in *kayotsarga mudra*.



Fig. No. 381: Parents of *Tithankara*

300. It is the image of the parents of the *Tīrthankara*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 18x16.8 cm. The provenance of the antiquity is *Kannauj*. It shows the couple is sitting on cushions. The son is sitting on the lap of mother. A small image of *Tīrthankara* is visible in the tree. Six people are shown sitting below the seat in different postures[65].



Fig. No. 382: ***Nāga***

301. The accessesion number of the antiquity is 79/35. It is the image of a *Nāga*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 21.5x17 cm. The provenance of the antiquity is *Kannauj*. He is standing with his right hand raised in *Abhaya mudra*. Three headed serpent hood is visible behind his head.



Fig. No. 383: ***Nāga***

302. The accessesion number of the antiquity is 396. It is a sculptural fragment showing five hooded *Naga*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 27.5x24x15 cm. The provenance of the antiquity is *Kannauj*. His hands are raised upward. He is wearing bangles, armlets, necklace and ear ornaments.



Fig. No. 384: *Sūrya* sitting in *rathika*

303. It is the image of four handed *Sūrya* sitting in *dhyana mudra* inside a *rathika*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 19x23 cm. The provenance of the antiquity is *Kannauj*. He is holding two flowers in his two hands and accompanied by a female attendant standing on his left side.



Fig. No. 385: ***Sūrya***

304. It is the image of *Sūrya*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 68x45x20 cm. The provenance of the antiquity is *Kannauj*. He is flanked by *Ragyani* & *Nikshubha*, *danda & pingala* and two kneeling devotees at the ground level. *Mahasweta @ Bhudevi* sits in the middle of his booted legs. At the level of his waist, *Usha* and *Pratyusha* holding bow and arrow can be seen. Beyond the two goddess stand *vyalas*. Above his shoulders, head of *makara vyalas* and two *Mālādhārī Vidyādhara* couple can be seen[66].



Fig. No. 386: ***Sūrya***

305. The accessesion number of the antiquity is 9. It is a sculptural fragment showing the fragment of the image of *Sūrya*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 35x23 cm. The provenance of the antiquity is *Kannauj*. There is a band at the bottom decorated with floral scrolls. The booted feet of the deity is visible. He is riding a chariot driven by seven horses. Four of the seven horses are visible, the other three horse are broken[67].



Fig. No. 387: Male figure

306. The accessesion number of the antiquity is 79/184. It is a sculptural fragment showing a male deity. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 15x8 cm. The provenance of the antiquity is *Kannauj*. He is wearing a *Kirītamukuta*. He is also wearing large ear ornaments.



Fig. No. 388: Head of a deity

307. The accessesion number of the antiquity is 32. It is the broken head of a deity. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 17x10 cm. The provenance of the antiquity is *Kannauj*. He is wearing *Kirītamukuta*.



Fig. No. 389: Female deity

308. The accessesion number of the antiquity is 75/137. It is a sculptural fragment showing the mutilated bust of a female deity. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 29x20 cm. The provenance of the antiquity is *Kannauj*. She is wearing graiveyaka, *har, kundals* and a highly ornamented *Kirītamukuta*.



Fig. No. 390: Part of a lady figure

309. The accessesion number of the antiquity is 375. It is a sculptural fragment showing the upper portion of a lady. The size of the antiquity is 8.5x10x9.5 cm. It is of 10th century A.D. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*.



Fig. No. 391: A sculptural fragment

310. The accessesion number of the antiquity is 295. It is a sculptural fragment. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 17x10.5x10 cm. The provenance of the antiquity is *Kannauj*. It shows a female standing in *tribhanga* mudra. Her right hand is resting on her thigh and left hand is raised.



Fig. No. 392: A sculptural fragment

311. The accessesion number of the antiquity is 75/80. It is a sculptural fragment showing two broken human figures holding child on their laps. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 21x21 cm. The provenance of the antiquity is *Kannauj*. Below their seats are shown a lion, a devotee and a human figure lying on the ground.



Fig. No. 393: Part of some image

312. The accessesion number of the antiquity is 300. It is a part of the image of some deity. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 10x11x6 cm. The provenance of the antiquity is *Kannauj*. It shows a heavily *Mālādhārī Vidyādhara* couple.



Fig. No. 394: ***Mālādhārī Vidyādhara***

313. The accessesion number of the antiquity is 75/97. It is the mutilated image of a *Mālādhārī Vidyādhara*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 9.5x8 cm. The provenance of the antiquity is *Kannauj*. He is holding a garland and wears a very large bun on his head.



Fig. No. 395: Flying *Mālādhārī Vidyādhara*

314. The accessesion number of the antiquity is 301. It is a sculptural fragment showing a flying *Mālādhārī Vidyādhara*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 15.5x10x6 cm. It is made of buff colored sand stone. The provenance of the antiquity is *Kannauj*. He is holding a garland in his hands.



Fig. No. 396: ***Mālādhārī Vidyādhara***

315. It is the image of a *Mālādhārī Vidyādhara*. Its size is 23x6x15 cm. It is of 10th century A.D. It is made of red colored sandstone. It is made of red colored sand stone. The provenance of the antiquity is *Kannauj*.



Fig. No. 397: Defaced female figure

316. The accessesion number of the antiquity is 140. It is a sculptural fragment showing a defaced female figure. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 40x18 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 398: Female head

317. The accessesion number of the antiquity is 5. It is a sculptural fragment showing a female head. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 16.5x15 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 399: Female deity

318. The accessesion number of the antiquity is 24. It is the upper part of the female deity. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 40x40 cm. The provenance of the antiquity is *Kannauj*. Two man fighting a *Vyāla,* two goddesses, two standing ladies and two *Mālādhārī Vidyādharas* are sitting above his head. *Ābhāmandala* is visible behind her head. She is wearing ear ornaments[68].



Fig. No. 400: Female deity

319. The accessesion number of the antiquity is. It is part of the image of some deity. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 45x20x16 cm. The provenance of the antiquity is *Kannauj*. It shows a female attendant of the divinity and a kneeling figure of a devotee.



Fig. No. 401: Male deity

320. It is the image of a male deity. It is of 10th century A.D. It is made of buff colored sandstone. Its size is 48x21x17 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 402: A sculptural fragment

321. The accessesion number of the antiquity is 226. It shows three male figures sitting in *lalitāsana*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 13x8 cm. The provenance of the antiquity is *Kannauj*. They are holding something in their hands.



Fig. No. 403: A sculptural fragment

322. The accessesion number of the antiquity is 79/180. It is a sculptural fragment. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 20.5x19 cm. The provenance of the antiquity is *Kannauj*. It shows a man in *lalitāsana*. He is flanked by two male figures. Below him three human heads are visible.



Fig. No. 404: Lower portion of a male

323. It is a sculptural fragment showing the lower portion of a male. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 11.5x8 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 405: Male figure

324. It is the image of a standing male figure. It is of 10th century A.D. It is made of red colored sandstone. Its size is 25x14x8 cm. The provenance of the antiquity is *Kannauj*. His right hand is resting on his thigh.



Fig. No. 406: Male figure

325. The accessesion number of the antiquity is 75/28. It is the head of a male deity. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 18.5x8.5 cm. The provenance of the antiquity is *Kannauj*. He is wearing a *Kirītamukuta*[69].



Fig. No. 407: A sculptural fragment

326. The accessesion number of the antiquity is 317. It is a sculptural fragment. It is of 9th century A.D. It is made of buff colored sandstone. The size of the antiquity is 18x10x8.5 cm. The provenance of the antiquity is *Kannauj*. It shows a male standing and a female sitting on his left side with folded hands.



Fig. No. 408: A sculptural fragment

327. The accessesion number of the antiquity is 386. It is a sculptural fragment showing a male attendant standing inside a *rathikā* and a female attendant standing to his left. It is of 10th century A.D. It is made of red colored sandstone. The size of the antiquity is 11.5x7.5x6 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 409: A sculptural fragment

328. It is a sculptural fragment showing a female and a male deity in standing posture. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 26x17 cm. The provenance of the antiquity is *Kannauj*. A devotee is sitting on the left side of the standing female deity. Both the deities are standing in *tribhanga mudra*.



Fig. No. 410: A sculptural fragment

329. The accessesion number of the antiquity is 66. It is a sculptural fragment showing a standing female and a male figure. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 20x12 cm. The provenance of the antiquity is *Kannauj*. The male is holding a stick which is curved at the top.



Fig. No. 411: A sculptural fragment

330. The accessesion number of the antiquity is 199. It is a sculptural fragment showing a male and a female in amorous pose. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 13.5x11.5 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 412: A sculptural fragment

331. The accessesion number of the antiquity is 75/100. It is a sculptural fragment showing a broken figure of a horse rider. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 12.3x9.5 cm. The provenance of the antiquity is *Kannauj*. It is made of buff colored sandstone. The rider is sitting on a richly decorated horse.



Fig. No. 413: A horse rider

332. The accessesion number of the antiquity is 75/67. It is a sculptural fragment showing a horse rider and a female figure. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 15x13 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 414: A panel

333. It is a broke panel. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 40x16 cm. The provenance of the antiquity is *Kannauj*. It shows a horse rider, an elephant rider, a lady with a child and a human figure as we move from left to right.



Fig. No. 415: A warrior

334. The accessesion number of the antiquity is. It is the broken image of a warrior. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 30x31x13 cm. The provenance of the antiquity is *Kannauj*. He is unsheathing his sword.



Fig. No. 416: Image of a goddess

335. The accessesion number of the antiquity is. It is the broken image of a goddess. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 40x29x7 cm. The provenance of the antiquity is *Kannauj*. She is flanked by two lions and two female divine attendants.



Fig. No. 417: Part of a large image

336. The accessesion number of the antiquity is 333. It is the part of a large image. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 34x24x13 cm. The provenance of the antiquity is *Kannauj*. It shows a deity sitting in a *rathikā.* He is flanked by two devotees and two *Vyālas*. Head of a *makara Vyāla* is visible on the right side of the *rathikā*.



Fig. No. 418: A sculptural fragment

337. The accessesion number of the antiquity is 75/89. It is a sculptural fragment. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 14x18.5 cm. The provenance of the antiquity is *Kannauj*. It shows a defaced deity sitting in *lalitāsana* inside a *rathikā* and holding his weapons. On the left side of *rathikā* is the head portion of a *makara Vyāla*.



Fig. No. 419: *Śiva* housed in a *rathikā*

338. It is the image of *Śiva* housed in a *rathikā* having circular pillars supporting ribbed *chhadya* topped by stylized *chaitya* motif, *chandrikā* and *āmlaka* etc. It is of 10th century A.D. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*[70].



Fig. No. 420: ***Tīrthankara***

339. The accessesion number of the antiquity is 75/62. It is a sculptural fragment showing a *Tīrthankara* sitting in *padmasana* inside a *rathikā*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 21x15 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 421: A sculptural fragment

340. The accessesion number of the antiquity is 152. It is a sculptural fragment. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 36x31.5 cm. The provenance of the antiquity is *Kannauj*. It shows a dancing deity housed in a round pillared *rathikā*. He is flanked by two human figures.



Fig. No. 422: Male standing in a *rathikā*

341. It is a sculptural fragment showing a male standing in a *rathikā*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 19x14 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 423: An architectural fragment

342. It is an architectural fragment showing a deity inside a small *rathikā*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 12.5x13 cm. The provenance of the antiquity is *Kannauj*. On the left side, a similar human figure sitting in *lalitāsana* and with right hand raised can be seen.



Fig. No. 424: A sculptural fragment

343. The accessesion number of the antiquity is 351. It is a sculptural fragment. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 22.5x18x9 cm. The provenance of the antiquity is *Kannauj*. It shows a lady sitting on a cushion and holding a large leaf.



Fig. No. 425: Lower part of an image

344. The accessesion number of the antiquity is 79/212. It is the lower part of an image showing four human figures. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 16x8 cm. The provenance of the antiquity is *Kannauj*. The right one is sitting in *padmasana* and other are in *lalitāsana*.



Fig. No. 426: Image of a deity

345. It is the lower part of the image of a deity. It is of 10th century A.D. It is made of buff colored sandstone. Its size is 32x13x15 cm. The provenance of the antiquity is *Kannauj*. It shows feet of the deity. A man lying on the ground, feet of another person and headless devotee.



Fig. No. 427: A sculptural fragment

346. The accessesion number of the antiquity is 308. It is a sculptural fragment showing the figure of a mother with her child. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 6x21x6 cm. The provenance of the antiquity is *Kannauj*. The mother is shown breast feeding her child.



Fig. No. 428: Parikar of a deity

347. The accessesion number of the antiquity is. It is part of the *parikar* of a deity. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 33x17x12 cm. The provenance of the antiquity is *Kannauj*. It shows a divine female attendant and two devotees[71].



Fig. No. 429: A sculptural fragment

348. The accessesion number of the antiquity is 64. It is a mutilated sculptural fragment. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 19x10 cm. It is made of buff colored sand stone. The provenance of the antiquity is *Kannauj*. It shows a human figure sitting on the ground and another man standing near him.



Fig. No. 430: Image of a *trišula*

349. The accessesion number of the antiquity is 370. It is a sculptural fragment showing a *trišula*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 11x6.5x6.5 cm. It is made of buff colored sand stone. The provenance of the antiquity is *Kannauj*.



Fig. No. 431: Two hands of some deity

350. The accessesion number of the antiquity is 206. It is a sculptural fragment showing two hands of some deity. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 16x11 cm. It is made of buff colored sand stone. The provenance of the antiquity is *Kannauj*.



Fig. No. 432: Mutilated sculptural fragment

351. The accessesion number of the antiquity is 231. It is a mutilated sculptural fragment. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 14.5x15.5 cm. It is made of buff colored sand stone. The provenance of the antiquity is *Kannauj*.



Fig. No. 433: A cow suckling a calf

352. The accessesion number of the antiquity is 103. It is the image of cow suckling a calf. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 8.5x6 cm. It is made of buff colored sand stone. The provenance of the antiquity is *Kannauj*.



Fig. No. 434: Defaced sculptural fragment

353. The accessesion number of the antiquity is 112. It is a defaced sculptural fragment. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 22x19.5 cm. It is made of red colored sand stone. The provenance of the antiquity is *Kannauj*. It shows two defaced human figures.



Fig. No. 435: A sculptural fragment

354. It is a sculptural fragment showing a hand kept on a *lota*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 15x10 cm. It is made of buff colored sand stone. The provenance of the antiquity is *Kannauj*.



Fig. No. 436: *Pranalaka*

355. It is a *Pranalaka,* an architectural fragment. Its size is 20x22x17 cm. It is of 10th century A.D. It is made of buff colored sandstone. It is made of buff colored sand stone. The provenance of the antiquity is *Kannauj*.



Fig. No. 437: A sculptural fragment

356. It is a sculptural fragment. Its size is 27x15x14 cm. It is of 10th century A.D. It is made of red colored sandstone. It is made of buff colored sand stone. The provenance of the antiquity is *Kannauj*.



Fig. No. 438: An architectural fragment

359. The accessesion number of the antiquity is 12. It is an architectural fragment showing the figure of *Agni* flanked by a lady standing on his right side and a man on his left side. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 42x25 cm. The provenance of the antiquity is *Kannauj*[72].



Fig. No. 439: A sculptural fragment

360. It is a sculptural fragment. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 23x19 cm. The provenance of the antiquity is *Kannauj*. It shows a male figure, hand of a larger figure and a defaced figure of a warrior.



Fig. No. 440: A sculptural fragment

361. It is a sculptural fragment showing a deity sitting in *lalitāsana* on a lotus seat and holding *trishula* in his right hand. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 15.5x8 cm. The provenance of the antiquity is *Kannauj*. The upper portion of the image is defaced.



Fig. No. 441: A sculptural fragment

362. The accessesion number of the antiquity is 258. It is a sculptural fragment showing a male holding a dagger and trying to kill an animal whom he has caught with its neck. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 30x30 cm. The provenance of the antiquity is *Kannauj*[73].



Fig. No. 442: Image of a deity

363. The accessesion number of the antiquity is 397. It is part of the image of a deity. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 39x14x19 cm. The provenance of the antiquity is *Kannauj*. She is standing in *tribhanga mudra* and holding a flower in her left hand. She is wearing a girdle, necklace, *stanahar* and ear ornaments.



Fig. No. 443: A lion

364. The accessesion number of the antiquity is 75/162. It is a sculptural fragment showing a lion held by a man. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 21x13 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 444: Lower part of the image of a deity

365. The accessesion number of the antiquity is 111. It is a sculptural fragment showing the lower most portion of the figure of a deity. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 21.5x12 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 445: Broken human figure

366. The accessesion number of the antiquity is 361. It is a sculptural fragment showing a broken human figure. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 16x13.5x16.5 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 446: Part of the image of some deity

367. The accessesion number of the antiquity is 293. It is a sculptural fragment showing the upper right part of the image of some deity. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 19x18.5x7.5 cm. The provenance of the antiquity is *Kannauj*. It shows a female deity sitting on a cushion and a *Vyāla* on her right.



Fig. No. 447: A divine figure

368. The accessesion number of the antiquity is 75/63. It is a mutilated sculptural fragment showing a standing divine figure. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 23.5x11 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 448: An Ascetic

369. It is the heavily mutilated image of an ascetic sitting in *lalitāsana*. The size of the antiquity is 11x10.3 cm. It is of 10th century A.D. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*.



Fig. No. 449: Human head

370. The accessesion number of the antiquity is 75/105. It is a sculptural fragment showing a human head. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 7.5x7 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 450: A sculptural fragment

371. The accessesion number of the antiquity is 109. It is a sculptural fragment. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 17.5x11 cm. The provenance of the antiquity is *Kannauj*. It shows a devotee sitting with folded hands at the top of a female head. On their right is a figure of *Vyāla*.



Fig. No. 451: Human head

372. It is a female head. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 10x9.2 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 452: Head of a female

373. The accessesion number of the antiquity is 210. It is a sculptural fragment showing the head of a female. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 29x26 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 453: A male figure

374. The accessesion number of the antiquity is 342. It is a sculptural fragment showing a male standing in *tribhanga mudra*. It is of 10th century A.D. It is made of red colored sandstone. The size of the antiquity is 25.5x10x12.5 cm. The provenance of the antiquity is *Kannauj*. It appears to be the part of a *parikar* of the image of a deity. His lower portion is defaced.



Fig. No. 454: Male torso

375. It is a sculptural fragment showing a male torso. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 62x23 cm. The provenance of the antiquity is *Kannauj*. He is wearing a *graiveyaka* and *katijalaka*.



Fig. No. 455: ***Bhārputraka***

376. The accessesion number of the antiquity is 133. It is a sculptural fragment showing *Bhārputraka* couple. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 42.5x15x50 cm. The provenance of the antiquity is *Kannauj*[74].



Fig. No. 456: A standing posture

377. It is the image of a deity in standing posture. It is of 10th century A.D. It is made of buff colored sandstone. Its size is 17x13x8 cm. The provenance of the antiquity is *Kannauj*. He is holding a rod.



Fig. No. 457: Part of a deity

378. The accessesion number of the antiquity is 303. It is a part of the image of a deity. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 13x14x6 cm. The provenance of the antiquity is *Kannauj*. There is a flying celestial figure holding a short club in his right hand.



Fig. No. 458: Part of the image of a deity

379. The accessesion number of the antiquity is 79/207. It is the middle portion of the image of the deity. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 17x12 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 459: Head of a deity

380. It is a sculptural fragment showing the head of a deity. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 8.5x3 cm. The provenance of the antiquity is *Kannauj*. It is wearing ear ornaments and a crown.



Fig. No. 460: Human head

381. The accessesion number of the antiquity is 381. It is a sculptural fragment showing a human head. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 8x6x5 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 461: Lower portion of a goddess

382. The accessesion number of the antiquity is 334. It is a sculptural fragment showing the lower portion of a goddess. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 29x25x13 cm. The provenance of the antiquity is *Kannauj*. The legs of goddess can be seen in two rounded pillars of a *rathikā*. *Makara Vyāla* is also visible on her left side.



Fig. No. 462: *Kīrtimukha*

383. The accessesion number of the antiquity is 266. It is a broken *Kīrtimukha*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 30x16 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 463: Figure of a musician

384. The accessesion number of the antiquity is 79/169. It is a sculptural fragment showing the broken figure of a celestial musician. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 13.5x13.5 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 464: An architectural fragment

385. The accessesion number of the antiquity is 75/54. It is an architectural fragment. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 23.5x14 cm. The provenance of the antiquity is *Kannauj*. It shows L-shaped piece bordered by garland of lotus buds. A lady stands in *tribhanga mudra* on the right side and four persons sitting in *lalitāsana* on cushions.



Fig. No. 465: An elephant

386. It is the image of an elephant lifting some object. It is of 10th century A.D. It is made of red colored sandstone. Its size is 33x23x8 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 466: Base of a pillar

387. It is a base of a pillar. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 51x51x36 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 467: A sculptural fragment

388. The accessesion number of the antiquity is 139. It is a sculptural fragment. The size of the antiquity is 35x15.5 cm. It is of 10th century A.D. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*.



Fig. No. 468: An architectural fragment

389. The accessesion number of the antiquity is 259. It is an architectural fragment. It is of 10th century A.D. It is made of red colored sandstone. The size of the antiquity is 28x20 cm. The provenance of the antiquity is *Kannauj*. It shows a deity flying in the air. Two males are showering flowers over him.



Fig. No. 469: An architectural fragment

390. It is an architectural fragment decorated with floral scroll motifs. It is of 10th century A.D. It is made of red colored sandstone. The size of the antiquity is 29.5x16.5 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 470: Broken *Kīrtimukha*

391. It is the broken upper part of a sculptural fragment showing a *Kīrtimukha*. It is of 10th century A.D. It is made of buff colored sandstone. The size of the antiquity is 31x19.5 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 471: A standing male figure

392. The accessesion number of the antiquity is. It is a sculptural fragment showing a standing male figure. It is of 10th-11th century A.D. The size of the antiquity is 49x29x18 cm. The provenance of the antiquity is *Kannauj*. It is made of *Kankar*.



Fig. No. 472: A sculptural fragment

393. The accessesion number of the antiquity is 373. It is a sculptural fragment showing one male standing and another man is sitting on his left side with folded hands. It is of 10th-11th century A.D. It is made of buff colored sandstone. The size of the antiquity is 12x6x6 cm. The provenance of the antiquity is *Kannauj*. It appears to be the lower right portion of the *parikar* of a deity.

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Fig. No. 473: ***Sūrya***

394. It is the half-finished image of *Sūrya*. It is of 11th century A.D. It is made of buff colored sandstone. The size of the antiquity is 88x46x30 cm. The provenance of the antiquity is *Kannauj*. He is accompanied by *danda pingala* and two *Ashwanikumaras*. *Mahasweta @ Bhudevi* is standing in between the legs. He is holding two flowers. He is also wearing shoes.



Fig. No. 474: ***Mālādhārī Vidyādhara***

395. The accessesion number of the antiquity is 79/196. It is a sculptural fragment showing a flying *Mālādhārī Vidyādhara*. It is of 11th century A.D. It is made of buff colored sandstone. The size of the antiquity is 9.5x11.5 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 475: *Viṣnu* riding *Garuna*

396. It is an inscribed broken lower part of the image of *Viṣnu* riding *Garuna*. It is of 11th century A.D. It is made of buff colored sandstone. The size of the antiquity is 28x38x24 cm. The provenance of the antiquity is *Kannauj*. It shows damaged figure of *Garuna* and the two legs of *Viṣnu*. A female attendant is shown on the right side. There is a one line inscription on the pedestal of the image.



Fig. No. 476: *Viṣnu*

397. The accessesion number of the antiquity is 294. It is a mutilated image of *Viṣnu*. It is of 11th century A.D. It is made of buff colored sandstone. The size of the antiquity is 14x9x4 cm. The provenance of the antiquity is *Kannauj*. He is holding *chakra* and *gada* in his left and right hands respectively. Other hands are broken. He is also wearing a *vanamala*.



Fig. No. 477: An architectural fragment

398. The accessesion number of the antiquity is 75/119. It is the image of an architectural fragment. It is of 11th century A.D. It is made of buff colored sandstone. The size of the antiquity is 15x9 cm. The provenance of the antiquity is *Kannauj*. It is showing female figures in the center. They are flanked by *Vyālas*.



Fig. No. 478: *Viṣnu*

399. The accessesion number of the antiquity is 79/242. It is a broken votive figure of *Viṣnu*. It is of 11th-12th century A.D. It is made of red colored sandstone. The size of the antiquity is 16x7.5 cm. The provenance of the antiquity is *Kannauj*. The deity is wearing a large *vanamala*.



Fig. No. 479: *Viṣnu*

400. The accessesion number of the antiquity is 330. It is a portion of a large *Viṣnu* image. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 30.5x23x18 cm. The provenance of the antiquity is *Kannauj*. It shows *Matsyavatar* carrying four *Vedas* and a male warrior raising a sword to kill an animal. Above these two figures, headless *Mālādhārī Vidyādharas* have been shown.



Fig. No. 480: ***Viṣnu***

401. The accessesion number of the antiquity is 398. It is a portion of an image of *Viṣnu*. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 36x22x16 cm. The provenance of the antiquity is *Kannauj*. It shows *Narasingha avatar, makara Vyāla, Mālādhārī Vidyādhara* couple, a standing male figure, a devotee sitting with folded hands and a man standing on his left side.



Fig. No. 481: *Viṣnu*

402. The accessesion number of the antiquity is 371. It is the image of four handed *Viṣnu*. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 22.5x8x13 cm. The provenance of the antiquity is *Kannauj*. He is flanked by two kneeling devotees in *Namaskara* posture.



Fig. No. 482: *Shaiva* image

403. The accessesion number of the antiquity is 75/75. It is a sculptural fragment of a *Shaiva* image. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 21x16 cm. The provenance of the antiquity is *Kannauj*. It shows *Ganeśa* sitting in front of a standing headless male deity.



Fig. No. 483: A sculptural fragment

404. The accessesion number of the antiquity is 117. It is a sculptural fragment. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 20x24 cm. The provenance of the antiquity is *Kannauj*. An elephant is shown in the top row. In the bottom row, two deities are shown sitting on cushions. The left one is *Ganeśa*.



Fig. No. 484: ***Rāvaṅanugraha***

405. The accessesion number of the antiquity is 79/264. It is the lower part of the figure of *Rāvaṅanugraha* image of *Śiva*. It is of 11th-12h century A.D. It is made of buff colored sandstone. The size of the antiquity is 20x23 cm. The provenance of the antiquity is *Kannauj*. The leg and feet of *Pārvatī* and *Śiva* are visible. *Nandi* and a male figure standing near him is visible at the right side of *Pārvatī. Ravana* and his followers are shown trying to lifting the mount *Kailash*[75].



Fig. No. 485: Broken image of *Śiva*

406. The accessesion number of the antiquity is 75/116. It is the broken image of *Śiva*. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 17x12 cm. The provenance of the antiquity is *Kannauj*. He is wearing a necklace, ear ornaments and a *keyura*. There is a *Jatamukuta* on his head.



Fig. No. 486: *Umā-Maheśa*

407. It is the image of *Umā-Maheśa*. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 20x14.5 cm. The provenance of the antiquity is *Kannauj*. Below the seat *Nandi* is visible in the middle. On the right side a man is sitting in *lalitāsana* and on the left side another man probably *Kartikeya* is sitting. At the top two deities and five *Śivalingas* are also shown. *Śiva* is holding *triśula* in his right hand.



Fig. No. 487: ***Pārvatī***

408. The accessesion number of the antiquity is 395. It is a sculptural fragment showing the head of *Pārvatī (?)*. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 29x18x10 cm. The provenance of the antiquity is *Kannauj*. The deity is wearing a very high *Jatamukuta*.



Fig. No. 488: *Chāmundā*

409. The accessesion number of the antiquity is. It is the image of *Chāmundā* sitting in *lalitāsana*. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 65x43x20 cm. The provenance of the antiquity is *Kannauj*. Her body is emaciated. Her feet are placed on a lotus pedestal. Her *parikar* has two female attendants and two *Mālādhārī Vidyādharas*.



Fig. No. 489: ***Brahmā***

410. The accessesion number of the antiquity is 75/51. It is a broken figure of *Brahmā (?)*. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 17x9 cm. The provenance of the antiquity is *Kannauj*. He is sitting in *lalitāsana*.



Fig. No. 490: Larger image of a deity

411. The accessesion number of the antiquity is 163. It is a fragment of the larger image of a deity. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 25x18.5 cm. The provenance of the antiquity is *Kannauj*. It shows three headed *Brahmā* sitting on a cushion in *lalitāsana* on the left side of the circle of *Ābhāmandala*.



Fig. No. 491: A male figure

412. The accessesion number of the antiquity is 304. It is a sculptural fragment showing a defaced standing male figure. The size of the antiquity is 11x6.5x4 cm. It is of 11th-12th century A.D. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*.



Fig. No. 492: Torso of a male

413. It is the torso of a male standing in a relaxed posture. It is of 11th-12th century A.D. It is made of buff colored sandstone. Its size is 17x17x5 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 493: Male

414. It is the figure of a male. It is of 11th-12th century A.D. It is made of buff colored sandstone. Its size is 14x06x7 cm. The provenance of the antiquity is *Kannauj*. The legs of the figure is missing.



Fig. No. 494: A male figure

415. The accessesion number of the antiquity is 75/34. It is a male figure. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 21x10.5 cm. The provenance of the antiquity is *Kannauj*. He is wearing a *Kirītamukuta,* large ear ornaments and necklaces[76].

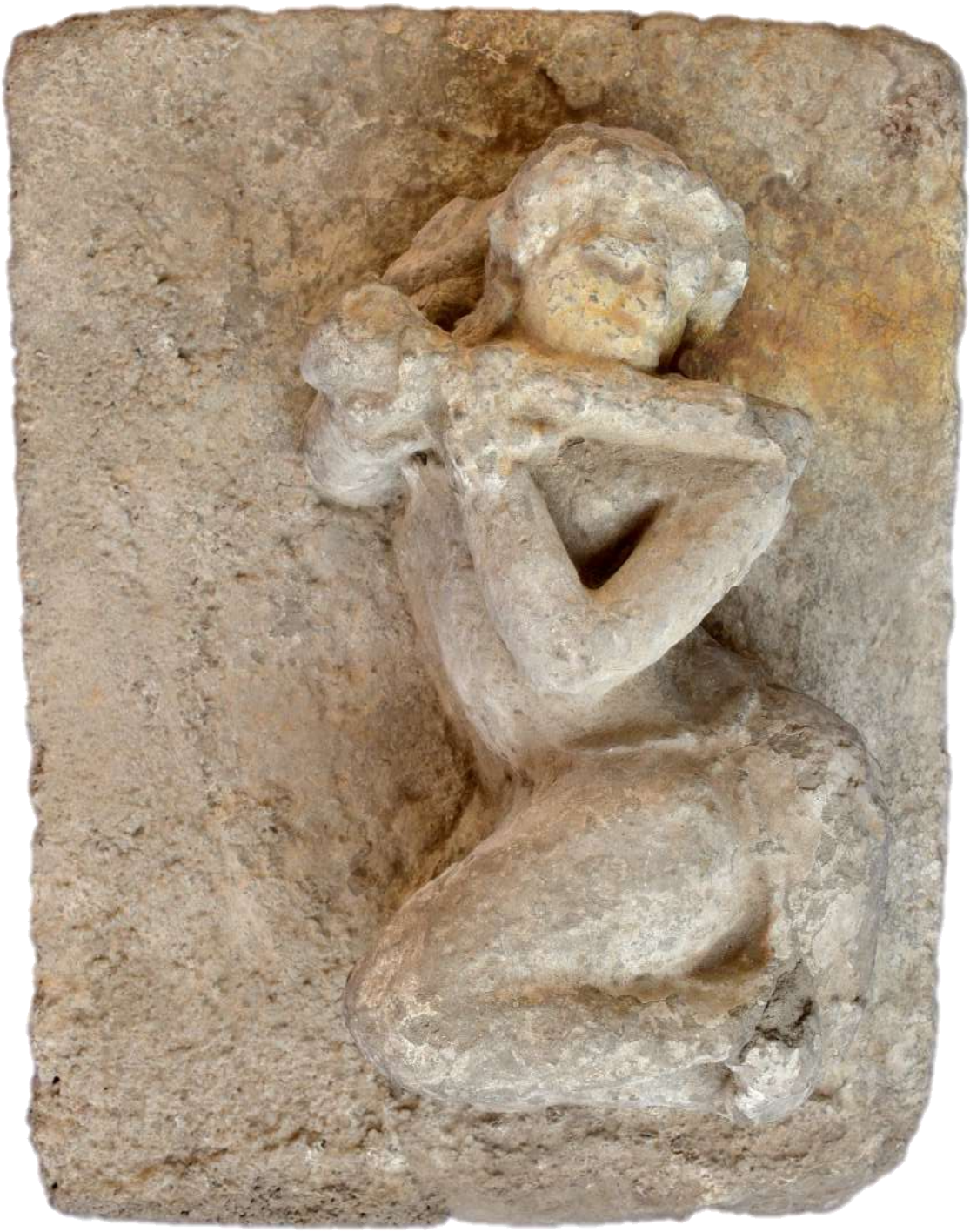


Fig. No. 495: A male figure

416. The accessesion number of the antiquity is 253. It is a sculptural fragment showing a male figure playing a flute. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 24x18.5 cm. It is made of *Kankar* stone. The provenance of the antiquity is *Kannauj*.



Fig. No. 496: Image of a female

417. The accessesion number of the antiquity is 284. It is a mutilated image of a female. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 11.5x11x7 cm. The provenance of the antiquity is *Kannauj*. She is wearing a necklace, ear ornaments and a semi-circular head dress.



Fig. No. 497: Female head

418. The accessesion number of the antiquity is 75/35. It is a female head. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 21.5x10 cm. The provenance of the antiquity is *Kannauj*. She is wearing a *Kirītamukuta*[77].



Fig. No. 498: Female deity

419. The accessesion number of the antiquity is 75/83. It is the head of a female deity. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 21.5x10 cm. The provenance of the antiquity is *Kannauj*. She is wearing a *Kirītamukuta.*



Fig. No. 499: Female figure

420. The accessesion number of the antiquity is 82. It is a sculptural fragment showing the middle portion of a female figure. It is of 11th-12th century A.D. It is made of red colored sandstone. The size of the antiquity is 30x24.5 cm. The provenance of the antiquity is *Kannauj*. She is wearing a fine girdle with two layers of strings.



Fig. No. 500: Defaced female deity

421. The accessesion number of the antiquity is 349. It is a sculptural fragment showing a defaced image of a female deity. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 18x19x14 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 501: A sculptural fragment

422. The accessesion number of the antiquity is 320. It is a sculptural fragment. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 26x16x8.5 cm. The provenance of the antiquity is *Kannauj*. It shows a female standing in *tribhanga mudra* and an animal is sitting in front of her.



Fig. No. 502: A sculptural fragment

423. It is a sculptural fragment showing the female raising her sword above her head. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 17.2x21 cm. The provenance of the antiquity is *Kannauj*. She is wearing bangles, *keyura*, graiveyaka, *har,* ear ornaments and crown.



Fig. No. 503: ***Bhārputraka***

424. It is an architectural fragment showing a *Bhārputraka* and a female musician sitting to his left. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 15x20.6 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 504: ***Bhārputrakas***

425. The accessesion number of the antiquity is 236. It is the image of *Bhārputrakas*. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 16.5x18 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 505: ***Bhārputrakas***

426. The accessesion number of the antiquity is 157. It is an architectural fragment showing *Bhārputrakas*. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 41x35 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 506: ***Bhārputrakas***

427. It is bracket of the pillar decorated with *Bhārputrakas*. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 43x34x15 cm. The provenance of the antiquity is *Kannauj*[78].



Fig. No. 507: ***Bhārputrakas***

428. The accessesion number of the antiquity is. It is a sculptural fragment showing a bracket of a pillar decorated with *Bhārputrakas*. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 43x43x22 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 508: Image of a deity

429. The accessesion number of the antiquity is 79/203. It is the fragment of the image of a deity. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 19x9 cm. The provenance of the antiquity is *Kannauj*. The remaining right hand of the deity holds a flower. Another smaller size deity is visible on the upper right side of the image. Deity is sitting in *lalitāsana*.



Fig. No. 509: A sculptural fragment

430. The accessesion number of the antiquity is 79/247. It is a fragment of a sculpture showing a deity sitting in *lalitāsana* on a blooming lotus flower. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 14x10 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 510: A sculptural fragment

431. The accessesion number of the antiquity is 299. It is a fragment of some large sculpture showing an ascetic sitting in *padmasana*. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 13.5x17x6 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 511: A sculptural fragment

432. The accessesion number of the antiquity is 345. It is a sculptural fragment showing the lower left part of a *parikar* of a standing deity. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 23.5x6.5x1.5 cm. The provenance of the antiquity is *Kannauj*. It shows the figure of a lady. A dwarf is standing in front of her and a male standing to her right. On the extreme right, there are three sitting males one at the top of other in three tiers.



Fig. No. 512: Eight handed goddess

433. The accessesion number of the antiquity is 322. It is part of the image of eight handed goddess. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 25x17.5x12 cm. The provenance of the antiquity is *Kannauj*. In one hand, she is holding *khetaka*. In her *parikar,* a *Vyāla* and *makara Vyāla* can be seen.



Fig. No. 513: Image of *Navagrahas*

434. The accessesion number of the antiquity is 79/262. It is a sculptural fragment. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 28x19 cm. The provenance of the antiquity is *Kannauj*. It shows three of the *Navagrahas.* On the right side of them is shown a lady sitting with a bow[79].



Fig. No. 514: *Navagraha*

435. The accessesion number of the antiquity is 164. It is a sculptural fragment showing part of *Navagraha* panel. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 12x24.5 cm. The provenance of the antiquity is *Kannauj*. *Rāhu* & *Ketu* are visible on the left side.



Fig. No. 515: ***Makara Vyāla***

436. The accessesion number of the antiquity is 265. It is the head of a *Makara vyāla*. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 38x23 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 516: ***Tīrthankara***

437. The accessesion number of the antiquity is 366. It is a mutilated figure of a *Tīrthankara*. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 15.5x13.5x9 cm. The provenance of the antiquity is *Kannauj*. He is sitting on a *simhasana. Simhasana* is flanked by his *yaksha* and *yakshi*.



Fig. No. 517: ***Tīrthankara***

438. The accessesion number of the antiquity is 123. It is the broken image of *Tīrthankara* sitting in *dhyana mudra* on a lotus seat kept above a *Simhasana*. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 19x16 cm. The provenance of the antiquity is *Kannauj*. He is flanked by his *Indra* and *Upendra*[80].



Fig. No. 518: A lion

439. The accessesion number of the antiquity is 306. It is a sculptural fragment showing a lion. It is of 11th-12th century A.D. It is made of red colored sandstone. The size of the antiquity is 25.5x41.5x19 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 519: A deer

440. The accessesion number of the antiquity is 75/195. It is broken figure of a deer. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 14.5x8 cm. The provenance of the antiquity is *Kannauj*. It shows a deer with a bent neck, a mouth towards the ground.



Fig. No. 520: Mutilated horse rider

441. The accessesion number of the antiquity is 331. It is a mutilated horse rider. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 37x24x11 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 521: Lower part of an image

442. It is the lower part of a large image. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 50x33x14 cm. The provenance of the antiquity is *Kannauj*. The legs of the person are visible. On the right side, a man taking something out of a pitcher is shown.



Fig. No. 522: An architectural fragment

443. It is an architectural fragment. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 90x42x16 cm. The provenance of the antiquity is *Kannauj*. It is decorated with floral scrolls, human figures housed in *rathikās*, band with stenciled designs and a band decorated with flower & human figures separated by round pillars[81].



Fig. No. 523: A miniature temple

444. The accessesion number of the antiquity is 336. It is a miniature temple. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 36.5x18x20 cm. The provenance of the antiquity is *Kannauj*. It is having *samvarna shikhara* and diamond motif housed within a square pillars.



Fig. No. 524: A sculptural fragment

445. The accessesion number of the antiquity is 14. It is a sculptural fragment. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 52x28 cm. The provenance of the antiquity is *Kannauj*. It is decorated with a man leaning and doing *Namaskara* housed in a *rathikā* and a standing human figure flanked by two small sized attendant and a large female on the left side at the top of this *rathikā*.



Fig. No. 525: *Pranalika* of a temple

446. The accessesion number of the antiquity is 215. It is the *Pranalika* of a temple. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 14.5x10.5 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 526: *Sūrya* & feet of *Bhudevi*

447. It is a sculptural fragment showing the shoes of *Sūrya* and feet of *Bhudevi*. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 17x12 cm. The provenance of the antiquity is *Kannauj*. The pedestal is carved with half flower and a band decorated with rectangles.



Fig. No. 527: A sculptural fragment

448. The accessesion number of the antiquity is 221. It is a sculptural fragment. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 25x19 cm. The provenance of the antiquity is *Kannauj*. It shows five human figures in different postures.



Fig. No. 528: A sculptural fragment

449. The accessesion number of the antiquity is 79/188. It is a sculptural fragment showing a badly mutilated piece. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 18x14 cm. The provenance of the antiquity is *Kannauj*. It appears to be the part of *Navagraha* sculpture.



Fig. No. 529: A sculptural fragment

450. The accessesion number of the antiquity is 122. It is a sculptural fragment. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 28x13 cm. The provenance of the antiquity is *Kannauj*. It shows the scene of churning of ocean but in place of large team of *asuras* and *devtas,* there are only two of them standing on both sides of the tortoise. At the top of this figure exists a *ghatapallava* motif.



Fig. No. 530: Standing mother goddess

451. It is the votive image of standing mother goddess. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 10.5x6.2 cm. The provenance of the antiquity is *Kannauj*. She is holding her usual weapons[82].



Fig. No. 531: Three headed deity

452. The accessesion number of the antiquity is 39. It is a three headed deity. It is of 11th-12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 9x11 cm. The provenance of the antiquity is *Kannauj*. *Jatabhara* on all the three heads is visible.



Fig. No. 532: Viṣnu

453. It is the part of the image of *Viṣnu (?)*. It is of 12th century A.D. The size of the antiquity is 21x13 cm. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*. A standing female figure, a horse rider, another standing human figure and defaced human figures can be seen as we move from left to right.



Fig. No. 533: Viṣnu

454. It is the votive image of *Viṣnu*. It is of 12th century A.D. It is made of red colored sandstone. The size of the antiquity is 12.5x5.5 cm. The provenance of the antiquity is *Kannauj*. The deity is carrying his usual attributes[83].



Fig. No. 534: ***Śiva-Pārvatī***

455. The accessesion number of the antiquity is 332. It is a lower part of a *Śiva-Pārvatī* image. It is of 12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 26.5x27.5x10 cm. The provenance of the antiquity is *Kannauj*. It shows *Nandi* and a lion below the seat. On the pedestal are carved the images of *Ganeśa, Bhringi Rishi* and *Kartikeya* along with one male and one female devotee sitting and worshipping the deities.



Fig. No. 535: *Śiva* image

456. The accessesion number of the antiquity is 127. It is the upper part of the *Śiva* image. It is of 12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 20x29 cm. The provenance of the antiquity is *Kannauj*. He is wearing a *Jatajuta* on the head and *Kundals* in the ears. Two human figures can be seen on both sides of the central figure[84].



Fig. No. 536: *Ganeśa*

457. The accessesion number of the antiquity is 75/101. It is a broken image of *Ganeśa*. It is of 12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 10.5x5.5 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 537: ***Varāha Avatār***

458. The accessesion number of the antiquity is. It is the image of *Varāha Avatār*. It is of 12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 62x57 cm. The provenance of the antiquity is *Kannauj*. He is lifting *Bhudevi*. Near his feet can be seen a *Naag* and a standing human figure. He is holding his usual attributes. The image is housed in a rectangular niche[85].



Fig. No. 538: Female head

459. The accessesion number of the antiquity is 227. It is a female head. It is of 12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 13x8 cm. The provenance of the antiquity is *Kannauj*. She is wearing a large bun behind her head.



Fig. No. 539: Female figure

460. The accessesion number of the antiquity is 75/76. It is a sculptural fragment showing a mutilated female figure. It is of 12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 31x5.5 cm. The provenance of the antiquity is *Kannauj*. She is wearing a necklace and a *keyura*.



Fig. No. 540: A mutilated female figure

461. The accessesion number of the antiquity is 79/249. It is a sculptural fragment showing a mutilated female figure. It is of 12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 17x15 cm. The provenance of the antiquity is *Kannauj*. She is wearing a necklace, *har* and ear ornaments.



Fig. No. 541: A female deity

462. The accessesion number of the antiquity is 75/104. It is a sculptural fragment showing a mutilated figure of a female deity. It is of 12th century A.D. It is made of red colored sandstone. The size of the antiquity is 11x6.2 cm. The provenance of the antiquity is *Kannauj*. It is of grey color stone.



Fig. No. 542: A sculptural fragment

463. It is a sculptural fragment showing a male and a female devotees worshipping the deity. The male is standing and the female is kneeling on the ground. It is of 12th century A.D. It is made of red colored sandstone. The size of the antiquity is 33.5x16 cm. The provenance of the antiquity is *Kannauj*[86].



Fig. No. 543: A female Head

464. It is a sculptural fragment showing a mutilated female head. It is of 12th century A.D. It is made of red colored sandstone. The size of the antiquity is 13.5x19 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 544: A sculptural fragment

465. The accessesion number of the antiquity is 309. It is a sculptural fragment showing a female figure accompanied by a kneeling devotee saluting the deity. It is of 12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 59x22.5x21 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 545: A male head

466. The accessesion number of the antiquity is 75/30. It is a male head (?). It is of 12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 16x11.5 cm. The provenance of the antiquity is *Kannauj*. He is wearing a large crown on his head.



Fig. No. 546: A sculptural fragment

467. The accessesion number of the antiquity is 75/61. It is a sculptural fragment showing a male figure standing in *tribhanga mudra*. It is of 12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 19.5x10 cm. The provenance of the antiquity is *Kannauj*. It is part of some larger image.



Fig. No. 547: A sculptural fragment

468. The accessesion number of the antiquity is 326. It is a sculptural fragment showing a male figure standing and on the left side, the legs of another human figure can be seen. It is of 12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 26.5x14x11 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 548: A male deity

469. The accessesion number of the antiquity is 79/263. It is the figure of a standing male deity. It is of 12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 24x10.5 cm. The provenance of the antiquity is *Kannauj*. He is holding a thick stick in his left hand and wearing necklace and ear ornaments.



Fig. No. 549: A sculptural fragment

470. The accessesion number of the antiquity is 379. It is a sculptural fragment. It is of 12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 23.5x15x7.5 cm. The provenance of the antiquity is *Kannauj*. It shows a man riding a horse and a defaced standing male figure. Above the second figure is a kneeling human figure.



Fig. No. 550: A male figure

471. It is an architectural fragment showing a multi-handed male figure. It is of 12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 24x17 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 551: A sculptural fragment

472. The accessesion number of the antiquity is 160. It is a sculptural fragment showing a stout male and a female. It is 12th of century A.D. It is made of buff colored sandstone. The size of the antiquity is 32x13.5 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 552: Head of a deity

473. The accessesion number of the antiquity is 75/48. It is the head of a deity. It is 12th century A.D. It is made of red colored sandstone. The size of the antiquity is 14.5x6 cm. The provenance of the antiquity is *Kannauj*. It is wearing a *Kirītamukuta*[87].



Fig. No. 553: Image of a deity

474. The accessesion number of the antiquity is 79/208. It is upper part of the image of a deity. It is of 12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 17x15 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 554: Image of a deity

475. It is the head of a deity. It is of 12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 10x5.4 cm. The provenance of the antiquity is *Kannauj*. He is wearing a *Kirītamukuta*.



Fig. No. 555: ***Nandī***

476. The accessesion number of the antiquity is 290. It is the image of *Nandī*. It is of 12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 28x16x14 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 556: A lion attacking an elephant

477. The accessesion number of the antiquity is 20. It is the image of a lion attacking an elephant. It is of 12th century A.D. It is made of red colored sandstone. The size of the antiquity is 28x13 cm. The provenance of the antiquity is *Kannauj*[88].



Fig. No. 557: A man doing *Namaskara*

478. It is a figure of a man doing *Namaskara*. It is of 12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 10.5x7.7 cm. The provenance of the antiquity is *Kannauj*. He is wearing necklace, ear ornaments and his hairdo is elaborate.



Fig. No. 558: Broken figure of a *Vyāla*

479. The accessesion number of the antiquity is 79/257. It is the broken figure of a *Vyāla*. It is of 12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 66x38 cm. The provenance of the antiquity is *Kannauj*[89].



Fig. No. 559: A lion

480. The accessesion number of the antiquity is 232. It is a sculptural fragment. It is of 12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 24.5x23 cm. The provenance of the antiquity is *Kannauj*. It shows a growling lion.



Fig. No. 560: Broken figure of a *Vyāla*

481. The accessesion number of the antiquity is 240. It is a broken figure of a broken figure of a *Vyāla*. It is of 12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 16x11 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 561: ***Mālādhārī Vidyādhara***

482. The accessesion number of the antiquity is 383. It is a sculptural fragment showing a flying *Mālādhārī Vidyādhara*. It is of 12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 8.5x6.5x4 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 562: A sculptural fragment

483. The accessesion number of the antiquity is 315. It is a sculptural fragment. It is of 12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 15x20x11.5 cm. The provenance of the antiquity is *Kannauj*. Two human figures can be seen in it.



Fig. No. 563: A sculptural fragment

484. The accessesion number of the antiquity is 75/72. It is a sculptural fragment showing a human figure sitting in *lalitāsana* inside a *rathikā*. It is of 12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 17x21 cm. The provenance of the antiquity is *Kannauj*.



Fig. No. 564: An ascetic

485. The accessesion number of the antiquity is 75/91. It is a sculptural fragment showing a mutilated figure of an ascetic. It is of 12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 12.5x11.5 cm. The provenance of the antiquity is *Kannauj*. He is sitting in *padmasana*. He is holding a round vessel in his left hand. His right hand is held in *abhaya mudra*.



Fig. No. 565: A sculptural fragment

486. The accessesion number of the antiquity is 79/214. It is a sculptural fragment showing a man kneeling and sitting with folded hands. It is of 12th century A.D. It is made of buff colored sandstone. The size of the antiquity is 14.5x7.5 cm. The provenance of the antiquity is *Kannauj*.

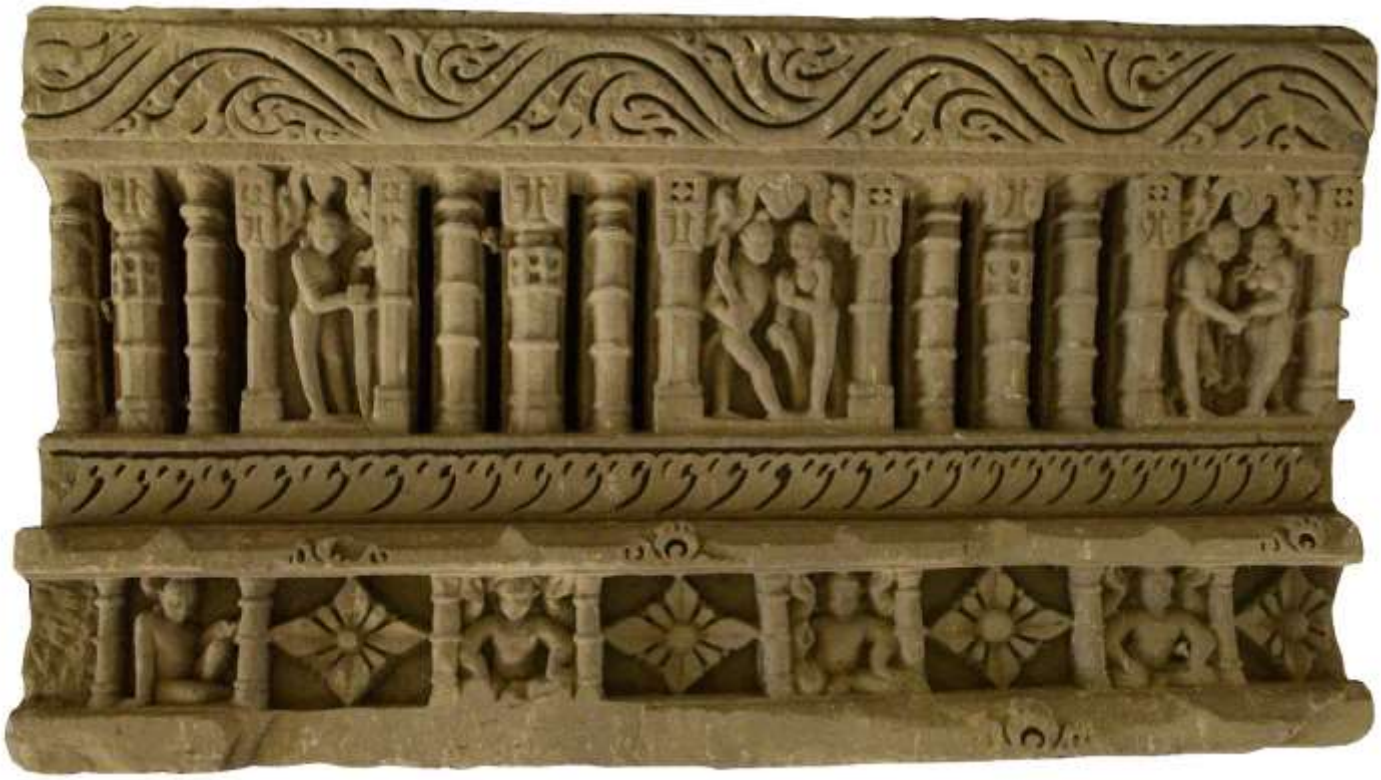


Fig. No. 566: An architectural fragment

487. It is an architectural fragment showing a row of *Mithun*/ human figures housed between *rathikās* above two bands of flower/ *Bhārputraka*/ human figure motifs and stenciled floral motif. The size of the antiquity is 103x56x11 cm. It is of 12th century A.D. It is made of buff colored sandstone. The provenance of the antiquity is *Kannauj*[90].

Sculptures of period after 1200 A.D. -



Fig. No. 567: Votive figure of a *Viṣnu*

488. The accessesion number of the antiquity is 75/107. It is a headless votive figure of *Viṣnu*. It is of 12th-13th century A.D. The size of the antiquity is 9.5x3.2 cm. The provenance of the antiquity is *Kannauj*. It is made of black colored soft stone. He is holding *shankha, chakra* in his two left hands and *gada* & some unidentified object in his two right hands. He is wearing a *vanamala*[91].



Fig. No. 568: *Tīrthankara*

489. It is the lower part of a broken and inscribed image of a *Tīrthankara* sitting in *dhyana mudra*. It is of 13th century A.D. The size of the antiquity is 48x13x23 cm. The provenance of the antiquity is *Kannauj*[92].



Fig. No. 569: Lower portion of a deity

490. The accessesion number of the antiquity is 102. It is the lower portion of a miniature votive figure of a deity. It is of 18th century A.D. It is made of buff colored sandstone. The size of the antiquity is 8x10.2 cm. The provenance of the antiquity is *Kannauj*. It shows a male deity wearing a large *vanamala*.



Fig. No. 570: Votive image of a female deity

491. The accessesion number of the antiquity is 392. It is votive image of a female deity. It is of 18th century A.D. The size of the antiquity is 12x12x2 cm. The provenance of the antiquity is *Kannauj*. It shows the sword held in her raised right hand.



Fig. No. 571: *Ganeśa*

492. The accessesion number of the antiquity is 296. It is crudely made figure of four handed *Ganeśa*. It is of 20th century A.D. It is made of buff colored sandstone. The size of the antiquity is 16x15x4.5 cm. The provenance of the antiquity is *Kannauj*. His vehicle mouse is shown on the pedestal. He is sitting in *padmasana*.

Miscellaneous Images:



Fig. No. 572: Hand of some deity

493. The accessesion number of the antiquity is 367. It is a sculptural fragment showing the hand of some deity. It is made of buff colored sandstone. The size of the antiquity is 16x8.5x8 cm. It is made of red colored sand stone. The provenance of the antiquity is *Kannauj*.



Fig. No. 573: Three headed snake

494. The accessesion number of the antiquity is 108. It is a votive image of a three headed snake. The size of the antiquity is 5.7x5 cm. The provenance of the antiquity is *Kannauj*.

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CONCEPT OF SARASWATI IN JAIN TRADITION AND ART

Dr. Maruti Nandan Pd. Tiwari
Emeritus Professor
History of Art
Banaras Hindu University, Varanasi-221005
&
Dr. Shanti Swaroop Sinha
History of Visual Arts & Design
Faculty of Visual Arts
Banaras Hindu University
Varanasi-221005
E-mail- sssbhu@gmail.com

Sarasvati (also known as *Bharati, Vak-devi, Vagishvari* and *Sharada* etc.), the presiding goddess of wisdom, knowledge and music (*Buddhi, Jnana* and *Sangita*), was popular in Indian tradition since *Vaidik* times. The river *Sarasvati* on the banks of which *Vaidik* learning and *Yajna* took place, played vital role in the development of her mythology. As a result river became the personification of goddess *Sarasvati*. The hymns found in the *Samaveda* were chanted on her bank. It is because of the above reasons that she was conceived as holding manuscript (symbol of knowledge), rosary (*akshamala*) and water-vessel (*kamandalu*) which were symbolic attributes for *Yajna* and *Upasana*. The swan (*hamsa*) became her *vahana* (vehicle), which again symbolizes knowledge and also power of *Nira-Kshira-Vivechana* (discussion in the spirit of differentiation of water from milk). However it was from the *Sunga - Kushan* period that *Sarasvati* is represented in art and in the mythology. In the *Puranas*, she is associated with Brahma both as daughter and *Shakti* (consort) and at same times with *Vishnu* also along-with *Lakshmi* as his *Shakti* to be seem mainly in Pala art (8^{th} – 10^{th} century A.D.) of eastern India.

Sarasvati was assimilated in *Shramanic* tradition also. In Jainism she appears as *Sarasvati* and *Shrutadevata* (as *Jina-Vani*) atleast from second century A.D. (Kushana period), while in Buddhism she appears as *Prajna-Paramita* probably after the Gupta period (c. sixth century A.D.). Thus she was accepted in all the Indian religious traditions as goddess of knowledge and was to be shown invariably with *Pustaka* (manuscript) and *Hamsa-Vahana* (swan).

Much has been written about *Sarasvati* in *Vaidik-Puranic* tradition and art and also about *Prajna-Paramita* in Buddhist tradition but very little is written on the concept, form and iconography of *Sarasvati* in *Jain* context. Therefore we have decided to focus mainly on *Sarasvati* in *Jain* Tradition and Art. The study reveals her powerful presence in *Jain* texts and visual renderings.

The earliest goddess to be worshipped by the *Jain*s was *Sarasvati*[1] also called the *Shrutadevata*, the personified knowledge embodied in of sacred *Jain* scriptures preached by the Jinas and the *Kevalins* (Vyakhya-Prajnapti-11.11.430 and Paumachariya-3.59)[2]. The *dvadashanga* –the twelve *anga*-text are described as the different limbs of the *Shrutadevata* while the fourteen *purva* texts are said to be her ornaments.[3] *Sarasvati* is invoked for dispelling the darkness of ignorance, for removing the infatuation caused by the *jnanavarniya karma* (i.e. the *karma* matter covering right knowledge) and also for destroying miseries.

Sarasvati as the bestower of knowledge and purity has been endowed with symbols like swan (as mount), manuscript, rosary, *varada-mudra* and water-vessel (in hand), which do represent her distinctive character. Subsequently by the end of ninth century, she also became the presiding goddess of music and hence provided with *Vina* (lute) in hands and peacock as mount. The popularity of worship of *Sarasvati* in Jainism is established on the testimony of literary references in the *Vyakhya-prajnapti* (c. 2nd-3rd century A.D.), the *Paksika-sutra* of *Shivasharma* (c. 5th century A.D.), the *Dvadasharanyachakravritti* of *Simha suri Kshamashramana* (c. CE 675), the Panchashaka of *Haribhardra suri* (c. CE 775), the *Samsaradavanala-stotra* (also of *Haribhadra suri*), the *Mahanishitha*-sutra (c. 9th century A.D.) and the *Sharada-stotra* of *Bhappabhatti suri* (c. 3rd quarter of the 8th century A.D.) and also by the archaeological evidence of the famous image of *Sarasvati* from *Mathura* belonging to the Kushana period (CE 132)[4]. The popularity of her worship can also be understood from the large number of *Sarasvati* figures placed at different parts of *Jain* temples particularly in western India. A special festival held in the honour of *Sarasvati* is called *Jnana-panchami* in the Svetambara tradition and *Shruta-panchami* in the *Digambara* tradition.[5] Besides this festival, special penance like the *Shrutadevata-tapas* and *Shruta-skandha* and *Shrutajnana-vratas* are also observed by the *Jain*s.[6]

The worship of *Sarasvati* was far more popular with the *Svetambaras* which is why, her images at the famous *Digambara Jain* sites like *Badami*, *Aihole*, *Ellora,* etc. are absent. *Sarasvati* at some stage in pre-medieval period began to be invoked by the *Svetambaras* as a power. The pursuit of supernatural powers and the development of rites to attain them had acquired strong *tantric* colours by medieval period and as a natural corollary, the hymns addressed to a number of *Jain* goddesses, including *Sarasvati*, often were composed after the *tantric* mode.

The *Jain*s, particularly the monks friars and pontiffs such as *Bappabhatti suri*, *Hemachandra*, *Mallisena*, *Mallavadi suri* (II), *Narachandra suri*, are reported in the medieval literature to have acquired *Sarasvat*-power from *Sarasvati*, the medieval works being the *Prabhavaka-charita* of *Prabhachandracharya* (c. CE 1250), the *Prabandhachinatamani* of *Merutungacharya* (c. CE 1305-06), the *Prabandhakosha* of *Rajashekhara suri* (c. CE 1328-49) and the *Kumarapalacharita* of *Jinamandana* (c. CE 1435-36). The reason for such pursuit was not only to become a poet (*kavi*) of unequal merit and invincible dialectician (*vadi*)[7] but also to obtain certain supernatural powers. There are references which distinctly reveal that the *Jain Acaryas* and poets sought to acquire the *Sarasvata-mantra*, a magic formula for obtaining mastery over speech. *Hemachandra* himself in his manual of poetics, the *Alankarachudamani*, admits unreservedly his faith in such means.[8] The *Jain* works also make frequent reference to the journey of *Hemachandra* and other *Jain Acharyas* to *Brahmidesha* i.e. Kashmir for winning the favour of goddess *Brahmi* in order to overcome all their rivals in disputations (*vada*).[9]

The *Prabandha-kavyas* invariably refer to a story wherein *Bappabhatti suri* is said to have invoked *Sarasvati* for winning over a Buddhist deflection *Vardhanakunjara* at the court of *Amaraja* in Gopagiri.[10] The *Prabhavakacharita* mentions that the *vada* between *Bappabhatti* and *Varadhanakunjara* continued for six months without any result. *Bappabhatti* thereupon invoked *Giradevi* i.e. *Sarasvati* in the mid night by the *mantra* given by his *guru*. The *mantra* was so forceful that *Sarasvati* forgot even to drape herself while appearing before *Bappabhatti* (*anavrittashariram*). *Bappabbhatti* then composed a *stotra* of 14 verses in praise of *Sarasvati*, and the goddess, after being pleased with the hymn disclosed that his rival *Vardhankunjara* was her great adorer for the last seven *bhavas* (births) and consequently obtained from her *akshayavacana -gutika* which enabled him at unstopping and flawless speech and hence made him *aparajeya* (unconquerable). On request *Sarasvai* also suggested *Bappabhatti* to win over *Vardhanakunjara*. That was by asking him, along-with other *vadis* present, to gurgle with water (*mukhashauca*) and while he would do so, the *akshayavacana-gutika* will drop out of his mouth by the grace of the goddess, where after *Bappabhatti* could easily defeat him in the *vada*. We further find that *Bappabhatti* acted accordingly and was able to defeat his rival and become *vadi-kunjara-kesari*, the lion for the elephants who are disputants.[11] This anecdote distinctly gives an idea as to the power achieved by the invocation of Sarsavati. The *akshayavacana-gutika* of the story symbolizes the personified *vani* itself. Before disappearing, *Sarasvati* also asked *Bappabhatti* that he would neither recite before anybody nor even put the 14 *stotras* into writing because they are so forceful that the moment they are recited she would be compelled to appear in person before the *sadhaka* which cause great inconvenience to her.[12] The *Prabandhakosha* also refers to this story without any change, except that *Sarasvati* is not shown as coming undraped.[13]

Hemachandra (c. mid 12th century A.D.) was also blessed with *Sarasvata*-power along-with other magical powers.[14] The *Prabhavaka-charita* mentions that *Chaulukya* king *Jayasimha* requested *Hemachandra* to prepare a new grammar on the model of the grammar of *Paramara* king *Bhoja* of Ujjain. *Hemachandra* then asked for eight ancient grammars which were to be found only in the library of the *Sarasvati* temple in Kashmir. *Jayasimha* at once sent his officials to Kashmir for bringing the manuscripts. *Sarasvati* pleased with the psalms of her praise by the officials appeared and ordered the librarian to send the desired manuscript to her favourite devotee, *Hemachandra*. On completion of the new grammar by *Hemachandra*, its 20 copies were sent to Kashmir which was accepted by *Sarasvati* herself for the library of her temple.[15] The *Prabandhakosha* gives another story, according to which *Hemachandra* once invoked *Sarasvati* on the bank of river *Sarasvati* for knowing the previous existence (*purvabhava*) of *Kumarapala Chaulukya*. After three days *dhyana Sarasvati* (*vidyadevi*) appeared and told *Hemachandra* as to the *purvabhavas* of *Kumarapala*.[16]

Mallisena suri (c. CE 1047), the author of *Bhairava-Padmavati-Kalpa* and *Bharati-Kalpa* (wrongly called *Sarasvati-mantra-kalpa*), was also blessed with *Sarasvata*-power.[17] From the various titles mentioned for him in his works we gather that he was not only a great *mantric* but also a great poet of Sanskrit and *Prakrita*, a grammarian, a dialectician and also well versed in all the sacred scriptures and was favoured by *Sarasvati* with a boon (*Sarasvatilabdhavaroprasadah*).[18] Another reference pertains to *Balachandra suri*, author of the *Vasantavilasha* (c. early 13th century A.D.) who was well known as *Siddhasarasvata* i.e. one who has successfully practiced the *sadhana* of *Sarasvati*. He is described to have realized the form of *Shri Sharada* in a *yogic* trance.[19]

The *Prabhavaka-charita* and the *Prabandhachintamani* refer to *Mallavadi suri* of the court of Shiladitya[20] who favoured with a logical treatise *nayachakra* by *Sarasvati*. She also descended into his throat in a *vada* with Buddhists to silence them.[21] *Mallavadi* was able to please *Sarasvati* with his excellent memory alone. According to the anecdote, on one occasion, *Sarasvati*, roaming in the sky, asked him while he was engrossed in her worship 'what things are sweet' (*kemistha*)? He answered 'grains of wheat' (*valla*). Again after the laps of six months, the goddess returned at the same time asking him 'with what' (*keneti*). Malla then remembered the former dialogue and answered 'molasses and *ghee'* (*guda ghrieneti*). The answer apparently pleased *Sarasvati* and she blessed him with the desired boon [22]. According to the *Prabhavaka-charita*, *Sarasvati* blessed *Mallavadi* with the power to grasp the complete meaning of the *shastra* only by a single verse.[23]

One other story pertains to *Vriddhavadi suri* (c. 4th century A.D.) who is so called because he cultivated learning at a late age. Once he invoked *Sarasvati* in a *Jinalaya* (temple of *Tirthankara*) and observed fast for 21 days. *Sarasvati* pleased with his austerities appeared and favoured him with a boon of becoming the master of all *vidyas* (*sarvavidyasiddha*).[24] After having the blessings of *Sarasvati*

Vriddavadi by his *mantric* power demonstrated the shower of flowers on a pestal (*mushala*) and hence become famous as *Prajnamushala*. The *Prabhavaka-charita* explains that he prayed *Sarasvati* to bless him with such powers.[25] The Prabandha-kosha also calls him *apratimalla-vadi* upon whom on the that account, his preceptor *Skandiacharya* bestowed the status of an Acharya.[26]

The *Prabandha-kosha* also refers to an interesting story in its *Harihara-Prabandha* which bears testimony to *Sarasvata* power. The story pertains how a poet Someshvara from Gujarat was humiliated by a *Gauda* poet *Harihara* in the assembly of *Vastupala*. Once *Someshvara* composed a *stotra* of 108 verses and recited it before *Vastupala* and *Harihara*. *Harihara*, on hearing the *stotra* remarked that it is not an original composition and is just the copy of the work of *Bhojadeva*, he had seen in the cellar of *Sarasvati-Kanthabharana-Prasada*. To prove this he at once repeated the entire *stotra* verbatim. After Sometime, *Harihara* himself disclosed to the *Vastupala* that he had mastered the *Sarasvata-mantra* and was thus blessed with a tremendous memory by which he could remember 108 verses, *Shatapadakavya* and many more things. Just by listening to their recitation once he could reproduce them verbatim.[27]

The *Prabandha-kosha* in its *Vastupala-prabandha* also cites an example wherein *Narachandra* suri makes a prediction as to the death of *Vastupala* in V.S. 1298 (CE 1241).[28] *Vastupala* commented that his prediction regarding his death cannot go wrong in as much as he is *Sarasvati siddhisampanna*.[29]

The *dhyanamantra*s of *Sarasvati* both in the *Svetambara* and *Digambara* tradition, reveal the *tantric* mode of her worship, wherein she is invariably conceived with two, four and even more arms and with differing attributes. The *vahana* of *Sarasvati* in the *Svetambara* tradition is swan, while in *Digambara* tradition she rides a peacock. The first *tantric* expression of the worship of *Sarasvati* is found in the *Sharadastotra* of *Bappabhatti suri* who is also invoked as *Shrutadevata* with *Rishabhanatha* and *Munisuvrata* in his *Charturvimshatika*.[30] The later *tantric Jain* works such as the *Bharati-Kalpa* by *Mallisena* and the enlarged version of the *Sarasvati-Kalpa* attributed, though wrongly, to *Bappabhatti* (c. 10th -11th century A.D., the *Sidhhasarasvat-stava* (misread as of *Sadhvi* Shivarya but in reality the composition of *Hemachandra suri*) and *Sharadastavana* by *Jinaprabha suri* (c. 14th century A.D.) enjoin her worship in all the *tantric* rites such as the *Shantika, Paushtika, Stambhana*,[31] *Marana, Ucatana* etc. The various *tantric* modes included her *sakalikarana, archna, yantravidhi, pithasthapana, saubhagyaraksha* and *vashya-mantras* along-with different rites to be performed. Apart from the propitiatory rites, the gruesome rites were also accepted and the terrific form of *Sarasvati* was also visualized from about the 10th -11th century A.D. The *Bharati-Kalpa* of *Mallisena*, the *Sarasvati-kalpa* of *Arhaddasa*, *Sarasvatayantra*-puja of *Shubhachandra* (c.10th century A.D.) and *Jinasamhita* of *Ekasamdhi* enunciate the goddess in horrible form with three eyes and crescent in her *jata* and also making terrifying sounds (*humkaranada*).[32] These features bear testimony to her closeness with Shiva. *Bappabhatti*, in his

Sarasvati-Kalpa invokes the goddess under the name Gauri.[33] It may be noted in passing that the *Sutasamhita* of the *Skanda-Purana* (c. 13th century A.D.), likewise describes *Sarasvati* with three eyes and having *jata-mukuta* with crescent.[34] A few later *Jain* works visualizing *Sarasvati* with goad and noose in her two hands further reveal her power aspect.[35] However, she is also addressed by various such names as *Kali, Kapalini, Kauli, Vijna, Trilochana, Raudri, Khadgini, Kamarupini, Nitya, Tripurasundari, Chandrashekhari, Shulini, Chamunda, Humkara, Bhairavi* and so forth which attests to the amalgamation purely of *tantric* features in her worship.[3 6]

According to *Vidyanushasana* (c. 15th century A.D.) *Vagishari* should be worshipped in a form with sharp bare fangs and protruding tongue, three eyes and terrific appearance. Her worship in this form with *Khadga-manta* results in removing all mishaps.[37] The *Acharadinakara* of *Vardnaman suri* (c. CE 1412) includes *Sarasvati* in the list of 64 *yogins* as well.[38]

The *Sarasvati-Kalpa*, the Bharati-*Kalpa* and the Sarasvata-Yantra-puja, however, speak of different *yantras* or magical diagrams for the *sadhana* of *Sarasvati*.[39] The Saravata-yantras sometime give interesting information on the *parivara* of *Sarasvati* as well. The *yantra-puja* envisaged in the *Sarasvati-kalpa* of *Bappabhatti* suri mentions Moha, Nanda, Bhadra, Jaya, Vijaya, Aparajita, Jambha, Stambha, the Sixteen *Vidyadevis* (Rohini, Prajnapti etc), the eight *Dikpalas*, *Ashtamatrikas*[40] and the *Ashta-Bhairvas* to be wroshipped in the *mandala* or *yantra* of *Sarasvati*.[41] *Bappabhatti* and *Mallisena* in their respective *Sarasvati-yantra-puja-vidhi* refer to the formation of several diagrams to be made on the lotuses with eight, twelve, sixteen, sixty-four, 108 and 1000 petals, various *tantric* rites and rituals to be performed in the *homakunda* (sacrificial alter) and the recitation of *mantras* for 10000, 12000, 100000 and for even more times.[42] All these *tantric* rites have been described as *Siddhasarasvata-bija* in the *Sarasvati-kalpa*.

The iconographic of study of *Sarasvati* images reveals that the spirit of *tantra* was never so overt in *Jain* sculpture[43] as has been the case with Buddhists and Brahminic icons known form places like Ellora (Maharashtra), Nalanda (Bihar), Kurkihar (Bihar), Gurgi (Rewa, MP), Hinglajgarh (Mandsore, MP), Lokhari (Banda, U.P.), Malhar (Bilaspur, MP), Bhubaneshwar (Orissa), Bheraghat (Tripuri, MP) etc. *Sarasvati*, even when she came under the fold of *tantric* worship in Jainism during the medieval time, had her image hardly bearing any *tantric* shade. In *Jain* sculptures she usually is represented with benign appearance with only a few exceptions showing her as 'Power' especially of music and fine arts.

Jain Sarasvati has also some bearing of *Vaidik-Pauranic Sarasvati* who is conceived as consort both of Brahma and Vishnu. This closeness can be established on account of their common attributes, like *pustaka, vina, akshamala, kamandalu, shruk, ankusha and pasha*. The Achardinakara, however

envisaged the same sets of symbols for *Shrutadevata* and Brahmani. The four armed Brahmani here is visualized like *Sarasvati* as riding on *hamsa* (swan) and holding *vina*, *pustaka*, *padma* and *akshamala*.[44] The rendering of *sruk* with *Sarasvati* although never prescribed by any *Jain* text is noticed in good number of *Jain Sarasvati* figures which happens to be an invariant features of Brahma. [45]

The early *Jain* works conceive *Sarasvati* only with two hands and as holding either a book and a lotus or a water-vessel and a rosary, and riding a swan.[46] The *Sarasvati*-yantra-puja of Shubhachandra, however describes the two armed *mayuravahini* with three eyes and holding a rosary and a book.[47] The four armed *Sarasvati* appears to have enjoyed the highest veneration among both the Svetambara and the *Digambara* sects. The four-armed goddess in both the sects bears almost identical attributes, except for the *vahana.* The Svetambara works invariably conceived her with the *varada-mudra,* a lotus. a manuscripts and a rosary.[48] The Sarasavati-*kalpa*, however, gives two sets of symbols for four-armed *Sarasvati*; the first showing her with the *abhaya-mudra*, the *varada-mudra*, *pustaka* and a lotus, while in other the *abhaya* and the *varada-mudra* have been replaced by a *vina* and a rosary.[49] The Bharati-*kalpa* renders the *dhyan*a of the goddess showing *abhaya-mudra*, *jnana-mudra*, rosary and manuscript.[50] It was only sometimes after the 9th century A.D. that *Shrutadevta* became the goddess of music as well and was consequently provided with a *vina* replacing the *varada-mudra*.[51] The Jinendrakalyanabhyudaya refers to *Sarasvati* as holding a *pasha* in place of *vina*.[52] According to Nirvanakalika of Padalipta suri (III) (c. 900 A.D.), *Sarasvati* bears a book, a rosary, a lotus, the *varada-mudra* and various other symbols in her numerous hands.[53]

The earliest representation of *Sarasvati* (Fig. 01) is known from Mathura (132 A.D.)[54]. The image now preserved in State Museum, Lucknow (Acc. No. J. 24), is inscribed and mentions the date and name of *Sarasvati* on the pedestal. The two-armed goddess squats on a rectangular pedestal, holds a manuscript in her left hand, while her mutilated hand was showing the *abhayaksha*. The *hamsa-vahana* is not carved in the present instance. Deogarh (Lalitpur, U.P.) a prolific *Digambara Jain* site has yielded a number of independent figures of *Sarasvati*, datable between c. 9th to 12th century A.D. *Sarasvati* in Deograh, riding either a swan or a peacock, is represented either with two or four arms. The rendering of *Sarasvati* twice in the group of 24 *yakshis* in particularly interesting. These figures carved on the façade of the temple no. 12 (862 A.D.) at Deogarh, represent her as the *yakshi* respectively of *Jina Abhinandana* and *Jina Suparshvanatha* with the labeling "*Bhagavati Sarasvati*" and '*Mayuravahini* (ni)'.[55]



Fig 01: The earliest representation of *Sarasvati*

A figure of *Sarasvati* from Deogarh, carved on the exterior wall of temple No. 1 (now in the modern temples of *Jain* Dharmashala, late 11th century A.D.), shows the goddess in the *tritirthi* image (Fig. 02), wherein *Sarasvati* is depicted with two Jins standing on same pedestal. *Sarasvati*, occupying the left extremely of the *tritirthi*, is shown equal in size to the Jina figures, which may however be interpreted that as *Shrutadevata*, personifying *Jina-vani*, she is given a status as honourable as that of the Jinas. The four-armed goddess, standing in *tribhanga*-posture with peacock mount, shows the *varada-mudra*, a rosary, a lotus and a manuscript. She also finds representation on different door-lintels (temple no. 12) with *Cakreshvari, Rohini, Ambika* and *Lakshmi*.

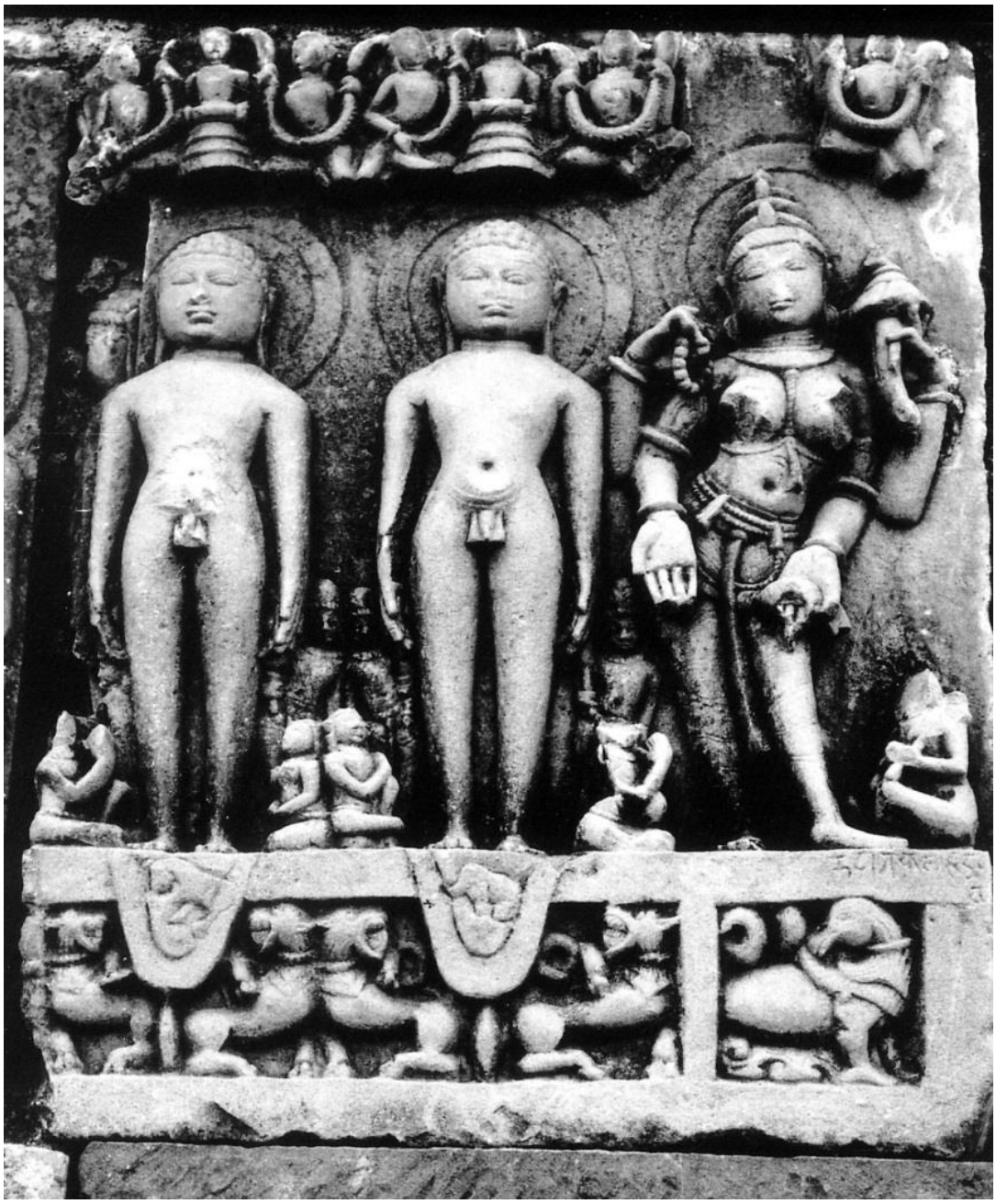


Fig 02: A figure of *Sarasvati* shown in the *Tritirthi* image, found in Deogarh

The two-armed *Sarasvati* in Deogarh usually bears the *abhaya-mudra* and a manuscript (temple no. 16). The four-armed figures, either wearing a *dhammila* or a *jata-juta*, shows the *varada-mudra*, the *vyakhyana*-cum-rosary, a long-stalked louts and a manuscript.[56] In one instance (temple no. 19, Fig. 03), *Sarasvati* is accompanied by fly-whisk bearers, tiny Jina figures and also the *Jain Acharyas*, holding a manuscripts, the *vyakhyana-mudra* and a *mayurapichika*, which is the manifestation of her being the goddess of *Jina-vani* or *agamic* literature. A few instances carved mainly on the door-lintels, shows her with a *vina* and a water-vessel, sometimes the latter being replaced by a conch.[57]



Fig 03: *Sarasvati* in *Vyakhyaana Mudra*

Khajuraho, a *Digambara Jain* site (Chhatarpur district of Madhya Pradesh), has yielded eight figures of *Sarasvati* wherein she, except for one instance[58] is always four-armed.[59] The figures, datable between c. 950-1100 A.D., depict her in *lalita-mudra* and as holding a manuscript, a *vina* (either in one or two hands), a lotus (usually in two hands) and also the *varada-mudra* (or a water-vessel or a rosary). However, the *vahana* swan is carved only in one instance on the northern *adhisthana* of the *Parshvanatha* temple (c. 950-70 A.D., Fig. 04). The six-armed *Sarasvati* on the southern *adhisthana* of the same temple, shows a lotus and manuscript in upper pair of hands, while the middle pair of hands are engaged in playing on *vina*. The remaining two hands, however, show the *varada-mudra* and a water-vessel. The presence of female *chanvara*-bearers, adorers, hovering *maladharas* and above all, small Jina figure overhead, signify that she was accorded a favoured position at the site.



Fig 04: *Sarasvati* on her *vahana* swan

Belonging as they do to *Digambara* tradition, a few sculptures from different places in Karnataka have some indications as to the power aspect of *Sarasvati*. Three such examples, datable to 11th-12th century A.D., are known from the *Panchakuta-basti*, Humcha (Shimoga district, Fig. 05), *Shantinatha-basti*, Jinanathapura and *Adinatha* temple, Halebid (Hassan) all in Karnataka.[60] *Sarasvati*, seated in *dhyana-mudra* without *vahana*, in all cases shows *abhayaksha*, goad, noose and manuscript. The face although much mutilated, has at least some suggestions of power through large open eyes, open lips and even somewhat swollen nose.

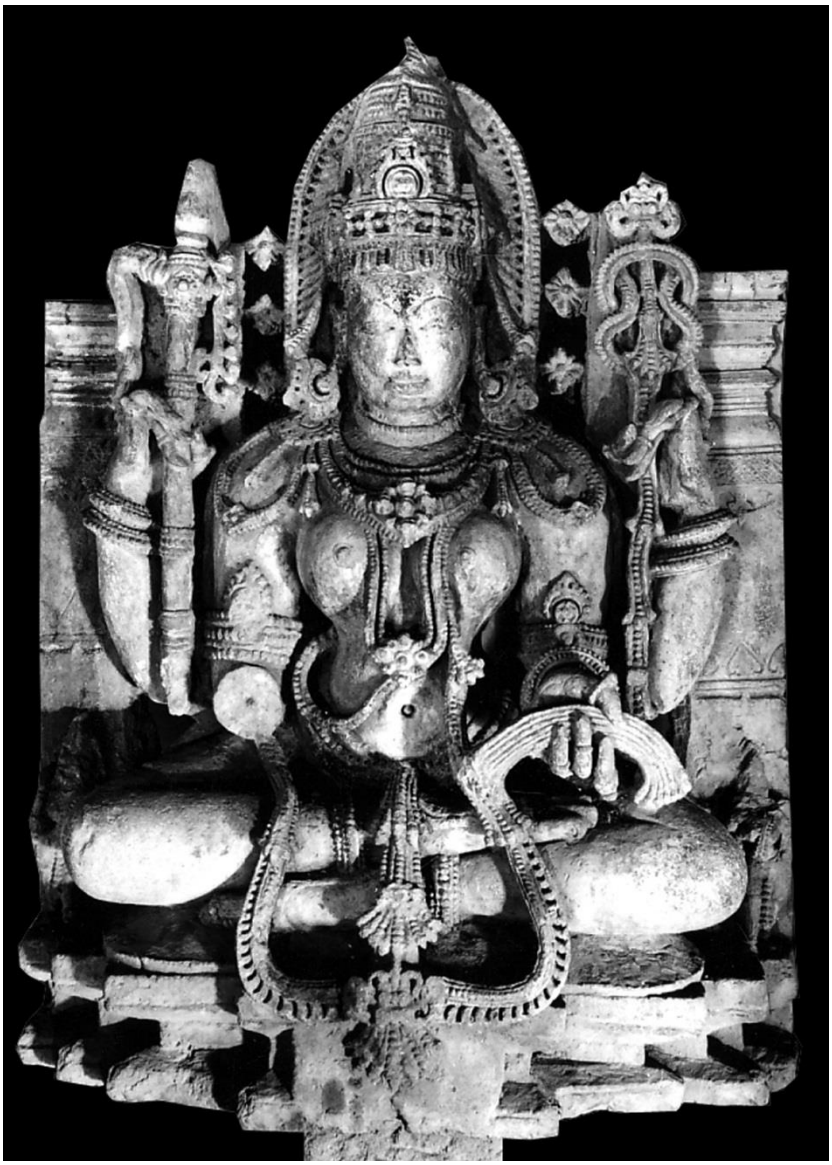


Fig 05: *Sarasvati* seated in *dhyana-mudra* without *vahana*

The Svetambaras *Jain* temples in western India have yielded a large number of figures of *Sarasvati* coming as they do mainly from Osian, Kumbhariya, Mt. Abu and Taranga. The figures on the Mahavira temple at Osian (Jodhpur, Rajshthan) (close of eighth century A.D.) show the goddess both with two and four arms and riding either a peacock or a swan. The two-armed goddess holds a lotus and manuscript, while the four-armed goddess (*mukhamandapa* on west) shows a *shruk*, a lotus, a lotus and a manuscript. The figure of five *Jain devakulikas* at Osian (c. 10th-11th century A.D.) invariably show the four-armed goddess riding a swan and as holding a manuscript and lotus in two hands, and the remaining two showing the *abhaya-mudra* and a water-vessel or the *varadaksha* and a book.

The figures from the *Vimala-Vasahi* (latter half of 12th century A.D.) and the Luna-Vasahi (13th century A.D.), Mt. Abu, Rajasthan and the *Ajitanatha* temple at Taranga (Mehesana, Gujarat, 12th century A.D.) are particularly interesting since they exhibit the goddess with two, four, six, eight and even 16 arms, thus distinctly suggesting her power aspect by way of increase in number of hands. Besides the usual four-armed figures of *Sarasvati* with swan as mount and the *varada* (or the *abhaya-mudra*), a lotus, a manuscript (sometimes *shruk* or *vina* replacing lotus or manuscript) and a fruit (or a water-vessel) in hands, *Vimala-Vasahi* has two other such figures which deserve our attention. In one case, carved in the southern bay ceiling, *Sarasvati* (Fig. 06) seated in *lalitasana* on a *bhadrapitha* and holding *varadaksha*, a spiral lotus, a manuscript and a water- vessel, is accompanied by two male figures, standing close to her with folded hands. These figures bear inscriptions, according to which the bearded figure to her right is *sutradhara* Loyana while the figure to left with a measuring-rod is *sutradhara* Kela. The first seems to be the chief architect of the *rangamandapa*, while the other was possibly the chief sculptor.[61] The present figure apparently suggests that *Sarasvati* here has been visualized as the goddess of fine-arts, which also may be taken to be a step ahead towards the manifestation of her power aspect. The figures of 16 armed goddess (Fig. 07) carved in a *bhramika*-ceiling, depicts here as sitting on *bhadrasana* in *lalita-pose* with swan and holding the *varada-mudra*, a conch (suggesting her Vaishnavite character), small stick (possibly measuring rod in two hands), a chain (in uppermost pair of hands) a *vina* (in two hands), a noose, the *kartari-mudra*, an indistinct object, a goad, the *abhayaksha*, a fruit, a manuscript and a water-vessel. The goddess is joined by six-armed dancing male figure on each side, thus suggesting her command over musical power.



Fig 06: *Sarasvati* seated in *lalitasana* on a *bhadrapitha* and holding *varadaksha*

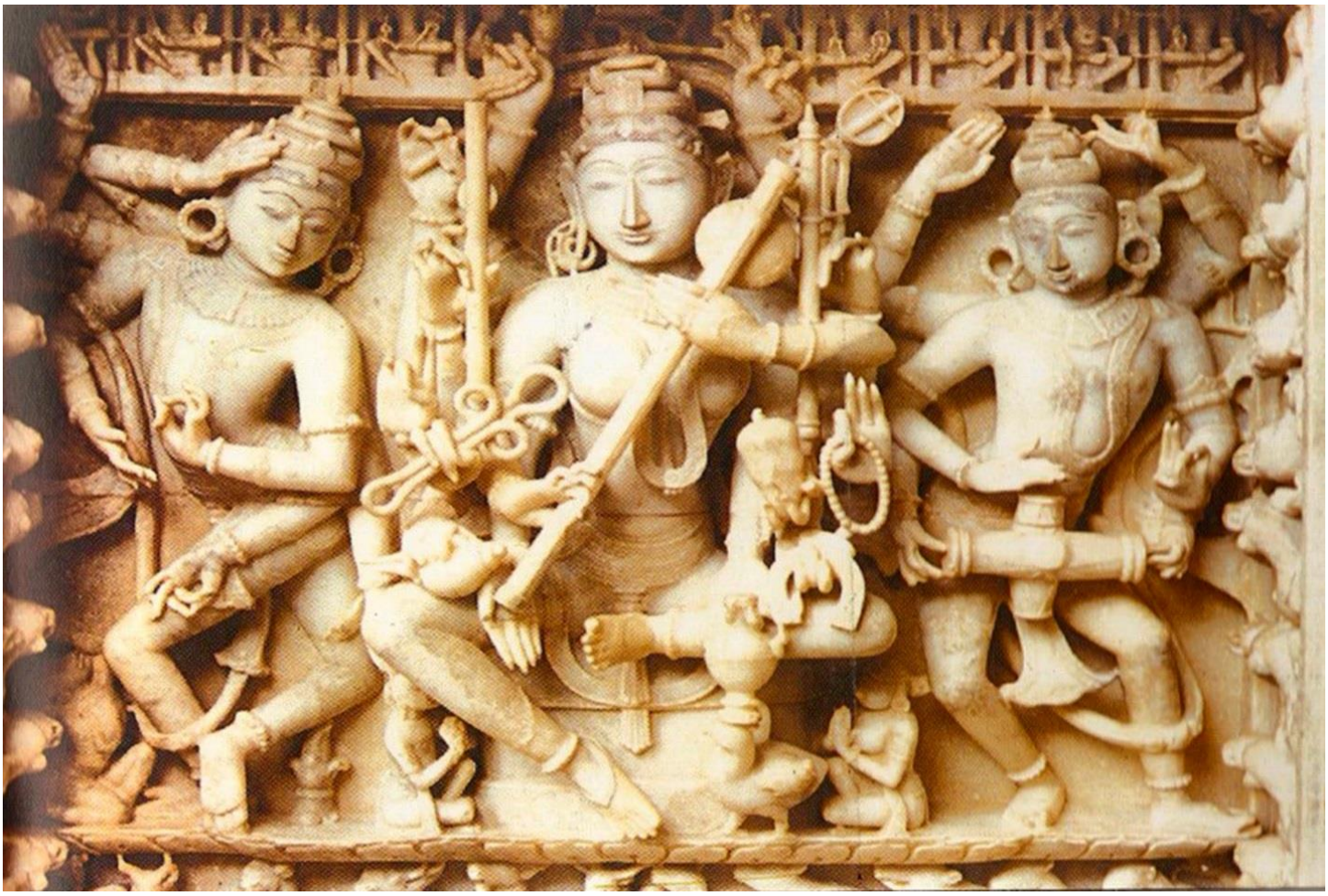


Fig 07: The 16 armed goddess sitting on *bhadrasana* in *lalita-pose* with swan

The figures in Luna-Vasahi show the goddess with four and six hands and riding a swan. An interesting point in this regard is the collective rendering of eight *Sarasvati* on each of the four pillars of the *navachauki* close to *rangamandopa*. The four-armed *Sarasvati* in these instances shows the *varada-mudra* (or *varadaksha*), a long-stalked lotus (or manuscript), manuscript (or *vina*) and water-vessel. There are two examples wherein *Sarasvati* possesses six hands. These figures are carved in the *bhramika*-ceiling of *devakulika* no. 11 and in the ceiling close to the *rangamandapa* on north. Accompanied by a swan, she in latter case bears the *abhayaksha*, a double petalled lotus (in two hands), a water-vessel and the *jnana-mudra* (with the middle pair of hands). The other instance again revealing her musical-power shows her as holding cymbals in middle pair of hand with a *vina* in the upper left. The remaining three hands, as usual, show the *varadaksha*, a spiral lotus and a manuscript.[62]

The most exquisite of all the known figure of *Sarasvati* are the two images from Pallu (Bikaner, Rajasthan). Of the two identical figures, one is in the National Museum, New Delhi (Acc. No. 1/6/278,

Fig. 08), while the other is in the Ganga Golden Jubilee Museum, Bikaner (Acc. No. 203). These figures belonging to c. mid 11th CE, show the four-armed goddess as standing in *tribhanga*-posture on a lotus pedestal with a small figure of swan. The goddess, benign in appearance, is bedecked with beautifully carved ornaments and *karanda-mukuta.* The whole composition is endowed with divine grace and aesthetic qualities. She shows the *varadhaksha,* a full blown lotus, a manuscript and a water-vessel. The goddess is accompanied by two female figures playing on *vina*, topped by another two figures playing on flute, thus revealing her musical-power. What is particularly interesting about the image in the Ganga Golden Jubilee Museum (Fig. 09), Bikaner is the beautiful *prabhatorana,*[63] containing the two-armed figures of 16 *Maha-vidyas*. Some of them may be identified with *Apratichakra, Vajrankusa, Kali, Rohini* and *Prajnapti*. The figures on the *prabha-torana*, possibly suggest that *Sarasvati* here has been conceived as the Superintending goddess of all the Great-Powers (*Mahavidyas*).[64]



Fig 08: *Sarasvati*

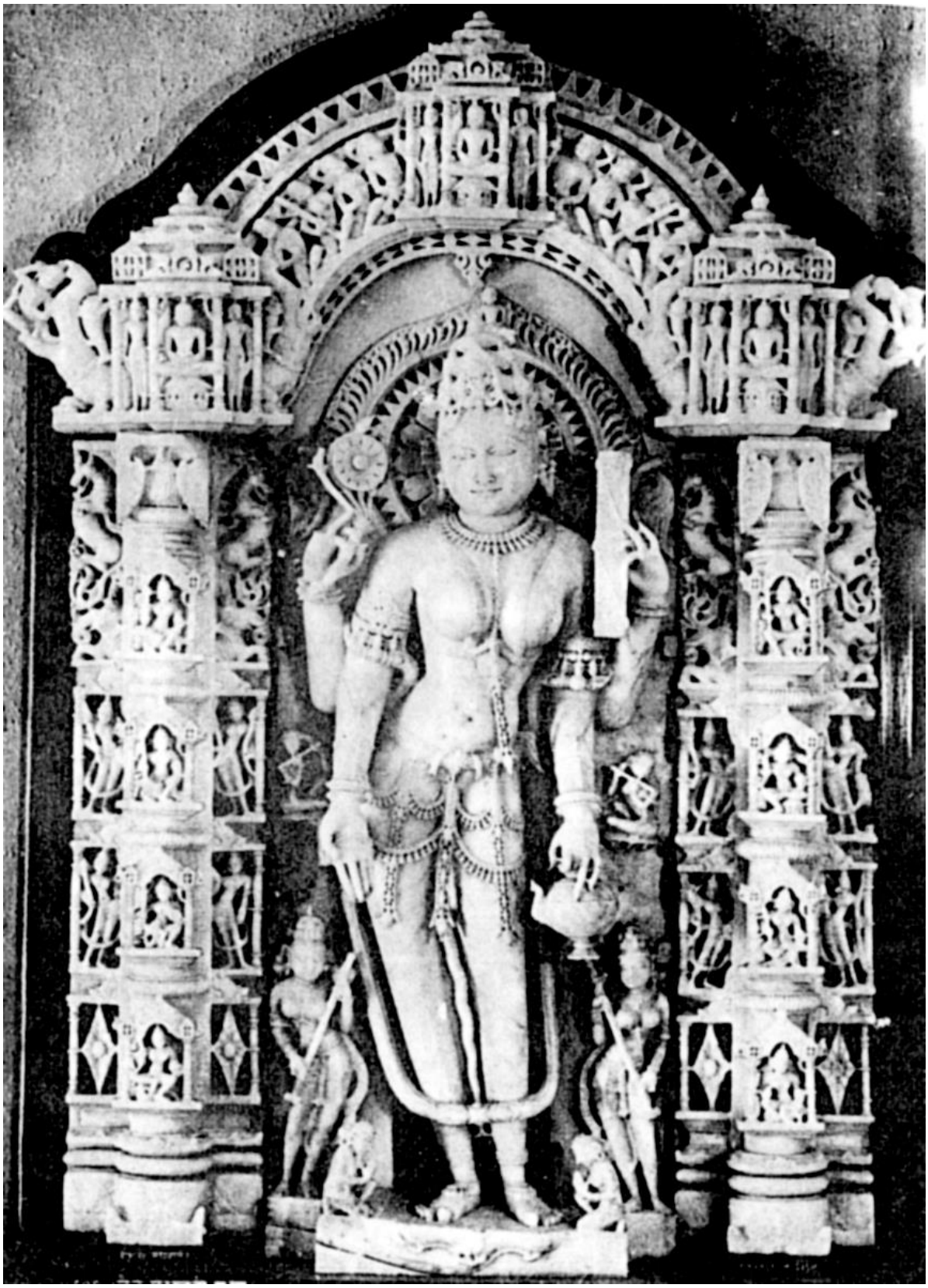


Fig 09: *Sarasvati*

Another beautiful image of *Sarasvati* in marble (Fig. 10) is preserved in Modern *Jain* Temple at Ladnun (Nagaur, Rajasthan). The image inscribed in *V.S.* 1219 (1162 A.D.) gives the name of *Sarasvati* and refers to its carving at the instance of *Shresthi's* (trader) wife Asha Deva. *Sarasvati* with a tiny seated Jina figure atop stands in *tribhanga* and wears tastefully chiselled *karanda-mukuta*, long *vanamala* hanging down to the knees and other ornaments, which make her *sarvabharanabhushita*. *Sarasvati* like Pallu images bears (clockwise) *varadaksha*, spiral lotus, manuscript and water-vessel in her four hands. The swan mount also is likewise shown in miniature form in the midst of beautifully delineated rolled lotuses on the pedestal exhibiting at its extremities male-female devotee (probably donors) with folded hands. *Sarasvati* also being the presiding goddess of music is joined by the figures of two female musicians playing on flute and *vina* along-with two flywhisk bearing female attendants. The beautiful oval face with benign smile and supple body emanates divine beauty and grace.



Fig 10: *Sarasvati*

The present study thus reveals that the worship and rendering of *Sarasvati* in *Jain* tradition and art, popular from the Kushana period through the centuries, evolved from being the goddess of wisdom to the presiding goddess of music and fine arts. She has been invoked mainly as benevolent goddess granting *Sarasvata*-power (power of knowledge) to the worshippers but in *tantric* invocation she has also been conceived in gruesome form with attributes like goad, noose and having such appellation as *Kali, Kapalini, Kauli, Trilochana, Khadgini* and *Shulini*.

Owing to the fact that *Sarasvati* in *Jain* context was visualized as personification of the preaching's of the *Jinas* (*Jina-Vani*), she was provided not only with manuscript (symbols of Jinas preaching's) but was also given a status equal to the Jinas, as it evident from an image of *Sarasvati* from Deogarh depicting her with *Jinas* on the same pedestal and in same composition and size.

References:-

1. She is variously called Shrutadevta, Sharada, Bharati, Vak, Vakdevata, Vagishvari, Vani, Vagvadini and Brahmi.
2. Vyakhya-prajnapti -11.11.430, Paumachariya-3.59
   Jinapatiprathitakhilavangmayi Ganadharananmandapanartaki/ Chaturvimshatika (of *Bappabhatti* suri; appendix A-*Sharada-stotra*-3 (Ed. H.R Kapadia and Hiralal Jain, Bombay, 1926, p. 181).
3. *…dvadsangashrutadevadhidevate Sarasvatyai Svaha* –Nirvankalika, p.17, see U.P. Shah, 'Iconography of *Jain* Goddess *Sarasvati*', Jour University of Bombay, Vol. X (New series), P. II, Sept. 1941, p. 196.
4. Recent researches demonstrate that the *Shaka* era (CE 78) had started form the 1st Year of Kshatrapa Nahapana and has no relationship with the Kushana era. The Kushana era apparently began c. CE 105 as ascertained by Prof. A.K. Narain.
5. The *Jnana-panchami* falls on the fifty day of the bright fortnight of the month of *Karttika* while the *shruta-panchami* is the fifth day of the bright half of *Jyestha*.
6. U.P. Shah. Op.cit., p.196
7. Chaturvimashatika (of *Bappabhatti* suri) Appendix A-Sharada Stotra-11.; *Amarshatanatanghih Kamadhenuh Kavinam-* As quoted in *Jain*-Stotra-sandoha, Vol- I, Ed. Amarvijaya Muni, Ahmedabad, 1932, p. 346.
8. Alamkarachudamani I.4. (as quoted by G. Buhler in his 'The Life of Hemachandracharya' (Tr. By Manilal Patel), Singhi *Jain* Series-11, Shantiniketan, 1936, p. 10)
9. G. Buhler, Op-Cit., p. 10
10. Prabhavakacharita of Prabhachandracharya, (Ed. Jinavijaya Muni, Singhi *Jain*s Granthmala-13, Ahamedabad-Calcutta, 1940), 11-*Bappabhatti* Suricharita; Prabandhakosha of Rajashekhara suri (Ed. Jinavijaya Muni, 1st Part, Singhi *Jain* Series-6, Shantiniketan 1935) a- *Bappabhatti* suri Prabandha.
11. Prabhavaka charita-11: *Bappabhatti* Suricharita-419-442
12. *Chaturdasham punarvrittam na prakashyam kadapi hi/*
    Yatastatra shrute sakshad bhavitavyam maya dhruvam//
    *Bappabhatti*suricharita-435-6; Prabhavaka-charita-11.
13. Prabandhakosha – 9; *Bappabhatti*suri-prabandha.
14. G. Buhler., Op.cit., p. 54
15. Ibid, pp. 15-16
16. Prabandhakosha- 10 Hemasuriprabhadha.

17. Bhairava-Padmavati-*kalpa*, Appendix 11: *Sarasvati*mantra-*kalpa* (actually Bharati-*kalpa*),verse 3. (Ed. K. V Abhyankara, Gujarati trans. Sarabhai Manilal Nawab, Ahmedabad, 1937, p. 61)
18. Mohanlal Bhagwandas Jhaveri, Comparative and critical study of Mantrashastra, Ahmedabad, 1944, p. 300
19. Gaekwad Oriental Series, Vol. VIII, p. 5, Also Bhattacharya, Kanailal, *Sarasvati* (A Study on her Concept and Iconography), Calcutta, 1983, p. 109.
20. The name of the contemporary king, however, is anachronistic.
21. Prabandhachintamani (Eng. Trans. C.H. Tawney, Delhi, 1982, pp. 171-172)-Panchama-prakasha: 11 Prakirnaka-Prabhandha: Mallavadiprabandha (Ed. Jinavijaya Muni, Pt. I, Singhi *Jain* Series-I, Shantiniketan, 1933, p.107).
22. Prabhavaka-charita: 10 Mallavadisuricharita 22-35; Prabandhachintamani-Tawneys, trans., pp. 171-172.
23. *Shlokenaikena shastrasya sarvamartham grahisyasi/*
Mallavadisuricharita- verse 33; Prabhavakar-charita: 10.
24. Prabandhakosha: Vriddhavadi-Siddhasenaprabhandha, p. 15.
25. Prabhanvaka-charita: 8 Vriddhavadisuricharita, verse 30-31.
26. Prabandha-kosha: Vriddhavadi-Siddhasena-prabandha, p. 15.
27. Prabandhakosha: 12 Hariharaprabandha, pp. 59-60.
28. Actully the death occurred in CE 1239.
29. ……..*1298 Varshe svargaroho bhavishyati/*
tesham ca vacamsi na calanti Gihsiddisampannavat/
Prabandh-kosha: 24 Vastupalprabhadh, p. 128.
30. Chaturvimshatika, 4.1, 76.19, 80.20.
31. *Stambhana* is defensive magical bower for making the evil spirit motionless.
32. *Abhayajnanamudrakshamalapustakadharini/*
trinetra patu mam veni jatabalendumandita//
Bharati *kalpa*, verse 2
Chandraprabham nilagalaprayanam/
Trinetramyam svagunapratushtam//
Sarasvatamantra-puja (As quoted by U.P. Shah in 'Iconography of *Sarasvati*', p. 201, fn. 29, also his p. 211. fn. 71)
33. *Sarasvati-kalpa*, verse 6: As Appendix 12 of Bhairava-Padmavati-*Kalpa*.
34. T.A. Gopinatha Rao, Elements of Hindu Iconography, Vol. I, Pt. II, Delhi, 1971 (Reprint), P. 378.
35. The goad and noose, principal attributes respectively of Indra and Varuna (also of Yama), are suggestive of power since these are among the main attributes held by various *Tantric* deities in gruesome form. *Sarasvati* through these attributes perhaps control the evil spirits of ignorance.
36. Shri *Sarasvati*stotra (of unknown author), Publ. in *Jain*-stotra-sandoha, Vol. I, 107, pp. 345-46
37. As quoted by U.P. Shah in his article on 'Supernatural Beings in the *Jain* Tantras', Acharya Dhruva Commemoration Vol., Pt. III, Ahmedabad, 1946, p.75
38. Acharadinakara, Pt. II: Pratishthavidhi (Bhagavti mandala), Bombay, 1923, p. 207.
39. U.P. Shah, Iconography of *Sarasvati*, pp. 211-12.
40. Brahmani, Maheshvari, Kaumari, Varahai, Vaishnavi, Chamunda, Chandika and Mahalakshmi- *Sarasvati-kalpa*, p. 73.
41. *Sarasvati-kalpa*: Appendix 12 of Bhairava-Padmavati-*Kalpa*, pp. 69-76.

42. The detailed *Yantra-Puja* is mentioned in the appendices 11 and 12 of Bhairva-Padmavati-*Kalpa* (of *Mallisena*), pp. 61-78.

43. Although a few *dhyana-mantra* of *Sarasvati* conceive her with three eyes and having crescent in *jata* but she has never been shown with such features in concrete manifestations.

44. Acharadinakara -I, p.12, II, p. 158, Bombay, 1923.

45. Such figures are in the Parshvanatha temple (eastern façade) at Kumbhariya, (c. 12th century A.D.), Ajitanatha temple at Taranga (c. 12th century A.D.), Vimala-Vasahi at Mt. Abu (ceiling of cell no. 48, c. CE 1150 and Mahavira temple at Jalore, c. 12th century A.D.).

46. The Chaturvimashatika (76.19) and the Sharada-stotra (verse- 1-2, 8) of *Bappabhatti* suri respectively give two different sets of symbols for *Sarasvati* who is visualized either holding *kamandalu* and rosary or *pustaka* and *padma.*

47. As quoted by U.P. Shah, ' Icongoraphy of *Sarasvati*', p. 201, fn. 29.

48. Nirvanakalika of Padalipata suri (c. CE 900), p. 37. (Ed.) Mohanlal Bhagwandas, Muni Shri Mohanlal *Jain* Granthamala- 5, Bombay, 1926.

49. *Sarasvati-kalpa*, verse 6 and 11.

50. Bharati-*kalpa*, verse 2

51. Shrisharadastavana (of Jinaprabha suri-c. CE 1263-1333), verse 7: As in Appendix 14 of Bhairava Padmavati-*kalpa*, p. 81, Also Acharadinakara, supra, fn. 70.

52. Jinendrakalyanabhyudaya folio 98 (As quoted by U.P. Shah, 'Iconography of *Sarasvati*'), p. 207, fn 58.

53. As quoted by U.P. Shah, Op. cit. p. 211, fn 70.

54. K.D. Bajpai, '*Jain* Image of *Sarasvati* in the Lucknow Museum' *Jain* Antiquary, Vol. XI, No. 2, Jan. 1946, pp. 1-4; M. N. P. Tiwari and S. S. Sinha, *Jain* Art and Aesthetics, New Delhi, 2011, p. 131.

55. Bruhn, Kalaus, The Jina Images of Deogarh, Leiden, 1965, pp. 102, 105: The four-aremed *mayuravahana yakshi,* with Jina Suparshvanatha stands in *tribhanga* and shows the *vyakhyana-mudra*, a *chamara, padma* (typical of Deogarh), a manuscript and a conch; Maruti Nandan Pd. Tiwari, *Jain* Pratimavijyana, Varanasi, 1985; Maruti Nandan Pd. Tiwari and Shanti Swaroop Sinha, *Jain* Kala-Tirth: Deogarh, Lalitpur, 2012 (third edition), pp. 112-114; Maruti Nandan Pd. Tiwari and Shanti Swaroop Sinha, *Jain* Art and Aesthetics, p. 131-132

56. Of the three instance, two are in temple nos. 12 and 19 while the remaining one is near the entrance gate of the enclosure wall.

57. Door-lintels of temple Nos. 5, 12, 13 and the pillar figures of temple nos. 1, 4, 12, 24 & 25; For detail see- Maruti Nandan Pd. Tiwari and Shanti Swaroop Sinha, *Jain* Kala-Tirth: Deogarh, pp. 112-114; Maruti Nandan Pd. Tiwari and Shanti Swaroop Sinha, *Jain* Art and Aesthetics, p. 131-132

58. Figures on the southern *adhishthana* of the Parashvanatha temple at Khajuraho.

59. Figures on the façade of the Parshvanatha temple and the door-lintels of different temples; for detail see- Maruti Nandan Pd. Tiwari, Khajuraho Ka *Jain* Puratattva, Khajuraho, 1987, pp. 72-74.

60. Another image with the same symbols is preserved in the temple at Tiruparuttikunaram (Tamilnadu).

61. Jayantavijaya Muni, Holy Abu (Eng. Trans, U.P. Shah), Bhavanagar, 1954, p. 55, fn. 2; Maruti Nandan Pd. Tiwari and Shanti Swaroop Sinha, *Jain* Art and Aesthetics, p. 133.

62. Maruti Nandan Pd. Tiwari and Shanti Swaroop Sinha, *Jain* Art and Aesthetics, p. 133.

63. B.N. Sharma, *Jain* Images, Delhi, 1979, pp. 15-19: Sharma has opined that the *prabha-torana*, however, does not originally belong to the *Sarasvati* image.

64. Maruti Nandan Pd. Tiwari and Shanti Swaroop Sinha, *Jain* Art and Aesthetics, p. 133.

List of illustrations:-

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4. *Sarasvati*, southern *adhisthana*, Parshvanatha temple, Khajuraho, 950-70 CE.
5. *Sarasvati*, Panchakuta Basti, Humcha (Shimoga, Karnataka), CE 1077
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JAMA MASJID AT BADAUN: AN ARCHAEOLOGICAL STUDY

Ashok Kumar
Dr. S. Radhakrishnan Post-Doctoral Fellow,
Department of History,
Bareilly College, Bareilly
Mail: ak12379@gmail.com

The Jama Masjid of Badaun is the earliest and largest monuments of Islamic architecture in Badaun. It lies on latitude 28^{0}2′18.31″ N and longitude 79^{0}7′19.2″ E in the locality of Maulvi Tola in the middle of the city[1]. It was built by Shamsuddin Iltutmish in A.H. 620 (1223 A.D.)[2].

In 1197 A.D. Qutubuddin Aibak captured the Badaun and appointed Hazabruddin Hasan as a governor of Badaun[3]. But later on in 1203 A.D. Shamsuddin Iltutmish was appointed governor of Badaun by replacing the Hazabruddin Hasan[4]. Since Shamsuddin Iltutmish remained governor at Badaun, when he became sultan, he remained attached to Badaun. After Iltutmish, he appointed his son Ruknuddin Feroz as a governor of Badaun[5].

It was reported that, four epigraphs were found in the structure of the mosque[6]. Presently only two inscriptions located in different parts of the mosque can be read[7].

First inscription which exists on the eastern entrance of the Jama Masjid mentions that Jama Masjid was built by Shamsuddin Iltutmish in 1223-24 A.D., when Ruknuddin Feroz was the governor of Badaun[8]. It translation reads as: "Enter here in peace and security. The great Sultan, the most exalted Shahanshah, the Lord of the necks of the people, Shams-ud-dunya-waddin, the help of Islam and the Muslims, the most just of the kings and Sultans, Abul Muzaffar Iltutmish-as-Sultan, the ally of the commander of the faithful, may God perpetuate his kingdom, in the month of the year six hundred and twenty (1223 A.D.)[9]."

Second inscription exists on the northern gateway of the Jama Masjid, which informs us that in 1326 A.D. the mosque was repaired by Mohammed – Bin – Tughlaq[10]. It translation read as: "This edifice was ordered by his exalted majesty, the shadow of the merciful God, the father of the warrior (in the cause of religion) Muhammad Shah the emperor, may God perpetuate his kingdom and reign, in the year seven hundred and twenty six (1326 A.D.) to be built by Husain, the son of Hasan, Kotwal of the province of Badaun[11]."

Third inscription is situated on the left side of inner arch of the entrance to the nave[12]. It is dated to 1602 A.D. It provides the information about the repair of the mosque. It translation read as:

"The building of Qutb-ud-din Khan, the defunct of happy memory was strengthened (repaired) by the order of the lord of land.

"When at the desire of Shaikh Faizullah Chishti it was finished with great elegance and beauty.

"For its chronogram I told Wisdom to say from his heart, 'Purely for the great God.'[13] "

Fourth inscription is situated on the right side of the inner arch of the entrance to the nave[14]. This inscription provides details of the events after 1603 A.D. It further informs that Mughal emperor Akbar carried a massive repair to the mosque since the dome of the mosque was ravaged by the fire. During this period Qutubuddin Khan, who was also known as Sheikh Khubu *Koka* was the governor of Badaun. He was the grandson of Sheikh Salim Chishti i.e. daughter son. His father was a descendent of Sheikh Shahzadas of Badaun. It translation read as:

"During the reign of Jalal-ud-din Muhammad Akbar, the king, champion of the faith, in the year 1013 one thousand and thirteen Hijri (1604-05 A.D.), this mosque was built by Qutb-ud-din Khan Chishti alias Shaikh Khubu, the *koka* (foster-brother) of Abul Muzaffar Sultan Salim Shah, champion of the faith, son of Jalal-ud-din Akbar under the supervision of Nawab Shaikh Ibrahim, son of aforesaid Khan (i.e., Qutb-ud-din Khan).Written by the Superintendent of the building (named) Abdul Malik Qazi[15]."

The mosque was built on a traditional plan, where a central courtyard was surrounded by the cloisters on eastern, northern and southern sides and a prayer sanctuary i.e. western liwan on the western side (Fig. 1). The mosque structure got deteriorated in the course of time. As the consequence of deterioration it was thoroughly modified and repaired. This modification and repair in the course of the time disfigured and changed the original structure. Besides, encroachment that took place on all sides further caused the illegal occupation which makes zigzag boundary lines on the three sides namely eastern, northern and southern sides (Fig. 1). To some extant the western *liwan* remain in its original position, though the walls, piers and the roofing system have been altered and repaired many times.

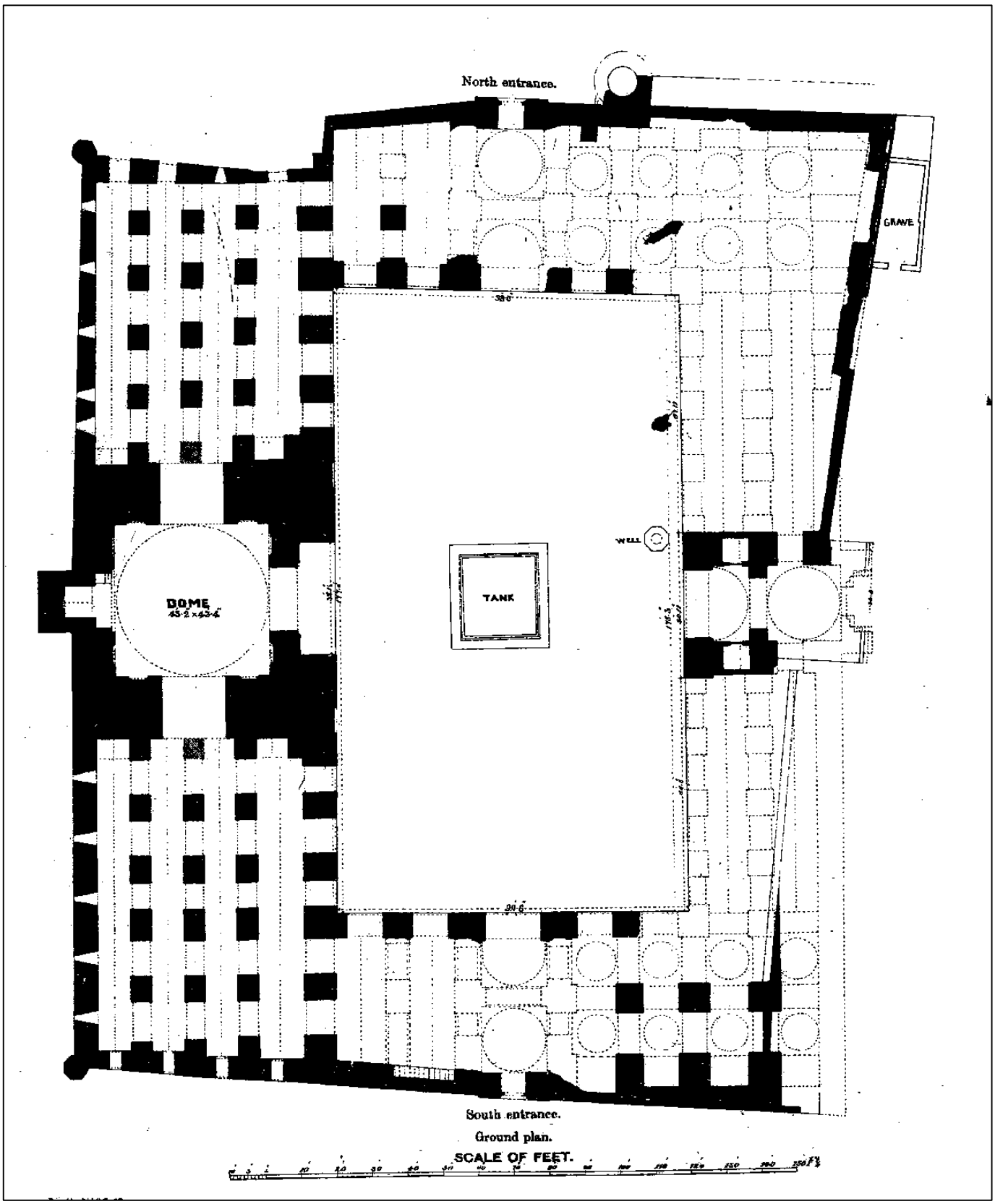


Fig. 01: Ground plan Jama Masjid, Badaun (Courtesy: J. F. Blakiston)

Western *liwan* is composed of central nave in the centre (Fig. 1, 2, 3 & 4). The central nave is square in dimension and is having thick wall (Fig. 1, 2, 3 & 4).



Fig. 02: A View of Central Portion of Western *Liwan*, Jama Masjid.



Fig. 03: Another View of Western *Liwan*, Jama Masjid



Fig. 04: A View of *Hauj* along with Central Portion of Facade of Western *Liwan*, Jama Masjid.

The central *liwan* is flanked by cloisters on the both sides (Fig. 1, 4, 5, 6, 7 & 8).



Fig. 5: A View of Northern Cloister, Jama Masjid.



Fig. 6: A View of Southern Cloister, Jama Masjid



Fig. 7: A View of North-Western Corner, Jama Masjid.



Fig. 8: A View South-Western Corner, Jama Masjid

The central *liwan* contains a huge *Qibla* merged in the thickness of the wall on western side (Fig. 1 & 9).



Fig. 9: A View of *Qibla*, Jama Masjid.

The central nave is connected with flanking cloisters by huge archway with a good span on northern and southern sides (Fig. 1, 5, 6, 7, 8, 9, and 10).



Fig. 10: A Closer View of Southern Cloister, Jama Masjid.

The central nave is faced with a huge portal on the eastern side which forms the central part of the facade of the mosque (Fig. 1, 2, 3 & 4). This portal contains arched entrances where the span of outer arch is much bigger than the span of the true arched entrance (Fig. 2, 3 & 4). The western wall of the central nave which contains the merged *Qibla* (Fig. 9) has been projected towards western side to form the projected oblong minaret (Fig. 11).



Fig. 11: A Rear View of Western *Liwan*, Jama Masjid.

The central nave is surmounted by a dome which is hidden behind the portal given in the centre of the facade (Fig. 2, 3, 4, 12 & 13). The dome is circular and very prominent similar to the prominent shape of the nave (Fig. 2, 3, 4, 12 & 13).



Fig. 12: A View of Central Dome of Western *Liwan*, Jama Masjid.



Fig. 13: A Rear View of Central Dome of Western *Liwan*, Jama Masjid

On the inside, a full-fledged phase of transition has been provided to convert the square nave into a circle to bear the base of the dome (Fig. 14, 15, 16 & 17).



Fig. 14: A View of the Phase of Transition of the Nave, Jama Masjid.

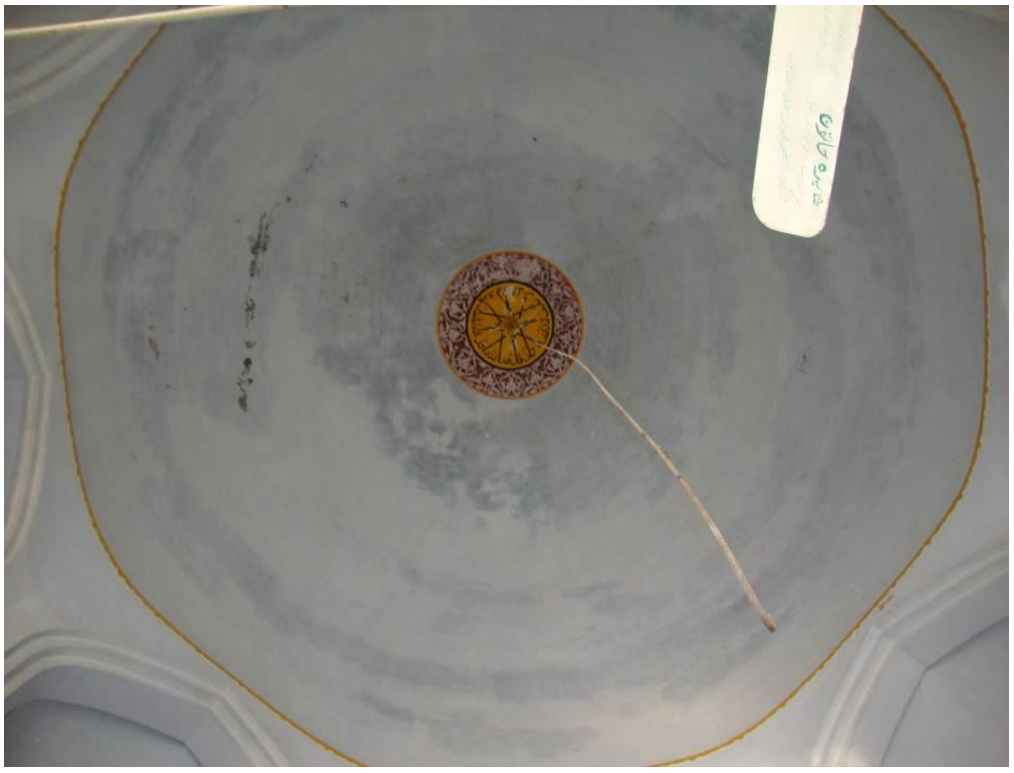


Fig. 15: A View of Ceiling of the Nave, Jama Masjid.



Fig. 16: Another View of Phase of Transition, Central Nave, Jama Masjid.

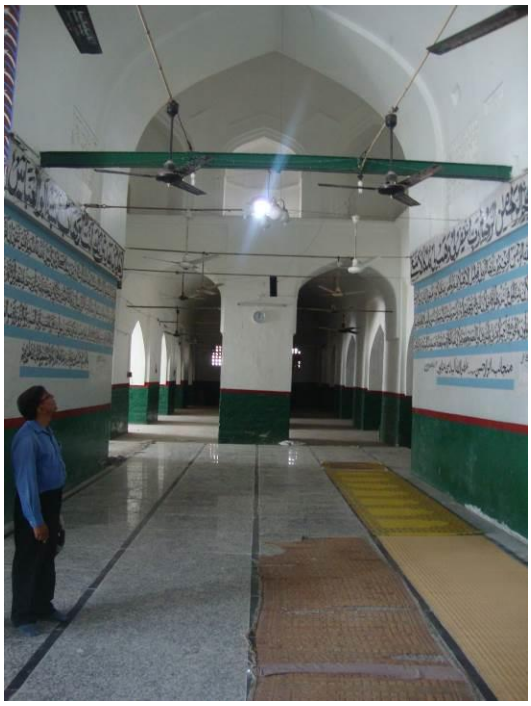


Fig. 17: Inner View, Central Nave, Jama Masjid.

Both the phases of the transition have been achieved with the help of squinches which forms miniature arched alcoves (Fig. 14, 15, 16). The dome is crowned with inverted lotus and finials which

was most probably a later addition when it was repaired during the reign of Akbar (Fig. 2, 3, 4, 12 & 13). The interior of the nave was plastered later on. Whatever decoration it has today has been done during the late Mughal period (Fig. 9, 14, 15, 16 & 17). The flanking cloisters are composed of bays, where from north to south there are five (5) bays deep and east to west four (4) bays deep (Fig. 1, 16 & 17). Each flanking cloister contain twenty (20) bays and fifteen (15) piers along with four (4) piers facilitating five (5) arched entrances towards outside in the facade (Fig. 1, 3, 7, 8, 16 & 17). Each bays in the flanking cloister was originally surmounted by cupolas (Fig. 16, 17), which were destroyed and have been replaced with new roof. From the orientation of the western *liwan* it appears that northern and southern cloisters have been added little later than the construction of the main structure of the western liwan. The facade of the western liwan consists of a huge portal in the centre and flanking five (5) small arched entrances on both sides (Fig. 1, 4, 5, 6, 7, and 8). The elevation of the northern and southern wings of the facade is just half of the elevation of the central portal (Fig. 4, 5, 6, 7 & 8). The portal consists of two arches, where one is bigger and the other is smaller. Both are fixed in a rectangular frames (Fig. 1, 2, 3 & 4). This frame contained three rectangular boarders (Fig. 2, 3 & 4). At the both corners of this portal two turrets have been provided (Fig. 2, 3 & 4). The structure of this portal is original where as its decorations were done later on. The rear wall of the western liwan has two tapering minarets at the both corners (Fig. 18).



Fig. 18: A View of Rear Minaret, Jama Masjid.

Being built on a traditional plan originally the mosque has been provided three entrances, where main was at eastern side and the two were in the southern and northern sides (Fig. 1, 5, 6, 8, 10, 19, 20 & 21). All three entrances were built on the same plan but in the course of the time all have been changed. Whatever entrances which exist at present are later additions. These entrances are composed of a square chamber and a half domed portal towards courtyards side (Fig. 1, 5, 6, 7, 8, 10 & 19).



Fig. 19: A Rear View of Main Entrance Gate, Jama Masjid.

Square chamber is connected with half domed portal with archway (Fig. 1, 5, 6, 7, 8, 10 and 19). Towards outside a huge portal was built having a huge arch covering the whole elevation (Fig. 20 & 21). These entrances were rebuilt during the mughal period or may be during later mughal period. These structures of the entrance gateway were further repaired and modified during the modern period (Fig. 20 & 21).



Fig. 20: General View of Main Entrance, Jama Masjid.

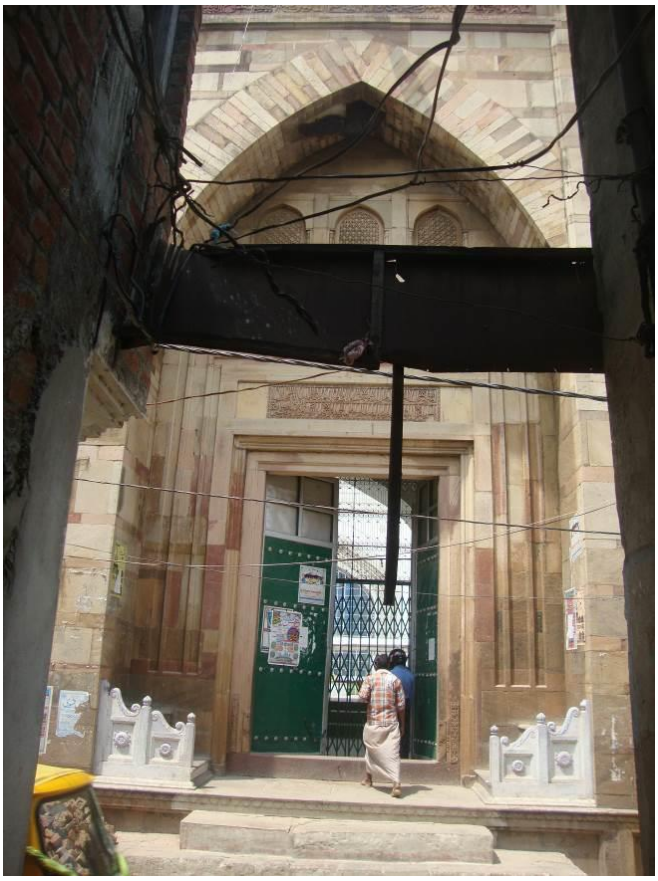


Fig. 21: A View of an Arched Entrance, Main Gate, Jama Masjid.

The cloisters in eastern, northern or southern wings, which were built contemporary to the western liwan have been destroyed in the course of the time (Fig. 5, 6, 7, 8, 10 & 19). The present cloisters and compartment have been built during the British period or modern period.

The courtyard in the centre was on the oblong plan on north-south axis (Fig. 1). In the centre of the courtyard there is a *Hauz* (Fig. 1, 2, 3, 5, 6, 4 & 22). It was built during the modern period exactly over the older *Hauz* of the time of Iltutmish period.



Fig. 22: A View of Inscription near *Hauj*, Jama Masjid.

From the space covered by the structure of the mosque it appears that the mosque was built not on a fresh land but on the place where some old structures existed and these were demolished to build the mosque. It is proved by the irregular plan of the mosque as the northern part of the mosque is not parallel to the southern part of the mosque (Fig. 1), so far as the area and stretch or expansions are concern. As on the northern and southern side, the structure has been restricted because of the existence of old structure. The area on which the mosque existed today has no symmetry on eastern, northern and southern sides (Fig. 1).

So far as the building material of the original structure are concerned dressed sand stone have been used with lime mortar (Fig. 5, 6, 7, 8, 10, 11, 18, 19, 23, 24 & 25).



Fig. 23: A View of Central Arch of Southern Cloister, Jama Masjid.



Fig. 24: A View of Inscription on the back wall, Jama Masjid.



Fig. 25: A Rear View, Jama Masjid.

The interior and outer surface of the structure were more probably coated with lime plaster which in the course of the time was replaced with modern plaster and the veneer of white marble (Fig. 2, 3, 4 & 5). The same treatment was given to the main dome, the portals and the facades (Fig. 2, 3, 4, 7, 8, 12 & 13). The crowning element of the dome was roughly modified and replaced.

References:

[1] Geo Coordinates are based on Google Earth.

[2] A. Cunningham, *Archaeological Survey of India, Report of the Tours in the Gangetic Provinces from Badaun to Bihar, in 1875-76 and 1877-78, vol. XI*, Varanasi, 1968, p. 4, *A. Fuhrer, The Monumental Antiquities and the Inscriptions in the North western Provinces and Oudh, vol. 2*, p.20 and *Journal of Asiatic Society of Bengal,* Vol. XLI, Calcutta, 1872, p. 112

[3] A.B.M. Habibullah, *The Foundation of Muslim Rule in India*, Allahabad, 1961, p. 63 and H.M. Elliot and J. Dowson, *The History of India as told by its own Historians*, vol. II, Allahabad, 1964, p. 305.

[4] H.M. Elliot and J. Dowson, *The History of India as told by its own Historians*, vol. II, Allahabad, 1964, p. 305

[5] *Ibid*. p. 330

[6] J. F. Blakiston, *Memoirs of the Archaeological Survey of India*, *No. 19, The Jami Masjid at Badaun and other Buildings in the United Provinces*, New Delhi, 1998, pp. 2-3 and See Plates 193, 204 & 211.

[7] See Plates 2, 12, 18 & 19.

[8] J. F. Blakiston. *Opcit* 199, p, 2.

[9] *Ibid*.

[10] *Ibid*.

[11] *Ibid*.

[12] J. F. Blakiston. *Opcit.* 1998, p, 3.

[13] *Ibid*.

[14] *Ibid*.

[15] *Ibid*.

EXPLORING THE MEDIEVAL ARCHAEOLOGY: A STUDY OF TOMB OF SHAHPEER AT MEERUT, U.P.

M. K. Pundhir
Professor of History,
Centre of Advanced Study,
Department of History, A.M.U., Aligarh

Medieval archaeology signifies the application of archaeological tools to study the various types of structures comprising palaces, forts and fortifications, Tomb buildings, temples, general houses, waterworks, *hammams*, gardens, pleasure palaces, hunting resorts, *sarais*, roads, towns, etc. built during the Medieval Period. In broad terms, Medieval Archaeology is a part of historical archaeology where written records are available to reconstruct the History. Though, during the Medieval Period, sufficient written sources are available to reconstruct the history that provide the information on various aspects, still it don't address some issues, such as building technology and techniques involved in constructing the buildings. Presently an attempt has been made to study the Tomb of Shahpeer constructed under royal patronage at Meerut, a city very near Delhi by applying the archaeological tools.

The city of Meerut is situated on latitude 29º1' N and longitude 77º43' E[1] in Western Uttar Pradesh. It is located 65 kms on the north eastern side of Delhi[2]. Historicity of the city of Meerut can be traced to Mauryan period which could be proved by the Ashokan pillar existing in Meerut[3]. It indicates the significance of Meerut during the ancient period. During the medieval period Meerut continued to enjoy the same importance as it was situated in the close proximity to Delhi; a Medieval capital. Consequently a large number of structures of varied nature were built in Meerut region. These structures were constructed by Delhi Sultans and Mughal rulers and their nobles and officials. Though these structures faded away in the course of time. A number of buildings are still intact but in dilapidated condition. Among them there are few Tomb Buildings such as Tomb of Shahpeer , Abu Khan ka maqabara, etc. which are important as they provide a full-fledged picture of the evolution of architecture and building technology during the medieval period. These monuments are in ruinous condition and subjected to wanton destruction and unplanned repairs and modifications.

Tomb of Shahpeer popularly known as Shahpeer ka Maqabara is a tomb building of saint whose identity can't be established. It is said to be built by Mughal Queen Nurajahan sometime in 1628 A.D[4]. Since its construction was patronized by Mughal Queen, prefix of Shah was attached with its name. Royal connection with its construction can also be verified by the fact that in Meerut red sand stone was not available. Hence, for its construction red sand stone was transported from the stone mines existing in the District of Agra which definitely involved huge cost[5]**.** Therefore bearing such a cost incurred in building the Tomb could have only been possible by the Mughal Ruling class[6].

The building of the tomb of Shahpeer exists on a raised platform which was constructed with bricks and lime mortar. The platform is square in plan (Fig. 1 & Fig. 2, 3). Eight square platforms (Fig. 1) of smaller dimension were also built and attached with the main platform in such a way that four smaller platforms were attached to four corners of the main platform while four other smaller platforms were attached with main one at the cardinal points meeting in the mid of each side of the main platform (Fig. 1, 2, 3 & 4). These smaller platforms are built to accommodate pillared pavilion. The approach to the main platform was provided through the smaller platform existing in the mid of southern side of the main one which in turn could be approached by steps providing on the southern side of smaller platform (Fig. 1).

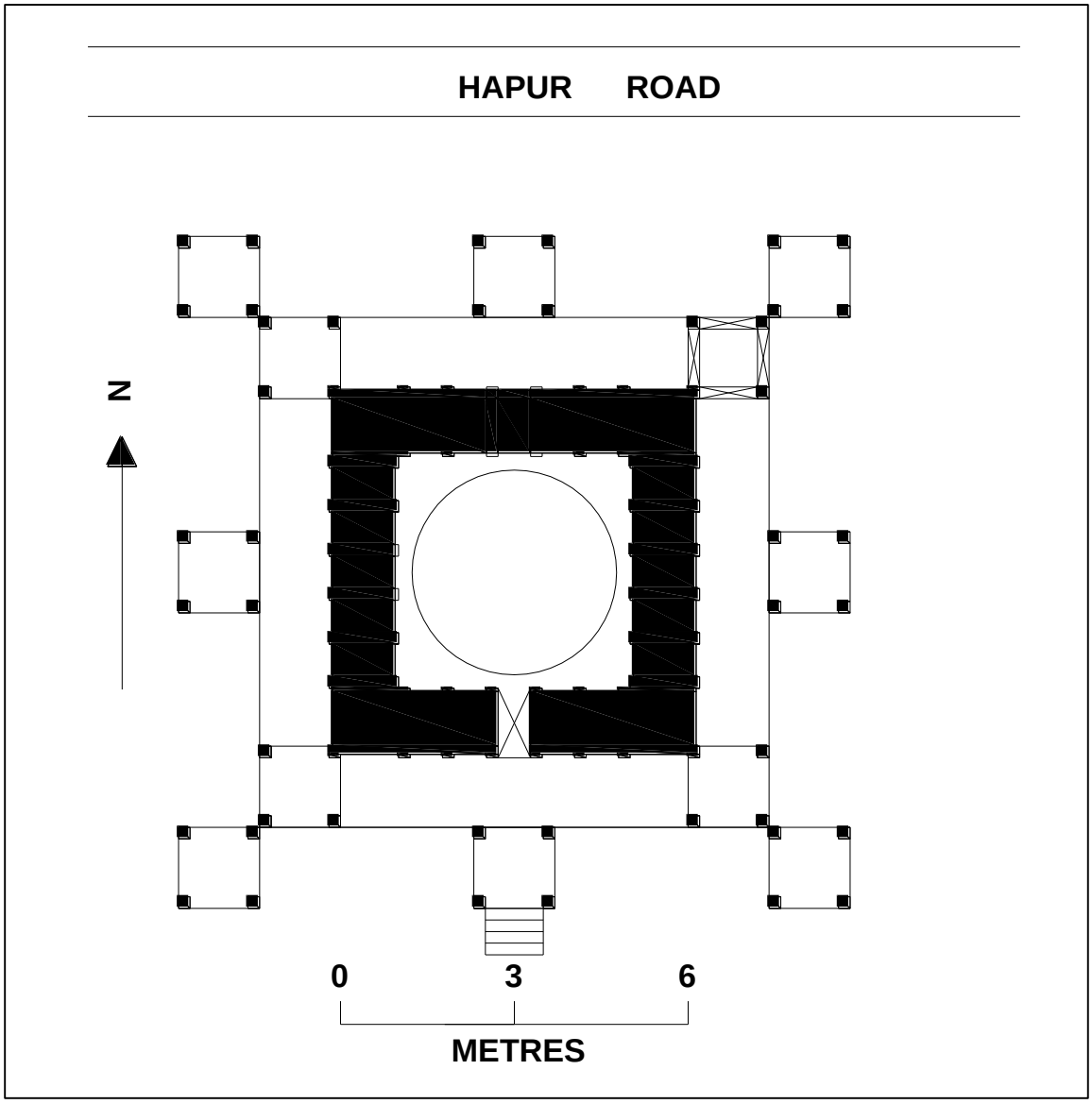


Fig. No. 1

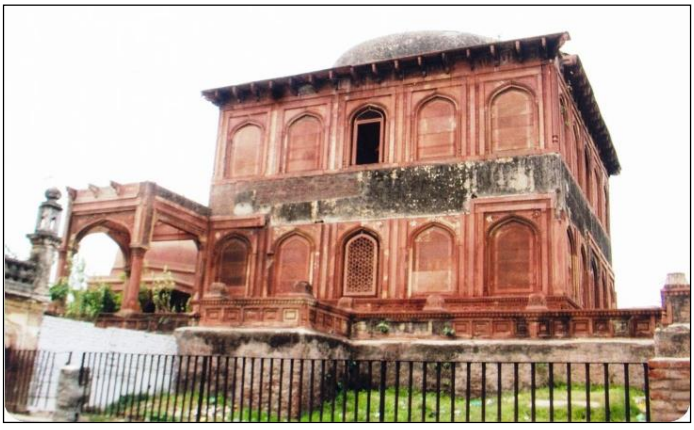


Fig. 02



Fig. 03



Fig. 04

The mausoleum situated on the main platform is composed of central mortuary chamber which was surrounded by pillared cloisters (Fig. 1, 2 & 4). The corners of the surrounding cloisters were built as if these were the four pillared pavilion. Each side cloister including both corners has been provided into nine bays with the help of pillars. The corner pavilion of the cloister has been conceived as square pillared pavilion with domed roof (Fig. 1 & 5).



Fig. 05

Remaining parts of the surrounding cloisters would have been flat roofed as no evidence of dome has been discovered till date. The domed pavilion occupying the corner of the cloisters is composed of three free standing pillars along with two pilasters attached with the main structure of the mausoleum (Fig. 1, 4, 5, 6 & 7).

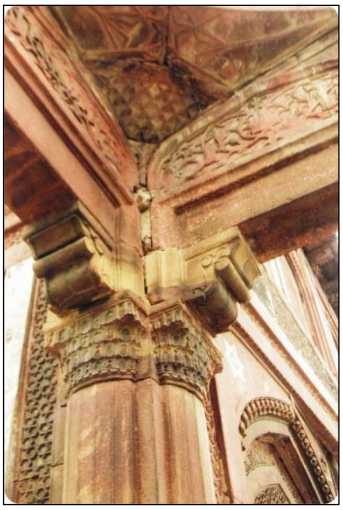


Fig. 06

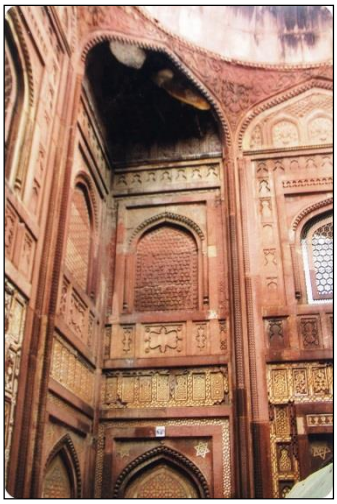


Fig. 07

These pillars and pilasters are surmounted with lintels on the inner sides i.e. facing cloisters while the two outer side's four centered arches are put above the pillars (Fig. 4 & 5). These arches are false as they are modeled in stone pieces. The pillars of the pavilion are composed of base, shaft and capital. The bases are made up of foliated designs with pyramidal lower portion (Fig. 4 & 5). The shaft consists of sixteen flutes (Fig. 4). The shaft is surmounted by the beautifully carved capital with honey combed designs (Fig. 8 & 9).



Fig. 08



Fig. 09

These pavilions have raising above the arches and lintels surmounting the pillars that is again carved with floral designs on exterior (Fig. 4 & 5) whereas inner parts of the raising has been carved with various elements of the phase of transition (Fig. 4 & 5) such as squinches etc., though these are fake. To bear the dome, circular drum has been created by corbelling the stone slabs (Fig. 5). None of the dome once surmounting the corner pavilion have survived but few traces are found which are sufficient to

have an idea about the domes of the pavilion. These domes have been built with bricks and lime mortar (Fig. 5).

Though the surrounding pavilions are not extant but their platforms and the bases and fragments of other parts are quit sufficient to reconstruct their nature and composition along with building technology. The pillared pavilion which are nine in number as there are nine platforms, are similar to the corner pillared pavilions of the cloisters so far as their composition, organization and dimensions are concerned (Fig. 1, 2, 3 & 4). These pavilions are composed of pillars and pilasters surmounted with arches and lintels which are surmounted with circular dome in turn. The treatment and methods of constructing various parts of these pavilions are same as corner pavilions (Fig. 1). Fragments of these pavilion also provide clue of the technology used in their construction. A large number of the Flower carved bases (Fig. 10) of the pillars of the pavilions are found here which are embellished and have the hole i.e. mortise (Fig. 8 & 9). It indicates that the technology of Mortise and Tenon has been used to attach the various parts of the pillars and other parts of the pavilions. The shafts of the pillars are surmounted with capital carved with *Muqarnas* (Fig. 9).



Fig. 10

The elevated facades of the main platform and the platforms of the surrounding pavilions have been encased with red sand stone (Fig. 2 & 3) and embellished with oblong panels separated by pilasters which are topped with projected moulding carved with inverted leaves (Fig. 2 & 3). Outer corners of the surrounding platforms were occupied by carved stone nook-shafts (Fig. 2 & 3).

The main structure has been built with an elevation of double storey while the surrounding cloister is of single one (Fig. 2). The elevation of the structure has been provided with the effect of double storey with the help of arcade of arched panels (Fig. 2). Sides of the each storey have been provided with five arched panels whereas the central panel has given an opening (Fig. 2). Except the southern side, all

other central panel openings have been restricted with beautifully carved lattice (Fig. 2, 11, 12, 13, 14 & 15). Side panels flanking central one are built in the form of blind arched alcove. Arches in these panels are modeled with toothed designs and supported on nook-shaft on both side (Fig. 15). The same pattern has been followed in the treatment of all the exterior facades of the upper fake storey (Fig. 2). Providing lattice to the central panels on both the storeys has facilitated the ventilation and light to interior.

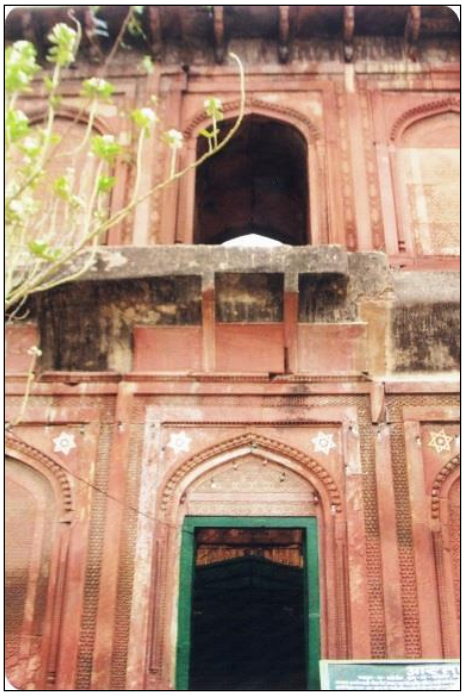


Fig. 11

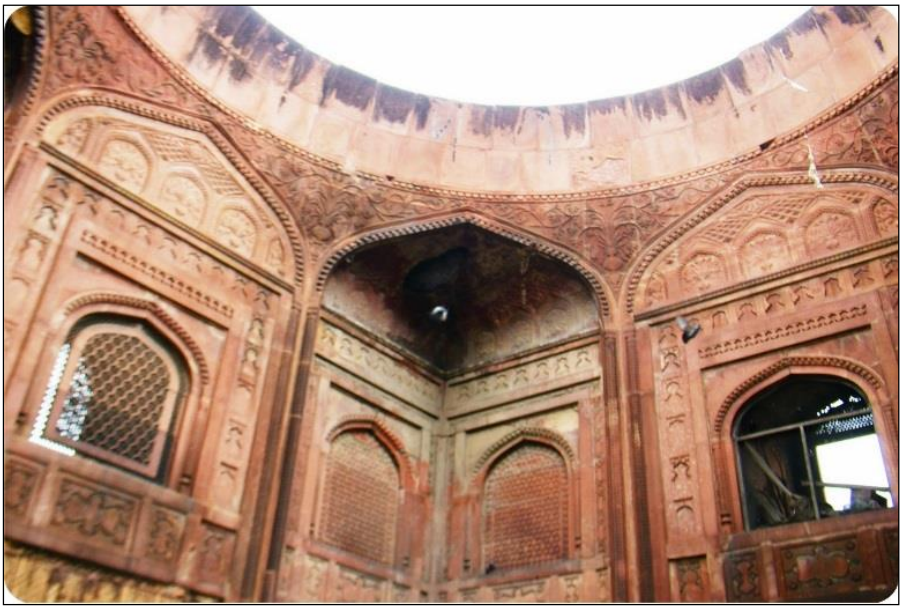


Fig. 12

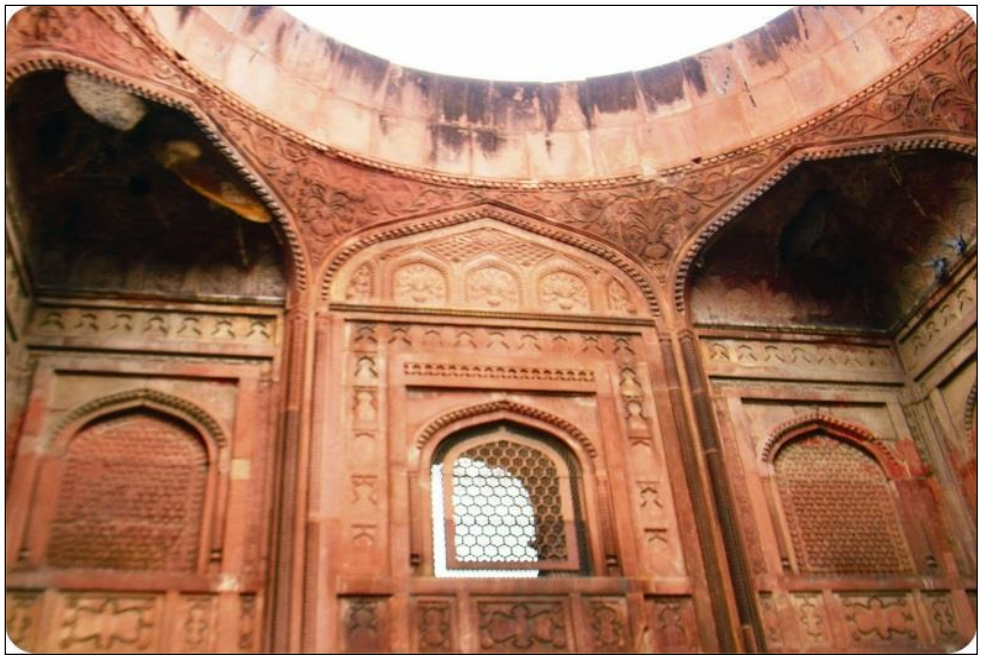


Fig. 13

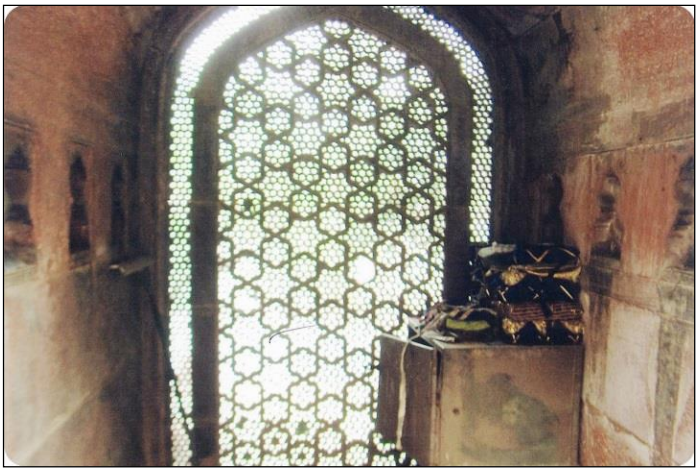


Fig. 14

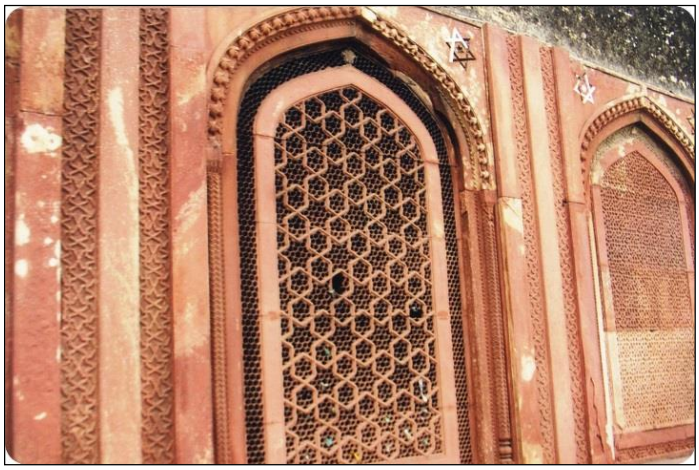


Fig. 15

The main structure comprising chamber is square in plan (Fig. 1) and meant to enshrine the grave of saint whose identity could not be fixed in the absence of any inscription and textual reference. Interior of the chamber has too been given the two storey effect to relieve the monotony of high elevation (Fig. 7 & 16). Two storey effects have been achieved again with the help of arched panels surrounded with oblong decoration (Fig. 7 & 16). Interior has been more decorated and ornamented in comparison of exterior facades. Each side of the lower storey has vertically been divided into three sections where side sections have further been divided into three parts horizontally (Fig. 7 & 16). Side sections consist of arched panels fixed in rectangular frame closed with stone carved in lattice design in mid with smaller oblong panels with inlay designs above and richly carved oblong panel below (Fig. 7 & 16).

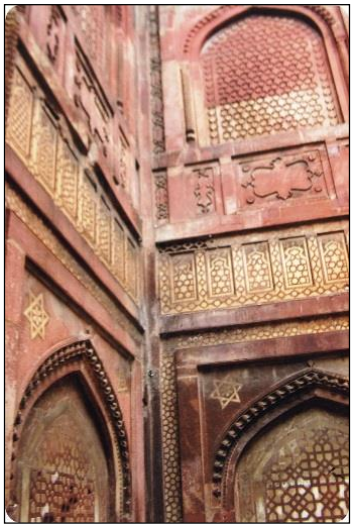


Fig. 16

Central section has been wider than the flanking ones and was composed differently (Fig. 7, 12 & 13). It has accommodated the arched openings where southern side has been provided with entrance and

other sides openings are closed with lattice (Fig. 2, 14 & 15). The arched openings in the central section have been fixed in rectangular frame composed of vertical panels with inlay work (Fig. 17).

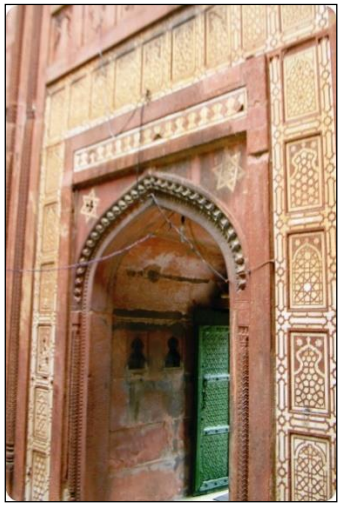


Fig. 17

Each side of the upper storey has been partitioned into three sections vertically (Fig. 7, 16 & 18). Here decorative treatment is different from the lower one. Side sections of the upper storey are composed of arched closed panels fixed in oblong frame with carved oblong panels below and above where central section has arched openings closed with lattice (Fig. 7, 16 & 18) again meant to release the suffocation and to provide light to the inner side.

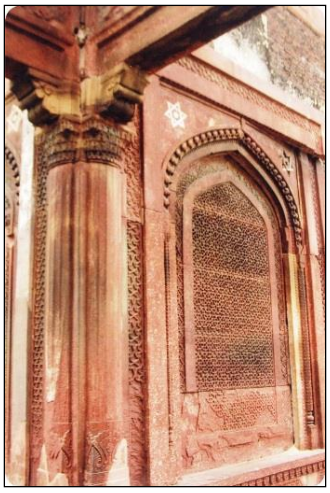


Fig. 18

Presently the central chamber enshrining the grave on north south axis is open to sky as its roof has collapsed in the course of time (Fig. 1, 12 & 13). Remains of the circular base (Fig. 12 & 13) of the dome above confirms that once the maqabara of Shahpeer was surmounted with hemispherical dome. The

dome would have been placed on circular base. Fragments of the circular base are lying around. Below the base phase of transition has been achieved by squinches (Fig. 7, 12 & 13). The squinch has arches though not true as modeled in stone. The arches in squinches have sprunged from the pilasters (Fig. 7, 12 & 13). The pilasters cover the whole height of double storey starting from the ground level (Fig. 7). These pilasters are decorated with Chevron pattern (Fig. 7) where red sand stone has been inlayed with white marble. Triforium of the squinches has been richly carved with flower and vase motifs whereas the inner space of the span of the arches are covered with flower and vase motif in arched niches along with arch netting designs above (Fig. 12 & 13). Arches used in any composition in this mausoleum are typically four centered pointed one and the outer line of the intrados of these arches are sculptured with fringes looking like flower garlands. Blind niches typically of Jahangir period are too found in carved panels. In inlay, niche patterns with flower and geometrical designs have been made (Fig. 14). Central arched openings have been covered with recessed inlay boarders (Fig. 11, 15, 17 & 19). Thus all the three major decorative motifs found in Mughal architecture have been employed in decorating the interior and exterior of the mausoleum building which makes it a true specimen of decorative art evolved during the Mughals.



Fig. 19

To sum up, the study proves the building Shahpeer ka Maqabara with superb decoration was an experiment which was done in the field of Mughal Architecture and Ornamentation. This building contributed in the development of Mughal Building Technology.

References:-

[1] . Neville, H. R. 1922. *Meerut: A Gazetteer, Being Volume-IV of the District Gazetteers of the United Provinces of Agra and Oudh*, Lucknow. p. 271.
[2] . *Ibid*.
[3] . *Ibid*.
[4] . Neville, H. R. 1922. *Opcit.* p.272.
[5] . Fatehpur Sikri and Tantpur are the places in Agra District know for quarrying red sand stone. Since Agra is 230 kilometers far from Meerut, a huge cost was definitely incurred in transporting the stone from Agra to Meerut.
[6] . It has already established that building a monumental structure during the medieval period was a really costly affair. Mughal ruling class had commissioned a large number of building projects which had incurred a huge cost such as Taj Mahal, Tomb of Itmad-ud Daula, etc.

A Note on the Origins of Bundelas

D. P. Dubey
University of Allahabad

The Bundelkhand region, spread over U.P. and M.P. in central India and lying within the folds of the Vindhyan Mountain, is a marked geographical unit with a distinct cultural personality of its own. This region, owing to its unique geographical position between the northern and the southern parts of India, its hilly surroundings and natural resources, has attracted kings and commoners alike through all the ages. It was used as a gateway between the North and the South by the invading armies of kings, merchants, caravans of traders and religious missionaries in their attempts of success from one part to the other. This strange natural phenomenon, though catastrophic to some extent, made people sturdy, self-sufficient and God-fearing. That is why Bundelkhand was blessed with enormous cultural remains well marked in quality as well as variety. This region with its impressive topography, more or less poor soil, and inclement climate is difficult to access and has an individuality of its own.

The name Bundelkhand itself is comparatively of late origin, as it was derived after the name of a well-known ruling family of Bundelas of fifteenth-eighteenth centuries CE. During the 10th-14th centuries it was known as *Jejakābhukti*, in the times of the Chandellas who ruled the region from tenth to the middle of thirteenth century CE. The Chadella kingdom of *Jejākabhukti*, referred as *Jajhoti* by *Abu Rihan*[1], corresponded with modern Bundelkhand. Before that it was famous by the name of *Chedidesh*; *Chedi Mahājanapada* with its headquarters at *Śuktimatī* (Sevaḍhā in the Bāndā district) in the sixth century BCE represented this region. As the name so also the political boundaries of the region have undergone changes from time to time. Yet the geographical boundaries and the climate of the region have remained unchanged till date.

The origin of Bundelas is shrouded in mystery. B. B. Mishra, a noted historian on medieval India, has called them a 'tribe' in his foreword to the *Aitihāsik Pramāṇāvalī aur Chhatrasal*.[2] Traditionally they claim to have sprung from the *Gaharwār* (*Gāhaḍavāla*) royal family of *Kashi*-Kanauj[3] which is known to have ruled the *Gaṅgā* valley from CE 1089 to CE 1198. Nothing is heard of the family after king *Hariśchandra*, the last *Gāhaḍavāla* ruler, whose rule was confined to the region of

Kashi and ended well before CE 1200.[4] History is silent about the fate of his successors. But tradition records that after his defeat at the hands of *Bakhtiār Khilji* (the Sultanate chief of *Bhagavat* and *Bhuilī* in the Chunār area of Mirzapur district in U.P.), king *Hariśchandra* fled with his family towards Farrukhabad. There after a short time his son's son *Sīhājī* went to *Marwar* where he established a principality with the assistance of some *brāhmaṇas*. Colonel Tod also records that in *Saṁvat* 1268 (CE 1212) *Sīhājī* and *Setrām*, grandsons of king *Hariśchandra*, abandoned the land of their birth and with 200 retainers journeyed westward to the desert.[5] But the problem connected with the legend of *Sīhājī* relates that he was a *Rāṭhor* (*Rāshṭrakūṭa*) *kshatriya* of *Marwar*. How can a *Gāhaḍavāla* be *Rāṭhor*? Be that as it may, the legend does not hint at the movement of the *Gāhaḍavālas* towards Bundelkhand. Trivedi says that the *Buḍherā* pillar inscription of the time of the *Yajvapāla* ruler *Gaṇapati*, dated *Saṁvat* 1351 (CE 1295), states that *Kīrtidurga* at *Chanderī* was governed by the Bundela chiefs who were the feudatories of the Chandellas.[6] But a careful scrutiny of the text of the inscription reveals no mention of any *Bundela* chief at *Kīrtidurga*.[7] In fact, Bundelas appear in the country sometime in the fourteenth century CE. *Keśavadāsa* (CE 1561-1623), who adorned the courts of Bundela kings *Indrajit* and *Bīrasinhadeva*, has given the genealogy of the chiefs of *Orchhā* in his *Vīrasinhadevacharita* (pp. 15-17) and *Kavipriyā* (1.6-36). He associates *Vīra*, the progenitor of Bundelas, with the family of god *Rāma* of Oudh, but his successor *Karanapāla* is simply said to have belonged to Kashi[8]; thus confounding the confusion related to the relation of the Bundelas with the *Gāhaḍavālas*.

The *Dinārā* tank stone slab inscription of *Saṁvat* 1675 (CE 1678) describes the *Bundela* chief *Bīrasinhadeva* as belonging to the *Gaharwār* (*Gāhaḍavāla*) family of Kashi.[9] In the *Kuṇḍalapur* Jain temple stone inscription (now untraceable after the recent restoration works in the temple) of *Saṁvat* 1757 (CE 1700) the *Bundela* chief *Chhatrasāl* is called *Kāśīśvara-Gahiravārānvaya*.[10] But the *Kuṇḍāragarh Griddhavāsinī Devī* image inscription of *Saṁvat* 1778 (CE 1721) says that the mother of the Bundela chief *Sahanapāla* hailed from the *Gaharwār* family.[11] Such conflicting and late epigraphic references have been negated by the evidence of the *Kālañjar Patthar Mahal* (so called) Mosque Stone slab inscription of the *Bundela* chief *Pratāparudradeva*, dated *Saṁvat* 1543 (CE 1486).[12] The sixth verse of this inscription traces the origin of the *Bundela* family from the sage *Atri* of lunar family *(somapāyī*). The eleventh verse describes how *Droṇapāla* gave up the Brahmanical practices and adopted the profession of *kṣatriyas* for the protection of *brāhmaṇas*.[13] This inscription does not associate the ancestors of *Pratāparudradeva*, son of *Purushottama* from *Trilokyadevī*, with the *Gāhaḍavālas*. It declares them as a *Brahmakṣatra* family from *Droṇapāla* onwards. Thus, the Bundelas were originally *brāhmaṇas* who undertook the profession of *kṣatriyas* for protecting *brāhmaṇas* and central India during the disintegration of the Sultanate of Delhi. The once grand Turkish empire of India was reduced to a petty principality of Delhi within a decade of *Firoz Tughlaq's* death in CE 1388. *Timur's* invasion of CE 1398 took away the last semblance of royalty professed by the princes of the Tughlaq dynasty. The

four *Sayyad* rulers (CE 1414-50) were petty chieftains of Delhi. The Sultanate exhibited some signs of recovery under the first two *Lodhi* Sultans-*Bahlol* (CE 1451-89) and *Sikandar* (CE 1489-1517) but that was like 'the last flicker of the dying lamp'.

Pre-*Pratāparudradeva* traditional family history of the Bundelas found in the works of *Keśavadāsa* and the *Chhatraprakāśa* of *Lāla Kavi* is not trustworthy; more reliance should be placed on the information of the *Kālañjar Patthar Mahal* (so called) mosque inscription of *Pratāparudradeva*. The Bundelas, who began their upward career from *Mahonī* in the *Hamīrpur* district, under the leadership of *Droṇapāla* carved out a petty principality at *Garhkuṇḍār* by replacing the *Khangārs* in the very beginning of the 15th century CE during the very weak rule of the successors of *Firoz Tughlaq*. *Droṇapāla* soon occupied the fort of Kālañjar where he constructed a tank named *Droṇasāgar*, some new temples and renovated the old ones (*adhi-Kālañjaraṁ yasya Droṇadevālay-odayaṁ, śrīkhaṇḍe tu nava nityaṁ droṇasāgarajaṁ yaśaḥ*). *Prithvīchandra*, famous for his gift-giving activities and heroism, is said to have captured *Jayapura* (*Ajayagarh*, 30 km to the south of *Kālañjar*) with the help of his commander of army, *Raṇamall*, which was besieged by one Husain who seems to be none other than *Husain Shāh Sharqi* (CE 1458-1500) of *Jaunpur*. His successor *Arjunadeva*, the grandfather of *Pratāparudradeva*, has been described as the protector of *Kuṇḍāragarh* (*kuṇḍāle'rjjunadeva rakṣaṇa*). *Puruṣottama*, father of *Pratāparudradeva*, possibly died in the lifetime of his father, hence *Pratāparudradeva* (CE 1485-1531) styled as *mahārājādhirāja* succeeded his grandfather. He constructed a temple of *Lakṣmī-Nārāyaṇa* at *Koṭitīrtha* of *Kālañjar*.[14] In his time *Azam Khān Humāyūn Sherwāni* besieged the fort of *Kālañjar* on behalf of *Sultan Ibrāhim Lodhi* (CE 1517-1526), but abandoned the siege and joined *Jalāl Khān*, brother of *Sultan Ibrāhim Lodhi*, to free Jaunpur from opposition and rebellion.[15] The conquest of *Bābur* and the fall of Lodhi dynasty of Delhi in CE 1526 resulted into an upheaval in the political conditions of northern India. *Bābur* himself undertook an expedition against *Chanderī*, situated on the border of Bundelkhand and *Malwā*, which was in the possession of the *Rajput* chief *Medini Rai*. *Bābur* captured the place in CE 1528. *Pratāparudradeva* took the advantage of the confusion created by the invasion of *Bābur* and extended his sway over the neighbouring territories. Within six months of his accession the Mughal emperor *Humāyūn* besieged the fort of *Kālañjar* in March 1531, but was soon obliged to make peace in order to proceed hurriedly to deal with the Afghan menace in the east. The *Raja* could not be beaten and *Humāyūn* failed to realize his objective.[16] Realizing the unforeseen danger in Mughal designs *Pratāparudradeva* is said to have laid the foundation of a new capital at *Orchhā* in CE 1531 but he unfortunately died in the same year while attempting to rescue a cow from the clutches of a tiger.

It is from the twelve sons of *Pratāparudra* that most of the *Bundela* royal families trace their descent. He was succeeded by his eldest son *Bhāratīchandra*[17] who completed the construction of palace and fort at *Orchhā* on the banks of the river *Betwā* in CE 1539. During the ensuing confusion following *Humāyūn's* invasion, the *Bundela* power extended over the whole tract between Sindh and

Ken rivers south of a line drawn from Gwalior and *Kālañjar*.[18] In the time of *Bhāratīchand* the boundary of *Orchhā* State extended far and wide, which made it more powerful than before. During his rule, *Malwā* and western Bundelkhand came under the control of the *Sultan Bahādur Shāh* of Gujarat. When *Humāyūn* defeated *Bahādur Shāh* in CE 1535-36, *Malwā* including western Bundelkhand became part of the Mughal Empire. Soon after, *Humāyūn* was obliged to proceed towards Bihar to face *Sher Shāh Sur*. In the meanwhile *Bahādur Shāh* reoccupied Gujarat and *Malwā*, declaring his independence[19]. It was in the period of *Bhāratīchand* (CE 1531-54) that *Sher Shāh Sur* turned his attention towards Bundelkhand and marched through that region to *Kālañjar*. *Bhāratīchand's* brother *Kīrati Shāh*[20] held *Kālañjar* at that time. *Bhāratīchand* sent his other brother *Madhukar Shāh* to help *Kīrati*. In spite of considerable opposition from the Bundelas, *Sher Shāh* besieged the fort in CE 1544-45, but lost his life by an accidentally exploded shell under the walls of the fort. However, the fort was captured in CE 1545; *Kīrati Shāh* and his seventy principal followers were mercilessly put to death and the *Bundela* garrison in the fort was slaughtered. *Islām Shāh* (CE 1545-53), son of *Sher Shāh Sur*, was declared his successor in the fort of Kālañjar.[21] Soon after his accession he proceeded to Agra for taking charge of the kingdom. He was a mediocre, but he kept his parental heritage intact for eight years. After his death in CE 1553, the Sur Empire disintegrated earlier than expected and *Raja Rāmachandra Baghela* (CE 1555-1591) of *Rewa* bribed *Ali Khān*, son-in-law of *Sher Shāh Sur* and *subedār* of *Kālañjar* and took possession of the subah of *Kālañjar* in CE 1556. Although *Bhāratīchand* lost ground in *Kālañjar*, he managed to acquire *Jatārā*, named *Islāmābād* in the days of *Islām Shāh Sur*, during the confusion which reigned in the time of *Sher Shāh's* weak successors.

It was in the period of *Madhukar Shāh* (CE1554-92), brother of *Bhāratīchand*, that a beginning was made for *Bundela*-Mughal collisions. He was a very important and famous king of the *Orchhā* State. He made a series of incursions around Gwalior and Sironj and thus made the Mughal emperor Akbar discontented due to his activities. Akbar, therefore, dispatched the Mughal forces against him on various occasions and he was obliged to surrender to the Mughal authority.[22] Akbar also dispatched *Manjun Khān Qaqshal*, governor of *Kaṛā-Mānikpur*, to conquer *Kālañjar* held by the *Baghela* chief in CE 1569. *Raja Rāmchandra Baghela* offered little resistance and submitted. The Raja was granted the *parganā* of *Arail* near Allahabad and *Manjun Khān Qaqshal* was given the charge of the fort of *Kālañjar* in addition to the governorship of *Kaṛā-Manikpur*.[23] *Madhukar Shāh* was succeeded by his eldest son *Rām Shāh* who proved to be a weak ruler. *Rām Shāh's* younger brother *Bīrasinghdeo*, the *jāgirdār* of *Baḍonī* (near *Datia*), courted the favours of Prince *Salim* and earned his gratitude by the murder of *Abul Fazl* in CE 1602 when the latter was returning from the Deccan to Agra. When *Salim* ascended the Mughal throne as Emperor *Jahāngīr* he installed his protégé *Bīrsinghdeo* on the seat of *Orchhā* and *Rām Shāh* was hustled off to *Chanderī* and *Bānpur*. *Bīrsinghdeo* proved himself a powerful and strong ruler and remained singularly loyal to his benefactor throughout his life[24]. Another

important *Bundela* chief was *Chhatrasāl*, son of *Champatarāi*, who established his independence from the *Orchhā* State when Mughal emperor *Aurangzeb* became busy in the affairs of the South after CE 1680. He not only captured the fort of *Kālañjar* from the Mughal governor in CE 1688-89, but was also anointed as a *rājā* at *Pannā* by *Swāmī Prāṇanāth* in CE 1691. Before his death in CE 1731 *Chhatrasāl* had made the whole *Bundelkhand* free from the yoke of the Mughal rule. By CE 1800 the vast kingdom of the famous *Orchhā* chief *Pratāparudradeva*, nourished by *Bīrsinghdeo*, which had already begun to fall into pieces because of family dissensions before the death of latter, was by maladministration and threats of invaders entirely broken up after the demise of *Raja Chhatrasāl* of *Pannā*.

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    putra Pratāparudra upajāe prathama Bhāratīchanda kahāe,

    dūje Madhukarasāhi bakhānai Udayājīta udita jaga jānai,

    Kīratisāhi kīrti jaga chhāī līnhai Bhūpatisāhi bhalāī।

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A note on Chariot Burials found at *Sinauli* district *Baghpat* U.P.

Vijay Kumar

The Chariot Burials : Recently chariots were found by *S. K. Manjul,* Director of Institute of Archaeology A.S.I (Archaeological Survey of India), *Arvin Manjul,* Superintending Archaeologist, A.S.I and their team, during excavations at the site of *Sinauli, Baghpat* U.P. in 2018 (Fig. No. 01). This site was earlier excavated by *D. V. Sharma* and his team in the years 2003-04 & 2005-06, revealing a necropolis[1]. The present excavations have yielded chariots buried with dead bodies, which gives totally new dimension to the associated culture and the old debate about use of horse in India. We will examine these points in the following pages:



Fig. No. 01: *S. K. Manjul* & *Arvin Manjul* with excavation team at *Sinauli, Baghpat* U.P. (Courtesy: Archaeological Survey of India)



Fig. No. 02: *S. K. Manjul* at the excavation site, *Sinauli, Distt. Baghpat* U.P. (Courtesy: Archaeological Survey of India)

The excavations at *Sinauli* has revealed four legged, lid covered coffins containing the bodies (Fig. No. 03). The lids of the coffins are profusely carved and covered with thin plate of copper (*patra*). Once such coffin is visible in the above figure on the upper left side. The coffin is laid roughly along west-east axis.



Fig. No. 03: Legged Coffin with carvings on the lid (Courtesy: Archaeological Survey of India)

Towards the feet of the body, two chariots were also buried. Its wheels are solid and studded with triangular pieces of copper (Fig: 04). The light frame of the carriage has a curved chassis made of rounded wood. In addition to the chassis being fixed to the covering of axel, there was a similar 'U' shaped wooden support for the carriage as shown in the figure above. A long shaft was fixed to the chassis. Joint has been covered with thin copper plate which is visible from the side in the figure (Fig. No. 04 & 05). The long shaft must have been attached to a transverse *yoke*. The upper end of the front side of the carriage helped the driver in remaining stable while the chariot was being driven. It appears that this chariot carried two persons.



Fig. No. 04: Chariot (Courtesy: Archaeological Survey of India)



Fig. No. 05: Closure view of chariot (Courtesy: Archaeological Survey of India)



Fig. No. 06: Another view of Chariot found in the burial at *Sinauli,* Distt. *Baghpat U.P.*



Fig. No. 07: Closure view of the lid of coffin (Courtesy: Archaeological Survey of India)



Fig. No. 08: Overview of the grave with double chariot burial (Courtesy: Archaeological Survey of India)



Fig. No. 09: Closure view of the Wheel of the Chariot (Courtesy: Archaeological Survey of India)



Fig. No. 10: In situ Carriage pole in another grave (Courtesy: Archaeological Survey of India)

Chariots in *Sunga* Sculptures : In a panel from *Bharhut* depicting *Muga Pakkha Jataka* dated 2nd century B.C., one can see a chariot driven by four horses on the lower left side and a grave digger on the lower right side (Fig. No. 11). According to this *Jataka* story, *Buddha* was once born in the house of a King (on the upper right side of the panel) after much persuasion by *Indra*. He was named *Temiya*. When he grew up, he was not interested in becoming a king so the king ordered him to be killed and buried. The charioteer *Sunanda* took him to the cemetery and started digging the grave (on the lower left side of the panel). On this *Temiya* explained to him that, he didn't want to become a king therefore he didn't take interest in the affairs of the kingdom. On hearing this, the charioteer became his disciple. He took *Temiya* to the king and queen. They also became his disciples and later on, he started preaching to the

people and had many disciples (on the upper left side of the panel). The details of construction are visible on the chariot shown in the following panel.



Fig. No. 11: *Muga Pakkha Jataka* carved on a panel at *Bharhut* district *Satna* M.P.

One similar chariot with spoked wheel can be seen in a panel from *Sanchi* (Fig. No. 12). It is dated to 1st-2nd century B.C.

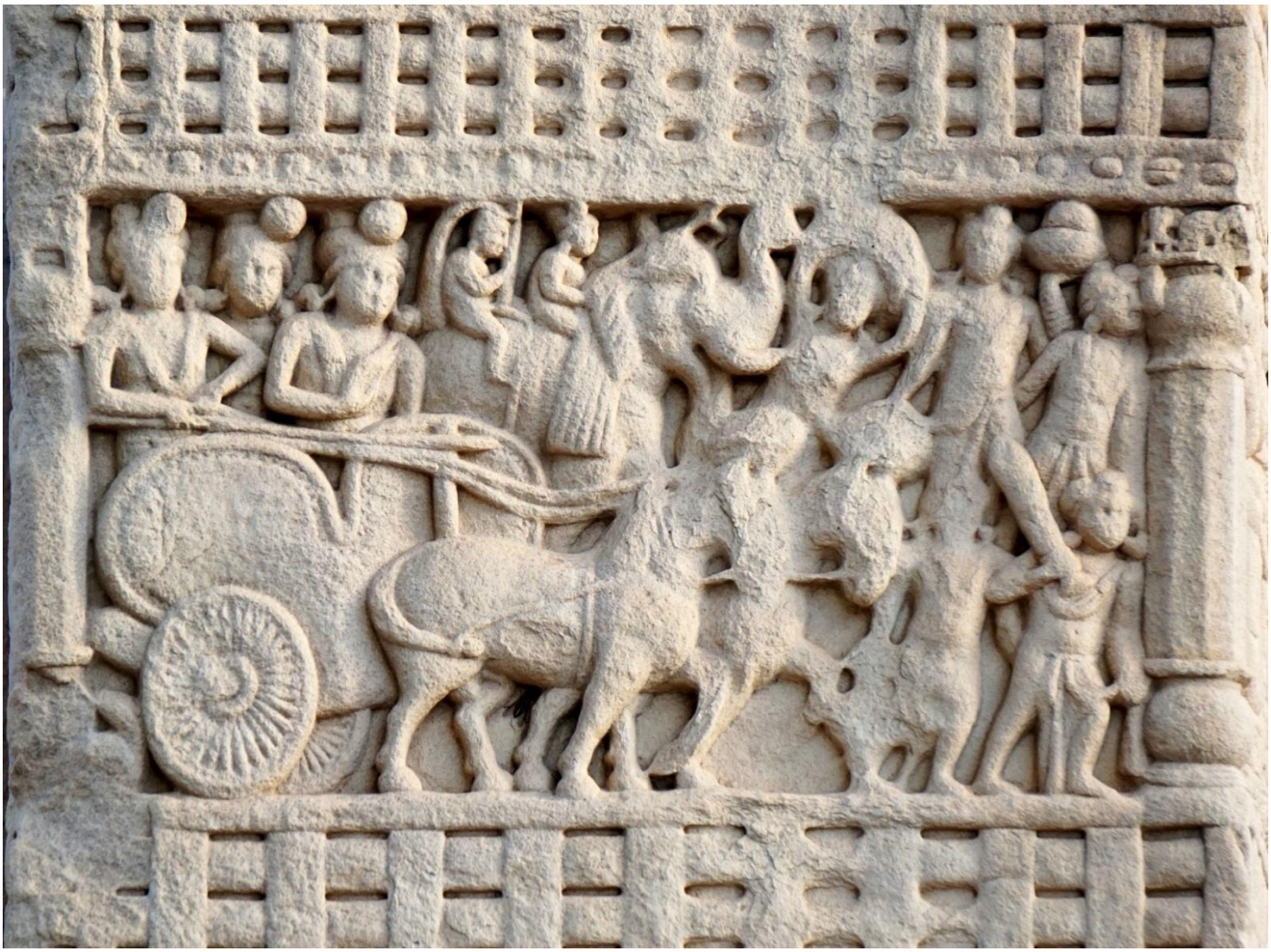


Fig. No. 12: Chariot shown in a panel at *Sanchi* district *Raisen* M.P.

<u>The Pottery found in Burials</u> : The pottery recovered from *Sinauli* belongs to OCP culture. No Harappan pottery or any other pottery except OCP was found from the graveyard of *Sinauli*. The grave in question belongs to the OCP people who were late contemporaries of Harappans. The chariot is light and was made for carrying two persons. The pottery which was recovered from this place is similar to the OCP potteries which were found from *Barabanki, Faizabad, Sultanpur* axis in the east to *Bara, Kalibangan* axis in the west. The similarity between the potteries from east to west has been discussed in details by the author in the article 'Archaeological Gazetteer of *Aligarh* & *Hathras* Districts with special reference to OCP & Other Proto-Historic Cultures of Indo-Gangetic Plains'[2]. The repertoire of common shapes from *Faizabad* to *Bara* is given in the following figure[3] (Fig. No. 13-A). The typical Harappan pottery shapes like vessels with bulging bodies and stem bases, cylindrical jars, jars with S-profile, all with beaded & beaked lips, dish on stands with ledged rims, basins & Indus Goblet, tumblers and cups are not to be found among purely OCP sites which are found independently from mature Harappan sites even in western U.P. Although at some sites, we find the predominantly OCP

shapes mixed with mature Harappan pottery shapes. The area beyond the *Ganga-Yamuna* doab doesn't yield these (mature Harappan) shapes at all[4] (Fig. no. 13-B).

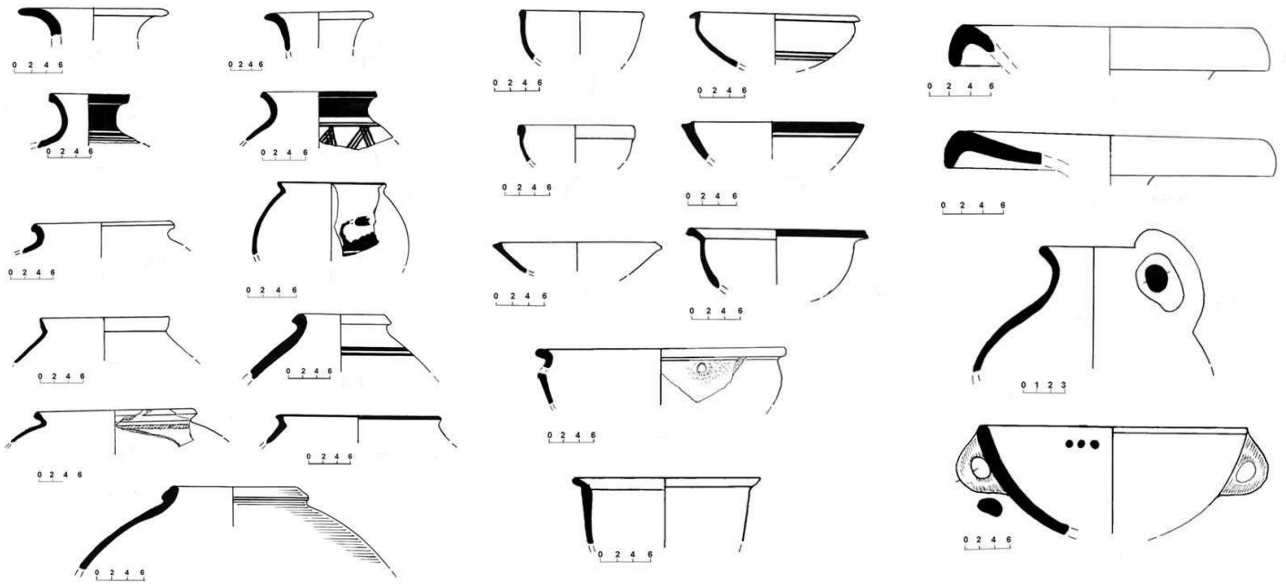


Fig. No. 13-A: OCP potteries

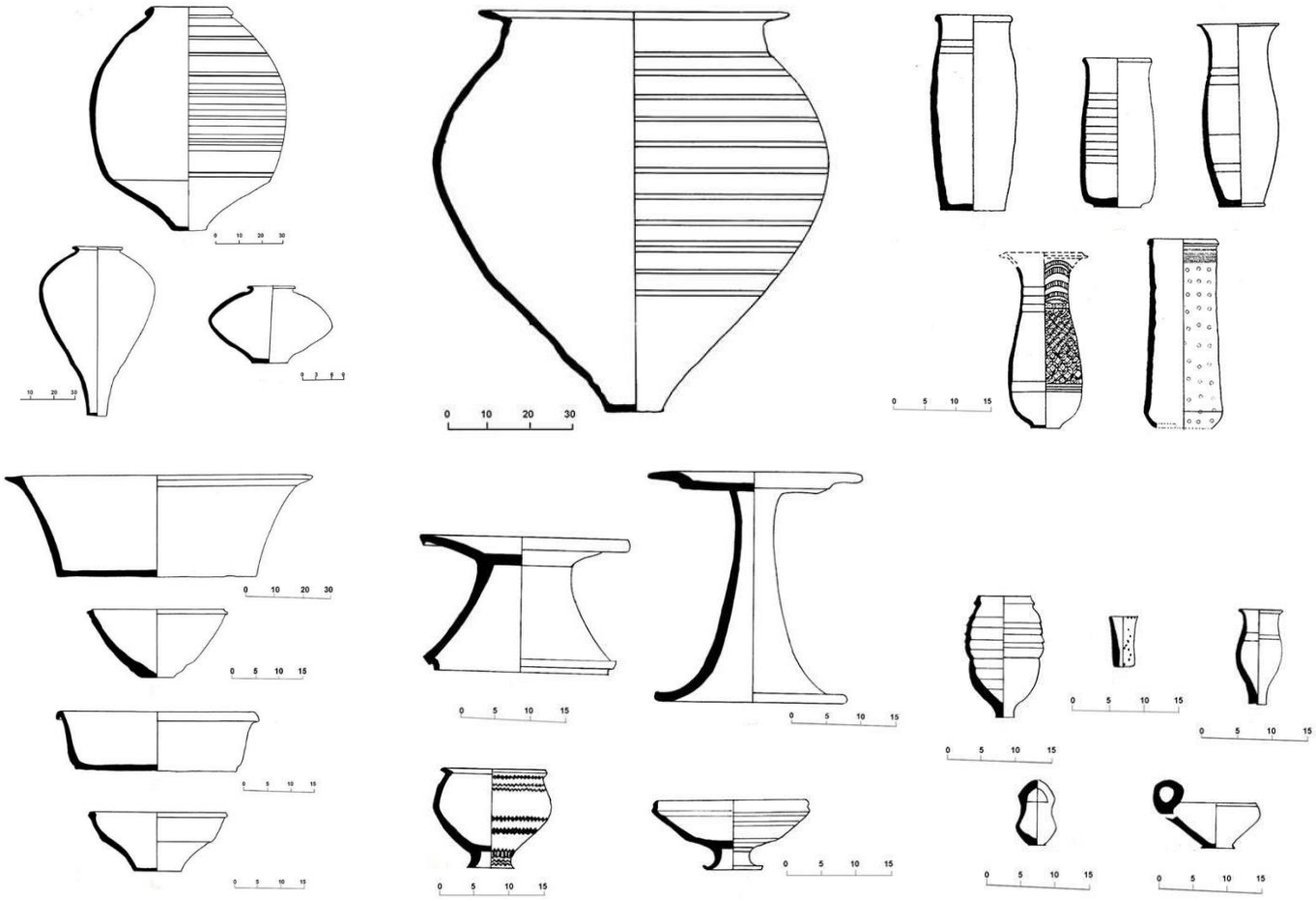


Fig. 13-B: Mature Harappan Potteries

The paintings[5], the incised designs[6], applique designs[7] and rustication on the potteries surprisingly remain the same from east to west and from *Shivalikas* to *Yamuna*. In the east, OCP culture rubs shoulders with corded-ware tradition and in the west, it rubs shoulders with Harappans. It appears that in the hay days of Harappans, the OCP area was encroached upon by Harappan people that-is-why in Punjab, Haryana & Ganga-Yamuna doab, one finds Harappan antiquities mixed with OCP antiquities. The date for OCP sites come mostly from Punjab, Haryana, North Rajasthan and western U.P. They fall between 4th millennium B.C. to the early 2nd millennium B.C.[8]. Seeing the antiquity of sites in eastern U.P. which have yielded the dates for Neolithic going back to 9th millennium B.C. and looking at the antiquities found there, it is obvious that the pottery tradition in the eastern India is totally different from Harappans and OCP areas. One doesn't see the encroachment of the corded-ware tradition of east coming to the west. Similarly the pre Harappan potteries like those from *Qili-gul-mohammed/Mehrgarh*, *Haqra* and *Kotdiji* are not to be found in western areas of the OCP zone. Only the mature Harappans encroach upon the western part of this culture. From this, it is very obvious that OCP had a local beginning and will go back to 9th-10th millennium B.C., had it not been so this whole area would have yielded the Neolithic/ early Chalcolithic potteries from east (corded-ware tradition) or from west (*Qili-gul-mohammed/Mehrgarh*) mentioned above.

Copper Hoard Weapons associated with OCP : The highest number of copper hoard weapons were found from OCP area (Fig. No. 14), therefore, it is very obvious that these north Indians were manufacturers and users of these weapons.

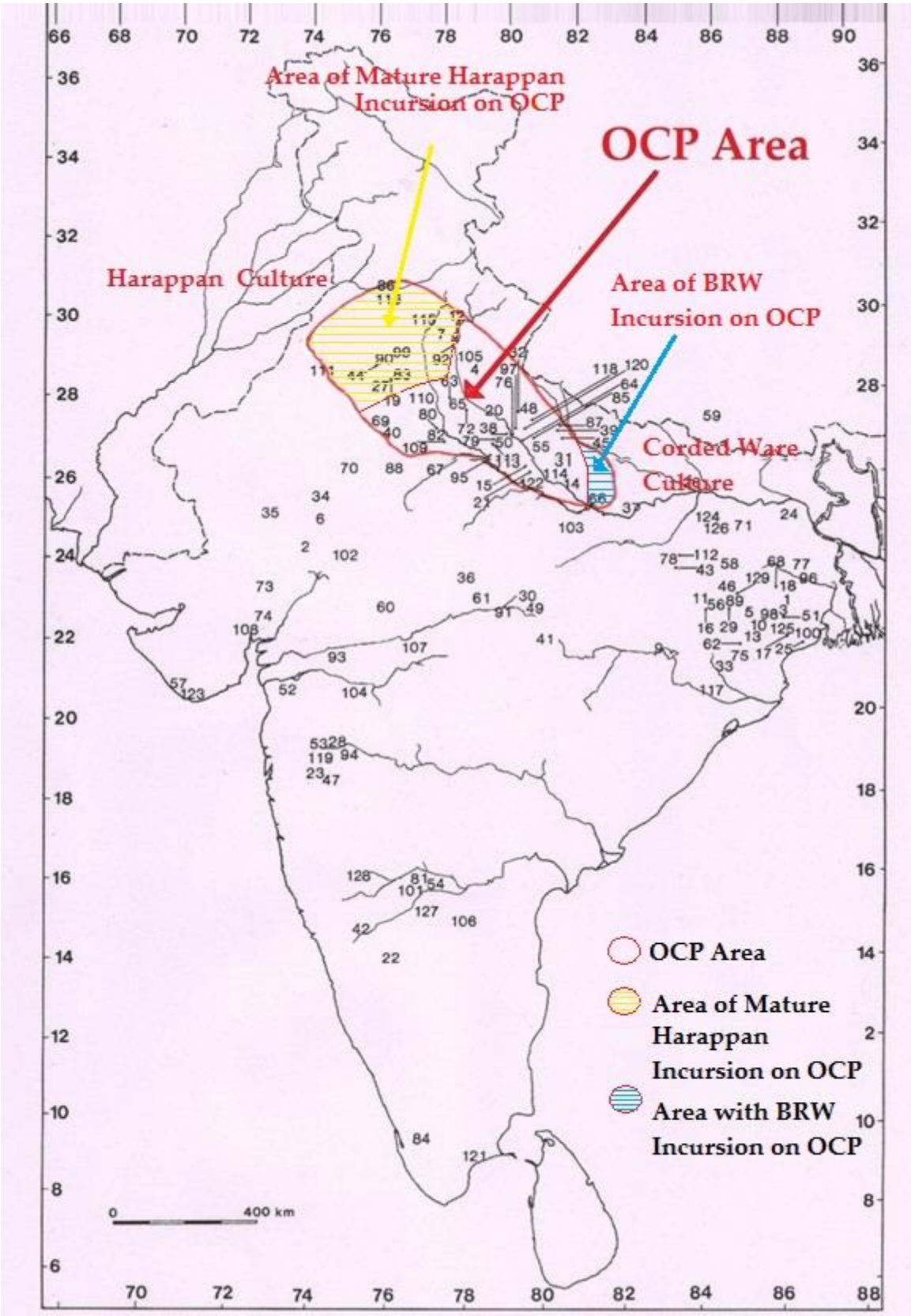


Fig. No. 14: Map showing the area of OCP from *Faizabad* to *Bara*

The antennae sword found in these burials (*Sinauli*) and other copper artefacts found from OCP sites in an archaeological context like *Saipai,* district *Etawah* U.P. and without archaeological context have proved that these weapons belonged to OCP people. The inspiration for these Harpoons came from Mesolithic harpoons shown in one of the rock paintings of *Chitrakoot*[9] (Fig. No. 15).

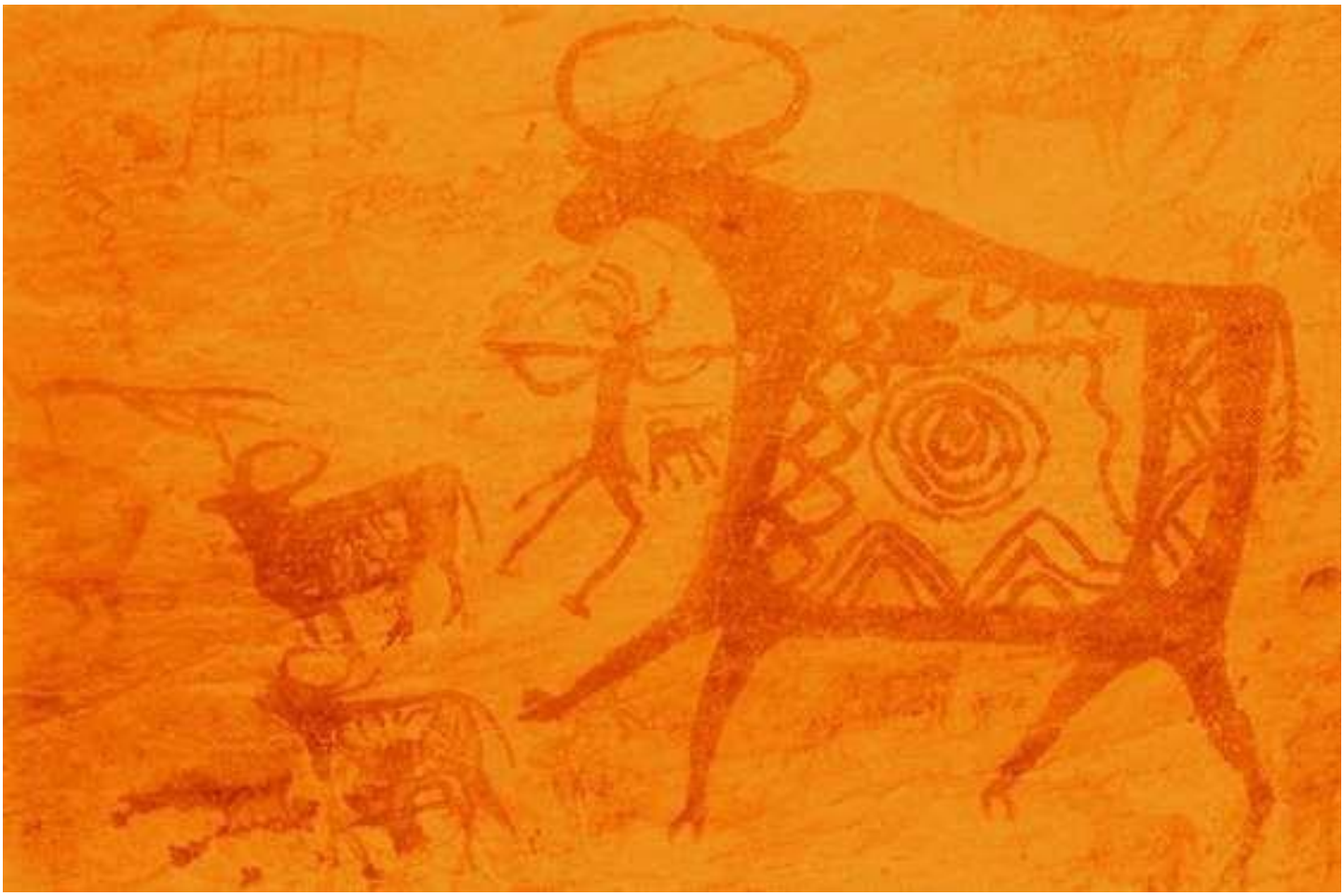


Fig. No. 15: Mesolithic hunter wielding harpoon shown in rock painting of *Matiyahi, Chitrakoot* U.P.

These harpoons were later on replicated by the people belonging to Chalcolithic phase of OCP like the harpoons shown in figure[10, 11] (Fig. No. 16 & 17).



Fig. No. 16: Harpoon from *Ahichhatra*



Fig. No. 17: Harpoon from *Bijnor* kept at Lucknow museum

Some of the rock paintings of *Chitrakoot* area show people wielding harpoons and copper Celts used by people belonging to OCP culture. The figure nos. 18-20 show some foot soldiers and horse riders wielding harpoons. This clearly indicates that these horse riders and foot soldiers can be associated with the people of OCP culture. The horse riders wielding harpoons indicate that OCP people were using horse for their war machineries.



Fig. No. 18: Rock painting from *Kabri Patthar* district *Chitrakoot* U.P.



Fig. No. 19: Rock painting from *Geruhai* district *Chitrakoot* U.P.



Fig. No. 20: Rock painting from *Geruhai Pahad* district *Chitrakoot* U.P.

This must have happened during the last phase of OCP because the horses were used in war machinery only after 2000 B.C. in Middle East. In some of the rock paintings, the copper hoard axes have also been drawn (Fig. No. 21-24).



Fig. No. 21: Battle axe from *Bedhak Chauri* district *Chitrakoot* U.P.



Fig. No. 22: Shouldered axe kept in *Kailash Deep Museum Meerut,* U.P.



Fig. No. 23: OCP axe kept in *Lucknow Museum Lucknow,* U.P.



Fig. No. 24: Shouldered axe from *Hastinapur* district *Meerut* U.P.

The Source of Horses for OCP culture: The people have wrongly assumed that the horse in India came from Central Asia. The western part of South Asia might have received the horses from Central Asia. In fact pre-historic sites of Afghanistan give the evidences of horse in Neolithic period. North India is far away from Afghanistan and Central Asia. The source which is very near North India is Tibet. Tibet has indigenous breeds of *Pony*. *Riwoche* pony is the ancient breed of horse belonging to Tibet. The shortest path from Tibet to India was crossing the *Himalayas* through the gorges of Trans-Himalayan Rivers and different passes. This route is roughly 150 kilometers long. The Himalayan tribe were a link between the Tibet and Gangetic plains. There was a long standing trade between the two areas. The discovery of ingots shaped like anthropomorphic figures at *Bankot* Uttrakhand India[12] and district *Mustang* Nepal[13] proves that there was a regular trade between northern India and Himalayan/ Trans-Himalayan region for copper, copper artefacts and other goods. The *Bhotiyas* of *Kumaon-Garhwal* carried on trade between Tibet and Himalayan areas/ plains before 1947. The modern day *Tamatas* of *Kumaon* and *Tamrakars* of Nepal are copper smiths of Himalayan region and are ethnic survivors of ancient copper smiths. Coming to literature, it is evident that the chariot makers were known as *Sutas* during *Mahabharata* time. Their profession was very important because we see *Karna,* the son of *Adhiratha* (who was the charioteer of *Dhritarashtra* of *Hastinapur*) rose to become the minor king under

Duryodhana. Later on, the *Sutas* took up the job of narrating *Itihas, Puranas* and *Narasansas* to the people. This is very obvious from the fact that *Sutaji* is the narrator of *Mahabharata* and *Puranas*.

Conclusion: The chariots found at *Sinauli* belong to OCP culture. It belongs to late phase of OCP (around 2000 B.C.). The OCP people were using the copper hoard battle axes, harpoons and antennae swords. It appears that they were importing copper and finished copper objects from all over India. Some of the rock paintings of *Chitrakoot* reveal that *Vindhyan* area, south of river *Yamuna* was invaded by copper hoard people. At that time, OCP people were using horses also for their war machinery. From these rock paintings, it is very clear that the OCP people were using these during the late phase of OCP. The find at *Sinauli* reinforces this conclusion because the chariots buried there are horse driven light chariots used in wars, sports and game. These chariots continued to be used by the local people as evident by *Sanchi* and *Bharhut* panels.

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