THE RETROSPECTIVE AND PROSPECTIVE PSYCHIATRY OF THE EXTENT OF ARCHAEOLOGY IN CHOLISTAN DESERT, BAHAWALPUR, PAKISTAN

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ABSTRACT

The Indus Valley or Harappan Civilization is contemporary to the other ancient societies. Fortunately, some of its renowned sites have been excavated, and comprehensive writings have been progressed by the local and foreign archaeologists, anthropologists, and historians. Its renowned ancient cities like Harappa, Mohenjo-Daro, Rakhigarhi, Dholavira, etc. have also been treated with great archaeological expeditions through which inclusive results were organized scientifically about this civilization. However, unfortunately, some of its precious regions, like the Cholistan Desert and its important cities like Ganweriwala, Qasaiwala Ther, Kaliyan Para have been paid no attention to trace out the ancient facts about the Indus Valley Civilization. Some of the surveys have been executed by a few archaeologists and historians. On the other side, the ancient agriculture of this region has also not been traced out by archaeobotanists due to insufficient expertise and technicalities. Whether some of the famous ancient cities and famous sites have been given much attention and resultantly, the ancient objects examined and new thoughts have been created about this civilization. In this manuscript, the scope of desert archaeology is examined, and some proposals for future work regarding archaeobotany are presented with the wide-ranges of arguments too.

Keywords: The Cholistan Desert, Hakra Culture, Archaeology, Archaeobotany

INTRODUCTION

It is unanimously admitted the fact that the Indus Valley, Egyptian, Chinese, Persian, and Mesopotamian civilizations have been noted as the ancient complex societies, which have unique archaeological and anthropological perspectives. Generally, Egyptian and Mesopotamian civilizations are longer lived than Indus Valley Civilization but existed at the same time between 2600- 1900 B.C (Childe 1950). After studying the unique artifacts of Indus Valley Civilization, this came into being as purely indigenous civilization, whether it had trade relationships with Egyptian and Mesopotamian civilizations and exchange of the goods had been practiced too, but it is obvious that this

civilization has the antiquities, which elaborate it significantly as local civilization. The Indus Civilization has been given the status of an ancient complex culture, which has a great sharing out of Pakistan and the Indian Sub-continent (Agrawal 2007; Lal 1997).

This civilization has also been called as Harappan Civilization after the Harappa site, a village in Pakistan, which is a mother site or type-site of this civilization (Dibyopama et al. 2015). Except for Harappa, some other vital ancient cities of the Indus Civilization have the status of metropolitan cities of ancient times such as Mohenjo-Daro, Ganweriwala in Pakistan, and Lothal, Rakhigarhi and Dhulavira in India (Petrie 2013). Indus Valley Civilization is vast because about 2600 archaeological sites have been found which belong to it (Possehl 1999). Further, it has been stretched over the highlands of Afghanistan, Baluchistan, and some parts of Kutch (Pakistan) and Gujrat (India), which demonstrate it as gigantic (Mughal 1970). The Notable Site, as mentioned earlier, Ganweriwala, is situated in the Cholistan Desert and existed as one of the important metropolitan cities of Indus Valley Civilization, adds importance to it. It is also a fact that a huge portion of Indus Valley Civilization lies in the Cholistan Desert. This part of the Cholistan Desert was first explored by Sir Marc Aurel Stein, who was a Hungarian-British in 1941(Stein, 1942). Later on, in 1955, Henry Field re-examined a part of Stein's track (Mughal, 1982). On the Indian side, the dry bed of Ghaggar River was surveyed by A. Ghosh, B.B. Lal, and B.K. Thapar (Mughal, 1992). In this dry land of the Cholistan Desert, once flowed Hakra-Ghaggar River from Siwalik foothills towards the Cholistan and down to the Rann of Kachch (Kalyanaraman 2008). According to M.R. Mughal, the Hakra River flowed in this land perennially before 1000 B.C. The important feature of this river is that its depression is still observable in Bikaner (India), Bahawalpur, and Sindh province (Pakistan). The survey of Marc Aurel Stein is worthy, which left impressions for the coming scholars and researchers to pounce upon the archaeology of the Cholistan Desert. His work on the sites of Sandhanwala Ther, Ahmadwala Ther, and Kalepar has been noted as commendable, which was first ever started in this land. Notably, he designed the archaeological framework, which was traced out by the following researchers. In 1974, the launching of the foremost survey by the M.R Mughal was the key to dig out the new evidence about ancient archaeology of the region that prolonged to 1977. During this survey, about 424 sites were recorded, and in 1990 another 37 sites were added to this documentation by the same scholar. According to my observation, after visiting the Cholistan Desert in different patches of time, still much work is to be done, and more than 1000 sites are still unexplored. With this, the new scientific techniques of archaeology can also be a good hand to carve out the ancient history of this region. In this manuscript, the scope of archaeology would be analyzed with the appraisal of past work, and as well as the new prospects and advanced scientific techniques would also be proposed with some superlative arguments and suggestions. This manuscript would have the imperative status because it is an explanation about the

past archaeological culture of the region as well as new the dimensions of further work in the field of desert archaeology.

SITE DESCRIPTION

The Indus Valley emerged on the basin of the Indus River that wraps much of the land of Pakistan that once flowed in the environs of Ghaggar-Hakra River (seasonal) in the northwest side of India as well as the eastern side of Pakistan (Goison et al. 2012; Wright 2009). On the southern side of Punjab Province of Pakistan, there is a desert, which is called the Cholistan Desert (Figure.1) that is extended through the Nara and Thar deserts of Sindh Province (Chaudhery et al. 1997; Akbar et al. 1996; FAO 1993; Mughal 1982). Regardless of its importance as a desert, it has interesting facts about its nomenclature. The word "Cholistan" is derived from the Turkish word, called "Chol," Kurdish word, Cholistan, and both the words refer to "Desert." Above all, locally, it is known as "Rohi," which is derived from the Pushto word "Roh," also has the meaning of "desert or sandy desert" (Auj 1987). This Cholistan Desert is the extension of the Great Indian desert which covers that area about 26100 sq.km lies between 27^0 42' and 29^0 45' (North latitude) and 69^0 52' and 73^0 05' (East longitude) (Ahmad et al. 2012; Jowker et al. 1996; Arshad et al. 1995). In a broader spectrum, the Cholistan Desert is one of the main deserts in Pakistan, such as the Thar Desert, Thal Desert, and Kharan Desert. In this regard, The Cholistan Desert is positioned in the second largest desert of the country (Mughal 1994). In this earth, deserts are considered very crucial because these deserts swathe more than 1/5 of the Earth (Brown et al. 2008), and its habitats face challenging conditions as well as environmental challenges because they don't approach freshwater and other facilities (Manoli et al. 2014). The Cholistan Desert is the desert with the attribute of hot hyperarid sandy desert, with the high temperature in summer (Mughal 1997). In further, the Cholistan Desert has the division of Greater Cholistan(13,630 km) and Lesser Cholistan(12,370 km), and Greater Cholistan is situated in the southwest dried track of Hakra River that extends to the vicinity of India (Akhtar and Arshad 2006). If we peep into the past, we will encounter the reality that once, the Cholistan Desert was a green and flourishing region with plenty of freshwater of Hakra River that was the cradle of Indus Ghaggar-Hakra or Great Hakra Valley (Ratangar 2006). However, with time, this Hakra Valley converted into the desert. There are many reasons for this conversion, which have been discussed by many local and foreign archaeologists or scholars. The Speculations and suppositions were gone when it was unanimously accepted that due to the changes in climate and less rainfall caused the dryness of the Hakra River. This change was measured as gradual, which caused a huge transformation of green to dryness. There is also another theory that, in the 3rd millennium B.C, the Hakra River obtained some vacillation in its course due to earthquakes. Later on, around 600 B.C. due to the alterations in its course several times and resultantly, it dried up fully. Whether this mighty river has been dried up completely, but still it has vigorous impressions as the 'Lost River.' With the context of archaeology and anthropology, this region is enriched

with plenty of seen artifacts on the surface of archaeological sites that enlighten the scholars about the cultural heritage of this region from the perspective of anthropology. Here, the site of Ganweriwala is the key to pounce upon the history to understand the metropolitan cities of Indus Valley Civilization. Ultimately, the Cholistan Desert is the abode of unique cultures such as Hakra ware culture and with the denomination of the Early Harappan Period, Mature Harappan period, and Late Harappan Period, respectively. The standing Cholistan forts tell the Tangible Cultural Heritage as well as persisted norms of the habitats acquaint with the Intangible Cultural Heritage of this region as well.

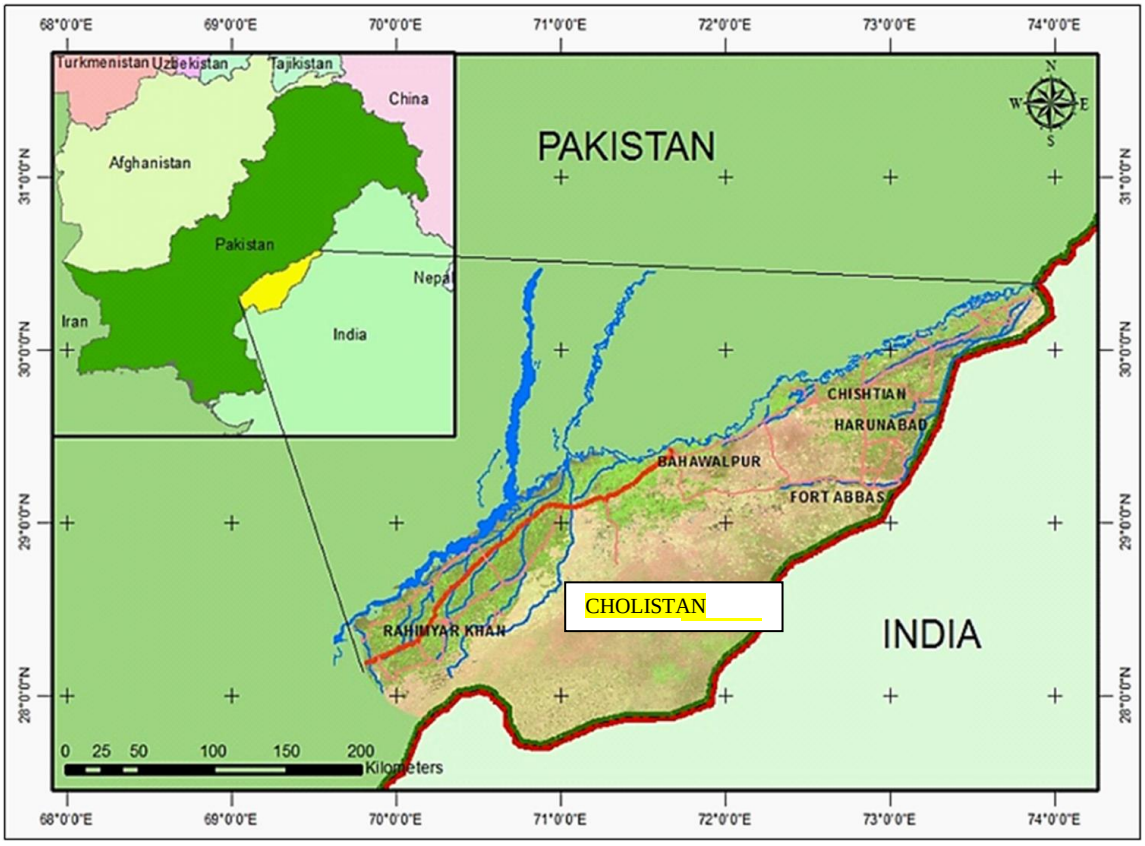


Fig.1 Map of Pakistan with the flaunt of Cholistan Desert
(https://www.google.com/search?q=Map+of+Cholistan+Desert&tbm=isch&source)

METHODOLOGY

The Archaeology has four chief objectives which distinctively make this field significant; to divulge the past, to reveal the functions of the artifacts, to be acquainted with the ancient culture, and to dig out the cultural attributes and its relations with the ancient people. In this regard, archaeological methods and techniques can play a vital role in finding the truths about the past. In the case of the Cholistan Desert, it is need of the hour to utilize and practice the archaeological methods with the special addition of archaeobotany, which is a sub-field of archaeology (Pearshall 2015) that has never been practiced over here.

ARCHAEOLOGICAL AND GEOGRAPHICAL METHODS

REMOTE SENSING

In the near past, the methods of Remote Sensing have been carried out in trivial practices, both at the lesser and greater Cholistan. The methods of Remote Sensing are a key that provides accuracy in the milieu to geographical understanding. The Global Positioning System (GPS) and the Geographic Information System (GIS) are significant tools for this technique. Before going to excavation, the remote sensing endows with the location of the site that is accessible after pursuing the coordinates. In further understanding, remote sensing is categorized into two different categories, passive and active. For the land survey, remote sensing is the best technique to be executed. In the field of archaeology, aerial photography and topographical maps are worthy, which are also the features of remote sensing (Stewart et al. 2014). Ultimately, the remote sensing can be a good hand in the survey of the Cholistan Desert. In the desert, there are countless archaeological mounds and standing structures, to approach these mounds and structures, remote sensing is valuable because to find out the sites without coordinates, is very intricate.

ARCHAEOLOGICAL FIELD SURVEY AND EXCAVATION

For the last few decades, archaeology has been well recognized with other sciences such as anthropology, ethnography, sociology, and folklore to enhance the cooperation and understanding in the documentation of research (Schuyler 1977). Every discipline has a different kind of survey, and in the field of archaeology, the survey is entitled as an "archaeological survey." In this field, the survey can also be categorized as a small area survey, the survey in urban are, and a survey of monuments or structures. Two out of the above-mentioned three categories of the survey are applicable in the Cholistan Desert because there is a specified region comprised of mounds and standing buildings or structures. Archeological surveys are indispensable to recognize those archeological properties that are appropriate for inclusion in the National Register of Historic Places. The purposes of the survey are to describe the sites, which might generally be compared with one another based on survey data, but in most places, the survey is as regarded principally as a prologue to the archaeological excavation. With the help of survey data, the sites to dig out is easy to handle. The archeologist most probably knows what kinds of sites he wanted to explore or dig, and the survey data is engrossed looking for the sites. The underlying principle for the survey is remained the unearthing the sites for excavation and rebuilding the culture-history, which is the core reason for excavation. Surveys are, no doubt, considered as the first footstep in the field of archaeology. There is a unanimous fact that the archeological survey as a research activity has been continued to grow during the last decade. Numerous researches based on survey data have also been in print (Thomas 1975; Matson and Lipe 1975). Some of the notes about the surveys in the Cholistan Desert are presented in the section of the

introduction. As far as archaeological excavation is concerned, it has been practiced in the past, even when it was done as an amateur. Generally speaking, the excavation is the pricey segment in the field of archaeology, which is also well-thought-out as the disparaging and destructive route. The purpose of the exaction is to collect the material elements, which present the human past as archaeology is, treated a sub-branch of anthropology, which deals the past human events with the help of material leftovers (Renfrew and Bahn 1991). Whether archaeology has a connection with other disciplines such as anthropology, art history, history, sociology, etc. but it has its own identity as well, which is unique and unmatchable. As far as the methods for the archaeological excavation are observed, these are: Permission, funding, site safety measures, (before excavation), staff, equipment, settle the benchmarks, digging, stratigraphy, dating the sites, recovery of the artifacts, writing the notes, etc. After the excavation, fill the site with the mud, typology of the artifacts, writing the reports, keeping the records, a demonstration in public, are the fundamental actions in the milieu of the archaeological excavation. As the case of the Cholistan Desert is examined, about 500 sites have been documented by M.R Mughal, and many of the sites are still unexplored. There must be formal and scientific archaeological excavation started from the Ganweriwal, which is the most important key site of the region. In later stages, the rest of the sites should also be enlisted for the archaeological expeditions.

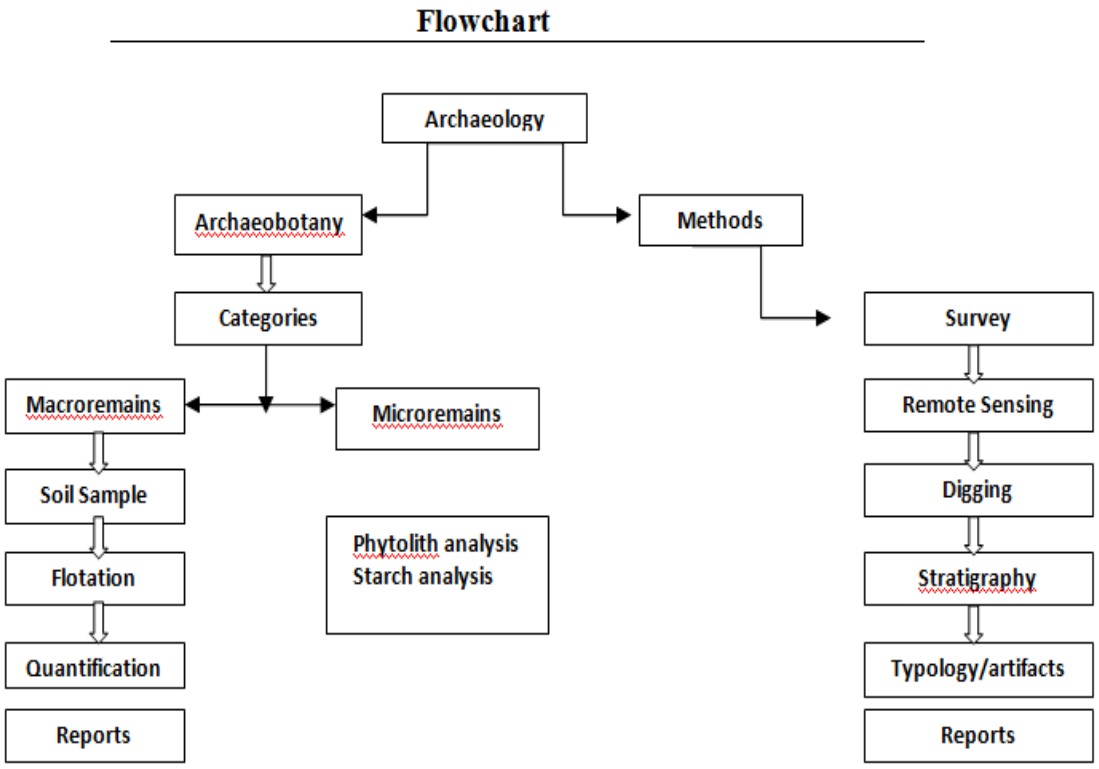
ARCHAEOBOTANICAL METHODS

Palaeoethnobotany or archaeobotany is the sub-field of archaeology that bonds the masses to the ancient plants (Miller, 2013). Chiefly, the archaeobotany is the quick-witted study that interprets the ancient agriculture that connects the ancient people (Samer et al. 2018). In this regard, the applications of archaeobotany during and after the archaeological excavation are worthwhile and foreseeing. Overall, archaeobotany interprets the different circumstances of the ancient plants and their status with the accordance of ancient communities of the people. For the examination of the ancient plants, two categorical fields are of the essence, such as macro remains and microremains. Here, the methods related to the categories mentioned above are presented. Here I suggest the category of macro remains, and in later stages, micro remains category can also be used during the archaeobotanical expedition in the Cholistan Desert. Phytolith analysis and starch analysis are also worthy of getting information about the ancient diets of this region.

MACRO REMAINS AND FLOTATION WORK

There are three chief categories of archaeobotanical materials; macro remains, pollen, and phytoliths, and comparatively macro remains are larger than the rest of the categories. In the category of macro remains, plenty of seeds, fruits, tubers, waterlogged, and other plant fossils are examined carefully. In this category, the flotation work is considered the key through which the plant fossils are being extracted and recovered. In

the broader spectrum, a collection of soil samples, floatation work, sieving, classification, identification, quantification, sorting, and quantitative analysis, is the process and technique that is carried out to get the true pictures about the ancient diet through the examination of ancient crops. Usually, the weight and volume of the samples are recorded after the flotation work that approximates total charcoal. The sorting keeps at a low-powered microscope after opening the sample into size fractions, which makes sorting more well-organized like >4 mm, 2–4 mm, 1–2 mm, 0.5–1 mm, <0.5 mm (Champion and Fuller 2018). The morphological, as well as statistical analysis of cereals, wild plants, fruits, and nuts, are observed by the archaeobotanists. Ultimately, in the macro remains, the charred plant remains are scrutinized with the help of scientific techniques. Notably, the stereomicroscope is used in laboratories with other tools. Field notebooks, collecting tools, collecting bags, tags, etc. are the tools, which are also necessary during the process in macro remains techniques. The whole process from the field to the library (Figure.2) is shown in a chain. For further understanding with the methods of archaeology, the following flowchart is a good explanation.



Flow chart explaining the archaeological excavation method and archaeobotanical research

Fig. 2 The chain from field to library (adapted from Champion and Fuller 2018)

RESULTS AND DISCUSSION

PALAEOCHANNELS OF THE HAKRA RIVER

Palaeochannel is attributed to a system, which is no longer part of a river that was active and now has become stopped or ceased. All the settlements, which were exited in the land of the Cholistan Desert, emerged on the banks of Hakra River, as some scholars suggested that a new culture called the Hakra wares culture was also the key to observe the atmospheric conditions of Hakra River in the ancient time. As far as the Indus Valley is observed, the Indus River and its tributaries are also valuable, which were materialized after passing through by a palaeochannel is called Hakra or Ghaggar River. This river is also a precious river to discern the Indus Valley or Harappan society that has prolonged association with the settlements that prevailed in the Cholistan Desert (Mughal 1997). This Hakra River or Ghaggar-Hakra River has its origin in the northern margin of the Thar Desert (north-west India) and on the eastern side of Pakistan. Peeping into the past, from 6000-4300 B.C, it was in fine-grained fluvial deposition (Saini and Mujtaba 2010) and in later stages, the fluvial competence was mislaid in about 3400 B.C. interestingly, according to some scholars like Julie A. Durcan, Ghaggar-Hakra River flowed, even after the decline of the urban center of the Indus Valley Civilization.

THE PHILOSOPHY OF THE SETTLEMENTS AT THE CHOLISTAN DESERT

In the past, few archaeological expeditions were executed in the land of the Cholistan Desert. Whether the survey conducted by Dr. M.R. Mughal was admirable and appreciable, but still, no systematic and prolonged excavation has been done in the past. The positive thing is that the short but constructive work of Sir Aurel Stein and the survey of the above-mentioned archaeologist is the key to attain the lofty trajectories of the desert archaeology. This survey of Dr. M.R. Mughal was conducted about 300 miles alongside the desiccated bed of the Hakra River from 1974 to 1977 (Mughal 1980a). The settlements or ancient sites in the Cholistan Desert have been classified by Dr. M.R. Mughal with time range, cultural association, and numbers as; the Hakra Wares, 4th millennium B.C. (99), Early Harappan, 3000-2500 B.C. (40), Mature Harappan, 2500-2000 B.C.(174), Late Harappan, 1900-1500 B.C.(50), and Painted Grey Wares(PGW), 1100-1000 B.C. (14). Some of the sites are categorized in both Early and Mature Harappan phases due to cultural similarities. Some of the sites have been remained unidentified. The earliest sites, such as the Hakra Wares sites, have been noted as these sites are found on the big platforms of the mud or sand dunes. In further, the campsites have also been observed as the artifacts from these sites are unique, and due to this uniqueness, these kinds of settlements are given names as the Hakra Wares settlements. After observing the Harappan Sites, the transition of one culture to another is pragmatic with some clues. Suddenly the nomadic life converted into the enduring settlement. Interestingly, some of the sites named Sandhanwala Ther, Chak 76, and Gamanwali also maintained the continuation in a later phase like Mature Harappan. Why the percentile of the campsite declined suddenly and converted into the settlements? The only reason and answer to this significant question are that the people explored the shelters near to the Hakra River for the domestication of their animals and for their own survival. This might be on the reason out of others, which must have pounced upon after conducting the archaeological expeditions on the Early Harappan settlements. In the settlements of Mature Harappan, the full urban life was practiced because they had religious beliefs, industrial knowledge, proper communities or villages, and above all, the existence of the large city, Ganweriwala (85.5 ha) sites depict the metropolitan life there. The Late Harappan settlements have the attributes resembled the Cemetery – H, found at Harappa site. In the Late Harappan Phase, another shift is observed because again, the increase in the campsites describes the fluctuation in life due to the water problems, and people were searching for their shelters where they found plenty of water resources. The PGW sites are categorized with the sites of Rajasthan in India after comparable evidence in the ceramics. Notably, these all sites are noted as the settlements that show the change from the Late Harappan to PGW. Nevertheless, it is as a referred question because the Hakra River was fully dried up before 1000 B.C. then why PGW sites (14) are claimed as settlements with small areas. To meet this answer, the people might have the small patches of water resources, which they preserved during the rains as still such examples are found in the Cholistan Desert in the shape of *Chobhas* or *Tobias*.

THE ARCHAEOLOGICAL FINDINGS WITH THE CULTURAL ASSOCIATION

All the archaeological findings which recovered by the scholars have been categorized as the industrial, kilns, settlements, camp, and cemetery objects associated with the cultural association. Each object has unique features that refer to the accuracy and difference among all the cultures that prevailed in the Cholistan Desert. If we talk about the different features of the ceramics from the different cultural associations, the Hakra Wares ceramics, these kinds of ceramics have been identified both as wheel made and handmade in style with special treatments on the surfaces. Red-ware, mud-appliqué, buff wares, and incised lines on the surfaces of the ceramics make this variety unique and different. On the surface, there have many examples of pottery with incised lines on the surface from many archaeological sites of the Cholistan Desert and some terracotta figurines, fragments of grinding stones, bangles, and the unique lithics, which have exclusive appearances. According to (Rao et al. 2005), the Hakra Wares pottery can be ascribed with different types, which are eight kinds different from each other. The ceramics from the Early Harappan period from the Cholistan Desert resemble the other Indus Valley sites as well as Kot Diji ceramics. Other artifacts except for ceramics from the Early Harappan sites are terracotta bangles, terracotta figurines, potsherds, stone objects, etc. The Mature Harappan culture displays the full urban life with the features of civilized society. Different varieties of ceramics with perforated sherds, stone objects, terracotta bangles, terracotta cakes, terracotta figurines, beads, shell bangles, bricks, copper objects etc. remarkably, the signs of fishes are also depicted on the surface of pottery that shows the social, cultural, economic, trade, and artistic values of the people belong to the Mature Harappan Phase. Except for the above-mentioned objects, relics from lithic industries, micro-blade, scraper, sling balls of terracotta, mud triangular cakes, etc. different objects have been recovered from different cultural sites like Hakra Wares sites, Early Harappan sites, Mature Harappan sites, Late Harappan sites, and PGW sites.

GANWERIWALA, A METROPOLITAN MATURE HARAPPAN SITE

Ganweriwala is 80.5 ha large (71^0 09'E and 28^0 35' N), is a metropolitan Mature Harappan site (2500-1900 B.C.), situated in the Cholistan Desert, one of the five metropolitan sites in the Indus Valley Civilization. All these sites have been treated with excavations except for Ganweriwala. All the urbanized features of the Mature Harappan Phase of the Indus Valley Civilization (Figure 3) have been observed belonging to this site. Having in the list of Mature Harappan cities, the Ganweriwala has its repute as all other four metropolitan cities were large in populations, specialized in crafts, and best in engineering, respectively (Possehl 1998). Whether there has not been any systematic excavation done on this large site, but it has been well documented and investigated by (Mughal, 1990). Most interestingly, the Ganweriwala is larger than the Harappa site (76 ha) and almost identical to Mohenjo-Daro (83 ha). It is located in the center of Mohenjo-Daro and Harappa and from Rakhigarhi to Mohenjo-Daro and a little far away from the city called Dholavira. This connects depicts that in the past, the trade activities were done

between all these metropolitan cities. All the artifacts with the attributes of urban life have been recovered from the surface of this site and documented by some scholars, distinctively M.R. Mughal. Expectedly, after the conduction of systematic exaction, there is a chance to encounter with ancient cereals such as wheat (*Triticum aestivum*), barley (*Hordeum vulgare*), millets (*Setaria Italica, Panicum miliaceum*), and rice (Oryza sativa), etc.

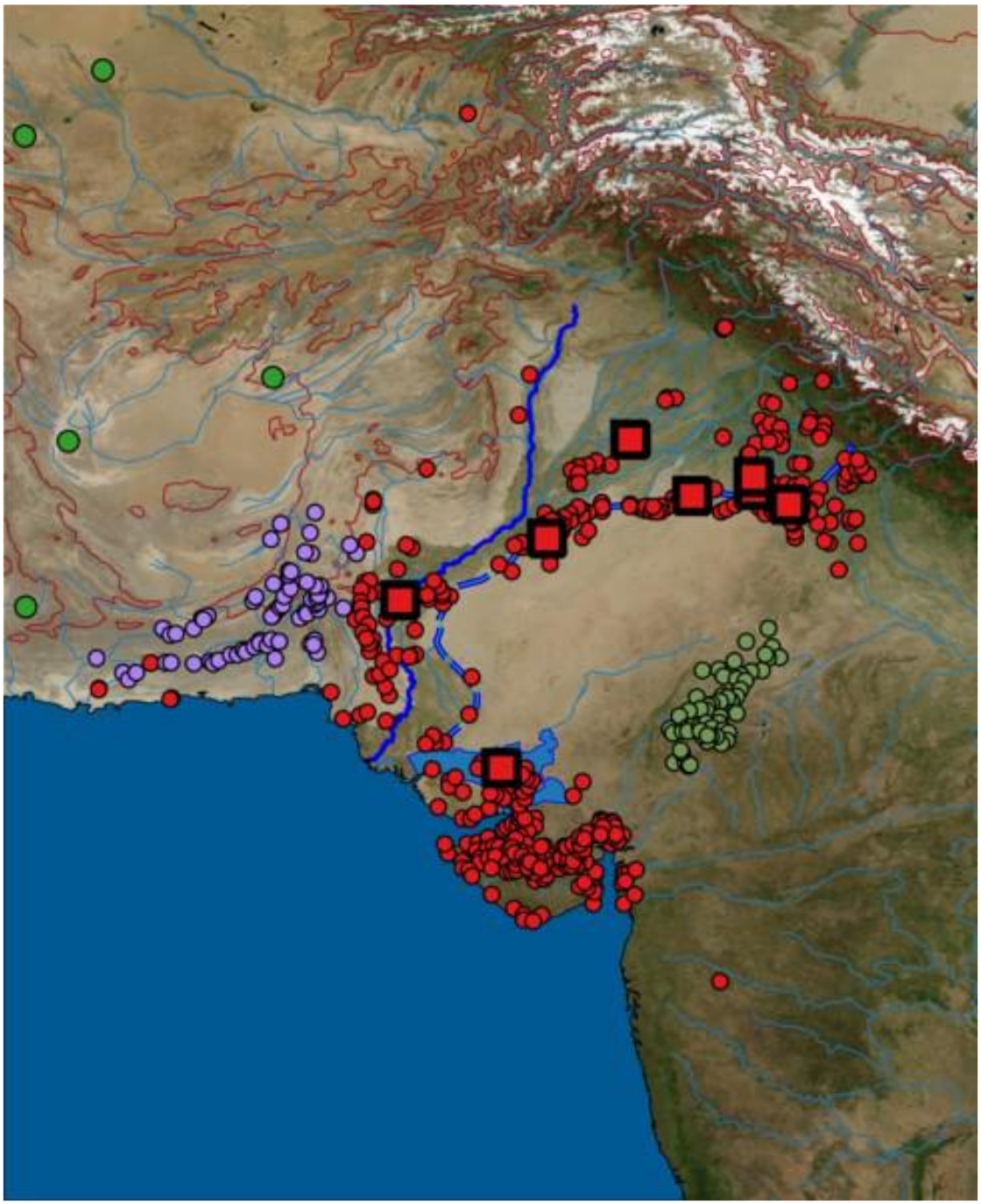


Fig.3 The distribution of Indus Valley sites in Mature Harappan Phase (cal. 2550-1900 B.C), the Blue line showing Indus River and blue dashed lines depicting the dried bed of Hakra.

(https://commons.wikimedia.org/wiki/File:Indus_culture_sites_distribution_map_2500-1900.png)

EXPEDITION FOR ANCIENT CROPS AT THE CHOLISTAN DESERT, AN ARCHAEOBOTANICAL PREVIEW

It is unanimously admitted that Mehargarh, an ancient site situated in present-day Pakistan, has the ancient record of the agriculture of Indus Valley Civilization. Prominently, wheat and barley were recovered from this site as the ancient origin of Indus rice belongs to the Ganges Valley. From Harappa, Mohenjo-Daro, and Rakhigarhi, ancient cereals have also been recovered after applying the archaeobotanical methods. Unfortunately, Ganweriwala has been treated with the scientific methods of the archaeobotany. But due to the existence of the Hakra River, there must be vital clues about ancient crops of the Cholistan Desert. According to (Possehl 2002: 34), the society of Hakra Wares existed under the early farming group of people due to the flourishing on the bank of River Hakra. Apparently, the region of Hakra River has a record of some floods; there are clear-cut chances of wheat and barley (Possehl 2002). Consequently, agriculture took the chief part in the economy of the people of this region of Hakra Wares culture. In initial stages, some of the sites such as Ganweriwarla, Azeemwali Ther, Kalepar, Riyasti wali there, Kaliyan Paran, Sidduwala, Sanukewala, Ahmadwala Toba, Kuruwala, and Satwali are ideal sites to excavate for the perspectives of archaeobotany.

CONCLUSION

The Cholistan Desert is the land where the traces of the Hakra Culture can be searched. Since the first expedition of Sir Aurel Stein, some other scholars also tried to trace the Hakra culture, but unfortunately, no systematic archaeological excavation has been done in the Cholistan Desert. After surface collection from many notable archaeological sites, countless unique and precious antiquities came to hand, but there has not been any mission for the findings after digging. There are also some writings on the geographical extent as well as on the ceramics but, unfortunately, the ancient agriculture has also not been a quest. In this regard, archaeobotany can play a valuable role in approaching the ancient diets of the aboriginals of this region. The scope of archaeobotany is huge and tremendously result producing. The above-mentioned renowned sites for the archaeological exaction can also be a good hand to get the soil samples for the analysis of both macro remains and microremains of the plant fossils. After archaeological excavation, the scholars can also pounce upon the ancient origin of the crops. The archaeobotanical findings of this region can be a key to promote the ancient desert crops and its comparison with the rest of the desert archaeobotany of the ancient civilizations like Egyptian or Chinese societies. In spite of these prospects, there should be comprehensive coordination among local and international institutions through which all the archaeobotanical expertise, technicalities, and scientific approaches can be met with ease.

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