Mesolithic Settlements in Rohri Hills and Upper Thar Desert

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Introduction

In the context of South Asia, particularly India and Pakistan, the research on Mesolithic period began around 1867-68 which is said to be the "earliest" documentation of Microliths in the world (Misra 1985:111). In India, A.C.L. Carlleyle investigated caves and rock shelters in Kaimur range in Utter Pradesh and Madhya Pradesh in which paintings on the rock shelters depicting hunting scenes were also documented (Misra 1985:112). After these pioneer studies, Robert Bruce Foote in 1914 documented Mesolithic remains in Gujarat. According to V.N. Misra, a total of two thousand Microlithic sites have been registered to date and several have been excavated (Misra 1985:112; 1973:322). In the list of excavated sites, Bagor and Tilwara sites in Rajasthan (Misra 1971, 1973); Sarai-Nahar Rai in Uttar Pradesh (Sharma 1973) Adamgarh in Madhya Pradesh (Joshi 1978) are also included.

The earliest research on Mesolithic period in Pakistan started when W. R Dickinson in 1867 and J. Burgers in 1886 surveyed and collected Palaeolithic tools near Sukkur, Sindh. W.T. Blandford in 1880 mentioned about few flint scatters to the west of village Mendiari near Cape Monze. Morris reported sites at Marwat Kundi range and Shaikh Budin area (Morris 1938: 41-100). In the same year, Gordon reported another site situated in Mardan district known as Jamal Garhi which was cave site which in 1974, was revisited by Muhammad Salim who also confirmed the presence of Mesolithic artifacts (Gordon 1938; Salim, 1974). A year later in 1939, De Terra and Peterson explored Soan valley around Rawalpindi. They reported artifacts made of brown jasper and flint (DeTerra and Paterson 1939). In the same year, De Terra and Paterson re- investigated Sukkur area in Sindh (De Terra and Paterson 1939).

In 1947 Todd and Paterson surveyed the hills north of Karachi lying along the administrative boundaries of "Sindh Balochistan". Some artifacts were collected from the surface of the hills along Layari River which is seasonal and drains into the Arabian Sea (Todd and Peterson 1947).

In 1964, A.H. Dani, the renowned archaeologist of Pakistan discovered another cave site known as Sanghao cave. He discovered some geometric tools in Period III and associated them with the Mesolithic Period. This was the first stratified evidence of the Mesolithic period which was confirmed, when in 1988 Tussain re-excavated Sanghao cave (Dani 1964; Tussain 1988). The deposition of cultural material in this cave continued until the Neolithic period.

A small hilly region located in the northeastern part of Sindh Pakistan became the focus of research on Stone Age remains where the earliest documentation of sites was made by W. R Dickinson in 1867; J. Burgers in 1886 and De Terra and Paterson in 1939. Following these researches, B. Allchin in 1976 and 1978; Biagi and Cremaschi, in 1988 and 1990 investigated

the area and documented evidence associated with Old Stone Age and the Indus Civilization. After these preliminary investigations, the Department of Archaeology, Shah Abdul Latif University worked in collaboration with a team of the University of Foscari, Italy (1993-2000) and later from 2000-2005 onwards, the Department of Archaeology independently investigated these hills. After all these fundamental works, the authors also explored the area for investigating the remains of Mesolithic culture but were disappointed by the lack of evidence. Some remains were found near Ubhan Shah Hills which are located very close to the sandy region.

Nevertheless, this missing link is provided the recent research done in the Thar Desert where remains of Mesolithic have been reported extensively (Shaikh e*t. el.,* 2001). The area around modern town of Thari and Dubi was partially explored (Biagi & Veesar 1998-99: 93-118 and Mallah 2002). The exploration of this area revealed the presence of Mesolithic culture sites which were intensively documented and are now described extensively in the present paper.

The margins of the sand dunes connected with Rohri Hills were also explored such as the Veesar Valley where all three phases of Paleolithic were recorded. At the place some Mesolithic remains were also located which provided evidence that the Mesolithic people had their activities in the desert area. The surveys conducted along the western margins of desert near Thari Mirwah area and the lakes around Dubi area, revealed great number of sites (Fig.1).

The sites explored were distributed between Nara and Mirwah canals having different geographical units. The area consisted of valleys; raised sand dunes, alluvial plains and lakes. In this territory series of lakes are located at the edge of desert and alluvial Indus plains. An area of 75 kilometers North-South and 35 kilometers East-West was explored. During exploration, a total of 66 sites were discovered (Fig.2).

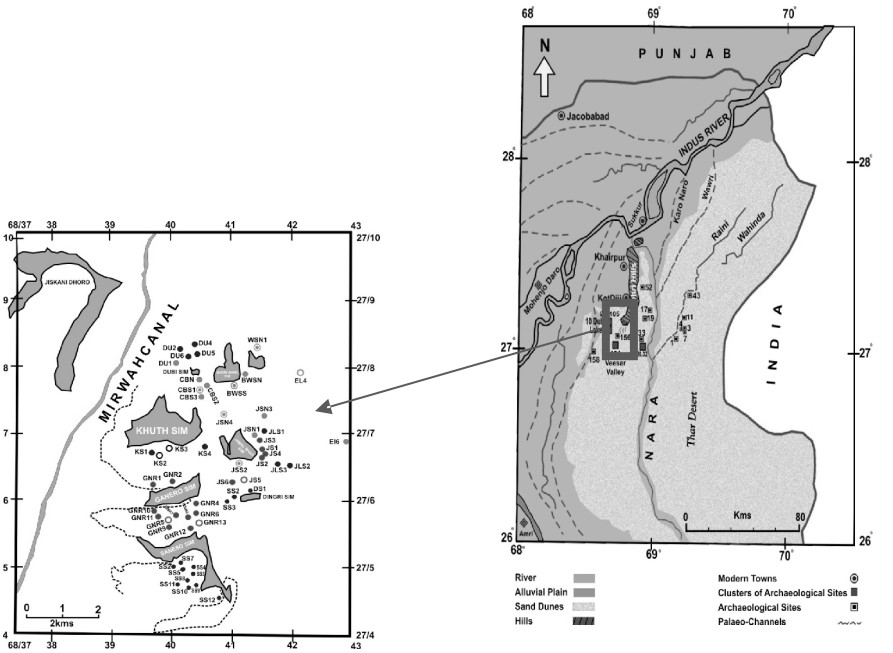


Fig. 1: Map showing the research area

All sites were examined very carefully in which each artifact was documented separately. This research was based on (1) manufacturing activity areas, (2) scale of production, (3) manufacturing technology and (4) exploitation of resources. Such an intensive recording of multiple features of all the archaeological remains it was thought would possibly indicate the chronology and culture of the Mesolithic period and would provide a broader view of the Mesolithic culture of South Asia. This preliminary examination of Mesolithic cultural assemblages revealed a total of five major groups of archaeological sites. This grouping and categorization was further established on the bases of presence and absence of certain artifact types at the given sites. For instance, the Group-1 sites comprise blades, scrapers and burin. The Group-2 sites carry all artifacts from earlier group which continue with an addition of new items such as backed blades and trapezes. Following this analysis a total of five groups have been established which are outlined below:

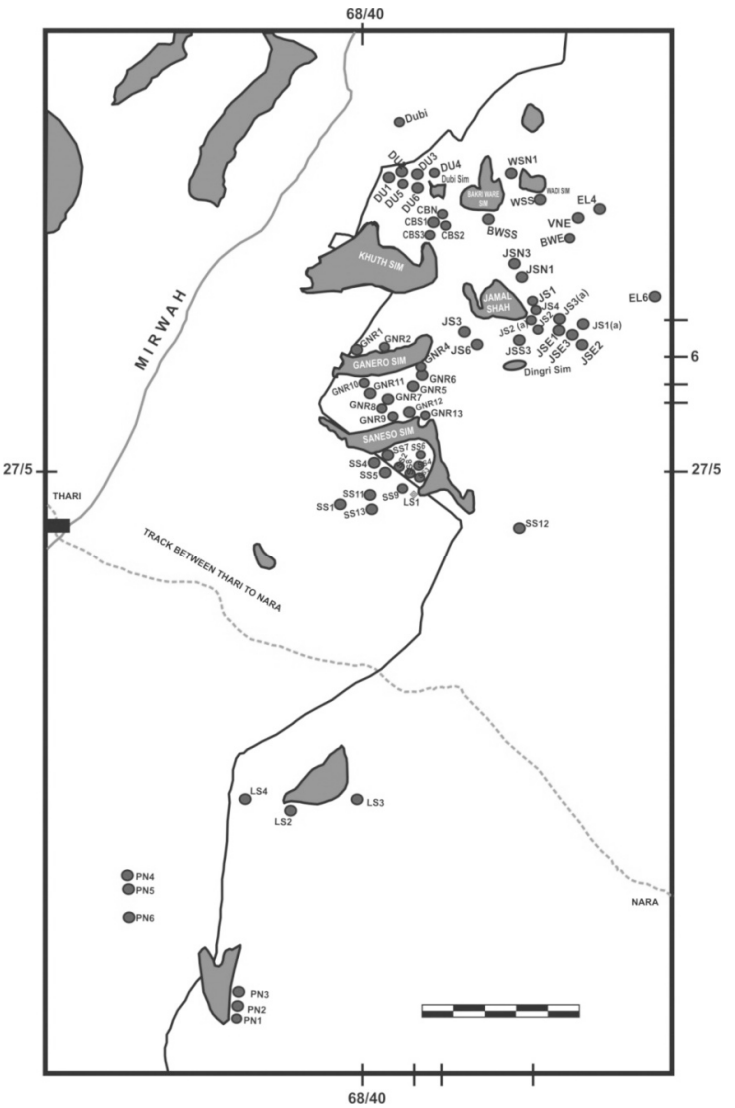


Fig. 2: Map showing the 66 Mesolithic sites.

Group – 1

This group of sites contained an assemblage of blades, scrapers, and burin. In this group, a total of thirty sites were documented.

Group – 2

This group showed continuation of all assemblages (blades, scrapers, and burin) from earlier group but backed blades and trapezes were new items. In this group nine sites were reported.

Group – 3

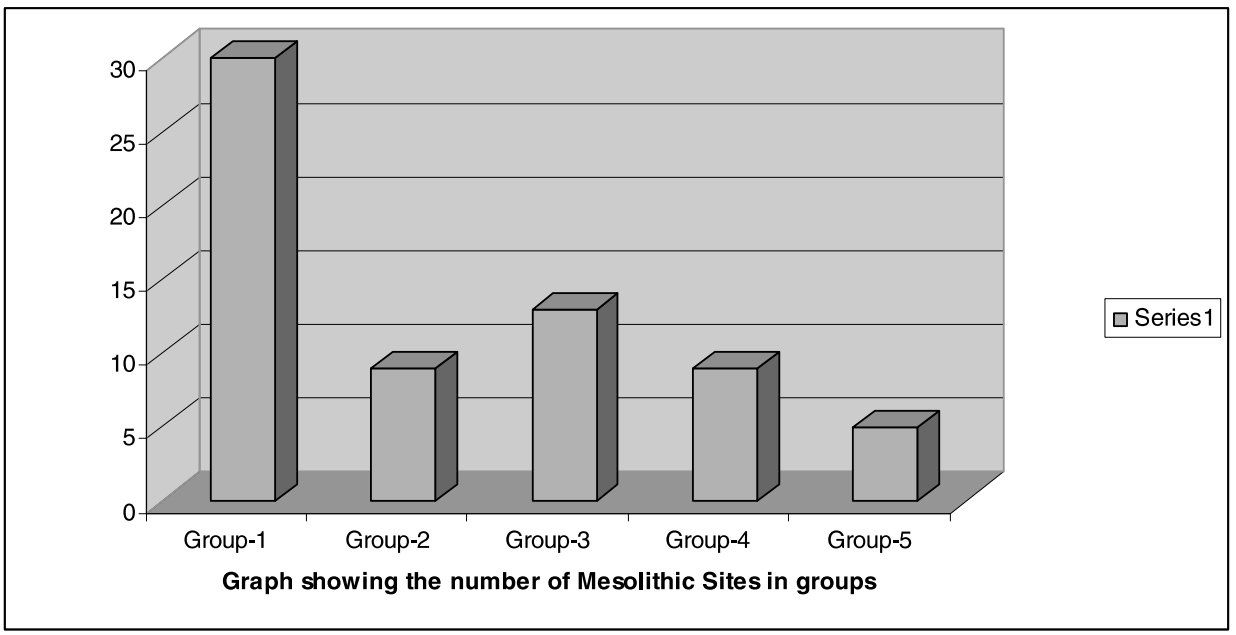
The Group-3 holds trapezes and all type of scraper, burins, triangles and backed blades. Thirteen sites are associated with this group.

Group – 4

In Group-4 registered tools of leaf shaped arrowheads, lunates & borers as new objects but toolkit of earlier group continued. Nine sites are associated with this group.

Group – 5

The tanged point appeared in Group-5 as a new item. However, all the above mentioned toolkit continued as well. Five sites are related with this tanged point category.



Graph showing the number of Mesolithic Sites in groups

Group – 1: Settlements

This group of settlements contained blades, scrapers, and burin. In this group a total of thirty (30) sites were documented. The sites are located in the desert environment with different scale of intensity of cultural assemblage (Fig.3).

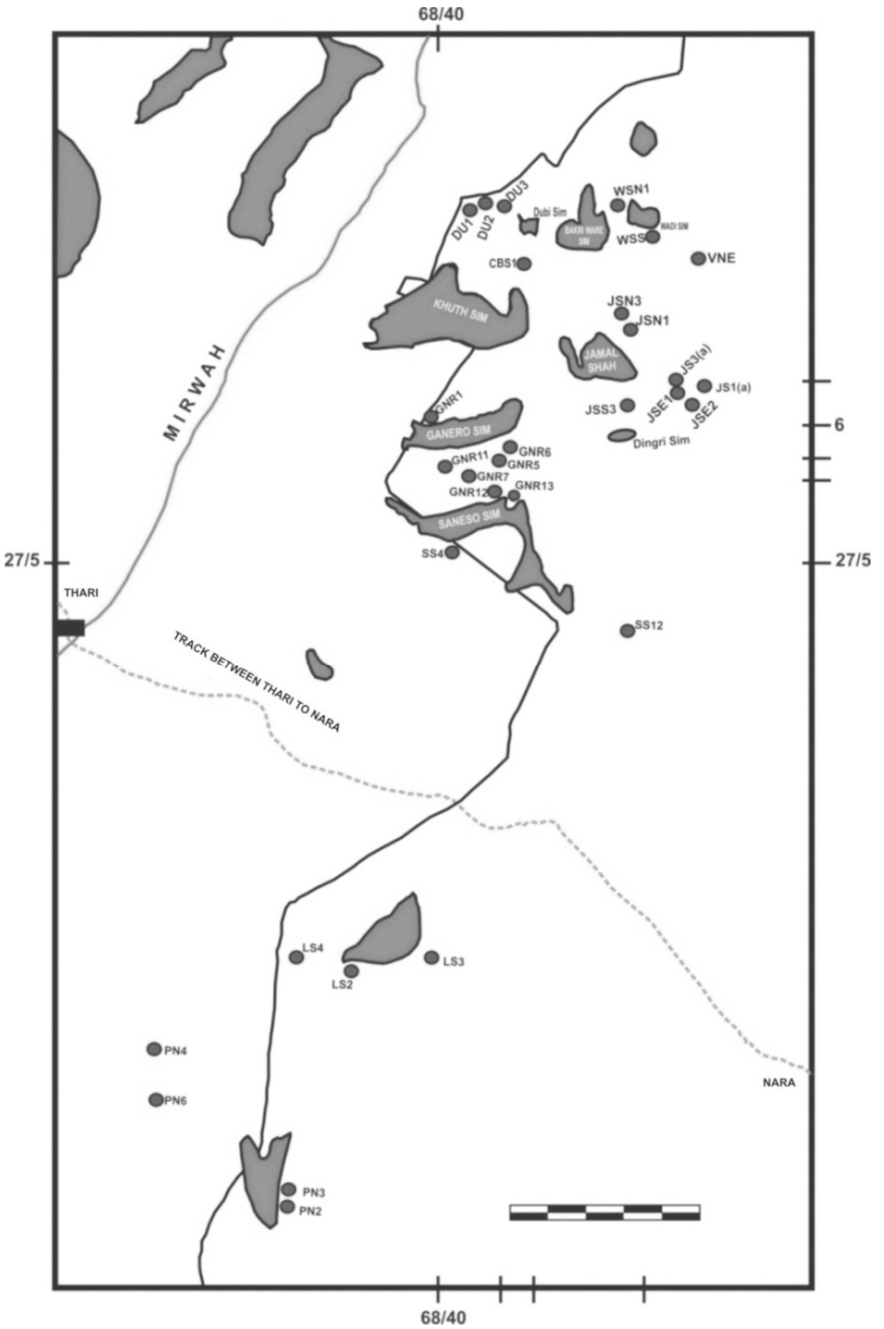


Fig. 3: Map showing the Mesolithic sites in Group-1.

01. Dubi 1 (DU1)

Latitude 27º.08'.24" North Longitude 68º.40'.22" East. The site is located on the western slopes of sand dunes. This slope is being gradually covered by shifting sand. After some time this site is likely to come under the sand. At this site chert stone chipping is noticed, Potsherds are also present in very small quantity, which indicates reoccupation in later period. The cultural repertoire of Mesolithic period includes scrapers, burins and retouched blades.

02. Dubi – 2 (DU2)

Latitude 27º.08'.24" North Longitude 68º.40'.26" East. The lies on the top of sand dunes where a good concentration of stone objects was present. This site is also being covered up by moving sand. Its southern and western portions are already covered. Some sherds were also found. The Mesolithic material in this site was in the form of thin surface scatter, which includes scrapers and blades.

Plate 1: Mesolithic tools from Dubi-2 site

03. Dubi – 3 (DU3)

Latitude 27º.08'.25" North Longitude 68º.40'.33" East. At almost one hundred meters further east from Dubi-3, this spot was noticeable on the flat top of sand dune. Where Mesolithic tools retouched blades, scrapers and burin were found.

04. Char Baro South – 1 (CBS1)

Latitude 27º.07'.64" North Longitude 68º.40'.34" East. The site is located on the flat top of sand dune where cultural material is concentration. Many exotic items were collected like two black stone bead fragments of lapis stone, copper fragment, white disc beads and others. Mesolithic repertoire included scrapers and blades.

05. Wadi Sim South (WSS)

Latitude 27º.07'.96" North Longitude 68º.41'.43" East. The site is located approximately 150 meters away from the southern shore of the Sim on a flat surface. There was another spot at 27°.08′.35″ North, 68°.41′.55″ East, where similar type of micro flaking was observed. Here, huge quantity of the micro flaking was seen. Very few complete stone objects were collected i.e. retouched blades, burin and scrapers

06. Wadi Sim North1 (WSN1)

Latitude 27º.08'.37" North Longitude 68º.41'.35" East. The site is located on the southern slopes of the sand dune where cultural material was scattered in good quantity, and included scrapers, burin, blades, and cores.

07. Vakar Norht-East (VNE)

Latitude 27º.07'.91" North Longitude 68º.42'.38" East. The site sits on the southern slope of the sand dune where there is a stream bed originating from the Rohri Hills and providing rain water to the alluvial valley locally known as "*Vakar valley*" and perhaps to lakes of Wadi Sim and Bakri Waro in prehistoric times. The cultural material was very thinly scattered indicating a campsite and comprised of the same toolkit i.e. scrapers and

retouched artifacts.

08. Jamal Shah - 1a (JS1a)

Latitude 27º.07'.022" North Longitude 68º.41'.408" East. The site is situated in the proximal ecosystem of Lake Jamal Shah towards east and on flat surface of sand dune. It had both choices of subsistence sources as open sand dunes and Lake Environment. Consequently, the finished tools were found in great diversity from the site. The cultural material found belonged to the Mesolithic Period in the form of thin surface scatter, which consisted of scraper, core, burin and blades.

Plate 2: Mesolithic tools from Jamal Shah-1a

09. Jamal Shah – 3a (JS3a)

Latitude 27º.06'.05" North Longitude 67º.41'.52" East. The site occupies northern part of the site Jamal Shah-1 on the flat surface of sand dunes that also demarcate the sloping depression. The location seems to be deliberate that served as a watching point. This is also culturally rich site the flint assemblage consisted of sub-conical flat platform, prismatic core with plain platform, narrow blade of "bullet type" and core with simple flat platform". The instruments include burin corticated blades, backed points with abrupt, deep, direct retouch along one side, micro blades backed point, micro burins, lunates and side scraper truncation on blade like flake.

10. Jamal Shah South – 3 (JSS3)

Latitude 27º.06'.58" North Longitude 68º.41'.33" East. The site is located on the southern shores of the Jamal Shah Lake at approximately 200 meters away. The location was intended exclusively for unitization of diverse sources of the lake, for instance birds, various species of animals and perhaps floral supplement as well. Here, micro flaking activity was observed. The toolkit of Mesolithic period included scrapers, burin and blades.

11. Jamal Shah North – 1 (JSN1)

Latitude 27º.07'.01" North Longitude 68º.41'.44" East. The site is located half kilometer north of the Jamal Shah on flat top surface of sand dunes where it gently slopes towards the lake Jamal Shah. Here pottery, stone flaking and micro debitage were observed spreading over a large area, which indicate importance of the area being reoccupied in different periods.

12. Jamal Shah North – 3 (JSN3)

Latitude 27º.07'.47" North Longitude

68º.41'.11" East. The site is located to north of the Jamal Shah Lake on slope of the sand dunes. The slope of northern sand dunes was favored to (a) watch over the animals, (b) receive southern winds at night and (c) easy accessibility. The concentration of artifacts showed micro flaking activity of Mesolithic people, and the tool kit of Group-I

13. Jamal Shah East – 1 (JSE1)

Latitude 27º.06'.95" North Longitude 68º.41'.80" East. One kilometer east of Jamal Shah, this site is on the flat top of sand dune sloping towards south. On the surface, very low concentration of pottery and stone tools and flaking was observed. Mesolithic assemblage included scrapers, burin and retouched artifacts.

14. Jamal Shah East – 2 (JSE2)

Latitude 27º.06'.77" North Longitude 68º.41'.56" East. The site is located on the eastern shores of the Jamal Shah Lake to utilize diverse subsistence niche of aquatic ecosystem. The flint assemblage from Jamal Shah East-2 is composed of retouched blades, scrapers and burins. Here spiral micro flaking activity was observed.

15. Ganero – 1 (GNR1)

Latitude 27º.06'.12" North Longitude 68º.40'.10" East. Site is located in a depression between the sand dunes that slopes towards the northern shores of Lake Ganero some ½ kilometer east of village Lakhmir Shar. The site was occupied perhaps for using the lake resources. The flint assemblage from Ganero-1 is composed of retouched, un-touched backed points with abrupt, deep direct retouch along the side scrapers and discoidal cores. This type of assemblage indicates the beginning and/ or the early stage of Mesolithic period is this region.

16. Ganero – 5 (GNR5)

Latitude 27º.05'.21" North Longitude 68º.40'.38" East. This site is located to the South-West of Ganero-4 site on the flat surface of the dunes from where the Saneso Sim is visible to the south. The flint assemblage collected from Ganero-5 consists of sub conical core, retouched and un-retouched artifacts, blades and scrapers scattered in low density. The artifact suggests that this spot may have been used for short time for exploiting monsoonal resources.

17. Ganero – 6 (GNR6)

Latitude 27º.05'.24" North Longitude 68º.40'.42" East. The site is located to northeast of Ganero-5 on the sand dune. The cultural material is thinly scattered on the surface suggesting seasonal occupation. The tools include flints re-touched and un-retouched artifacts scrapers, flakes and blades.

18. Ganero – 7 (GNR7)

Latitude 27º.05'.43" North Longitude 68º.40'.33" East. The site is situated to South-West of Ganero-6 on sand dune showing scattered materials over considerable area and quantity. Prismatic cores with micro flake detachments, sub-conical micro-blade cores and bilateral retouched micro-blades and scrapers have been discovered.

19. Ganero – 11 (GNR11)

Latitude 27º.05'.45" North Longitude 68º.40'.02" East. The site lies to the South-East of Ganero-10 sand dune which gently slopes towards south towards Saneso Sim. The location of the site is strategic for keeping close watch on the movement. The cultural materials consist of discoidal cores with prepared platform, retouched and un-retouched artifacts, blades and scrapers.

20. Ganero – 12 (GNR12)

Latitude 27º.05'.55" North Longitude 68º.40'.42" East. The site is situated at the slopes of sand dune facing North-Eastern shore of Saneso Sim. The cultural material is scattered thinly and only retouched blades and flakes have been discovered.

21. Ganero – 13 (GNR13)

Latitude 27º.05'.56" North Longitude 68º.40'.49" East. The site is located east of Ganero 12, less that hundred meters proximity of north eastern shore of Lake Saneso Sim. The viscosity of cultural assemblage was in considerable quantity scattered on the surface. A diversity of Mesolithic implements were gathered including double blow burin on Corticated blade with marginal semi abrupt retouch, parallel sided narrow retouched blades, parallel sided narrow bladelet and side scrappers.

Plate 3: Mesolithic tools from Ganero-13.

22. Loonwari Sim – 2 (LS2)

Latitude 27º.02'.25" North Longitude 68º.40'.17" East. The site is located in close proximity of the lake where cultural material was scattered thinly but occupying a large area. At the location of 27°.02'.24" North - 68°.40'.11" East, some chert flaking along with a hammer were observed. The pottery was present all over the site and some stamped sherds, pottery with black bands on red slipped surface, a very thin and polished sherd were collected along with other cultural materials. The presence of pottery alongwith chert flaking activity indicated reoccupation at the site for longer periods. The toolkit consisted of Group – I sites.

23. Loonwari Sim – 3 (LS3)

Latitude 27º.01'.39" North Longitude 68º.39'.26" East. This site is located along Loonwari Sim in similar eco-system as other sites. Cultural materials, potsherds and chert flakes retouched artifacts were recorded. Presence of pottery indicated re-occupation in later period.

24. Loonwari Sim – 4 (LS4)

Latitude 27º.01'.50" North Longitude 68º.40'.13" East. Site is located on the southern slope of Loonwari Sim. The objects were scattered in good quantity such as micro flakes, blades and scrapers and at few meters distance pottery was found. This suggests that the site was occupied at different periods. On the west side was found a broken pot buried upside down along with two lids.

25. Pir Nango – 2 (PN2)

Latitude 27º.00'.35" North Longitude 68º.39'.07" East. It is located at 300 meters north of Pir Nango-1 site along the slopes of the same dunes where several chert stone artifacts has been found consisting of retouched and un-retouched specimens Polyhydrical cores scrapers, and blades were also found on the surface.

26. Pir Nango – 3 (PN3)

Latitude 27º.00'.32" North Longitude 68º.39'.12" East. The site is situated along the western slope of sand dune over looking the lake where cultural debris is present in considerable quantity. It seems that the site was located for exploiting the lake resources like birds and game animals. Flint/chert stone in the form of discoidal cores, micro blades and retouch blades have been discovered.

27. Pir Nango West – 4 (PNW4)

Latitude 27º.01'.04" North Longitude 68º.38'.06" East. The site is located along the eastern side of Pir Nango. This site contains a good concentration of cultural materials where pottery, terracotta cakes, flaking debris, scrapers, cores, blades & pottery manufacturing mould were recorded. This type of cultural assemblage suggests that the settlement was occupied.

28. Pir Nango South – 6 (PNS6)

Latitude 27º.00'.52" North Longitude 68º.37'.59" East. The site is located on the flat surface of the dunes of Pir Nango where good concentration of cultural objects was noticed over a considerable area. The concentration suggests that people might have lived here for long time. The grazing of animals specifically, the goat have disturbed primary context of the objects. This situation was observed in several sites of Thar Desert. The cultural material of Mesolithic period includes retouched blades, scrapers and burin were found.

29. Saneso Sim – 4 (ss4)

Latitude 27º.05'.097" North Longitude 68º.40'.244" East. The site lies south of Saneso Sim and close to the lake. The cultural material found on surface belongs to the Mesolithic Period, which includes retouched blades and burins.

30. Saneso Sim – 12 (ss12)

Latitude 27º.04'.40" North Longitude 68º.41'.37" East . The site lies on the southern end of Saneso Sim. The cultural materials consisted of chert flakes, potsherds cores, concave scrapers, points, side scrapers, blades, points and single blow burins. Presence of pot sherds indicated re-occupation in later period

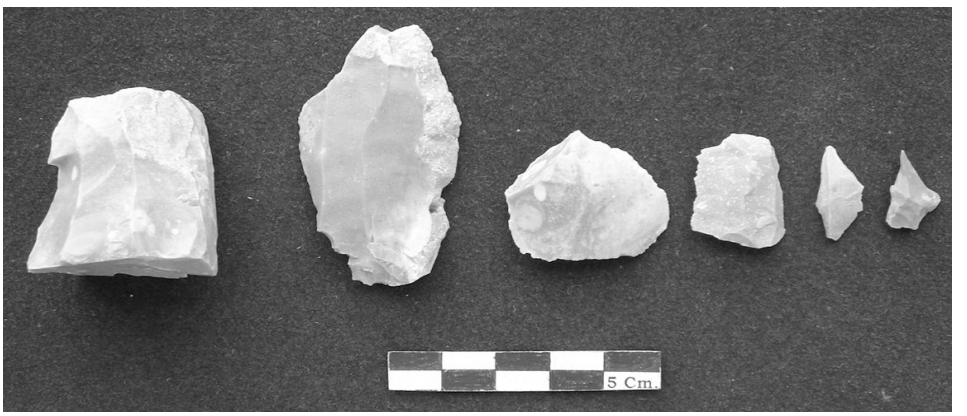


Plate 4: Mesolithic repertoire from Saneso Sim-12

Group – 2: Settlements

This group contains entire assemblage mentioned for Group-1 sites like blades, scrapers, and burins. Trapeze was a new tool marking group-2. In this group, a total of nine sites were assigned. The data on of each

settlement of Group-2 is provided as follow:

31. Dubi – 6 (DU6)

Latitude 27º.08'.17" North Longitude 68º.40'.30" East. This site lies on the southern slopes of sand dune facing a small lake called Char Baro. The materials consist of micro flakes, cores, scrapers, trapeze and various types of pottery. Though this is a small lake but provides every opportunity of subsistence for both human and animals. Presence of pottery indicates reoccupation in later period.

32. East of Lakes – 4 (EL4)

Latitude 27º.07'.85" North Longitude 68º.42'.15" East. This site was located on the southern slopes of sand dune where it has *Vakar* valley in the northeast direction. A monsoonal rivulet coming from Rohri Hills crossed at the foot of this site. Several rainy grasses grow which attract both the animal and birds. Cultural repertoire of Mesolithic comprises of scrapers, retouched blades, burins and trapezes.

33. East of Lakes – 6 (EL6)

Latitude 27º.06'.89" North Longitude 68º.43'.08" East. The site lies on the flat surface of sand dunes. Low lime stone hill is on its east the site is located about half kilometer away from the lakes. The cultural materials was scanty few retouched blades and trapezes were collected.

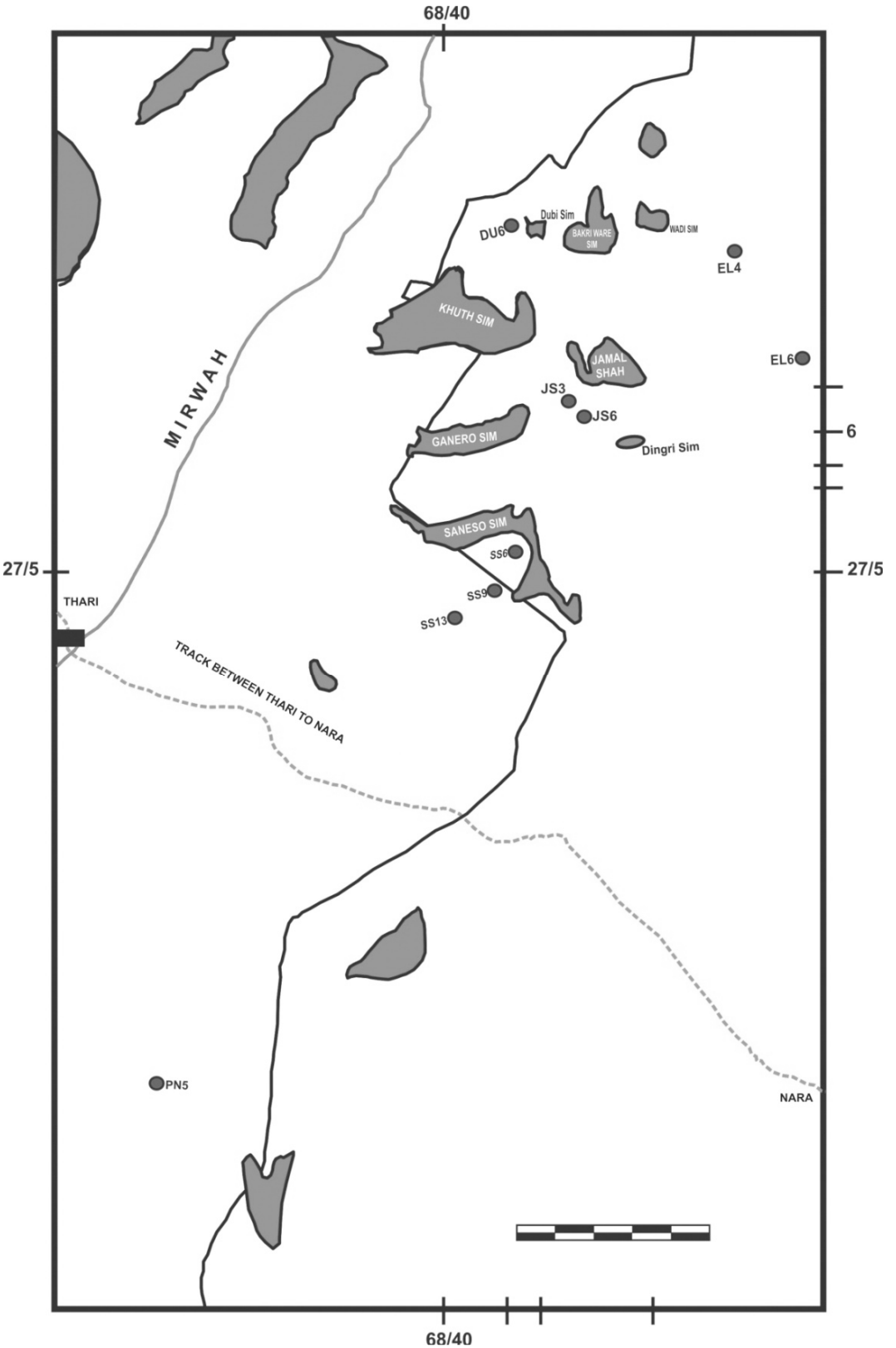


Fig. 4: Map showing the Mesolithic sites in Group-2.

34. Jamal Shah – 3 (JS3)

Latitude 27º.06'.326" North Longitude 68º.41′.567" East. The site lies in the close vicinity of Lake Jamal Shah and it has other resources within desert as well. A huge variety of artifacts were collected that were manufactured from Rohri hills chert stone. The cultural material found belongs to Mesolithic Period in the form of thin surface scatter site. The cultural material includes scrapers and trapezes and all other associated cultural repertoire of Group-I.

Plate 5: Mesolithic repertoire from Jamal Shah-3

35. Jamal Shah – 6 (JS6)

Latitude 27º.06'.22" North Longitude 68º.41'.21" East. The site JS6 is located on top of sand dunes on which a track connects modern towns like Thari Mirwah of Indus Plains to Sorah of Nara plains. Site is some 800 meters south of the Lake Jamal Shah and east of modern village Ganero. The cultural assemblage from this site consists of retouch blades, isosceles trapezes and slightly concave scrapers.

36. Saneso Sim – 6

Latitude 27º.05'.07" North Longitude 68º.40'.25" East. The site 30 x 13 meters lies on the eastern side of Saneso Sim. The cultural material belongs to the Mesolithic Period in the form of thin surface scatter. All the associated material of Group I & II was encountered.

Plate 6: Mesolithic tools from Saneso Sim-6.

37. Saneso Sim – 9

Latitude 27º.04'.31" North Longitude 68º.40'.36" East. The site lies to the south shores of Saneso Sim towards the lake. The site measures 10 x 7 meters North-South, large enough to construct houses. The cultural material found belongs to Mesolithic Period, in the form of thin surface scatter. Few Mesolithic tools which includes scrapers, burins, trapezes were collected.

38. Saneso Sim – 13 (SS13/LS1)

Latitude 27º.04'.50" North Longitude 68º.40'.08" East. The site is located on the South-Western slope of sand dunes over looking Saneso Sim. A thin scatter of chert flakes was observed. The cultural repertoire includes trapeze, scrapers and retouched blades.

39. Pir Nango East – 5 (PNE5)

Latitude 27º.01'.02" North Longitude 68º.38'.06" East. The site is located along the southeastern side of Pir Nango. Site is located along same sequence of sand dunes in similar type of location and eco-system. This site does not differ from other sites in the disposition of cultural material. A thin scatter of chert flakes trapezes and blades was observed.

Group 3: Settlements

The locational patterns of sites as recognized in Groups-1 and 2, also occur in Group-3 Thirteen (13) sites used distinct object identified as "triangles" which distinguishes this group from other groups of sites. The range of artifacts found included scrapers, burins, trapezes, triangles and backed blades. The data on each settlement is provided.

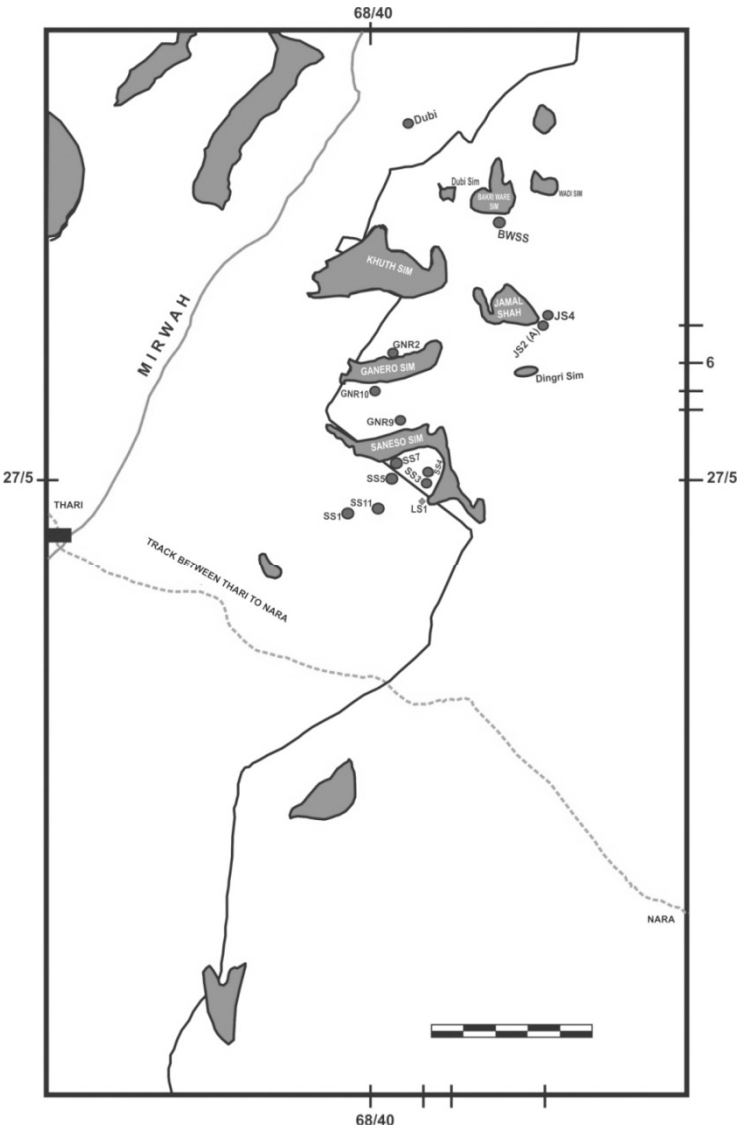


Fig. 5: Map showing the Mesolithic sites in Group-3

40. Dubi (DU)

Latitude 27º.07'.55" North Longitude 68º.40'.20" East. It is located to the west of Dubi lake The cultural materials collected

includes blades, cores, retouched blade, isosceles trapeze, straight borer, notched blades, scalene and triangles.

41. Bakri Waro South (BWS)

Latitude 27º.07'.64" North Longitude 68º.40'.86" East. This site is located to the south of Bakri Waro on a flat surface. Sparse vegetation exists and the cultural material is scattered approximately in an area of 50 x 20 meters. The site seems to be occupied repeatedly by the seasonal nomads. The main cultural materials associated with this site are the Hakra and Kot Diji wares. The Hakra pottery and cloth impressed sherds, short necked Kot Dijian pottery, terracotta cakes, terracotta bangles, hammer stones, chert flakes, heat treated micro blades, cores and broken blade including micro-flakes, trapeze, triangles and discoidal cores and many other (more than 22) small and large flakes were collected. Re-occupation in various periods indicates this being a favorite spot for Ancient inhabitants.

42. Jamal Shah – 2 (JS2)

Latitude 27º.06'.326" North Longitude 68º.41'.568" East. The site lies to the East of Lake Jamal Shah and very close to the shoreline. It has wide range of subsistence resources such as the Lake in the west and desert in the east. A large diversity of the cultural materials was found which belonged to Mesolithic Period. The artifactual repertoire of Mesolithic triangles, blades, botched flakes, single blow burins and large number of flakes.

Plate 7: Mesolithic tools from Jamal Shah-2

43. Jamal Shah – 4 (JS4)

Latitude 27º.05'.45" North Longitude 68º.41'.57" East. This site is located on the highest sand dune just to the east of JS2 site and JS4 site. The cultural material collected includes cores, micro burins, trapezes, triangles, truncated blades and backed points. Sub-conical cores with prepared platform, retouch, and narrow blades (obtained with abrupt and deep bipolar retouch), narrow blade with simple, deep, direct retouch and large micro burin have been recorded.

44. Ganero – 2 (GNR2)

Latitude 27º.06'.15" North Longitude 68º.40'.25" East. It is located at midway between village of Lakhmir Shar and Ganero villages and just close to lake shore. The flint assemblage consisting of cores, scalene triangles on micro bladelet, and backed points has been discovered.

45. Ganero – 9 (GNR9)

Latitude 27º.05'.36" North Longitude 68º.40'.30" East. The site is located just south of GNR8 on top of the dune facing towards the lakes Saneso Sim. The chipped stone assemblage from the site is very rich and consists of a variety of prismatic, discoidal and sub-conical bladelets like flakes detached crested blades, burins, isosceles trapezes, triangles, backed points and retouched blades. The flint assemblage of GNR9 is attributable to the late Mesolithic as indicated by the occurrence of trapezoidal arrowheads.

46. Ganero – 10 (GNR10)

Latitude 27º.05'.42" North Longitude 68º.40'.18" East. The site is located South-West of lake Ganero in close proximity to the lake shore which provides an opportunity of utilizing both the desert and lake subsistence resources. The cultural repertoire is borer a narrow bladelet, scalene triangle and retouched blades.

47. Saneso Sim – 1 (SS1)

Latitude 27º.04'.531" North Longitude 68º.38'.754" East. The site lies on the west of Saneso Sim in close proximity to lake shores for the purpose of using lake resources. At this site the cultural material found was in association with that of the Mesolithic Period in the form of thin surface scatter. The cultural repertoire is triangles, trapezes and backed blades.

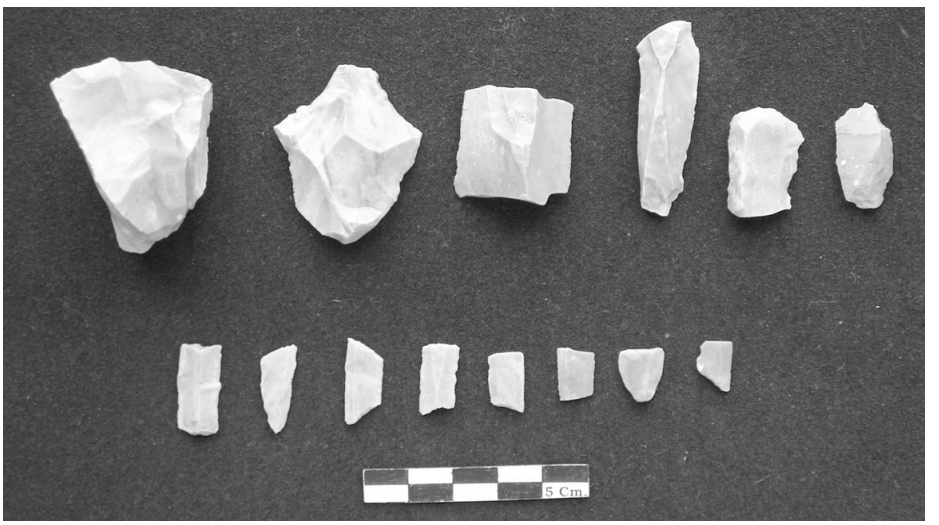


Plate 8: Mesolithic tools from Saneso Sim-1

48. Saneso Sim – 3 (SS3)

Latitude 27º.05'.114" North Longitude 68º.40'.30" East. The site lies on the southern edge of Saneso Sim. The cultural material found scattered belongs to the Mesolithic Period. The site is located in similar ecological zone as of other sites around Saneso Lake. The Cultural materials consist of triangles, trapezes and scrapers.

49. Saneso Sim – 5 (SS5)

Latitude 27º.04'.579" North Longitude 68º.40'.712" East. The site is situated to the south of Saneso Sim where the lake makes a turn. This and other lakes were filled with freshwater of the Indus River during flood season and thus become very attractive resource

of food for birds, fish, and animals. The diversity of cultural material consist of triangles, trapezes and retouched blades of the Mesolithic Period.

50. Saneso Sim – 7 (SS7)

Latitude 27º.05'.07" North Longitude 68º.40'.33" East. The site lies on the north of Saneso Sim. A variety of cultural items were gathered showing affinities to the Mesolithic Period in the form of backed blades, triangles, side scrapers, end scrapers, trapezes single and double blow burins and cores alongwith large numbers of flakes.

Plate 9: Mesolithic tools from Saneso Sim-7

51. Saneso Sim – 8 (SS8)

Latitude 27º.05'.07" North Longitude 68º.40'.25" East. The site was already recorded in 2000 and revisited in 2006. This site occupies an area on the north of Saneso Sim. The cultural material found belongs to the Mesolithic period in the form of trapezes, triangles, single blow burins, double blow burins, cores, backed blades, end scrapers, points, side scrapers, blades, truncated point and large number of flakes.

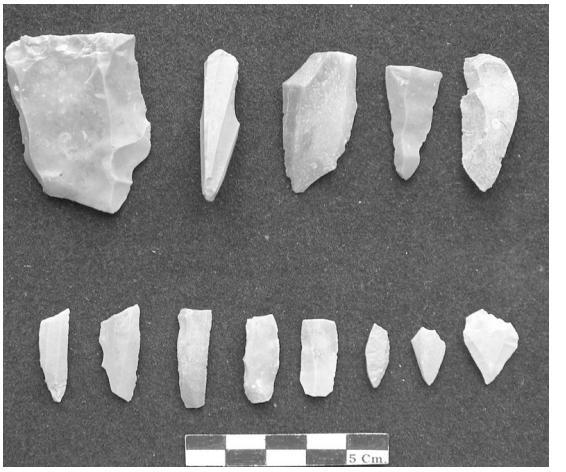


Plate 10: Mesolithic tools from Saneso Sim-8

52. Saneso Sim – 11 (SS11)

Latitude 27º.05'.57" North Longitude 68º.40'.55" East. The site occupies the western edge of Saneso Sim on flat top of sand dune. The cultural assemblage gathered for this site belongs to the Mesolithic Period in the form of points, broken cores, double blow burins, blades triangles, trapeze and large number of flakes.

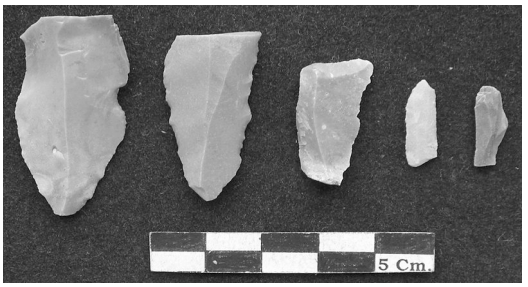


Plate 11: Mesolithic repertoire from Saneso Sim-11.

Group – 4: Settlements

The Group-4 sites contains tools of leaf shaped arrowheads, lunates and borers which were new category of objects. All the tools of other Groups-1, 2 and 3 continued, a total of nine sites are associated with this group which depicted the same cultural features as those on other groups.

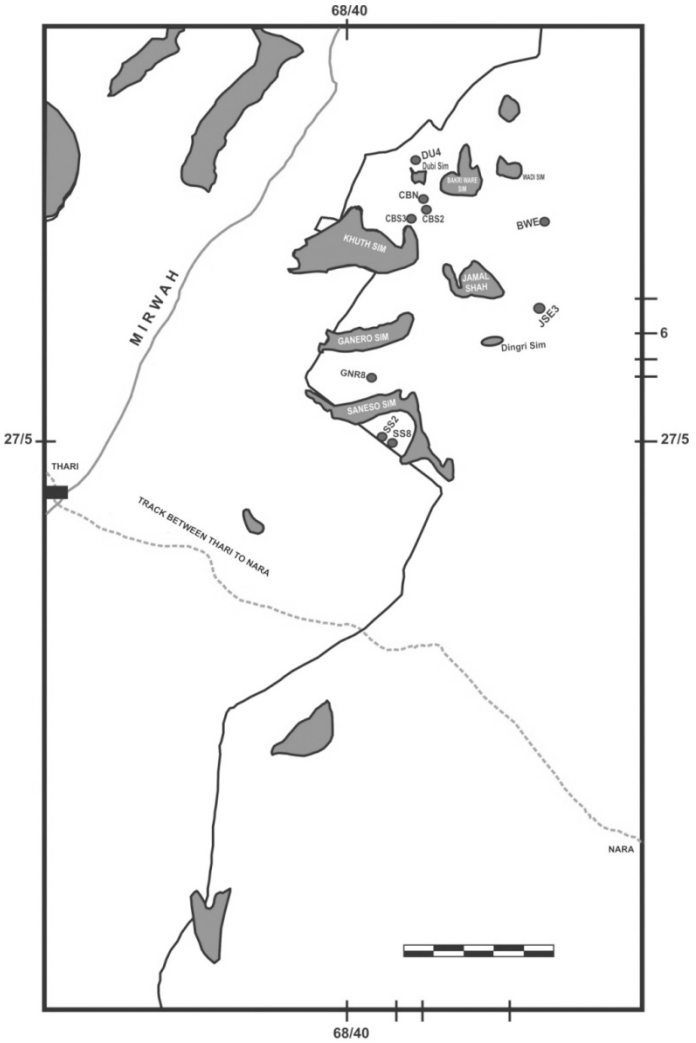


Fig. 6: Map showing the Mesolithic sites in Group-4

53. Dubi – 4 (DU4)

Latitude 27º.08'.34" North Longitude 68º.40'.48" East. The site is located on the eastern top of the sand dune, over looking the lake of Bakri Waro on the eastern side. The cultural material was spaced in good quantity and includes potsherds and micro flaking. Many flint pointed tools, Lunate, Trapezes, triangles, were collected pottery belonged to later period.

54. Char Baro North (CBN)

Latitude 27º.08'.04" North Longitude 68º.40'.42" East. The site lies at approximately 200 meters from the lake. Thick concentration of the micro flakes was observed and many pointed tools, cores & flakes Trapezes, Triangles, Lunates were colleted.

55. Char Baro South – 2 (CBS2)

Latitude 27º.07'.97" North Longitude 68º.40'.52" East. The site lies on the flat top of the sand dune where micro flaking and some pottery sherds were present. The presence of later period material indicated prolonged occupation. The cultural repertoire includes Trapezes, Triangles, Lunates were found

56. Char Baro South – 3 (CBS3)

Latitude 27º.07'.48" North Longitude 68º.40'.56" East. The site is located on the flat top of the sand dune where micro flaking Trapeze, Triangles, Lunates and Hakra pottery was present. It is approximately 200 meters from the actual shores of the lake.

57. Bakri Waro East (BWE)

Latitude 27º.07'.92" North Longitude 68º.41'.33" East. The site lies in a low lying area which slop towards south. It is actually south of Wadi Sim (Lake) and east of Bakri Waro – The toolkit includes Triangles and Lunates along with cultural repertoire of earlier mentioned Group I, II, III & IV.

58. Jamal Shah East – 3 (JSE3)

Latitude 27º.06'.87" North Longitude 68º.41'.58" East. The site is situated on the eastern shores of the Jamal Shah Lake at approximately 200 meters distance. This was perhaps a watch spot for hunt. Micro flaking activity was observed in sparse manner on the surface of dune. Mesolithic repertoire included tools of Group I, II, III and IV.

59. Ganero – 8 (GNR8)

Latitude 27º.05'.40" North Longitude 68º.40'.31" East. The site is located on a flat top of sand dune and close to the lake. It was reoccupied during the Kot Dijian period. It shows the impotence of site location through time. The flint assemblages of both the periods were recorded to examine variation of technique and size of artifacts. Side scraper, spherical hammer stone, long blade with abrupt, deep or regular retouching on one side were recorded. Trapeze, leaf shape tools, and burins were also found from the same place.

60. Saneso Sim – 2 (SS2)

Latitude 27º.05'.128" North Longitude 68º.40'.412" East. The site lies to the east of village Hekal and on the southern edge of Saneso Sim. Diversity of the cultural materials was found associated with the Mesolithic period. The cultural repertoire includes trapeze, Triangles and Lunates.

Plate 12: Mesolithic repertoire from Saneso Sim-2

61. Saneso Sim – 10 (SS10)

Latitude 27º.04'.39" North Longitude 68º.40'.36" East. The site is located on the south of Saneso Sim. The cultural material found belonged to the Mesolithic Period. It was in the form of thin surface scatter occupying an area of 26 x 15 meters in North-South directions. The artifactual evidence includes scrapers, triangles, points, lunates, single blow burins, blades and large number of flakes.

Plate 13: Mesolithic tools from Saneso Sim-10

Group – 5: Settlements

The last group of settlement observed was associated with 'tanged points' as a new item. However, all tools of other groups continued as well. Five sites belong to the tanged point category. This group of sites contains great diversity of artifacts indicating that they had knowledge about the tool making and availability of raw materials. The sites of Group-5 were frequently re-occupied through time. For instance, Dubi-5 (DU5) located at Latitude 27º.08'.23" North Longitude 68º.40'.41" East in this area was re-occupied several times. These sites also contained mixed materials namely Mesolithic, Hakra, Kot Dijian and the Indus period cultural materials. The presence of various periods indicates suitability and prosperity of the region. The details of Group-5 are furnished below.

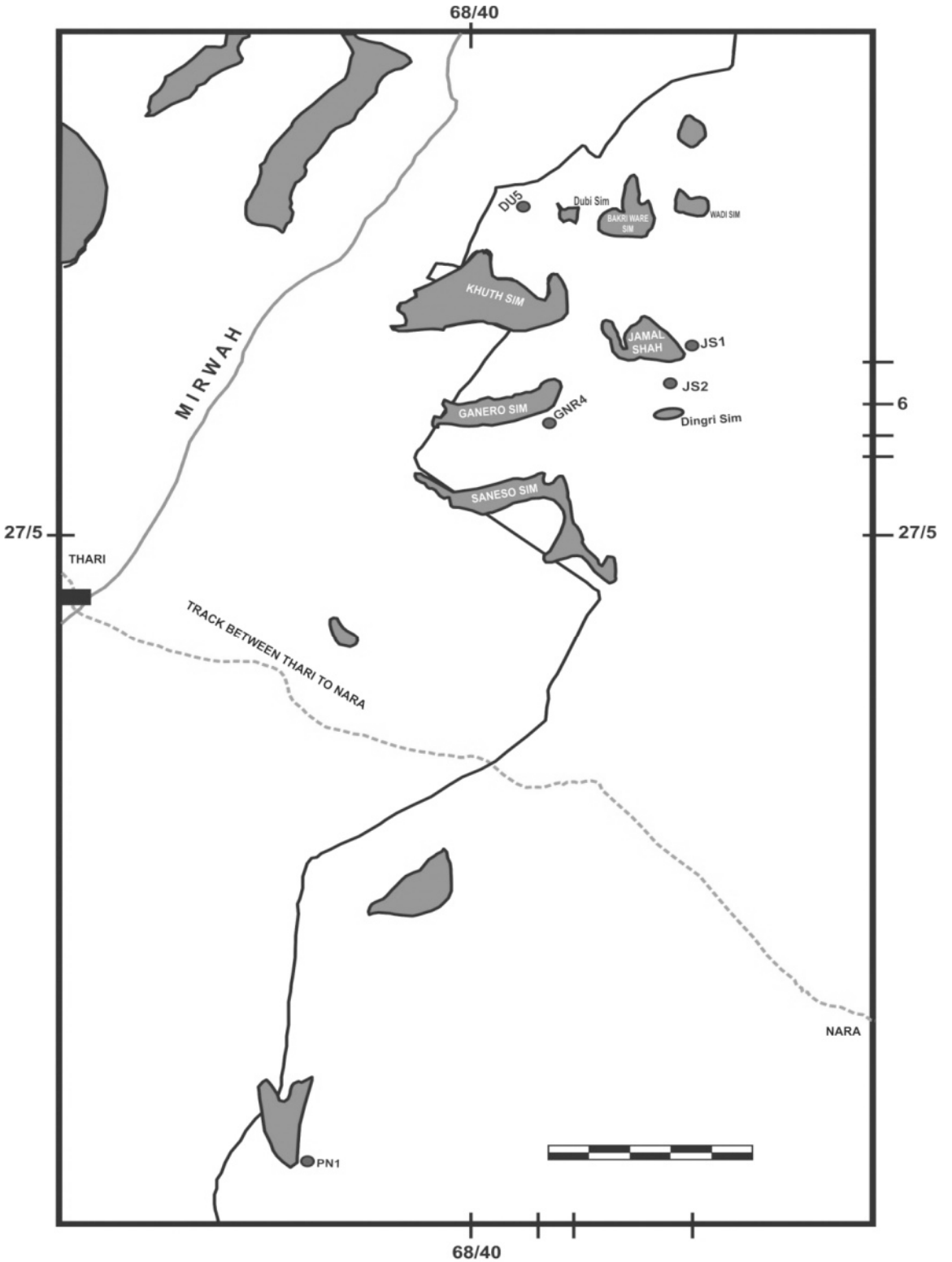


Fig. 7: Map showing the Mesolithic sites in Group-5

62. Dubi – 5 (DU5)

Latitude 27º.08'.23" North Longitude 68º.40'.41" East. At about 150 meters towards southwestern corner from the site DU4, many arrowheads were collected. These arrowheads were both complete and in broken condition. There were lots of micro flaking. Pottery was in good concentration at few sites while scanty at the other places. At about 30 meters to the east, a complete and perfect leaf shaped arrowhead was discovered. Similarly, towards southwestern corner at location of 27º.08'.23" North and 68º.40'.43" East degree, more pointed tools were collected which include a small limestone arrowhead. All these indicators suggest this place was a camp where these tools were manufactured.

Plate 14: Mesolithic tools from Dubi-5

63. Jamal Shah – 1 (JS1)

Latitude 27º.06'.00" North Longitude 68º.41'.55" East. The site is located at South-East corner of lake Jamal Shah at the north of lake there is a tomb of Pir Jamal Shah is located. This water of the lake is believed to cure skin allergy and the people flock to the tomb. The site was rich in Mesolithic tools like bladelets and flakes, cores such as prismatic or in sub-conical shape with plain, flat platform, crystal blades, backed micro burins, points with abrupt, direct retouch on one side. From the surface scatter two medial fragments of perfect parallel sided blades have been discovered. The flint assemblages from the site is attributable to the late Mesolithic Period on the basis of presence of trapezoidal geometric arrowheads, and other geometric tools, backed blades and micro burins.

64. Jamal Shah – 2 (JS2)

Latitude 27º.05'.42" North Longitude 68º.41'.55" East. The site is located on the flat surface of sand dunes that faces the south eastern shores of the lake. A large number of cultural materials have been discovered namely sub conical, prismatic cores, crested blades burins, elongated scalene triangles with complementary abrupt marginal retouched at the proximal edge, backed points, various types of bladelets backed retouched bladelets, retouched points with heavily worn proximal edges and abrupt, deep, lateral direct retouch and many side scrapers.

65. Ganero – 4 (GNR4)

Latitude 27º.05'.27" North Longitude 68º.40′.42" East. This site is located on the top of stabilized dune South-East of the lake. The cultural assemblage includes implements made of flint stone such as, cores, large number of isosceles, trapezes on bladelets, retouched, truncated scalene triangle with abrupt, deep direct retouch on one side, parallel sided blades bilateral retouch. One core pyramidal bladelet with flat platform and another core with flat platform, trapezoidal arrowheads on blade-let the site was recorded which would attribute the site the end of the Mesolithic Period (Baigi, Veesar 1995).

66. Pir Nango – 1 (PN1)

Latitude 27º.01'.30" North Longitude 68º.39'.05" East. The survey carried out along

the shores of Lake Pir Nango, reveled the site approximately 6.5 kilometers South-East of town of Thari. The site itself is on the top of a high dune where stone chipped artifacts have been found. The raw material for manufacturing of artifacts was apparently obtained from the outcrops of Rohri Hills. The chipping activity scattered over on 100 sq meters, was marked by retouch and un-touched artifacts some showing abrupt retouched, bipolar backed points, retouched crescents, backed blades one marginally retouched arrowhead of elongated and rhombic in shape, which indicates that hunting activity in this area in ancient times. Birds are hunted in this lake even today.

Discussion

The Mesolithic communities lived in different parts of India and Pakistan. For understanding and acquiring more information on this period some parts of the Rohri Hills and Thar Desert around the lakes/Sim (Salt Water Lakes) Bakri Waro Sim, Char Baro Sim, Wadi Sim, Jamal Shah Sim, Ganero Sim, Khuth Sim, Pir Nango Sim, Loonwari Sim and Sain Sim were surveyed. During present investigation within these units, data on 66 sites was collected. From these sites, a huge assortment of stone tools was collected including retouched blades, triangles, trapezes, arrowheads, lunates, trimmed points and cores of various sizes. When these tools associated with settlement were analyzed scientifically, it revealed five distinct groups of settlements. The documentation also provided information on settlement patterns, social behavior, and procurement of subsistence and quality raw materials.

Two types of the densities of artifacts were observed and taken as qualifier of (a) the type of a habitation and (b) an activity and /or the behavior; Archaeologically the fact is that heavier the density of objects, the longer the site was occupied and diverse types of tools / artifacts were present, suggesting complex behavior. The recognized Mesolithic five group of sites had commonality in occupational behavior which can be classified into two particular clusters (a) the areas of flat surfaces away from lakeshores having dense scatter of artifacts, some of which were reoccupied during later periods, and (b) areas very close to the lakeshores where only micro flaking activity was noticed. This specific setup of both type settlements is interconnected and denotes different purpose and activity. The first type sites might have been home base used for residential purposes where an assortment of stone tools was collected including retouched blades, truncated blades, triangles, trapezes, transverse arrowheads, lunates, trimmed points, and cores of various sizes. The geometric artifacts from the sites of Thar demonstrate immense morphological similarity with settlements of the Rajasthan named Bagor and Tilwara (Misra 1973, 1971; Allchins 1982, Agrawal 1982) and some sites from this part of Thar Desert (Biagi and Kazi 1995; Biagi and Sheikh 1998/99; Biagi and Veesar 1998/99). The different types of arrowhead/points like tanged points and bifacial or leaf shaped points are new additions to the artifactual collections. The sites of Bagor and Tilwara were excavated yielding evidences of a house and paved floors in round shape (Misra 1971, 1976: 96, 1977; Sankalia, 1974). This example suggests that the Mesolithic people of Thar were also living in circular huts entirely made of wood thatches. So far no evidence of stratified sites was found in Thar Desert.

The second type of settlements is located at the distance of 100 to 200 meters from lakeshores where only micro flaking activity was observed.

More clearly, at these sites, flaking debris, discarded cores and sometimes complete tools were recovered. Presumably, these sites may have been used as "game watch" "hunting locations" and while waiting for the hunt, they produced tools. The adjacent location of home bases and the hunting sites signify the scale of subsistence, procurement arrangement and work sharing strategies.

In Thar desert, the "game watch" and "hunting locations" are not very far from the home base and game ground. A group of 3 to 4 persons can collect a great deal from the rich bases like lakes. However, this also raises the question of wild animal behavior and hunt time and procedure of hunting. What types of animals could possibly be hunted with geometric tools. It requires micro-wear and trace element analysis of stone tools collected from the sites. Nevertheless, the evidence of wild deer, cattle and bull, goat and other animals is reported from Mehrgarh I period (Meadow1989: 64) that can survive in desert ecology but not in the vicinity where human being also move around regularly and frequently. Alternatively, if the Bagor and Tilwara sites of Rajasthan are taken as reference sites, then the presence of deer, jackal, pig, porcupine, lizard and mongoose and other desert fauna would be agreeable Mesolithic game list for the Thar Desert sites. The various types of small migratory birds can also be part of the list for which the micro-tools might have served the purpose of suitable hunting weapon which can give bountiful outcome. This successful utility is perhaps one of the reasons that geometric stone tool repertoire are found around the valleys and lake sites of Thar. The Mesolithic tools are in fact, light in weight and size but heavy in harvest, and useful in use. Thus these may have continued into subsequent periods when pottery also starts appearing like Hakra and other of later periods. The reoccupation of the same Mesolithic sites indicates the richness and sustainability of the ecological niches. A large number of wild plants foods are still in regular use today what are available in the study area throughout the year with seasonal variation, such as wild fruits. Fishing, hunting birds and small game is continuously practiced by local people even today. The survey in this area has infact given Upper Thar region an evidence of the continuous presence of people from Lower Palaeolithic to Mesolithic times and onwards and indicates richness of the area in pre-historic times.

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