



III.2. Rock Art

Editorial Note

[Distributed virtually all over the subcontinent except Bengal and the northeastern region, rock art has been known and studied for long. However, it has not yet been drawn into study of the main orbit of the subcontinent's cultural developments. This has figured more or less as the manifestations of a somewhat primitive mind in the so-called backwater parts of the land. The present essay tries to relate it to the subcontinent's overall scheme of cultural development, beginning with the Palaeolithic. From this point of view, this is a very important article. It also highlights the basic features of the data from different areas—from Ladakh to Kerala. The article is comprehensive in scope and one hopes that the overall structure which has been put forward here will go on being refined in time with further research. Meanwhile, it will remain a major statement on Indian rock art in the opening years of the twenty-first century.]

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INTRODUCTION

Rock art is a global phenomenon. It forms the archaic visual manifestations of hominins on rocks, which have survived the vagaries of time. Other archaic forms of human cultural activities, such as dance, music, songs, thoughts, ideas, language etc. could not survive. It means that rock art is one of the many aspects of human creativity and cultural activities which has survived and is available to us. Rock art is found in two forms—iconic and non-iconic, and has been created on rock surface either by additive technique (by applying pigment on rock, such as different kinds of rock paintings) or by reductive technique (by bringing out something from rock, such as different kinds of petroglyphs

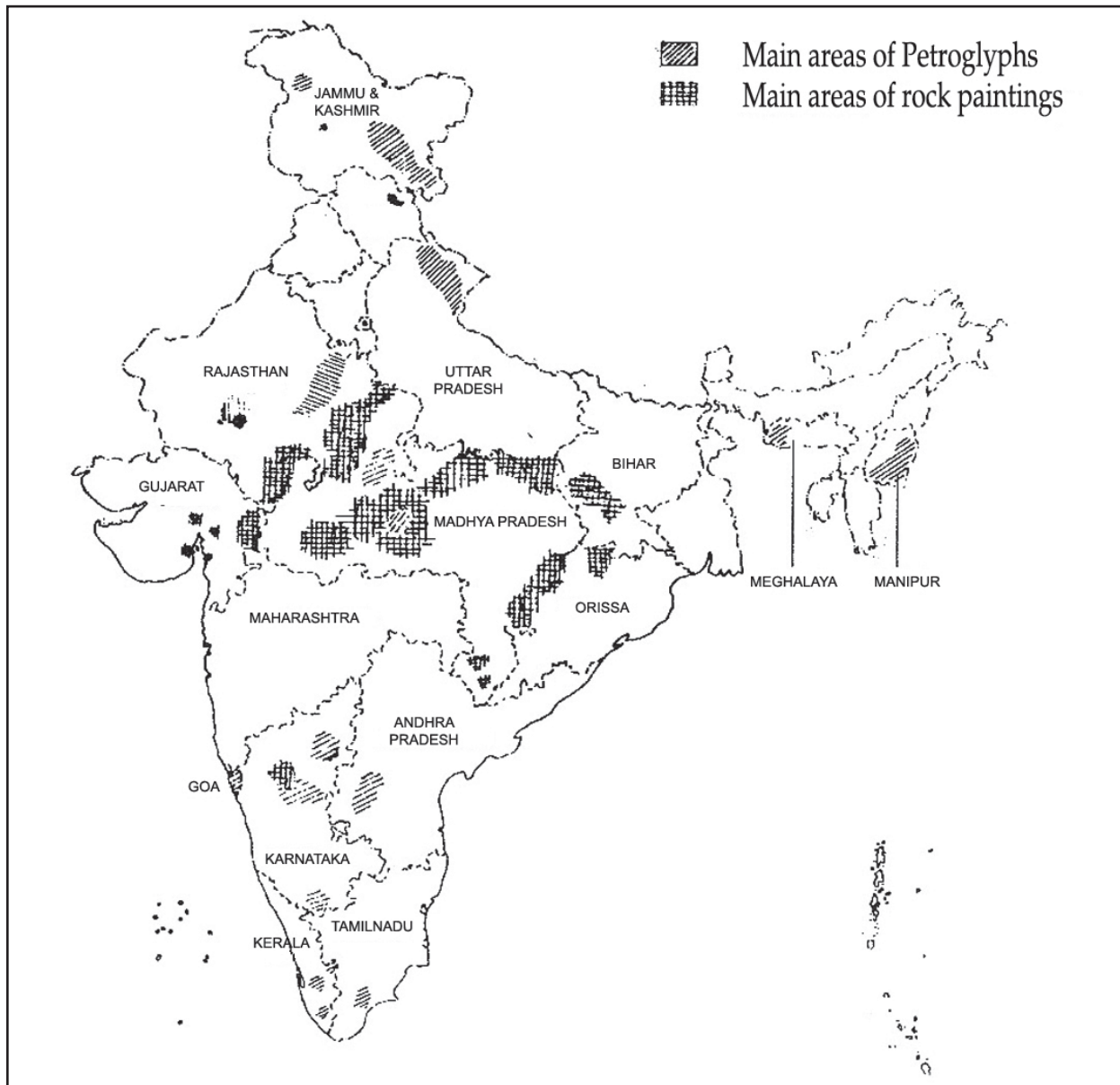


Fig. 1. Main regions of rock art in India.

executed by engraving, carving, pecking, scratching and bruising (abrasion) techniques.

India is one of the three countries having the richest treasures of rock art in the world, the other two being Australia and South Africa. Saudi Arabia and Brazil also appear to be very rich in rock art.

SETTING OF ROCK ART SITES

Rock art sites have been reported throughout India in different geological, geographical and climatic zones, particularly in the areas of sedimentary, metamorphosed and igneous rocks. The distribution extends from Ladakh in the Himalayas in the north to Kerala and Tamil



Fig. 2. Bhimbetka, rock art sites on hilltop.

Nadu in the south, and from Manipur in the east to Badmer in the Thar Desert in Rajasthan in the west. So far rock art sites have not been reported from the Deccan Trap areas, but one may be sure that an intensive exploration in these regions will definitely lead to discoveries in the form of petroglyphs.

Rock art sites and complexes are found generally on the plateaus and hill slopes and tops, in the valleys and gorges having rock-shelters, and caves and open rocks. These are located in the regions where nature unveils its serene beauty in the form of lush green forests full of vegetable food, wild fauna and plenty of natural resources including water. Rock painting sites are rich in the regions of rocks which have the capacity to withhold paints. Sandstone, quartzite, limestone and other forms of sedimentary rocks belong to this group. Igneous rocks being very hard and compact have comparatively less capacity to withhold

pigments, and that is why the chances of the survival of early rock paintings on igneous rocks are less as compared to the chances of the survival of petroglyphs. Further, rock art, particularly rock paintings, can survive for comparatively long time in the caves as in Europe where, because of their closed environment, the climate remains mostly constant, keeping the surface bearing rock paintings secure. The principle also applies partly to rock-shelters.

Because of the natural weathering of soft strata in sedimentary rocks such as sandstone and quartzite, boulders, rock-shelters and caves have been formed in areas which have sedimentary rocks. Walls of rock-shelters and caves and the open surface of boulders and plateau-beds were used as canvas for execution of rock art in different periods of human history. In rock-shelters, the roof also has been used for this purpose. Igneous rocks such as granite and



Fig. 3. Chaturbhujnath Nala; left side rock shelters.

dolerite weather in the form of boulders which get rounded by erosion. They are often seen in different states of roundedness. At Kishkindha in Karnataka, the hills on both the sides of the Tungabhadra are laden with granite boulders of different sizes, giving the impression that they have been deliberately arranged by some powerful agency. Such natural phenomena impart a spectacular character to the landscape and are a common feature in the granite and dolerite regions of the peninsular India, seen also in other parts of the country such as Rajasthan and Gujarat. Weathering of such boulders made the formation of rock-shelters of varying dimensions possible in them. Reshuffling of these boulders because of earthquakes or other movements of the earth

resulted in the formation of pseudo-caves such as the Edekal cave in Kerala. No one expected rock art in the lateritic formations of the Western Ghats, but Goa presents a unique example as here petroglyphs have been executed on a sloping bed of laterite. It is obvious as the western coasts are full of laterite deposits.

Understanding the setting, location and environment of a rock art site or complex is necessary in order to understand rock art properly and to appreciate the application of the taphonomic principle to judge its survival. Because of the location of a particular rock-shelter or a site and the importance of a particular surface, rock art has been created there one above the other for generations together. It has resulted in the superimpositions

of the figures and motifs, which may take the form of complex multilayered ones. In some cases of superimpositions the early figures have become very faint because of the effect of the climate and natural factors. Their decipherment becomes a tedious task and their photographs do not help. Therefore, one has to prepare its faithful copy at the site itself.

Thus, a rock art site unfolds its secrets slowly. Sometimes we have to visit the site again and again, and every time we would be surprised by new discoveries. One needs dedication and passion to explore, analyse and understand rock art.

HISTORY OF ROCK ART RESEARCH

The first discovery of rock paintings in India was made in 1867-68 by Archibald Carlleyle in a rock-shelter near Sohagi Ghat in Mirzapur district of Uttar Pradesh in the Vindhyan range. This was reported much later by Vincent Smith in 1906 (Smith 1906:185-95). The earliest discovery of rock carvings was made by F. Fawcett (1918:409-21) in Edakal cave in Kerala. C.W. Anderson (1918:298-306) discovered a painted rock-shelter at Singanpur in Raigarh district of Madhya Pradesh. On his last visit to the site in 1914, he persuaded Percy Brown, Principal of Calcutta Arts College and an authority on ancient Indian art, to accompany him. Percy Brown was the first art expert to include prehistoric rock art in the study of Indian art (Brown 1917:14-41). Rock paintings were first discovered by Hubert Knox in 1880s in Bellary district of Karnataka (Foote 1916:87-89). More paintings were found by F.R. Allchin (1963:161), A. Sundara (1974:21-32) and K. Paddayya (1968:294-98) in Bellary and Gulbarga districts. Manoranjan Ghosh discovered the painted rock-shelters of Adamgarh in 1932. He employed artists to make accurate copies of the

rock paintings of Mirzapur, Raigarh and Adamgarh groups of rock-shelters and published a monograph on them in 1932 (Ghosh 1932). The rock engravings in a rock-shelter at Vikramkhola in Sambalpur district of Orissa was discovered by K.P. Jayswal in 1933 (1933:58-60). Engravings on boulders were recorded from the bank of the Indus (King 1940:65-68) and on the Kupgallu hill near Bellary and Gotgiri Betta ridge near Bangalore (Gordon 1958:116).

The rock paintings of the Mahadev hills in the Satpuras were studied by G.R. Hunter (Hunter 1935). Between 1935 and 1950, D.H. Gordon published several articles on these paintings before publishing his book, *The Prehistoric Background of Indian Culture* (Gordon 1958). As he was dealing mostly with the historic period paintings in Mahadev hills, he put Indian rock art in the post-Stone Age, and thus did a great harm to the development of the scientific study of Indian rock art. A.H. Brodrick (1948) was perhaps the first to describe Indian rock paintings in world perspective. In the field of the explorations of new sites, V.S. Wakankar surpassed all his predecessors. Most of the rock art galleries of central India have come to light because of his untiring zeal and lone exploration trips. His Ph.D. thesis (1973) is the first catalogue of 150 rock art complexes in the subcontinent. Since 1955 nearly every issue of *Indian Archaeology—A Review* has carried the news of rock art discoveries. Bridget and Raymond Allchin (1968) have devoted an entire chapter to rock art in their book.

S.K. Pandey (1969), Jerome Jacobson (1970), G. Kumar (1983) and Vijay Singh (1987), while working on their doctorates, devoted some time to the study of rock art of their particular areas. A comprehensive study of rock art of India was published by Jagdish Gupta in Hindi (1967). In recent years, books of V.S. Wakankar and Robert

R.R. Brooks (1976), Lothar Wanke (1977), E. Neumayer (1988 and 1993), and the volumes edited by K.K. Chakravarty (1984), K.K. Chakravarty and Robert G. Bednarik (1998) have evoked the interest of scholars in Indian rock art. Shankar Tiwari carried out extensive exploration of the Betwa source region near Bhopal and made a photographic documentation of the rock paintings in the rock-shelter series that he named as 'S' belt.

Y. Mathpal (1984) published a book on the basis of his Ph.D thesis on the rock paintings of Bhimbetka. G. Kumar studied the rock art of the Chambal Valley and R. K. Pancholi that of the Bhanpura region. S.K. Pandey, J.D. Tripathi and Meenakshi Dubey did their Ph.D. thesis on the rock art of Sagar, Narsingharh and Pachmarhi regions respectively. Narayan Vyas did his D.Litt. thesis on the rock art of the Raisen area (Personal communication). The following publications are also important: Sundara 1974, 1994 on Karnataka, Tewari 1990 on Mirzapur, Mathpal 1995 on Kumayun, Mathpal 1998 on Kerala, Pradhan 2001 on Orissa and Chandramouli 2002 on Andhra Pradesh.

RECENT DEVELOPMENTS

Purakala, the Journal of Rock Art Society of India, which has been published regularly since 1990, is devoted solely to rock art research, nineteen volumes having been already been published. The publication of *Purakala* helped much to bring rock art studies in India on scientific track and at par with global development in rock art discipline. Another important development was a proposal on rock-shelters of Bhimbetka in two volumes prepared by the Archaeological Survey of India for submission in the UNESCO for nomination of the site as World Heritage in 2002-03. As a result the Bhimbetka group of rock-shelters was

declared World Heritage Site by the UNESCO on July 3, 2003. The Archaeological Survey of India also brought out a guidebook on Bhimbetka by S.B. Ota in 1990.

SCIENTIFIC INVESTIGATIONS

Archaeological excavations form one of the important aspects of the scientific study to establish the cultural chronology of the site, to understand the site formation process, to obtain cultural material including rock art from the cultural deposits and to obtain radiometric dates for the cultural strata exposed in the excavations. With these broad objectives, excavations have been carried out inside and outside the rock-shelters and caves from time to time. Since 1936, 43 sites have been excavated in India so far, out of which 32 are in central India, three each in Uttar Pradesh, Jharkhand and Tamil Nadu and one each in Orissa, Karnataka and Kerala. It indicates that central India has been the most preferred region for major scientific research in Indian rock art.

For scientific study of early Indian petroglyphs and for obtaining absolute dates for Indian rock art, Indian and Australian scientists have been working together on a major interdisciplinary project entitled *Early Indian Petroglyphs: Scientific Investigations and Dating by International Commission*. It is briefly called the EIP Project. It started in 2001 and is still continuing. It is a joint venture by the Rock Art Society of India and the Australian Rock Art Research Association and includes a team of scientists from both India and Australia. Giriraj Kumar and Robert G. Bednarik are the Indian and Australian Directors of the Project. It is supported by the Archaeological Survey of India, the Indian Council of Historical Research and the Australia-India Council, Canberra. Under this project, Daraki-Chattan, a palaeolithic cupule site

was excavated for five seasons from 2002 to 2006. Replication of cupules for scientific understanding of cupule creation has been going on near it. Among the many important rock art sites studied in India, Bhimbetka, Daraki-Chattan and Chaturbhujnath Nala in central India are of great significance

BHIMBETKA

V.S. Wakankar discovered a number of rock art sites (Wakankar 1978, 2005), the most famous among them being the site of Bhimbetka in Raisen district, 45 km southwest of Bhopal. Along with his students of Kala Bhavan, Ujjain, he carried out scientific numbering of rock-shelters, copied and studied rock art therein and did archaeological excavations on behalf of Vikram University, Ujjain from 1971 to 1977. V.N. Misra also carried out excavation and study of the site on behalf of Deccan College, Pune from 1972 to 1978. Scholars from other Universities both from India and abroad also participated in these studies from time to time. Among these scholars, mention may be made of Shyam Kumar Pandey from the University of Sagar, Erwin Neumayer from Austria, Robert R.R. Brooks from the USA and Susan Haas from the University of Basel, Switzerland.

In the Auditorium Cave, Bhimbetka (III F-24), Wakankar's excavations established the continuity of cultural succession from the chopper-chopping tool industry of the Lower Palaeolithic to the historic period. His results were corroborated up to Acheulian levels by the excavation of Misra in the adjoining rock-shelter III F-23. It made Bhimbetka, along with its rich rock art heritage, a unique prehistoric site of India. Wakankar is rightly regarded as the father of rock art studies in India. As a mark of recognition of his contributions to archaeology and rock art, the Government of India honoured

him with Padmashri in 1974 and the Government of Madhya Pradesh instituted Dr. V.S. Wakankar National Award for excellence in Archaeology in 2005.

The Archaeological Survey of India, Bhopal Circle, took a major initiative for the management of Bhimbetka including tourist impact assessment, forest fire management, mapping of village settlements in the buffer zone, and for establishing a permanent meteorological observatory and environmental laboratory. The project is also expected to carry out scientific investigations in the study of the nature of the rocks, micro-climate, flora and fauna, tangible and intangible heritage of the region, GIS and geological mapping, geo-scientific investigations, and demographic and ethnographic survey in collaboration with various agencies such as the Geological Survey of India, the Forest Department of the Government of Madhya Pradesh, and Indira Gandhi Rashtriya Manav Sangrahalaya of Bhopal (Ota 2005:83-88).

DARAKI-CHATTAN

Daraki-Chattan is a small, narrow and deep cave in the upper strata of quartzite buttresses of Indragarh Hill, which are broken into big blocks by vertical fracturing. With more than 500 cupules on its two vertical walls, it is an extraordinary palaeolithic cupule site in the Chambal basin in the Bhanpura-Gandhisagar region of the Mandsaur district of Madhya Pradesh (Kumar 1995, 2002).

Daraki-Chattan faces almost due west, with an entrance orientation at 10° NE and 190° SW. It overlooks a 1.5 km wide beautiful and fertile valley of the Betwa that is bounded on both the sides by Vindhyan escarpments. The valley is still a forest reserve that provided sanctuary to



Fig. 5. Early green dancers with their body twisted in 'S' form in the dynamic movement of dance. Below Boar's Rock, Bhonrawali Hill, Bhimbetka.

tigers and other wild fauna up to the 1960s and 1970s.

Daraki-Chattan Cave was discovered by Ramesh Kumar Pancholi in 1993 (Pancholi 1994:75) and was scientifically studied by Giriraj Kumar and his son Ram Krishna in 1995 (Kumar 1995). Since 2001, it has been studied under the EIP Project. Daraki-Chattan was excavated under the EIP Project from 2002 to 2006 under the direction of Giriraj Kumar. Narayan Vyas, the then Deputy Superintending Archaeologist in ASI, Bhopal Circle, was the official representative of the ASI and co-director of the excavations. A. Pradhan, P.K. Bhatt and R.K. Pancholi were the other members of the excavation team. Many scholars and scientists from India and abroad visited the site from time to time during 2002 to 2009. The area excavated from 2002 to 2006 is 33 square metres. The first tangible findings were presented at the RASI-IFRAO Congress in Agra at the end of November 2004 and were published in 2005 (Kumar et al. 2002, Kumar et al. 2005, Bednarik et al. 2005), but fieldwork and scientific investigations have continued, and will take several more years to complete (Kumar and Prajapati 2009, Krishna and Kumar 2010). In order

to make the results of the EIP Project easily accessible a project web-page was established by Robert G. Bednarik at <http://mc2.vicnet.net.au/home/eip1/web/index.html>.

CHATURBHUJNATH NALA

Another important site is Chaturbhujnath Nala in the Chambal Valley. It is the longest rock art gallery in the world (Kumar 2007a:21-134). It is located in the Gandhisagar game sanctuary near Bhanpura in Mandsaur district of Madhya Pradesh and was discovered by a group of three teachers, namely Ramesh Kumar Pancholi, Abid Choudhary and Satish Bhatnagar in 1977. Since its discovery it has been studied by Pancholi, Wakankar, E. Neumayer, Lothar Wanke and his team, Giriraj Kumar, J. Clottes and many other scholars. G. Kumar has been engaged in a thorough study of its rock art since 2006. Kumar has documented the rock art of Chaturbhujnath Nala and published it along with an analytical study in *Purakala* (Kumar 2007a:21-134, Kumar and Pradhan 2008:23-52). The rock art of Chaturbhujnath Nala presents a distinct picture of the transition from hunting-food-gathering mode of life to cattle domestication, which started with humpless cattle (bull) in mid-Holocene period (Kumar 1983, Kumar 2007a:21-134, Kumar and Pradhan 2008:23-52).

ANTIQUITY OF INDIAN ROCK ART

Bhimbetka in the Vindhyan Hills and Daraki-Chattan in the Chambal River basin have yielded petroglyphs in the form of cupules and linear lines from Lower Palaeolithic strata in archaeological excavations. These are so far the oldest rock art in the world, three to ten times much older than that of the cave paintings of Europe (Kumar et al. 2005, Kumar 2006, Bednarik et al. 2005). The Indian tradition of Lower Palaeolithic petroglyphs shows a trend

of global pattern (for details please see the progress report of the EIP Project 2005, Kumar et al. 2005, Bednarik et al. 2005). The tradition of petroglyphs continues through the upper Pleistocene to the Holocene period throughout the world.

The core of rock paintings of India in general belongs to the Holocene period or is even earlier than it and was produced by people using microliths. Wakankar closely observed the effect of the dry phase in late late-Pleistocene and the occurrence of the non-geometrical form of Upper Palaeolithic microliths. On this basis he considers that in the Bhimbetka and the adjoining regions in central India, some of the early rock paintings of typical green dancers with their body twisted in 'S' shape in the dynamic movement of dance, may be late late-Pleistocene (Wakankar 1978). But most of the scholars want to be safe and consider the beginning of iconic art in India with Mesolithic culture in the Holocene period. The tradition of rock art continues up to the Historic period.

We have to bear in mind that the antiquity and existence of rock art are directly related to the element of its survival. The chances of its survival become less and less as we go back in time, but it cannot be zero at any point. It is

known as the taphonomic principle of rock art. The chances of survival of the rock art also depend on environmental conditions, the nature of the rock and the technique of its creation. Hence, the chances of the survival of rock paintings in the closed environment of caves, as in Europe, are much more as compared to the open environment of rock-shelters. Wherever the surface remains open to rain water, temperature fluctuations and other climatic factors, petroglyphs can survive for longer period than rock paintings. At such places, the available rock paintings are comparatively very young. Hence, it is obvious that on hard rocks the chances of survival of petroglyphs are more than the corresponding chances of the survival of rock paintings. That is why generally, almost all the early archaic rock art is in the form of petroglyphs.

DATING OF INDIAN ROCK ART

Absolute dating of rock art is important for scientific study, but it is a very complex process. AMS ¹⁴C dating is the most popular method for dating in archaeology and sometimes for rock paintings also. It needs only a few milligrams of carbon coming from the organic matter in the pigment, but datable carbon is difficult to derive from the pigments of Indian rock paintings.

Table 1.

Sample Id.	Description	Lab. Number	δ13C ‰	AMS ¹⁴ C age
HAT - white	Hathihol	OZG370	?	4810 ± 370
J52B - white	Bhimbetka	OZG368	?	1720 ± 310
AS122 - white	Bhimbetka	OZG369	?	5190 ± 310
AS144 - white	Bhimbetka	OZG814	-5 assumed	1100 ± 60

The AMS ¹⁴C age determinations on the pigment samples of rock paintings from Bhimbetka and Raisen by Alan Watchman.

Red paint from the hind leg of the same animal from Hathitol produced an age of 2780 ± 40 years BP ($\delta^{13}\text{C} = -15.3$ per mil). Most of the dates mentioned here are from younger paintings in white which have datable carbon, hence these are young dates for them. (For more details of the direct dating of early petroglyphs by Microerosion method, OSL method and AMS ^{14}C method by the Indo-Australian team of scientists, please see Bednarik et al. 2005 and Kumar et al. 2005, Kumar 2006 and Kumar and Bednarik 2010)

However, OSL dating of the sediments in Misra's trench provides a date 45 ± 8 Ka to the late phase of the Middle Palaeolithic culture at Bhimbetka and 106 ± 20 Ka to upper Acheulian. The younger date 94 ± 11 Ka for mid-Acheulian cannot be accepted as it comes for the sample collected from much lower level.

The cupules on the Chief's Rock in the Auditorium Cave at Bhimbetka were dated by Microerosion dating method by Bednarik. In this method the ages of fractures on crystals caused at the time of the production of petroglyphs are attempted. One of the nine cupules on the Rock, cupule No.5, weathered up to the core, was determined to be beyond the effective range of the method, which is thought to be in the order of 50 Ka under conditions of full exposure to precipitation. However, as the quartzite site occurs in a partially sheltered cave location, this would imply an antiquity considerably greater than this figure. Microerosion dates were also obtained for cupules at Morajhari and Moda Bhata in Rajasthan which are in the order of 10000 to 5000 yrs BP.

We have to keep it in mind that this method gives a minimum age for a petroglyph under study because it shows the date when it was worked the last time. A petroglyph can be

reworked multiple times after its creation. It means the actual age may be much older than what is obtained by the microerosion method.

OSL dating of upper sediments yielding upper Acheulian at Daraki-Chattan is very young and cannot be taken into consideration. It is because of the continuous leaching of the older fine sediments by rainwater and the fact being replaced by the younger ones. Similarly, the process of deposition and erosion of the encrustations and also the process of exfoliation of the wall-surface have been going on throughout the history of the cave and cupules on its walls. Hence, the present available encrustations are not the original ones, but recently deposited ones and that too on the scars of recently exfoliated wall-surface. That is why one gets younger AMS ^{14}C dates for them. Both OSL and AMS ^{14}C dating methods are thus not suitable for dating of the petroglyphs at Daraki-Chattan.

After a lot of discussion we decided to use alternative methods, hence we invited Sunil Kumar Singh, Head, Geo-Chemistry Lab., Physical Research Laboratory, Ahmedabad in February, 2009. He collected iron mineral precipitation samples deposited on the engravings on a boulder, which was obtained from layer 3 in the excavation at Daraki-Chattan, for U-Th analysis and dating. The results are still awaited. We will also explore the possibility of using $^{26}\text{Al}/^{10}\text{Be}$ dating of the artefacts.

These are the preliminary results of age determination of Indian rock art obtained through the EIP Project. The details have been published elsewhere (Kumar et al. 2005, Kumar 2006, Bednarik et al. 2005) explaining the complexities involved in analysing a sample for age determination of rock art in India. It is

because of this that the efforts made earlier by Indo-French scholars were not successful (Kumar and Bednarik 2010). Further, we have to be clear in our mind that the laboratories can give an age in terms of figures for a sample, but not the actual cultural age for it. It is to be used cautiously after proper considerations. It is not that we submit a sample to the laboratory and get the absolute cultural age for it (Kumar and Bednarik 2010).

CHRONOLOGICAL CLASSIFICATION OF ROCK ART

Previously, scholars classified Indian rock art on the basis of archaeological evidence obtained from exploration and excavations of rock-shelters, comparison of animal drawings in rock art with those on the Chalcolithic pottery, superimpositions and stylistic developments, the mode of the depicted human life and wild and domestic fauna. On that basis Indian rock was classified broadly into Mesolithic, Chalcolithic and Historic periods. Wakankar was of the opinion that the earliest dynamic dancers executed in 'S' twist style in green colour (Fig. 5) and the figures of *Bos* in natural outlines, which were shown being hunted, belong to the Upper Palaeolithic (Wakankar 1978, 2008). Neumayer also thinks so, but wants to be safe and puts them in the early Mesolithic (Neumayer 1983:11).

CRITICISM

This chronological classification is valid for most of the Indian rock art but has invited criticism from scholars like Shankar Tiwari (1984:228-240), K.K. Chakravarty, Robert G. Bednarik (1997: 21-94) and G. Kumar (2001-02:5-36) on the following grounds:

1. Individual styles can continue and hence cannot be used as reliable chronological denominators.

2. It classifies rock art into watertight compartments and does not recognise cultural overlaps which are so obvious in the Indian case.
3. It does not consider the existence of rock art prior to the Mesolithic or Upper Palaeolithic periods.

FRESH ATTEMPT

In the light of the above discussion and criticisms, I made a fresh attempt for the chronological classification of Indian rock art (2000-01:5-36) and improved it in the light of the latest developments in India and in the world (Kumar et al. 2005, Bednarik et al. 2005: 147-97 and 2009). It involves three approaches simultaneously.

1. Classification of rock art on the basis of evolutionary traits visible in the development of forms, motifs, styles, inventions, technology, fauna, and human cognitive and creative abilities.
2. Periodisation on the basis of internal evidence from the rock art and rock art sites, and the external evidence provided by other scientific disciplines.
3. Establishing antiquity of the rock art by indirect dating methods, and direct dating methods (as per their availability).

Based on the above three approaches the Indian rock art has been classified into two broad groups:

1. Pre-cattle domestication hunting-food-gathering mode of life and thought processes. Palaeolithic and Mesolithic. Pleistocene and early Holocene Periods.
2. Cattle domestication, semi-nomadic-pastoral and incipient agriculture mode of life and thought processes. Transitional phase from Mesolithic to Neolithic,

Neolithic, Chalcolithic and Iron Age.
Holocene Period.

Each broad group has some phases with distinct evolutionary markings (signatures) and represent different evolutionary stages in the chronological development of Indian rock art. In most of the cases these triggered further developments. They may continue in the succeeding phases or give way to some other newly emerging powerful traits.

But, as a whole, Indian rock art depicts a cohesive and homogeneous evolution throughout the country. There are, of course, regional variations, and it is also a fact that it occurred at somewhat different times in different parts of the country.

Thus, in this process of evolution in such a large country as India, it is but natural that the traits of the preceding and succeeding phases are sometimes found coexisting with each other, particularly in the transitional phases. Sometimes it is also possible that some of the traits present at some places are absent at others (as in Ladakh in the Himalayas and in the peninsular India), or some new traits may be brought into light by future research, which can further subdivide the different evolutionary stages.

CLASSIFICATION OF ROCK ART

- I. Pre-cattle domestication, hunting-food-gathering mode of life and thought processes. Palaeolithic in Pleistocene period and Mesolithic in early Holocene period.

PALAEOLITHIC ROCK ART: NON-ICONIC

1. Non-iconic pre-pattern, pre-design stage, cupules and linear petroglyphs. Auditorium Cave, Bhimbetka and Daraki-Chattan. Early Acheulian.

2. Appearance of pseudo-patterns of cupules. Daraki- Chattan. Early Acheulian, Acheulian.

3. Appearance of linear pattern of cupules. Cupule sites from Bhanpura plateau.

Tentatively transition phase- Acheulian-Middle Palaeolithic, Middle Palaeolithic.

4. Appearance of simple motifs and design. Petroglyphs from Raisen, Chattaneshwar, designs on ostrich eggshells and fluted core from Chandravati, intricate designs from Bhimbetka and the surrounding area. Tentatively transition phase- Middle Palaeolithic-Upper Palaeolithic, Upper Palaeolithic-1

PALAEOLITHIC ROCK ART: ICONIC

Appearance of simple forms of humans, spears, stringless bow, other implements, wild bovids, hunting and dancing activities, etc. Bhimbetka and surrounding area. Upper Palaeolithic-2.

MESOLITHIC ROCK ART

Exuberance of human creativity and activities depicted in a variety of forms and styles. Hunting-gathering mode of life and thought processes, different forms of bows, arrows, spears, other implements and devices, different techniques, wild fauna, etc. Profuse and multiple use of microlith-tipped implements. Many styles.

CENTRAL INDIA: THE HEARTLAND OF INDIAN ROCK ART

Out of the regions explored so far in the country, central India forms the heartland of rock art. Rock art of central India has become the synonym for Indian rock art because of its great antiquity, different forms, styles, varied themes, quality of lines, rhythm, force, and vigour and powerful



Fig. 5. Cupules on southern wall of the Daraki-Chattan cave.

visual effects. These traits altogether present different evolutionary stages and also spread the flavour of regional character in different regions. Though we can also see regional features in rock art of other parts of the country, the basic character of evolution and development remains the same.

PALAEOLITHIC NON-ICONIC ROCK ART IN CENTRAL INDIA

Cupules are generally found in circular forms and sometimes in oval, elongated and conical forms also. Several cupule sites have been discovered in India since 1990 (Sharma et al. 1992, Bednarik 1993a, Pancholi 1994, Kumar and Sharma 1995, Kumar 1996, 1998, 2005, Kumar and Bednarik 2002). They present different evolutionary stages of Palaeolithic art in India. Out of these, Auditorium Cave Bhimbetka and Daraki-Chattan have been excavated and studied thoroughly.

PETROGLYPHS IN AUDITORIUM CAVE

Evidence for one of the oldest rock art sites of the world comes from Bhimbetka. Here in Wakankar's trench in Auditorium Cave III F-24, excavated in

1972, Robert G. Bednarik observed a man-made big, deep cup mark and an engraved meandering line above it on a boulder in 1990. It was covered by the upper Acheulian stratum that was sealed by a more compact Middle Palaeolithic deposit; hence, there is no chance of later disturbance (Bednarik 1993a:32). The cupules are the oldest surviving rock art known in the world. The oldest cupules found so far in the Americas, Africa, Australia, Canada and Europe stretch up to the Mousterian at La Ferrassie in France and to about 50, 000 yrs. BP in Australia. The cupule found at Bhimbetka in Wakankar's trench appears to be much older, because the Indian Acheulian has been shown, through the Thorium-Uranium dating method, to be generally beyond the limit of that method, which is around 350,000 BP (S. Mishra 1994:63; Chakravarty and Bednarik 1997:59). These dates have been pushed back further to 670,000 BP by $^{39}\text{Ar}/^{40}\text{Ar}$ dating of Bori tephra (Misra et al. 1995), >1.2 myr by ESR date from Isampur (Paddayya et al. 2002) and to 1.51+07 Ma by $^{26}\text{Al}/^{10}\text{Be}$ dating of the artefacts at Attirampakkam in Tamil Nadu (Pappu et al. 2011: 1596-1599).

PETROGLYPHS IN DARAKI-CHATTAN

Daraki-Chattan with more than 500 cupules on both of its vertical walls is an extraordinary Palaeolithic Cupule site in the Chambal basin in the Bhanpura-Gandhisagar region. Cupules in the Daraki-Chattan cave are circular, oval, elliptical and triangular (Fig. 7). In terms of depth, they are broad dish-shaped, deep bowl-shaped, circular with conical depth, oval or elongated with oblique and conical-receding depth, triangular with triangular depth. The biggest cupule on the northern wall measures 54.65 x 51.00 x 16.35 mm and the smallest one 30.30 x 38.60 x 6.00 mm. On the southern wall, the dimensions of the biggest and the smallest

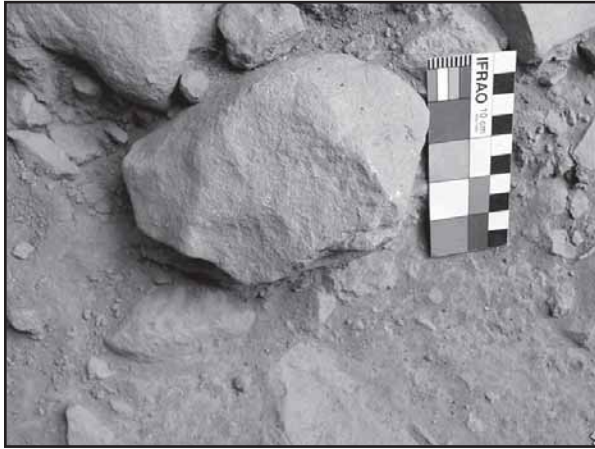


Fig. 6. A big chopper *in situ* in layer 5. Daraki-Chattan.

cupules are 55.80 x 64.00 x 15.00 mm and 17.00 x 16.00 x 1.40 mm respectively. Cupules in Daraki-Chattan are patinated and do not show any definite pattern, but pseudo-patterns can be observed in them (Kumar 1995). It is interesting to observe the effect of climate, temperature fluctuations, and the process of exfoliation especially in the front half of the cave. Hence, because of these factors, a large portion in the first half of the southern wall and a portion in the front of the northern wall bear deep exfoliation scars and are devoid of cupules. Some cupules in these parts of the cave are in a different state of weathering, which has not only reduced their size but in some cases has even altered their shape. This process has been going on throughout the life-history of the cupules and even prior to their creation. Similarly, some portions of the cave walls and cupules on them have been regularly washed by percolating rainwater every year. The salt carried with sweeping water dries up and gets hard in the long drier phase of the year. It has been going on for years. Such encrusted salt layers get peeled off by the play of water or entirely removed with the exfoliating surface of the wall.

The cave walls have witnessed many such cycles of deposition and exfoliation of encrustation of the salt on them. Observation and understandings of the taphonomic phenomenon are necessary before any conclusion is made from the scientific analyses.

REPLICATION OF CUPULES

In order to understand the process of cupule creation, Giriraj Kumar and Ram Krishna (Prajapati) carried out experiments to replicate cupules on the hard quartzite experimental rock in the southern side of Daraki-Chattan (Kumar 2007b, Kumar and Prajapati 2009). They observed that it needs nearly 30 000 strokes with concentration and dedication for two days to create a small cupule. It indicates that cupule creation is not a play work. In Daraki-Chattan cupule creation must have been a serious task deeply related with life (Kumar and Prajapati 2009, Krishna and Kumar 2010b).

ENGRAVED GROOVES ON A BOULDER

In the excavations of Daraki-Chattan, a big boulder was found bearing two engraved lines. It was lying in the lower part of layer 3 (Kumar et al. 2005). The longest one is 293 mm long and almost straight. Its width ranges from 14 mm to 21 mm, but in general it is very consistent at an average width of 19 mm. The groove section is U-shaped. Its average depth seems to range up to about 4.5 mm at rises, and was close to 2.0 mm in the depressions. Robert G. Bednarik observed that it had been produced by the abrasive process. Execution of a groove by abrasion requires great patience and very long hours of work with concentration. Abrading an almost straight groove of more than 293 mm length requires steady movement of the hand(s) with sufficient pressure (Bednarik et al. 2005).

OBSERVATIONS AND THE RESULTS OF THE STUDY

The excavations at Daraki-Chattan in particular and the EIP Project (Kumar 2000/01; Kumar et al. 2002; Kumar et al. 2005, Bednarik et al. 2005) in general are endeavouring to secure the first data of the Lower and Middle Palaeolithic petroglyphs. The preliminary report of the excavations at Daraki-Chattan provides the unambiguous evidence of petroglyphs, mostly cupules, from archaeological occupation strata of Lower Palaeolithic Age. It endorses the similar evidence from the Auditorium Cave at Bhimbetka. At Daraki-Chattan, the petroglyphs recovered from the excavations consist of a total of 28 cupules exfoliated from the cave wall, and two linear grooves. Besides, ten hammer stones used for producing cupules were also discovered. The lack of cupules on exfoliation scars on the cave walls implies that the remaining wall cupules are of ages similar to those in the excavation. The actual age of the cupules must have been much older than that of their archaeological- stratigraphic age, as they must have been exfoliated much later after their production on the cave wall. The same relationship has been suggested for the cupules above the ground in the Auditorium Cave.

NON-ICONIC MOBILIARY OBJECTS

Besides petroglyphs, some mobiliary objects having visual qualities and intentionally created shapes have been discovered from Acheulian levels.

QUARTZ CRYSTALS FROM SINGI TALAV

At Singi Talav near Didwana in Rajasthan, from the base of the Lower Acheulian deposit, six small quartz crystals have been discovered (d'Errico et al. 1989). They measure from 7 to 25 mm in length, and are too small to have been used as tools, and are almost entirely

unmodified. But they were carried into the site, perhaps for their visual qualities and geometrical forms. Refitting them was impossible, and they differ so much in mineralogical purity that they are not assumed to have come from the same geode. It suggests the collector hominin's ability to discriminate the geometrical and attractive forms from other ones.

HAEMATITE NODULE FROM HUNSGI

A further evidence of Acheulian art activity in India has been found at Hunsgi in Karnataka. Here a faceted haematite nodule has been found with straight and distinctive striation marks. It suggests that it has been used as a crayon to colour or mark a rock surface (Bednarik 1990). It has been discovered from Acheulian locality V in the excavations (Paddayya 1982). Such iron pigments have been reported from different parts of the world. The red ochre pigments, going back to 800,000 to 900,000 years, occur along with quartz crystals and coloured river pebbles in the early Acheulian Wonderwork Cave site in South Africa (Bednarik 1993a: 61).

CIRCULAR DISCS

The circular form is one of the universal forms. It was conceived and created in the form of circular discs by hominins of Acheulian cultures. A beautiful disc on chalcedony was discovered from breccia in BHIM III F-24 (the Auditorium Cave) TR I from Acheulian level by V.S. Wakankar (1975:14). The use of chalcedony, agate and chert was already started by Acheulian people, but was not so popular at that time. A colourful chert scraper was also found from Acheulian levels in III F-23 (Wakankar 1975: 14).

A very symmetrically shaped disc on quartzite was among the most interesting discoveries of the Acheulian culture from the

Index Trench at Maihar in Satna district, Madhya Pradesh. It has been made with alternative flaking on its periphery. This non-utilitarian stone object is one of the rare evidence of art-like activity of the Acheulian culture in India (Pal 2005: 73).

The foregoing data indicate that Lower Palaeolithic hominins possessed considerable cognitive abilities, creative urge and suitable skills to appreciate the visual qualities and geometrical forms of crystals, designing and shaping a circular disc and creating cupules and engraving a meandering line by pecking and almost straight line by abrasion technique on the very hard quartzite rocks. The most difficult thing is the creation of deep cupules with small diameter. It requires intelligent planning, proper selection of hammer stones, great concentration, patience, endurance and the use of a proper technique. Similarly, engraving an almost straight groove of more than 293 mm length by abrasion requires steady movement of the hand(s) with pressure. It also needs great patience and very long hours of work with great concentration.

These achievements indicate that the Lower Palaeolithic hominins were intelligent and creative enough to produce such features, and that a modern form of human cognition and symbolism might have developed during the reign of either *Homo erectus* or archaic *Homo sapiens*.

GLOBAL SIGNIFICANCE

The evidence of Lower Palaeolithic petroglyphs from the Auditorium Cave and Daraki-Chattan shattered the concept of the Euro-centric origin of art and culture in Upper Palaeolithic period. It strongly supported the view that rock art is a global phenomenon and that non-iconic rock art precedes the iconic art in Pleistocene period. Robert G. Bednarik in his paper on “The origin

of ‘Modern Humans’ and Palaeoart reconsidered” (2008) has presented the long-known early evidences of art-like productions preceding the Upper Palaeolithic by hundreds of millennia.

We have long known about many Acheulian stone beads from Bedford, England, and recently learned about a proto-sculpture of the Middle Acheulian from Tan-Tan, southern Morocco. The latter is a naturally shaped quartzite enhanced with artificial grooves and haematite paint, visible in the form of microscopic traces of haematite coating. Even the example of the currently thought to be the earliest non-figurative art on a shoulder blade is one of the three engravings from Oldisleben, Germany, which belong to the Micoquian, and there are numerous other examples of palaeoart preceding the Aurignacian of Europe (Bednarik 2009).

We have many Middle Palaeolithic rock art motifs, mostly from Australia (cf. Foley and Lahr 1997) and at least one example of 18 cupules on the underside of a large limestone slab placed on top of La Ferrassie burial No. 6, the grave of a Neanderthal infant (Peyrony 1934) in France. In other continents, pre-Upper Palaeolithic rock art and portable palaeoart are much more common (Bednarik 1992a, 1993b, 1994a, 2001a, 2002a, 2003). But the incidence of Lower Palaeolithic cases remains very rare, and the confirmed cases of it are limited to India.

ADVANCED CUPULE PATTERNS AND OTHER PETROGLYPHS INDRAGARH CUPULE SITES

Nineteen cupules have been discovered on the bedrock of the hill on the way and close to the Mataji temple near Daraki-Chattan at Indragarh. They are arranged in two lines of 10 and 9 cupules. Thus, they present a bi-linear pattern. Their diameter varies from 34 mm to 44 mm, and depth from 3.5 to 6.6 mm. Two pairs of cupules

on the right end are shallow. Their size, shape, technique of execution and patination indicate the continuity of the practice of making cupules at Daraki-Chattan (Kumar 2000-01:5-36).

Besides, twelve more early cupule sites have been discovered on Indragarh and Chanchalamata hills (Kumar et al. 2006: 13-34). These present mostly random and sometimes bi-linear distribution pattern of cupules.

It was followed by a multiple linear pattern of cupules on the bedrock close to Daraki-Chattan on the Indragarh Hill and on the way to Chanchala Mata temple at Indragarh. Multiple linear pattern of cupules has also been discovered on the bedrock of a rock-shelter and that of the river close to it at Kanyadeh. The dimensions and the style of the execution of cupules on the Indragarh hill and near Chanchala Mata temple put them in the evolutionary line of the previous two sites at Indragarh, but that at Kanyadeh represents a different tradition. They are comparatively very much small in dimension (13 x 13 x 1.7 mm to 20 x 18 x 2.0 mm) and have been executed by fine pecking.

ENGRAVED MOTIFS AND SIMPLE DESIGNS

A petroglyph was discovered on the bedrock of a rock-shelter at Raisen in Madhya Pradesh by Robert Bednarik, Giriraj Kumar and G.S. Tyagi in 1990 (Bednarik et al. 1991:24-27). It is in the form of an engraved circle with two radiating lines and two cupules by the side of one of it. Their grooves show thousands of pecking marks. They are patinated and smooth, which suggests their archaic character. It is an example of initial human efforts to develop a motif by the integration of a circle, linear lines and cupules in a creative way. Another example of simple motif development comes from the bedrock of a rock-shelter at Chattaneshwar. It

has been created by arranging small cupules in the form of an oval with a cross inside it. On the grounds of patination, technology and simplicity, both these motifs can be assigned to the transitional phase from the Middle to the Upper Palaeolithic or early Palaeolithic 1 phase. A rhomboid design engraved on the cortex of a fluted core on chert was found at Chandravati in Rajasthan. The design was already there as the cortex of the core was removed along with the blades, leaving scars on the core and the damaged cortex. Because of the above factors, V.H. Sonawane assigns it to Upper Palaeolithic antiquity (Sonawane 1997:5-16). Further, because of its complex designing pattern G. Kumar puts it in the second phase, Upper Palaeolithic 2.

OSTRICH EGGSHELL BEADS

S.A. Sali discovered finished and unfinished ostrich eggshell beads from Upper Palaeolithic strata in the excavation at Patne in Maharashtra (Sali 1978, 1980). Wakankar discovered two fine ostrich eggshell beads from a human skull in the excavation of the Upper Palaeolithic layer in a rock-shelter BHIM III A 30 at Bhimbetka (Wakankar 1976, 2008). Besides, an ostrich eggshell bead-manufacturing site has been discovered in excavation from the Upper Palaeolithic cultural strata at Khaparkheda in Narmada Valley by S.B. Ota and Sheila Mishra (Mishra et al. 2004: 22).

SIMPLE DESIGNS ON OSTRICH EGGSHELL PIECES

One piece of an ostrich eggshell obtained from the Upper Palaeolithic strata in the excavations at Patne bears a simple design made of two sets of parallel lines with cross-hatchings between them. The strokes of cross-hatchings are uncontrolled and extend beyond the borderlines. This is the first evidence of a simple design,

dated by the ^{14}C method to 25000 ± 200 BP (Sali 1978). The ostrich eggshell beads, which have already been discussed, were also discovered along with this piece. Besides, V.S. Wakankar also discovered an ostrich eggshell piece along with Upper Palaeolithic industry from Ravishankar nagar, Bhopal. It bears a simple design created out of deep notches arranged in a semi-oval pattern.

Ostrich eggshells have been discovered from more than 50 sites in Maharashtra, Gujarat, Madhya Pradesh, Rajasthan and Uttar Pradesh (Kumar et al.1988: 43-53). The existence of ostrich in the terminal part of the late-Pleistocene indicates a drier phase in central and western India. It is also evident from the fossil sand dunes around Pawagad and extreme calcification of the sediments in all the river sites of Malwa Plateau and Narmada Valley. This drier phase is also evident from the excavations at Didwana in Rajasthan (Misra 1995).

INTRICATE DESIGNS

G.S. Tyagi observed that the early dynamic dancers in green colour at Jaora in the Vindhya are preceded by intriguing intricate designs, a non-iconic form of rock paintings in central India (Tyagi 1992: 303-18).

PALAEOLITHIC ICONIC ROCK ART

The *Homo sapiens* burial of Bhimbetka had a necklace having two ostrich eggshell beads in the skeleton's neck. The lower jaw indicated the loss of the first molar quite a long time before the death of this elderly man in his fifties, but the tooth was carefully preserved and buried with the dead (Wakankar 1978, 2008).

V.S. Wakankar and others, while exploring the painted rock-shelters at Bhimbetka, Jaora, Kathotia, Firangi, Mahadeo, Kharwai, Bhopal,

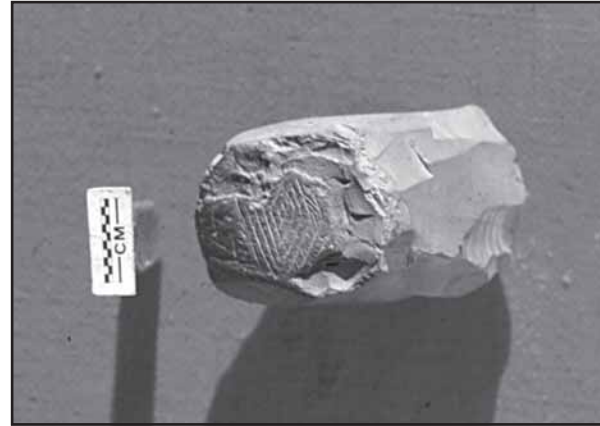


Fig. 7. An advanced rhomboid design engraved on the cortex of a fluted core from Chandravati in Rajasthan. Upper Palaeolithic.

Pengawan, Chiklod, Amargarh, Raisen, Narwar, Mohammadpur, etc. in the Vindhya, observed that the earliest paintings were always done in their typical early style in green colour. Big herbivores (*Bos*) were shown in their natural outlines and humans always in the dynamic action of hunting or dancing executed in abstract form in typical 'S' twist style. Green colour stones used for making pigment were discovered in Upper Palaeolithic deposits in BHIM III A-28, 30 and II

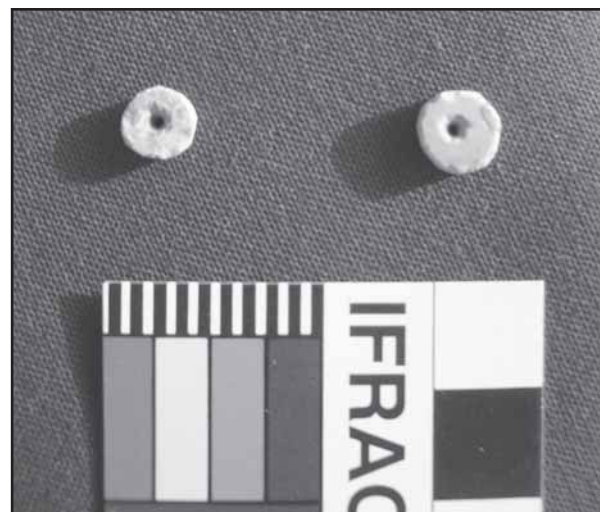


Fig. 8. Ostrich eggshell beads from Bhimbetka. Upper Palaeolithic.

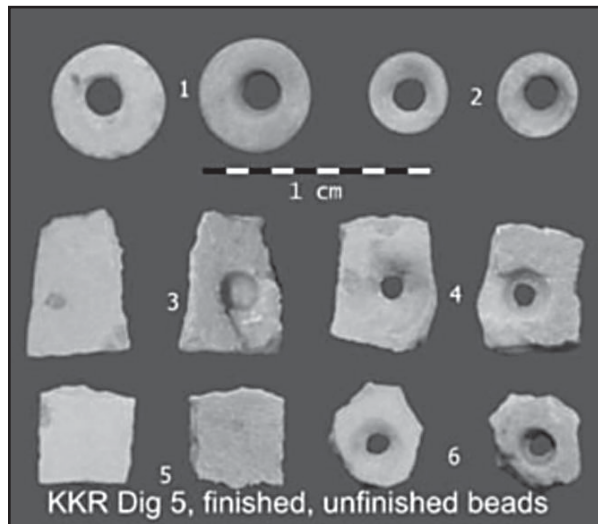


Fig. 9. Ostrich eggshell beads from Khaparkheda in Narmada Valley. Upper Palaeolithic (courtesy: S.B. Ota).

B-33. Later on, as mentioned earlier, G.S. Tyagi observed that the early dynamic dancers in green are preceded by intricate designs at Jaora (Tyagi 1992: 303-18).

The earliest green paintings do not show a variety of activities except dancing and hunting of *Bos*. This epoch of the Upper Palaeolithic rock art, in the light of the present evidence, appears

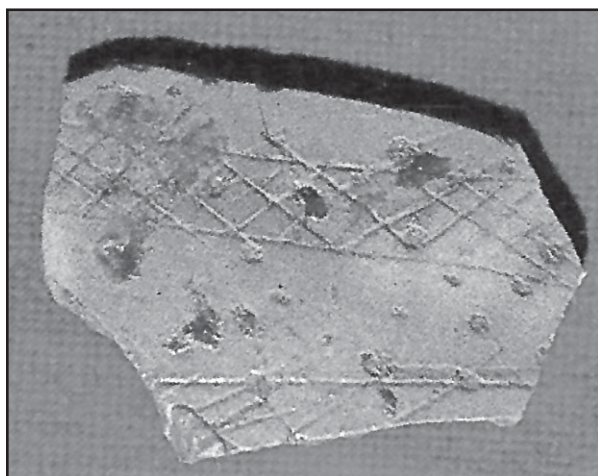


Fig. 10. An ostrich eggshell piece with simple engraved designs from Patne, Maharashtra. Upper Palaeolithic (courtesy: Deccan College, Pune).

to be the beginning of Indian iconic art. The green style human figures are typical in themselves. They show such an unusual bend of the body between shoulders and hips that it must have been inspired by the fast movements of the body during the dynamic and forceful act of dancing. The energy of the dynamic action is very evident. The face in some of the paintings is extremely small, but in others it is extremely schematic.

COMMENTS

Most of the Pleistocene art is non-iconic. Simple iconic animal and human forms appear for the first time in Upper Palaeolithic rock paintings in the late late-Pleistocene period. This simple model of evolution of Pleistocene art of India is very much in line with the cognitive development of the hominins and the global trend of the beginning of art known at present (Kumar 2009, Kumar et al. 2005; Bednarik 2009, Bednarik et al. 2005).

It was followed by explosion of creativity in the form of rock art. Numerous motifs, designs, animal, human and imaginative forms in varied styles were created by Mesolithic artists, and were used in the expression of their environment, life and thought processes. With the beginning of cattle domestication a new trend of evolution begins in rock art in the late Mesolithic or even earlier in the upper Vindhya in Mirzapur region (Kumar 2000-2001: 5-36). Thus developed the Neolithic and Neolithic-Chalcolithic rock art of India.

MESOLITHIC ROCK ART

Numerous motifs, designs, animal, human and imaginative forms and symbols were created. They were used in the expression and presentation of human perception of reality such as fauna, life patterns, different inventions,

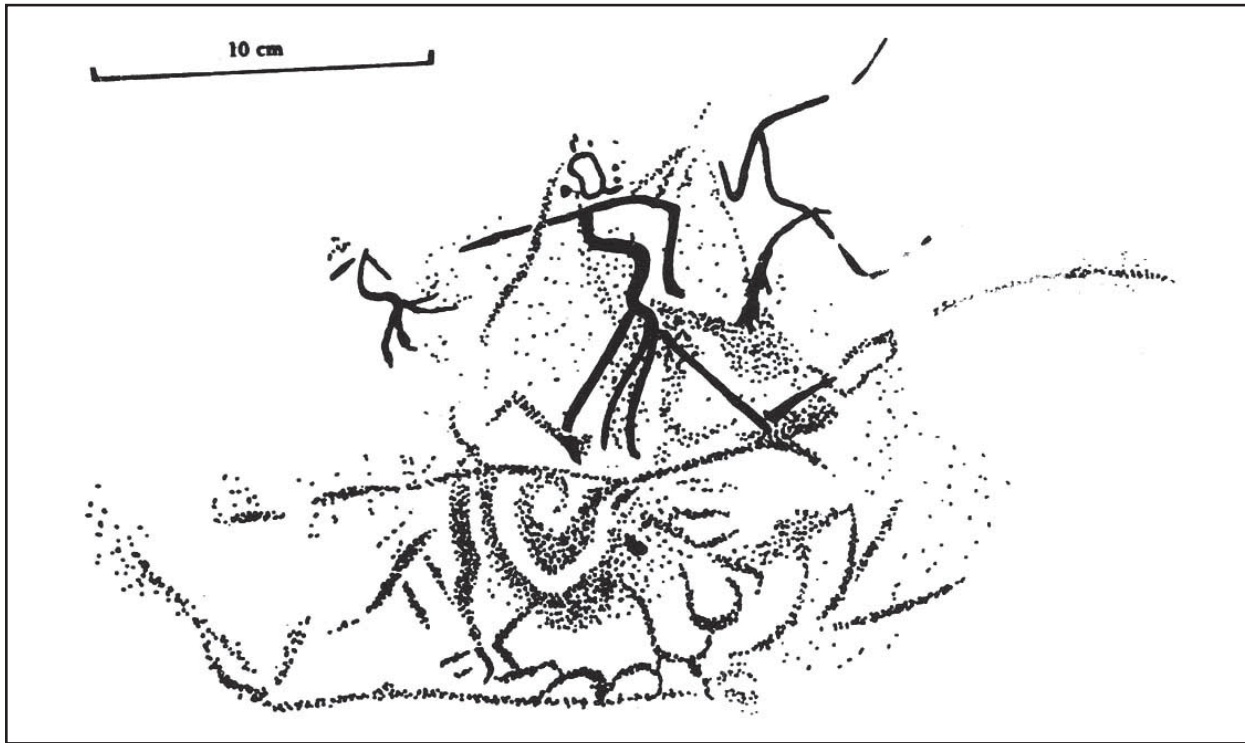


Fig. 11. Intricate designs superimposed by green dynamic dancers at Jaora. Upper Palaeolithic (after G.S. Tyagi 1992).

devices, techniques and thought processes depicted in a variety of ways and styles. The figures have been done mostly in gently flowing fine lines reflecting dynamic action, vitality in form and directness of visual perception, a keynote of the Mesolithic art (Wakankar 1978:10).

Mesolithic art presents a dynamic and vibrant cultural life in a wide range of themes and styles. Because of their richness, varied themes, forms, styles and antiquity, the rock paintings of central India have become the synonym of Indian rock paintings. Though we can see regional features in the rock art of other regions in the country,

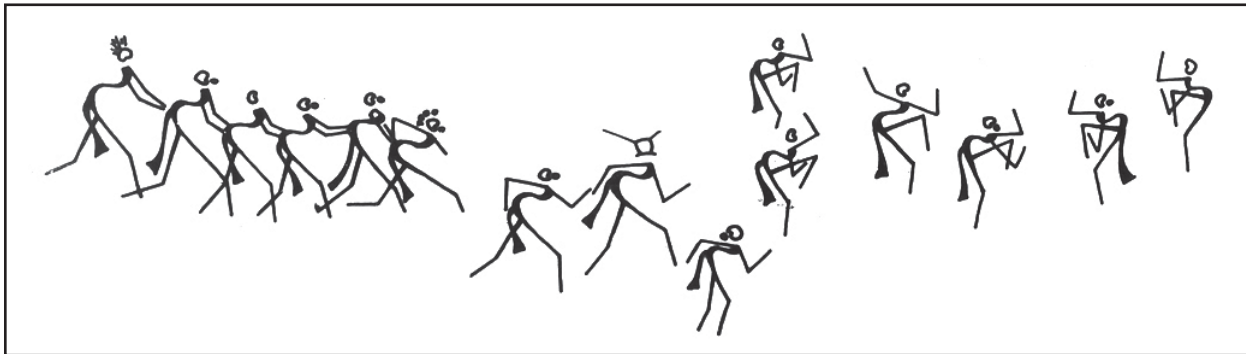


Fig. 12. A group dance in green colour, earliest rock painting style, Lakhajuar (after E. Neumayer 1983).



Fig. 13. Mesolithic life, Lakhajaoar (after E. Neumayer 1983).

the basic characters of evolution and development remain the same in terms of styles, use of space, theme, the quality of lines, rhythm and force in them, vigour, expressive power and the over-all impression of figures. It reflects a cohesive course and homogenous trend of evolution throughout the country. Of course, the breakthrough point of time for different evolutionary stages in it is different in different parts of the country. Similarly, different patterns of life in different styles can co-exist, the previous ones can continue and overlap the following ones.

No one can understand the exact meaning of rock art unless their creators themselves come to us and tell us about them. However, the environment, nature and spirit of life as reflected in it and substantiated by archaeological evidence in the Holocene period have been

summarised after Wakankar (1978, 2008). I can also add my observations.

Sophisticated masks, either in the form of decorative ornamentations or for magico-religious taboos, developed. Animals such as *Bos*, deer, rhinos, monkeys, etc. were modelled for headdresses or their skulls were used for these purposes. Feathers of different birds were also used to beautify the headdresses. Arm decorations at the joint of the elbow, either as suspending strings with decorated ends or certain decorative objects tied at the elbow, were very common. The necklaces made of bone beads or decorated bird bones hanging over the chest were popular. These were obtained in the excavations at Bhimbetka. Bracelets made of reeds or some unknown materials are often observed in rock paintings. Besides, body painting was also in practice for beautification.

Mesolithic man had developed the art of basketry as well as rope-making and weaving of reeds and palm leaves. Hides were used as garments. Woven garments most probably made out of palm-leaves and threads made of bark fibres must have been manufactured. The *langoti* (loincloth) was a common garment for males and females. Females also had waistbands. The male garments used in dancing were of various types. For common dancing, simple *langoti* worked well, but for ceremonial dancing, masks, headdresses and skirts were essential. While hunting, a shaman or *ojha* served as the guide. He used to have an elaborate dress, often using a square or rectangular shield either to protect himself or to engage the animal of prey.

Bamboo with rope traps and bamboo strips with zigzag weaving of tiny ropes formed a trap. The traps were either rectangular or triangular or V-shaped. Uneven grounds were turned into by obliquely planting sharp bamboo pieces. These techniques were often used to trap the animals in rock paintings.

Multi-barbed lances, bone pointed arrows, bone harpoons, stone tipped lances and arrows were the usual hunting tools. *Bolas* (stone slings) were also used for encircling the animals in traps. Killing the animal with the help of dogs and also by jumping over the back and thrusting the lance point in the back of the prey was a usual practice. Spears were thrown by a single hand or both the hands and sometimes a spear thrower was also used. Lances of pointed bamboo must have been very common. The lances were decorated with ornamentation on the shaft near the point, in the middle and at the end of it. Sometimes lances and arrows with a round ring attached to the shaft were also used. Barbed arrows fitted with trancheollets, triangles, lunates and bone points were often used for various types of hunting. Bows are also of various

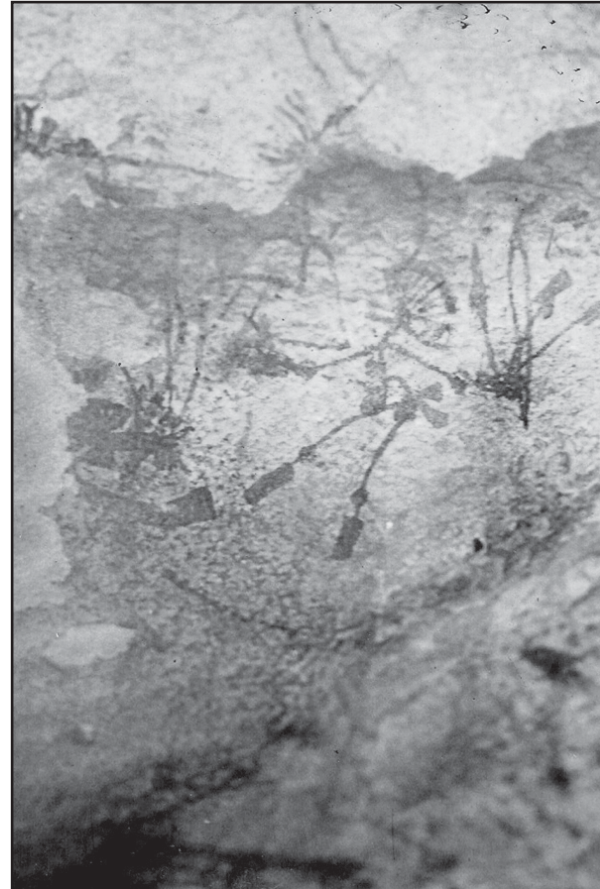


Fig. 14. Decorated hunter dancer, Lakhajaoar, Mesolithic (courtesy: E. Neumayer 1983).

shapes, arcuate, trapezoidal, semicircular etc. and were often of human heights. Arrows and bows for ceremonial purposes were often decorated.

Hunting was the task of the male members of the society, while family nourishment and rearing of children were the responsibilities of the females. This probably developed into a sort of mother cult as is evident from the figure of the milking mother goddess of Jaora Malkhar. Female figures of highly stylised form, like mother cult objects, are also there. Sexual life does have a place in Mesolithic art, but is not so prominent. Male-female union is rarely shown, that too as one of the many daily activities going



Fig. 15. A big decorated bird with two chickens, Kathotia, Mesolithic.

on in a composition (as at Kathotia, bottom). Pregnant women, childbirth and a mother with a child are drawn occasionally.

Women as load-bearers are also shown. Most often, they carry a basket over their back as the women in tea plantations do. These baskets were either conical or flat at the base. They were of different forms, such as tapering, broad at the top and narrow or conical at the base, cylindrical, rectangular and sometimes cubical in forms. They were attached with a flat strip to be tied at the head. While walking, the strips were held near the ears or over the head or over the shoulders as convenient, but often over the head. They were woven in different patterns. Probably strips used in their making were coloured to create pleasing patterns. Children as well as tiny animals as the foodstuff were also carried over the head. Fruits were hoarded in baskets. An exodus of Mesolithic people in groups has been painted in rock art where people are shown carrying baskets over their heads.

What was their main diet is difficult to say but a food-gathering economy certainly marked this period. Their principal food included fruit, onion as well as honey, as is evident from rock

paintings. Hunting was a part of the economy, but the number of bones in Mesolithic deposits is so limited that it seems meat was a delicacy for certain occasions. Fish, tortoise, deer, antelope, *Bos gaurus* and rhinoceros were their favourite prey. The elephant is rarely shown being hunted. Among birds, the peacock was a favourite delicacy. The porcupine, sometimes, also served the purpose. The most cherished food was the wild boar, *Bos gaurus*, and the deer.

Alcoholic drinks were likely to have been known, with gourds used as containers. Honey formed a source of energy. In a scene in rockshelter ASI No. 28, a person is sitting comfortably and having his drink. It is interesting to note that the drink going into his stomach has been illustrated in the form of drops from his throat trickling downwards.

Dance had developed in an organised fashion. The dance styles comprised 'steps together forward and backward', 'clapping along the rhythm in steps', 'clapping over head and under the raised knee', 'dancing to the rhythm of the leader in the centre', 'dancing with masks and dresses', 'dancing with alternate male and female participants', 'dancers with antler headgear and also in concealed faces and bodies', and 'dances with sticks in hands and to the beats of stone drums', etc'.

A stone drum slab has been found on the Vinayaka hill. Among rituals, dances around fire and in a line of 10, 12, 20 and 30 individuals are often depicted.

Curing by magic must have played an important role. Sweeping the body with brooms and enchanting the sick for cure were shown. Death during hunting was inevitable and death by epidemic was also not unusual. After death, rituals were performed. A scene of a burial ceremony with weeping members has been painted.

ART OF ENGRAVING

The art of engraving had already started in the Upper Palaeolithic period, which is evident from the discovery of engraved ostrich eggshell pieces from Patne and Bhopal. At Bhimbetka, the Mesolithic artists left a rich heritage of bone

engravings and bone ornaments. Often bones of birds were used as pendants and amulets and were decorated with parallel lines and cross hatching patterns (Wakankar 1975, Misra 1977).

Besides colour drawings, engravings have also been done on those rock surfaces which



Fig. 18. A-top. Fishing scene, Lakhajoar. B-bottom. Mesolithic life, Kathotia (after E. Neumayer 1983).



Fig. 16. A big deified composite animal. Bhimbetka. Mesolithic.



Fig. 17. A man drinking. Bhimbetka. Mesolithic.



Fig. 19. Dynamic archers with different masks or headgears. Chaturbhujnath Nala. Mesolithic.



Fig. 24. An early chariot pulled by four horses. Kanyadeh. Krishnavilas-Chambal Valley. Neolithic-Chalcolithic.

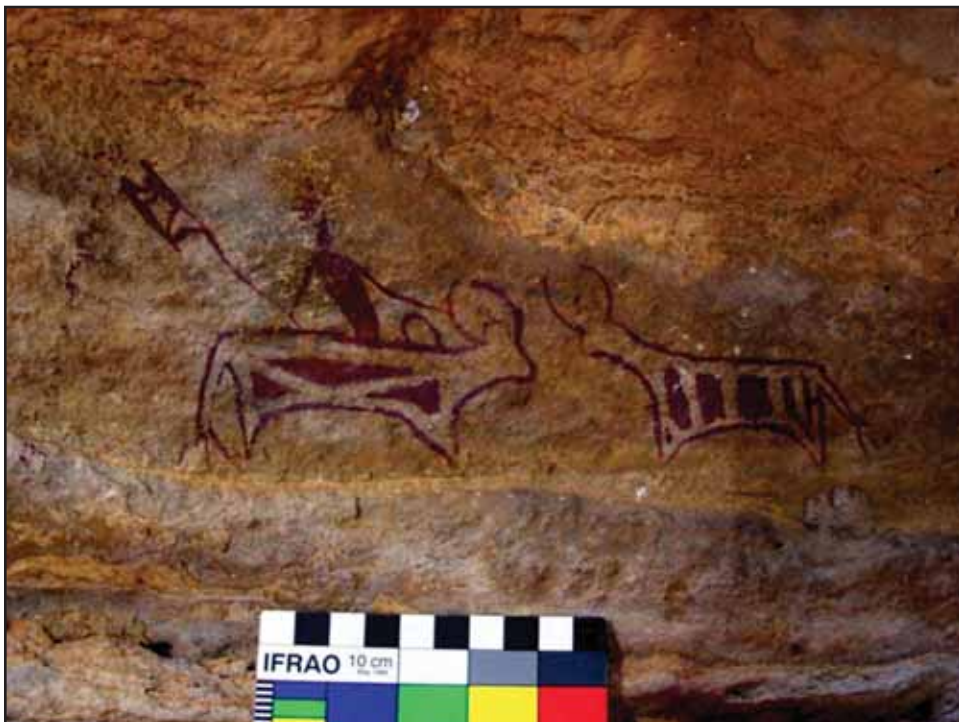


Fig. 25. Humped-bull rider with a metallic axe and a humpless bull standing in the front. Chaturbhujnath Nala. Neolithic-Chalcolithic.

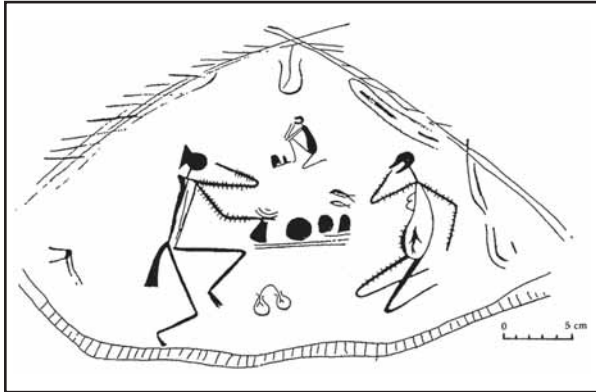


Fig. 20. A family feasting in a hut, Lakhajoar, Mesolithic (after E. Neumayer 1983).

possess thick coats of calcite encrustation. These were engraved with microburins or microlith points. At Bhimbetka Cave No. IV D-20, a drawing of a bison is engraved on all sides by tiny line scratchings. Similar engravings have also been found in a stalagmite cave near Manpur.

USE OF SURFACE AND COLOUR

Not much of the wall was occupied by the early drawings of the Upper Palaeolithic period, but it seems that during this period it was the upper part of the rocks in the shelter that was mostly painted. During the Mesolithic period, any

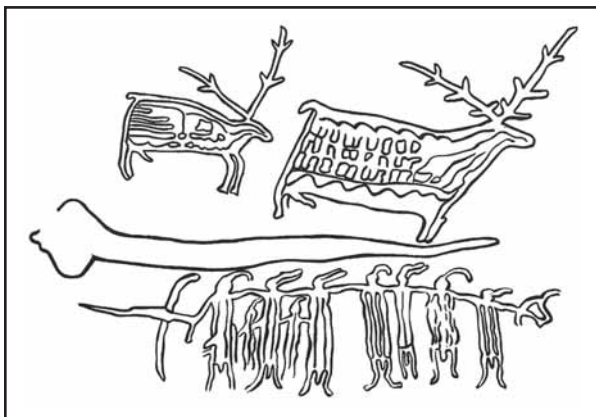


Fig. 21. Ritual dance, Chattaneshwar, Chambal Valley, Mesolithic.



Fig. 22. Magical treatment of an ill person, Bhimbetka, Mesolithic.

surface could be used depending upon the dimensions of the composition and the layout of the subjective creation.

The animal figures in green are either *Bos* or deer. The purple red made out of haematite for making figures was also used during this period. Drawings in red were often associated with green, and thus bichrome pictures were drawn. In Mesolithic drawings, dark purplish red was the predominant colour of the period, but red and white were also very common.

For execution of rock paintings mostly locally available mineral colours were used. Pigment nodules with rubbed surface have been

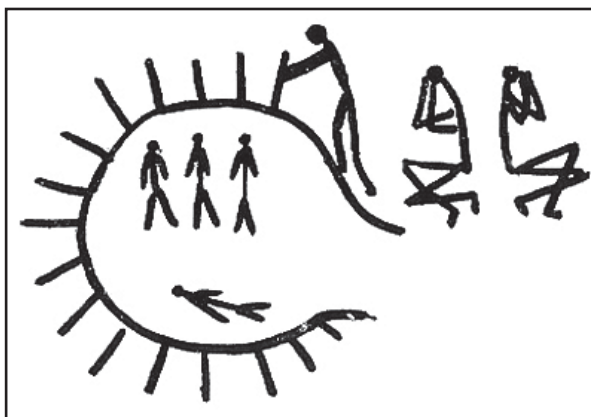


Fig. 23. Burial ceremony and mourning persons, Bhimbetka, Mesolithic (after V.S. Wakankar 1978).

discovered in the excavations from microlithic layers. Rock paintings are in different shades of red because of the different compositions of iron oxides used for painting. In due course of time, ferrous oxide is changed to ferric oxide, and thus the shade of painting also changes from light red to dark red. Pigments of figures are also washed out by sweeping of rainwater over them, resulting in fading of the colour of the paintings. Hence, recording of shades of the colour of paintings minutely is of little scientific value, as these do not indicate the original colour of paintings when these were made. These are going to change further in the future.

ARTISTIC SKILL

The filling of the mural space was so balanced that there is a continuity and amalgamation of different subject matters together so as to give continuity to the whole mural composition. The Mesolithic art has been depicted in a variety of styles. The most interesting style is that used for depicting big animals in a pattern of honeycomb design and its variants. Sometimes geometric patterns are also added to fill in the body. Spirals and zigzag patterns are often used to decorate rectangular masses (intricate designs). It is still a mystery why these designed masses were created, but even today on the occasion of a marriage ceremony walls are decorated with designs called *kohabar*. Whether these were drawn for the same purpose we do not know.

Deified animals were drawn in extremely big sizes and were filled with the patterns mentioned above. Animals such as *Bos gaurus* (bison), *Bos bubalus*, *Rhinoceros unicornis*, *Sambar*, bear and panther have been depicted. Boar-bull-elephant combined images occur. Pregnant antelope (nilgai) and pregnant antelope with elephant calf in the womb have been painted by Mesolithic artists.

In the upper Chambal Valley, pre-cattle domestication (Mesolithic) rock paintings depict humans with a long body either engaged in a dance of fast movement or running in a team of three or four persons with a stringless, long bow in one hand and variously built arrows in the other. Sometimes arrows are also tied by the side in their waists. Barbs in the arrows have been variously fixed and elaborately depicted. Besides archery, wooden spears, points, wooden sticks and boomerangs were also in use, but spears were not so popular here as in Vindhyan hills. Archers' lower garments with long flaps and vividly prepared headgears are unique to this region. But surprisingly, except in rare cases, archers have never been shown engaged in actual hunt, which is a very common phenomenon in rock paintings of the Vindhyan region. Dynamic action, vitality in form and directness of visual perception form the key features of Mesolithic art.

- II. Cattle domestication, seminomadic-pastoral and incipient agriculture mode of life and thought processes. Transitional phase from Mesolithic to Neolithic, Neolithic-Chalcolithic and Iron Age.

With the beginning of cattle-capturing and rearing scenes, a new trend of evolution begins in Indian rock art. Cattle domestication began with humpless cattle in the late phase of the Mesolithic, in the later half of the ninth millennium BC in Ganga Valley, in the beginning of the sixth millennium BC in Narmada Valley, and in the end of the sixth millennium BC in Banas-Chambal basin. Humped cattle appear afterwards. Appearance of the hump on cattle was the result of gene mutation which might have taken nearly 2000 years. Selective breeding must have played a significant role in producing good breeds of humped bull which brought revolution in agricultural economy (Kumar 2000-01).

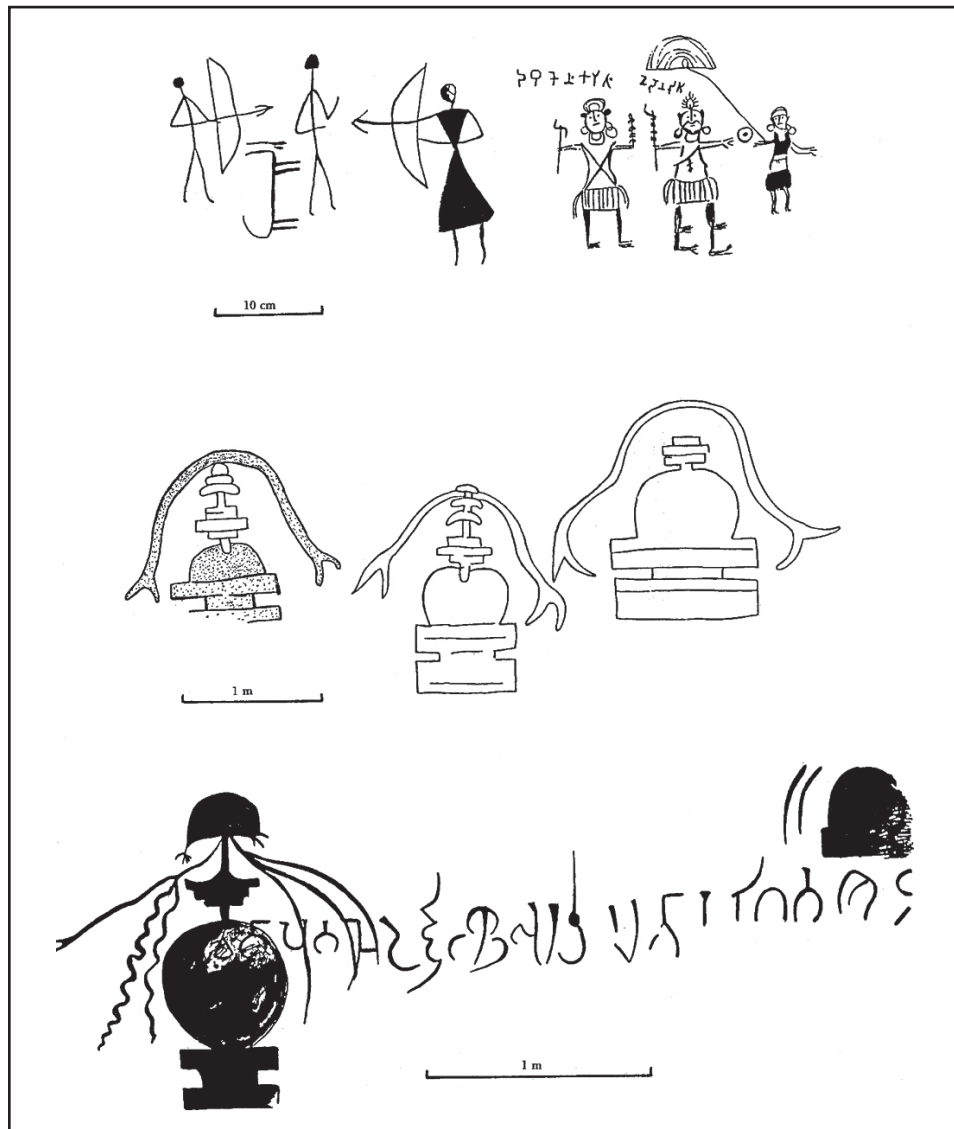


Fig. 27. Rock paintings with inscriptions in red colour in Asokan Brahmi script and Buddhist symbols. Top: Tikla village (red). Middle: Red stupas with white infilling in the left one. Bottom: Narsinghgarh. A stupa with an inscription in Gupta Brahmi script (red) (after E. Neumayer 1983).

Cattle domestication became full-fledged economy in the Neolithic cultures in the eighth millennium BC in the Bolan Valley in Baluchistan, in the seventh millennium BC in the Belan River Valley and in the beginning of the third millennium BC in the Krishna River Valley (Kumar 2000-01). A scene

of wild horse hunting by a group of two hunters by piercing their spears into the neck and body of the horse at Chaturbhujnath Nala indicates that like the humped bull, the horse is also an indigenous animal which was domesticated (Kumar et al. 2006).

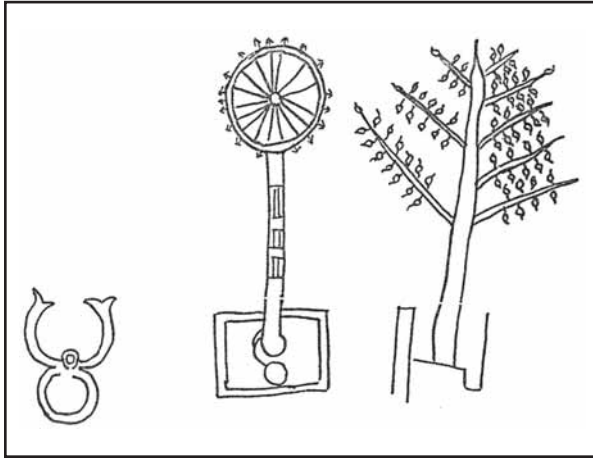


Fig. 28. Buddhist symbols in red colour, Chibbad Nala, Chambal Basin, Early Historic.

With the appearance of the humped bull a radical change occurred in the scenes of socio-cultural activities of the cattle breeders. The self-relying cattle domesticating economy gradually led to a secure and comfortable life as compared to that of hunter-food-gatherers. Gradually, hominins started losing close association with nature that Mesolithic hunter-food-gatherers had. Consequently, they began to lose the vigour and dynamism of life, which is also reflected in their rock art. Gone is the sense of movement with every line and stroke. Every action now seems to be frozen, figures are repetitive signs, walking or dancing in files. The figures are generally overlapping with the earlier ones. The humans and animals start becoming more and more schematic and stylised. Their size in general goes on reducing, though a few big figures are also there. Microforms both of humans and animals of only a few millimetres in dimension are new experiments in the rock art of Chaturbhujnath Nala. The theme, devices, implements etc. also witnessed change with time. Hunting scenes are there, but hunting as an act of a large group is absent. From now onwards, the solitary hunter

and sometimes his dog encounter motionless animals standing in front of the hunter to receive the deadly arrow.

Chariots appeared and long stringless bows of the previous age gave way to *parasu*, a metallic axe. The use of copper implements in the form of metal tipped arrows, axes and *parasus* became popular soon and continued till they were replaced by iron implements such as swords, daggers, etc. The early introduction of copper in the upper Chambal Valley was probably because of the impact of copper producing Chalcolithic cultures in the river and hill valleys of Rajasthan, probably somewhere in Chittorgarh and Bhilwara regions. From the recent archaeological discoveries we know that copper implements were produced on a large scale in the beginning of the third millennium BC in Rajasthan (Agrawal 1981:59-63). In the Vindhyan region the authors of rock art became acquainted with copper implements somewhat later than those in the Chambal Valley. As this region is situated deep in the interior, it took some time for the copper implements to reach there from the far situated copper-producing centres in Rajasthan (or from other states) (Kumar 1983: 413, 2007b:21-134).

ROCK PAINTINGS OF HISTORIC PERIOD

In the historic period, many Buddhist symbols and inscriptions, sometimes along with figures, appeared. Satdhara near Sanchi is a Buddhist site. Here a figure of Buddha has been painted on a prepared base in a rock-shelter, which is unique. In the Chambal Valley large size Buddhist symbols, a *dharmachakra*, *bodhi-vriksha* (tree in railing) and a *triratna* symbol, are depicted in a rock-shelter at Chibbad Nala. Chibbad Nala is derived from *Chivar*, a Buddhist nomenclature. Buddhist inscriptions in red colour have been found at Kalaji-ki-kui in



Fig. 26. A charioteer with a metal axe. Chaturbhujnath Nala. Neolithic-Chalcolithic.



Fig. 29. An aroused elephant (in mast). Chaturbhujnath Nala.



Fig. 31. Six armed divine figure throwing and trampling elephants. Kaua-khoh, Mirzapur. Uttar Pradesh (courtesy: Rakesh Tewari).



Fig. 33. Geometric designs and noniconic forms. Isco, Hazaribagh. Jharkhand (courtesy: S. Chakraverty).

the Mukandara Hills near Darrah and also in Chibbad Nala.

Several rock-shelter sites were transformed into monastery complexes as seen at Bhimbetka and Kotra Vihar near Narsingharh. A chain of such sites existed on the scarp of the Vindhyan hills towards the Narmada Valley. In one of those, Sauro Mauro (District Sehore, Madhya Pradesh), two rock edicts of the Mauryan emperor Asoka were found (*IAR* 1975:28-30). A similar site was found near Gambipura in northern Gujarat. War and fighting are the main subjects of historic rock paintings, particularly in the Vindhyan region. Camel figures, which are crude and lifeless, are there in the rock art of the upper Chambal Valley and the Mukandara hills, as camel grazers regularly visit these regions.

Besides, there are some interesting scenes presenting a different aspect of life. A royal family under an umbrella has been depicted with an Asokan Brahmi inscription at Kankali-Tikala near Mohana in Gwalior district. In Chaturbhujnath Nala, a composition of a procession has been effectively painted. A person and an attendant holding metal axes in their hands are riding an elephant. They are moving to the tune of music played by two persons walking behind them. Besides, bird-

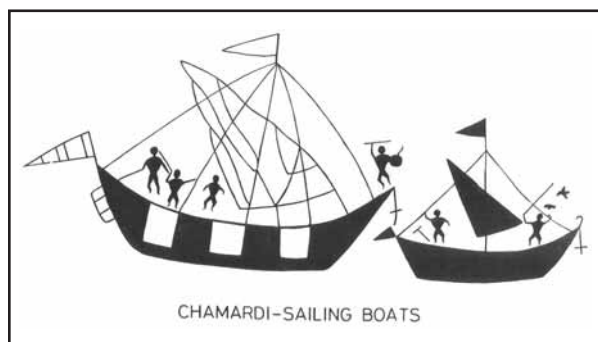


Fig. 30. Sea-going boats, Charmardi, Gujarat, Historic (after V.H. Sonavane 1996).

riding scenes are also there, one in Chaturbhujnath Nala (Kumar 2007: 21-134) and another at Gararda in Bundi district (Sharma 1998:69-70). An elephant in heat (in *musti*) has been depicted effectively in Chaturbhujnath Nala.

Within this thematic and stylistic uniformity there is one more distinct group of paintings, which is highly unconventional. It is found in eastern Malwa around Bhopal. The humans have been shown in different styles of clothes. The men wear pantaloons and a long *kaftan*-like upper garment. They are wearing a fez-like cap with long tassels. The most common weapon is a long decorated bow, often shown several times the size of its owner, with a bundle of five or more arrows with metal leaf-shaped points at the notch end. The drapery appears to be like that of the Kushan art of northern India.

The animals depicted in this style are very naturalistic and graceful. Hunting is shown quite frequently. There are also paintings of beautiful horses and Brahmani bulls.

In several paintings of this style in Raisen district there are people addressing a person sitting on a throne. The scenario of all these compositions is quite uniform. A chief is sitting on a four-legged throne, in front of him is a warrior armed with a spear or holding a standard. At the back of the throne there is an outspread spotted hide. Besides this, there is a tree from whose branches a bow, a bundle of arrows and some parcel-like objects are dangling. The whole scene is encircled by a line, which might indicate an enclosure or a shelter. Stylistically, these paintings are close to the Historic paintings of the Mahadev Hills which depict a life style of hunters and pastorals. Most of the scenes of the fights depicted are centred around herds of cattle. The paintings in the Mahadev Hills have an iconography quite different from that of the



Fig. 32. Primitive rock engravings, Kargil, Ladakh: Neolithic and Early Historic (after B.R. Mani 2000).

contemporary paintings of the Vindhya region. They depict compositions of dances, hairy demons, head-hunters and abduction of fair maidens. Along with these figures appear human figures attired as monkeys, fighting with clubs, heroes with axes and daggers that sit riding on composite animals (Neumayer 1992: 215-48).

GUJARAT

One of the unique features of the rock art of Gujarat is the depiction of sailing boats in a very prominent granite rock-shelter at Chamardi. The figures clearly reveal the structural and technological details of the small sea-going vessels. Besides the main body of a boat and human figures as sailors, one could find a rudder, masts, flags and anchors in the picture. The painting covers an area of 115 x 50 cm. It represents one of the sea-going *Kotiyas*, a native

craft of Saurashtra and Kutch. Chamardi is very close to the Gogha Port, one of the active ports of the Saurashtra coast, and it is the only painting of a sea-going vessel found in India so far (Sonawane 1996:11-14). Besides, there are many Buddhist symbols and Shankha-lipi inscriptions.

MIRZAPUR, UTTAR PRADESH

Rakesh Tewari thoroughly studied the rock art of Mirzapur (Tewari 1990: 29). Being in the Upper Vindyan region, the rock art of Mirzapur bears most of the characteristic features of central India. But, the depiction of a scene of six armed twin faced divine figures and a figure of a folk warrior hero in Kaua-khoh rock-shelter, is typical of the region. The armed warrior in red is shown about four times larger than the other figures of the scene. He is holding an elephant in each of his raised hands and both

his feet trampling an elephant under them. Tewari associates the figure with 'Lorika' who is the hero of the popular folklore known as 'Lorikayan' in this region. 'Lorikayan', with the

tale of Lorika and Chanda, is a composition by a 'sufi' saint Mulla Daud in the 14th century AD. This composition highly acclaims the valour and immense strength of the hero. It is believed that



Fig. 34. Geometric designs and non-iconic forms, south Bihar (courtesy: Col. A.K. Prasad).

Goddess Sarada accompanied by sixty-four pairs of 'Yoginis' herself adorned his flag and helped him in the battlefield. It is also mentioned in 'Lorikayan' that 'Lorika' single-handedly pulled out an elephant from a pond and flung it in the air in war. On the basis of this story we may safely associate this warrior with 'Lorika' and the twin faced figures with the aforesaid goddesses and their associates (Tewari 1990: 29).

TYPICAL FEATURES OF THE ROCK ART OF LADAKH IN THE HIMALAYAS

The area of Ladakh is one of the most elevated regions on the earth. Because of the cold-humid conditions there the region is covered with snow for most of the time of the year. Hence, there is no question of the survival of paintings if they were there. Rock art is found mostly in the form of engravings and brushings in rock-shelters and on open boulders along the banks of the Suru, the Doda and the Zaskar rivers. Many boulders are found bearing engraved and bruised figures, symbols and other motifs along the ancient trade routes and Kargil-Padum-Thongde road and track along the banks of the Indus from Leh to Batalik. Like the rest of India, the early rock art here consists of wild animals executed in simple natural outlines. It is followed by the animal domestication phase. Religious symbols and inscriptions appear in the Historic period. These are dominated by Buddhist symbols and the figures of Buddha and Bodhisattvas. It is important to note here that in Ladakh the Neolithic continues up to the Historic period. The rock art of Ladakh has been classified tentatively in four phases by B.R. Mani (2000-2001: 93-100):

- (a) Primitive phase—Neolithic and early Historic rock art are represented by human and animal figures (ibex, sheep, goat and



Fig. 35. Engraved humped bulls, Rajbar forest, south Bihar (courtesy: Col. A.K. Prasad).

other animals), and symbols and scenes of hunting, dancing and war. Domestication of animals is represented by horse-riding people and those engaged in battle scenes with spears and bows in hand and riding horses. Sheep, goat, yak, cattle, ibex, etc. are shown either standing separately or being hunted. The rock art of the primitive phase is hypothetically associated with Dard nomads who traded in the region in early historic period up to the beginning of Tibetanisation.

- (b) In this phase, the traits of the earlier phase continue and Kushan inscriptions in Kharoshthi and Brahmi make their appearance.
- (c) The third phase is represented by scratching with the Tibetan influence depicted through the inscriptions of 8th-9th century AD, engraved and bruised figures of stupas and of a few humans and animals. Contemporary with these are the gigantic rock carvings of Avalokiteswar and Bodhisattvas in mixed styles having some influence of Tibet and Kashmir as well as that of Central Asia.



Fig. 36. Engraved bulls with intersecting squares and notes, Chik Rampur, Karnataka (courtesy: A. Sundara).

This last phase of rock art includes low relief carvings datable from c. 11th to 17th century AD.

The tradition of the depiction of ibexes in the rock art of Ladakh seems to have continued amongst the people (Baltis tribe) for a very long time as thanks-giving offerings to gods on childbirth. However, the engravings of Buddhist symbols and deities on the rocks and boulders indicate the adoption of the traditional technique of the production of figures by the artists in Historic period.

TYPICAL FEATURES OF THE ROCK ART OF ORISSA

Orissan rock art, particularly in Sambalpur and Sundargarh districts, is dominated by geometrical forms, symbols and enigmatic designs (90%). Engraved vulva motifs, both plain and pigmented

ones, predominate the bulk and form a typical feature of the rock art of Orissa.

Here, rock art has been executed by both the reductive and additive techniques in the early phase (hunting food-gathering mode of life) and then the reductive technique predominates in the following phases of cattle domestication. Painted engravings are a common feature here and so also in the adjoining Jharkhand. Coexistence of paintings and engravings in the same rock-shelter, as in Lekhamoda 10 in Sundargarh district, also forms a typical feature of Orissan rock art (Pradhan 2001).

TYPICAL FEATURES OF THE ROCK ART OF JHARKHAND

The rock art of Jharkhand is also dominated, as in Orissa, by geometrical forms and symbols.

Here also both the forms of rock art, created by additive and reductive techniques, are represented. Generally paintings are found in rock-shelters and petroglyphs on open boulders. Paintings, engravings as well as painted engravings (as in Orissa) are common in the Karanpura forest region in Hazaribagh district and are connected to the regional folklore of the 'bridal cave' or *kobbar*.

Whereas large boulders and bedrocks in the river valleys containing petroglyphs are common in the southern districts, particularly in the Subarnarekha River Valley of Purbi Singbhum and in the associated Jharkhand-West Bengal bordering area, in the northernmost bordering area of the state, the chain of rock art sites is located in the hills and forests of Kodarma and Giridih districts along the Jharkhand-Bihar borderline. Such sites are an extension of the chain of sites in Kaimur Hills, Jamui and Nawada districts of Bihar (Chakraverty, 1995) and share the characteristic features of that region.

TYPICAL FEATURES OF THE ROCK ART OF BIHAR

A.K. Prasad discovered 86 rock art sites and many Stone Age, Chalcolithic and Historic sites in South-East Bihar and the adjoining region of Jharkhand in 1990s. At the same time, several rock art sites were also discovered in the Kaimur district by Kumar Anand, an officer of the State Department of Archaeology and Museums, Govt. of Bihar (Anand 1991-92, Sinha 2001). The rock art sites in the Kaimur ranges and the Vindhyas bordering Uttar Pradesh are predominant in rock paintings. (Anand 1991-92, Sinha 2001). While rock art in South-East Bihar is executed by both additive and reductive techniques, as in Jharkhand and Orissa, rock paintings have been done mostly in red obtained iron oxide pigments as in the rest of India. However, rock art in southern Bihar and in the area bordering

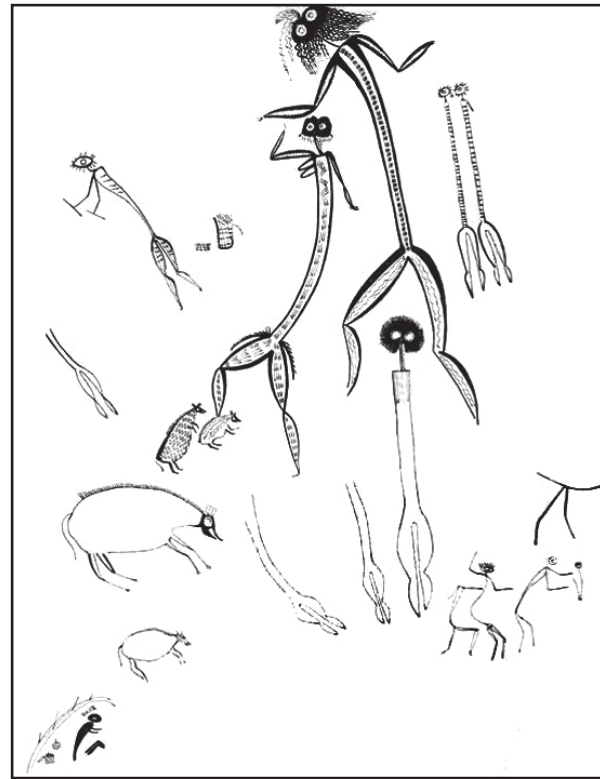


Fig. 37. Early human and animal figures with typical features, Kutakankeri-Badami (after E. Neumayer 1983).

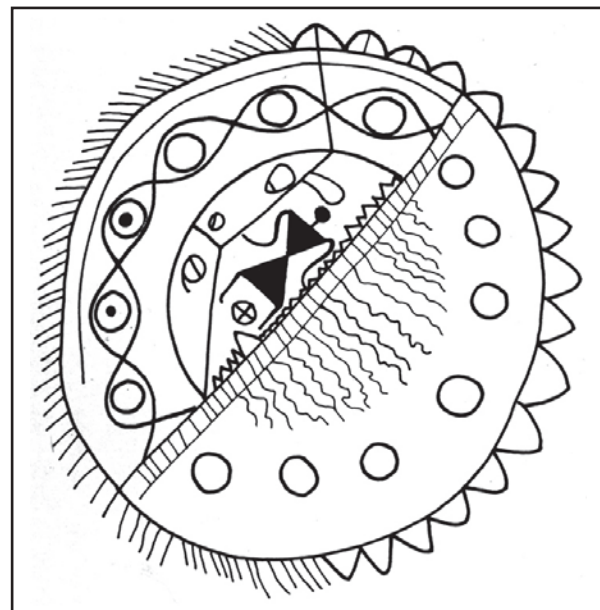


Fig. 38. Megalithic burial scene, Chik Rampur, Karnataka (courtesy: A. Sundara).



Fig. 39. A circle with a trident symbol on the left side of the panel and other figures, Naidupalli, Andhra Pradesh, Megalithic (courtesy: N. Chandramouli).

Jharkhand is predominated by symbols, geometrical and intricate designs and shares the characteristic features with the rock art from Jharkhand and Orissa. The use of blue colour (from azurite pigment) in one of the rock-shelters in this region is unique. This region is rich in petroglyphs having several cup marks and engraved figures of elephants, deer, peacocks, fish etc. But the engraved bulls on a huge granite boulder in the Rajabar forest are a rare feature of this region and appear similar to that found at Holaluru in Shimoga district of Karnataka.

A large number of Kharoshthi and Brahmi-Kharoshthi inscriptions is unique to this region. Through the inscriptions for the first time we

get an evidence of the *saka* traders/travellers from the northwestern India in the second century AD. The reading and interpretation of these inscriptions are unlikely to be dependable.

A painted figure of *Garud-dhvaj* (RS-III A2) is unique. The frequent depiction of phallic human and animal figures, snakes and Buddhist symbols indicates that the region witnessed a dynamic play of different faiths and beliefs in the historic period.

TYPICAL FEATURES OF THE ROCK ART OF KARNATAKA

- A. Sundara has carried out a thorough study of the rock art of Karnataka (Sundara 1974, 1994). He observes that the rock art of

Karnataka has also been executed in both additive and reductive techniques and presents some unique features. The rock art pictures are of three kinds: paintings, bruising and engravings. They range in time from the Upper Palaeolithic or Mesolithic to the recent. Most of them, of course, are prehistoric.

- B. While rock paintings are found in caves and shelters of the peninsular granite hill ranges in the eastern and southern parts of Karnataka and in the shelters of the sandstone hill ranges of the Kaladgi-Bhima series, rock engravings and bruising are found on the granite boulders in open fields particularly in the midwestern part of Karnataka. Most of the paintings in Badami-Aihole belt are either Upper Palaeolithic or Mesolithic in view of the pictures of animals of perhaps extinct species and certain peculiar geometrical designs as well as style. In the vicinity of the sites are sparsely found Upper Palaeolithic and Mesolithic microliths and no habitation remains of the protohistoric cultures.

In Karnataka in the neighbourhood of the rock art sites are generally found the Neolithic Chalcolithic and Iron Age megalithic cultural remains. These sites are predominated by cattle such as bison, ox, cow and, infrequently, wild animals such as leopard, tiger, wild pig, elephant, deer, peacock, geometrical designs that are even today in use, as, for example the endless four knots, to publicly intersecting squares with knots at the corners and of course humans, etc. The paintings are mostly drawn in red ochre, dark or brown red,

and rarely in white. At two places the paintings are bichrome: humans in ochre of deep red and green for the outline at Kutakankeri and a peculiar creature in ivory black and white in Badami.

The humans in Badami-Kutakankeri area are exaggerated in their height, either abstract or in the real form, with hair on the head, eyes and beard on the face and form one of the typical features of rock art of Karnataka. In the mid-eastern part of Karnataka, the depiction of humans and animals in outline or silhouette is normal and conventional. In bruising and engravings the humped bull appears to be the most favourite animal of the artists. Their best examples come from Billamarayana gudda, Holaluru and Holehatti in Shivamogga district. In Billamarayana gudda an animal has been executed by applying both the techniques of engraving and bruising. It is a rare and unique feature. In Narayanapura, on the flat underside of a big inclining rock, a 4 m tall human figure has been drawn. Its proportions and pre-planning are appreciable.

The hunting scene in Badami is of the rare kind and of scenic value. The group dance comprising both men and women on the concave side of a large boulder with open space in the front in Hampi gives an impression that a dance performance is in progress in a theatre for the audience sitting in the front. The row of deer in Hire Benkal appears as if they are drawn with stencils. They are so uniform in their physical form, one behind the other. The 2 m tall standing nude human with the geometrical designs drawn all over the body with squat legs and the hands raised upwards in a cave in Mallapur is another instance displaying the artist's capability of rendering any picture proportionately small or big.

The painting of a robust bull with a prominent hump in Anjanahalli near Anegondi reminds one of the bull on the Harappan seal. The elephant on a large oval-shaped boulder in Bramhagiri is another instance of the choice of the suitable medium by the artist for the display of his talent. A cave painting in Chik Rampur apparently of a Megalithic stone circle (burial) is unique, as Sundara understands.

TYPICAL FEATURES OF THE ROCK ART OF ANDHRA PRADESH

The rock art of Andhra Pradesh is found in three geological formations: granite, sandstone/limestone and shale in that order of frequency of sites. The rock art and archaeological data of the regions share the traits of the Peninsular India. Here also both the additive and reductive techniques have been used in the execution of rock art. The early rock art considered to be Mesolithic is in the form of rock paintings in red ochre. Petroglyphs start appearing in the Neolithic and continue onwards (Chandramouli 2002).

Mesolithic rock art mostly presents wild fauna and has been found in the Kethavaram-Puricherla complex (Kurnool district), at Chintakunta (Kadapa district), Sanganonipalli (Mahaboobnagar district) and Pandavula gutta (Warangal district). No domesticated animals are there. Two phases have been delineated in the Mesolithic rock art, which is also corroborated by archaeological evidence. The first one represents the transitional phase from the Upper Palaeolithic to the Mesolithic. In the first phase, the figures exclusively of large-sized animals in their naturalistic forms are found, mostly at the higher reaches of the rock-shelter and are faintly visible. The paintings of the second phase contain small sized animals mostly in the lower reaches of the rock-shelters and are good in

physical condition. In some cases, they are found superimposed on the paintings of the first phase. The paintings of the second phase are numerically more in number at all the sites. Besides the wild game animals, they also depict some other small animals such as dogs, porcupines, lizards and birds. Human beings are shown involved in various activities and in a variety of postures in hand prints and drawings, geometric and indeterminate drawings.

One of the most striking features of the Mesolithic art of Andhra Pradesh is the total absence of the hunting scenes and the depiction of hunters with bows and arrows. The depiction of the female members is also interesting. In one rare case of the depiction of a sexual scene, the female is shown physically weak without any secondary sexual organs. The children too are rarely depicted and are executed crudely.

The Neolithic cattle domestication phase presents the humped bull besides other animals as a predominantly popular motif. These have been depicted both in paintings and petroglyphs. In paintings, besides red, white pigment has also been used. This trend continues in the following period also. Wild game animals also continue to appear both in paintings and petroglyphs. In one case at Chintakunta in Kadapa district, the humped bull in red ochre has a fifth leg, thus revealing the physical abnormality of the animal. The depiction of human figures with bows and arrows in red ochre on the basis of the state of preservation seems to go well with the Neolithic phase and this may indicate the continuation of the hunting-gathering way of economic activities.

Depiction of iron implements without any associated inscription is the beginning of the Megalithic phase in rock art at the sites of Muumuu (Mahaboobnagar district) Edthanur, Wargal and Sivaru Venkatapur (Medak district),



Fig. 40. Rock painting at Payampalli, Tamil Nadu, Historic (courtesy: K. Rajan).

Ramachandrapuram (Khammam district) and Naidupalli (Prakasam district). The figures start becoming schematic and abstract in form and are almost exclusively done in white colour, although paintings in red ochre are not altogether absent. The most important feature of the Megalithic art is the prolific occurrence of a symbol named 'circle-with a -trident' in the petroglyph form. This symbol is found on the orthostats of the Megalithic cist burials, close to them on the open-air boulders and also on the rock-shelter walls. At one site in the coastal region of Andhra Pradesh, this symbol is found on the shale slabs and outcrops in a variety of shapes, forms and sizes; some of them were transformed in such a way that they depict anthropomorphic forms. On close observation it appeared that this symbol is a composite one comprised of several individual elements. What could have been its significance can only be hypothetical. But in one instance, a group of ithyphallic humans are depicted in dancing/praying posture in front of this symbol, whose heads are shown schematically with a small horizontal stroke, indicating the cultic significance of this symbol. This symbol also seems to have

been confined only to the Megalithic art of Andhra Pradesh. Painted petroglyphs found at Ramachandrapuram (Khammam district) are similar to that in Orissa. It should be mentioned that megalithism continued into the early historic period and, as such, it is reflected in rock art also. Inscriptions and other religious symbols in red ochre make their appearance now for the first time. By the mediaeval times rock art in red and white colours seems to have lost its pristine nature and becomes a mere narrative one. It depicts horse riding warriors, religious symbols and inscriptions which can be dated to on palaeographical grounds, religious personages such as the Jaina Tirthankaras, etc.

TYPICAL FEATURES OF THE ROCK ART OF TAMIL NADU

The discovery of rock paintings at Mallapadi in Dharmapuri district by K.V. Raman in 1978 initiated a new beginning in the study of the rock art of Tamil Nadu. So far, more than seventy-five sites are known to have yielded paintings executed on rock-shelters and the 'megalithic' tombs. Only a few of the sites have engravings. Rock art is witnessed throughout the region with a higher concentration in the northern part of Tamil Nadu. Rock art sites are found mainly in association with the Mesolithic, the Neolithic and the Iron Age cultures and to some extent with the Early Historic. In the Mesolithic and the Neolithic contexts, they occur on the open rock-shelters located within the vicinity of the settlements. In the Iron Age context, they are found both on rock-shelters and the graves, particularly the dolmens. Some of the rock paintings are noticed in the caves associated with the Jain beds engraved with the early historic Tamil-Brahmi inscriptions. Artefacts like the mesolithic tools, neolithic celts and Iron Age habitation materials were recovered from the majority of the rock-shelters and their

surroundings in Tamil Nadu, e.g., Mayiladumparai, Munandipatti, Ulkombai, Kilvalai, Perumukkal, Mallapadi and Paiyampalli.

Rock paintings were made invariably by using both white and red mineral pigments. At Mayiladumparai and Ormanagunta, paintings in red pigment are superimposed by white pigment and thereby suggest an earlier date for the red ones. The type, position and techniques indicate that they were executed particularly at different locations of the same shelter.

With regard to engravings, Tamil Nadu has very limited evidence, but the Perumukkal engravings are the best examples of this



Fig. 41. Deeply carved elongated human figures with upraised hair or decorated head, Edakal cave, Kerala.

category. There are sporadic engravings in rock-shelters at Mayiladumparai and Tirumalpadi. The excavations carried out in the shelters with engravings suggest that these engravings belong to the Neolithic phase. The Perumukkal engravings, because of their occurrence in the border land associated with Kerala, are identical in all respects to those found at the Edakal caves located in the same region, but in Kerala. However, the former's cultural association is yet to be ascertained though claims have been made for their prehistoric origin. Besides the usual engravings on the walls of the shelter, cup-marks are noticed on the capstone of the Iron Age Megalithic cist burials at Karubayanahalli and Vedarhattakkal in Krishnagiri district. Cup-marks were also seen for the first time on the boulders of a stone circle entombing a cist burial at Velliripatti near Melur in Madurai district and on flat bedrock at Malaiyadipatti near Pudukottai in 2010.

In Tamil Nadu, traces of rock art are found in the districts of Dharmapuri, Krishnagiri, Tiruvannamalai, Vellore, Coimbatore and Madurai with heavy concentration in the first two districts. The earliest paintings associated with the Mesolithic phase, seen at Sirumalai, Mayiladumparai, Ulkombai, Munandipatti and other places, could be associated with the Mesolithic phase.

In the case of Iron Age, the picture is somewhat clearer. The area under study had witnessed the inhabitants belonging to different social/occupational groups. The earliest groups were involved mainly in hunting and cattle-rearing, while the later ones were engaged in agriculture. The former groups generally settled on hillocks, whereas the latter ones occupied the riverine tracts, which are suitable for agriculture. Though both the groups followed the practice of raising Iron Age Megalithic tombs for the dead, there seem to be architectural and



Fig. 42. Deeply carved enclosure with animals and associated channels on laterite bed, Usgalimol, south Goa, Megalithic.

cultural variations in their funerary rites. The groups that occupied the hillocks or foothill regions generally built dolmens and dolmenoid cists. Their main water source was small tanks and perennial ponds. The inhabitants settled on plains adopted urn burials and stone circles entombing cist or urn burials (Rajan 1992a: 35-47). The size, type and location of the burials and the associated habitations indicate that in Tamil Nadu, rock art was created by the people who were actively involved in cattle-raising rather than those associated with agriculture. Most of the paintings were noticed on rock-shelters and dolmens. The rock-shelters are generally located in the middle elevations of the hillocks. Their location in the vicinity of the



Fig. 43. Deeply engraved labyrinth on laterite bed, Usgalimol, south Goa, Megalithic.

habitation mounds and Iron Age graves thereby exposes their close relationship.

MOTIFS, THEMES AND THEIR LOCATIONAL CONTEXT (TAMIL NADU)

There is very slight difference between the motifs found on the dolmens and in the rock-shelters. The former have numerous human figurines involved in fighting, whereas the latter have scenes depicting social gatherings.

The paintings at several sites depict the scenes of warriors heading for cattle raids. In these cases, generally the warriors are seen mounted on cattle and holding weapons such as swords, javelins, lance like objects and shields. In a few cases, the victorious hero is shown with a headdress or square box and mounted on cattle. The square box may also indicate the memorial stone raised for the slain hero involved in cattle retrieval.

Hunting scenes are shown in different patterns. At a site, an archer holds a bow and arrow above his head in a position of shooting the arrow upwards. In a scene, four hunters encircle a deer standing in the centre. The horns of the deer are depicted with branches and this suggests the attention for details on the part of the painter. Fighting scenes, tilling of the land, dancing in a row, riding a horse and cattle-rearing are some of the other scenes portrayed in rock art.

Another important aspect of the study is the graffiti found in association with various themes. At Kilvalai five symbols were found (Samy 1984: 71-72) and such graffiti were found at Vettavalam, Tirumalai, Kurralapadai and Podikaimalai. The Panaikkarans, a contemporary 'tribal' population, worship the symbols found at Podikaimalai. Recently, engravings were found on the rock-shelter at Perumukkal and at Tirumalpadi. These engravings are identical to the paintings found

elsewhere. It is probable that in the course of time, instead of painting, people began to engrave to make their art last forever.

TYPICAL FEATURES OF THE ROCK ART OF KERALA AND GOA (AS UNDERSTOOD BY GIRIRAJ KUMAR)

According to Y. Mathpal, the rock art of Kerala also begins in the Mesolithic and continues up to the Neolithic, Megalithic and Historic periods (Mathpal 1998). It also shares the characteristics of rock art in other parts of the peninsular India in the corresponding periods. But the rock art of the Edakal cave in Kerala in the borderland associated with Tamil Nadu is exclusively done in deep carvings and depicts elongated human figures with upraised hair or decorated head, sometimes wearing masks, animals and symbols. Y. Mathpal assigns a few of the early figures to Neolithic (Mathpal 1998:39-46). However, the rock carvings in the Edakal cave are predominantly Megalithic and Historic.

The rock art in the western coast in Goa is unique, as it has been executed in deep engraved lines on sloping laterite bed overlooking a small stream near Usgalimol in south Goa. This is the first case of its kind so far known in the world. The figures have been associated with the Megalithic and early Historic phases. The rock art depicts humped bulls, birds, symbols and cupules. The figures are spectacular and a big labyrinth is noteworthy. In some of the cases, humped bulls and cupules have been connected with deep channels. Rock paintings, if there were some at any time, could not survive because of the hot and humid conditions of the region.

CONCLUSION

The evidence from Bhimbetka and Daraki-Chattan through the EIP Project

unambiguously established that the antiquity of rock art in India goes back to the Lower Palaeolithic Age.

A new picture of Indian prehistory has emerged with the discovery of the complex of painted rock-shelters of Bhimbetka and in the adjoining area, and their study and excavations by scholars. The presence of microliths in all the excavated painted rock-shelters, the finding of hematite, yellow ochre, and manganese pigment stones in Mesolithic layers and the discovery of green pigment in an Upper Palaeolithic layer provide impressive support for our conclusion that the creation of rock paintings in the form of intricate designs and iconic figures began with the appearance of non-geometric microliths in the Upper Palaeolithic.

The theme of the figures in rock art generally was not a depiction of the day-to-day life activities or socio-cultural and natural environment as seen by their authors. Rather, it reflects the reality as perceived by their authors in particular and the related community in general, and also the human behaviour developed in the light of the wisdom so earned at different stages in human history. Birth and death are two important realities of life understood by the hominins and are associated

with different kinds of ritual practices and ceremonies in different communities in different parts of the world. In between these two ends of birth and death, hominins have been making their best efforts to sustain, maintain and enjoy life in a particular environment. In this process of struggle and celebration of life they manifested their creative ideas and thoughts in the form of rock art (Kumar 2009b).

Thus, rock art is a reflection of human mind, thought processes and efforts made for understanding the reality through the journey of evolution. It presents the human spirit of adventure and creativity, living a life full of energy, enthusiasm and happiness, meeting the challenges with passion to overcome them, and the discoveries and inventions made. It manifests the strong human spirit of the celebration of life in perfect harmony with nature, and the philosophy of life developed in this process (Kumar and Pradhan 2008:59-50).

The early humans were able to explore such beautiful and charming sites which were used by the coming generations for hundreds of thousands of years, in some cases even up to the present, for their creative manifestations in the form of rock art (Kumar 2011).

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