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Recent Investigation into the Probable Late Palaeolithic Rock-Art Sites in the Northern Bargarh Uplands, Odisha

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Abstract: The present paper briefly discusses the results ofrecent investigations carried out in the Debrigarh-Lohara massif located in the northern Bargarh uplands of Odisha, which brought to light three new rock art sites. The most significant characteristic features of these newly discovered rock art sites are, absence of petroglyphs, ceramics, and use of bi-chrome as well as polychrome techniques in the art representations, and presence of monochrome pictographs executed by purple red pigment and represented mostly by naturalistic wild animal and anthropomorphic forms, besides a few design patterns. The habitation floor of two rock art sites out of three yielded evidence for microliths including geometric forms, besides a few used red ochre pieces. On circumstantial grounds, taking into consideration microlithic assemblages from stratified and dated open-air sites located nearby the Debrigarh-Lohara massif, a Late Palaeolithic time bracket for the pictographs of the newly discovered rock art sites has been suggested.

Keywords: Rock art,Pictographs, Anthropomorphic form, Naturalistic representation, Red ochre, Microliths.

Introduction

Ever since the first discovery of a rock shelter with some engraved forms ‘proto-script’ (still undeciphered) at Vikramkhol rock shelter by K. P. Jayaswal (1933: 58-60) in the present Jharsuguda district of Odisha, more than hundreds of such shelters containing petroglyphs (engravings) and pictographs (paintings) have been brought to light in different parts of the sandstone formation of Gondwana age stretching from northwestern part of Sundargarh-Jharsuguda districts of Odisha to the

Khandagiri-Udayagiri cave complex near the capital city of Bhubaneswar and beyond (Behera 1989, 1991-92: 7-17,2000-2001: 1-12, Behera and Badam 2019: 279-88, Chakravarti 1936: 229, Fabri 1936: 230, Gadnayak 2008, Gadnayak *et al*2018: 1-12, Hussain and Mendaly 2023: 291-05, Majumdar 1955: 321, Mohapatra 1982: 97-100, Neumayer 1992: 13-24, Ota 1994: 17-22, Padhan 2014: 321-31,Pathy 1984: 11-15, Pradhan 1995: 5-13, Pradhan 2000: 635-50, Pradhan 1999: 17-32, Sahoo 2015 and 2016: http://www.etribaltribune.com, etc.).The hills of this area are mainly composed of medium-coarse textured ferruginous sandstone with accretions of shale, grit and silt of the lower Gondwana sediments, which were deposited in Satpura-Mahanadi graben, defined by pronounced NW-SE trending lineaments on a pre-Cambrian platform (Pandya 1985: 46). The most common characteristic features of the rock art of this region are, rare representation of human figures, a large variety of geometric and non-geometric design patterns, human palm and foot forms, triangular forms with downward cones and small somewhat oval engraving in the lower-middle portion of each of these triangles probably representing female genital organs (human/animal?), besides a wide array of wild as well as domestic animal, reptile, frog and bird forms. While some of the engraved forms are also painted with dark purple red and yellow ochre, the paintings are executed in dark purple red, orange red, yellow, white and black color pigments which appear in monochrome, bi-chrome and rarely polychrome. Besides the above area, sporadic rock art sites have also been found in granitic/quartzitic outcrops/shelters in Subarnapur (personal visit), Kalahandi (Singh Deo 1976: 21-2), Nuaparha (Singh Deo 1976: 21-2), Mayurbhanj (Ambuj 2018: 105-13, I.A.R. 1975-76: 37)and Keonjhar (I.A.R. 1958-59: 73, 1984-85: 58)districts of Odisha.On the basis of density and subject matters represented, scholars have identified broadly nine rock art zones (Fig. 1) in Odisha (Behera 2000-2001: 2, Hussain and Mendaly 2023: 292).

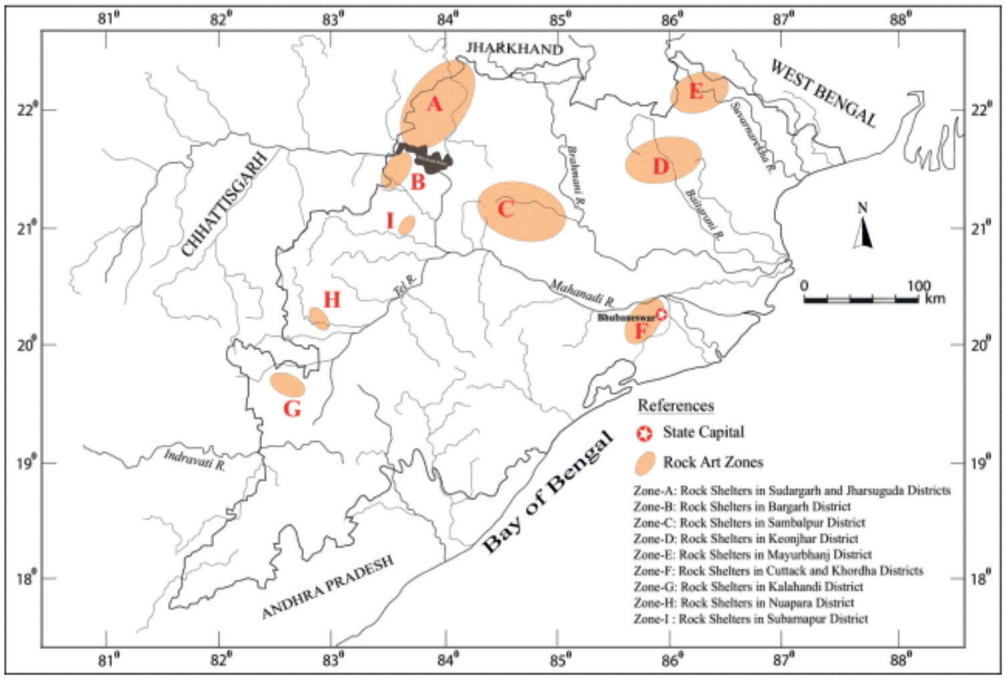

Figure 1: Distribution of rock art sites in nine different zones in the state of Odisha (after Hussain and Mendaly 2023: 292)

Bordering the south-eastern part Chhattisgarh state, the district Bargarh, lying south of right bank of the Mahanadi, occupies the western-most part of Odisha.It remained *terra incognita* from

rock art perspective for a pretty long time, though it is not far away from the rock art complex of Sundargarh and Jharsuguda districts of Odisha. For the first time, the Indira Gandhi National Centre of Art (IGNCA), New Delhi, conducted a survey and systematic documentation of only four rock art sites during 2008 in the Debrigarh Wildlife Sanctuary, district Bargarh (http://ignca.gov.in/Bargarh/). Although no petroglyphs could be found, all the four rock shelters contain mostly pictographs of naturalistic/stylistic human as well as wild animal forms and intricate design patterns, human palm forms, all executed in purple-red pigments. The floor of these rock shelters also yielded microliths, though no details are known so far. Since the last few decades systematic and intensive exploration have been undertaken under the leadership of the first author, assisted by his M.Phil. and Ph.D. scholars, in the Bargarh uplands, drained by the river Jira and its tributaries. As a result, a large number of localities bearing evidence for Late Acheulian, Middle Palaeolithic and Late Palaeolithic (Fig. 2 and 3) cultural remains have been brought to light (Behera *et al* 2015: 1-13, Behera and Thakur 2019: 1-11, Deep 2016, Mendaly 2014: 79-82, Mishra 1997-98, Seth 1995-96, Thakur and Behera 2015: 1-19,Thakur 2023). During the course of our intensive investigation, particularly in the northern part of the Bargarh uplands, we registered several pieces (used and unused fragments/nodules) of haematite (iron oxide), manganese oxide and clay mineral pigments associated with open-air microlith bearing sites in primary as well as semi-primary surface contexts and also from stratified contexts at three sites, namely, Torajunga (Fig. 3: site no. 27), Barpadar/ Locality-C (Fig. 3: site no.20) and Kasurdih (Fig. 3: site no. 30), all located in the Jira river valley system.

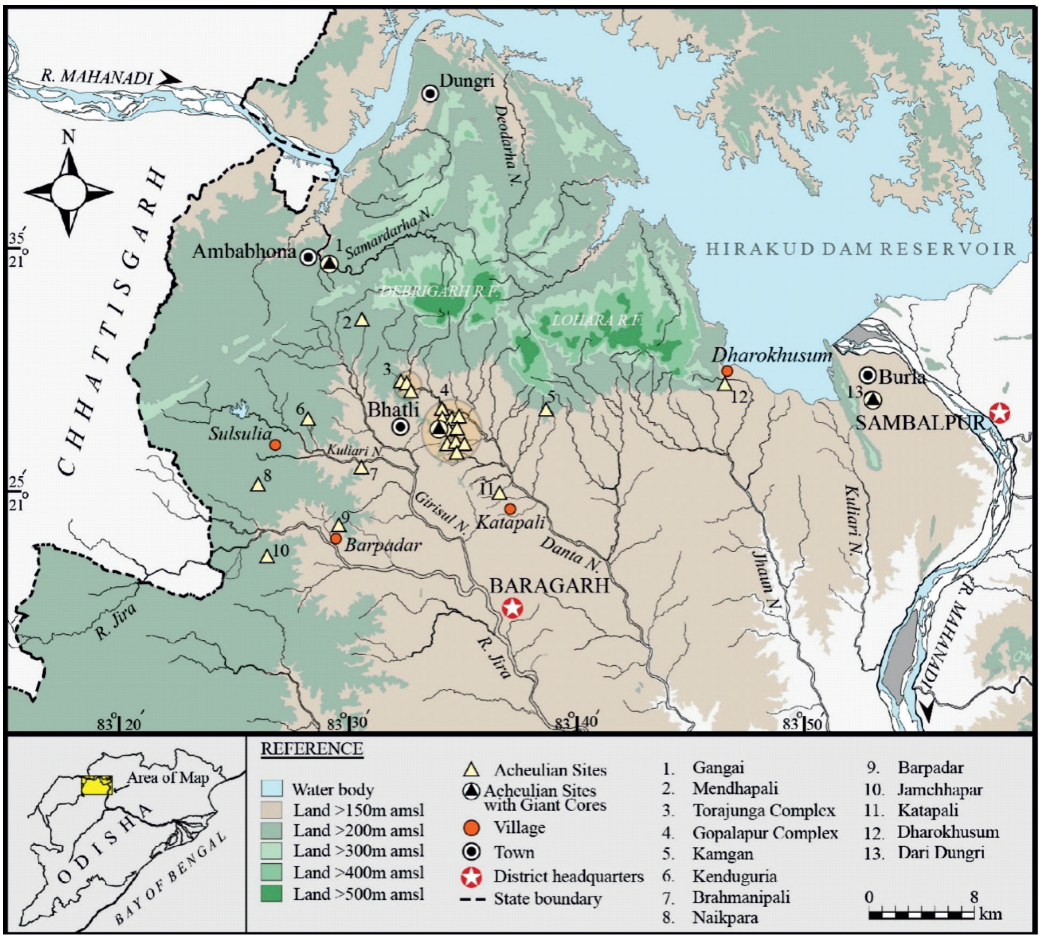

Figure 2: Distribution of Late Acheulian-Early Middle Palaeolithic sites in the northern Bargarh uplands

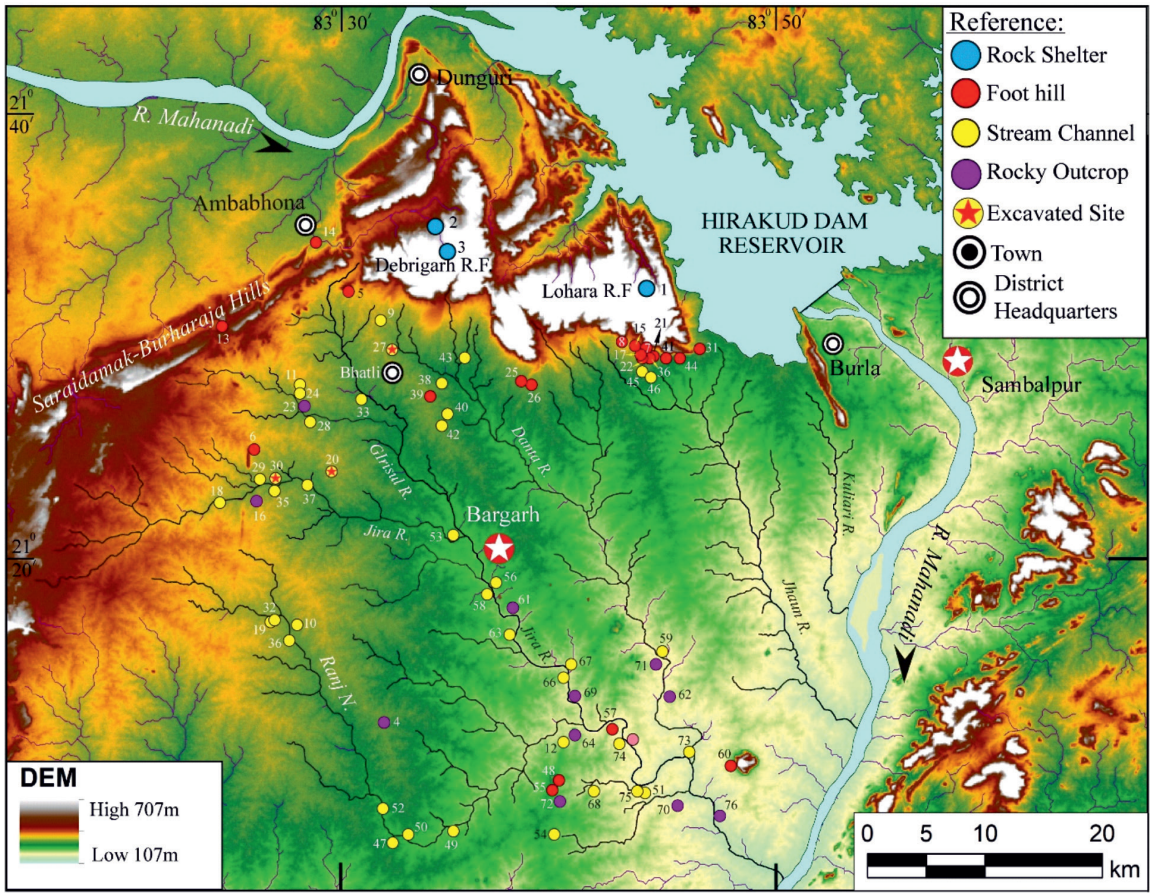

Figure 3: Distribution of Late Palaeolithic/Microlithic sites and newly discovered rock art sites (site nos. 1-3) in the river Jira system of northern Bargarh uplands. Excavated sites associated with used/unused red ochre, 27 Torajunga; 20 Barpadar Locality-C; 30 Kasurdih

At Torajunga open-air Palaeolithic site, during the process of excavation, a large block of quern and two ovaloid-shaped used pestles have been brought to light associated with microliths (Behera and Thakur 2018: 129-47). This discovery and the earlier discovery of four rock art sites by the IGNCA, prompted us to reinvestigate the Debrigarh-Lohara Wildlife Sanctuary with a hope to encounter more rock art sites in the northern Bargarh uplands to understand the variability in the context of occurrence and use of red ochre/haematite and other mineral pigments.With the help of some forest guards and permission from forest Ranger, we located three new rock art sites in this area. The present paper seeks to highlight the rock art and other material finds encountered in these three new rock shelter sites in the northern Bargarh uplands.

The Area and its Physical Settings

The district Bargarh which spreads over 4662 km^2 surface area, geomorphologically may be divided into three broad natural zones, namely, i) denudational hills, ii) upland plains and iii) vast pedeplain with sporadic inselbergs which vary in height between 255->315 meters above mean sea level (Fig. 4). The granitic terrain is weathered to varying depths at different places leaving behind isolated patches of un-weathered rocks. The massive weathering has given rise to the formation of the extensive pedeplain in the region. The area is not a levelled tract, but an expanse of undulating country sloping down from the hill ranges in the north-west and north to the Mahanadi Valley in the east and southeast.

The district exposes different litho-stratigraphic units with varied litho-assemblages. The area lying towards north and north-west of the upland mainly comprises of meta-sedimentary rocks, *viz*., coarse,earthy, felspathic, and other varieties ofquartzite, conglomerate, shale and calcareous shale, belonging to the Chhattisgarh Supergroup (Das *et al*.1992:271-88, GSI 2002).The constituent rocks of the upland are a varietyof granitic rocks varying in composition from tonalite, medium-grained granodiorite, porphyritic granodiorite, toalkaline-granite. The whole granitic unit is referred to as *'West Orissa Granitic Complex'*(Naik 2003: 83-94). Oldermeta-sedimentary rocks occur as enclaves within the granitic rocks, which are intruded at places by dolerite dykesand quartz reef/ veins (Fig. 4).

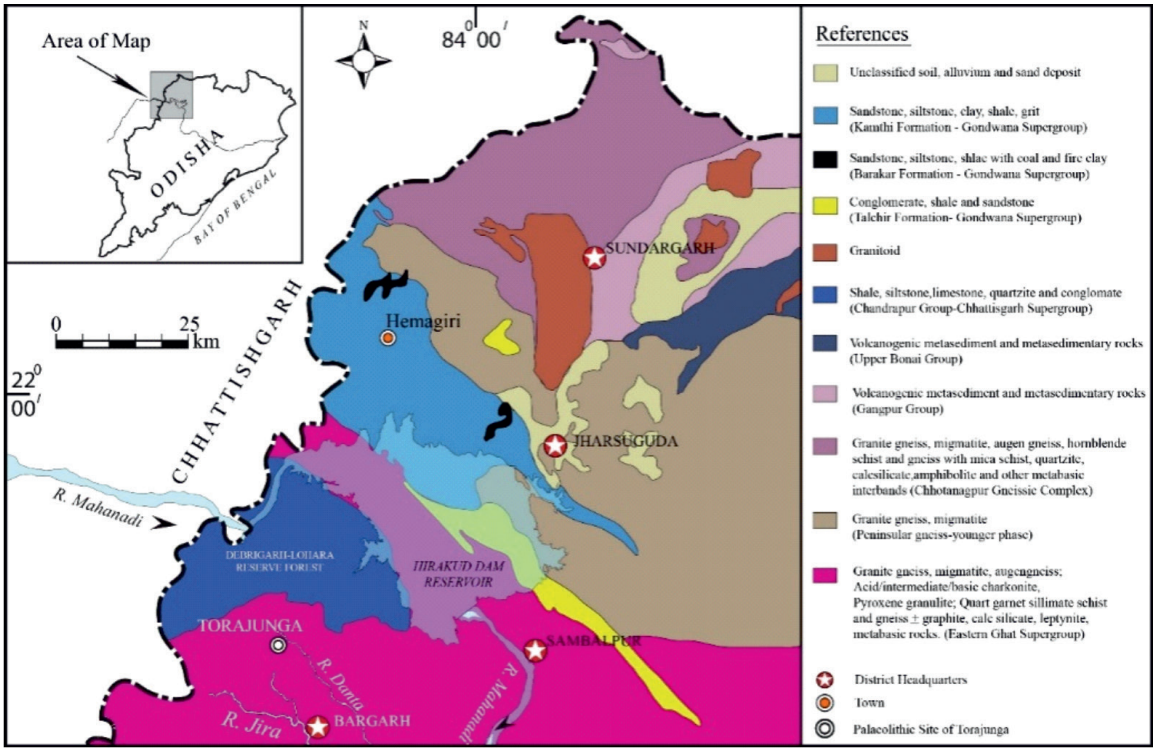

Figure 4: Map showing rock formations of the northern Bargarh uplands and the adjoining western parts of Jharsuguda and Sundargarh districts of Odisha.

The area has undergone intense tectonic deformations, as evident from the presence of numerous faults and joints in the granitic rocks. Many of the fault zones are silicified and some are filled with quartz veins. The silicified rocks are massive, fine-grained and are of various colours, from palewhite, yellowish to brown. Thin to thick quaternary deposits overlie the eroded and weathered granitic basement with a prominent unconformity. The Quaternary deposits have undergone large-scale erosion at many places, particularly in the western part of the uplands, which is evident from the presence of numerous alluvium filled palaeo-channels that cut across the deposits.

The overall drainage pattern of the area is dendritic to sub-dendritic with moderate drainage density and is primarily controlled by tributaries of the River Jira and the Ong of the Mahanadi River system (Fig. 5). While the Jira with its major and minor tributaries drains the northern and north-western part of Bargarh, the river Ong and its tributaries drains the southern Bargarh uplands. Except a few major tributaries, all other streams of this area retain water only during the monsoon and post-monsoon seasons, from July to March.

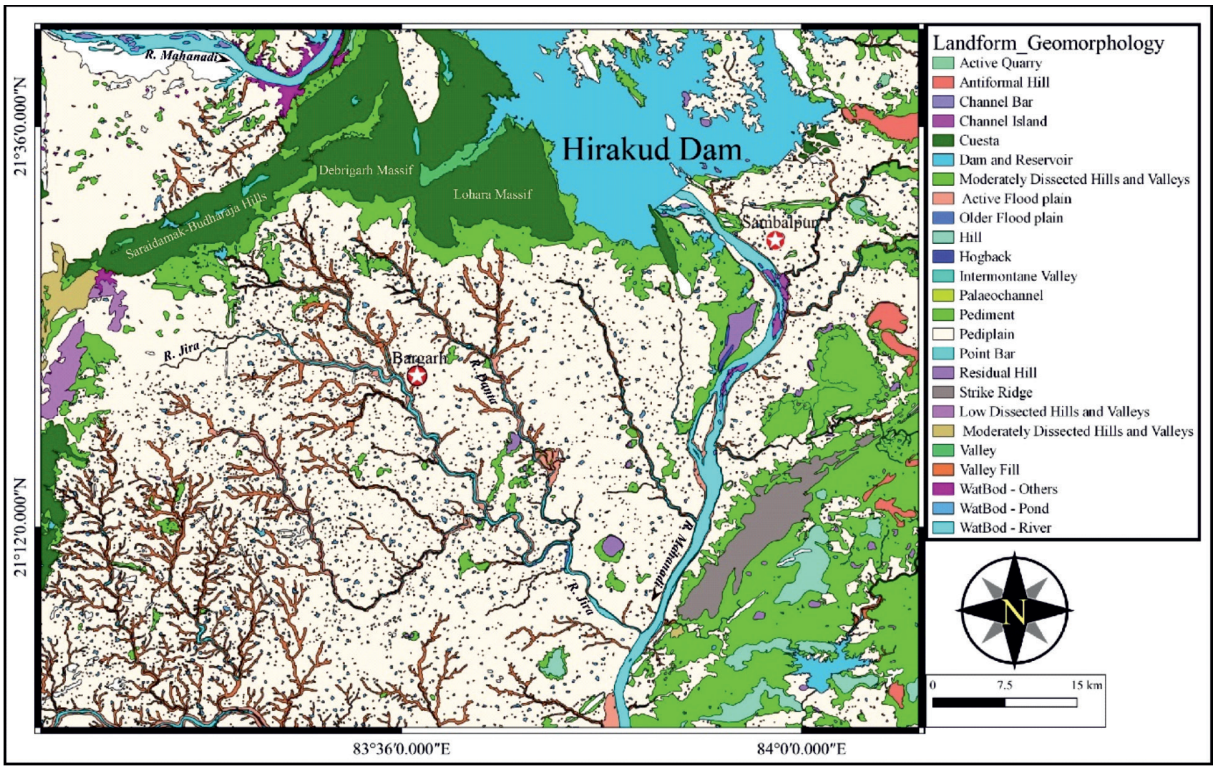

Figure 5: Map showing overall drainage pattern of the river Jira and associated geomorphological features in the northern Bargarh uplands

The natural vegetation, characterised by dry mixed deciduous type of forest, closely resembling that of semi-aridand sub-tropicalzone, and stands in a variety of landforms, ranging from low lying river valleys to a chain of hills, and is sparsely distributed in the area, being mostly confined to the highlands lying towards north, north-west and western part of the district of Bargarh. However, intensive human interference like agricultural activities and forest clearance has caused large-scale depletion in vegetation cover in the area, which led to massive erosion of the top soil of the pedeplain. The climate of this area is characterised by long warm summers and cold winters, with mean annual rainfall of about 1500 mm. Despite continued human interference, the area still boast of large varieties of wild fauna, including small and large game animals, avian and aquatic species (Senapati and Mahanti 1971).

The Sites

As mentioned earlier, the first discovery and documentation of rock art sites (four nos.) in the Bargarh upland was made by the IGNCA, New Delhi in 2008. Unfortunately, during our subsequent visit to this area in the year 2016-17, by using the geo-coordinates documented by the IGNCA, we failed to relocate the rock art sites. However, we were successful in adding three new rock shelter sites in the area, one in the north-east of Lohara massif and two other in the north-west of erstwhile Debrigarh village, presently rehabilitated elsewhere by the Forest Department (Fig. 6), details of which are given below.

During our investigation, though we encountered a large number of natural caves in phyllitic and quartzitic formations and small-very large natural rock shelters in the highly-jointed quartzitic formations in the Debrigarh-Lohara massif (Fig. 7), only three shelters contain pictographs and none

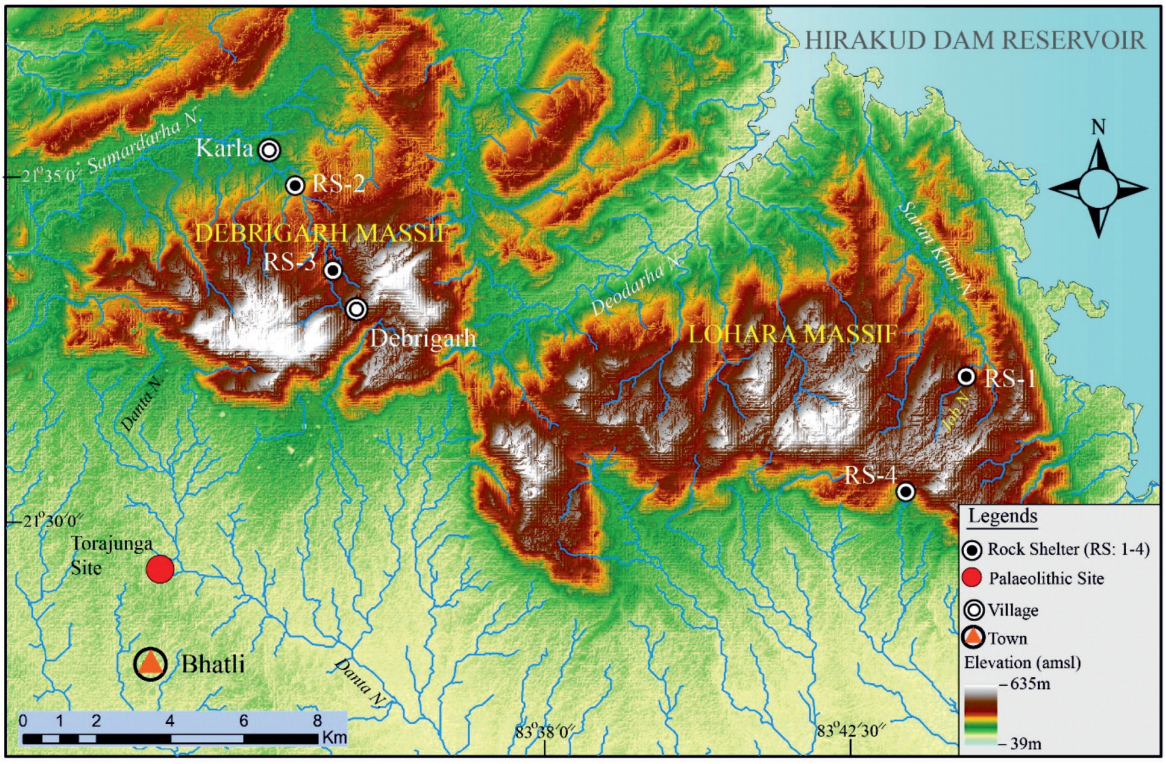

Figure 6: Map showing the location of three newly discovered rock art sites (RS 1-3) and a massive rock shelter without any art (RS-4) in the Debrigarh-Lohara wildlife sanctuary

of the shelters reveals any evidence for petroglyphs. Here the quartzites are juxtaposed with phyllites and the transition zone is composed of fault gouge materials. Slicken surfaces are also observed on the vertical scarp of quartzite. These observations suggest that the vertical scarp represents a fault plane. The quartzite block in this zone of deformation is highly jointed. During the course of time, through physico-chemical weathering process most of the rock shelters were formed by falling of huge blocks of quartzite from the joints.

The Rock Art Site on Job Stream(Fig. 5: RS-1)

This rock shelter (N 21.535999, E 83.736557; Elevation 418m amsl.), facing north-west and formed of highly jointed quartzite, is located in the south-eastern part of the Lohara massif and situated on the upper reach of the right bank of a minor tributary the*Job* stream, which is a tributary of the perennial river *Saran Khol*. The shelter measures 115m in length, 4.5m in depth and the ceiling 7.5m from the ground surface (Fig. 8). A minor water fall originates from the right rear side of this shelter. The front and right side wallof the shelter contains a variety of pictographs (Fig. 9) executed in dark purple pigment, except one sun-like symbol which is in orange-red pigment (Fig. 8: no. 11 and 12). The subject matters include anthropomorph figures, wild animals, intricate design patterns and unidentifiable forms.Although due to their exposure to sun and rain besides dampness inside the shelter most of the paintings appeared in faded condition, yet their image quality was enhanced by using DStretched technique. A few bear holes on the habitation floor revealed occurrence of two pieces of used haematite crayons, besides microliths, which include bladelet cores, complete as well as broken flakes, blades and bladelets, retouched flakes, retouched and backed bladelets and a few geometric forms, besides chips and chunks (Fig. 10 and 11). The microlith assemblage is mostly made

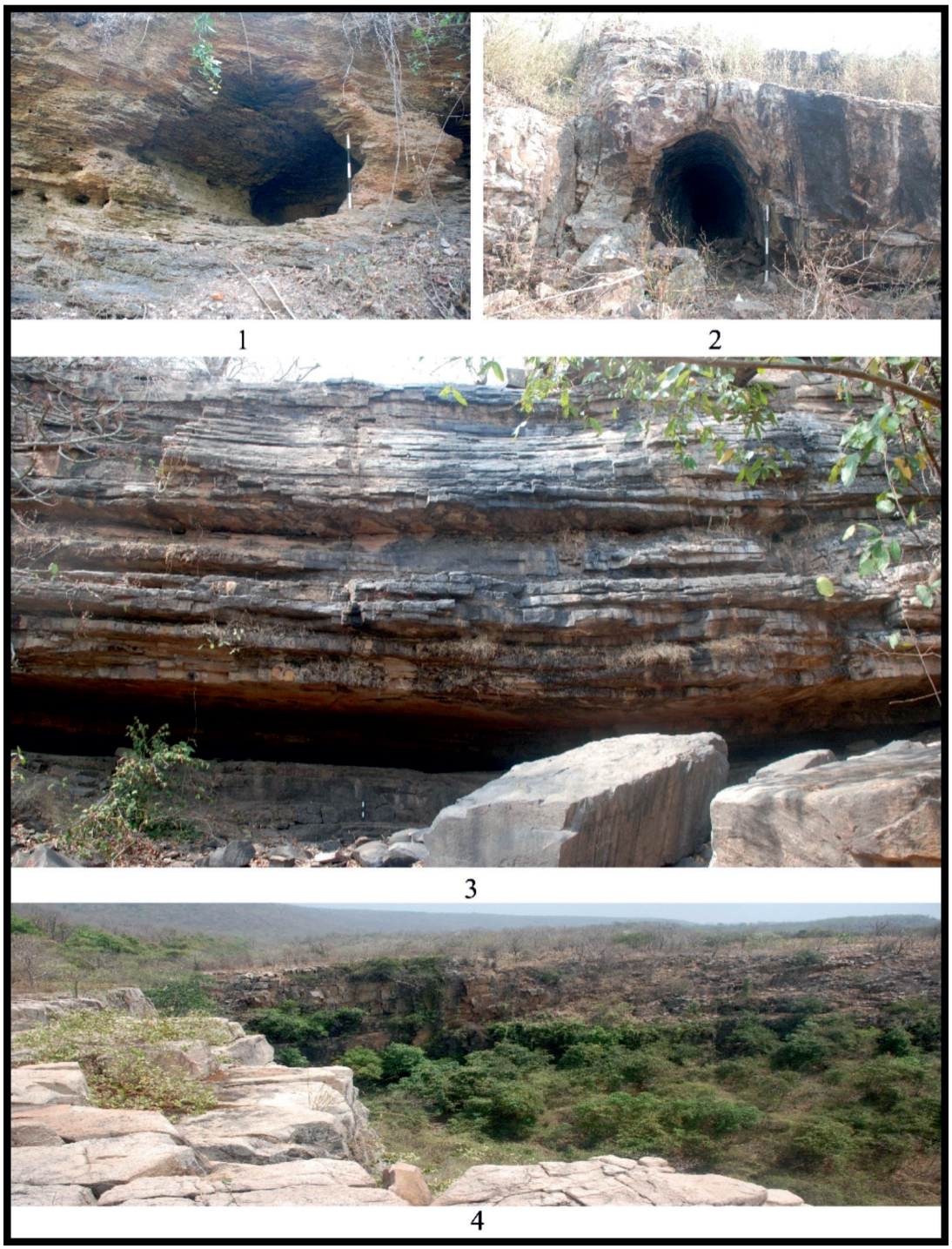

Figure 7: 1. Natural cave in phyllitic formation; 2. natural cave in highly jointed quartzite formation; 3. huge natural rock shelter without rock art (Fig. 5: RS-4), formed of highly jointed quartzite (scale 50cm), located about 1km north of the nearest village Junani; 4. A view from the top of RS-4, showing several shelters at the base of the vertical scarp zones

out of chert, agate, chalcedony and milky quartz as well as quartz crystal raw materials. The blank form, mostly represented by rounded pebbles, of the available cores suggests raw materials were most likely procured by the inhabitants either from the lower reach of the *Saran Khol* stream, or from the bed of the river *Mahanadi*, which are now submerged under the Hirakud Dam Reservoir.

Figure 8: Rock shelter, formed of highly jointed quartzite, with pictographs on the *Job* stream.

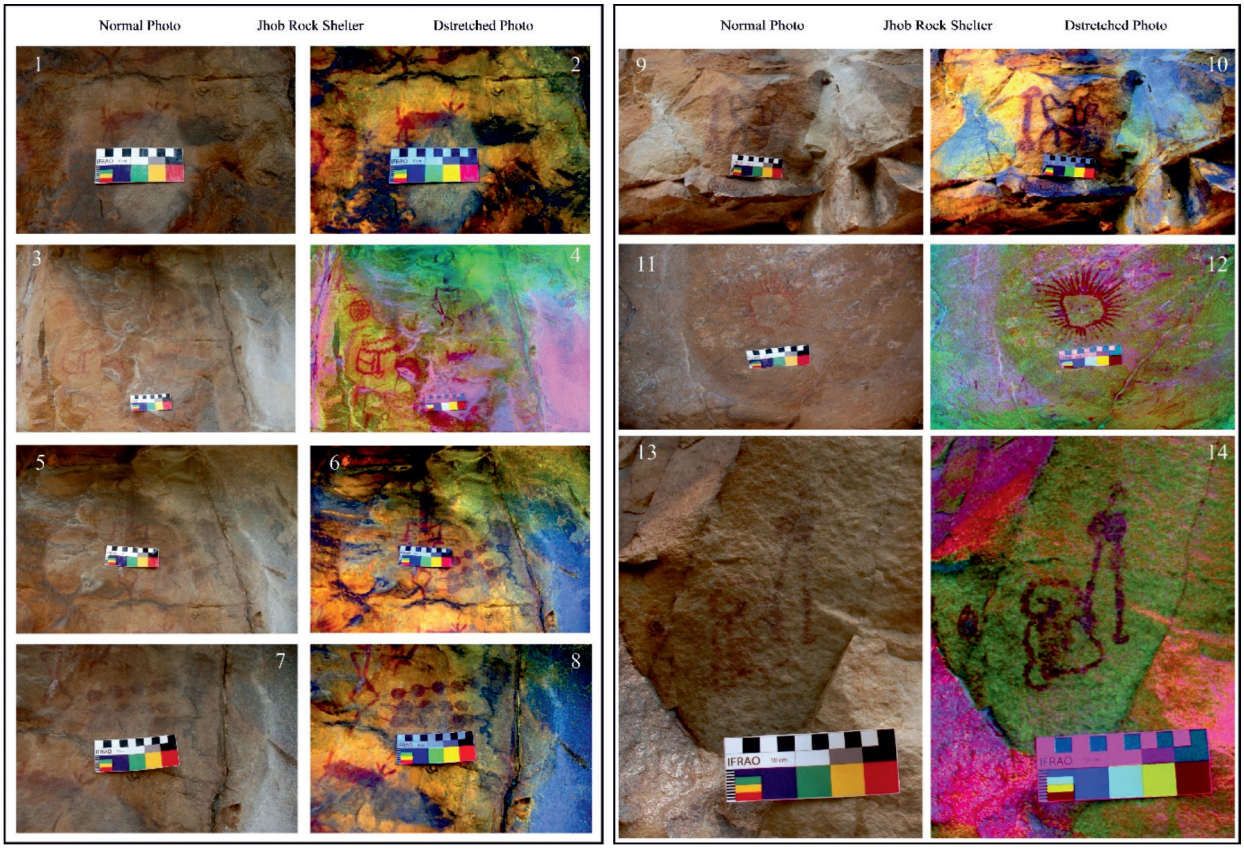

Fig. 9: 1 & 2 wild horned animal form (dear?); 3 & 4 unidentifiable linear and zig-zag design patterns; 5 & 6 anthropomorphic figure in sitting posture with raised hands resembling a frog; 7 & 8 rhombic pattern and linked solid dots (bead?) in three rows;9 & 10 anthropomorphic form behind a bird-like linear painting; 11 & 12 sun-like form; two anthropomorphic forms, one in walking posture and another sitting (?).

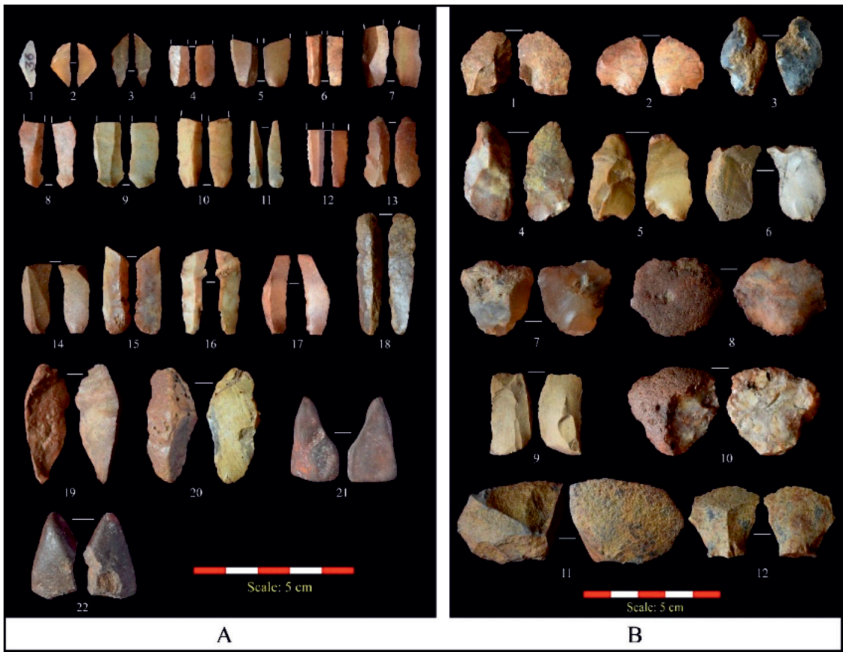

Figure 10: (A) 1-2 isosceles triangle; 3 scalene triangle; 6 & 17 unilaterally retouched; 8 & 10 notch; 11-12 &15-16 denticulate; 4-5, 7, 9, 13, 14 &18 unretouched complete and broken bladelets; 19-20 unretouched blades; 21-22 used haematite (red ochre) sub-angular nodules. (B) unretouched flakes of different raw materials showing various stages of detachment from cores.

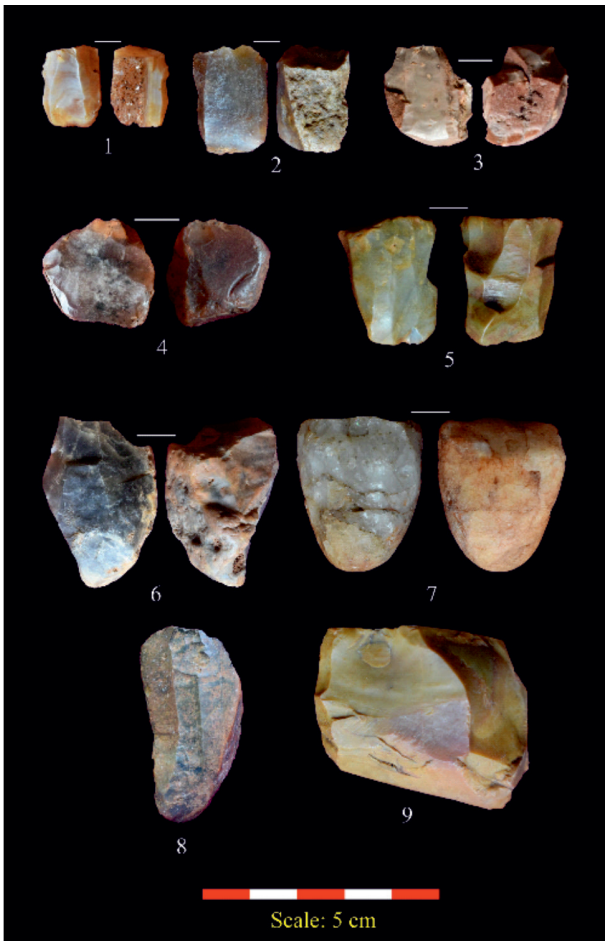

Fig. 11: bladelet, blade-bladelet and flake cores of different raw materials from Job rock art site.

The Rock Art Site of Magargarh (Fig. 5: RS-3)

Formed of highly jointed quartzite formation and facing west (N 21.561831, E 83.58165; Elevation 396m amsl.), this rock art site is located about two kilometers north-west of the village Debrigarh and situated near an ephemeral hill stream, a tributary of the *Samardarha* (Fig. 5). The shelter measures about 6.30m in height from the floor, about 4.45m in depth and about 26m in length (Fig. 12). The floor is covered with huge fallen rocks from the ceiling, and is devoid of microliths and other artefacts. While there is total absence of petroglyph, almost all the available paintings (Figs. 13 and 14), executed in purple red pigment, occur on above man-high of the shelter wall at different heights and mostly these appeared faded due to long exposure to rain and sun. The paintings are represented by wild animal forms, insect (centipedes?), anthropomorphic and unidentifiable forms.

Figure 12: Rock shelter site of Magargarh (scale; 1 meter)

The Rock Art Site of Barabakhra (Fig. 5: RS-2)

This rock shelter (N 21.5823, E 83.572531; Elevation 296m amsl.) is located about two kilometers south-east of the nearest village Karla and about five kilometers north-west of Magargarh rock art site, and situated at the top of a small hillock on the north-western foothill of Debrigarh massif. During festive occasion the locals of village Karla and surrounding areas gathered in and around this shelter for several days of ritual performances. Due to availability of water in the form of a small water fall towards the right rear side of the shelter, picnickers from distant places also frequented this shelter, particularly during the winter season for feast and other entertainment, as a result the entire inner side roof and wall are smeared with thin-thick layer of shoot produced during the process of large-scale cooking activities, which virtuallycoveredmany of the prehistoric paintings. Even many of the paintings have been vandalized by the picnickers. The shelter which is formed of highly jointed quartzite and facing east, measures about 101m in length, 4.5m in depth and about 5m in height from the floor. The shelter wall exhibits very few identifiable monochrome paintings executed in purple red

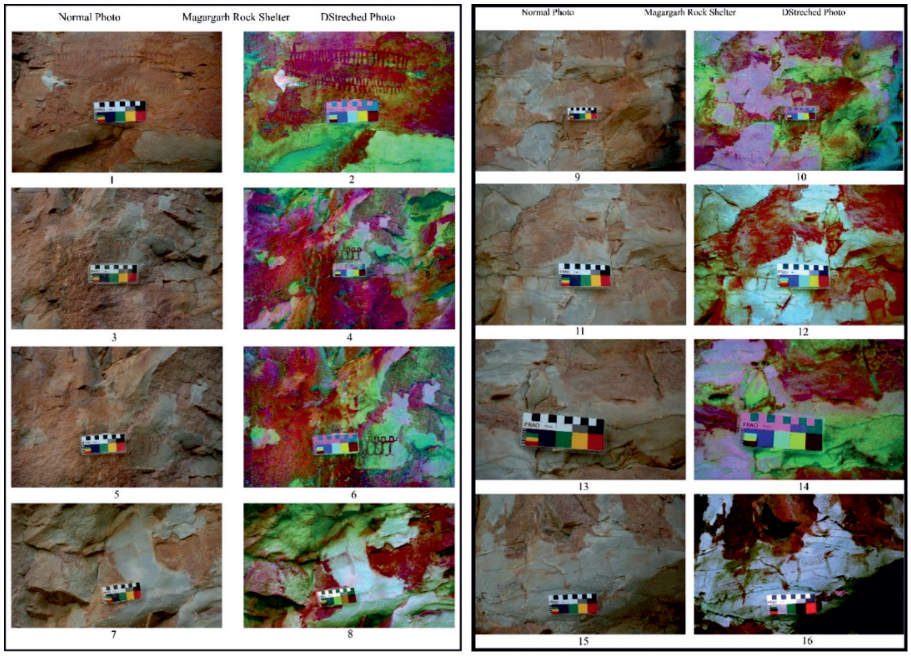

Figure 13: 1 & 2 two rows of linear forms probably represent centipedes; 3 & 4 box-headed linked four anthropomorphic figures in dancing posture; 5 & 6 faded picture of a running humped wild animal (bison?); 7 & 8 faded painting of an antelope (?); 9 & 10 faded picture of a wild animal with long neck; 11 & 12 faded picture of an anthropomorphic form, just above the scale and a wild animal (deer?) on the left side of the scale; 13 & 14 faded picture of an unidentifiable animal; 15 & 16 represent faded paintings of three wild animals in walking posture towards one direction, the middle one spotted with two rows of dots on the body (spotted deer?), and an anthropomorphic form in standing posture probably carrying a stick located extreme left side of the scale

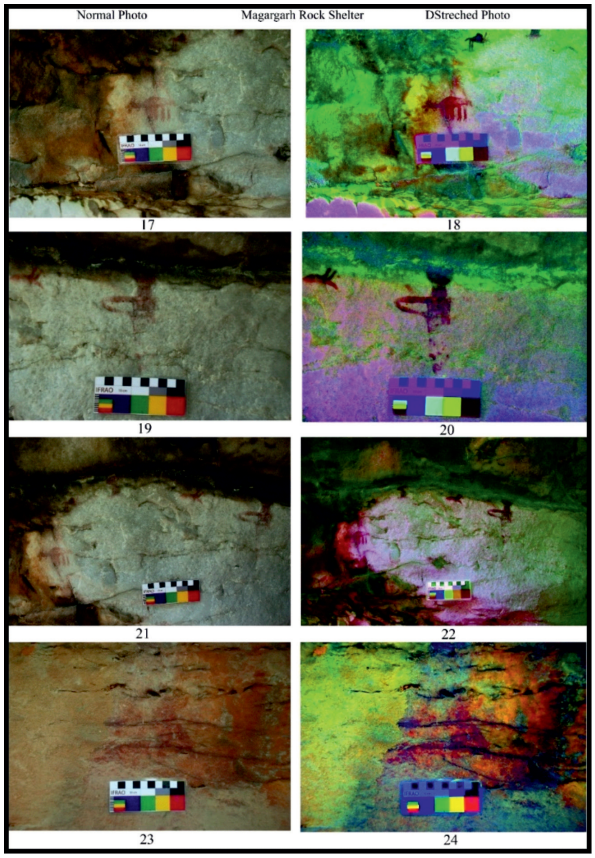

Fig. 14: 17 & 18 unidentifiable horned and hump-backed animal form in standing posture with a faded anthropomorphic figure behind it, and a humped animal figure (bison?) in standing posture located about 12cm above it; 19 & 20 a round headed anthropomorphic figure in standing akimbo posture throwing dart (?) at running horned wild animals; 21 &22 the same anthropomorphic figure as above surrounded on left side by wild animals; 23 & 24 unidentifiable faded picture in purple red.

Figure 15: The rock shelter site of Barabakhra, showing the location of water fall (scale: 1 meter)

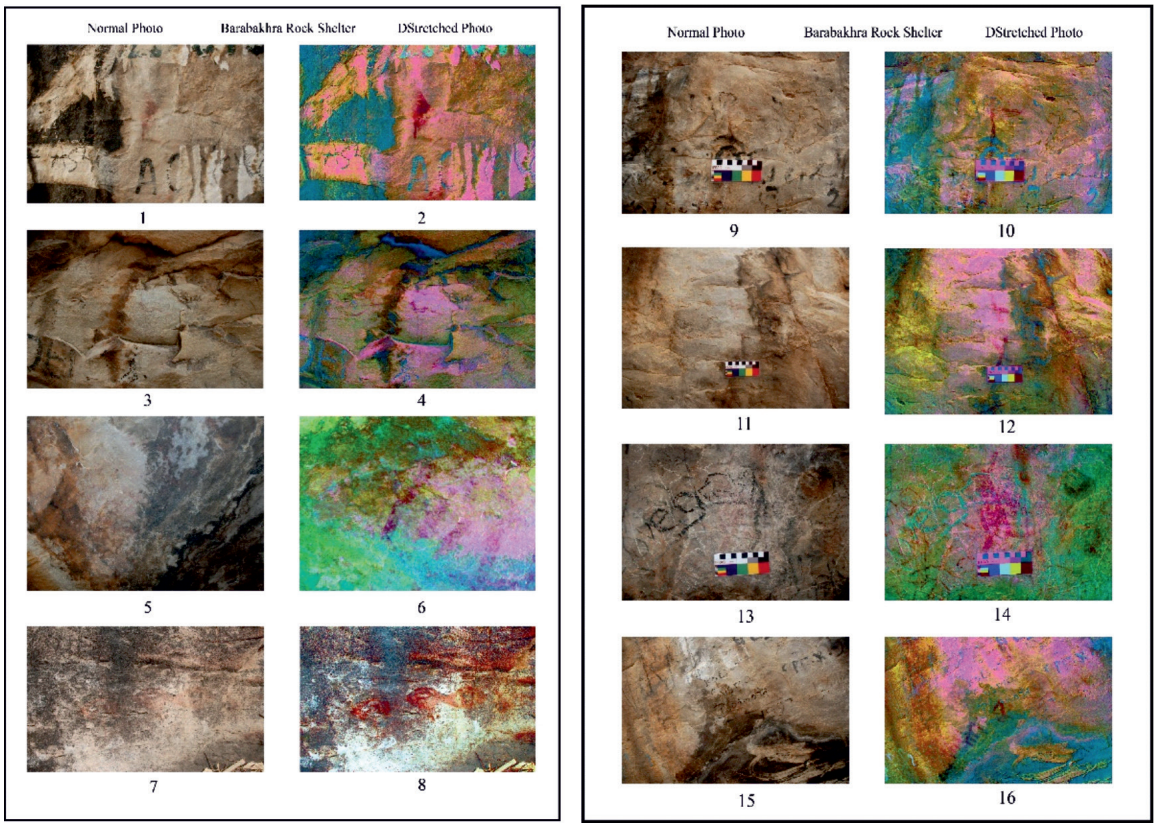

Figure 16: 1 & 2 animal form (?), 3 & 4 a bird form with long legs, 5 & 6 an animal form with four legs, 7 & 8 fish-like forms, 9 & 10 a bird form (?) with two long legs, 11 & 12 an anthropomorphic form in cross-legged posture (?), 13 & 14 an anthropomorphic form (?) and some unidentifiable linear patterns, 15 & 16 an anthropomorphic form in akimbo posture and some unidentifiable linear patterns.

colour (Fig. 15) and they represent animal and bird forms, anthropomorphic forms and unidentifiable linear patterns. The habitation floor inside the shelter, though disturbed by anthropogenic and wild animal agencies, numerous microliths, represented by bladelets, retouched and backed bladelets, geometric forms, retouched and unretouched flakes, blade-bladelet cores, chips-chunks and splinters as well as a few pieces of used haematite sub-angular nodules (Figs. 17 & 18). The available evidence from the floor clearly suggests prolonged use of the shelter by the prehistoric hominins for not only intensive lithic tool manufacture, but also for pictographic representations. Systematic excavations of the habitation deposit and a thorough chemical cleaning of the shelter wall and ceiling will definitely shed comprehensive light on the hominin behavioural patterns from chrono-stratigraphic perspectives and socio-cultural dimensions of this rock art site.

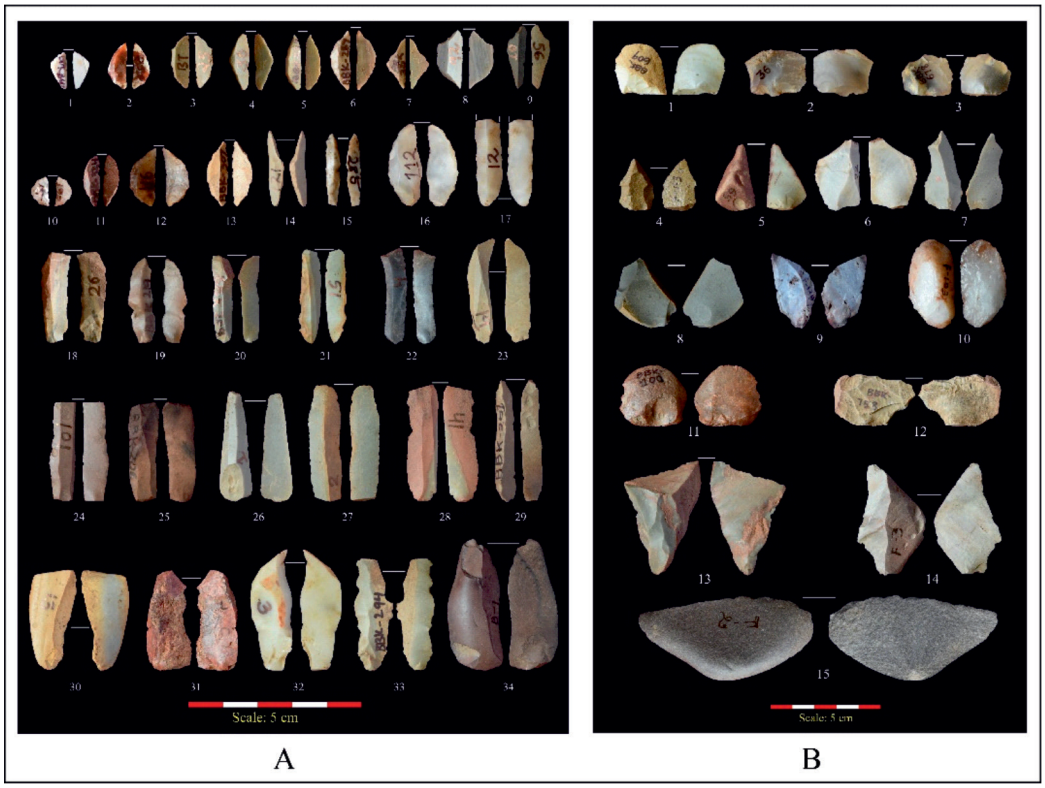

Figure 17: (A) 1, 9 & 14 scalene triangle; isosceles triangle 4; trapeze 7 & 8; lunate 2, 10 & 12; crescent 3, 5, 6, 13 & 16; denticulate 21, 22, 27, 28 & 33; notch 19; unilaterally retouched 17, 18, 24 & 25; unmodified bladelet 15, 20, 23, 26 & 29; unmodified blade 30, 31, 32 & 34. (B) levallois point 4; denticulate 11; all others unmodified flakes

Discussion and Concluding Remarks

The foregoing preliminary accounts on the three newly discovered rock art sites in the Debrigarh-Lohara massif of northern Bargarh uplands clearly suggest their uniqueness among the documented rock art complexes of Odisha. Although there are certain resemblances as far as the style of paintings and the forms of various figures and patterns between these rock art sites and those documented by the IGNCA in the Debrigarh massif, they appear to stand out unique at least in regard to certain diagnostic features commonlyfound among the other rock art complexes of Odisha, namely, absence of petroglyphs, absence of ceramics, absence of Neolithic celts, absence or rare representation of hunting-chasing-herding scenes, absence of domestic animals in the subject matters and absence of

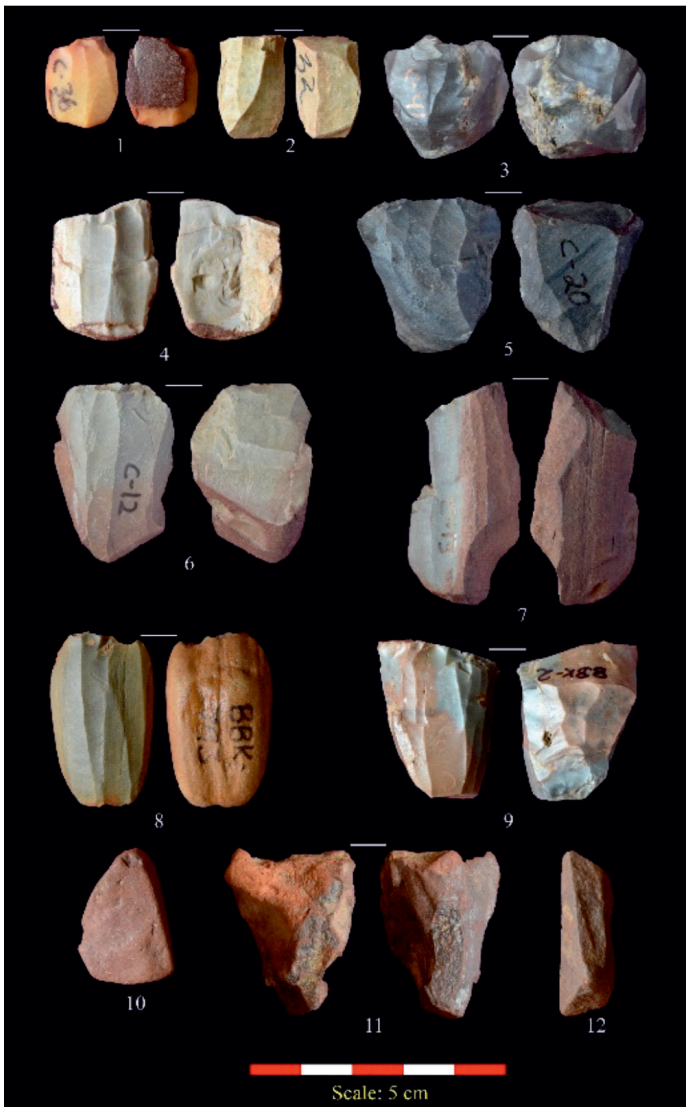

Figure 18: Representative lithic artefacts from Barabakhra rock art site;bladelet cores 1-9, used haematite nodules 10-12

bi-chrome and polychrome pictographs. In the rock art of Debrigarh-Lohara massif mostly naturalistic forms of anthropomorphic and wild animals are represented, except the hand-linked group-dancing scene of box-headed human forms (Fig. 13: 6) appeared in the Magargarh rock shelter.

The rock art sites of Debrigarh-Lohara massif in the northern Bargarh uplands may be evaluated in the context of occurrence of numerous microlith bearing open-air sites distributed throughout the river Jira and its tributary streams, some of which originate from the above hill system. Significantly, a sizeable number of such sites, both stratified and surface, are found to be associated with used/unused red ochre and other mineral rocks in the form of nodules and fragments. It may be mentionedhere that, the Palaeolithic excavated site of Torajungha, located hardly six-seven kilometers south of the southern flank of the Debrigarh massif and situated about 200m away from the right bank of the Danta stream, a tributary of Jira, microlith assemblages were recovered from two stratigraphic contexts, one early microlithlevel overlying the early Middle Palaeolithic and the later microlith level with a gap of more than 50cm of sedimentary deposit (Behera and Thakur 2018: 137-42).Here, the early microlithlevel, dated by OSL to 21 ±1kyr (PRL/TRJ-IV-1), yielded a heavy rectangular-shaped milling stone of

haematite (red ochre) with shallow grinding depression on one of the surfaces and two ovaloid-shaped pestles with ground surfaces. The later microlithlevel at this site has been dated by OSL to 12±2.8kyr (TBO-1). Thus, in view of the above it may be said with some amount of certainty that the microlith-bearing deposits in the northern Bargarh uplandsbelong to the Late Palaeolithic period and by about 21,000 years ago the hominins of this area were very well acquainted with the use of red ochre minerals, which were probably imported from distant places, namely, from Jharsuguda and south-western part of Sundargarh districts of Odisha (Behera *et al* 2020: 287-01), where thin-thick deposits of haematite rocks have been found in the Kamthi Formation of Gondwana Super-Group rock (Fig. 4).

In the present state of our knowledge it appears very difficult to ascertain whetherthe microlith using communities of northern Bargarh uplands were also responsible for the rock art of Debrigarh-Lohara massif, is far from being conclusive but, future systematic and scientific excavations coupled with reconstruction of chrono-stratigraphic contexts of at least one of the shelters from multi-disciplinary perspectives will definitely throw welcome light on the aforesaid research problem.

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