



## An Interpretive Analysis of the Isko Rock Art Site in Hazaribag District, Jharkhand

AVICK BISWAS<sup>1</sup>, SHRESTA JANA<sup>2</sup> AND CHANDNI ROY<sup>3</sup>

<sup>1</sup>Assistant Professor, Department of Anthropology, Vidyasagar University,

E-mail: [avickbiswas@gmail.com](mailto:avickbiswas@gmail.com); Mobile 7278338747

<sup>2</sup>Independent Researcher, <sup>3</sup>Independent Researcher

Received : 28 June 2023 • Revised : 20 July 2023;

Accepted : 05 August 2023 • Published : 30 December 2023

**Abstract:** The present paper aims to conduct a comparative investigation of rock art sites, specifically Isko in the Barkagaon block of the Hazaribagh district of Jharkhand. This research is being conducted to document this site by interpretive and ethnoarchaeological analysis to understand this region's human cultural history better. The site gets its attention due to the tribal population's emotional and cultural connection with rock art. As a result, many works are done exclusively from an ethnoarchaeological point of view rather than from an interpretive analysis of the symbols, patterns, pictographs, petroglyphs, and so on found on the site. Therefore, this research aims to shed light on the interpretive approach with a glimpse of the prehistoric people's cognitive minds on their surrounding environment. Also, the authors tried to describe this rock art site's structural position and the importance of its connection with the surrounding villagers of the Isko rock art site.

**Keywords:** Rock art, anthromorph, zoomorph, interpretation, pictograph, engravings, petroglyphs, symbols, ethnoarchaeology, geometric features

### Introduction

The present work attempts to interpret the rock art of the Isko rock shelter in Barkagaon block of Hazaribag district, Jharkhand. Isko is one of the well-known rock art sites of Jharkhand, which has both non-figurative and figurative motives, pictographs and petroglyphs under one roof. The huge density of superimposition of pictographs at the panels of the Isko rock shelter indicates that this site played an important role in the development of early human settlements and activities in northern Jharkhand. The Isko Rock Art Site is an important archaeological site that sheds light on the early

---

#### TO CITE THIS ARTICLE

Biswas, A., Jana, S., & Roy, C. (2023). An Interpretive Analysis of the Isko Rock Art Site in Hazaribag District, Jharkhand, *Man, Environment and Societys*, 4(2), pp. 97-114. DOI:10.47509 /MES.2023.v04i2.01

human history of the region. It's a testament to the creativity and cultural heritage of ancient communities. These paintings are believed to date back to the last phase of the Pleistocene or early part of the Holocene and may have served various purposes, such as religious or ceremonial significance, communication, or documenting the daily life and environment of the ancient inhabitants.

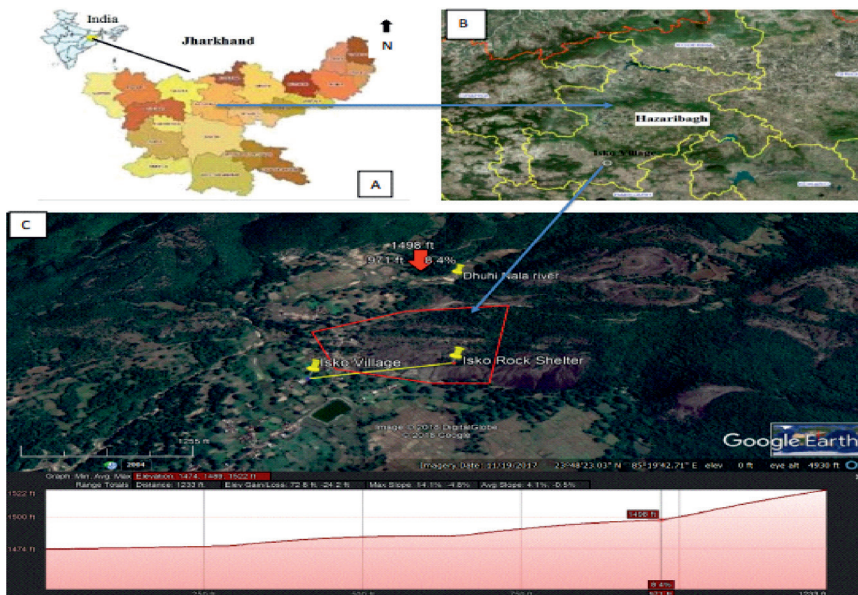
With time, this heritage site is being destroyed by natural weathering processes as well as by anthropogenic activities. The chemical weathering processes (rainwater dropping and humidity) and an increase in tourism have both had a negative impact on the Isko Rock Shelter. It is therefore critical to document this site by interpretive and ethnoarchaeological investigation in order to fully understand the region's past cultural history. A few existing tribal tribes continue to practise tribal art on the wall or wooden planks in the vicinity of these rock art sites. Among these, it is still debatable if there existed a form of continuation between rock art and tribal art or something else.

### Study Area

Hazaribag District is situated approximately in the Central part of Jharkhand, which comprises the fringe area of the Chotonagpur plateau. The exact location of the rock art site is (32°48'20.22" N; 85°19'40.19"E) in Isko village, 30 km south of Hazaribag town and 14 km from Barkagaon block (Map 1). The village appears to be the gateway for entrance into the vast undulating plateau region towards the east. Hillocks with an average height of 425 to 540 m area further extended towards the east. A fairly dense mixed jungle of *Sal* (*Shorea robusta*) trees covers the hills. The Damodar River is about 12 km south of the rock art site. The hills in the Karnapur plateau are a part of the Gondwana system in the upper part of the Damodar River valley. The Isko village is a part of North Karnapura Valley, which is also known for its isolated residual hills, long hill ranges, forested valley landscape and coalfield belt. The painted rock shelter is formed of sandstone. The Munda, Oraon and other tribal groups are the inhabitants of Isko village (Choudhury, 1957).

### Previous Research/ Studies

The first archaeological and anthropological survey in the Hazaribag region was carried out by S.C. Roy in 1928 (Roy 1957), who documented the lifestyle, settlement pattern, art and hunting-gathering patterns of Munda, Birhor and Oraon communities and discovered several prehistoric sites in Hazaribag district. The Isko rock shelter was first discovered by Father Tony Herbert, a Christian Missionary, in 1992. It was further



Map 1: Map of the study area

reported by Mr Bulu Imam (a local convenor) of INTACH (Indian National Trust for Art and Cultural Heritage) in 1993-94 (Bulu Imam, 2014, 2015a, 2015b, 2016). For quite a long no information and research were available on the methodology and technical details of this site. Somnath Chakraverty was the first person who documented and archaeologically interpreted the Isko rock art site. Chakravarty (1996, 1998, 1999, 2003) in his report, mentioned that a significant number of stone tools were also collected from the localities belonging to flakes, flake-blade elements and microliths. Some reports also suggested that little evidence of Neolithic polished stone tools was recovered from the area of the painted rock shelter and adjacent river valley. Siddhartha Saha and Shubham Rajak (2019) recently tried to describe the rock shelter through three-dimensional documentation and remote sensing techniques.

### Research Aims and Objectives

The research is conducted to understand the materials and pigments used in rock art and their source in nature. Furthermore, in order to identify the pigmentation and determine whether the rock art portrays Paleo-flora and fauna, indicating a possible paleo-environment. The authors wanted to understand the contents of the paintings that were observed during the exploration and the kind of interpretation observed from the paintings and the cognitive processes of the people behind them. Intended to

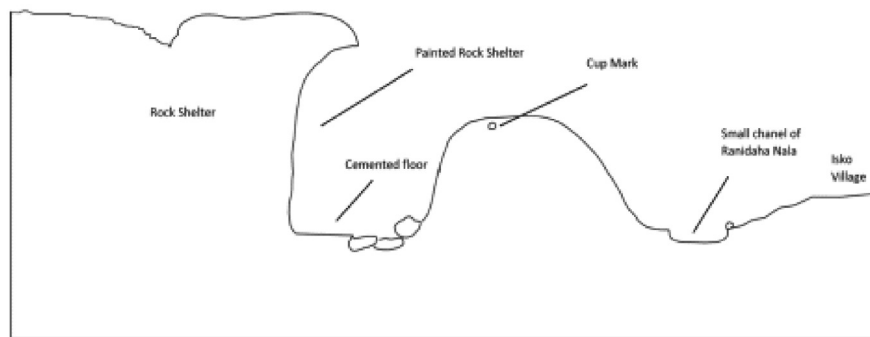
produce a detailed ethno-archaeological analogy by interacting and understanding the lifestyles of the Indigenous people in the village associated with Isko.

## Research Methodology

The selected area is explored on foot and studied. Detailed documentation of Rockart was done by Photographing and drawing on paper. Detailed interpretation is done by implementing methods of ethnography and ethnoarchaeology through interaction with the villagers.

## Context of the Painting

The paintings are to be viewed only on the eastern part of the ridge at a height between 428 m and 440 m. The orientation of the rock shelter is in the north-to-south direction. The average height of the adjacent peaks of hills is from 500 to 570 m. A much higher, smooth and slopped cliff-like exposed bedrock runs parallel to the painted rock shelter. The painters had intentionally selected the best possible part of the chain of the rock shelter. In the painted area, the rock wall is relatively smooth, spacious, wide and protected by a narrow ledge blocking out direct sunlight and other unfavourable climatic effects. In the non-painted part, the surface layer of the rock is more uneven and the composition of coarse-grained.



Cross-sectional view of Isko rock shelter (North-side)

## Data Analysis

For better understanding, divide the canvas into three parts or three segments. Start from west to east, then we get the 1<sup>st</sup> segment shown in Fig. D 1, then the segment shown in Fig. D 2 and last we get the segment shown in Fig. D 3. The segment division

in this report is just to make for easy understanding. The prehistoric population may or may not have divided the shelter in this manner.



Fig. D 1: Segment 1 of Isko rock shelter



Fig. D 2: Segment 2 of the rock shelter



Fig. D 3: Segment 3 of the rock shelter

#### Features of the segments are given below:

**Segment 1 (from West, shown in Fig. D 1):** This part has panels with different types of motives in the wall and the ceiling of the shelter. In some panels, superimposition was also visible in the form of white, bordering the red colour. This indicates that the paintings were of different cultural periods. It is quite difficult to say whether the motives were painted by the same group of humans or different groups. Paintings with monochrome colour, bi-chrome colour and polychrome colours are visible in the segment. Floral motifs, geometric features, zoomorphic, anthropomorphic, fertility art, and cupmarks were depicted. No hunting-gathering scenes are observed in the part.

**Sinbonga or Sinchadu:** *Singbonga* or *Sinchadu* is assumed as the symbol of the Sun. This type of symbol is also reported in other prehistoric rock art in Hazaribag. Segment 1 is filled with a large number of rounded figure motives. It seems that all these represent the Sun. Approximately more than 20 rounded figures were seen in the part. To date, the Sun plays an important role in religious beliefs in this region, and it may be drawn for ritualistic purposes. A group of people who lived in nearby



Fig. S 1: Symbol of the Sun



Fig. S 2: Symbol of the Sun

areas believed that the Sun would give more power if they drew a large number of suns. Sometimes it was also found that drawing the rounded figure was easier. But it is quite clear that rounded symbols play a major role in that group. In many parts of the country, this symbol is represented 'singbonga' or 'singchadu' symbol.

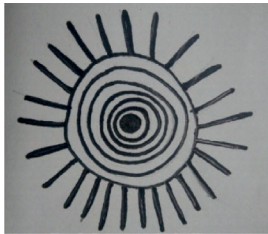


Fig. S 3 Diagram

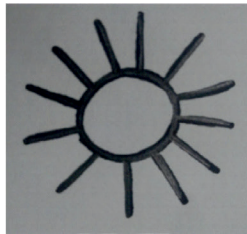


Fig. S 4 Diagram

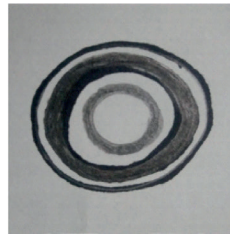


Fig. S 5 Diagram

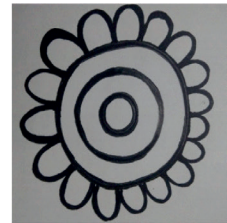


Fig. S 6 diagram

Fig. S 1 and S 2 show two photographs of the rock shelter showing the *singbonga* or *singchadu* symbol. Fig S 3,4,5,6 show a diagrammatic representation of some rounded motives present in the same segment of the rock shelter. The figures were monochrome, and the colour used was mainly red.

### Geometric Featured Motives



Fig. G 1: a part of segment 1 showing geometric motifs



Fig. G 2: diagrams showing geometric motifs



Fig. G 3: diagram showing geometric motifs along with phytomorph, the symbol of the sun

This part of the segment has the maximum number of different types of motives (Fig. G 1). These patterns are found in huge numbers. These geometric patterns were seen as very mysterious. These indicate some ritualistic purposes and symbolic beliefs of a group of people. However, the exact purpose and meaning cannot be interpreted to date by any archaeologist. It is assumed that - 1. The figures might have very important data, 2. Might be drawn for any simple ritualistic purpose like modern *alpona* like decoration (Fig. G 4), 3. These figures might be some indication of any

place, 4. It is difficult to believe that prehistoric people made these just to entertain themselves or for decorative purposes. It was recorded that geometric patterns were of monochrome colour, bi-chrome colour and polychrome colour. Major paintings were in red. Superimposed motives were also present with the white border. Sometimes yellowish colour was also visible in the middle of the red colour.



Fig. G 4: alpona of modern day

**Zoomorphs:** In the 1<sup>st</sup> segment of the rock shelter, some zoomorphs are also present. Though these are not more than the geographic featured motives, however, these are important. Isko shows some domesticated animals like bison, buffalo, and deer and some amphibians like reptiles and turtles too.



Fig. Z 1: zoomorphs motif



Fig. Z2 & Z 3: zoomorph motif

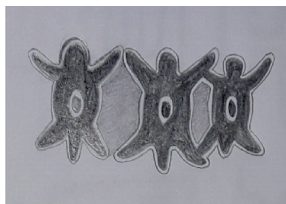
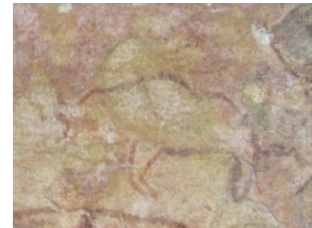


Fig. Z 2: diagram

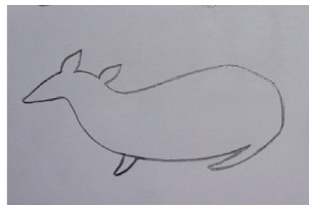


Fig. Z 4: diagram

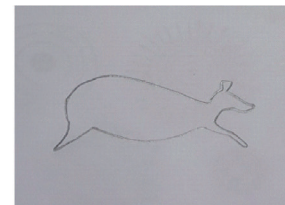


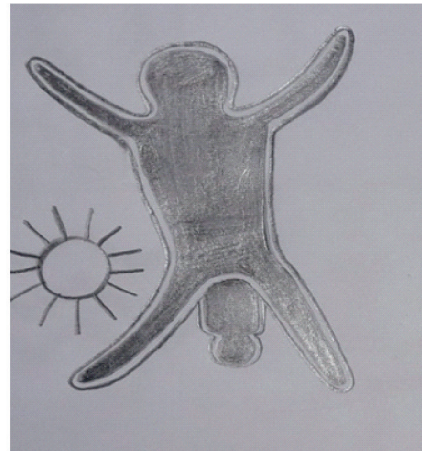
Fig. Z 6: diagram

Fig. Z 1, 3, and 5 show some photographs of the zoomorphs present in the wall of the Isko shelter, whereas Fig. Z 2, 4, and 6 show the diagrammatic representation of the zoomorphs present in the wall of the cave. These motives are monochrome colour, bi-chrome colour and polychrome colour. Bi-chromic colours are dominant, red painting with a white border. There was no hunting seen present in the wall. So these figures might not be drawn for hunting purposes but might be drawn for ritualistic purposes. There is a possibility that these figures were drawn because these animals were common in their surroundings.

**Anthropomorphs:** Anthropomorphs are the most important motives in the panels in rock art. It helps us to relate the work of prehistoric men in early times. In the 1<sup>st</sup> segment of the rock shelter, about 9 anthropomorphs were present. One important anthropomorph is a human figure pattern that shows a symbol of fertility.



**Fig. F 1: Mother giving birth**



**Fig. F 2: diagram**

Fig. F 1 shows probably a female giving birth to a child. Fig. F 2 shows the diagrammatic representation of the figure present on the wall of the Isko. The figure has with white border around the red part. Perhaps the image was worshipped during the time in order to have a child. It may also happen that this place was used for baby delivery purposes, and so the figure was there to indicate the place. Also, it can be assumed that the delivery of a child is a natural process, so they painted the figure of fertility casually. They saw the phenomena and made it one of the themes of their painting.





**Fig. F 3: anthropomorph wearing a suit of spacecraft**

The rock shelter shows a most mysterious anthropomorph on its wall. Fig. F 3 shows the figure. Here we can observe a figure with probably a suit of spacecraft. It is very difficult to say anything about the painting by the archaeologists. Is it a spacesuit or any other activity? It is very difficult to make any assumptions about it. It may be an alien figure, or it can be another animal present at that time in their locality, or they might have seen this type of figure or creature. It is also possible that this is their imagination only. The figure has no boundary. It is a monochromic figure.

**Cupules or Cup Marks:** Segment 1 shows a large number of cupules and cupmarks on the wall and ceiling of the rock shelter, which represents the early part of the rock symbol described by an earlier worker. Some are natural, and some are artificial also. It was seen that some natural cup marks are used in paintings. Fig. C 1 shows a painting with a white colour cantered with a cup mark. Other cupmarks of its surroundings remain untouched. Why these artificial cup marks or cupules were made is not properly known to all (Kumar 2015). Rounded petroglyphs were also noted in the 1st segment of the rock shelter.



**Fig. C 1: engraving**

Segment 1 of the rock shelter contains a large number of pictographs and only one petroglyph as far as we can notice.

**Table 1: Distribution of Motifs**

<i>Morphic Type</i>	<i>Number</i>	<i>Percentage</i>
Anthropomorph	9	3.16
Zoomorph	26	9.15
Figurative motif	31	10.91
Anthropomorph in association with Zoomorph	9	3.14
Artefacts	5	1.76
Phytomorph	15	5.28
Non-figurative or geometric motif	189	66.54
Total	284	100

**Table 2: Distribution of Colour in Motifs**

<i>Colour</i>	<i>Number</i>	<i>Percentage</i>
Monochrome	156	54.92
Bichrome	83	29.22
Polychrome	10	3.52
Superimposition	35	12.32
Total	284	100

**Segment 2 (from West, shown in Fig. D 2):** Segment 2 does not show any zoomorph, anthropomorph and cupules or cup marks. The whole segment is full of a vigorous number of geometric featured motives, and 6 rounded motives may be the symbol of the sun. Geometric figures are very mysterious.

**Table 3: Distribution of Motifs**

<i>Morphic Type</i>	<i>Number</i>	<i>Percentage</i>
Figurative motif	6	6.45
Non-figurative or geometric motif	87	93.54
Total	93	100

**Table 4: Distribution of Colour in Motifs**

<i>Colour</i>	<i>Number</i>	<i>Percentage</i>
Monochrome	61	65.59
Bichrome	25	26.88
Polychrome	3	3.22
Superimposition	4	4.30
Total	93	100

**Segment 3 (from West, shown in Fig. D 3):** Segment 3 shows only one rounded sun-like structure and a large number of Geometric featured motives. No presence of anthropomorphs, zoomorphs. Artificial cupules or cup marks are absent, but numerous numbers of natural holes are present. Fig. H 1 shows a part of segment 3 containing natural holes. The lower part of the segment has vandalism, as shown in Fig. H 2. This figure leads the viewers to confusion. As it looks like petroglyphs, someone may assume that it is a figure of a goddess. By sincere observation or with the guidance of a good guide, the confusion can be removed.



Fig. H 1: geometric motifs with natural holes



Fig. H 2: human vandalism

**Table 5: Distribution of Motifs**

<i>Morphic Type</i>	<i>Number</i>	<i>Percentage</i>
Figurative motif	3	9.67
Non-figurative or geometric motif	28	90.32
Total	31	100

**Table 6: Distribution of Colour in Motifs**

<i>Colour of Motifs</i>	<i>Number</i>	<i>Percentage</i>
Monochrome	15	48.38
Bichrome	9	29.03
Polychrome	3	9.67
Superimposition	4	12.90
Total	31	100

The shelter of the Isko cave is dominated by pictographs. One petroglyph is present. A large number of natural holes and artificial cupules or cup marks are also

present. No evidence of hunting and gathering scenes. Geometric-featured motives are dominant in the shelter. We cannot see any thematic objects like a battle, group dancing or hunting activities.

**Table 7: Total Distribution of Motifs**

<i>Morphic Type</i>	<i>Number</i>	<i>Percentage</i>
Anthropomorph	9	2.20
Zoomorph	26	6.37
Figurative motif	40	9.80
Anthropomorph in association with Zoomorph	9	2.20
Artifacts	5	1.22
Phytomorph	15	3.67
Non-figurative or geometric motif	304	74.50
Total	408	100

**Table 8: Total Distribution of Colour in Motifs**

<i>Colour</i>	<i>Number</i>	<i>Percentage</i>
Monochrome	232	56.86
Bichrome	117	28.67
Polychrome	16	3.92
Superimposition	43	10.53
Total	408	100

## **Ethno-Archaeological Interpretation**

Till now, the Tribals of Isko village (Munda & Oraon) practice art on their wall known as tribal art (Bednarik 2011). They practice this as traditional art and rituals. They abide by this rite very specially. On the time of 26th January (Jatra), kohabar (related to marriage), soharai (related to agriculture) the tribal people draw different paintings on house walls, on the back of cattle, on agricultural instruments, etc.

### ***The Khovar painting***

The portrayal of *Khovar* art is seen as a socio-religious tradition among tribals living in Isko village while preparing a marriage room for the bride and groom. This is referred to as *Khovaris*. This tradition follows the custom of decorating the room by the bride's mother and aunts in the bride's house. This is because there is a bride price in their tribal system which has to be paid. The bridegroom spends the wedding night in the bride's house. The bride price is still paid in Hazaribagh tribal villages. This is influenced by

the original matriarchal system. Tribals respect women as *Devi*, the mother goddess. Therefore, after marriage, it is believed that she became a devi. Anything created by her hands is auspicious or a gift from the mother goddess. It's an ancient tradition where it is naturally assumed that the Devi is the only person permitted to draw or embroider sacred icons during marriage or harvest seasons. From January to monsoonal June, their marriage season runs and overlaps with spring and summer when annual hunts happen. The originality and significance of this tradition can also be observed only among Munda, Oraon and Santal tribal groups of the Hazaribagh.



Fig. E 1: Khovar painting

Many of the Khovar illustrations depicted flora and fauna. Nomadic tribes still consider the forest the place where couples go to consummate their marriage. In Khovar art by scraping the upper coat of watery earth ochre (white and yellow) with a comb reveals the black and red undercoat.

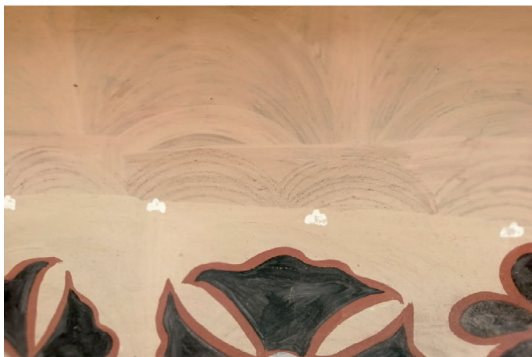


Fig. E. 2: comb-like scraping with mud



Fig. E 3: painting with black and red ochre

The actual comb-cutting technique follows as the wall is first completely plastered or repaired with mud or in some cases like Bhuiya art, a mixture of cow dung and mud is used for the coating. Then the wall is coated with black earth called *Kali Mati*, in a half-moon circular stroke known as *Basera* (*Bas* = bamboo, *Era* = goddess).



Fig.E.4: the painted wall is repaired with mud



Fig.E.5: the painted wall is repaired with mud

### *Soharai Painting*

The harvest festival arts are called *Sohrai* painting and came from the ancient word *Soro*, which means to handle with a stick. It is observed during the month of winter when the paddy is fully grown and collected. Hence it is connected with agriculture. In the Bhelwara area, the Kurmi people take their cattle to the jungles early in the morning for grazing and afterwards wash in the forest ponds. After this, they brought their cattle back home for ceremonial purposes, where the cattle were welcomed with *Aripan* (specially painted carpets). On this *Sohrai* day, welcoming the cattle is marked as the domestication of wild cattle and the origin of this event is associated with *Ram*,



Fig. E 6: painting in agricultural instruments



Fig.E7:animal painting on the wall

the ancient king of tribes, likely to be a Pre-Aryan tribal king who might be depicted in *Ramayana* and as *Parshurama* of the Indus king lists. Also, sometimes it is associated with *Pasupatideity*, the lord of animals (Rajak 2019).

### *Painting in on 26<sup>th</sup> January*

On the 26th of January, a beautiful painting is displayed outside and inside every house in the village. Even the houses have been plastered with cement paint with a natural white colour. Besides the rock shelter, a fair was also held, in which all the villagers participated. This painting is a symbol of unity and was meant to bring the community closer together. The rock shelter was used as a gathering place for the villagers to socialize and celebrate. However, they are still unsure of the exact reason for selecting the date.



Fig E 8: wall painting outside the house



Fig E 9: white painting outside a plastered house

Tribal peoples believed that the Isko cave was the house of their forefathers and the painted shelter was the house of the king and queen. The shelter is *Khobar* (bridal room) as it has some paintings related to fertility. From this belief, they still practice the art and it is very sacred to them.

The context of these rituals performed by the local villagers around Isko village is controversial since they believe they are practising their ancestral traditions. However, they do damage the rock paintings through vandalism (Fig. E 11). In addition to natural degradation, these rituals can cause damage to these paintings consciously or unintentionally. It is a popular tourist destination and has been a draw for people from all over the world. It has become a symbol of cultural heritage and a reminder of the importance of preserving the natural environment.



**Fig. E. 10: Author sitting in front of one tribal house**



**Fig. E. 11: Local people's vandalism**

## Discussion

Exploration in the selected area yielded Rockarts at rock shelters at Isko. Analysing these Rockarts shows possible temporary habitation of prehistoric people in different time periods which continued up to the chalcolithic period. Rockarts can be divided into petroglyphs and pictographs, consisting of simple lines, cupules, figurative and non-figurative. Further can be divided into anthropomorphs, zoomorphs, floral, linear patterns, geometric and non-geometric patterns or motifs. Superimposition can be seen among the rock paintings. This indicates that the paintings were from different time periods. Paintings with monochrome colour, bi-chrome colour and polychrome colour are observed. Mostly red hematite to paint, maybe some floral colours were also used. Analysing these rock arts one can observe the intuition of the prehistoric people behind it, which is very ritualistic and possesses a cognitive process about its surroundings and mother nature, for example, painting of the sun, Mother giving birth, and geometric shapes. These rock arts also show the ability of prehistoric people to depict the things they visualize or maybe dreamed of during their lifetime in the form of paintings and petroglyphs, for example, the Painting of a man in a spacesuit. Also, it represents curiosity to leave their presence for generations to come by. Some of the paintings show floral and plant motifs which can help to get an idea of palaeo-vegetation and some zoomorph can also give the idea of palaeo-fauna at that time period around this area. An ethnoarchaeological Analogy can be drawn out by studying and observing the lifestyle of the Indigenous populations residing near this area. Patterns similar to what is found at rock shelters and somewhat modified paintings similar to these rock arts can also be observed among these indigenous people which have now become part



of their rituals and cultures, for example, 'Khoval' paintings and 'Soharai' paintings observed at the houses in the villages.

## Conclusion and Recommendations

Rock art is possibly the only direct, authentic source of visual evidence to decipher the world of early man. Their views, both of environmental and social realities, are expressed through visual imagery. Therefore, in a global situation, interest in rock art research has increased considerably. The reputed international journal of social science, like 'Current Anthropology' for the last few years, also concentrates on rock art. The field of rock art research is a multi-disciplinary approach, and in the Indian context, much more contribution from physical scientists is urgently required. It is for designing a more justified analytical technique for ascertaining the absolute chronology of rock art.

The rock art of Isko cave is very important for Hazaribaag as well as India and also for the whole archaeological world. The tribes of Hazaribaag still practice art on different occasions. These drawings are known as tribal art. They have the belief that the paintings of the rock shelter are made by their forefathers.

By weathering, these prehistoric evidences are getting harmed. There is a need for time to preserve the evidence very carefully. Even not only weathering human vandalism is also destroying the sites. We must protect prehistoric activities. Government agents and offices should take proper care of the site.

Addressing our exploration and documentation which yielded further questions and a base for further research in this area is, an exploration of nearby areas that give an idea of many more rock shelters and caves that might be permanent or temporary habitation. Tracing and mapping other rock shelters and caves might give an insight into mobility and mineral exploitation by the prehistoric people. As there is no prominent work done on the material culture of Isko rock shelters and caves, more extensive research needs to be done. Geomorphology can yield more information on site formation and palaeo-environment. Also, further research on detailed ethnoarchaeology may give us an idea of better interpretation and new aspects of the prehistoric cognitive mind. It's recommended to visit such sites with the guidance of experts or authorities to ensure their preservation and respectful exploration.

## References

- Bednarik, R. G. 2011. Ethnographic Analogy in Rock Art Interpretation. *Man in India* 91 (2): 223-234.

- Chakraverty, S. 1996. Isko Rock Art site in Hazaribagh District: An Ethnoarchaeological Profile. In: Sharma, R. K. and Tripathi, K. K. (eds), *Recent Perspective on Prehistoric Art in India and Allied Subjects*. New Delhi: Aryan Books International.
- Chakraverty, Somnath. 1998. Rock Art in Central India: its role and functional significance. In Asok Datta (Ed.) *History and Archaeology of Eastern India*, 134-147. New Delhi: Books and Books.
- Chakraverty, Somnath. 1999. Primeval Rock Art and Ethnographic Analogy in India. *Bollettino del Centro Camu- no di Studi Preistorici* 31-32: 213 - 222.
- Chakraverty, Somnath. 2003. *Rock Art Studies in India*. Kolkata The Asiatic Society.
- Choudhury, P. C. R. 1957. *Bihar District Gazetteer: Hazaribagh*. Patna: Government Printing.
- Ghosh, A. 2003. *History and Culture of the Oraon Tribe: Some Aspects of Their Social Life*. New Delhi. Mohit Publication.
- Imam, B. 2014. *Antiquarian Remains of Jharkhand*. New Delhi: Aryan Books International.
- Imam, B. 2015. *Oraon Songs Stories by Philomina Tirkey*. United States: LAP Lambert Academic Publication.
- Imam, B. 2015. *The Nomadic Birhors of Hazaribagh*. United States. LAP Lambert Academic Publication.
- Imam, B. 2016. *Hazaribagh School of Painting & Decorative Arts*. LAP Lambert Academic Publication. United States.
- Jaiswal, R. K., R. Saxena and S. Mukherjee. 1999. Application of Remote Sensing Technology for Land Use/ Land Cover Change Analysis. *Journal of the Indian Society of Remote Sensing*. Vol. 27:123-128.
- Kumar, Giriraj, and Ram Krishna. 2015. Manual of Cupule Replication Technology. *Arts* 4 (3): 101-120. <https://doi.org/10.3390/arts4030101>.
- Rajak, S. 2019. The Connection of Rock Art with the Belief System of Munda and Birhor Communities of Isko Village, Hazaribagh, Jharkhand. *Kalakalpa, IGNCA Journal of Arts* III (2): 1-18.
- Rajak, S. and S. Saha. 2019. Digital Documentation of the Rock Art Site of Isko, Hazaribagh District, Jharkhand. *Heritage: Journal of Multidisciplinary Studies in Archaeology* 7: 493-506
- Roy, S. C. 1928. *Oraon: Religion and Customs*. New Delhi: Gyan Books Pvt. Ltd.