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Expand your vision

# Vasundhara

Annual magazine of Geoclub

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## *First Issue*

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**Our noble wish is that this very first issue of 'Vasundhara' may stand as a platform and act as an impulse for students of present and many generations yet to step in this college to hone their skills, be unbiased thinkers, better observers, writers or photographers and present it to the world with right degree of gratitude and humbleness as a team.**



# PROBLEM WITH INSTINCTS

In 1940s B.F. Skinner carried an experiment with pigeons. He placed hungry pigeons in an experiment box for few minutes each day. Box was placed with a timer based hoper, which released grains after every 15 seconds. He found that 6 out of 8 pigeons developed a particular behavior between the reinforcement of grains i.e. If the birds were incidentally behaving in a certain way when the food dropped, they began to continuously repeat the behaviour. Such as one bird was conditioned to turn counter-clockwise about the cage, another repeatedly thrust its head into one of the upper corners of the cage, a third developed a 'tossing' response, as if placing its head beneath an invisible bar and lifting it repeatedly. Two birds developed a pendulum motion of the head and body and so on. Pigeons associated such behavior as being fed. This is an example of operant conditioning, where a subject is conditioned to operate in a certain way.

The pigeon surely did not know of the hoper or the timer. It somehow felt that doing something brought her food. The Skinner's experiment was first published in Journal of Psychology titled as 'Superstition in Pigeons'. This type of conditioning is not only peculiar to the birds or animals but can be found very frequently among humans also. Recall the friend, who wears the same shirt in every exam because he rocked the first one with it. This is how a personal superstition arises without a driver. But in our society we already have a lot of them - parents, society, priestly class etc. Through them a lot of superstitions which might have arisen due to some vague reason pass on through generations. Beliefs are dear to us, not necessarily because these are legacies of our ancestor. But because believing on something creates a hypothetical safe place. We feel protected and we feed them with a lot of emotional attachment. Hence, whenever one speaks against them even with evidences. We react with our fight-or flight hormones producing a biased behavior. And later buy a logic to defend our view.



*It is harder still to knock off old superstitions, very hard; they do not die easily. With all his education, even the learned man becomes frightened in the dark -- the nursery tales come into his mind, and he sees ghosts.*

- Swami Vivekananda

Few of the studies in this regard point that education does not completely undo our flawed instincts or superstitions. We learn new theories which suppress the naive ones but do not supplant them. A study in Cognition, led by Andrew Shtulman at Occidental College, remarks that - people are not blank slates, eager to assimilate the latest experiments into their world view. Rather, we come equipped with all sorts of naive intuitions about the world, many of which are untrue.

The ugly part is when these beliefs turn as a trap for humanity and justice.

The article 'Witch hunt' by Dipti Kacchhap presents an effective picture of the inhuman practice prevalent in tribal villages of Jharkhand. Boldly it mentions - Yes! witches exist. But does witchcraft work? The women who were murdered, did they actually harm anyone?

Superstition has a lot to do with supernatural elements. Reasons and logic are considered local. Hence, have limitations. But supernatural even in its basic form is considered as an unearthly thing, beyond limitations. Until and unless we would be able to fix this feeling. Educated ones would also tend to be superstitious in time of crisis.

Articles - 'Magnetic hill' and 'Water barriers' reveal the secret behind two natural phenomena.

'Which way is up' is an interesting takedown on how our notion on directions took shape through historical time.

And there is plenty more inside to keep you going - from festivals, art works and tribes of Jharkhand to the possibilities of 'Artificial rainfall' and 'Earthquake prediction'.

-Editorial Board, Vasundhara, Vol. I



# **Vasundhara**

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Dr. Subhasis Das – the Megalithic scholar for giving us insight on the megalithic culture and his valuable edits.

Rock & Rope Adventure Team and Dr. Md. Sarafuddin; Curator, State museum, Ranchi for their precious time.



# Messages



I am immensely glad that the Geoclub, Association of Students, Department of Geography is publishing the first issue of 'Vasundhara' Geoclub magazine. The magazine has effectively maintained the interdisciplinary character of Geography, as the name suggests, the members of the group wish to 'Save the Earth' from all forms of degradation. Let each of us make a pledge to save the Earth and all the living beings. This will be a great service to the nation, ecology and humanity. The indigenous people are fighting for their rights to Forest, Land the Water... Those who are crusading for it must continuously work towards this cause. I wish them all the best.

Dr. Fr. Nicholas Tete, S.J.  
Principal  
St. Xavier's College, Ranchi



जितने भी शैक्षिक कार्य हैं उनमें पत्रिका प्रकाशन को मैं सर्वोपरि कार्य मानता हूँ क्योंकि इसमें नए लेखकों से लेकर सिद्धहस्त लेखकों का दर्शन एक साथ हो जाता है। नए लोगों में लेखन के प्रति उत्साह का संचार होता है यही इसकी विशिष्टता है।

संत जेवियर महाविद्यालय के भूगोल विभाग द्वारा 'वसुंधरा' (वार्षिक) पत्रिका का प्रकाशन सभवतः महाविद्यालयों के भूगोल विभागों में यह प्रथम प्रयास है। इस सोच की मैं हार्दिक स्वागत करता हूँ तथा इसकी निरंतरता की कामना करता हूँ। मेरा विश्वास है भूगोल विभाग का 'जियो क्लब' (Geoclub) इस पत्रिका के द्वारा भौगोलिक चेतना के विस्तार में सफल रहेगा।

Dr Ram Kumar Tiwari  
HOD, University Deptt. of Geography  
Ranchi University, Ranchi



Since its formation in 2006, Geoclub has successfully organized various activities such as Geo-Quiz, photography and handicraft exhibitions, field trips, plantation and other environment awareness campaigns etc.

And now, after 10 years, we at Geoclub and Department of Geography are elated to publish the 'Vasundhara'. It provides a platform to the students to share their thoughts, views and ideas. The Magazine is the result of hard work put by the editorial board, advisory committee and other committees of the club. I express my good wishes for the magazine and wish for its continuity in future also.

Animesh Roy  
Director/HOD  
Geoclub/Dept. of Geography  
St. Xavier's College, Ranchi



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झारखंडी कला संस्कृति  
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# EARTH REVISITED

Earth's rotation, revolution and other stuffs are not that simple as we studied in childhood. Here we have listed few such interesting facts. You might already know few of them -

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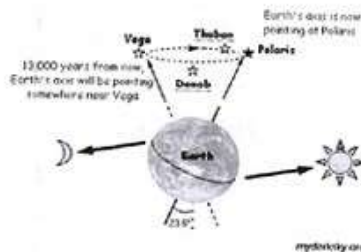
**E**arth is an oblate spheroid which revolves around the sun in an elliptical path with the sun at one of the foci. Its eccentricity of 0.0167 shows that its orbit around the sun is almost circular. (*Eccentricity of an ellipse is a value ranging from 0 to 1. Which expresses how round or oval it is, while circle has an eccentricity equal to zero*).

Due to its elliptical orbit earth is never at the same distance from the sun. It is closest to the sun on 3<sup>rd</sup> Jan (147.3 million km) at Perihelion and farthest on 4<sup>th</sup> July (152.1 million Km) at Aphelion. The average distance of earth from sun stands at 149.6 million km, which is known as 1 A.U.(Astronomical Unit).

During revolution around the sun, it also rotates on its axis causing day and night inclined at 23.4° from normal to its orbital plane. During whole revolution its axis of rotation points in the same direction (approximately towards the Pole star).

## Earth Wobbles

Due to gravitational influence of the sun & the moon, the earth also wobbles on its axis similar to that of movement of a rotating top, which is likely to stop. Over a period of 26000 years it traces a circle in space with its imaginary rotating tip. At present earth's axis of rotation points towards



the star Polaris. Hence, Polaris is the pole star. 13000 years later it will point towards star Vega and 26000 years from now (after one full cycle) again to Polaris.

This wobbling of the earth also changes the portion of orbit at which certain season occurs and hence their severity.

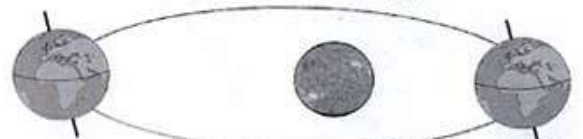
### Present Time



Summer in Northern Hemisphere  
(Slightly Cooler)

Summer in Northern Hemisphere  
(Mild & Shorter)

### 13000 Years from Now



Summer in Northern Hemisphere  
(Colder & Longer)

Summer in Northern Hemisphere  
(Slightly Hotter)

## Earth's tilt

Tilt or obliquity of the earth's axis of rotation is responsible for the change in seasons. It also varies from 22.1° to 24.5° over a period of 41000 years. At present its tilt is 23.4° and is declining. Last maximum tilt occurred in 87000 B.C. while next minimum tilt will occur on 11000 A.D. This change in obliquity is found to be linked with ice ages on earth. It can cause the



seasons to become more or less severe. More tilt results in hotter summers & colder winters while less tilt would result in cooler summers and mild winters.

### Earths Revolution

The earth does not revolve around the sun in a fixed path. Neither, has it an initial point to which it comes back after a revolution. Then how do we ever know that one revolution has been completed and a year has passed. Here comes the concept of **Sidereal year**: From the point of reference of earth, sun appears as moving in an elliptical path with various constellations or zodiacs in the background. When it completes one revolution i.e. it comes back to the same Zodiac, one Sidereal year has passed. Which is of 365.25636 days.

Earth's orbital plane also spins around the sun over a period of 112,000 years relative to fixed stars. It also moves up and down periodically to the plane of the solar system which is roughly the orbital plane of Jupiter.

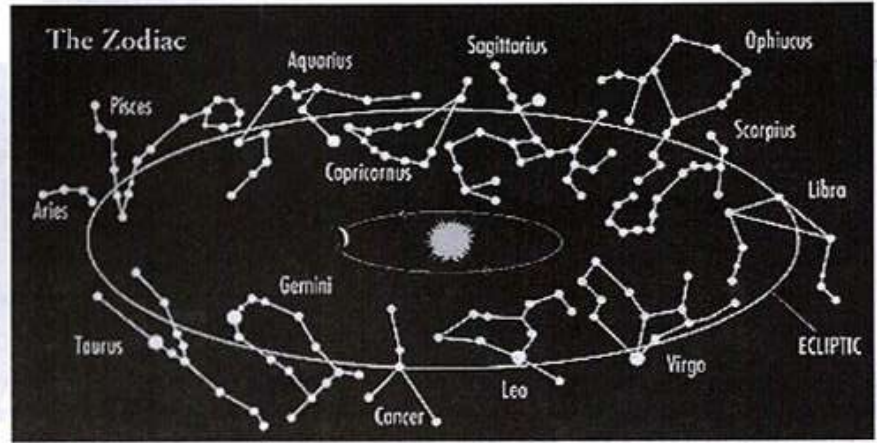
### Eccentricity

Eccentricity of earth's orbit also varies over a period of 100,000 yrs. It's caused due to the gravitational effect of other planets especially Jupiter and Saturn. It affects the duration of season, with increased eccentricity the season that occurs on the farther side of the orbit are substantially longer in duration and vice-versa.

### Magnetic field

Earth's magnetic field is tilted at an angle of  $11^\circ$  from its spin axis. It is similar to the field of a bar magnet, but the north and south poles are not necessarily antipodal.

Earth's magnetic field is



speculated to be generated by the swirling of the molten iron present in upper core due to its rotation. It forms Magnetosphere above the ionosphere which prevents the charged solar particles and cosmic rays from entering into the earth's atmosphere, which could otherwise stir the Ozone layer that protects earth from harmful U.V. rays.

But like other things the earth's magnetic poles are not static. It actually moves over time due to changes in Earth's core & sometimes also flips its position (reversal of north & South pole) over long geological period.

According to study of rocks formed by cooling of lava we have been able to ascertain past flips and can speculate that we are due for another switch of poles in next few thousand years..

### Modern day Zodiacs and Date

**Capricorn:** Jan. 20-Feb. 16.

**Aquarius:** Feb. 16-March 11.

**Pisces:** March 11-April 18.

**Aries:** April 18-May 13.

**Taurus:** May 13-June 21.

**Gemini:** June 21-July 20.

**Cancer:** July 20-Aug. 10.

**Leo:** Aug. 10-Sept. 16.

**Virgo:** Sept. 16-Oct. 30.

**Libra:** Oct. 30-Nov. 23.

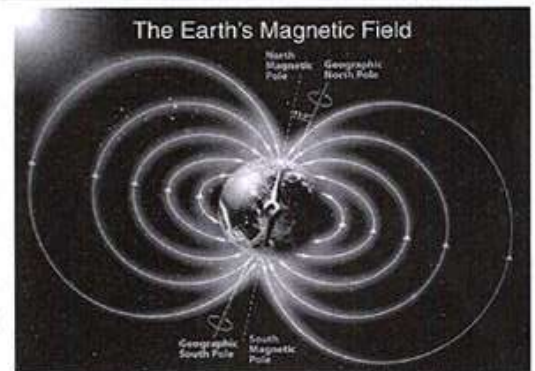
**Scorpio:** Nov. 23-29.

**Ophiuchus:** Nov. 29-Dec. 17.

**Sagittarius:** Dec. 17-Jan. 20.

Source: Minnesota Planetarium Society

\*The days when sun enters a particular zodiac has changed from what is used in Astrology because of the precision or wobbling of Earth.





# WHICH WAY IS UP?

Ritesh Singh Choudhary

Department of Geography

(2014-17)

**W**e are so much obsessed with maps showing north on top that we often attribute north as up and south as down. For a person living in central India, it would seem more usual to say that I'm moving up to Delhi and then down to Madras instead vice versa. But, it has not always been this way.

**Egyptian's** felt that 'south was up' because of the northwards flow of Nile; as river must flow downwards. In biblical times – east was at the top of maps. This is evident from the excerpts of torah. In Genesis—  
“Abraham's nephew lot, is captured and carried away. Abraham races to the rescue. He and his men catch up with lot's captor and set him free in Chovah, which is to the left of Damascus”.

(gen. 14:15)

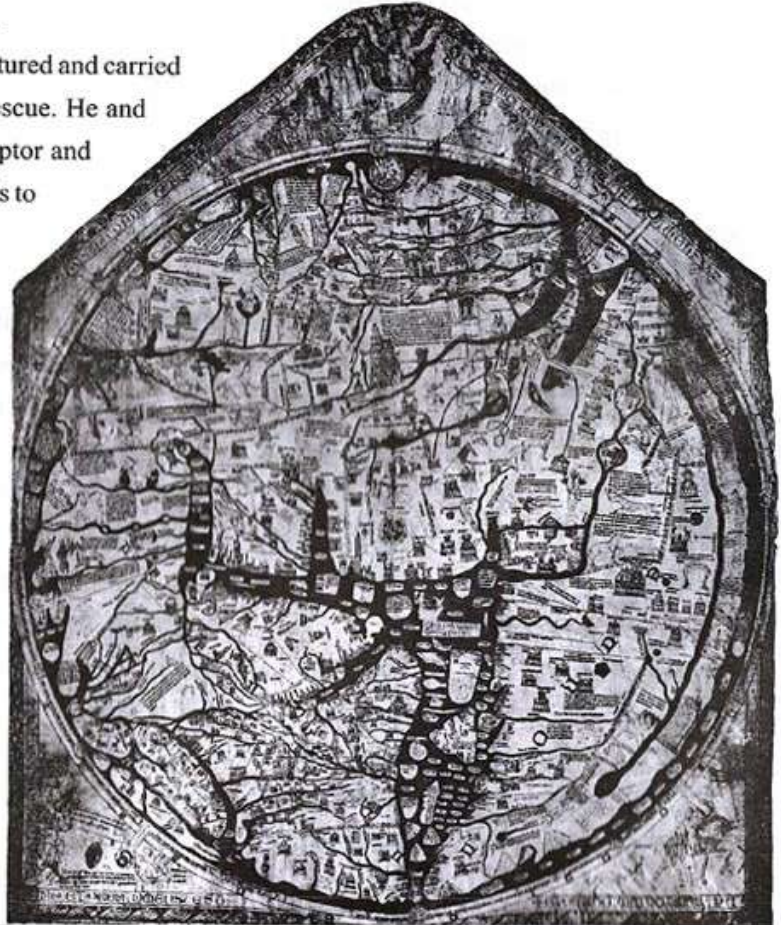
Since Chovah is in north of Damascus and for north to be left, one must face towards east.

## MEDIEVAL EUROPEAN MAPS-

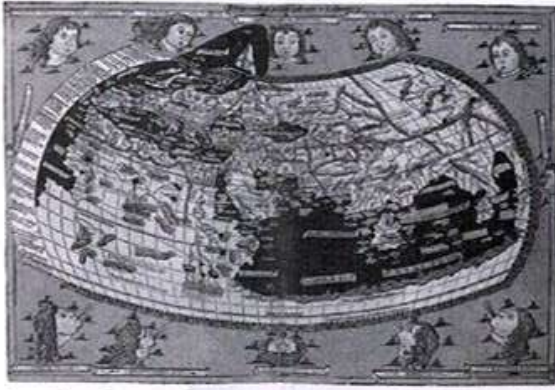
**T and O maps** or **tripartite maps** {named so because they split the world into three parts (T) and is contained in a circle (O).} Such as Hereford mappa mundi (Mappa ~cloth, Mundi-



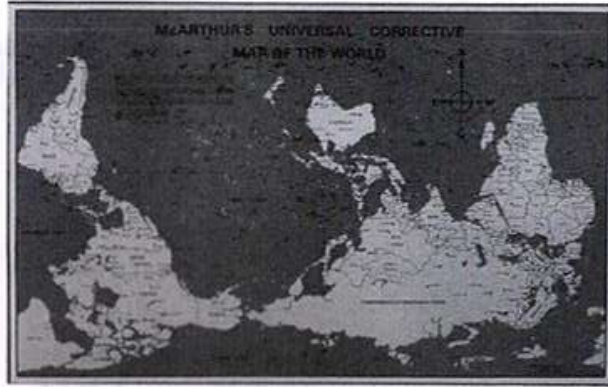
The Hereford Mappa Mundi, about 1300, A classical "T-O" map with Jerusalem at center, east toward the top, Europe the bottom left and Africa on the right.







A printed map from the 15th century depicting Ptolemy's description of the Ecumene (1482, Johannes Schnitzer, engraver).



McArthur's Universal Corrective Map is a modern south up map quite popular in New Zealand and Australia. It is used to challenge the northern hemisphere bias.

world) placed Jerusalem, their holy land on top which means that more or less east lied at the top. The word orient literally meaning-'east' is traditionally used to refer to the countries of Middle East. Which were at top at that time? Perhaps, this is where the word orientation comes from.

#### ARABS AND CHINESE:

Ancient Arabians put south on top. Yemen is so named because it is on the 'yamin' - right of Arabia. They did so, possibly because this is the way Chinese did it. Chinese might had opted the south up scheme because this is to where their ancient loadstone compasses pointed to.

European learnt map making from Arabs and flipped it to place themselves on top. But this is not the whole explanation of how north ended on top.

This notion was established by 13<sup>th</sup> century rediscovery and re-creation of maps from Ptolemy's geography by the Greek monk Maximus Planudes. The example was followed by notable map makers such as Gerardus Mercator, Henricus Martellus and Martin Waldseemuller and the world was set with

north on top.

#### NORTHERN-HEMISPHERE BIAS

The up and down are often attributed to positive and negative feeling also such as I am feeling up, feeling down; going up to heaven and down to hell. And since orienting north towards the top is a matter of convention rather than correctness, which probably got established because during the time cartography was placing the continents on paper the world was dominated by people of north or particularly Europe who were powerful and rich. Thus, what we see today is a Eurocentric world.

**We are used to picture the world in a certain way and just a simple rotation can make things look almost unrecognizable.**

But, since the world need not be this way. And technically it is a simple cartographic affair to build an inverted map from usual. South up maps is often made to illustrate northern hemisphere bias. These maps are quite popular in New Zealand and Australia. McArthur's universal corrective map

of modern times stands firmly against this bias. We are used to picture the world in a certain way and just a simple rotation can make things look almost unrecognizable. But hanging a south-up or east up map in our wall can help us to gain a new sight of the world which is as true as the other.





### More on 'directions'

So when you are done with maps of world probably you would like to know, how direction or orientation of astro-photographs or celestial maps are determined. Think hard, don't blame me later!

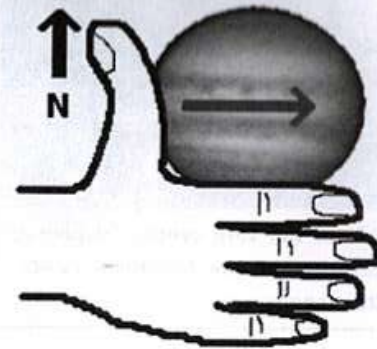
As a child, when I came to know that we live on the surface of this globe kept at our study room and not inside it, I felt why the kangaroos don't get pulled down and how they even

stay there! Hope you were not silly as me. At least now you know there is no true up or down, at least not in open space. Because we have something called gravity which do not let the kangaroos pulled in space. In such a comfortable position astronomers of earth are compelled to assign direction to everything that they see and the up and down in astronomy exist so, that we can laugh out and say, I just thought I knew too much!

Here are some conventions:-

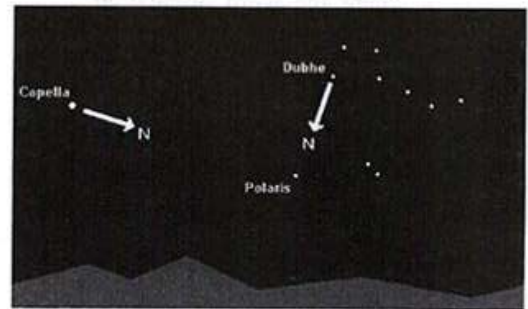
### Planets, moons (solar system) follows-Right hand rule:

As the telescopes improved, we witnessed the rotation of planets and stars in a better manner and the- *right hand rule* was put into use. That some of you would remember is used to get the direction of rotation of a body by keeping your thumb along the axis of rotation and moving rest of palm along direction of applied force. The movement of palm anticlockwise or clockwise gives the direction of motion. Anyway it's simple- move your right palm in the direction of rotation of celestial objects whichever way the thumb points is north.



### Star maps:

When referring to objects on the sky such as a star north for it is the direction which takes it to the north celestial pole of earth.



### Galaxies:

It's time to give some rest to your right hand and take out your left. Unlike the rotating planets, the rotating milky way follows the left hand rule. This seems to have been done since that direction in space most closely matches the north of our solar system.(Wherever, I read it, said so.)

(Let me know if you are feeling 'up' and going to get 'down' to it more.)

ritesh8092370948@gmail.com

Here are the references/ Credits-

\*ryukyu astronomy club-which way is up?

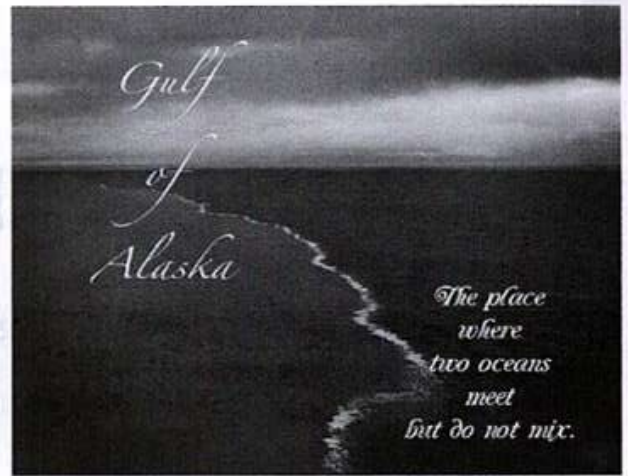
-[www.nexstarsite.com/-rac/article/which way is up.htm](http://www.nexstarsite.com/-rac/article/which_way_is_up.htm)

\*a cartographic history of why north, not east or south is up|metafilter

-[www.flourish.org/upsidedownmap-francis irving](http://www.flourish.org/upsidedownmap-francis_irving)



# 'Water Barriers'



**F**ew years back, a picture of Gulf of Alaska went viral. It was taken by photographer Kent Smith on Alaskan Cruise, July 2010. Quite often the phrase – “Where two Oceans meet but do not mix” associates the photograph.

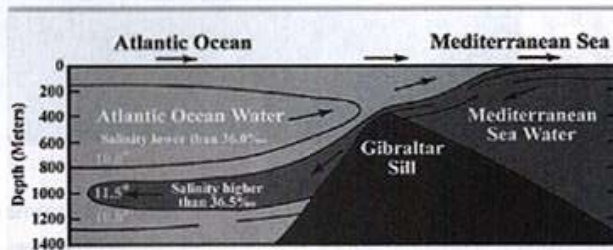
It is amazing to see waters of two different colour butting against each other but not mixing. But it is not exactly what the phrase says. At Gulf of Alaska, it is not two oceans meeting but it is glacial melt water, light blue in colour meeting offshore dark blue gulf water.

The waters do not mix all at once because of the difference in their densities and salinity. The gulf water is more saline and dense than the fresh glacial melt water. Due to this difference a surface tension develops which acts like a thin wall forming a boundary between the waters outlined by thin foam. However, the boundaries are not static and the waters from either side do mix eventually.

Examples of horizontal stratification of two fluids can be easily seen such as – not mixing of oil and

water, where oil being less dense remains at the top of water while such vertical stratification of water is quite rare. There are many such confluences around the globe. And what makes these an incredible sight to behold is their sharp contrast in colour. Colour of water depends on its absorption and scattering properties. This ultimately depends on what silt, debris, vegetation or chemicals the water carries which sometimes contrast the waters they join into.

Another important place is, Strait of Gibraltar where waters of strait of Gibraltar and Mediterranean



sea meets. Mediterranean Sea is more saline hence denser than the Atlantic Ocean. Thus the Mediterranean water outflow moves into the bottom of the strait forming a layer at around 1000 m depth and less dense Atlantic water lies above it. The Mediterranean water flowing over the Gibraltar sill and into the Atlantic Ocean also maintains its

characteristic salinity and temperature hundreds of kilometers away from Gibraltar sill.

This place and phenomena has got mentioned in holy Quran –

*“It is He Who has let free the two bodies of flowing water: One palatable and sweet and the other Salt and bitter; yet has He made a barrier between them, a partition that is forbidden to be passed.”*

[Quran 25:53]

*“He has let free the two bodies of flowing water, meeting together. Between them is a Barrier which they do not transgress.”*

[Quran 55:19-20]

Although the water masses always mix eventually, the density barrier makes the process very slow and water masses looks like piled up as water and oil.

## References:

- [ ] <https://www.quora.com/How-true-is-the-statement-Gulf-of-Alaska-where-two-oceans-meet-but-do-not-mix>
- [ ] <http://www.adn.com/science/article/mythbusting-place-where-two-oceans-meet-gulf-alaska/2013/02/05/>
- [ ] <https://www.flickr.com/photos/kentsmith9/4955772693>



# MAGNETIC HILL

The reality behind the uphill driving force of magnetic hills.



Kritika Priyadarshni  
(2015-18)

Coming across the word 'Magnetic hill', one may picture a triangular hill with a magnet confined within it. Perhaps a big magnet which certainly could attract the magnetic materials and so the cars can move up the hill slope. In the first sight, it looks like a geological affair. As if magnetic properties are embedded in the rocks of the hill.

Well a hill with such effects do exists and is a popular stop for people visiting Leh- Ladakh. It is in Leh-Srinagar highway, 30kms from Leh towards Kargil, where road ahead looks going uphill. Yet if one turns off the engine and make

the car stand in neutral, it would slowly start moving and would go uphill at the speed of 20 km per hour on its own. Local administration has also put a bill board to help tourists recognize it and a specific spot is marked on the ground. One who is with their vehicle at the right spot would be surprised to experience this uphill driving force. This phenomenon has been observed by many tourists but the feedbacks do not explain the reason or mechanism.

A magnetic force strong enough is believed to be at work behind the mysterious

phenomenon. It is so strong that aircraft flying over the region increases its altitude to avoid the magnetic interference. However, locals give a different version of story. According to them there lied a path straight to the heaven. People who deserved it would automatically get pulled up while the undeserving or unrighteous people never made up through it. (Supernatural stuff! Another WAY TO HEAVEN....)

Some people also blame the drivers for fooling them. My two cents on it - 'It does work', no matter what is the mass of the vehicle, it would start moving up very slowly. But it also does work for non-magnetic material like a rubber ball. So, there is nothing like magnetic attraction there. The

recorded magnetic intensity there, is in no way capable of making things move at 20km/hr. So what is it then? *Actually, it is the usual gravity. But gravity is disgraced for always bringing things down. As the phrase goes- 'nothing can bring me down except gravity!'* How gravity can make things go uphill! **The truth here is- there is no uphill.** What people see as uphill is actually very slight downhill. In neuroscience it is called **optical illusion**. The most important factor contributing to this optical illusion is the **obstructed horizon**. We are used to of using the







horizon as a reliable reference to determine the slope of a terrain. But the magnetic hill of Ladakh at 14000 ft. is naturally laid out in a way that it tricks our mind to believe a downhill slope to be uphill. And in absence of a reliable reference such as horizon, we have no ways to contradict it. Thus what appears to us as uphill is actually slight downhill and hence cars slowly gain momentum even when its ignition is killed.

And claims of planes flying over experiencing turbulence might be caused by wind and air rising steeply, due to the mountain terrain, which causes rapid cooling and pressure variations.

Another such place is **Wadi-al-jinn or valley of jinn** which is a valley located at 30-35km north west of Medina in Saudi Arabia where the cars are believed to be accelerated on their up to a speed of 120km/hr.

**When ignition of car is killed and gear sifted to neutral, the car still accelerates on the road that appears up hill.**

The locals named it Wadi-al-jinn because they believed that jinn live in these mountains and the acceleration of the car is due to jinn pushing them.

One may get its video on YouTube, where people have uploaded their experience which presents a similar story - when the ignition of the car is killed and

gear shifted to neutral, the car still accelerates on the road that appears to go 'uphill'. But now you know how uphill it is!

Places of such optical illusion can be found all around the world such as Australia, Brazil, Canada, China, Ireland, Germany etc. A detailed list can be found in Wikipedia.

So, whenever you visit Leh, stop at magnetic hill and be amazed, not by the fact that the vehicle is itself moving up but by how our mind is getting tricked out & how we never came to recognize the reality.

*Magnetic Hill at Leh-Srinagar Highway*

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# भूकंप का पूर्वानुमान

सौरभ रंजन

(2014-17)

**ह**मारी पृथ्वी हमेशा से परिवर्तनशील रही है। इसमें हर वक्त बदलाव होता रहा है परन्तु कुछ बदलाव इंसानों के लिए आपदा का रूप ले लेती हैं। जिससे उन्हें जान-माल की क्षति उठानी पड़ती है। जिज्ञासु मानव हमेशा से इस कोशिश में रहा है कि किसी तरह उसे इन आपदाओं की जानकारी पहले से हो जाए। इस कार्य में मानव कुछ हद तक सफल रहा है। हम चक्रवात, ज्वार, बाढ़, उल्कापिंड के गिरने आदि का पूर्वानुमान कर सकते हैं। परन्तु भूकंप ?

भूकंप की भविष्यवाणी करना बहुत ही कठिन कार्य रहा है क्योंकि भूकंप की घटना बिना किसी चेतावनी के आकस्मिक तथा बहुत जल्द ही घट जाती है। फिर भी भूकंप के होने से पहले कुछ भौतिक परिवर्तन के मापन से हमें कुछ समय पहले भूकंप की जानकारी मिल सकती है जो निम्न है :-

a) भूकंपीय-तरंग : जब भूकंप मूल से भूकंपीय कम्पन उत्पन्न होते हैं तो उसके साथ भूकंपीय लहरें उत्पन्न होती हैं। ये प्रायः

तीन लहरें होती हैं जिन्हें P, S तथा L तरंग कहते हैं। जिनमें P तरंग तथा S तरंग आन्तरिक तरंगे हैं और यह पृथ्वी के आन्तरिक भाग से गुजरती हैं तथा L तरंग सतही तरंग हैं और यह पृथ्वी सतह के साथ आगे बढ़ती है। P तरंग की गति S तरंग की गति की तुलना में अधिक होती है तथा इस कारण इन दोनों तरंगों की सतह पर पहुँचने के बीच एक निश्चित समय-अवधि का अंतर होता है और यह समय-अवधि का अंतर भूकंप से कुछ दिन या सप्ताह पहले घटने लगती है, परन्तु भूकंप से ठीक पहले यह अंतर पुनः सामान्य हो जाती है। इन परिवर्तनों को भूकम्पलेखी पर देखा जा सकता है और भूकंप का पूर्वानुमान किया जा सकता है।



# RUN



b) पशुओं का आचरण : यह तथ्य साधारणतः ज्ञात है कि कुछ पशुओं की इन्द्रियाँ मानव के तुलना में काफी अधिक संवेदनशील होती हैं। जिस कारण वे कुछ प्रकार के कम्पन या किसी अन्य असामान्य तथ्य को हम मानवों से पहले महसूस कर लेते हैं तथा कई विचित्र प्रकार के आचरण करने लगते हैं, यही असामान्य व्यवहार वे भूकंप से पहले भी करते हैं। सामान्यतः यह पाया जाता है कि किसी बड़े भूकंप से पहले जीव-जंतु, विशेषतः बिलों में रहने वाले जीव अजीब व्यवहार करने लगते हैं, वे असामान्य मौसम में अपने बिलों से निकल जाते हैं तथा उस क्षेत्र से दूर जाने लगते हैं। कई तरह की चिड़ियाँ भी उस क्षेत्र से दूर की ओर जाने लगती हैं और जोर-जोर से चहचहाती हैं तथा कुत्ते भी नियत प्रकार से भौंकते तथा रोते हैं तथा वे भी उस क्षेत्र को छोड़कर दूर जाने लगते हैं। यह असामान्य व्यवहार के 24 घंटे पहले ही शुरू हो जाती है तथा यह अजीब व्यवहार भूकंप के 2-3 घंटे पहले और भी ज्यादा तेज हो जाती है। इनकी इस अजीब व्यवहार की सहायता से भूकंप का पूर्वानुमान लगाया जा सकता है।

c) रेडॉन निकास : रेडॉन एक प्रकार का रेडियोएक्टिव गैस है जो पत्थरों तथा चट्टानों के मध्य होती है तथा इस गैस का निकास किसी बड़े भूकंप के आने से पहले बढ़ जाती है। यह गैस सामान्यतः कूपों के पानी में घुल जाती है तथा इसकी मात्रा बढ़ती ही जाती है तथा इसकी निकास के मात्रा में यह बदलाव भूकंप के आने से 3-13 दिन पहले से ही शुरू हो जाती है। अतः रेडॉन गैस के निकास पर दृष्टि रखने से किसी बड़े भूकंप के आने की चेतावनी पहले मिल सकती है। यह गैस भूकंप

के भविष्यवाणी में इसलिए भी सहायक है क्योंकि इसके रेडियोएक्टिव गुणों के कारण इसका आसानी से पता लगाया जा सकता है।

d) भूमि उत्थान : भूकंप से पहले भूखंड के धीमी गति से खिसकने से बड़े क्षेत्र के शैलों में नए दरारों का निर्माण हो जाता है तथा इन नव-निर्मित दरारों के कारण भूकंप आने से पहले भूमि गुम्बदाकार आकृति में फूल जाती है, जिससे की भूकंप का पूर्वानुमान लगाया जा सकता है। शैलों में आए इस परिवर्तन को "दाबखादिता" कहते हैं।

उपरोक्त तथ्यों को ध्यान में रखा जाए तो भूकंप का पूर्वानुमान लगाया जाना संभव है परन्तु फिर भी प्राकृतिक परिवर्तन आकस्मिक ही होते हैं तथा कहीं पर भी हो सकते हैं, जिस

There's gonna be one...  
**Now!** No, ... **Now!**  
 Okay, maybe... **Now!**  
 Alright, it's gonna be...  
**Now!** Okayyy... **Now!**



Another long day down at the  
 Bureau of Earthquake Prediction

(Artist: Streeter, Betsy, cartoonstock.com,  
 Search Id: bstn 335)





राजेश कुमार  
(2014-17)

# कृत्रिम वर्षा

भारत में अनियमित मानसून के बीच कृत्रिम वर्षा की संभावना

भारत की अर्थव्यवस्था मानसून पर निर्भर करती है किन्तु मानसून अनियमित है। मानसूनी वर्षा का सिस्टम बिगड़ रहा है और खेती की जरूरत के मुताबिक वर्षा नहीं हो पा रही है। इससे देश के कई इलाके सूखे की चपेट में आ गए हैं तथा करोड़ों किसान इसका असर झेल रहे हैं। हमें यह समझना होगा कि मानसून कोई मशीन नहीं है जो हर साल आएगा और निर्धारित वर्षा करके ही जायेगा। यह अधिक या कम हो सकती है तथा इन सभी के बीच ही हमें संभावनाएँ तलाशने होंगे।

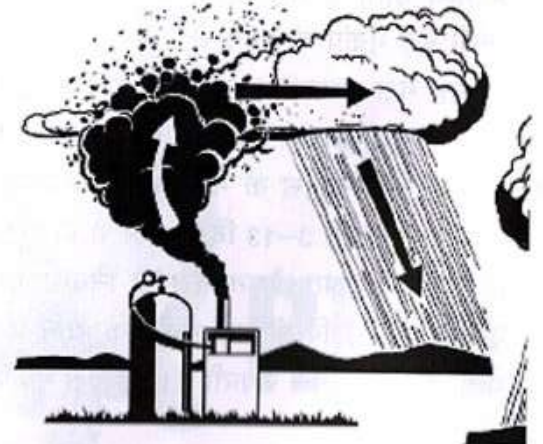
मौसम विभाग ने इस वर्ष भी कम बारिश होने की संभावना जताई है। पिछले वर्ष भी मानसून के दौरान कम वर्षा हुई थी जिससे अनाज का उत्पादन प्रभावित हुआ था। भारत में कृषि योग्य भूमि में करीब 22% भाग में ही सिंचाई की सुविधा उपलब्ध है। अतः किसानों को मानसून पर ही निर्भर रहना पड़ता है। वैसे भी आधुनिक तरीके से सिंचाई करना किसानों के लिए महंगा सौदा साबित होता है, फसलों के बेचने पर लागत भी प्राप्त नहीं होती है।

इन सभी समस्याओं को देखते हुए कृत्रिम वर्षा एक कारगर सहायक सिद्ध हो

सकती है। क्लाउड सीडिंग जैसे कृत्रिम तरीके को अपनाकर बारिश कराया जा सकता है। महाराष्ट्र सरकार ने किसानों को राहत पहुँचाने के लिए इस दिशा में कदम उठाया है। हालांकि वे अधिक सफल नहीं हुए किन्तु अत्याधुनिक तकनीकों की सहायता से कृत्रिम वर्षा की संभावना बढ़ी है।

**क्या है कृत्रिम वर्षा ?**

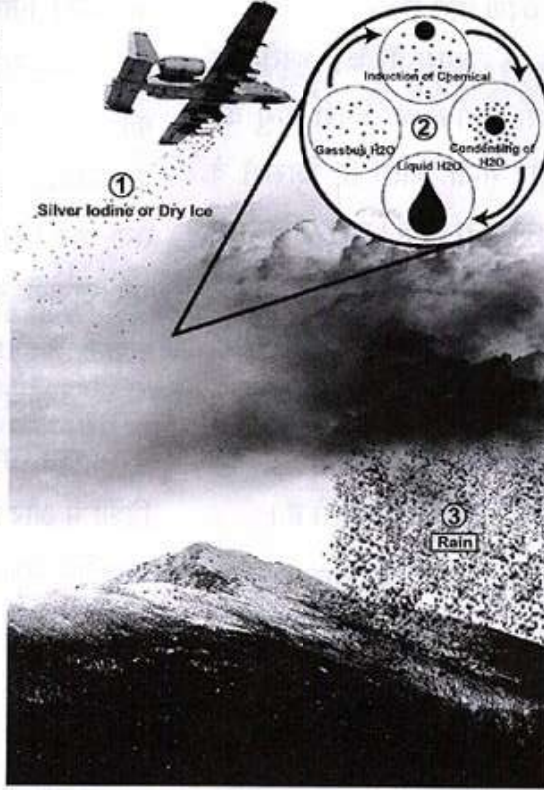
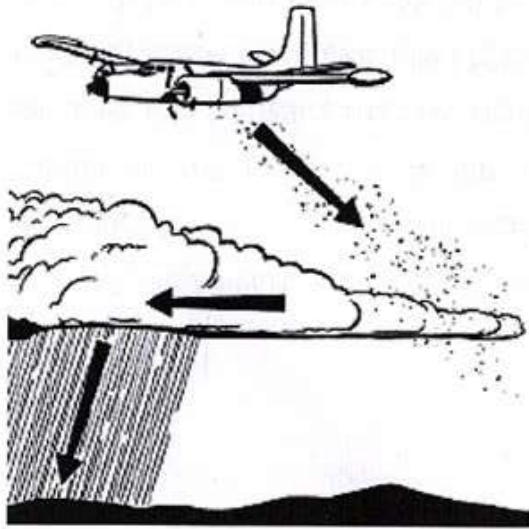
कृत्रिम वर्षा का मतलब एक खास प्रक्रिया से है जिसके माध्यम से बादलों की भौतिक अवस्था में कृत्रिम तरीके से परिवर्तन लाया जा सकता है, जो इसे बारिश के अनुकूल बनाता है। बादलों के रूपांतरण की यह प्रक्रिया





क्लाउड सीडिंग कहलाती है। दरअसल बादल अतिसूक्ष्म जलकणों के सम्मिश्रण होते हैं जो कम भार की वजह से खुद जल के बूंद के रूप में भूमि पर बरसने के लिए सक्षम नहीं होते हैं। विशेष परिस्थिति में जब ये कण संघनित हो जाते हैं तब इनके आकार और भार में उचित वृद्धि हो जाती है तथा यह धरती के गुरुत्वाकर्षण बल के कारण पानी के बूंदों के रूप में धरती पर गिरने लगते हैं।

कैसे होती है क्लाउड सीडिंग प्रक्रिया द्वारा बारिश ?



कुल मिलाकर कृत्रिम वर्षा करा पाना पूरी तरह भरोसेमंद तकनीक नहीं है। इस दिशा में और वैज्ञानिक अध्ययन होना बाकी है। हालाँकि उत्तम किस्म के रडार तथा कंप्यूटर जैसे उपकरण उपलब्ध होने पे इसकी सफलता की संभावना काफी बढ़ गयी है। अब वैज्ञानिक पहले से ही यह जानने में सक्षम हैं कि किस बादल से कृत्रिम वर्षा कराया जा सकता है, तथा कितनी बारिश हो सकती है।

हवा के जरिये क्लाउड सीडिंग करने के लिए सामान्य तौर पर हवाई जहाज की मदद ली जाती है। हवाई जहाज में सिल्वर आयोडाइड के दो बर्नर या जेनरेटर लगे होते हैं, जिनमें सिल्वर आयोडाइड का घोल उच्च दाब पर भरा होता है। जिस इलाके में बारिश करानी होती है, वहाँ हवाई जहाज को हवा के विपरीत दिशा में चलाया जाता है। सही बादल का सामना होते ही बर्नर चालू कर दिए जाते हैं। उड़ान का फैसला क्लाउड सीडिंग अधिकारी मौसम के आंकड़ों के आधार पर करता है। शुष्क बर्फ पानी को 0 डिग्री सेल्सियस तक ठंडा कर देती है जिससे हवा में मौजूद पानी के कण संघनित हो जाते हैं। कण प्राकृतिक रूप से ही बनते हैं। इस संपूर्ण प्रक्रिया के बाद कृत्रिम वर्षा सफल होती है।



**कृत्रिम वर्षा के कारक :** कृत्रिम वर्षा तकनीक में तीन चरण होते हैं :-

1. पहले चरण में रसायनों का इस्तेमाल करते हुए उस इलाके के ऊपरी वायु को ऊपर की ओर भेजा जाता है, जिससे वे वर्षा का बादल बना सकें। इस प्रक्रिया में कैल्शियम क्लोराइड, कैल्शियम कार्बाइड, कैल्शियम ऑक्साइड, नमक, यूरिया, आदि का प्रयोग किया जाता है। ये यौगिक हवा से नमी को सोख लेते हैं और संघनन की प्रक्रिया शुरू कर देते हैं।
2. दूसरे चरण में बादलों के द्रव्यमान को नमक, यूरिया, अमोनियम नाइट्रेट, शुष्क बर्फ तथा कैल्शियम क्लोराइड का प्रयोग करके बढ़ाया जाता है।
3. तीसरे चरण में सिल्वर आयोडाइड और शुष्क बर्फ जैसे ठंडा करने वाले रसायनों की आसमान में छाये बादलों में बमबारी कराई जाती है। ऐसा करने से बादल के जल-कण संघनित होकर बारिश के रूप में धरती पर गिरने लगते हैं।

**कृत्रिम वर्षा की चुनौतियाँ :** क्लाउड सीडिंग के प्रत्येक चरण की सफलता के लिए विशेषज्ञता तथा व्यापक अनुभव का होना बेहद जरूरी होता है। इस पद्धति में यह ध्यान रखना पड़ता है की किस तरह का और कितनी मात्र में रसायन का प्रयोग करना है,

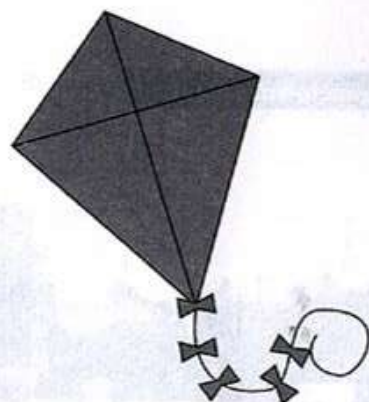
मौसम का मिजाज कृत्रिम वर्षा के अनुकूल है या नहीं। जिस इलाके में बारिश करवानी है वहाँ के हालात कैसे हैं, बादल के किस्म, हवा की गति तथा दिशा क्या है। इन सभी कारकों पर, बादल बनने की प्रक्रिया तथा बारिश होने तक, हर पल नज़र रखनी होती है। साथ ही यह जरूरी नहीं है कि यह प्रयोग हर बार सफल ही हो जाए।

कुल मिलाकर कृत्रिम वर्षा करा पाना पूरी तरह भरोसेमंद तकनीक नहीं है। इस दिशा में और वैज्ञानिक अध्ययन होना बाकी है। हालाँकि उत्तम किस्म के रडार तथा कंप्यूटर जैसे उपकरण उपलब्ध होने पे इसकी सफलता की संभावना काफी बढ़ गयी है। अब वैज्ञानिक पहले से ही यह जानने में सक्षम हैं कि किस बादल से कृत्रिम वर्षा कराया जा सकता है, तथा कितनी बारिश हो सकती है।

भारत इस तकनीक के शुरुआती दौर में ही है। केवल कुछ भागों जैसे महाराष्ट्र के इलाकों में कृत्रिम वर्षा का प्रयोग किया गया है, इस दिशा में भारत को अग्रसर होना चाहिए और वर्षा पर खेती की निर्भरता को कम करना चाहिए। जहाँ संभव है वहाँ सरकार सिंचाई की सुविधा का विस्तार करें और जहाँ संभव नहीं है, वहाँ कृत्रिम वर्षा कार्यक्रम को अपनाए। इससे भारत की कृषि तथा अर्थव्यवस्था में विकास की संभावना काफी बढ़ जाएगी।



# Home Town



We all have a place to which we belong. The streets with which we share our friendship, the playground which witnessed the biggest battles of our childhood, the sky where our Kites rose as if it was her own & the local fare for which we saved coins whole year. It's a place which we call Hometown and we all have something special to tell about it.

*Here are few stories of our fellow students living away from home .*

**Rajrappa**



**Wajida Sarwat**

(2015-18)

Rajrappa lies at the confluence of **Damodar and Bhairvi** or commonly known as **Bhera** river in Ramghar district of Jharkhand. It often gets its identity from the famous Chinmastika temple which is an important pilgrimage centre for Hindu community. Chhinna-mastika means *one with severed head*. The temple has an idol of Goddess Kali or *Chinmastika*-a deity with her head on her hand. She is standing on top of the

body of Kamdev and Rati. Animals are often sacrificed here on Tuesday and Saturday and



during Kali puja. A large fair is also organized here on Makar Sankranti.

Rajrappa Project, where I was brought up is a township established by CCL (Central Coal field Ltd.) Its neat and planned colonies are a lovely place to live

at. Here we enjoy every festival together be it Eid, Holi or Diwali. But this place is at its best during Durga Puja. Every year a different style of pandal is erected. We enjoy a lot especially on Navratri when tribal dancers visit to perform '*Jhumar*' dance and entertain people with their devotional songs.

Moreover, this place has got some beautiful natural spots. The Damodar Valley at Rajrappa is an excellent example of a two storey valley. The Bhera River coming from Ranchi plateau falls into Damodar River from approximately 30 ft. forming the *Rajrappa fall*, which is a popular picnic spot with boating facility. The sight of Sun setting across Damodar River is worth a snap and my personal favorite.



Hometown: Dhanbad

# Burning inside... - the city of miners.

*The heart of India's energy source is black — literally so for its primary dependence on coal and metaphorically so for what coal mining does to people involved in and living around mines.*

*-(mid●day, the guide)*

Ritesh Singh Choudhary

(2014-17)

*Every morning he wakes up with his mother and follows her as she does the house chores. Taking out the charcoal from the chulha (coal stove) while cleaning it, she shows him her hands bathed in white coal ash, waving from the kitchen and the child laughs with joy and surprise. In a while, sirens wails from the nearby coal mines and people stroll down the streets in their mining boots to their work. '*

**These are the few childhood images engraved in my memory.**

**My mother used to tell me about the torrential rainfall that followed after my birth and how a sleeping man fell in depth of his own house with his bed due to land subsidence. This became a headline at that time.**

**Similarly, a little of this city is alive in all its residents as memories or incidents.**



In Dhanbad area, mining on an industrial level started by the mid-19th century. Before that, only village population was engaged in small-scale mining. Mining became industrialized with the colonial efforts to connect the main trading and manufacturing with the ports via railways.

Tata opened mines in Dhanbad in 1910 (Bhelatand) in order to supply coal to their steel plant in Jamshedpur and subsequently in Sijua & Jamadobha in 1918 and in Malkera in 1931. During 1895 to 1920, notable Railway contractors such as Seth khora, Ramji Chawda etc. popularly known as Kutchi mistris (all the way from kutch, Gujarat) came down here and established many mines and also opened schools to train the miners.

At present, there are as many as 112 official mines in Dhanbad which consist of open cast as well as underground mines owned by B.C.C.L, IISCO and ECL while TATA owns only underground mines. These companies have setup their residential colonies which forms an important component of the topography as well as demography of this city. The picturesque of the whole town is not a planned one. The whole city amidst the blowing coal dust and loaded trucks crawling on roads looks quite restless.

The mining industry has changed the lives of people considerably by generating employment, providing markets, education facility etc., but it comes with its own set of odds.

With over 4,000 people per square km, Jharia, "the most densely populated mining area in the world" is burning inside, since more than 100 years. The first coal mine fire in Jharia was reported in 1916. Before nationalization of the coal assets in 1972, mining companies carelessly left the mines

open after digging, thus exposing the coal to open air which resulted in spontaneous combustion. And then they were blatantly extracted for cheaper coal by BCCL and now the residents are paying for it.

In the last four years, about 100 cases of fire have been reported from all around Jharia's coal fields. All methods to douse the fire have resulted in vain. Now, People from the affected areas are being relocated to Belgaria, a BCCL township far away from affected areas; on a priority basis—depending upon the amount of un-mined coal in fire affected areas. But Belgaria has no jobs, neither mines! So a large number of folks from mining villages, who were indirectly associated with mines as loaders, sorters etc. but are not official employees of BCCL have decided to stay in Jharia, amidst the poisonous fumes and yellow-bluish flames close to their door.

In recent times a shift can be seen towards open caste mines owing to its more productive and feasible nature. Many open cast mines are being dug overnight, close to the dwellings. Smokes and particulate pollutants rising from there have made the surrounding air more vulnerable. The water here is polluted with arsenic. The recent government released survey (Swachh survekshan, 2016) based on solid waste management and open defecation has placed Dhanbad as the dirtiest city of India. (Thanks for recognizing!)

The city has a long history of in-migration; after nationalization of coal mines in 1972, 50,000 in-migrants from Bihar, U.P and other states replaced the local workers just in a span of few weeks and gradually were absorbed in the main stream community.

Illegal mining, long history of exploitation of workers, trade unions, coal mafias (*people often relate these with the movie*



*'Gangs of Wassehypur'* which not though accurate but presented a close glimpse of the dramatic reality!), \*disasters, are as much real as the spurting flames of underground fire.

Ironically the most beautiful natural scenery you can find here is a sad one- watching the grimy picture of flames burning like blue-orange neon lights amidst the dark evening, the whole city looks in a dreamy state or a slumber but a chaotic one.

It is also one of the fastest growing cities of the world (79<sup>th</sup> in world rank). It often gets its identity through ISM (Indian School of Mines) the first mining school of Asia, CIMFR (Central Institute of Mining & Fuel Research) integrated form of CFRI & CMRI.

The coal industry has provided people with opportunities, capital and dreams to be

**In blue-orange flames, close to the dwellings, amidst dark evening the whole city looks in a chaotic slumber**

pursued. The prospered younger generation or the well qualified upper middle class are all set to fly away. But there are many whose fates are sealed in an uncertain future with the mines.

#### **\*Disasters-**

- On 28<sup>th</sup> May 1965 an explosion at Dhori mines at Bermo near Dhanbad killed 375 miners.
- Chasnala mining Disaster – On the fateful day of December 27, 1975 explosion occurred in Chasnala colliery (Dhanbad), while workers and official were inside the mines. Those who survived the blast and methane flames, were killed by gushing water from the water reservoir lying over the pit, and altogether 372 miners and officials were gravely injured. This has been depicted in the movie *'Kala Pathar'* starring *'Amitabh Bacchan'*.



**Chasnala Mine Disaster: Wives and family members waiting for the dead bodies.**

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# मैक्लुस्किगंज : मिनी लंदन



प्रभात गिरि  
(2014-17)

मैक्लुस्किगंज अपनी प्राकृतिक सौंदर्य व खुशनुमा मौसम के लिए मशहूर है। यह एंग्लो-इंडियंस के निवास स्थान के रूप में प्रसिद्ध है तथा इसे 'मिनी लंदन' के नाम से भी जाना जाता है। यहाँ कई दर्शनीय स्थल हैं। उनमें से एक प्रचलित स्थल दुली है जहाँ मंदिर, मस्जिद, गुरुद्वारा तथा चर्च एक ही स्थान पर बनाये गये हैं। इसके साथ ही डेगा-डेगी नदी, जागृति विहार इत्यादि घुमने के लिए अच्छी जगह हैं। परन्तु पिछले कुछ वर्षों में यहाँ वनों की अंधाधुंध कटाई, अवैध ईट भट्टों व कोयला उत्खनन की वजह से यह अपनी पहचान खोने लगा है।

## भौगोलिक स्थिति :

मैक्लुस्किगंज समुद्र तल से 2200 फिट की ऊँचाई पर स्थित है। यह चार नदियाँ - पूर्व में सपही, पश्चिम में चट्टी, उत्तर में दामोदर व दक्षिण में बाला नदी से घिरा हुआ है तथा पहाड़ियों के बीच बसा है।

**कैसे बसा :** 1857 के सिपाही विद्रोह के बाद देश में अंग्रेजों के प्रति नफरत की भावना पनपने लगी। ऐसे में एंग्लो-इंडियंस किसी शांत स्थान की तलाश कर रहे थे। जब इसकी खबर ब्रिटिश शासन में M.L.C. रहे Earnest Timothy MCCLUSKIE को हुई तो उन्होंने अपने मित्र रातू महाराजा के तत्कालीन मैनेजर पी.पी. साहेब से बात की। श्री पी.पी. ने रातू महाराज से बात कर E.T. MCCLUSKIE की कंपनी 'कोलोनायजेसन ऑफ़ इंडिया



लिमिटेड' को 10,000 एकड़ जमीन दिला दी। इस समझौते के अनुसार सात गाँव - हुरहू, दुल्ली, बसरिया, केदल, लपरा, कोनका, बघमरी, जोगिया व रामदग्गा को मिलाकर ई.टी. मैक्लुस्कि के नाम पर 'मैक्लुस्किगंज' का नाम रखा गया और इस तरह 3 नवम्बर 1933 को मैक्लुस्किगंज की नींव रखी गई। इसके बाद E.T. MCCLUSKIE ने कोलकाता में कार्यालय खोलकर एंग्लो-इंडियंस को बसाना शुरू किया। उस समय 80 कि.मी. की परिधि में 380 बंगलों का निर्माण कराया गया जिसमें लगभग 2000 एंग्लो-इंडियन रहते थे।

इनमें से अधिकतर द्वितीय विश्वयुद्ध और आज़ादी के बाद पलायन कर गए, वर्तमान में सिर्फ 20 परिवार ही रहते हैं।

**खासियत :** मैक्लुस्किगंज को स्कॉटलैंड की तर्ज पर बसाया गया था। पहाड़ और जंगलों से घिरे

विक्टोरीअन स्टाइल के बंगले स्कॉटलैंड में हैं। बताया जाता है कि 1933 से 1980 तक मैक्लुस्किगंज और लंदन की जलवायु एक जैसी थी इसलिए मैक्लुस्किगंज को 'मिनीलंदन' भी कहा जाता है। बगैर नक्शा के यहाँ किसी को घर बनाने की इजाजत नहीं थी। सड़कें 60 फिट चौड़ी थीं।

**निकलता था अखबार :** 1934 में मैक्लुस्किगंज से 'द कोलोनायजेसन ऑब्जर्वर' नाम का एक साप्ताहिक अखबार निकलता था। उस अखबार की प्रति



कोलकाता, पटना और दिल्ली तक जाती थी। बिजली के लिए वहाँ एक बांध का भी निर्माण कराया जा रहा था जो 20 मेगावाट बिजली उत्पन्न करता पर आजादी के बाद वो काम बंद हो गया।

**इंग्लैंड जाती थी भोला महाराज की बर्फी :** वर्तमान में जहाँ पोस्ट ऑफिस है वहाँ

भोला महाराज की मिठाई की दुकान थी। दुकान की बर्फी अंग्रेजों को इतनी पसंद थी कि वे उसे संदेश के रूप में इंग्लैंड भेजते थे। भोला महाराज का परिवार आज भी मैक्लुस्किगंज में रहता है।

**वर्तमान में सिर्फ 80**

**एंग्लो इंडियन रह गये हैं :** वर्तमान में कुल 20 परिवार के 80 सदस्य ही रह गये हैं। कुछ परिवार को छोड़कर बाकी सभी गरीबी रेखा से नीचे जीवन-यापन करने को मजबूर हैं। परन्तु वे यहाँ के माहौल में पूरी तरह से रच-बस गये हैं।

**आम के बगीचों से है पहचान :** अंग्रेजों द्वारा लगाए गये आम के बगीचे बहुत प्रसिद्ध हैं। यहाँ के 380 बंगलों में लगभग 4000 आम के पेड़ लगे हुए हैं। आम यहाँ के लोगों के लिए कमाई का बहुत बड़ा जरिया है। अच्छी फसल होने पर करीब डेढ़ करोड़ का कारोबार होता है।

**जागृति विहार :** स्वयं सेवी संस्था जागृति विहार के संस्थापक एच.एस. उपाध्याय ने मैक्लुस्किगंज को अलग पहचान दिलाई।

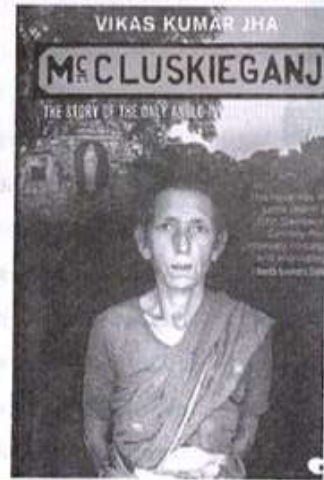
1973 में श्री उपाध्याय स्वीडन से शिक्षक की नौकरी छोड़कर मैक्लुस्किगंज आये और 20 एकड़ जमीन खरीदकर जागृति विहार के माध्यम से पेड़ों को बचाने, फलदार वृक्ष लगाने, शिक्षा का माहौल तैयार करने तथा जलवायु को बचाने की दिशा में काम किया। जागृति विहार अपने आप में अनोखा है। यहाँ आने पर

अलग ही प्रतीत होता है। ब्रिटिश शैली के मकान, विभिन्न लघु उद्योग, भिन्न-भिन्न प्रकार के पेड़-पौधे, हॉस्पिटल इत्यादि यहाँ की खासियत बयां करती हैं। पंचवर्षीय योजना बनाकर विकास कार्य की नींव भी मैक्लुस्किगंज से

**वर्तमान में कुल 20 एंग्लो इंडियन परिवार के 80 सदस्य ही रह गये हैं। कुछ परिवार को छोड़कर बाकी सभी गरीबी रेखा से नीचे जीवन-यापन करने को मजबूर हैं।**

**शुरू हुई :** इसके लिए एंग्लो-इंडियनों ने 'कोलोनायजेसन सोसाइटी' बनाकर 1946 में शेयर जारी किया था। इसकी सदस्यता शुल्क पाँच रुपये थी। वहीं एक शेयर की कीमत 12.08 रुपये थी। उस समय मैक्लुस्किगंज में अस्पताल, चिकित्सक, पोस्ट ऑफिस, थाना, रेलवे स्टेशन, डांस क्लब, बेकरी, कारखाना, ग्रामोफोन की दुकान, डिपार्टमेंटल स्टोर, बग्घी वाहन, अस्तबल, गोल्फ, फुटबॉल व क्रिकेट के मैदान, सभी तरह के फलों के बगान व नर्सरी खोली गई। यहाँ 1962 में ही बिजली आ गई थी। पहले यहाँ औसतन साल में 150 दिन बारिश होती थी। उस समय यहाँ प्रत्येक दिन सुबह में ठण्ड, दोपहर में हल्की गर्मी, शाम में बरसात और रात में वसंत ऋतु का आनंद मिलता था। 1990





तक यहाँ अधिकतम तापमान मई में 35 डिग्री सेल्सियस व दिसम्बर में न्यूनतम तापमान 0-1 डिग्री सेल्सियस रहता था।

**समस्याएँ :**

**पेड़ों की कटाई :** पेड़ों की अंधाधुंध कटाई से यहाँ की जलवायु बिगड़ गई है पहले यहाँ घना जंगल था जिसमें चीता, बाघ, भालू, हिरण आदि जैसे जानवर खुले में घूमते थे। परंतु पेड़ों की अत्यधिक कटाई की वजह से धीरे-धीरे खत्म हो गए।

**ईंट भट्टों का खुलना :** यहाँ अंधाधुंध ईंट भट्टों के खुलने से वनों की अत्यधिक मात्रा में कटाई हो गयी है। मिट्टी का कटाव अन्धाधुंध हो रहा है। इसका प्रभाव यहाँ के मौसम पर भी पड़ रहा है, यहाँ औसत तापमान में भी वृद्धि हुई है तथा नदियों पर भी बुरा प्रभाव पड़ रहा

है। नदियाँ और तालाब सुख रहे हैं। भट्टों से निकलता धुआँ वायु को भी प्रदूषित कर रहा है। **REMARKABLE :** यहाँ पर स्थित 'डॉन बास्को अकादमी' बहुत ही प्रसिद्ध है जिसमें राज्य के विभिन्न हिस्सों से तथा दूसरे राज्यों से बहुत सारे बच्चे पढ़ाई करने आते हैं। इनके रहने के लिए बहुत सारे होस्टल भी बने हुए हैं। जो यहाँ के कमजोर आर्थिक व्यवस्था के बीच एक उम्मीद के रूप में उभरा है। स्वीडन, नॉर्वे, अमेरिका, ऑस्ट्रेलिया, कोरिया इत्यादि जैसे कुछ देश हैं जिनसे हर वर्ष पर्यटक यहाँ घुमने आते हैं। यहाँ पर्यटक मुख्यतः ठण्ड के मौसम में ही आते हैं। मैक्लुस्किकगंज पर विकास कुमार झा द्वारा लिखा गया नॉवेल - 'मैक्लुस्किकगंज' को काफी सराहा गया है।



# Creative Creations!



Vijay Kumar  
(2015-18)

A look back at the creative stories of creation, arised out of an effort to interpret the unknown.

**E**arth was created 4.54 billion years ago and life appeared on it a billion years later in some form of prokaryotes. Since then life in various forms has continued to adapt, evolve, survive or perish every single passing second. The wheel of life moved from simplest cells to giant dinosaurs, forming swimming fishes, crawling reptiles, birds who could fly and humans who could think. Humans have lived here for only 0.04% of Earth's history, still with their abilities they have established themselves as ambassadors of this planet.

Thousands of years ago, everything surrounding them was covered in thick clouds of mystery. They must have felt like a lost child who was abandoned under the stars with so many unanswered questions regarding the natural phenomena that they saw viz. shape of the Moon, rising of the Sun and its movement across the sky, eclipses, constellations & other fundamental questions such as – What constitutes

## Homeric Earth:

Earth, a circular plate surrounded on all sides by ocean rivers, sky to be a solid concave surface & sun to rise out everyday of the ocean rivers and sink into the same on opposite at its setting.

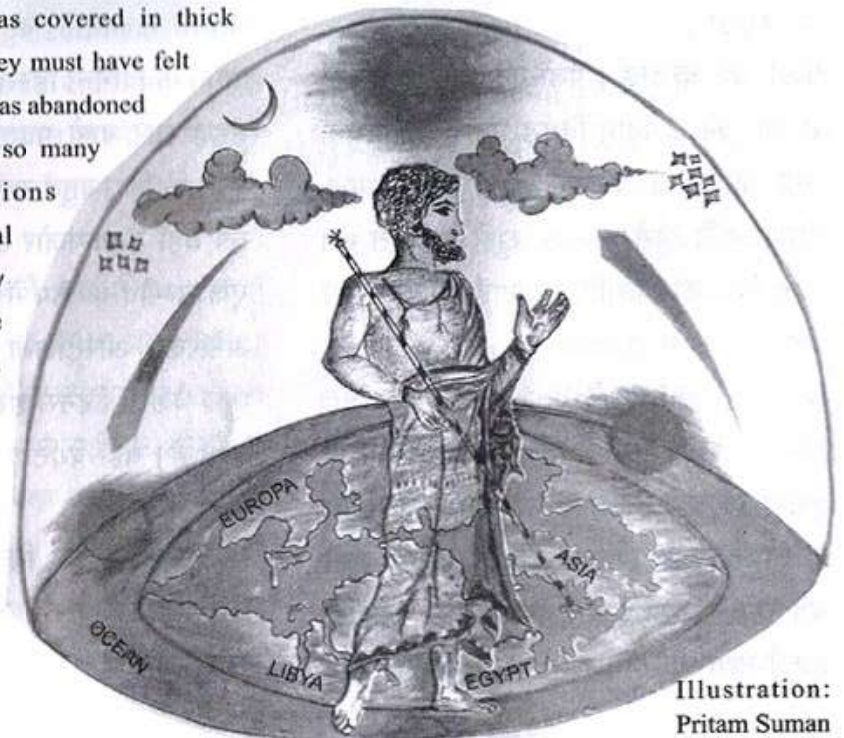


Illustration:  
Pritam Suman



their world? Who created it? When and how it was done?

Many of us also have grown up calling the Sun: Father of all, Moon: the Uncle and the Stars: the spirits of our great ancestors. Similarly every tribe, every civilization or an inquisitive individual, who lived, cherished and perished here, interpreted them in their own ways. *'Diving into the waters of this ancient legacy, there are some interesting and some weird stories and interpretations to find.'* Many of these stories share interesting similarities, which point perhaps to the deep common concerns of human beings.

### **Greeks:**

Greeks were among the first civilizations, who framed significant thoughts and philosophies on earth, astronomy etc. -

**Homer** - Probably the greatest Greek poet, believed the earth to be a place of circular form, surrounded on all sides by the ocean river. He conceived the sky as a **solid concave surface resting on tall pillars** which are in-charge of Atlas Mountain and the sun to rise out every day of the ocean river and sink into the same on opposite side at its setting. Stars are also represented as following the same course.

**Thales** – considered as the first Greek thinker and philosopher visualized the earth as a disc floating on water just like a log of wood. By this he aimed to provide a logical explanation of earthquakes. According to him, earthquakes are caused when earth floating on water is rocked by the waves. He tried to explain everything in terms of water. (Either everything is made of water or everything came from water)

**Herodotus**- (Father of History) He believed that the **sun was driven southward out of its regular course by the winds** at the approach of winter!

### **Arabs:**

The early Arabs considered the earth as Centre of Universe around which seven planets viz. Moon, Mercury, Venus, Sun, Mars, Jupiter and Saturn revolved. They imagined that each of these planets occupied a particular sky and that each sky was under the authority of the planet to which it had assigned. In this hypothesis, all the stars formed the seventh sky or highest heaven. The first of the seven sky was believed to be made of green emerald, the second one of white silver, third of red ruby, fourth of white pearl, fifth of red gold, sixth of yellow topaz, and the seventh of a mass of fire (nur). Similarly there were seven earths, one inside the other, the lowest of them being hell. *(Hussain p 118)*

### **Egyptian mythology:**

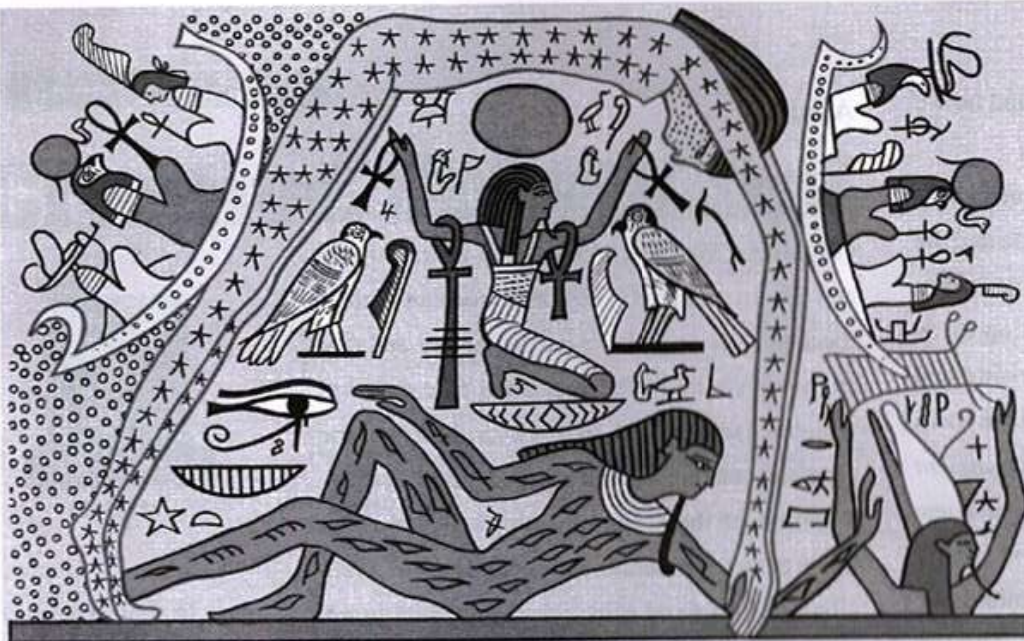
The Egyptian gods are an exclusive example of personification of natural environment and thus explaining the natural events in terms of human affairs.

GEB was worshipped in Lower Egypt as the 'Earth God'. GEB was depicted as a bearded man with a goose on his head. He was the provider of the crops and a healer. Egyptian people believed that GEB's laughter cause Earthquakes.

While the sky is the Nut's body arching from horizon to horizon lying over Geb – *the earth*. She used to swallow sun every night and gave birth to it every dawn. NUT and GEB were passionate lovers. During the day, Nut and Geb were separated, but each evening Nut came down to meet Geb and this caused darkness. If storms came during the day, it was believed that Nut had come closer to the earth.

They both married, without asking the powerful Sun god RE. RE was so angry at NUT and GEB that he forced their father SHU; the god





Source: The Gods of the Egyptians Vol-II, colour Plate facing Page 96, E.A. Wallis Budge

of Air, to separate them. That is why the Earth is divided from the Sky (*Nice explanation folks!*). Moreover RE prevented NUT from having children in any of 360 days of a year. Fortunately THOTH; the divine scribe, helped NUT. He tricked the Moon into playing a game where the prize was the Moon's light. THOTH won so much light that the Moon had to add 5 new days to the official calendar. Thus making a year of 365 days, and adding five extra days in which NUT and GEB had their 5 children.

(Hope you got it!)

### MOON- Head of Goddess CAYOLXAUHQUI

In Aztec mythology, COATLICUE whose name means 'serpent skirt', was the Earth goddess of Life & Death. COATLICUE had a horrible appearance. She was depicted as a woman wearing a skirt of snakes and a necklace of hearts torn from victims. She also had sharp claws in her hands and was thirsty of human sacrifices.

COATLICUE gave birth to HUITZILOPOCHTLI after a ball of feathers fell into the temple where she was sweeping and touched her (*One of the similar virgin mother theories!*) This weird pregnancy greatly

GEB - the earth lying under NUT- the sky, between them is her father SHU separating them.

offended her existing 400 children who were encouraged to kill their dishonoured mother. However, HUITZILOPOCHTLI (*are you able to pronounce it!*) emerged from the womb of his mother fully armed and saved her. HUITZILOPOCHTLI cut off the head of his sister CAYOLXAUHQUI and threw it into the sky to become the Moon.

### The Biblical story - six days of Creation

Genesis 1 says God created the universe, the earth, the sun, the moon, the stars, plants and animals, and the first two people in six days. When god said, 'Let there be light', light appeared. In similar way, he created other things. Now, whether those were ordinary days or geological period is a matter of theological reasoning (*deep stuffs*) and way too negotiable, depending on what the concerned people are trying to teach you.

Rather than taking such stories as religious or cultural baggage we should endorse them as humans' creative past and in many cases an effort to interpret the unknown.

And remember there was a seventh day in which god rested. Why don't you use such an off day to write your own 'creation story'! Let's



see how creative you can be...

**Note** – if you are really into these things and wish to pen down your own creation story (as the writer of this piece insists!) send it to us at [at-geoclub.sxc@gmail.com](mailto:at-geoclub.sxc@gmail.com)

And if your story is really great, we would be happy to get it published in our next edition. Cheers!

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Megaliths (mega-large, lithic-stone) are large stone structures made of single or more than one stone. That is placed together without the use of concrete or mortar.

-Wikipedia

Photographs Courtesy:  
Subhashis Das



Ritesh Singh Choudhary  
Satish Kumar  
Aprajita  
(2014-17)

# MEGALITHS

Oldest  
temples  
of humanity:  
(An Interview with  
Subhashis Das,  
a Megalith Researcher)



Subhashish Das



**O**n the quest of a magazine story and to know more about the Megaliths. We reached – 'The Equinox', residence of a prominent megalithic researcher- Subhasis Das. A man of his own kind, a self-taught megalithic scholar who left his job 15 years ago to unfold the mysteries of megaliths. On a long conversation we talked about megaliths of Jharkhand, India & around the world, about megalithic people, astronomical knowledge of such people, Aryanisation of tribal India and lot more.

We were also privileged to see his small museum. Where he showed us different kinds of potteries – Red, Black, Black and Red of the prehistoric megalithic period inscribed

potteries yielded from megaliths, handmade potteries of 2000 B.C and glazed pottery of the Mughal Period *et al.*

Apart from potteries there were precious collection of duplicates of Harrapan seals, stone and metal tools like hand chisel, nail pairers and totem pins used by Malla women for making tattoos (godna) etc.

Another thing which caught our interest was one 'singi' which was used by megalithic people to keep ashes of the deceased below menhirs.

#### **Sir, What are megaliths after all?**

Megaliths are primarily burials and memorials of the dead. There are varieties of burial practices –



Collections of Subhashish Das : Metal Tools Potteries, Slags of Iron etc. found from megalithic burials



Singi : Containing ashes of deceased found from Tharpakhana Megaliths



**Sarcophagus burials-** Sarcophagus meaning 'stone coffins' in which dead bodies are placed. Another one is **Urn burials-** which composed of pits having oblong spit circles. Normally babies were placed in such burials. Jharkhand megaliths have not been excavated yet it is known that these chiefly comprise of **Pot burials.**

Skeletal remains also show that in some burials many of the dead bodies were placed as one lies within the mother's womb. And this practice is found not only in India but even in England also.

Apart from these there were also trend of secondary burials. In which remains i.e. ashes or bones of dead were placed inside the megalith after cremation. In some megaliths portholes were made specifically for it.

Various funeral offerings in the form of ritualistic pottery, beads, ornaments etc. have also been found from these graves. A glimpse of what you saw in my small collection. So, this is about sepulchral (related to death) aspect of megaliths. But modern day research suggests that megaliths were not only raised for burial practices but also served as boundary makers, memorials of significant events and even as astronomical calendars and observatories.

Dolmen, Stone and cairn circles, dolmenoid cists, menhirs *et al* are other types of megalithic architectures.



A port hole dolmen in Andhra Pradesh

### **Is there any known origin of megalithic people or any chronological sequence?**

The folklores of the proto austroloid Kolarian tribes as the Santals, Asurs and Mundas suggest that they trace their origin to Sumeria/Chaldea and so does my research on these tribals.

In Jharkhand the megalithic tribes as Mundas, Oraons, Asurs and the Hos call their dolmens as *Sasandiri*. Menhirs to them is *biridiri*.

### **Tell us something about Megaliths of Jharkhand.**

There are megaliths everywhere in Jharkhand except some northern parts. I wrote somewhere that if you go to Pathalgadda in the district of Chatra and throw a stone high up and wherever it falls you are sure to find a megalith.

### **Is there such enormous concentration of megaliths?**

Jharkhand is one of the rarest place in the world where megalithism is still practiced. Megaliths of Jharkhand has yet not been excavated but sometimes they get exposed during construction of roads or dug up by treasure hunters as was the case with Pathadgada village in Chatra.

We are struggling to get Chaibasa recognized as a Heritage Town of Jharkhand where you find megaliths everywhere and here megalithism is in practice uninterruptedly since many centuries. It has only one contender in India i.e. Shilong in Meghalaya.

Enter any Ho house and you are bound to confront megalithic burial slabs in their courtyard called *Sasandiris*. Since they bury their ancestors there. They even go on to erect large *menhirs* called *biridirs* as memorials or to commemorate any event. Chaibasa also exhibits the most beautiful homes of Jharkhand. Every



15 days the Ho women paint the walls with colours made from barks of trees, floors too are painted from extract of various seeds.

I am also trying to get Chokahatu, the largest megalithic burial site of the state a World Heritage Status, as megalith making in the site is still being practiced since over 2500 years now. The site is spread to over a whopping area of 8 acres of land and comprises over 8000 sepulchral stones!

Sasandiris of Munda in Jharkhand are meant to be used as family vaults of the dead, where death remains of whole family are kept together.

**What is the specialty of Megaliths of Hazaribagh?**

There are few astonishing features that I found in Megaliths of Hazaribagh, which is quite different from rest of Jharkhand—

Most of the Megaliths here are placed in alignment between two hills on either side. The places where there are no hills, you won't find

megaliths. This suggests that megaliths were not placed anywhere randomly. Another typical characteristic is presence of stone triangles. That is of two types—

- i. a pure equilateral/isosceles triangle
- ii. A menhir having a triangular tip.

For instance, Pacahi Baba megalith of Jabra road

comprises of both such triangles which are in alignment with another menhir. And these three stones are aligned to the Juljul Pahari in south east. And this entire complex has been positioned on the alignment line between Kanhari and Bawanwey hill.

Rola, Birbir & lati megalithic complexes are few other sites containing stone triangles.

**Have megaliths been made by non-tribal people also?**

We do not have any evidence to suggest that therefore we can conclude that only tribal people made megaliths.

**How different were the megalithic stones from ordinary stones?**

Geologically sandstones or Granite gneiss were used. They also used stones of yellow colour because it could be spotted from a far distance as well as it represents their imperativeness. Red hematite stones were also used. 'MI' of Punkree Barwadih is a red hematite stone. Apart from it

**If you go to Pathalgadda in the district of Chatra and throw a stone high up and wherever it falls you are sure to find a megalith.**



**A Stone circle at Banadag**



I've seen some menhirs made of stones embedded in mica. The stones shine so beautifully in moonlight.

**Punkri Burwadih : An Astronomical observatory of ancient Astronomers.**

Another important site is Punkri Burwadih, It is one of a kind because of the mathematics and precision involved in the positioning of the stones. Imagine thousand years before any known mathematician or astronomer the ancients had knowledge of proportions and ratios and had precise knowledge of cardinal points, Equinoxes and Solstices.

The stones have been placed in accurate alignments with each other and also to major peaks and notches of the surrounding hills. Two menhirs 'M1' & 'M2' have been placed side by side facing the Winter solstice sunrise. One small stone marked 'A' has been placed on the north south axis of the monument. Walking south on this axis of A on one particular

point, equinox morning sun can be seen rising through the 'V' notch formed between 'M1' & 'M2' behind the hill in landscape. Along with a burial it is essentially a solar calendar. Every year crowds flock here at the day of equinoxes to see the spectacular sunrise.

**How many astronomical megaliths have you discovered so far? Please name a few.**

Well, I guess about a 5 or 6. They are the megaliths of Chano, Furuka, Birbir and Katia Muwey etc apart from Punkri Burwadih.

**What was the purpose ?**

The accurate positioning of the entire megalithic complexes and the stones inside the sites towards the Equinoctial, Solectical sunrises and sets and even to the cardinal points suggest that these megaliths apart from serving as prehistoric burials also functioned as their observatories for the transits of the sun and other celestial bodies as certain stars and the moon. Perhaps for these megaliths to operate as their calendars.

**Below: Punkree Barwadih Megalithic Complex, Rising Sun between the 'V' notch of M1 and M2 (Inset).**





### **Who were those people? Were they the Mundas ?**

This is difficult to say as because the present-day Mundari tribes do not reveal any astronomy in their megalithic burials.

### **Why understanding megaliths are important?**

When we talk about megaliths we are talking about a culture which is lost long ago. Only the burial factor is taught to the students and in the process much reality of megaliths and their makers are lost.

Without knowing about megaliths and the megalithic tribes such as Munda, Ho, Asurs etc. we can't know about ancient India.

Suniti Kumar Chatterjee, a great linguist has said that " in prehistoric times Mundari languages were spoken all the way from Afghanistan to Mekong valley in Vietnam." Mundari is one of the oldest spoken languages of India. Asuri, Ho, Santhali, Shabari of Orissa etc. are its entire sister languages.

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***Punkree Barwadih is one of a kind because of the mathematics and precision involved in the positioning of the stones. Imagine thousand years before any known mathematician or astronomer the ancients had knowledge of proportions and ratios and had precise knowledge of cardinal points, Equinoxes and Solstices.***

However Kurukh believed to be Dravidian in origin is spoken by the Pahadiyas and the megalithic Oraon tribes. The mention of "Kurukhshtera" in the Mahabharata shows the presence of various Kurukh speaking tribes in the region.

Kurukhshtera therefore means the *shetra* or the region of the Kurukh (speaking) people. Plenty of names of cities and villages around us are austric -Mundari in origin confirming that the tribals were indeed the dominant people in India during prehistory.

Megaliths are needed to be understood as a relic of prehistoric India and as a source of India's prehistory. Unless megaliths are understood and accepted by the common man and the scholarly world, much of prehistoric India will linger in dark.

Megaliths are not merely burials of the dead but several megaliths of Jharkhand, Andhra Pradesh and Karnataka does give evidence that astronomy and seminal mathematics were known to the megalithic folks even in hoary antiquity.

Therefore megaliths do have the potential to rewrite India's past.

### **What is the level of Awareness?**

There was hardly any awareness prior to my work. Even the megalith making tribes who have adopted Christianity or have been absorbed into the Hindu fold have deserted megalith making therefore their newer generation do not even know that megaliths are their archaeological, sociological, religious and cultural heritage.

Though very little yet a section of the common people have gradually begun recognizing megaliths. This is my little achievement.

You know '*heritage is something which is not understood by people in general*'. We can't expect much from government, politicians, or bureaucrats to care for heritages of our state.



Already much has been lost. The common man has to preserve megaliths; someone as you & me. Since I've reached the evening of my life if someone from the younger generation comes up then perhaps we have a hope...

**Many films have been made on you and your discoveries on megaliths as one was telecast on the National Geographic last year.**

**Now tell us about your books and your website on megaliths.**

I have authored many papers on national and international journals.

Yes, my books are the first ever books written on megaliths of Jharkhand, besides they present a separate view on megaliths, the tribals and the prehistory of India.

My books are :

**SACRED STONES IN INDIAN CIVILIZATION.** Kaveri Books. New Delhi.

**UNKNOWN CIVILIZATION OF PREHISTORIC INDIA.** Kaveri Books.

Two more books on my research on megaliths await publication and I hope they will be released by 2017.

My website [www.megalithindia.in](http://www.megalithindia.in) is the only website on megaliths of India.

**On the Quest of megaliths where around the world you have been till now ?**

Not exactly around the world. I have been to Europe only.

Last year I was invited as the only Indian to speak on my research on megaliths in the World Conference of Prehistory and Proto-history held in Spain.

My entire journey, stay to/in Spain was sponsored by these people despite the fact I am just an individual explorer and not a professional.

I found there that knowledge is given more credence than qualifications; something that cannot happen in my country.

I have however have also flown to France and Italy.

...and thus ended Subhashis Das with a meaningful smile on his face.

**Megaliths are needed to be understood as a relic of prehistoric India and as a source of India's prehistory. Unless megaliths are understood and accepted by the common man and the scholarly world, much of prehistoric India will linger in dark.**



# Geoclub so far:

## **Sandeep Chandra**

Assistant Professor, Department of Geography  
Founder Member, Geoclub

**G**eoclub is a group of individuals who are interested in exploring the field of geography and geographical issues. It was started in 2006 by students of geography department under the guidance of faculties of the department. Various activities of the club were supported by college management especially by Fr. Principal, Vice Principal and Late. Fr. C De Brower. They were not only supportive but they have also provided essential guidance for various activities. Initially the main activity of the club was to share study materials and discuss the questions and queries of geography. With time the activities of the club expanded. Geography is a field science, therefore personal visit to the field is very important for the understanding of geographical places, events, and processes. Taking it as key for better understanding in geography, Geoclub also started excursion to the places important for geographical studies. Jharkhand is the source point of many rivers, Subarnrekha is one of the important and independent river

originating from Ranichua, near Nagari, Ranchi. This was the first excursion from Geoclub. Later on the club organized visit to Parasnath hill, the highest point of Jharkhand, and nearby Usari waterfall in Giridih district.

Geoclub have organized long tours to Valley of flowers, uttarakhand, and Ladakh region of Jammu and Kashmir. Both the tours were self planned and quite successful. These trips provided us rich knowledge and practical experience. We have witnessed the natural, cultural landscape of the region. Jharkhand; being home state is easy to access and explore in short duration. We have



*Expand your Vision*

planned and visited various short trips to Netarhat, Lodh Fall, Betla National forest in past years.

Geoclub have organized many plantation programs to create awareness among students and youth towards plantation and healthy environment. We have done plantation at old age home, Bariyatu, Kanke Dam, along Ring road, college campus etc. Seeing the pollution level on roads and increasing health risk among the resident of the city and road accident we tried to create awareness about cycling in city by organizing bicycle rally in the city.

We have also organized Geo-quiz and Group discussion to enrich the knowledge about geographical issues. In recent years we have started an annual event of Geo-Exhibition of photographs and handicraft. This event is again a platform to share geographical knowledge, showing different natural and cultural landscape. We have got healthy participation even from other disciplines. Site visit is one of the important objectives of the club, in which visit to industries, mines, forest have been covered.

The club will keep igniting the minds of new geographers about the different geographical events, places, and people through its various activities. In this endeavour, this magazine itself is an effort to cultivate interest among students about writing articles, reports and travelogues.





*Geo-Exhibition, '13*



*Palamu kila, Betla '14*



*Plantation at Old Age Home, Barpeta '06*



*valley of flowers, uttarakhand*



*Bicycle Rally, '14*



*Geoquiz at sawnary*



*Clean your Campus, '15*



*Sunset in Netarhat, '13*



*Open Castle Near Rajapura (Jharkhand) '15*



*Geo-Quiz Winners '15*



# Ladakh Paradise

James Baria  
(2012-17)

## Rafting in River Indus

*Pages of diary*

It had been so long since I wanted to visit the dusty, barren, yellow-brown colored yet magical, hypnotic and beautiful land up north- Ladakh; a place whose beauty is beyond imagination. It has been graciously bestowed with all forms of natural beauty, that any natural wonder of the world could proudly boast of: the flourish of the Karakoram, ethereal colors of beautiful lakes, vast expanses of snowy glaciers, deafening quietness of valleys and the gurgling waters of flowing rivers! It seems god stooped down himself – on earth, to conceive this splendor. But in the midst of all this beauty, life strives to survive – inch by inch. Population is spread in small pockets across the vast expanses of land – in small and secluded hamlets, the largest of which is Leh; one time ancient capital of Ladakh.



*Shikara, Dal Lake*



Day 1: Departure from Ranchi:

And the journey began, We boarded Tata-Jammu-Tavi Express from Ranchi at 3 PM. As I was the group leader, my level of excitement was in double measures. We were so excited that we could hardly sleep in night. Hence, we had a late morning next day. And when we woke up we were perspiring in hot weather of UP. After spending two days of train journey with gossiping and lots of story-telling. We finally reached Jammu next day at around 3 PM. Jammu is quite well connected with rest of the country through rail and air network.

In Jammu, we ate lunch (a delight after trains food) rested a bit and took a bus to Srinagar that evening. A bus journey usually takes 7 to 8 hours to reach Srinagar from Jammu.

Early morning the following day we were in Srinagar's public bus stand in front of a mountain covered with a blanket of snow. For most of us, it was the first experience of seeing a snow clad mountain. I was trying to believe, what I was beholding.

We checked in our hotel ate, refreshed and proceeded to explore the beauty of Srinagar. We began with the Mughal Gardens located on the banks of Dal Lake – Shalimar Bagh - The abode of love and Nishatbagh – The garden of bliss laid down by Asif Khan, father of Empress Noorjahan in 1633 A.D. It was a place of serenity and beauty. These were the places, we had studied about. But now we were in there. The first hand experiences are always unmatched!

After this wonderful experience we

went for boating in Dal lake, another heart stealing place to be in. We explored the Dal lake in Sikhara, the beautifully decorated boat, the once Bollywood hits and the logo of Jammu and Kashmir tourism department. This experience of divine peace surpasses all things.

It was the first experience of seeing a snow clad mountain. I was trying to believe, what I was beholding.

Next morning we headed towards our next destination, Ladakh via Sonmarg through Zoji-La pass.

Our first stoppage was Sonmarg. There we trekked about 20-25 kms in snow

covered mountains. It was our first experience of trekking in Himalayas.

Though, we all were exhausted till the end. For me, it was the best part of the journey.

Now, we were on the Zoji-La, one of the highest motorable road in India at an altitude of 11,575 feet. Buses like ours was moving at less than an inch from the edge of the road and because of the steep slopes we could see valleys deep down. And this altitude was getting scary with every turn and with every passing vehicle. It soared our level of thrill manifolds. After so much of surprises and breathtaking adventure our teachers were not satisfied. They wanted to have some more thrilling moments. And we decided not to stay in Dras but to proceed with our journey till Leh.

With sleepless night and thrilling road journey we finally reached Leh on 6<sup>th</sup> day of our tour. We all checked in our hotel rooms and everybody lied flat on their beds. When everybody woke up in the noon, everyone was fine except me. I had high fever and hence I was taken to a doctor. I took some medicine and had rest. While others traveled around the town. And I was all well by the next day for River Rafting in Nimmu.



Nimmu is the place where river Zaskar and river Indus meet. We were all geared into raft and proceeded for a comprehensive safety briefing. We were wearing wet suit, life jackets, paddling jackets, helmets and a new found feeling of being extremely alive. The first plough through the Doda's icy cold wave was terrific. The experience of travelling through some fantastic piece of real estate will stay with me for the rest of my days.

We also stopped at Magnetic Hill on Srinagar-Leh highway and experienced the illusionary up slope drifting of vehicles on its own. This is also a worthy place to visit.

#### **Visit to Pangong lake**

On 8<sup>th</sup> day of our trip we visited to Pangong lake. The route for Pangong Lake passes through Chang La(17,596), the second highest motorable road in the world. Pangong is also known as 'The Hollow lake'. It is a clear symbol of craftsmanship. The brackish water plays with the sunlight to produce different effect of light. It gave the feeling of wonderful peace and relaxation to my soul. The first glimpse of the tranquil, azure blue water and shaky lakeshore

will remain etched in my memory forever.

Then we traveled to Manali via Keylong. We reached Manali at noon and stayed there for one night. It was also a wonderful place surrounded by high peaks in the beautiful green valley of Beas River. Then it was the time to return. We left for New Delhi at about 7P.M. While we were returning by bus, all the memories of the days we spent in Ladakh were inviting me to visit that place again.

We reached Delhi about 10 A.M. We ate our breakfast and relaxed for a while. The return train for Ranchi was awaiting us at 7P.M.

Next day, We came back to Ranchi amidst a familiar crowd.

This short trip to Kashmir n Ladakh had inspired me and gave me a new sight to see the Nature's beauty. It has taught me the most important lessons of my life. The struggles and the challenges through which people of this place deal everyday are commendable. The bus driver of our tour is an exact example for that. On the whole it has been an experience which can never be erased off my memory.

Each and every member played an important role in this trip. I am very thankful to the professors and all the people of our group that we did it.







*The Consensus Project.com*



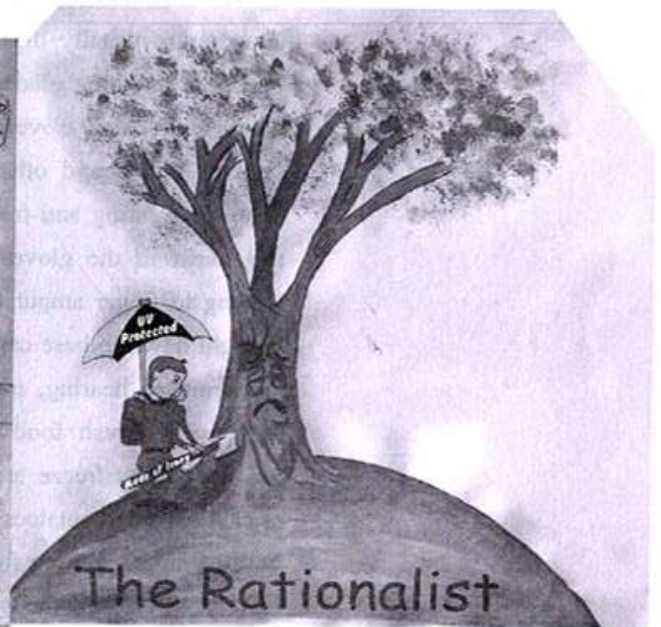
**-Pritam Suman**  
(2015-18)

## Consensus on Man made Global warming

### **Meanwhile**



**-Kritika Priyadarshni**



**-Aparajita**



# Defending Siachen



**Abhijeet Singh**  
(2014-17)

869 Indian Soldiers, including the 10 martyrs of the recent avalanche have sacrificed their lives defending the wild roses.

The Indian army is a shield that defends the country from all external odds, a force that work un-tiredly so that around 1.2 billion Indians can carry on their lives comfortably. It has extreme operational versatility guarding around 3.3 million square km of geographical area. The Indian army holds its ground in all possible terrain and weather conditions, from burning deserts to snow fed mountains, from a large coastal ground to dense forest, but here I will focus on the challenges faced by the forces at high altitude region of Siachen.

Siachen, the highest battle field in the world is situated in such a place where temperature usually dips below  $-50^{\circ}$  celcius. Touching anything made of metal with bare hands can cause severe frost bite within seconds. Guns and other artillery are only operated wearing anti-frost bite gloves. Even the sweat in the gloves freezes sometimes leading to finger amputations. Soldiers when brought down to base camp often suffer from problems of hearing, nausea, insomnia and depression. Fresh food is a rare luxury at Siachen, fruits freeze and become hard like cricket balls and potatoes can't be dented even with hammers, getting food at 21,000 ft. is a task itself. Canned foods have to be dropped down by helicopters and if, God forbid, when weather condition is bad then the food is

swallowed by snow. Fear of death from freezing is so much that soldiers take bath once a month, that too in specially designed commodes by D.R.D.O. Due to ghastly winds at 18,000 ft. mortar shelling becomes extremely unpredictable, sometimes falling where least expected. Rifles are thawed repeatedly over kerosene stoves and machine guns are dipped in boiling water to keep them from jamming.

Facing almost 35 ft. of snow and blizzards year round, the soldiers not only protect the territory from enemies but also maintain the post which will be swallowed if left unmanned. The snow can last more than half a month and the place has about 10% of oxygen that plains have. Professional climbers dread climbing in bad weather conditions but our soldiers are on their feet patrolling the area 365 days in a year. Since Indian army holds the higher grounds and Pakistani army holds the low areas around Siachen, Indian army faces more casualties because of extreme weather conditions.

Since Operation 'Meghdoot' at Siachen in 1984, 869 Indian soldiers have sacrificed their lives. It also includes the casualty due to extreme conditions. Several experts have questioned the need for maintaining armies on the glaciers with such high casualty and cost. Many times negotiators from India and Pakistan have set to lay path for demilitarizing the glacier. But talks haven't been able to ensure that both sides would





Rescue operation at Siachen glacier after an avalanche struck north Siachen on 3<sup>rd</sup> February, 2016

- Temperature usually dips below  $-50^{\circ}$  celcius. Touching anything made of metal with bare hands can cause severe frost bite.
- Guns and other artillery are only operated wearing anti-frost bite gloves. Even the sweat in the gloves freezes sometimes leading to finger amputations.
- Fresh food is a rare luxury at Siachen, fruits freeze and become hard like cricket balls and potatoes can't be dented even with hammers,

not cheat after withdrawing their forces and rush troops back onto the glacier in future. Defending these fronts has not been less than a war. In spite of extreme hostilities Indian army never experienced shortage of volunteers to serve in Siachen.

*So from my side a salute from the depth of my heart to these brave soldiers who are sacrificing their life, family, friends, home and other necessities that we often take for granted.*



Life is meant to be celebrated and that too together....

# Community Festivals

**'Parva' literally means the joint of sugarcane which keeps it upright and gives it strength. Similarly Parva or the festival that communities celebrate together binds them together. It's a time when whole community gathers to celebrate their own common history and culture.**

**The tribals of Jharkhand have a very distinct culture and characteristics. Though situation is changing but tribal villagers are not very rich. They do not have fancy clothes to wear or a car to move around. But still they are considered as the most pleasant and content folks. Every occasion whether it is birth, death or a historic event, everything is meant to be celebrated. They do not need much for a celebration. Their instruments are made of simple stuffs, yet effective.**

**Dance form is quite simple – which involves moving to and fro in groups & all this involves sheer joy. The joy of living!**

**Here, most of the festivals are related to nature. We also found that there are many rituals and festivals which are celebrated both in tribal and non-tribal communities living in close vicinity in the state.**

**Here, we have recaptured few of those community festivals -**



# Karma & Jawa

Suresh Mahto

(2014-17)

**K**arma is a beautiful and vibrant festival which involves singing, dancing & worship of nature in the form of karam tree.

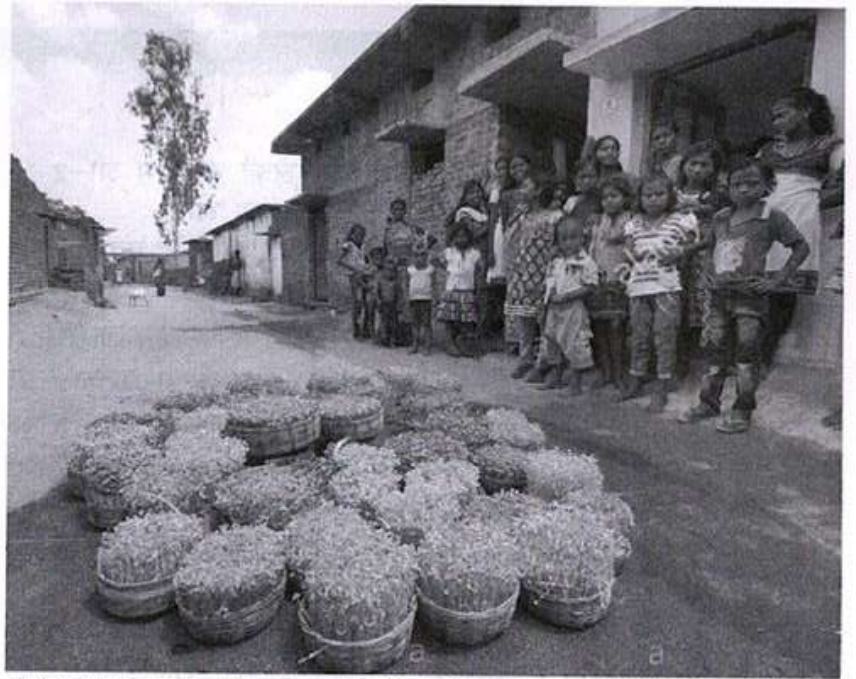
This festival is celebrated on Ekadashi (11<sup>th</sup> day) of Bhadra month for good harvest.

“Among many stories underlying the history of this festival, the narration of two brothers-Karma & Dharm is the most popular one. *Karma came victorious from a battle. When he arrived at the outskirts of the village, Dharm was asked to make preparation for his welcome. But Dharm chose to worship a 'Karam tree' (branch) instead of welcoming him. When Karma arrived home, he got furious at this and disregarded the karam tree and its worship. As time passed, Karma became very poor because of this act.*”

Karma rituals begin way before the day of the festival. Nine days before karma, small baskets made of bamboo (Dali or Daliya) are filled with sand and jawa seeds are sown into it. Every unmarried girl prepares one such daliya. Every evening they take them out and dance around it while singing special songs of karma. After dancing water is sprinkled on the daliyas and are left to rest till next evening.

After few days, seeds germinate and beautiful yellow jawa flowers begin to grow and soon it covers the whole daliya which symbolizes possibility of a good harvest.

One day before Karma festival unmarried girl practice Sanyat (a kind of fast) and on the day of Karma they keep “upwas” while male member plant a branch of Karam tree in their courtyard (Akhra).



Source: alamy stock photo

**Rituals begin nine days before the main day of the festival, by sowing of daliyas with Jawa seeds.**

In evening, karam tree is worshipped with flowers, dub grass, paddy seeds etc. Unmarried girls tie rakhi around the branch, apply tilak to it and pray for safety of their brothers. Girls end their fast and after that traditional dance continue with full vigor throughout the night on the beat of Mandar.

Events of Karma are beautifully summarized in this folk song.

आज रे करम गोसाईं, घरे दुआरे रे  
घरे दुआरे ।  
काल रे करम गोसाईं कांस नदी पार  
के तोरा करम गोसाईं आनलो नेवती रे  
आनली नेवती ?  
उपास ? बोल के तोरा करम गोसाईं राखलो  
बड़ दादा करम गोसाईं आनलो नेवती रे  
आनलो नेवती ।  
बड़ भोजी करम गोसाईं राखलो उपास  
जाहो-जाहो करम गोसाईं जाहो छव मास रे  
जाहो छव मास  
पड़तऽ भादर मास आनबो घुराए  
मरी हराए जाइबो त रहियं डढ़ाएँ ।  
आज रे....  
पात तोड़े गेलो, पतरिया लो  
पतरिया लो ।  
दोतन तोड़े गेलो, संगतिया लो



आनबय रामदुलकी बाजतय लो-2  
बाजतय लो  
नदी पारेक छोड़ी गिली नाचतय लो  
नाचयत लो .....

Next evening, Karma branch (Dali) is carried throughout the village and is immersed in lake or pond with a promise to bring it back next year. Girls tie the jawa flower around their ear and take blessings elders. This is how this beautiful festival concludes with a hope of good harvest and with deep respect for nature.

## Bhagta Parwa

**Kamlesh Mahto**

(2014-17)

**I**n this festival, devotees called *Bhagtas* show respect to God through valour. Celebrated in the month of April, this is a major festival of Oraons and is celebrated with equal vigour among Kurmeez & others. It is also known as 'Charak Puja' and mainly Shiva or *budha baba* is worshipped during this festival.

A day before the start of festival, Pat, a sacred slab of wood is taken to a blacksmith for mending. This festival continues for four days. On first day -bhagtas practice 'Sanjot' (Sanyat) and go to sacred pond or lake for holy bath. Gram, jaggery and mango are distributed as Prasad. The next day is followed by upwas and this time bhagtas go to a different pond for bath while puja takes place in evening. Third day is the day of *parna*. It is the day when hooks are pierced into the body of Bhagtas and they are tied to a rotating shaft hinged on the top of a wooden pole, approx. 30 ft high. Both the pole and the shaft are kept

immersed in a pond for a whole year and still the wood doesn't rot away, which is conceived as a miracle. The shaft is rotated by other people with the help of rope. The Bhagtas while rotating throws coins and chocolates. The children underneath rushes to collect them. Almost the whole body weight of Bhagtas lies on the pierced hooks.

"In this peak hour of pain, he dances and seeks to establish a connection with god."

All this while his wife waits with water for him. Later they apply paste of neem to heal the wound.





# Sohrai

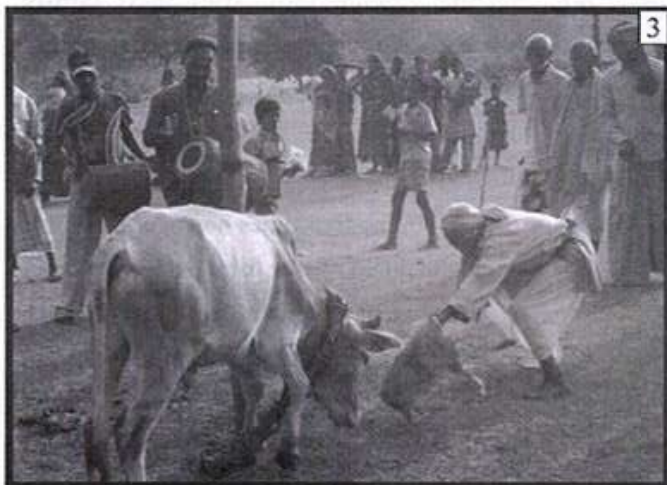
Ramesh Sandeep Munda  
(2014-17)

**S**ohrai is celebrated by tribals on the next day of Deepawali as their new year. Agricultural equipment such as plough, shovel, raksha etc. are washed & cow sheds are cleaned. Path from entrance of home to cow shed is paved by making traditional design from guri (rice flour). Rangoli are also made with guri and sindoor in cattle shed called 'goraiya'.

Horns of cattle (cow & ox) are painted with oil and garland of paddy (dhan) is tied around them. Their bodies are also decorated

with household colors. An inverted bowl or glass is dipped in aalta or neel and pressed against their bodies creating red & blue circular pattern over their body. These practices are also popular among non-tribal families. In tribal culture- '*Rangua Murga*' is sacrificed and a special feast of khichdi & chicken called '*Tehri Bhat*' is cooked in the cow shed (*gohal*) itself. Only male members participate in this feast.

"*Goru Khunta*" is organized in an open area on the following day in which untamed oxen are tied and teased. Ox starts to react furiously while crowd enjoys this play by beating dhol- nagara and dancing together.



**During Sohrai** (Clockwise from top):

1. Courtyard is decorated with patterns made of '*guri*'. 2. Cows are also decorated with garlands made of *paddy*. 3. *Goru-khunta*-Oxen are tamed.



# JANI SHIKAR

Dipti M. Kachhap &  
Abhishek Toppo

(2015-18) & (2014-17)



*Illustration of Jani Shikar at Gallery of State Museum, Ranchi*

**J**ani Shikar is one of a tribal festival which is celebrated in Jharkhand with full zeal.

This festival is celebrated in summer season once in every 12 years. It is also celebrated in other parts of India like Chhattisgarh. In this festival women dress up like men and go for hunting with traditional weapons. This festival is mainly celebrated by tribal women and men do not interfere in this celebration. In this festival women form a group and go for hunting animals such

as goat, rabbits and cocks in the jungle. They even kill those animals which come in their way and the villagers don't mind much. After hunting they light a bonfire and cook the hunted animals. They sing, dance, drink Hadia (rice beer- a traditional tribal drink) and celebrate their victory.

Jani-Shikar is celebrated in remembrance of the event of driving away the Mughals by the womenfolk in Rohtasgarh, Aurangabad (Bihar). The narrative dates back to around 1610 when Mughal rulers approached a spy for help to capture the area of Rohtasgarh, inhabited by Oraon tribes. The spy

**Despite women look after their family - household but they are strong enough to fight a battle.**

**This festival is basically a salute to all those tribal women who fought against the Mughals.**

advised the Mughals to attack them in the morning after Sarhul, when the men would be in slumber after drinking whole night. But during this time, the Oraon women dressed up as man and provided a stiff resistance and failed the Mughal invasion. They tried to invade 12 times in 12 years but every time they were driven by the Oraon women dressed in men's attire.

As the government has banned hunting of some of the animals, now the festival is celebrated just as a ritual.

Generally hunting is considered a physical activity in which

preference is given to men over women but this festival emphasizes on the equality between men and women and reminds us of the fact that despite women look after their family - household but they are strong enough to fight a battle. This festival is basically a salute to all those tribal women who fought against the Mughals.

In modern times however this festival might not retain its true form but it will continue to remind us of the importance of women in our society with a historical event as the backdrop.



# दुसू

पंकज कुमार

(2013-16)

दुसू पर्व राँची जिले के पूर्वी तथा दक्षिणी भाग में काफी हर्षोल्लास के साथ मनाया जाता है। यह पंच-परगना क्षेत्र के कुड़मी जातियों का प्रमुख त्योहार है। यह मुख्यतः झारखंड के राँची, खूँटी, तथा सरायकेला-खरसावाँ, पश्चिम बंगाल के पुरुलिया, बाँकुड़ा तथा मेदनीपुर एवं ओड़िसा के मयूरभंज, केंऊझर तथा सुंदरगढ़ जैसे जिलों में मनाया जाता है।

दुसू का अर्थ है धान के फूल का ऊपरी भाग वाला हिस्सा। यह माना जाता है कि दुसू दैवीय शक्ति से युक्त एक स्त्री थी जिनका जन्म खूँटी जिले के अड़की प्रखंड में स्थित, चैनपुर के निकट एक छोटे से गाँव में एक कुड़मी के घर हुआ था। कहा जाता है कि उस समय इस क्षेत्र पर मुंडा-मानकियों एवं ठाकुरों का शासन था तथा ये मुस्लिम राजाओं के अधीन थे। वो समय मुस्लिम धर्म के प्रचार एवं प्रसार का काल था। दुसू लोगों के बीच अपने गीतों तथा संगीत के माध्यम से जनचेतना का प्रसार किया करती थी। उसके गीतों में गजब का प्रभाव था। लोग बरबस उसकी ओर खींचे चले आते थे। इन गीतों को आज भी दुसू पर्व के मौके पर गाया जाता है।

लोगों में दुसू का बढ़ता प्रभाव कुछ शासकों को अनुकूल नहीं लगा तथा उसे बादशाह ने कलकत्ता के दरबार में

प्रस्तुत होने का हुकम दिया। दुसू पालकी में सात दिन की यात्रा के उपरांत हाजिर हुई। वहाँ बंगाल के एक मानकी राजा ने उसे बेटी के रूप में स्वीकारा तथा बादशाह से उसके लिए क्षमा याचना की। मानकी ने उसे अपने यहाँ एक महीना रखने के पश्चात् विधिवत् पालकी से विदा किया। रास्ते में जितने भी गाँव आते गए, वह रात्रि में वहाँ विश्राम करती तथा अपने गीतों के माध्यम से लोगों में जन-चेतना का प्रसार करती गई। कुछ शासक अब दुसू के बढ़ते प्रभुत्व से भयभीत होने लगे थे तथा उसे मार डालना चाहते थे। कुछ समय पश्चात् उसने 14 जनवरी को स्वर्णरेखा तट के निकट सती घाट पर अपने प्राण त्याग दिए। वह जिन गाँवों में रूकी थी, गाँवों के लोग आज भी उसे

अपनी बेटी मानते हैं एवं उसकी याद में दुसू पर्व का आयोजन करते हैं। दुसू पर्व का आयोजन मुख्यतः दो गाँव या दो नदियों के मिलने के स्थान अथवा किसी नदी या मंदिर के किनारे किया जाता है। जहाँ बाँस तथा पटसन से घरों के आकर का दुसू का प्रतिरूप बनाया जाता है। उस प्रतिरूप को विभिन्न रंगों से सजाया भी जाता है। कई जगहों पर इसकी प्रतियोगिता भी होती है। यह मकर संक्रांति के दिन मनाया जाता है तथा इस अवसर पर मेला तथा हाट का भी आयोजन किया जाता है।







रस्सी बनाते बिरहोर परिवार  
राज्य संग्रहालय, राँची

## बिरहोर जनजाति

सतीश कुमार

(2014-17)

### परिचय

बिरहोर जनजाति झारखंड राज्य की एक अल्पसंख्यक आदिम जनजाति है। इस जाति के लोग छोटानागपुर पठार के उत्तर-पूर्वी किनारों पर बसे हुए हैं। ये लोग छोटानागपुर के पठार पर एक स्थान से दूसरे स्थान पर चले जाते हैं। वास्तव में ये लोग घुमक्कड़ प्रवृत्ति के होते हैं जो जानवरों के शिकार तथा जंगली फलों पर अपना जीवन-निर्वाह करते हैं। दूर की वस्तुओं को तीर से भेदने में ये लोग बड़े कुशल होते हैं। ये लोग दूसरी जाति के लोगों से अलग रहना पसंद करते हैं और यही कारण है कि ये

अधिकतर जंगलों और पहाड़ियों पर ही निवास करते हैं। ये किसी स्थान पर दो-तीन वर्षों तक रहकर दूसरे स्थान पर चले जाते हैं। जब उस जगह पर भी खाने के लिए कुछ नहीं मिलता है तो फिर कोई तीसरा अनुकूल स्थान खोजते हैं। उनके गिरोह का एक सदस्य दूर के जंगलों में जाकर किसी अच्छे स्थान का चुनाव करता है और उसकी बात पर विश्वास करके सारा कबीला उस स्थान पर चला जाता है, परन्तु जाते समय इस बात का ध्यान रखा जाता है कि ऐसे रास्ते से जाएँ ताकि उनका दूसरे जाति के लोगों से सामना न हो और इसलिए ये लोग जंगल ही जंगल दूसरे स्थान पर पहुँचते हैं।

इनकी संस्कृति अधिक उन्नत नहीं है। शिकार करना इन लोगों का मुख्य पेशा है, परन्तु फिर भी इन्हें दो भागों में बाँटा जा सकता है :-



1. ओथलो या भूलया
2. जाघी या धानिय

ओथलो जाति के लोग एक स्थान से दूसरे स्थान पर घर-बार बदलते रहते हैं किन्तु जाघी जाति के लोग एक स्थायी निवास स्थान रखते हैं, जिसे टाँड़ा कहते हैं। बिरहोर के निवास स्थान (टाँड़ा) में लगभग 10-12 झोपड़ियाँ होती हैं। कुछ टाँड़ा ऐसे भी हैं, जहाँ

एक 'गोतियारा' या सोने के लिए झोपड़ीनुमा 'युवाग्नीह' (Dormitory) भी होता है। इसमें केवल कुंवारे लड़के सोया करते हैं। लड़कियों के सोने के लिए एक अलग घर होता है। यह घर लड़कों के सोने के घर से काफी दूर होता है। इन

कुंवारी लड़कियों की देखभाल के लिए कोई बूढ़ी विधवा रहती है। बिरहोर अधिक गरीब हैं। ये लोग साधारणतः जंगली फलों और जानवरों के शिकार से अपना जीवन निर्वाह करते हैं। इसका परिणाम यह होता है कि इन्हें कई दिनों तक बिना कुछ खाए-पीये ही रहना पड़ता है।

बिरहोर लोगों का रंग काला, कद छोटा, बाल घुंघराले और नाक चौड़ी होती है। इनका लगाव संथाल, मुंडा और हो लोगों से है तथा ये लोग 'ऑस्ट्रो-एशियाई' भाषा बोलते हैं।

### टाँड़ा संगठन

#### (Tanda Organisation)

बिरहोर लोगों का सामाजिक संगठन सीधा, सादा और साफ है इसलिए इसे हमलोग प्राचीन नहीं कह सकते हैं। वर्तमान

समय में उनके पास दो प्रकार के संगठन हैं। एक संगठन आर्थिक व्यवस्था करता है और दूसरा सामाजिक। यह कबीला कुछ छोटे-छोटे गिरोहों में बंटा हुआ है। हर गिरोह में तीन से लेकर बारह परिवार होते हैं। ये लोग खाने की वस्तुओं की खोज में एक स्थान से दूसरे स्थान पर घूमते रहते हैं। इनमें कुछ

**बिरहोर के निवास स्थान को टाँड़ा कहते हैं। हर टाँड़ा में एक सरदार होता है, जिसे 'नाया' कहते हैं। नाया का पद वंशानुगत होता है।**

गिरोह ऐसे भी होते हैं, जो किसी स्थान पर काफी दिनों के लिए स्थापित हो जाते हैं, जो टाँड़ा कहलाते हैं हर टाँड़ा में एक सरदार होता है, जिसे 'नाया' कहते हैं। यह नाया बिरहोर लोगों का धार्मिक तथा सांसारिक नायक होता है। एक

'नाया' के मर जाने पर उसका बेटा इस पद के लिए चुना जाता है। यह नया 'नाया' इस पर नियुक्त होने के बाद स्नान करता है। स्नान करने के बाद लोग उसे ऐसे स्थान पर ले जाते हैं जहाँ शिकार के कुछ जाल रखे होते हैं। वहाँ पहुँच कर यह नाया आत्माओं को थोड़ा चावल भेंट चढ़ाता है और टाँड़ा के दूसरे लोग शिकार खेलने चले जाते हैं। यदि वे शिकार में सफल होते हैं तो 'नाया' के चुनाव पर सभी लोग खुश होते हैं।

बिरहोर जाति के लोग शिकार पर ही निर्भर रहते हैं और यही कारण है कि उनके धार्मिक तथा सामाजिक कार्यों का इससे बड़ा गहरा सम्बन्ध है। यदि इन पर कोई आपत्ति आ पड़ती है तो ये समझ लेते हैं कि यह सब किसी अनुचित कार्य करने का दंड है।

रस्सी बनाना एवं बंदरों का शिकार





Illustration: Mimansa Kumari

करना इनका मुख्य पेशा है। बंदरों के शिकार में टांडा के सभी युवक सम्मिलित होते हैं। शिकार खेले जाने वाले दिन 'नाया' सवेरे नदी में स्नान करता है और वहाँ से एक घड़ा पानी ले आता है। इसके बाद थोड़ा अरवा चावल और पानी के साथ टांडा के युवक शिकार करने के स्थान पर चले जाते हैं उस स्थान को ये गोबर और पानी से लिप देते हैं फिर 'नाया' जंगल के सभी जीवों से प्रार्थना करता है कि वे लोग शिकार में उनकी पूर्ण सहायता करें। इसके बाद सभी लोग सारे जालों को रखकर वापस आ जाते हैं। दूसरे दिन सभी लोग अपने जालों को लेकर आ जाते हैं और फिर सब मिलकर दूसरे जंगलों की ओर रवाना हो जाते हैं।

### विवाह (Marriage)

बिरहोर लोगों में विवाह करना आवश्यक समझा जाता है। इनके ख्याल के अनुसार देवताओं और देवियों के भी जोड़े होते

लड़के पक्ष के लोग लड़की के मकान के बाहर विवाह प्रस्ताव के रूप में छड़िया रख देते हैं। अगर लड़की के माता के माता पिता विवाह के बात-चीत के लिए तैयार होते हैं तो कोई व्यक्ति उन छड़ियों को लाकर घर में रख देता है।

हैं। विवाह के बाद कोई बिरहोर अपनी जाति का वाज़िब सदस्य बन सकता है। बिरहोर में विवाह की कई विधियाँ हैं। इनकी संख्या लगभग दस है। जब बिरहोर लोग देखते हैं कि किसी जवान स्त्री और पुरुष में प्रेम-भाव पैदा हो जाता है तो ये लोग उन दोनों को विवाह की आज्ञा दे देते हैं। यदि लड़के के माँ-बाप धनी होते हैं तो स्त्री का मूल्य दे देते हैं। इस समय टांडा के लोग जमा होते हैं। इस प्रकार के विवाह की विधि को 'नाम-नापाम-बापला' कहते हैं।



दूसरे प्रकार का विवाह वह होता है जब लड़कियाँ अपने प्रेमी के साथ घर छोड़कर भाग जाती है। इसे 'उदा-उद्री- बापला' कहते हैं। कोई स्त्री और पुरुष एक दूसरे को पसंद कर लेते हैं तो वे अपने प्रेम के रास्ते में रूकावट से बचने के लिए किसी अज्ञात स्थान पर चले जाते हैं और वहाँ पति-पत्नी के रूप में रहते हैं। जब उनकी जाति के लोग उन्हें खोज लेते हैं तो उनका विवाह कर देते हैं। इस अवसर पर खुशियाँ मनाई जाती है। इस तरह उनके प्रेम को सामाजिक सहायता भी मिलती है।

इनके अतिरिक्त उनके यहाँ 'सिपन्द्र-बापला, संघ-बापला, गोलहत-बापला, सदर-बापला इत्यादि विवाह के विभिन्न नियम हैं :-

यदि किसी लड़के के माता-पिता किसी लड़की को अपने बेटे के लिए पसंद कर लेते हैं तो अपने मित्रों को लड़की के माता-पिता के पास विवाह के सम्बन्ध में बातचीत करने के लिए भेजते हैं। ये लोग अपने घरों से इतना सबेरे प्रस्थान करते हैं कि लड़की के घर सूर्य डूबने से पहले पहुँच जाएँ। वहाँ पहुँच कर ये लोग मकान के पीछे कुछ छड़ियाँ रख देते हैं। यह देखकर लड़की के माता-पिता यह समझ जाते हैं कि ये लोग विवाह के विषय में बातचीत करने आये हैं। यदि वे लोग इसके लिए तैयार होते हैं तो घर का कोई व्यक्ति उन छड़ियों को लाकर घर में रख देता है। इसके बाद स्त्रियाँ घर से निकलकर उन लोगों के पैर धोती हैं। थोड़ी देर बातचीत करने के बाद सभी लोग सो जाते

हैं। इस प्रकार बिरहोर लोगों में विवाह की बात तय की जाती है।

### जन्म, लड़कपन तथा यौवन (Birth, childhood and puberty)

बिरहोर लोग इस बात को अच्छी तरह से जानते हैं कि एक मनुष्य अपनी जिन्दगी में एक स्थिति से दूसरे स्थिति में बदलता रहता है। एक बालक जन्म लेने के बाद धीरे-धीरे बढ़ता है और फिर लड़कपन की अवस्था आरम्भ हो जाती है। लड़कपन को पार करने के बाद वह जवानी में कदम रखता है। पुनः बुढ़ापा अपना रंग दिखलाता है। अंत में मृत्यु उसके जीवन के दीपक को सदा के लिए बुझा देती है, किन्तु मृत्यु के बाद मनुष्य आत्माओं से मिल जाता है और उसकी शक्तियों का सही विकास होता है। उनके ख्याल के अनुसार मनुष्य पर सबसे अधिक खतरा उस समय रहता है जब वह अपनी माँ के पेट में होता है। इसलिए बच्चों को कष्टों से बचाने के लिए वे लोग विभिन्न उपाय करते हैं।

किसी लड़के के जन्म के समय घर के सभी पुरुष बाहर चले जाते हैं और वहाँ केवल कुछ स्त्रियाँ ही रह जाती हैं, उनमें से कुछ गर्भवती की देखभाल करती है और कुछ स्त्रियाँ घर की सफाई में लग जाती है। गर्भवती को झोपड़ी के एक किनारे पर रखा जाता है और उसी स्थान पर बच्चे का जन्म होता है बालक की जन्म के बाद घर में अलग दरवाजा खोल दिया जाता है, जिससे प्रसूति अपवित्र अवस्था में उसी दरवाजे से बाहर निकले। इन लोगों का विश्वास है कि जिस दरवाजे से प्रसूति निकलती है घर के दूसरे लोग अगर उसी दरवाजे से निकलेंगे तो उसकी मृत्यु हो



जाएगी। घर के नये दरवाजे के रास्ते को थोड़ी दूर तक झाड़ियों और लकड़ियों से घेर दिया जाता है, जिससे अपवित्रता का प्रभाव लोगों तक न पड़ सके। बच्चे के जन्मदिन के दिन 'टाँड़ा' के लोग शिकार खेलने जाते हैं और जब वे लोग सफलता प्राप्त कर आते हैं तब यह समझा जाता है कि उस बच्चे का जीवन सफल होगा।

### युवागृह (Dormitory)

एक बिरहोर टाँड़ा में दो झोपड़ियाँ हुआ करती हैं — एक में कुंवारी लड़कियाँ सोती हैं और दूसरे में कुंवारे लड़के, ये दोनों झोपड़ियाँ घर के किनारे के भाग में बनायी जाती है। गाँव की लड़कियाँ पेड़ों से पत्ते और डाली तोड़ लाती हैं तथा गाँव के पुरुष उनकी सहायता से झोपड़ियाँ बनाते हैं। इसी प्रकार कुंवारे लड़के सारा सामान जमा करते हैं और अपने सम्बन्धियों के सहयोग से झोपड़ी बनाते हैं। ये झोपड़ियाँ काफी बड़ी होती हैं और इनका आकार गाँव की आबादी पर निर्भर करता है। लड़कों के युवागृह में केवल एक दरवाजा होता है किन्तु लड़कियों के युवागृह में एक दरवाजा झोपड़ी के पीछे से भी होता है साधारणतः लड़के दस साल की अवस्था में उस युवागृह में प्रवेश करते हैं और अपने विवाह तक उसी स्थान में रात को सोया करते हैं। विवाह के बाद लड़का एक अलग झोपड़ी बना लेता है और उस नयी झोपड़ी में वह अपनी पत्नी के साथ रहता है। लड़कियों के युवागृह में एक विधवा रात में उनकी रखवाली करती है, वह रात में दरवाजे पर सोती है ताकि कोई झोपड़ी के अन्दर न आ जाये।

### धर्म (Religion)

धर्म बिरहोर लोगों के जीवन का अभिन्न अंग है। वे लोग समझते हैं कि जीवन में सुख और दुःख भगवान तथा देवताओं की देन है। धर्म के द्वारा ही तमाम कष्टों से मुक्ति मिलती है एवं जीवन सफल होता है। यही कारण है कि ये लोग अपने विभिन्न आचारों से किसी-न-किसी देवता या महान आत्मा को प्रसन्न करते हैं। इनके जीवन के हर भाग पर चाहे वह सामाजिक हो या राजनीतिक, धर्म की छाप रहती है।

बिरहोर लोगों के ख्याल के अनुसार हर व्यक्ति में एक महान शक्ति होती है। इनका सबसे बड़ा देवता 'बोरा-बोंगा' या 'ओरा-बोंगा' है। इसके अतिरिक्त जंगल, पहाड़ तथा झरने भी देवियों से भरे पड़े हैं। इनके दूसरे प्रसिद्ध देवता 'देविमाई', 'माघ-बीर', 'हिंद्र-बीर' इत्यादि हैं।

### त्योहार (Festival)

बिरहोर कबिले के 'ओथलो' परिवार के लोगों के एक स्थान से दूसरे स्थान पर जाने के कारण इन्हें त्योहारों में भाग लेने का अवसर कम ही मिलता है। ये लोग फिर भी कुछ गिने-चुने कार्यों के द्वारा ही देवताओं को प्रसन्न करना आवश्यक समझते हैं। बिरहोर लोगों के मुख्य त्योहार 'सोसो-बोंगा' और 'नवाजम' है जो अषाढ़ मास में मनाये जाते हैं। 'करमा' और 'चेता' भादो में 'दसाई' त्योहार आश्विन में और 'सोहराई' कार्तिक में मनाया जाता है। इन त्योहारों को "जाघी" लोग बड़े उत्साह से मनाते हैं।



# झारखंडी कला संस्कृति



विशाल कुमार गुप्ता  
(2014-17)

झारखंड उन राज्यों में से है जिसके पास अपनी विशिष्ट कला-संस्कृति है। यहाँ के जनजातियों ने हमेशा से ही कला के माध्यम से अपनी धारणाएँ, मान्यताएँ एवं वजूद को व्यक्त किया है। यहाँ प्रतिभा के प्रदर्शन व मनोरंजन के इतर कला, जीवन का अभिन्न अंग है।

## चित्रकला :

झारखंड देश के उन गिने-चुने क्षेत्रों में से एक है, जहाँ गुफाओं में आदिम जनजातियों द्वारा बनाए गए भित्ति-चित्र देखने को मिलते हैं। यह ऐतिहासिक दृष्टि से महत्वपूर्ण है। सोहराई, कोहबर, जादोपटिया सहित अन्य शैली की चित्रकला में स्थानीय संस्कृति की छाप दिखती है। इसके बावजूद उन्हें उस तरह की पहचान नहीं मिल सकी है, जो पहचान बिहार में मिथिला पेंटिंग्स की है।

## सोहराई :

छोटानागपुर इलाके में सोहराई कला का खास स्थान है। इस कला में घरों की दीवारों पर जंगली जीव-जंतुओं, पक्षियों और तरह-तरह के पेड़-पौधों के चित्र बनाए जाते हैं। इसे बनाने के लिए सफेद मिट्टी, काली मिट्टी तथा गोबर का उपयोग किया जाता है तथा कुची के स्थान पर प्रायः कंधी का इस्तेमाल किया जाता है।

## कोहबर :

कोहबर संथाल परगना क्षेत्र की कला है। इसमें प्राकृतिक परिवेश एवं स्त्री-पुरुष के चित्र देखने को मिलते हैं। आमतौर पर विवाह के बाद महिलाएँ अपने पति के घर पर कोहबर कला का चित्रण करती हैं। इसमें घर की दीवारों और आँगन में तरह-तरह के पेड़-पौधे की पत्तियाँ

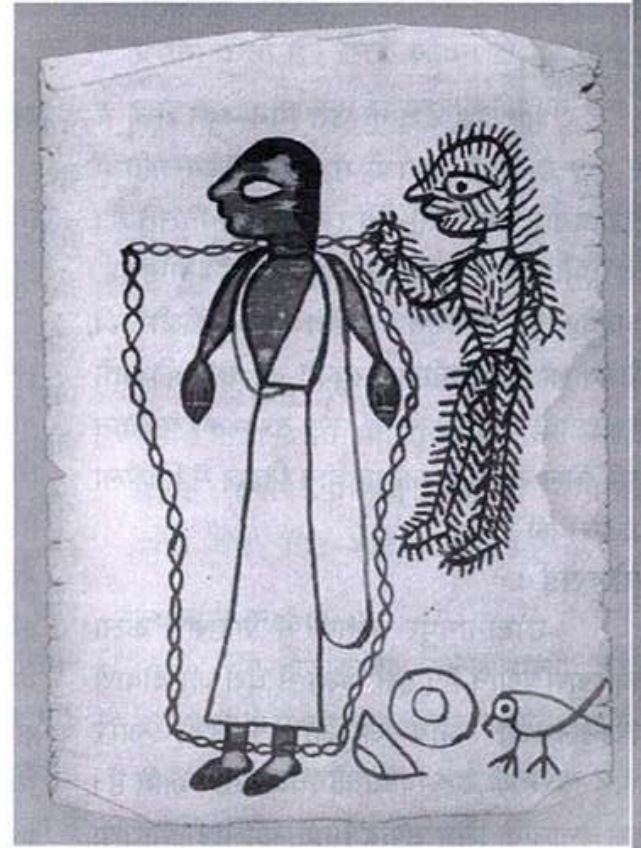
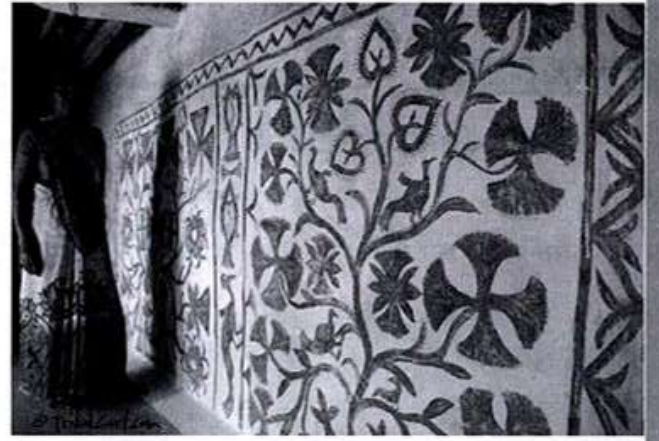
आदि के तस्वीर बनाए जाते हैं।

## जादोपटिया :

यह संथाल क्षेत्र में प्रचलित ऐतिहासिक चित्रकला है। इसमें 4 से 16 चित्रों की श्रृंखला होती है। इन्हें 10 से 15 फीट चौड़े कपड़े या कागज के टुकड़ों पर बनाया जाता है। इन चित्रों में संथाली समाज के विभिन्न रीति-रिवाजों, धार्मिक मान्यताओं आदि की चित्रमय प्रस्तुति होती है। चित्रों की आकृतियाँ सरल एवं प्रभावशाली होती हैं। मानव आकृतियों की आँखें अपेक्षाकृत बड़ी तथा मुखाकृति प्रायः एक समान होती है। यह वंशानुगत कला है। इन चित्रों को बनाने वालों को 'जादो' कहा जाता है। जादो संथाल से भिन्न, किन्तु संथाल के प्रति पुरोहित होते हैं। संथाल परगना के चित्रों में सफेद, नीला, लाल और काला रंगों का प्रयोग किया जाता है, जबकि छोटानागपुर इलाके में काला, नीला, हरा, सफेद, पीला तथा इन रंगों से बने विभिन्न शेडों का प्रयोग किया जाता है। इस शैली के चित्र झारखंड के अलावे पश्चिम बंगाल, मध्यप्रदेश, उड़ीसा एवं पश्चिमी महाराष्ट्र में थोड़े अंतर के साथ मिलते हैं।

जादोपटिया के मृतुपाट चित्रों में मृत्योपरांत की यात्रा तथा 'यमकारा' में दंडित किए जाने का दृश्य दिखाया जाता है। उदाहरणतः झूठ बोलने पर जिह्वा काटने की सजा, कर्ज का भुगतान न करने पर सीने पर 12 मन के पत्थर





बाएँ से दाएँ :

घर के दिवारों में सोहरई एवं कोहबर कला का चित्रण

जादोपटिया के मृत्युपाट शैली के चित्र, यमकारा में दंडित किए जाने का चित्रण

जादोपटिया शैली में ही माता पिता एवं शिशु



रखकर सजा देना इत्यादि। मृत्यु उपरांत की इन यातनाओं को देखकर दर्शक बुरे कार्य करने से डरते हैं। जिससे संथाल समाज पर नैतिकता की दृष्टि से सकारात्मक प्रभाव पड़ता है।

### हस्तशिल्प कला :

झारखण्डी हस्तशिल्प की अपनी विशिष्ट पहचान है। यहाँ पर कई समुदाय हैं जो साधारण औजारों का उपयोग करके मिट्टी, धातु, बाँस आदि से आकर्षक कलाकृतियाँ और दैनिक जीवन में काम आनेवाली चीजें बनाते हैं। इनमें मलहार, मोहली, लुहार, कुम्हार समुदाय शामिल है।

### डोकरा शिल्पकला :

डोकरा शिल्प में अलौह धातु के साथ मोम को मिलाकर तरह-तरह की कलाकृतियाँ बनायी जाती हैं। यह मलहार समुदाय का मुख्य पेशा है। इसमें अधिकतर हिरण, घोड़ा, कछुआ, नृत्य करते स्त्री-पुरुष, चावल या धान मापने के लिए पयला, सेरा आदि का निर्माण किया जाता है तथा कई स्थानों पर इनकी बिक्री की जाती है।

### काष्ठ-शिल्प :

झारखंड के 'काष्ठ-शिल्प' काफी आकर्षक हैं और विविधता से भरे हुए हैं। यहाँ जंगलों में मिलने वाली गम्हार तथा अन्य वृक्षों की लकड़ियों से कलात्मक चीजें बनायी जाती हैं। इनमें सिर पर घास का बोझा तथा पीठ पर शिशु लिए महिला, विभिन्न तरह के मुखौटे, नकली तलवार, फूल व जानवरों की आकृति सहित अन्य चीजें बनाई जाती हैं।

### बाँस-शिल्प :

झारखंड के विभिन्न क्षेत्रों में बाँस आसानी से मिलते हैं। यहाँ पर बाँस से कई तरह की कलात्मक एवं उपयोगी चीजें बनाई

जाती हैं। इनमें तीर-धनुष, बाँसुरी, टोकरी, मछली पकड़ने का उपकरण, फूलदान, टेबल-लैम्प, कुर्सी, सोफा, पंखा आदि प्रमुख हैं। बाँस की कलाकृतियाँ बनाने वालों को यदि प्रशिक्षण दिया जाए एवं बाजार उपलब्ध कराया जाए तो यह कला और बेहतर हो सकती है।

### जूटकला :

जूट का ज्यादातर इस्तेमाल रस्सी बनाने के लिए होता था। अब इससे तरह-तरह की सजावटी चीजें भी बनायी जा रही हैं। इन सामग्रियों में फैंसी थैला, टेबल मैट, फाइल होल्डर, पर्स, डोरमैट तथा सुंदर खिलौने शामिल हैं। जूट से बनी कारपेट आकर्षक और मजबूत होते हैं। इकोफ्रेंडली होने के कारण जूट से बनी चीजों की डिमांड बढ़ रही है।

इसके अलावा जनजातियों के विशिष्ट वस्त्र, उनके गहने, भोजन, नृत्य-संगीत तथा वाद्ययंत्रों को भी पहचान दिलाने की जरूरत है। झारक्राफ्ट जैसे अनेक संस्थानों ने झारखंडी कला व संस्कृति पर उल्लेखनीय काम किया है, परंतु अभी बहुत कुछ किया जाना बाकी है जितना की यहाँ की कला-संस्कृति और कलाकार हकदार हैं।



डोकरा शिल्प में गणेश



# Marijuana



**Anup Kumar Mandi**

(2014-17)

Marijuana scientifically named cannabis is often used as medicine for people suffering from psychological problems. It has some good effects on our body such as heightened mood relaxation and increasing appetite but regular consumption may lead to problems like short term memory loss, dry mouth, impaired motor skills, red eyes, paranoia, anxiety etc.

Marijuana is acting as a pest in the life of a vast number of people, affecting especially the youngsters. It is not only harmful for the consumers but also affects the people nearby.

People of Jharkhand are habituated to this drug to a great extent. It is locally known as 'GANJA'. The government of Jharkhand and NDPS Act prohibits cultivation, distribution and consumption of marijuana.

In Jharkhand, farmers clear forest land and cultivate marijuana. Since these lands are not registered on the name of any person so it is difficult for local police to arrest these farmers. Farmers earn about Rs. 500 per from dismil yield of land and in each dismil they grow more than a kilogram of ganja. Its price in market is around 1-2 lakhs per kg depending on the quality. More than a quarter of total production is consumed by the people of India and rest is exported to other countries through Bangladesh and Nepal through sea.

Early monsoon is favorable for the cultivation of this crop. It requires temperature of more than 21 degree Celsius, rainfall more than 75 cm and good fertile soil.

Marijuana cultivation is done on large scale in Latehar, Khunti, Gumla, Hazaribag and Chatra. Maoists encourage local farmers to cultivate it on their land and today marijuana contributes a lot in filling the treasures of Maoists. Maoists use this money to buy weapons so that they can challenge the administration and police.

Although youngsters know that it is harmful still they consume it. They start taking it simply as an experiment, to rebel, relax or escape and often to fit in groups who call themselves as matured ones.

Regular intake of marijuana causes physical as well as mental problem.

## **Physical problems-**

Marijuana affects a persons respiratory system, heart and reproductive system. Like tobacco cigarette marijuana cigarette is made up of a variety of toxic



chemicals that can irritate a person's bronchial passage and lungs. If you are a regular smoker you are likely to wheeze, cough and produce phlegm. Marijuana may aggravate existing respiratory illness like asthma and cystic fibrosis. Marijuana cigarette contains carcinogens which increases the risk of developing lung cancer. Intake of marijuana fluctuates our heart beat, it increases while smoking and suddenly gets lowered afterwards. It also has adverse effect on reproductive system.

'CANNABI' is one of the drugs which causes abnormal cell division and leads to

severe hereditary defect. A pregnant woman who regularly smokes marijuana may give birth to a pre-mature, under sized or under-weight child.

Like physical problems, marijuana causes **mental problems** too - Temporary hallucinations, temporary paranoia, worsening symptoms in patients with schizophrenia, disruption of nerve cells by THC present in cannabis, which adversely affect our memory are common among regular smokers.

*"I started using on a lark, a dare from a best friend who said that I was too chicken to smoke a joint and drink a quart of beer. I was fourteen at that time. After seven years into it I found myself at the end of the road with addiction. I was no longer using to feel euphoria; I was just using to feel some semblance of normality. Then I started having negative feelings about myself and my own abilities. I hated the paranoia. I hated looking over my shoulder all the time. I really hated not trusting my friends.*

*I became so paranoid that I successfully drove everyone away and found myself in the terrible place no one wants to be in—I was alone. I'd wake up in the morning and start using and keep using throughout the day.*

*—Paul, a marijuana addict*





# WITCH HUNT



**Dipti Kacchap**  
(2015-18)

**Y**ou must have heard stories about witches, ghost and evil spirits. They must have sounded interesting and fascinating to you leaving a question in your mind, "Do they really exist?" Now you would say that it's a matter of belief. Some believe in it while others don't. But there are times when we should choose our beliefs critically. Especially when it has started taking tolls on lives of innocent people.

We not only pass information & knowledge to the coming generation, but we pass our beliefs too.

Many centuries ago, the sight of a comet was considered a bad omen.

*There, with long bloody hair,  
a blazing star threatens the world with famine,  
plague and war  
to princess it spells death, to kingdom many  
crosses  
to herdsman rots, to ploughman helpless  
seasons,  
to sailors it brings storms, to cities civil  
treasons.*

— (excerpt of poem written by

Guillaume de Salluste Du Bartas, 1578)

It seems that some people are still living in that era.

Where people fall ill and die because of the spells of a witch.'

*'Curse those witches, defame them, kill them,  
behead them...*

*They're the witches, the evil witches.*

*Last year a depressing incident took place on 7th August at Mandar, 40 kms from Ranchi where five women were beaten to death for allegedly practicing witchcraft. This grabbed much public attention and made to the national headlines.*

Before writing this article I myself did not know that there is still so much influence of myths in our society. I knew that witch hunting had been in existence in past, but the present situation is no better. I was shocked when I read some data regarding witch hunting. The recent data of Indian government shows that 119 people were killed with witchcraft being the "motivation" in 2012. *THE TIMES OF INDIA'S* National Crime Records Bureau report revealed that more than 1,700 women were murdered for



practicing witchcraft between 1991 and 2010 and this number has increased at a higher rate.

It is due to the people's belief that when a neighbor becomes ill or livestock die unexpectedly they blame it on some women. They go to the local 'ojhas' or 'guni' to find the culprit. Ojha finds the culprit using his tantra vidya and then the woman, shamed as a witch is dragged out, stripped and forced to eat human feces which they consider as a method to eliminate their black-powers. In extreme cases, it leads to killing of the woman by brutal hands of the community who fear paranormal powers more than judicial laws.

India represents a modern-day paradox. On the one hand, it is the largest democracy in the world and has a rapidly growing economy

whereas on the other hand, people both educated and uneducated, often turn to superstition to cure illness, find love, and rationalize bad events.

But this is only one part of the story. A case study reveals that most of such women were widows who had no one to care about and many of them owned land or other properties which villagers acquired after their death.

In November 2013, a mother and daughter in Jharkhand were pulled out of their home by villagers who took them to a nearby forest and slit their throats. After the death of her husband rumors spread that the women were

witches and villagers blamed the women for several children becoming ill. Regarding the murders, police said: "All I can say is the women seem to have been killed for witchcraft".

These practices are mainly prevalent in villages because of backwardness in their thought and the ojhas or tantrics who teach and promote superstition for their own selfish interests. They would never want such superstitions to get over because this is what feeds their bellies and maintains their social status quo. The poor folks who are not much exposed to the outside world and lack proper

education get swayed by such tantrics. All these tantrics are cunning superstitious idiots who proudly carry on what their father and forefather taught them

	2008	2009	2010	2011	2012	2013	TOTAL (Avg)
All India	175	174	178	239	119	160	
Jharkhand	52	37	15	38	26	54	220(37)
Haryana	25	30	57	5	0	0	117(19)
Chhattisgarh	15	6	8	17	8	7	61(10)
Madhya Pradesh	17	23	18	15	10	11	94(15)
Odisha	23	28	31	39	32	24	177(29)
Andhra	23	27	26	28	24	15	143(24)
Rajasthan	0	0	2	1	0	1	4(0.6)

Source: PTI

Jharkhand taking a clear lead than rest of states, comprising 37% of total 'Witchcraft' murders.

for their survival.

Well, there are laws for such killings but legislation has not yet proved effective for this superstitious belief. Meanwhile, improving the critical thinking may help.

*The celestial rocks of ice and snow still passes in our night sky with a blazing tail, we call it as 'Comet' today. The 'tutata hua tara' – let's make a noble wish that very soon we would free ourselves from such superstitions. Since making a wish is not enough, someone has to get down to it.*



**The Indian Rationalist Association**, which has more than 100,000 members is trying to improve the social condition. People are taking initiative and are trying to completely stop this evil practice of witch hunting. Many NGO's are also working to create awareness among the people and making them aware that these are old superstitions which have no place in the modern world. We need to respect women and broaden

**A case study reveals that most of such women were widows who had no one to care about and many of them owned land or other properties which villagers acquired after their death.**

our perception. A lot of work has to be done by the educated and responsible people of villages.

And for the curious readers, yes, witchcraft does exist in interiors of villages where ojhas teach women special mantras and tricks – so called Black magic. But does witch-craft works? I am leaving that on you. Do make a sound judgment. A lot depends on it. Good Luck!

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# मानव तस्करी :

## झारखण्ड एक अभिशिप्त क्षेत्र



Illustration -Pritam Suman  
(2015-18)



चंदन कुमार

(2015-18)

मानव तस्करी इंसानों की दुनिया का विद्रुप सच है। यह इंसानों की मंडी है, जहाँ इंसानों की खरीद फरोक्त होती हैं नशीली दवाओं और हथियारों के कारोबार के बाद मानव तस्करी विश्व भर में तीसरा सबसे बड़ा संगठित अपराध है। संयुक्त राष्ट्र की परिभाषा के अनुसार मानव तस्करी के अंतर्गत – “किसी व्यक्ति को डराकर बल प्रयोग कर या दोषपूर्ण तरीके से भर्ती, परिवहन या शरण में रखने की गतिविधि शामिल है।” भारत को एशिया में मानव तस्करी का गढ़ माना जाता है। सरकार के आंकड़ों के अनुसार हमारे देश

में हर 8 मिनट में एक बच्चा लापता हो जाता है। न्यूयॉर्क टाइम्स ने भारत में खासकर झारखण्ड राज्य में मानव तस्करी की समस्या पर रिपोर्ट दी है। संयुक्त राष्ट्र संस्था ने भी झारखण्ड में बढ़ते मानव व्यापार पर चिंता व्यक्त की है।

झारखण्ड एक बहुल जनजातीय प्रदेश है, झारखण्ड राज्य के आदिवासी इलाकों में मानव तस्करी कर देश के अलग-अलग महानगरों में ले जाने का सिलसिला थमने का नाम नहीं ले रहा है। प्रतिवर्ष 20,000 से अधिक बच्चे मानव व्यापार का शिकार होते हैं, जिसमें 80% से अधिक महिलाओं और लड़कियों का देह व्यापार के लिए शोषण होता है। बाकी 20% को बंधुआ मजदूरी के लिए इस्तेमाल किया जाता है। उरांव, मुंडा, संथाल और गोंड



जनजाति के लोग मानव व्यापार से अत्यधिक ग्रसित हैं। अशिक्षा और गरीबी के कारण ये जनजाति एजेंटों के बहकावे में आ जाते हैं। एजेंट इनके माता-पिता को पढ़ाई, बेहतर जिंदगी और पैसों का लालच देते हैं।

एजेंट उन्हें स्कूल भेजने के बजाय कारपेंटर, घरेलू नौकर या भीख मांगने का काम करने के लिए बेच देते हैं। जबकि लड़कियों और महिलाओं को यौन शोषण के लिए एक वस्तु की तरह सस्ते कीमतों में बेच देते हैं। गढ़वा, सिमडेगा, दुमका, हजारीबाग, राँची, खूंटी और लोहरदगा जिलों में मानव व्यापार विस्तृत होता जा रहा है। इन क्षेत्रों से सटे पड़ोसी राज्यों की जरूरतें झारखण्ड पूरी कर रहा है। स्त्री के मान का मर्दन किया जा रहा है, लड़कियों का शारीरिक शोषण का बाज़ार बनता जा रहा है। जहाँ प्रतिदिन कई प्रकार की प्रताड़ना झेलनी पड़ती है और झारखण्ड अपना मोल खोता जा रहा है।

मानव व्यापार के विरुद्ध कई अधिनियम पारित हुए हैं पर ये बिल्कुल असफल

हो गये हैं। झारखण्ड राज्य की महिला नीति 2014 को स्वीकृति दी गई है राज्य महिला आयोग झारखण्ड और कई तरह की संस्थाएँ अवैध मानव व्यापार के रोकथाम के लिए झारखण्ड में सार्थक प्रयास कर रही है शक्ति वाहिनी और बचपन बचाओ आन्दोलन जैसी राष्ट्रीय संस्था अपराध के विरुद्ध कार्य कर रहे हैं। परन्तु सामाजिक संस्थाएँ ढोल हो गई हैं, बजतीं तो हैं लेकिन पूरी तरह खोखली।

मानव की आधी शक्ति टूटती जा रही है, ये मानव सभ्यता को लज्जित कर रहे हैं। किसी की गरीबी का फायदा उठाकर मासूम बच्चों के साथ अत्याचार कर रहे हैं, ये ही पढ़े-लिखे लोग सार्वजनिक मंचों से समानता की बात करते हैं और घर में किसी को गुलाम बनाकर रखते हैं। यह समाज का धिनौना चेहरा है।

आखिर बैल से सस्ती बेटियाँ हो गई है। यह हमारे सभ्य समाज पर कलंक है, या फिर यह कहना बेहतर होगा की हमारा समाज सभ्य हुआ ही नहीं है।



# Living On Edges...

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*Adventure is essentially a way of life and there are people around whose efforts stand as an excellent example of it. Every weekend you may find them harnessing their ropes or standing at the sharp edges of rocks gripping on small holds of the hills in and around Ranchi, provided they haven't left for a mountaineering expedition.... On the first anniversary of 'ROCK & ROPE ADVENTURE', we talked to the founders - Ravi Raj Mishra, Aditya sir (Indian mountaineer) & Khushwant Singh (the rock climber). We talked about rock climbing, mountaineering & allied adventure sports, prospects of tourism and adventure sports in Jharkhand and their journey so far...*





**B**esides being a sport, what personal and social values does Rock climbing and mountaineering adds to one's life?

**R & R A** Rock climbing & Mountaineering evolves one to judge or access the risk of day to day life in a better manner. It makes you a survivor rather than a victim of disasters i.e. with such skills one can save himself as well as others in time of crisis. And not to forget it is an extreme fitness activity. Altogether one lives more of himself with high physical fitness; mental strength with sharp reflexes and above all it provides a way to overcome your fears leading you to become a better asset to society.

**How this group came into being?**

We have been climbing in Ranchi since last four years. Our common passion brought us together. Friends and people from the city came along with the help of our Facebook group. This is how we started. But it was on 15<sup>th</sup> Jan last year when we took the resolution to team up and take these sports ahead.

**What was the initial objective?**

Our initial objective was to get registered under

Societies Registration Act 21 of 1860 and start training more frequently.

**Tell us about some of your achievements.**

The achievement of R&RA which caught interest of climbing fraternities was Mt. Gangstang Expedition. Before that we had organized two exploration cum trekking camp in the Pithoria-Patratu valley where we trekked from Pithoria to Patratu and back crossing river, forest, and valleys on the way. Apart from that we opened many climbing routes and boulders for practice in 'Bhairam hill' and established it as our training yard.

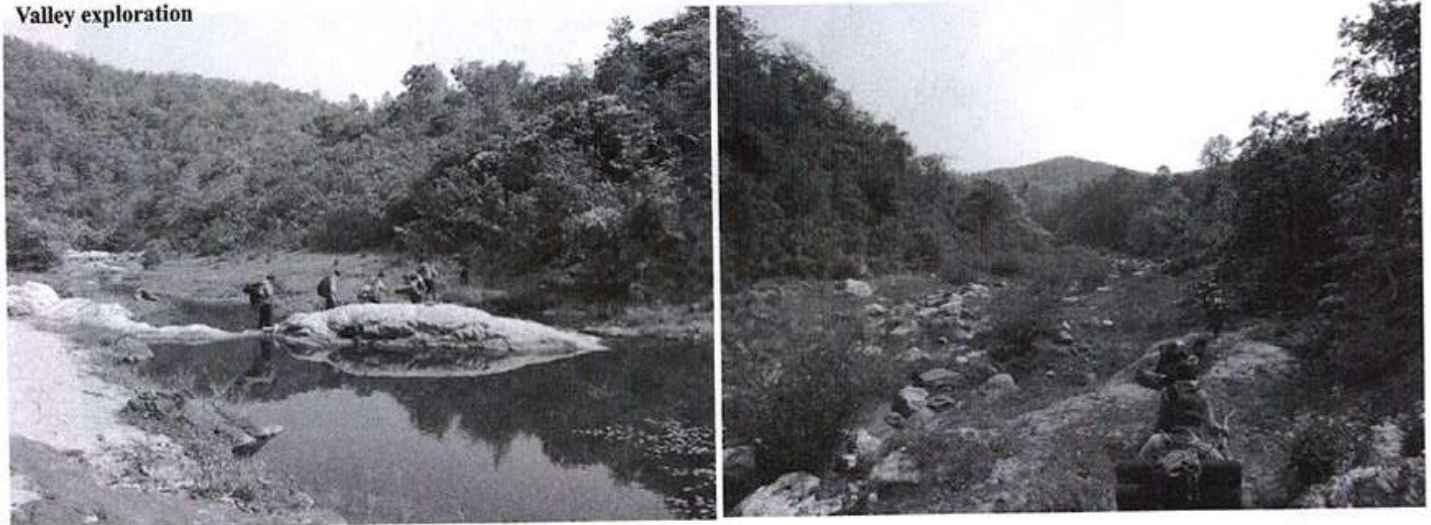
**Tell us more about your Mt. Gangstang Expedition.**

It was actually a Cleaning cum Climbing Expedition to Mt. Gangstang (6162m/ 20,218 ft.), Himachal Pradesh, funded by C.C.L, where Santosh Sinha and three of us headed for it. Altogether it was an expedition of 19 days (15 Sep – 4 Oct 2015). We reached the summit on 27<sup>th</sup> Oct and on our way back we brought around 80 kgs of litter from the mountain and disposed it in Keylong city.

**What were the challenges?**

**Ravi Raj** We took Khushwant Singh and Santosh Singh to the mountains who are

Members of R&RA team while Pithoria-Patratu Valley exploration





essentially rock climbers and trekkers. It was itself an initial challenge although the toughest part was arranging funds (Pre expedition). The incessant snowfall during expedition from camp 1 to summit led to a tougher and dangerous climb with hidden crevasses and avalanche slope.

**Any near future plans?**

Yes, we are planning a Cleaning expeditions at Mt. Yunum (6118 m) in Spiti Himalayas and Mt. Manirang (6593 m) in Lahul Himalayas, both in Himachal Pradesh.

Waterfall rappelling & camping cum exploration at Sita fall has been scheduled on 23<sup>rd</sup> and 24<sup>th</sup> of this month (Jan). Apart from it climbing practices are held every weekend at Bhairam hill. Hopefully soon we would be able to start climbing practice in Rock Garden also.

**How do you manage funds and resources for all these?**

Till now we have not received any financial aid except one time Sponsorship from C.C.L and that too for our Mt. Gangstang Expedition. So far we have managed our resources and expenses on our own and through contribution from members. We have donated our personal equipments to the organization for training and we expect sponsorships from government and corporates so that we can continue promoting climbing and allied activities.

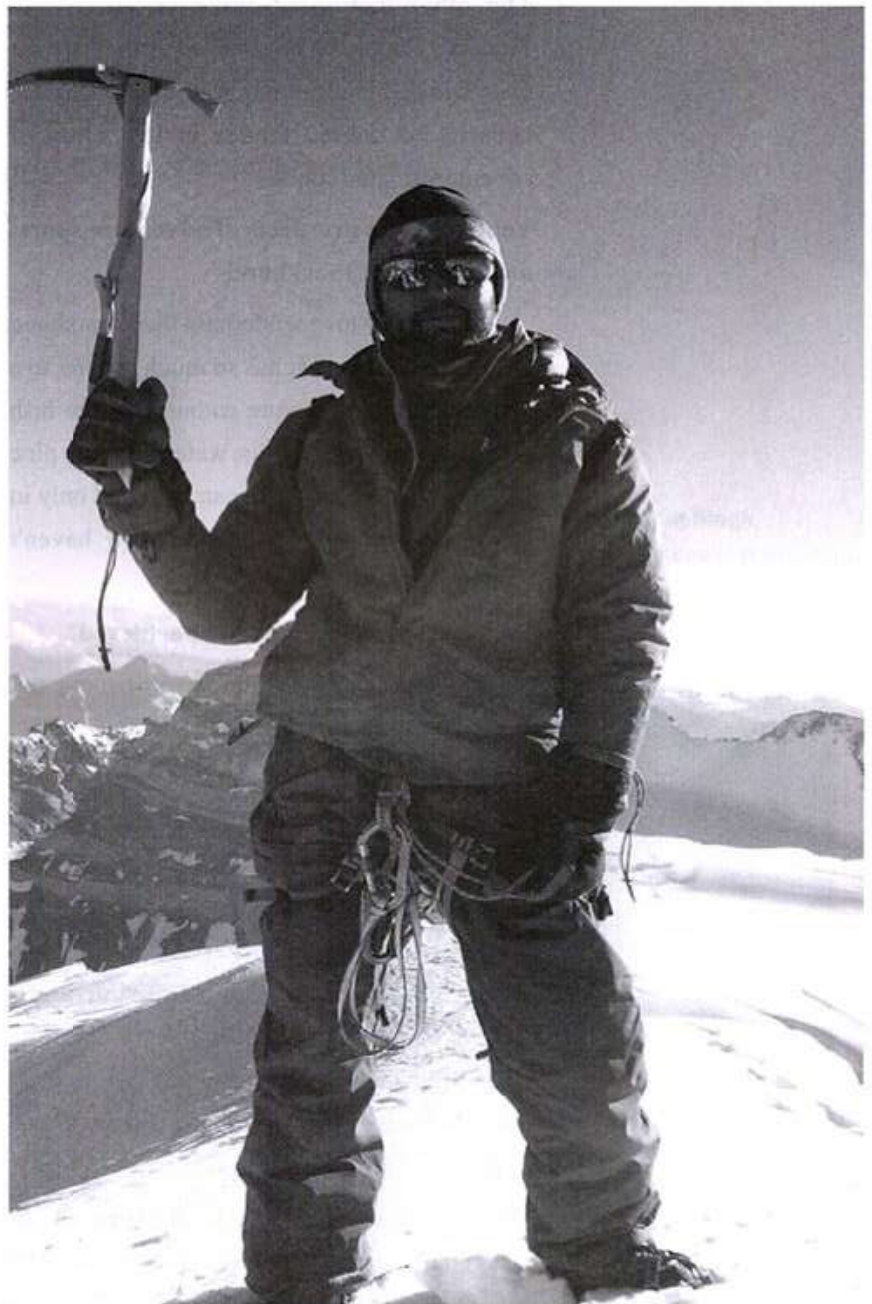
**How is the level of participation of women in these sports particularly in Jharkhand?**

Despite of the fact that first women Everester Bachendri Pal is a resident of Jharkhand now and the Oldest seven summiteer Premlata Aggarwal is also from Jharkhand the participation of Women in professional climbing and allied activities is negligible.

But speaking from R&RA we have two gems in

this regard, Ipsha Sinha (12) and Akriti Sharma (11). We often call Ipsha 'RockLizard' because of the way she carries her body along the rocks, Akriti got 4<sup>th</sup> position in IMF East Zone Sport Climbing Championship 2015, who is just 11 and it was the first time at that competition when she saw an artificial climbing wall

**Ravi Raj Mishra  
at Mt. Gangstang**





### Anything that disturbs?

There are a couple of things - Media should give more coverage to adventure related activities. A regular column on this new way of life won't harm anyone but can serve as a great tool for its promotion.

The other disturbing thing is 'Adventure Traders'. They must be checked as they are the ones whose main motive is to reap economic benefits of passed tender in the name of adventure related courses.

### Your views on prospects of adventure sports and tourism in Jharkhand-

If you love wilderness then Jharkhand is a big playground. It has so much to offer to a nature lover or adventure enthusiasts- the lush green forests, valleys, hills, waterfalls, rare pine forests at Netarhat (which can be found only in lower Himalayas). But sadly we haven't realized our true potential.

### So, how the road ahead can be achieved?

Jharkhand has to be rediscovered. There are many amazing places around, that we never cared to explore.

When we were going for trekking in Pithoria-Patratu valley, local administration forbade us as the area is affected by naxalism. And when we reached there we met tribal people, who were not habituated of seeing outsiders. Surprisingly this place is not very far from Ranchi. On the contrary we found that they were shy and sweet people and few of them also guided us in difficult routes.

We need to employ these local people in our tourism management. There is no need to build hotels everywhere. Trekker huts clustered together can be a better option. And

**Jharkhand has so much to offer to a nature lover- the lush green forest, valleys, hills, waterfalls, rare pine forests but sadly we have not realized our true potential.**

management of such huts should be given to local people. Hopefully employment generation may bring the naxal graph a bit down.

Few days back I read an interview of Alex Honnold, in which he said

that "I also fear death contrary to what others claim but it is that I have more of an acceptance that I will die at some point. But I don't want to baby myself along the way...."

We have deep regards for him and I also believe that death is embedded in us from the day we took birth. We can meet it anywhere while crossing the road or during climbing, and it is this fear which do not let us live.

**Matlab ham jeena chahte hain isliye jee nhi pate ?**

Exactly.

**Does climbing changes our lifestyle? Do we come more close to nature?**

Off course, It brings us closer to nature since we spend most of our time in the places which are far from crowd and noise of cities. And we secretly begin to appreciate the beauty of nature and love the peaceful atmosphere. We work on LNT- 'leave no trace' principle. Wherever we go for climbing and exploration, if possible we also clean it.

**Aditya sir, How's your climbing experience here?**

**Aditya Sir :** Rock climbing and mountaineering which got halted a long time ago got revived due to R&RA and now I have come down to 72 from 78 kgs (smiles). So Health and passion both have survived till now. And you know, this place has got such an excellent weather that one can climb here whole year.



**Khushwant Sir, what urges you to climb? Is it the top or climbing itself?**

**Khushwant Sir :** Although the goal is to reach the top because on reaching the peak we feel a sense of achievement but rather than having a sense of conquering the rocks or mountains, we seek to conquer our own fear through climbing which is itself a challenge and we love it.

**Ravi Raj :** Perhaps the closest answer would be between them, the crux where our grip begin to loose (winks) and adrenaline rushes in our body.

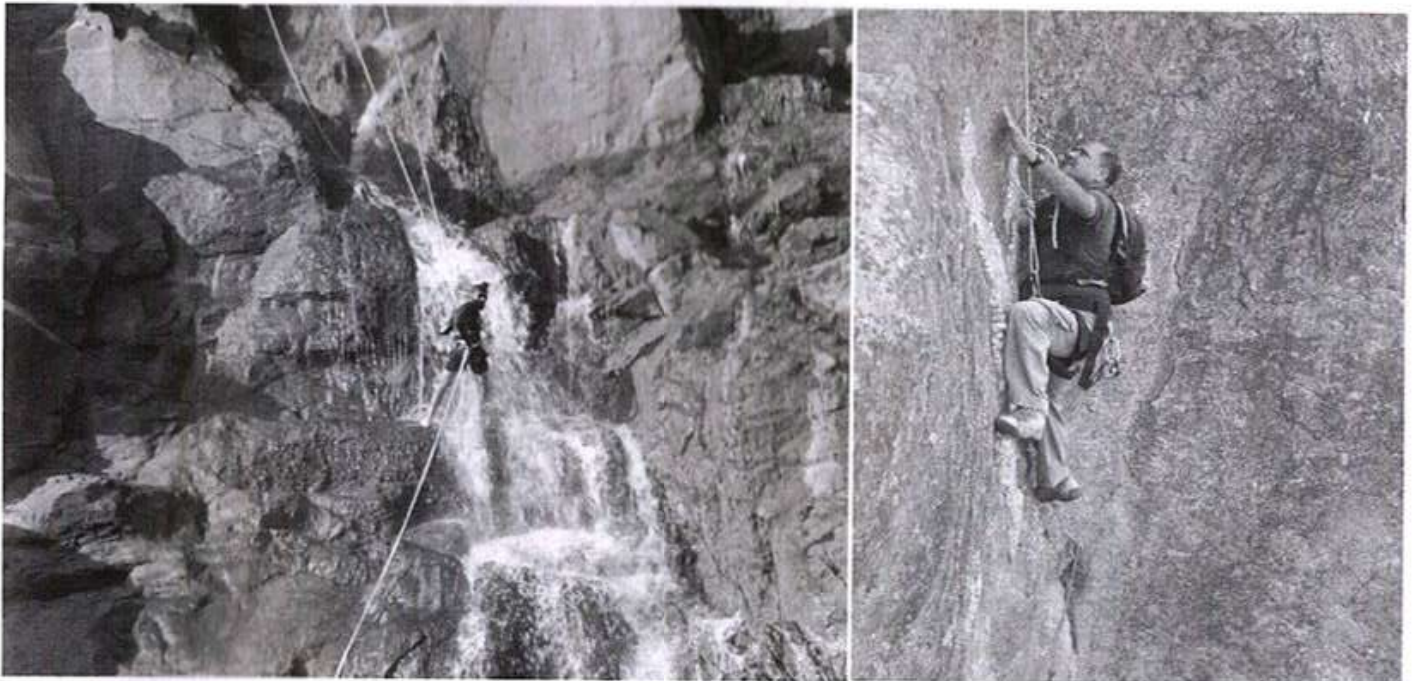
**Khushwant Sir :** Basically, we climb for the fear of falling! (Everyone laughs!)

...and this is how a pleasant evening with adventure geeks ended with a nice hope that more and more youth would conquer their fear through these sports and make our country proud (sport climbing is in Olympics now!).

Recently five R&RA members successfully completed their Waterfall Rappelling cum Exploration Camp at Sita Fall. It was the **first Water fall Rappelling** organized in **Jharkhand**. They also explored one more **trekking** route from Sita to Jonha fall and **cleaned 200 kgs** of garbage in trekking route and camping site.

Hats off! Guys, Keep up the good work...

- **Khushwant Singh rappeling down at Sita Fall**
- **Indian Mountaineer: Aditya Sir**





# राज्य संग्रहालय



**सौरभ रंजन प्रसाद**  
(2014-17)

ऐतिहासिक वस्तुओं तथा तथ्यों के बारे में जानना हमेशा से ही एक रोचक कार्य रहा है। राँची का राज्य संग्रहालय, ऐसा ही अवसर प्रदान करता है। झारखंड संस्कृति एवं इतिहास को समाहित किये हुए यह संग्रहालय राँची शहर से 8 कि.मी. पूर्व खेलगाँव स्पोर्ट्स कॉम्प्लेक्स के निकट स्थित है। जहाँ झारखंडी भावनाओं और समृतियों से जुड़ी संस्कृति को संरक्षित करते हुए इसके विभिन्न आयामों को दिखाने का प्रयास किया गया है। इस संग्रहालय का मुख्य उद्देश्य – पूर्वजों तथा अतीत से संबंधित सूचनाओं एवं संदेशों को नई पीढ़ी तक पहुँचाना है।

इसे मनोरंजक बनाने तथा आसानी से लोगों को समझाने के लिए विभिन्न दीर्घाओं का निर्माण किया गया है। यहाँ कई तरह की मूर्तियों का भी निर्माण किया गया है, जिसे देखकर घटनाओं का आसानी से अनुभव किया जा सकता है। सभी दीर्घाएँ मानव समुदाय के सामाजिक-सांस्कृतिक विकास की गाथा को प्रभावशाली ढंग से प्रस्तुत करते हैं।

## जनजातीय दीर्घा :

इस दीर्घा में विभिन्न जनजातियों के सांस्कृतिक विविधताओं, कार्यशैली, रहन-सहन, लिपि, पहनावा, भाषा, आभूषणों

आदि को प्रतिरूपों के माध्यम से व्यक्त किया गया है। उदाहरणार्थ – असुर जाति को लौह कार्य करते हुए दिखाया गया है। असुर जनजाति संभवतः भारतीय प्रायद्वीप के प्रथम धातु विज्ञानी माने जाते हैं। उनकी लोहा गलाने की स्वदेशी तकनीक उन्हें एक अलग पहचान दिलाती है। इसी तरह एक अन्य प्रतिरूप में बिरहोर जनजाति को रस्सी बनाते हुए दिखाया गया है जो कि इस जनजाति का प्रमुख कार्य है। इसी तरह कृषि करते हुए मुंडा जनजाति को दिखाया गया है। मुंडा झारखंड में संथाल एवं उराँव के बाद सबसे बड़ी जनजाति है। एक अन्य झाँकी में इस जनजाति को प्रकृति पूजक के रूप में भी दिखाया गया है। इन जनजातियों का मुख्य धर्म 'सरना' है। इस दीर्घा में जनजातियों द्वारा खुशी के मौके पर बजाए जाने वाले वाद्ययंत्र – ढोल, नगाड़ा, मांदर तथा इनके द्वारा पहने जाने वाले आभूषण – कंगन, माला आदि को भी प्रदर्शित किया गया है।

एक कोने में कदंब के पेड़ की डाल रखी हुई है। यह उस कदंब के पेड़ की शाखा है जिसमें 1858 ई. में विश्वनाथ शाहदेव सिंह को फांसी दी गई थी। इसे 'शहादत की डाल' भी कहा जाता है।

## प्रतिमा दीर्घा :

यह झारखण्ड के जनजातीय संस्कृति से संबंधित मूर्ति इतिहास तथा उनके कला शैली को प्रदर्शित करता है। झारखण्ड की





मूर्तिकला में हिंदू, बौद्ध तथा जैन धर्म का प्रभाव दिखाई देता है। तथापि ज्यादातर मूर्तियाँ इन्हीं धर्म के देवताओं की रखी हुई हैं। जिसमें शिव, विष्णु, सूर्य एवं बुद्ध-शिवलिंग प्रमुख हैं।

यहाँ पर भारतीय शैली की मूर्तियों के साथ-साथ लोक शैली की मूर्तियाँ भी दिखाई देती हैं। इसका उदाहरण पार्वती की एक प्रतिमा है।

इसमें पार्वती को स्थानीय रूप में दिखाया गया है। इस तरह की शैली से संबंधित मूर्तियाँ को खूँटी एवं जपला से प्राप्त किया गया है। इस दीर्घा में झारखण्ड के राजमहल तथा साहेबगंज क्षेत्र में मुगलकाल के परिवेश को भी दिखाया गया है। जो बहुत

ही रोचक तथ्य है क्योंकि झारखंड में मुगल परिवेश का ज्ञान काफी कम मिलता है।

**उत्खनित सामग्रियों की दीर्घा :**

यह संग्रहालय की सबसे रोचक तथा ज्ञानवर्द्धक दीर्घा है। यह झारखंड के गौरवशाली इतिहास को दर्शाता है। झारखंड को कभी भी उत्खनित तथा पुरातत्व सामग्रियों की दृष्टि से धनी नहीं समझा गया है, परंतु इस दीर्घा में रखी वस्तुएँ इस तथ्य को पूरी तरह से नकारती हैं। यहाँ विभिन्न क्षेत्र से प्राप्त पाषाण उपकरण, प्रागैतिहासिक काल के वस्तुएँ, ताम्र पाषाण काल के औजार, मुगलकालीन सिक्के, मनके, लाह की चुड़ियाँ, मिट्टी की पक्की गोलियाँ, युद्ध सामग्री आदि को प्रदर्शित किया गया है। जो इन क्षेत्रों में रहने आए लोगों के अतीत को दर्शाता है।



काँच के बक्से में बंद इन वस्तुओं को निहारते हुए आप एक पल के लिए वक्त में पीछे चले जाते हैं।

झारखंड में पुरात्व सामग्री का अन्वेषण कार्य काफी नया है। इसके अंतर्गत पूर्वी सिंहभूम का 'गुहियापाल', राँची जिले का 'खुखरागढ़' उत्खनन तथा पलामू जिले का 'कबराकलाँ' अन्वेषण एक महत्वपूर्ण कदम है।

#### **गुहियापाल :**

गुहियापाल का अन्वेषण कार्य झारखंड में संभवतः पहला अन्वेषण कार्य रहा है तथा इसका कार्य वर्ष 2002-03 था। यहाँ से पूर्व पाषाण कालीन, ताम्र पाषाण कालीन, लौह युग, गुप्त एवं पाल सेन कालीन पुरातत्व सामग्रियों की प्राप्ति हुई है। इस पुरातन स्थल की सांस्कृतिक यात्रा लगभग पचास हजार वर्ष लंबी है। इस क्षेत्र में काफी मात्रा में लौह के अयस्क, स्लैग्स तथा मिट्टी की काफी सामग्रियाँ प्राप्त हुई हैं, जिसमें पशु-पक्षियों की मूर्तियाँ, मिट्टी की बनी मुद्राएँ, दीपों को रखने के लिए स्टैंड आदि प्रमुख हैं।

#### **खुखरागढ़ :**

राँची जिला के अंतर्गत बेड़ो प्रखंड में एक विस्तृत पुरातात्विक स्थान खुखरागढ़ है। यहाँ पर झारखंड के कला-संस्कृति, खेलकूद एवं युवा कार्य विभाग की पुरातत्व शाखा के द्वारा 2008-09 एवं 2009-10 के दौरान उत्खनन किया गया था। इस पुरातात्विक स्थल से युद्ध सामग्रियाँ यथा - बाण एवं भाले के टुकड़े, मानव एवं पशुओं के मिट्टी की मूर्तियाँ, बहुमूल्य पत्थरों से निर्मित मनके तथा बड़ी संख्या में सिक्कों की प्राप्ति हुई है।

#### **कबराकलाँ :**

यह पुरातात्विक स्थान कबराकलाँ ग्राम पर स्थित है। जो पलामू जिले के हुसैनाबाद से लगभग 20 कि.मी. दक्षिण में सोन नदी के तट के निकट स्थित है। इस स्थान से जुड़ा रोचक तथ्य यह है कि यहाँ

खुदाई करते समय काफी संख्या में कब्रें मिली थी। यही वजह है कि इस गाँव को कबराकलाँ अर्थात् कब्रों का गाँव कहा जाता है। यहाँ पाए गए अवशेषों के आधार पर कयास लगाए जाते हैं कि यहाँ छठी शताब्दी में एक महत्वपूर्ण व्यापारिक नगर था। इसलिए इस क्षेत्र से शाह आलम के सिक्के, टोपाज के मनके, लाह की चुड़ियाँ, मौर्य कालीन सिक्का, पाषाणकालीन उपकरण, उत्तरी श्याम चमकीले बर्तन के टुकड़े, कुल्हाड़ी आदि पाए गए हैं।

भारतीय पुरातत्व सर्वेक्षण विभाग ने कबराकलाँ गाँव का दिसम्बर 1999 एवं अप्रैल 2000 में सर्वेक्षण के बाद पाई गई कुछ वस्तुओं को 36000 वर्ष पुराना बताया था।

इसके अतिरिक्त यहाँ भारतीय पुरातत्व सर्वेक्षण, नई दिल्ली से हड़प्पा सभ्यता के मृद भांडों को प्रदर्शित किया गया है। यहाँ गिरिडीह जिले से प्राप्त ताम्र निधि के रूप में सात ताम्र कुंघ कुठार भी रखे हुए हैं।

#### **चित्रकला दीर्घा :**

चित्रकला दीर्घा में झारखंड के विभिन्न क्षेत्रों तथा झारखंड के बाह्य राज्यों से भी कई लोगों के अति सुंदर कलात्मक चित्रों को प्रदर्शित किया गया है। चित्रकला प्रेमी व्यक्तियों के लिए यह दीर्घा काफी प्रेरणादायक है।

#### **पुस्तकालय :**

यहाँ कला, संस्कृति, शिल्प, स्थापत्य आदि के अतिरिक्त जनजातीय एवं पुरातत्व संबंधी पुस्तकें भी प्रचुर मात्रा में उपलब्ध हैं। जिन्हें स्वयं निकालकर पढ़ा जा सकता है। पुस्तक प्रेमी होने के कारण यहाँ का माहौल एवं चारों तरफ पुस्तकों का आवरण हमें काफी सुविधाजनक लगा। संभवतः गर्मी की छुट्टियाँ इन किताबों के लिए अनुकूल होंगी।

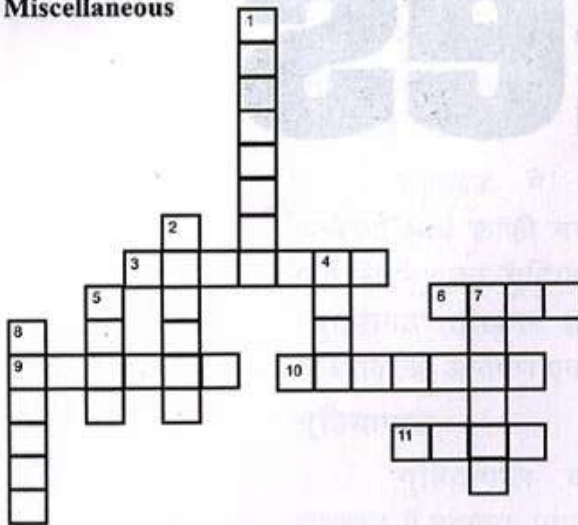






# Cross-Word Puzzle

## I. Miscellaneous



### Clues:

#### Across

3. People (tribe) of Kalahari
6. It wasn't built in a day
9. Biggest U.S state by area
10. Volga flows into this sea
11. Capital of Latvia

#### Down

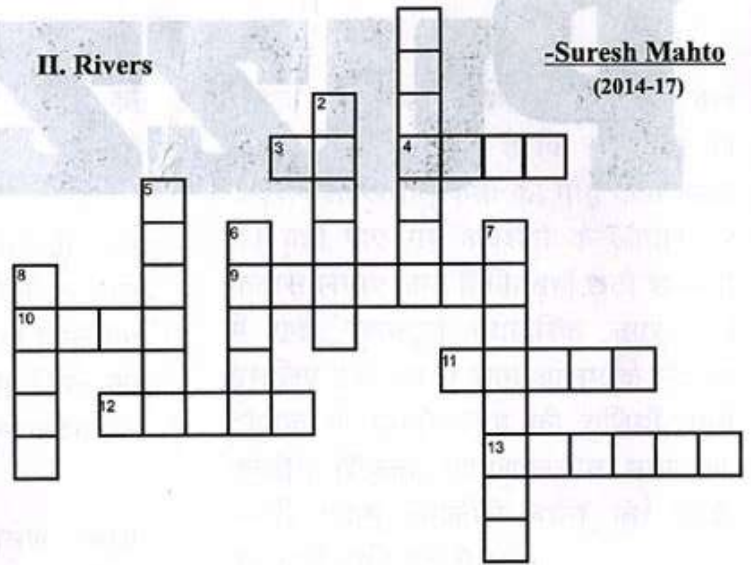
1. City were Jesus grew up
2. Language of Oraon tribe
4. Sicilian Volcano
5. Also known as Persia
7. a citrus fruit & longest river in S.Africa
8. 23 & 1/2 degree north, a disease & a zodiac

## Find 16 Country-Capitals

A	B	L	P	T	B	R	O
C	A	I	R	O	M	E	T
A	K	M	A	K	I	E	V
M	U	A	B	Y	N	G	E
A	S	N	A	O	S	L	O
D	U	I	T	U	K	E	R
R	V	L	O	N	D	O	N
I	A	A	N	K	A	R	A
D	O	H	A	N	O	I	S

## II. Rivers

-Suresh Mahto  
(2014-17)



### Across

3. Ganges of Italy
4. Flows beneath the sand in Rann of kutchh
9. Yellow river
10. Egypt is it's gift!
11. Crosses equator twice
12. It's delta region is sometimes called "oil rivers" because this region was a major palm oil producer (Africa).
13. Largest volume of water

### Down

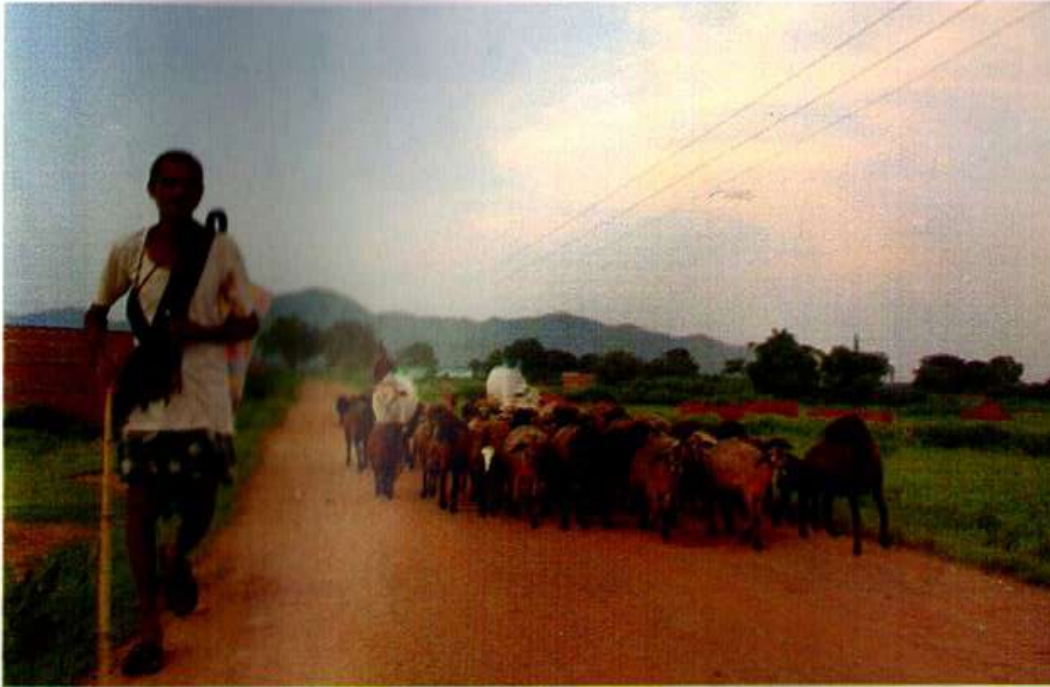
1. Dear to heart, flows in Australia
2. River in which Jesus baptized, name of a country
5. The holy river of south India
6. Busiest inland waterways of Europe
7. Carves 'The Grand Canyon' in state of Arizona
8. An ancient Civilization flourished in its bank

### Answer:

**Cross word Puzzle**  
 I. 1. Nazareth 2. Kurukh 3. Bushmen, 4. Elms 5. Iran 6. Rome 7. Orange  
 8. Cancer 9 Alaska 10. Caspian 11. Riga  
 II. 1. Darling 2. Jordan 3. Po 4. Luni 5. Kaveri 6. Rhine 7. Colorado 8. Indus  
 9. Hwang Ho 10. Nile 11. Congo 12. Niger 13. Amazon  
**Country Capitals:**  
**Down**  
 Baku, Suva, Lima, Manila, Rabat, Tokyo, Minsk, Madrid  
**Across**  
 Cairo, Rome, Kiev, London, Ankara, Doha,  
 Hanof, Oslo



# Capturing Lives



- *Alladu Bhaskar*  
(2011-14)

Carrying his  
flocks back home



- *Mukul Kerketta*  
(2014-17)

People drinking Haria after working in field at *Bitri* village, Gumla





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