PALEONTOLOGICAL RESOURCES FOR GEOTOURISM IN BARMER AREA OF WESTERN RAJASTHAN, INDIA: IMPLICATION FOR A NATIONAL FOSSIL PARK DEVELOPMENT

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ABSTRACT

A special fossil gathering has as of late been found from Gehun and Lunu areas of Paleocene Barmer Hill Formation around there, Western Rajasthan, India. These fossil destinations have been recognized based on past examinations and on the current work of our exploration bunch. Point of the current paper is to preserve the exceptional and uncommon topographical materials (Asthenopodichnium fossils) as the lone fossil site of such kind in India. Terrific Gehun site is effectively open as it is situated inside the Barmer city. Likewise, this examination will likewise propose a thought of setting up a public fossil park at Gehun in Barmer city like the popular Jurassic Fossil Park of Jaisalmer in Western Rajasthan, India. Geotourism is the best instrument for their advancement and preservation with extra worth as marking of Paleopark for manageable financial improvement of the district. As of late, field work was directed to notice the current situation and to recognize the dangers to the fossil site. Quick urbanization, formative exercises, fossil chasing and defacing of fossils by guests are the principle dangers to these locales. Point of the current paper is likewise to put forth further attempts to moderate paleontological locales and to perceive such destinations as the huge geoheritage assets of India.
Key words: Barmer Hill Formation, fossil vandalism, national Fossil Park and Paleopark, Promotion of Geotourism, New tourist product

INTRODUCTION

Exceptional and uncommon wood exhausting fossil footprint bearing Gehun segment of Barmer Hill Formation (BHF) is situated inside the Barmer city and Lunu segment is situated around 12 km away from the Barmer city on Barmer-Bisala Tar Road (Figure 1). Looking to the ideal area and rich fossil collection, Gehun segment is proposed for a public fossil park.

This fossil park will be an entirely important geotourism component of Barmer to find out about the antiquated climate, environment and contemplating the previous history of Earth. Our new field work in these novel and uncommon fossil destinations obviously saw that these locales are under dangers to quick urbanization, formative exercises, defacing of fossils and unlawful quarrying of sandstones locally for development. To secure these uncommon fossil bearing destinations and to build mindfulness, no deliberate endeavors have been made up until now.

![Figure 1. DEM of Barmer Area showing location of fossil-bearing Gehun and Lunu sections of Barmer Hill Formation of Barmer area, Western Rajasthan, India](image)

Protection of these destinations can be accomplished by including the neighborhood networks and nearby organization of Barmer. In this unique circumstance, objective of present paper is to examine a concise outline of topography of Gehun segment, brief clarification and meaning of fossils, ID of significant dangers to the fossil site and start the thought for proposing the always first fossil park with marking of possible Paleopark in Barmer.

LITERATURE REVIEW

Barmer territory is blessed with enormous and strong edges of rocks of Malani Igneous Suite (MIS) and related antacid set-up of Sarnu Dandali Igneous complex of Cretaceous age (Srivastava, 1988; Basu et al., 1993). Just a little edge named here as Gehun area address sedimentary shakes in this molten region of the Barmer city (Mathur et al., 2016). Dasgupta, (1973) first named these residue as Barmer Hill Formation (BHF).
As of late, India's just and uncommon wood exhausting fossil footprints, Asthenopodichnium (May fly and Rotten green growth fossils) have been accounted for (Mathur et al., 2018) alongside froze wood and Teredolites (Mathur et al., 2016); Gyroliths, Thalassinoids and Ophiomorpha fossil footprints (Shekhawat, 2016) from Gehun segment. Prior, Angiosperm botanical array (Matoniaceous greenery, acutifolium, phleopteris, ptitophilumandcycades, greeneries) have been accounted for by Dasgupta, (1974) from Lunusection of Paleocene BHF.

To recognize and portray the different fossils from BHF, work of Uchman et al., 1995, 2007; Moran et al., 2010; Campbell and Baxter, 1979; Kelly and Bromley, 1984; Hantzschel, 1975 have been used. It is imperative to note here that the Asthenopodichnium fossil footprints have been recorded before just from Lithuania, USA, Egypt, Czech Republic, Argentina, New Mexico (Uchman et al., 2007; Moran et al., 2010) and India's first site showing global meaning of Gehun site of Barmer, India.

METHODOLOGICAL FRAMEWORK

The goal of improvement of Barmer public Fossil Park with IPA paleopark tag for financial advancement of the area can be accomplished through the strategy given beneath (Figure 1, a). In light of past works and field, Petrographic, paleontological and distant detecting information, georesources of public and worldwide importance were distinguished in the investigation region (GGN, 2006). Further, significant geosites of huge fossils were recognized dependent on Yang et al., (2011). With legitimate security and preservation plan for recognized geosites, a public fossil park is proposed which can additionally get IPA paleopark tag according to Lipps, (2009).

Moreover, with ideal area, these geosites can fill in as a significant outside field gallery exhibiting geodiversity among rocks and fossils. Mix of all these geosites in one complex sort geosite will be a focal point of training for understudies and geotourism to appreciate and respect by overall population. Every one of these parts of the travel industry will add to financial improvement of the locale.
LAND ATTRIBUTES OF BARMER AREA:

Phenomenal to dissipated outcrops of fossil bearing Paleocene rocks of BHF are fundamentally uncovered around 5 km north western way from Barmer rail line station in the Barmer city up to Lunu in north for a strike length of around fifteen km (Figure 1). BHF unconformably overlay the storm cellar of Rhyolite of Malani Igneous Suite (Dasgupta, 1974; Roy and Jakhar, 2002; Mathur et al., (2016). Anyway Shivastava, (1988), Basu, (1993) and Shekhawat, (2016) proposed that the rhyolite of MIS broadly uncovered the eastern way to Barmer city and basic complex around Sarnu territory western way are of Cretaceous age. Late Cretaceous Fatehgarh Formation is underlain by BHF in north western side while BHF is underlain by the Akli Member of Dharvi Dungar Formation north way to Barmer (Figure 2; Mathur and Kumar, 2003; Mathur et al., 2006; Paul et al., 2016).

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With this stratigraphic attitude at Gehun segment, BHF structures a delightful scene with strong edges and segregated slopes (Plate-1a) pediments and pediment like surfaces covering a space of around two sq. km. Fifty-meter thick BHF at Gehun is separated into Lower and Upper Members on surface outcrops. Lower Member include four fining upward patterns of siliciclastic arrangements (Mathur et al., 2018). Each cycle starts with combination at the base. It is trailed by pebbly sandstone; coarse, medium and fine-grained sandstone with interbedded siltstone at the top (Figure 3 and Plate-1b). Fine grained sandstone of each cycle jam wood logs of Asthenopodichnium wood exhausting fossil footprints and froze wood (Plate-1c, 1d, e, f, 2a and 2b). These cyclic successions address channel slack stores to twisted riverine depositional setting of the lower individual from BHF with nearby residue source from Malani rhyolite. Upper individual from BHF is made out of carbonate overwhelmed lithofacies (Plate-2c) which contain rich collection of Teredolites, bivalve shells (Plate-2d, e and f); Gyroliths(Plate-3a); Ophiomorpha and Thalassinoid fossil footprints (Plate-3b, c and d) show shallow marshy close seaside to subtidal marine climate (Mathur et al., 2016; Shekhawat,2016).
1. FOSSIL RECORD OF GEHUN AREA: AN OVERVIEW

Assortments of fossil footprints are talked about beneath from Gehun Section of BHF alongside froze wood dependent on crafted by Mathur et al., 2016; Shekhawat, 2016; Mathur et al., 2018 and recognizable proof of numerous other ideal areas of fossils during our new field work:

1.1. Asthenopodichnium

Phenomenally protected, more modest to bigger Asthenopodichnium fossil footprints are found in full alleviation in wood signs in fine grained sand stones of Gehun segment of BHF (Plate-1c and 1d). These fossils are distinguished as Asthenopodichnium lignorum (Plate-1e) and Asthenopodichnium lithuanicum (Plate-1f) which are richly and consistently conveyed in ideal and learned structures corresponding to the sheet material planes. This circulation of Asthenopodichnium is like imbrications structure and their more extended pointed part shows south-south toward the west paleocurrent bearing (Plate-1d). Asthenopodichnium lignorum fossil footprints are freely to firmly stuffed, pocket like tunnels having tablet or almond–formed designs (Plate-1e) while Asthenopodichnium lithuanicum are naturally J-molded constructions (Plate-1f). Wood logs range in size from not many creeps to a meter size with 10cm to about 30cm thick shaping layers in the fine-grained sandstone (Plate-1d). A. lignorum fossil footprints are considered as taking care of and abiding tunnels delivered by wood-spoiled parasites while A. lithuanicum should take care of and abiding tunnels delivered by Mayfly fairies and hatchlings (Mathur et al., 2016; Mathur et al., 2018). At Gehun segment uncommon conservation of Asthenopodichnium fossils were conceivable because of improvement of iron hydroxide.
(Goethite) skins and projects around them. The goethite skins and projects were most likely framed by microbial rot of wood logs lowered in channels or bars of the waterway, when wood logs and other woody material passed on. Thusly, the vascular cambium and optional phloem go through rot measures. Simultaneously when mineral or particle loaded water interacted with passed on material and could respond to hasten goethite skins around the borings which are communicated as certain help in the skyline. Altogether, it is seventh detailing from the World in Barmer and first announcing from India demonstrating its global importance and uncommonness of protection.

1.2. Petrified Wood

All around safeguarded, scarcely any centimeters to few meter measured wood logs (Plate-1c) and froze wood (Plate-2a) happen in fine grained sandstones of all cycles in BHF. Frozen wood at Gehun area is most likely framed by tree and plants which totally changed to shake by the cycle of permineralization. Under this interaction, natural material has been supplanted with silicate minerals, principally quartz and Jasper which held the first design of the stem tissues. Not being impressions or compressions, frozen wood is essentially a three-dimensional portrayal of unique natural material. The petrification cycle begins when wood is covered under fluvial dregs which are at first goes through the climate with absence of oxygen. Thusly, mineral-loaded water begin coursing through the covering material in plantcells; as the plant's lignin and cellulose rot, a stonemould of silica structures in its place to shape froze wood (c.f. Campbell and Baxter, 1979). It has been discovered that frozen wood happening in fine grained sandstone in the lower cycle are halfway coalified, silicified and jasperified. This confers them an excellent and appealing shadings (Plate 2b). Wood logs with Asthenopodichnium and froze wood demonstrate the interaction of earthly fluvial climate. This addresses that as of now Barmer region which has dry semi bone-dry climatic conditions as of now, was a rich woodland during the Paleocene time and a major riverine framework was worked here.

1.3. Teredolites

Lovely conservation of Teredolitesin the Upper Member of Gehun area happen as bunches of squat to club-like carafe formed cylinders in wood ground sinmicritic limestone (Plate 2d and 2e). Teredolites are developed in an example which is vertical or slanted to the sheet material. These are exhausting bivalves having a place with the family Teredinidae (Kelly and Bromley, 1984). In micritic limestone of BHF, the pieces and fragmentary bivalve shells are bounteously scattered, showing high energy climate (Plate 2f). Teredolites are considered as abiding and taking care of follows created by wood–exhausting bivalves (Teredinids) likewise called Shipworms (Kelly and Bromley, 1984). Teredolites are markers of harsh to marine climate and regularly connected to the base level ascent in peripheral marine climate. Subsequently, Teredolites events demonstrate stretched out estuarine to offense conditions. The announcing of Teredolites has been produced using India from numerous paleontological locales. These include: Ukra Hill Formation, Bhuj Formation, Kaladungar Formation and Vastan lignite mine of Gujarat in Kachchh Basin (Desai and Saklani, 2012; Kumar et al., 2011); Bhuban Formation, Aizwal area, Mizoram (Mehrotra et al; 2001) Garudamangalam Formation, Tamil Nadu of Cauvery Basin (Tiwari et al., 2007). Seventh announcing is from BHF at Gehun in Barmer (Mathur et al., 2016) showing their significance and extraordinariness in India.
Plate 1 a. Spectacular landscape of rocks of Barmer Hill Formation (Foreground) and rocks of Malani Igneous Suite; b. Outcrop of fining upward sequence showing conglomerate at base to fine grained sandstone at the top; c. A wood log with large Asthenopodichnium preserved in fine grained sandstone; d. A large wood log in fine sandstone showing imbrications of tightly packed pouches of Asthenopodichnium; e. Tightly packed lozege and almond shaped Asthenopodichnium lignorum trace fossils; f. Tightly packed J-shaped Asthenopodichnium lithuanicum trace fossils

1.4. Gyroliths

All around saved left or right-gave wound and winding molded Gyroliths burrowtrace fossils are found in microsparitic limestone of Upper Member of Gehun segment (Plate 3a). No surface ornamentation shows up in the whorls of Gyroliths. Whole tunnel structures are going in size from 30cm to 50cm while breadth of the tunnel tubes change from 2-3.5cm. Gyroliths are taking care of and staying tunnels likely made by decapods, Shellfish (Hantzchel, 1975). Gyrolithsexhibit limited minimal marine climate (Bromley and Frey, 1974; Fillion and Pickerill, 1990). Teredolites and Gyroliths clearly demonstrate that huge fluvial arrangement of Barmer grades into marine climate through advancement of estuarine climate showing interesting old environment of the district development of estuarine environment indicating unique ancient ecosystem of the region.
Plate 2 a. Large log of non-coalified petrified wood preserved in fine grained sandstone;
b. Hand specimen of petrified wood showing partially coalified at top and jasperified at the base;
c. Students observing carbonate dominated Upper Member of Gehun section and its fossils; d & e. Bulb, club and flask shaped tubes of Teredolites preserved in micritic limestone; f. Pieces and fragments of Teridinae shells preserved in micritic limestone

1.1. Thalassinoids and Ophiomorpha

Thalassinoid and Ophiomorpha fossil footprints happen in same skyline of fine grained microsparitic limestone of Upper Member on top of Gehun part of BHF. Divided and spasmodic containers of Thalassinoids are installed in calcite to clayey network in which sheets are not all that reasonable. These fossil footprints show both expanded and unbranched cylinders (Plate-3b). Thalassinoid tunnel framework at Gehun is kept level to angled and at some point vertical to the sheet material plane. They are said to be a taking care of tunnel framework made under oxygenated water inward seaside shallow marine climate (Ekdale, 1992). Protection of Ophiomorpha normally happens as vertical or even and round and hollow passage framework in fine grained microsparitic limestone of Upper Member of BHF. Some of the time, it is extended and covered by prolonged or sporadic pellets masterminded opposite to their more drawn out hub. Some flat fragments of Ophiomorpha may need bumpy appearance because of differential enduring and disintegration which frequently results into void cylinders as seen on surface and in cross over area (Plate-3c and 3d). Ophiomorpha is considered as taking care of and staying tunnel of shellfish which regularly addresses sub-flowing climate (Uchman, 1995; 2007).
2. THREATS TO FOSSIL SITES IN BARMER AREA

Fossil locales of Gehun of Barmer are without a doubt containing special and uncommon fossils which are critical georesources of India. Uncommon fossil destinations of Barmer are under extraordinary dangers and ought to be secured for group of people yet to come to be dealt with as proposed beneath:

2.1. Awareness and Education

Barmer is the spot of immense geographical schooling as it is supplied with scene of internationally one of the biggest acidic, orogenic and earthbound volcanic region (Malani Igneous Suite), antacid suites and its mineralization of REE of Cretaceous age, colossal lignite and coal bed Methane events alongside one of the biggest oil and Bentonite stores of India (Bhushan, 1975; 2000; Maheshwari et al., 1996; Mathur et al., 2009; Compton, 2009, Dolson et al., 2015). Also, worldwide phosphogenic and mass annihilation occasions (rich collection of fossils of fishes, crocodile, dinosaur, turtle, fossil footprints and gastropods) and critical system components (attractive spherule, dust, ejecta material identified with KTB of volcanic and effect occasions in Fatehgarh Formation (Mathur et al., 2005a and b; 2006; 2019a and b) are different strengths alongside present fossiliferous site (Gehun) of Barmer territory. Being a geographically critical region, numerous geologists are intrigued to visit Barmer for study and exploration purposes. Be that as it may, overall population and vacationers don't know about geographical uniqueness of the area. To spread mindfulness; sign sheets, handouts, field manage, local escorts, articles in papers and online media ought to be arranged and made accessible by topographical clique at neighborhood and public level to fill the need of instruction and geotourism.
2.2. Rapid Urbanization and Developmental Activities

After 2004 with the oil revelation by CAIRN, India in Barmer Basin (Compton, 2009; Dolson et al., 2015), Barmer city has gone through quick urbanization and improvement. Also, the fossil destinations at Gehun are effectively available and are situated in a developing private province in the Barmer city. Along these lines, this site is seriously nearly complete weariness as outcrops will be lost and one day houses might be built using this land and topographically critical uncommon material for development. Consequently, these outcrops which are astoundingly uncovered ought to be minded by geologists, neighborhood individuals and organization to shield them from urbanization and formative exercises.

2.3. Excavation of fossils bearing rocks and fossil defacing

Fossil locales of Barmer are somewhat situated on government/public terrains and are not under save or ensured class. For example, the neighborhood individuals don't know about the significance of these stones and uncommon fossils, so the land is openly accessible for unlawful mining and to uncover fossil bearing rocks to be utilized for development purposes by nearby individuals (Plate-3d and-3e). Defacing of fossils by fossil trackers and antique criminals are another dangers to the locales as lovely and uncommon fossils are gathered and are brought for display in exhibition halls of establishments by geologists themselves. This training really upsets the insitu upsides of fossils. Assortment and defacing of uncommon fossils without consent and selling them for cost is an exploitative demonstration. Without rules and guideline against defacing of fossils in India, significant fossil destinations including Barmer are jeopardized for illicit unearthing and assortment of fossils.

OUTLINE OF CONSERVATION OF FOSSILS AND FOSSIL SITES:

J.N.V. College, Jodhpur and S.G.V. College, Jaipur are proposing a few activities to secure and save fossils and fossil locales of India remembering Gehun fossil site for the Barmer territory through their joint exploration cooperation. Moreover, these activities additionally intend to permit logical investigation prompting public instructive and sporting exercises for advantages to enable neighborhood local area for their monetary development through geotourism from these destinations. For this, we ought to know about the significance of paleontological material as the initial step and ought to debilitate to show them in exhibition halls since, it is considered as untrustworthy demonstration at global level. Maybe, one should be urged to moderate them insitu at their unique situation in the fossil destinations by building up a fossil park mostly for logical and geotourism purposes. In this unique circumstance, Lipps (2009), conceptualized that neighborhood fossil destinations having public just as global importance ought to be secured insitu as a paleontological fortune. It must be made fundamental through some administration rules, acts and enactment in light of the fact that these destinations give a comprehension of history of life on Earth to the present and future logical analysts. Shockingly, India doesn't have any standard and guideline till date against fossil defacing and preservations. In this unique circumstance, as of late on sixth Aug. 2019, Society of Earth Scientists, Lucknow and Indian National Science Academy, New Delhi have proposed a Geodiversity Act-2019 which is wanted to be submitted to the public authority of India. One of the co-creators (S.C. Mathur) was an individual from the board of trustees of the main Geoheritage Act of India. Furthermore, these huge georesources can be overseen by securing them proficiently by creating fossil parks as done in New Zealand (Heyward, 2009), Malaysia (Dony et al., 2014), Thailand (Kritwon-In and Singtuen, 2018) and in different nations. Numerous nations have advanced, ensured furthermore, monitored their critical paleontological locales in an assortment of approaches to perceive their paleontological legacy by passing enactment against fossil assortment and defacing.
Accordingly, under UNESCO’s World Heritage Program, 878 destinations with social and characteristic legacy esteems alongside 147 Geoparks in 41 nations have been perceived and created in these nations (globalgeoparks.org and GGN, 2006). Shockingly, notwithstanding of rich geoheritage, India doesn’t have a solitary geopark. A significant number of these perceived destinations are paleontological and fossil protection locales. Moreover, International Paleontological Association (IPA) set up Paleopark to ensure imperiled fossil locales by setting up fossil stops that save fossil destinations in ground for an essential wellspring of logical information, instructive freedoms, sporting and geo-touristic exercises.

There is no Indian paleontological site or fossil park included under IPA index regardless of the way that large numbers of Indian huge fossil destinations are imperiled and are nearly termination. Nonetheless, Geological Survey of India (GSI) had announced ten paleontological locales as National Geological Monuments (NGM; GSI 2001a&b), out of which Rajasthan has three NGM and Western Rajasthan has just one (Akal fossil park, Jaisalmer with froze wood of Jurassic age). In spite of this affirmation, no coordinated endeavors have been accomplished for their definite investigation, the executives and importance. However, these locales are ensured territories, notwithstanding, absence of appropriate security and defacement rehearses came about into the deficiency of fossils from numerous critical destinations. Lamentably, at Akal Fossil Park, frozen wood tests has been lost with the time and just couple of examples are left in the confine for the perception by guests. This is one of the extraordinary misfortunes of critical georesources of a Jurassic park in India. Considering the above realities, as of late found uncommon fossil destinations of Gehun in Barmer region can be a critical likely contender for setting up a public fossil park with Paleopark marking in western Rajasthan, India.

PROPOSED BARMER FOSSIL PARK AND FIELD MUSEUM

The proposed Barmer fossil park will be a huge spot where uncommon fossils and host rocks will be secured and moderated at their insitu openings. Also, the recreation center would be a superb open air field exhibition hall with various angles to customary indoor gallery where assortment of fossils could be made through the act of defacing. Thirdly, this fossil park will be an alluring site with unique scene; its different highlights and fossils which will give an expansive range and exhibit of the uncommon fossils in their unique spot. At last, the site will assume a significant part in moderating the fossils as well as would be accessible insitu for schooling to public, research for geoscientists to build up the worth of fossils to comprehend the historical backdrop of lifeand other topographical parts of Paleocene time of the district. Moreover, these locales are representing a landform of lush backwoods with enormous fluvial to marine arrangement of Paleocene time in this piece of India which is by and by a parched zone. Universally, there are a few instances of effective foundation of fossil park and Paleontological field historical centers by ensuring and preservation of fossil destinations (GGN, 2006; Santucci, 2017).

One can without much of a stretch comprehend this novel idea by following great models: Petrified wood park and Dinosaur edge in USA (Santucci, 2017), Wadi Al-Hatim fossil park (Whale Valley) in Sahara Desert, Egypt (UNEP-WCMC, 2011), Paleontological National fossil parks in China (Yang et al., 2011), PhuKumKhao Dinosaur Paleontological Site, Thailand (Boonchai et al., 2009) and Paleontological Site of Airing, Malaysia (Nazaruddinand Othman, 2014). All these fossil parks showed and moderated their remarkable and uncommon fossils by building up fossil park, paleopark and Geopark. Comparative endeavors ought to be made for assurance and protection of paleontological destinations remembering Barmer fossil locales for India. For example, the proposed Barmer fossil park is relied upon to give an extraordinary and intriguing perspective on awesome scene and life history of 65 to 55 million years of age Paleocene period. The site will draw in a wide consideration of scientistss, geologists and specialists for logical examinations relating to scientific categorization, taphonomy, paleoecology, paleoclimatology, paleobiogeography of fossils and depositional climate of sedimentary rocks. Average citizens and guests will learn and appreciate the uniqueness of
particularly wonderful fossils and their safeguarding cycle in rocks. Instructive visits for understudies and guided visits for vacationers will be an extra advantage of Barmerfossil park alongside promising circumstances for outdoors, talk and climbing exercises and so forth. Looking to the colossal advantages, Barmer fossil locales desperately required assurance and protection through a public fossil park. This should be possible by including every connected office (scholastic establishments, research focuses, state and focal gov't. associations) and people (scientistss, geologists/geoscientists, academicians). For this undertaking, neighborhood organization, nearby the travel industry association and vacationer ventures (travel planner, transporters and so forth) who are answerable for the travel industry advancement. In view of the current information and through this paper, proposed Fossil Park should have a sufficient and worthy space (limit) which ought to be overseen by government might be on PPD mode. Every fossil and interesting host rock destinations proposed will be portrayed momentarily, as sign sheets, flyers, handouts, little booklets in unmistakable language (in English and nearby language) to give information to a scope of guests for example understudies, vacationers, educationists, researchers and so forth. Since, proposed Barmer Fossil Park is arranged inside the Barmer city so a few offices (guest focus, bistro and café and so forth) and foundation (street and park) ought to likewise be planned and worked for the solace of guests wherein the proprietor may charge cash (ticket) from guests. Subsequent to making such offices with complete topographical data, the site can qualify for a Paleopark for which a Dozier to be arranged and submitted to IPA in coming future.

Conversations

Proposed Barmer Fossil Park addresses just the site containing one of a kind and uncommon conservation of Paleocene wood exhausting Asthenopodicichnium fossil footprints in India. Likewise, it is just seventh such site of the world (Mathur et al., 2018). This revelation of fossils by our gathering propelled us to secure and save them urgently, as it is seriously undermined by anthropological and defacement exercises going on there. This site likewise includes awesome outcrops of Paleocene sedimentary rocks and stupendous scene of rocks of MIS of worldwide importance. Also, this little outcrop (two sq. km. region) addresses old style fluvial to marine sedimentary arrangements and a novel biological system and paleolife of these conditions. It is all things considered a rich agent site and can be demonstrated as significant paleontological georesources of Barmer. Notwithstanding of being a critical paleontological asset, it is jeopardized because of the dangers of human sciences (improvement and quick development of urbanization) and defacement exercises. Geoscientists and neighborhood organization should think innovatively to accomplish appropriate assurance of this site in type of proposed Barmer Fossil Park by saving its stones and remarkable fossils.

The foundation of field exhibition hall in type of Barmer Fossil Park will build mindfulness in regards to significance of fossils among individuals, increment government and public intrigue and furthermore extend geotourism for financial advantage of the space. This paper is absolutely advancing the information of these exceptional fossils in geoscientific and geotourism angles to cause individuals to comprehend the land cycles and care for fossils through the protection of geoheritage and paleolifewhich was essentially grown soon after the K/T limit elimination in this piece of India (Mathuretal, 2006; 2019).

Besides, BHF unmistakably show non-coalification of wood material having rich gathering of wood exhausting fossil footprints while overlying Akal Member of Dharvi Dungar Arrangement saw by the presence of immense stores of lignite (Coalified wood) in the close by scenes demonstrating geodiversity among rocks of the Barmer. These parts of BHF give extra global importance to proposed Barmer Fossil Park.
CONCLUSION

Geographical highlights including safeguarding of fossils which required huge number of years to shape ought to be saved in situ. Fossils contain a scope of qualities that require unique consideration and insurance. Gehun part of Barmer is an incredible illustration of protection of extraordinary and uncommon fossils. Tragically, fossil bearing outcrops of Gehun segment of Barmer have been harmed because of huge exercises of development and improvement works with unlawful quarrying. Site is likewise jeopardized because of fossil chasing, defacing and antique robbery rehearses. To ensure this fossil site in type of National Fossil Park won't just assistance in rationing the fossil destinations of logical and instructive qualities yet additionally will advance geotourism in the chronicled and social Barmer city. For this reason, appropriate foundation ought to be created concerning assurance of regular legacy by including neighborhood networks, geoscientists and government specialists.

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