

## Fate of Indian Geoheritage and Geopark Bill

‘Geoheritage’ is a generic but descriptive term applied to sites or areas of geologic features with significant scientific, educational, cultural and aesthetic value that provides a unique insight into geological processes giving rise to and affecting the geological formations. They educate us about the preservation and evolution of the Earth. The inherent geological characteristics may also have cultural and/or heritage significance. Geoheritage, in brief, is the legacy of the geological past preserved in rocks, soils and landforms. The concept of heritage is a cultural construction, a value attributed to natural sites or areas and to their historical use. Geoheritage preservation should be at par with the protection provided for biological diversity and cultural sites. It is obvious that all geoscientists would be convinced that geology is an interesting discipline, but it is necessary to make geological features on the Earth attractive to the general public who are mostly ignorant about the significance of the Earth’s features. It is necessary to make them understandable to ordinary people who are not accustomed to the geological scale of time and dimension.

The concept of geoparks was developed in the year 2000 in Europe. In 2004, UNESCO defined geoparks as unified geographical areas where certain sites and landscapes of international geological significance are managed with a holistic concept of protection, education and sustainable development. In other words, geoparks are sites created to protect the geological heritage with the involvement of local people, to make them an ideal ecotourism destination, which conserves the geological heritage and also benefits the community in the region. Therefore, it is an important approach for achieving sustainable development. In November 2015, UNESCO (<http://www.globalgeopark.org/News/News/9979.htm>) accorded its support to the concept and ratified the creation of ‘UNESCO Global Geoparks Network’ as its official partner (Earth Science for Society. UNESCO; retrieved on 7 January 2020). The objective was to create awareness about the marvels of nature and help connect people to the beautiful aspects of planet Earth. In 2015, the International Union for Conservation of Nature (IUCN) adopted a resolution that affirmed geodiversity as an integral part of natural diversity and natural heritage, therefore, striving to treat geodiversity and geoconservation as inseparable from biodiversity and nature conservation. At present, there are 169 UNESCO Global

geoparks in 44 countries, of which China alone has 41 geoparks. By contrast, India has none.

As an integral part of geoheritage conservation, geotourism sustains and enhances the distinctive geographical character of a place – its environment, heritage, aesthetics, culture and the well-being of the locals. Geoparks not only promote tourism, but they also add to the financial resources of the state where they are located. Development of these sites provides livelihood to the people in the region in the form of hotels, transport, souvenir, curio shops, etc. Besides, geoheritage sites in the geoparks are of enormous educative value for the students, including researchers.

In geotourism we pay attention to the geological values of the area, involving scientific interest of the site as the main subject of attraction for geologists and tourists. We also draw attention of the administration, at local or national level, which should set an adequate legal framework, in close agreement with geologists, to define, promote, arrange, restore and support the maintenance costs of the protected sites.

In July 2019, the Indian National Trust for Art and Cultural Heritage (INTACH) campaigned along with the Andhra Pradesh Department of Tourism, Department of Archaeology and Museums and Visakhapatnam Metropolitan Region Development Authority for creating public awareness on geoheritage spots, and proposed the development of several geoparks in that region. INTACH has documented and illustrated many geologically significant sites which require immediate attention of the conservation authorities. This is in addition to the big list prepared and published by the Geological Survey of India (GSI) documenting 32 sites from all over the country (Wadhawan, S. K., *Indian J. Geosci.*, 2020, **74**(3), 354–362). The list has increased to 40, as documented in the Status paper prepared for the 36th International Geological Congress 2020 (now postponed). GSI also identified 26 geological sites as National Geological Monuments (NGMs). As the national custodian, it is the bounden duty of GSI to delineate and maintain the geoheritage sites in India either on its own or in collaboration with the State Government authorities who have been convinced on its intrinsic worth and geotourism potential. Although GSI is the national custodian for this purpose, in the absence of any laws for their protection, the agency finds itself helpless when these geologically significant sites are being vandalized by the locals or by the official contractors

undertaking developmental works in the region. Most of these sites are located in Rajasthan, Odisha, Karnataka, Andhra Pradesh, Telangana, Tamil Nadu, Maharashtra, Madhya Pradesh, Jharkhand and Uttar Pradesh. One of the first geological objects preserved in India dates back to 1951, when fossilized wood in Perambur district, Tamil Nadu was declared as a NGM. Spectacular remnants of Indian dinosaurs represented by fossilized eggs, egg-clutches, skeletal remains and faecal pellets (dated 230 Ma) are found preserved in the Adilabad district of the Pranhita–Godavari Valley in Telangana. Those found in the Kota Formation are 190 Ma old while the collections from Jabalpur, Bagh and Khera districts of Gujarat are dated 65 Ma. Fossil bones of the world-famous carnivore *Tyrannosaurus rex* bearing the name *Rajasaurus narmadensis* belong to Narmada region of central India. The Indian subcontinent bestowed with rich geological heritage sites should have been in the forefront of displaying its heritage geological wealth to the entire world, by creating geological monuments and geological parks (Ahluwalia, A. D., *Curr. Sci.*, 2006, **91**(10), 1307). Unfortunately, beyond declaration as geological monuments, little has been done to protect these marvels of nature. Most of the sites are lying unguarded and desolate, and will be lost to the world during the course of ‘development’ programmes or due to vandalism. Geoheritage has been a neglected feature in the conservation landscape of India.

In order to preserve the cultural buildings and biological diversity, there exist the Preservation of Archeological and Historical Structures Law 1958 and the Biodiversity Law 2002. However, there is no such law for the preservation of geological structures, which also constitute natural heritage of the nation. This in spite of the existence of a large organization like the GSI, research institutions participating in geological studies and universities teaching geology for more than a century.

Any proposal to conserve the geologically significant features as geoparks and geosites is dismissed as purely academic. It is not easy to make people realize the close links between their lives and the rocks, fossils and resources around them. Such realization would come only when we start educating our children in the primary classes and make the villagers living in the geologically interesting regions aware of the importance of such features. So far, all efforts to bring a Geoheritage Preservation Law have failed. In 2007, two enthusiastic geoscientists met the then President of India and impressed upon him the sorry state of geoheritage preservation. At the initiative of the President, the Secretary of Ministry of Earth Sciences (MoES), Government of India (GoI) was asked to initiate scientific discussions on this matter. On 26 February 2009, GoI presented the National Heritage Site Commission Bill. The Draft Bill was sent to the Ministries of Tourism, Transport, and Culture, GoI. With no further development, on 14 March 2016, the Press Information Bureau (PIB) put on record that the Bill of 2009 was again sent to a high-level committee, which after consulting the Archeological Survey of India,

National Memorial Authority, Urban Development Board and Ministry of Environment, Forest, and Climate Change, GoI, decided to drop and finally withdrew the same on 31 July 2015. It is necessary to point out that the matter was not even referred to any of the Ministries dealing with earth sciences, which are the natural custodians of the geological heritage sites.

The Indian Society of Earth Scientists, Lucknow, joined hands with the International Union of Geological Sciences (IUGS) National Committee under the aegis of the Indian National Science Academy (INSA) and organized a brainstorming session at the premises of the Academy in New Delhi on 6 and 7 August 2019 (Tripathi, S., *Down to Earth* (Hindi), 2020, 42–46). A team of knowledgeable and active geoscientists drafted an elaborate document entitled ‘Conservation of Geoheritage Sites and Development of Geoparks Act-2020’ with the following chapters: Conservation, Maintenance and access to geoheritage sites, National Geoheritage Authority, Annual plan, Budget, Accounts and audit of the Authority, State Geoheritage Boards, and Penalty and offences. This comprehensive document was sent to the Offices of the Prime Minister, the Principal Scientific Advisor (PSA) to the Government and several Ministries.

The Minister of Science and Technology responded and suggested that the Secretary, MoES, GoI, may convene meetings related to geoheritage protection. The Ministry of Mines (MoM), GoI, representative at the meeting, however, claimed that the subject matter falls in the domain of MoM. On 1 April 2020, the Secretary, MoM constituted an internal task group. The committee members met virtually, modified a few clauses in the original draft Bill which had been prepared at the INSA meeting and named it as the Geoheritage Conservation and Geoparks Development Bill 2020 (Tripathi, S., *Down to Earth*, 2020, **29**(12), 48–51). The task force that carried out the revision was strictly internal. No progress in finalizing the Bill has been made since then.

The wait is getting longer and geoheritage sites are being vandalized unabated in many parts of the country in the name of development. The ambitious plan to establish a world-class fossil repository/museum under the Chairmanship of the PSA has also not seen any progress for more than a year. It had been suggested by the IUGS National Committee which met at INSA, that the preservation and maintenance of geoheritage sites should be made part and parcel of the museum-related exercise. It is not known whether this suggestion has been incorporated in the proposed unfinished Detailed Project Report of the Museum Project. These issues require attention in the interest of protection and preservation of geological features, including the landforms and promoting geosciences education in the country.

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