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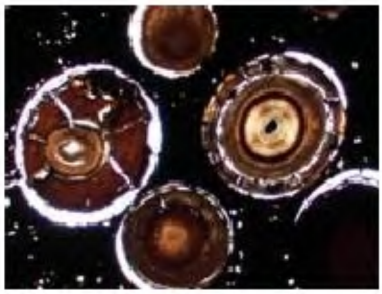
Significance of ooidal ironstone at Kakara–Subathu transition, NW Himalaya

The evolution of the Himalayan Foreland Basin consisting of marine to continental sediments is a manifestation of collision of the Indian plate with Eurasia, and its sediments are the excellent proxy records of the collisional history. The late Palaeocene–middle Eocene Kakara–Subathu Formation, an early phase of foreland sedimentation occurs in the foothills of NW Himalaya. In Dogadda area of Uttarakhand, a prominent unit of berthierine-rich ooidal ironstone is found at the Kakara–Subathu transition. Ooidal ironstones are indicators of specific palaeogeographical conditions of sedimentation and marine transgression. Siva Siddaiah investigates (**page 123**) the geology, mineralogy and textures of ooidal ironstone at Dogadda, and traces its depositional environment and highlights its tectonic significance.



Ooidal ironstone at Dogadda predominantly consists of berthierine/chamosite as spherical ooids and as matrix. Occurrence of berthierine/chamosite ooid reflects periods of low net sediment accumulation and shallow-water conditions in response to transgression events. The observations strongly suggest that ironstone genesis took place at the Palaeocene–Eocene transition during the early stage of marine transgression, when clastic shelves were sediment starved. Berthierine-rich ooidal ironstone at the base of the Subathu Formation in Dogadda indicates existence of stratigraphic gap between Kakara and Subathu formations.

An ancient Indian metallurgical marvel: Delhi iron pillar

The iron pillar located in the courtyard of the Quwwat-ul-Islam mosque near the Qutub Minar, New Delhi stands testimony to the high level of skill achieved by ancient Indians in the ferrous metallurgy. The iron pillar was originally erected around AD 402, in front of a Vishnu temple complex to serve as a *Standard of Vishnu* at Udayagiri (situated close to Sanchi near Bhopal, Central India) by Chandragupta II Vikramaditya

(AD 375–413). Udayagiri was known as Vishnupadagiri during the Gupta period. The iron pillar was located in such a position that the early morning shadow from the pillar fell in the direction of the foot of Vishnu's image in one of the important temples at Udayagiri (i.e. Vishnupadagiri) in the time period around summer solstice. The pillar was shifted by Iltumish (AD 1210–1236) from Udayagiri to its present location in the Qutub Complex, sometime around AD 1233.

The Delhi iron pillar has attracted the attention of archeologists, corrosion scientists and engineers because it has withstood atmospheric corrosion for more than 1600 years. Kulkarni and Deshpande (**page 120**) use computer modelling to estimate the precise weight of the pillar. The approach is novel in that the precise dimensions of the pillar have been utilized and therefore, this is the first study to simulate the Delhi iron pillar on the computer. It is hoped that the computer modelling studies will be extended further to understand the forging conditions of the pillar.

Cost-effective construction technologies to mitigate climate change

Global warming and climate change is the most discussed and debated topic now. It has gained so much significance that the Intergovernmental Panel on Climate Change (IPCC) has been awarded Nobel Peace Prize for 2007 for their outstanding contribution in highlighting the issue.

Among other sectors of mitigating climate change, the building sector, which has large contribution in terms of use of energy, is also under scanner of the environmentalists. Lot of discussions are being carried out on green buildings, increasing energy efficiency in buildings, improved insulation to minimize cooling/heating loads, using eco-friendly building materials, etc. But the factor of embodied energy, which corresponds to the energy used during production and transportation of building materials, has not yet been looked into seriously.

Cost-effective construction technology using the existing, widely used building materials but reducing their uses through improved technological methods would be an ideal choice for common men as they will get additional benefit of reduction of cost. The impediment of using these technologies lies on lack of awareness and non-acceptance by a wide range of policy makers.

Sengupta (**page 38**) discusses some of the most-used and aesthetically beautiful methods along with their contribution towards mitigation of global warming for sensitization of both common people and the intellectuals.