

## Die Geschichte der Geowissenschaften in Indien von der Antike bis zur Gegenwart

### History of Geosciences in India as Gleaned from Ancient to Modern Works

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Abstract:

Ancient literature of India contains many references to fundamental concepts and facts of Geology, Mineralogy and Metallurgy. The *Mohenjo-daro excavations*, dated 2750 B.C. - 3250 B.C. revealed many articles like jewellery made of gold, silver, copper and bronze, statues, pottery, glazed and inscribed seals which indicate the high level of the Indus Valley Civilization and Culture. KAUTILYA devoted one full chapter in his "*Arthasastra*" to mining and its importance to a king's wealth and strength (300 B.C.).

Old Sanskrit text like "*Sukraniti*" and "*Susruta Samhita*" mention use of diamonds. PLINIUS referred to gemstones produced in India.

VARAHAMIHIRA, considered as the *first Indian earth scientist*, deals with mineral exploration, ground-

water, meteorology, and earthquakes in his magnum opus "*Brihat Samhita*" (6<sup>th</sup> century A.D.). MARCO POLO (13<sup>th</sup> century) described how diamonds used to be mined during the reign of lady ruler, Rani Rudramamba at Warangal. The Iron pillar at Dehli is a quiet and unique example of the mining and metallurgical skills of the workers during that Period. Nagajuna (400 B.C.?) revealed advanced knowledge of chemical compounds in his "*Lohasastra*" (Metallurgy). The real tempo of scientific activity started with the formation of the Asiatic Society of Bengal in 1784. Geological research was taken care of by one of the two special committees formed in 1808 "*The realistic Researches*" (1788), "*Transactions*" (1799), and "*Journal*" (1832) used to publish the results of geological research, the first contribution in that line standing to the credit of Leut. R.H. COOLBROKE in 1795. The British East India Company initiated geological work to locate coal deposits and the first geological map in the country was published in 1814 by HEYNE. VOSEY (gratefully considered as the father of modern Indian geology), Capt. DANGERFIELD, Capt. HERBERT and some others made significant contributions prior to 1851, the year that saw the establishment of the Geological Survey of India. During the stewardship of Thomas OLDHAM, the first issue of the Memoir of GSI (1856), the *Palaeontologica Indica* (1861) and the *Records* (1868) were published, while the first official geological map of the country was brought out in 1877. A number of Societies were also started, the first being the Mining and Geological Institute of India in 1905, renamed as Geological, Mining and Metallurgical Institute of India. All these societies have their own publications. Geological and related studies were introduced in India in the last quarter of the nineteenth century when the universities were established in Bombay, Calcutta and Madras. Thomas HOLLAND headed the separate faculty in Geology in 1892 in the Presidency College, Calcutta. There is hardly any University in India that does not have the Geology faculty, and every of them has a geology library. The GSI library is the biggest. Pioneering works by Francis BUCHANAN (1807), CALDER & HERBERT (1821), HODGSON & WILLFORD (1832) and ATKINSON (1882) are valuable treasures in our Departmental library constituting valuable heritage.

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