

COUNTRY'S FIRST COAL MUSEUM

The country's first Earth Science and Coal Museum is likely to be thrown open to public at Ranchi by August.

Being established at the Central Mine Planning and Design Institute (CMPDI), the museum would cover an area of over 1200 sq m. and will have three sections. Work on the museum had begun in November and half of the work has already been completed.

The first section will have exhibits on the origin of the universe and the earth, solar system, evolution of man, and physical features of the earth, fossils, rocks and minerals, different sources of energy and other related areas. These subjects will be depicted in the form of paintings, slides and models.

Coal Gallery would be the second section at the museum. The gallery, first of its kind to be planned in any science museum in the country, will show origin of coal, its exploration and processing techniques. Working models of underground and opencast mines, coal-handling plant and coal washery would be added attractions at the gallery.

There will be a real-size model of an underground mine in the third section of the museum, which will show various techniques being adopted in coal mining. A mineral park will be developed above this underground mine model.

While the first two sections of the museum would be ready by August and would be thrown open to public, the third section would be ready next year, according to the CMPDI. The cost of the first two sections has been estimated to be Rs. 40 lakhs.

The museum is being constructed under the supervision of the famous architect Mr. Ranen Ayen Dutt, with expert help from geoscientists, mining engineers and architects of the CMPDI. Rare rock and mineral samples from all over the country and also from the icy continent of Antarctica are being collected for display in the museum. A host of agencies including the Geological Survey of India, various Universities and State Governments are involved in the task.

The museum will also have facilities for audio-visual shows and screening of films on earth sciences.

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ONGC'S SAGAR SAMRAT

Sagar Samrat is the first offshore rig with which ONGC started its offshore operations in June 1973. ONGC discovered hydrocarbons at the very first well drilled with this rig in February 1974 in a limestone reservoir at Bombay High.

Sagar Samrat built by Mitsubishi Heavy Industries, Hiroshima, Japan, has drilled 80 wells so far and is expected to drill 100th well in 1996. So far it has drilled 1,61,954 mtrs.

Sagar Samrat has drilled the deepest well drilled by any jackup-rig in the Bombay offshore of about 3400 mtrs. It has a capacity to drill in a water depth of 250 mtrs.

The rig has so far been deployed for drilling only exploratory wells, which are relatively difficult to drill as the reservoir conditions are unknown.

Sagar Samrat is the only surviving rig in the World amongst the 3 mercury class vessels built in Japan. The credit for this continuous service for the last 18 years goes to the ONGC's maintenance crew for keeping the equipment in operational condition.

Sagar Samrat symbolises the growth and development of India's offshore industry and as a tribute to its service, its replica is reproduced on one rupee note by the Reserve Bank of India and is shown on TV everyday before the commencement of National Programme along with landmarks of India.

With the introduction of *Sagar Samrat*, the rig count of ONGC has increased rapidly. Today 28 rigs are operating in the western offshore, out of which ten are owned by ONGC and rest on charter hire.

In the last four years, rig manufacturing has been indigenised and *Sagar Bhushan* one of the ONGC drillship has been built by Hindusthan Shipyard, Vishakhapatnam, *Sagar Vijay* and *Sagar Kiran* are built by Mazagaon Docks Limited.

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GYPSUM IN MILL TAILING DUMPS, KOLAR GOLD FIELDS

Up to 1935 gold at Kolar Gold Field was recovered by amalgamation process with recovery of only 80% of the gold. From 1935 onwards cyanidation process was introduced. In this process, lime (CaO) was added to provide alkalinity for the dissolution of gold in sodium cyanide and also to protect the cyanide from getting oxidised. In the northern part of the Kolar Gold Fields (Old Nine Reef Mine Block) near Henty's shaft, on the Oriental lode, a small mill tailing dump exhibits well developed tiny gypsum crystals after the onset and cessation of rains. Such gypsum crystals are not seen on other dumps. The origin of gypsum can be attributed to the chemical reaction of calcium, sulphur and water vapour by capillary action. Perhaps the addition of excess lime in the early period when cyanidation process was introduced is responsible for the presence of residuary lime in the dump at the Henty's shaft. The source for sulphur can be attributed to the disintegration and decomposition of sulphide minerals such as pyrite and arsenopyrite present in the ores. The absence of gypsum on other tailing dumps may be due to the absence of residuary lime in the tailing dumps.

J. V. SUBBARAMAN