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India—Heavy Water at Bhakar Dam Title 122

It was of course the ambition of Homi Bhabha to show us all of his scientific kingdom. Such intentions are common when planning visits, and not only for foreign correspondents, and invariably carefully planned schedules are delayed. In fact I have often quoted my dictum: "Any press visit that is on time is a failure". Such was the case after we returned to Trivandrum to catch a plane to Madras and Calcutta. I cannot now remember what was the cause of the delay, but we spent the entire day, a Sunday, at the airport drinking countless Nimbu pani, the delicious drink of fresh lemon juice.

Finally in Calcutta, we went to the Saha Institute of Nuclear Physics, where Dr B.D. Nagchaudhuri, the Director, and his staff gave us a number of talks about the history (it was founded in 1951), the present and the future of the Institute. It was financed by the Indian Atomic Energy Department. As usual, plans for future large accelerators depended on finance, and it was claimed that the know-how of construction and all materials were available in India.

From Calcutta we flew to New Delhi, where we were taken to the National Physical Laboratory, called the N.P.L., as in England. Its function is also the same, the supervision of the National standards of weights and measures, and it was just another historical reminder of the Raj. The only noteworthy Indian aspects were an early change to the metric system, the development of small solar heaters for cooking, and experiments to produce artificial rain by the spreading of sodium chloride (salt) crystals from aircraft. [See also Title 129] I did not file any reports to London, neither about the Saha Institute nor about the N.P.L.

Onwards by night train to Chandigarh in the Punjab where we saw very briefly the beautifully modern, official buildings created by the famous French architect Le Corbusier. The day became hectic and incredibly hot as in our small Indian taxis we were driven north, about 100 km over dusty country roads, to the Bhakra Nangal Dam in the Himachal Pradesh area. The dam, claimed to be the largest of its kind in the world, produces water for irrigation and hydro-electricity for the production of heavy water.

Heavy water, deuterium oxide, (as ordinary water may be called hydrogen oxide) will be essential for India's future atomic reactors, Homi Bhabha explained. The amounts produced in 1965, when we were there, were already impressive, 14.1 tons per year. In comparison, 6 tons per year were made in Germany, 1.0 t in France and 3.8 t in the Soviet Union. At the time the surplus was large enough to send 13 tons of heavy water as a loan to Belgium. Two new reactors, then being built in India, were of the heavy water moderated natural uranium type, and they will require hundreds of tons of this.

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