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India—Trombay's Atomic Science Title 117

If one sails into Bombay Harbour from the Indian Ocean, one sees on the starboard side a white dome-shaped structure, a very tall chimney and other white buildings, all situated in a large garden with many tropical multi-coloured flowers. This would have been the sight to greet our group on the first morning in India, had we come by sea, but we arrived by car at Trombay, India's Atomic Energy Authority's Research Establishment. Not only its science and technology had been carefully planned by Homi Bhabha, the Director General of the Authority, but also its architectural and horticultural appeal. The most beautiful laboratory I have ever seen. After the death of Homi Bhabha, it was re-named after him, the Homi Bhabha Research Centre.

The most impressive sight inside was the plutonium production plant. Because of its high chemical and radiation risk, plutonium can only be extracted from spent atomic reactor fuel rods and must be handled by remote tele-control. Complicated chemical processes are needed for extraction and purification of plutonium, and all this must be done from a distance, a difficult and highly secret procedure which in the West and in America had never been shown to the press.

What I saw in Trombay was a large room full of pipes, valves, pumps, and containers in intricate complexity, yet forming a unified whole. Everything was made from stainless steel. No human being was visible through the glass windows, and yet inside these confusing pipes, chemical processes were going on, controlled by living beings far away. Had I been asked to imagine a plutonium production unit, I could not have sketched anything very different from what I then saw in front of me. But such was the impact that I could only marvel at the ingenuity of the Indian scientists and engineers who had designed and constructed this high-technology example of chemical engineering without—as I was told—any European or American engineering help.

I knew that some theoretical information about plutonium extraction existed in the literature, but to see it in three-dimensional reality was most impressive for me. As a chemist I had of course visited ordinary chemical laboratories and factories for many years, but this was an achievement that made me proud to be a chemist. I could not understand why similar visits had never been organised in Europe or America.

Secrecy is all very well—if it is necessary for industrial or for national security—for the design, drawings and working parameters of any chemical process, but a casual half-hour visit to Trombay's plutonium plant could not possibly have allowed any outsider, however omniscient in chemical technologies, to copy any vital data.

I wrote about it and had several articles published.

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