

A few hours flight south of Bombay brought our group of five English science correspondents to Cochin on the south-west coast of India. It is a small town famous for its nearby deposits of black beach sands, rich in the chemical elements known as Rare Earths. These seventeen elements are found as oxides of metals of which cerium is the most common, used for lighter-flints. They occur in nature as complex mixtures, one of which is monazite, relatively abundant in the black sands about 160 km south of Cochin. Furthermore, monazite contains the radioactive element thorium, which may well play an important role in future atomic technology.

Apart from rare earths and thorium, monazite contains ilmenite as well, a mineral rich in titanium, so India is fortunate to have these important raw materials lying on its shores as black beach sands. Although only present in small quantities, at the time of our visit 3000 tons of monazite produced no more than about 1 ton of rare earths compounds and about 550 tons of thorium hydroxide each year. All rare earths compounds were exported to Europe and Japan, at the time earning 68 lakh (6 800 000) rupees.

I found these statistics and the details of the chemical purification processes interesting but was quite certain that the Editor would not share my devotion to chemical facts. I refrained therefore from writing and telegraphing about them. Only in recent years have the rare earths found a new and important use as alloys in ceramic electricity conductors which, at very low temperatures, offer minimal resistance to the flow of the current.

What we saw and heard the next day, on 12 June 1965 when we reached Trivandrum, was more newsworthy. There India was building a space technology centre, only 80 km north of Cape Comorin, the southernmost tip of the Indian Continent and lying almost exactly on the magnetic equator. Homi Bhabha, who accompanied us on the whole of our journey throughout India, explained the significance of this fact for precise measurements of the Earth's magnetic field. At the magnetic equator the field's position is vertical and in the last two years, he said, 24 scientific rockets had been launched, a contribution by India to pure scientific research.

We were in the State of Kerala, distinguished by the highest rate of literacy in all India and by its great tropical beauty. We spent the night in an old rest house of the British Raj. Gracious, luxurious and through its architectural design cool and spacious, it could not have been more welcome in the tropics. It was surrounded by high palm trees, and so near to the Indian Ocean that the sound of the gently breaking waves lulled us to sleep. We all wished to spend a few days there to rest, all the more so, had we but known what was to come!