

come around to accept the possibility that the earth was a liquid mass on formation and the rest can be accepted in time.

I am approaching the earth scientists to ponder on important issues, namely:

(a) Why should the dynamo theory³ not be totally given up for earth's magnetism, when the actual field of the earth is inclined to the axis of rotation and similar deviation exists for the other planets that have a magnetic field. The magnetic field can be explained by the expected paramagnetism of the bulk of the iron core and some ferromagnetism of its projections into the cooler outer core, and the inducing field is reversible, provided by

the minority helium atoms in the innermost core.

(b) Where is the helium coming from when after a long residence time in the earth's atmosphere, it seems to be easing out into space at the rate of about 1 atom/sq. cm of the outer surface of the earth's atmosphere. The source of the helium is the ternary fission during the giant-sized atomic explosions in the innermost core.

(c) What is the explanation of planetary tilts when one might expect the rotating planets to be upright when revolving in their orbits. These tilts, and occurrence of the planetary satellites point to the atomic explosions inside the planets.

To me the discovery of an iron slab below the equatorial plane of the moon will be no surprise.

1. Nanda, J. N., *Proc. Indian Natl. Sci. Acad.*, 1989, **55**, 101.
2. Nanda, J. N., *Proc. Indian Natl. Sci. Acad.*, 1989, **55**, 630.
3. Gubbins, D. and Masters, T. G., *Adv. Geophys.*, 1979, **21**, 1; Braginsky, S. I., *Geophys. Astrophys. Fluid Dyn.*, 1980, **14**, 189–208.

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Pyramidal hierarchy in the scientific community

None are more hopelessly enslaved than those who falsely believe they are free.

– Goethe

I read with interest a letter by Sharma¹ attempting to formulate a recipe for a made-in-India Nobel Prize. The issue of Nobel drought in India has been an enduring theme in the correspondence pages of *Current Science* for some years. While Sharma has indeed highlighted many determinants in this context, an often unnoticed phenomenon, and perhaps the most overpowering concern has not been mentioned with the requisite emphasis.

The greatest impediment to progress pertains to the pyramidal hierarchy that governs science in India. This important attribute that stifles Indian science has rarely been addressed by those in the seat of power. Worse, the superiors take hierarchy for granted, while it is not even noticed by the subordinates!

A national newspaper carried an interesting news item about the Nobel Laureate, Peter Doherty's recent visit to India. Quoted below are a few lines of particular relevance to the Indian scientist community.

In an effort to bridge the senior-junior gap in the research institutes, Nobel Laureate Peter C. Doherty on Sunday called India to shun the 'pyramid culture' to bring out the best in the budding scientists.... Talk-

ing to the reporters, he said by 'pyramid culture' he meant the hierarchy in the scientific community. In the absence of such discrimination, students are in a better position to question their seniors with relevant data, he said.

The Times of India
[Mangalore] 19 March 2007

What could have prompted Doherty to come to this conclusion? Surely, India has not been Doherty's major subject of research. And yet he hit the nail on the head! How? Considering that his statement was prompted from nothing more than a casual interaction with India, it must certainly have been the most glaring fault that attracts a visitor's attention.

It is this ill-conceived reverence for the big man that seems most incongruous in the scientific community. When we cannot ask questions about the day-to-day concerns of our lives, how can we be trusted to ask subtler and more profound questions that govern nature?

Even a casual glance at the statistical data on world science will show that democracies, though not necessarily all 'democratic' governments, perform best in science. Democracy is more than just elections that sweep the nation off its feet every now and then.

Almost all path-breaking science has originated in the Western democracies. The most robust contributor is USA, the first nation to embrace democracy in its

most modern form. Notwithstanding the early years of slave trade, the US community has indeed shown that science can flower most admirably in an atmosphere of equal opportunity and affirmative action. Proof of the pudding lies in the eating!

The hierarchy in Indian science is only a corollary to the natural barriers that divide society. And consequently, such impediments are also the most difficult to eradicate. Even from a tender age, students in India are taught to obey and follow rather than either lead or challenge a notion cherished by a senior. This is the foremost hazard that plagues the rational intellect of an Indian. The 'boss is always right' syndrome has ruined the thinking mind.

Scientists in India opt to metamorphose into science administrators because of the feudal hierarchy that rules us. The seat of power is a great temptation because little else gains visibility in the socio-political definition of a successful Indian scientist.

1. Sharma, O. P., *Curr. Sci.*, 2007, **92**, 269.

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