

# CURRENT SCIENCE

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## CORRESPONDENCE

### Want more, not less

I was shocked to read M. S. Hegde's complaint (*Curr. Sci.*, 1995 68, 486-487) that too many pages were being devoted to history of science and related topics. I am also a regular peruser of *Current Science* and I am grateful to the journal for the 'little' I get by way of history of science. Hegde's comment that the history of science presented in the journal 'is not all that relevant to the present day science' makes me wonder as to what criteria of relevance he has in mind. In my view, a scientific theory which acquires relevance solely in terms of its 'current' interest is likely to be only too fashionable and fail to endure the test of time. In a country where history of science in general and history of science in India in particular is just making its headway, we need more material on our past, be it remote or recent. As for quality, I do see the need for improvement but I believe that this can come about only through positive support and encouragement. I hope that the journal will continue to publish good quality articles on both science and

science-related disciplines (like history and philosophy of science) and not succumb to the pressure of intellectual myopia.

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### Neglected science

Gadagkar (Observational study of animal behaviour, *Curr. Sci.*, 1995, 68, 185) rightly points out that ethology is a neglected branch of science in India but should have attracted more attention than molecular biology. He also states, wrongly (I am afraid), that higher mathematics must be made compulsory even for biology students, apparently in order to grapple with the intricacies of mathematical ecology. But such a course would smash a person like Salim Ali, the doyen of Indian ornithology, who writes in his autobiography how he

broke down under pressure of mathematics. We need dedicated field watchers to unearth new hard data some of which can be further worked out by mathematical ecologists.

So, the right thing to do would be to publicize the importance of ethology and ecology (including chemical ecology, another neglected discipline in India) in the biology syllabus from school level onwards and to encourage biology students to go for *optional special courses in mathematics or biochemistry* (or both). These attempts can only slightly counter the tide of students who follow the fixed idea of society at large, namely the best lot opts for physics, the medium rank goes in for chemistry and the 'dregs' settle for zoology and botany. Only recently has molecular biology been accepted as a glamorous subject and wildlife biology is becoming a fashion too. Fashion, alas, rules the world.

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### More comments on the NSU and related matters

The proposal for a national science university (NSU) is unique in that it has attracted criticism from a wide spectrum of Indian scientists, ranging from iconoclasts to science mandarins. Perhaps the former see in Mahajan's proposal, a new form of 'hijacking' the science establishment of the country, even while the latter are nervously contemplating as to how exactly they can

join the NSU bandwagon if indeed the whole concept becomes a reality.

The ills outlined by Mahajan cannot simply be wished away. In large measure, they have arisen from historical realities. Many problems in the educational and scientific life of the country today can be traced back to just two policy decisions which hark back to the fifties: (i) the emphasis on higher edu-

cation *at the expense of* primary education; (ii) the categorization of education as a concurrent rather than as a central subject.

Scientists in India are no better or worse than other members of society (why this is regrettably the case will not be discussed here) and have come to terms, in their own peculiar way, with the very flawed socioeconomic system

into which this country was straight-jacketed. The results are clear today for all to see. While we certainly did not go as far as producing a Lysenko or an Elena Ceaucescu, Indian science did not take off because it was not allowed to find its true measure according to the dictates of merit, which is, in effect, the scientific free market.

The real tragedy in this era of liberalization is that while politicians have

felt the need to abolish the licence-control-permit Raj in the financial and commercial sectors, they have not deemed it important enough to extend their experiment into the educational and scientific arenas. Perhaps it is better this way – from the excellence exemplified by the work of Raman and Ramachandran, Indian science has drifted into obsolescence and is finally mired in irrelevance. It only remains for

it to be totally drowned in the sewage of its own bureaucratic procedures, managerial wisdom and wilful self-contradictions.

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## NEWS

## Promoting physics education: The Orissa example

Things and beings, all need to be taken care of. So do, and in a very special way, physics teachers and physics education.

Physics with its intrinsic beauty has always attracted the best of brains all the world over. Orissa, too, has experienced the same pattern and thus has managed to contribute its own share to growth of physics teaching and research in the country. Despite the strong challenge physics meets on account of the growing attraction towards managerial and administrative professions, its catch has not vanished as yet. Recognition of the seminal role physics plays in the development of science, technology and philosophy calls for attempts to present the subject to the young minds in its full glory, to the extent possible, in spirit and form. This also requires, on the part of physics teachers of the state, putting together of minds on one forum. Orissa Physical Society (OPS) is striving to achieve this. OPS was created in December 1971 in the Department of Physics, Utkal University, through the initial efforts of B. B. Deo by an act of will of a large number of physics teachers of colleges and universities of Orissa.

To have an idea about the size of the constituency it caters to, it is worthwhile to mention that about 310 colleges in Orissa offer science at higher secondary level and about 165 colleges impart physics teaching at degree level under the Utkal, Sambalpur and Berhampur universities of the state. The Orissa University of Agriculture and Technology (OUAT) also runs higher secondary and degree level science

courses. Apart from the three university departments of Utkal, Sambalpur and Berhampur, postgraduate courses in physics are also offered at four autonomous colleges – Ravenshaw College, Cuttack; Regional Engineering College, Rourkela; Khallikote College, Berhampur; Gangadhar Meher College, Sambalpur – and also at Fakir Mohan College, Balasore, Maharaja Purna Chandra College, Baripada. There are about 1200 teachers engaged in teaching physics at various college and university departments. Apart from this, the Institute of Physics, Bhubaneswar (funded by DAE, Govt. of India), primarily engaged in physics research and predoctoral teaching with a faculty and research scholar strength of about 60 persons, also lends strength to OPS in terms of membership (about 250) and academic and financial aspects.

While gradually enlarging its net, the members of OPS have put their minds and efforts together in restructuring and modernizing the physics curricula and prescribing text books at +2, +3 and postgraduate levels from time to time. The recommendations of OPS have, by and large, been accepted by the Council of Higher Secondary Education and the four universities of the state. Consequently, the courses of studies now stand among the best in the country. This provides the students of the state a level ground to compete with their counterparts elsewhere, inside the country and abroad.

The annual meetings of OPS are always organized as a miniseminar/conference of college and university

teachers. These include a small number of advanced-level review talks by researchers in the field delivered at a level that can be easily grasped and understood by the college teachers. This helps college teachers to update their understanding in the subject. Sometimes, this also motivates and helps them to decide on an area to pursue advanced study and research.

Also, as a matter of tradition introduced since the 9th annual convention in 1987, an eminent scientist of the country is invited to address the inaugural session and shed light on new developments in his area or deliberate on history/philosophy of science or science policy of the country, as the case may be. Speakers have included S. P. Pandya, PRL, Ahmedabad (1987), J. Bhattacharya, Indian Institute of Astrophysics, Bangalore (1988), Rajat Kumar Bhaduri, Mc Master University, Canada (1989), H. S. Roy, RRL, Bhubaneswar (1991) and S. Ramaseshan, Raman Research Institute, Bangalore (1994).

OPS has also started the tradition of honouring and felicitating senior and eminent physics teachers of the state in the annual meetings in recognition of their achievements and signal contributions to physics teaching and research.

These apart, the teachers also deliberate on various other aspects of physics education like the growing menace of private tutoring, pros and cons of central valuation, easing of bureaucratic bottlenecks teachers face in attending refresher courses or other faculty improvement programmes and improvement of laboratory courses, etc.