

Physics students' attitude towards theoretical and experimental research

A significant section of students who did not show much interest or distinct proficiency in theoretical physics in their undergraduate (UG) days are doing theoretical research for their Ph Ds. Some of these students mention that they have chosen the field not by the attraction of the field per se but for the reputation of the supervisor/research institution or for the 'hotness' of the field. Some research scientists feel that the weakness in the students' training in experiments bring them to do theoretical work. The recent UGC guidelines for pursuing the Ph D programme underlines the fact that one must know the theory well before pursuing theoretical or experimental research in physics.

Theoretical physics has a special place in the minds of physics students. The general notion is that one can do high quality theoretical research work in front-line areas in India because the essential support systems are in place. One can have access to the best journals and libraries, high-power computing facilities, can participate in international con-

ferences to have interaction with the peer group and, above all, can have adequate Ph D students. Although the government funding for different research projects in India may not be comparable with those available in the West, the quantum of support has gone up in recent years.

The basic requirements for experimental laboratories, i.e. the quality equipment, state-of-the-art set-ups and the funding that are available in our country are not comparable to those available in the scientifically advanced nations. Also, it may not be possible to replace an expensive equipment by one that has more facilities or capable of more precise measurements. So one is compelled to accept that frontline research in experimental physics is not possible in our laboratories. The research laboratory then may be considered as a good training hub for students and not a place to produce world-class experimental work. This training is an important aspect for the society but that may not be an acceptable proposition for a research scientist.

This may be a reason for the lack of attraction towards experimental research.

Unfortunately, the students tend to ignore that the experimental physicist or for that matter any scientist working in any experimental field must be proficient in the theory of the concerned subject to interpret and analyse his experimental results. The training in experimental research actually demands dual training. Incidentally, the lack of interest in doing experimental work has its fallout in our UG system as well. People with training in theoretical physics are joining colleges as teachers. A significant section of them shows distinct lack of interest in UG laboratory work. As a result, the students' training in laboratory work is hampered at the UG level. Some measures are needed to take care of this skewed approach.

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Collaborative studies on the fauna of the Western Ghats–Sri Lanka biodiversity hotspot

As a Sri Lankan taxonomist and biodiversity conservationist, I read with great interest the report by Bhaskaran and Rajan¹ on a meeting with the aim of assessing India's present status of taxonomy and biodiversity loss. The loss of biodiversity due to anthropogenic causes such as over population, habitat degradation and climate change demands the urgent attention of biologists. Unfortunately, most tropical countries, where the majority of biodiversity hotspots are situated, lack expertise in identifying and documenting biodiversity. Conservation involves scientifically managing the environment so that the human impact is minimized. The aims of conservation are to promote sustainable use of natural resources, while preserving habitats and biodiversity. Thus, I fully agree that taxonomy is crucial to meet the challenge of biodiversity loss in the 21st century. However, most taxa generally do not respect man-made political boundaries of a country.

Over a century ago scientists have documented the evolutionary relatedness

of the Indo-Sri Lankan fauna²⁻⁴, a fact fully confirmed by modern taxonomic studies⁵⁻⁷. This unique, shared heritage of the faunas and floras of India and Sri Lanka is not well appreciated.

Although birds and possibly freshwater fish have been the focus of many recent studies, not much is known about mainland Indian and Sri Lankan faunas. Almost next to nothing has been done on arthropod biodiversity. Most studies on insects and arachnids of both countries were undertaken during the colonial period and are now outdated. A few recent studies also suggest a mega diverse arthropod fauna in the region^{5,7}.

The faunas of mainland, India and Sri Lanka are interlinked in historic as well as evolutionary terms. To fully understand the diversity of the region, taxonomists from both the countries should jointly work on revisionary studies. Due to the close biological links between southern India and Sri Lanka, coordinating such biodiversity studies makes sense. Currently, taxonomists and academic institutions of both countries work in

isolation. Further, research, training and conservation management will benefit from the corporation between resource personnel of both countries.

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