

conditions resulting in 'single track' careers with little 'transgression'.

The session on 'Integrative Biology in Teaching' included two lead lecturers followed by discussion lecturers by seven other speakers. Lakhota discussed the dichotomy between the so-called 'classical' and 'modern' biology in our teaching programmes and suggested that the disrespect for 'classical' ('organismic') biology as well as the euphoria over 'modern' ('molecular') biology are more a result of our own limitations rather than irrelevance or greater relevance of any given sets of disciplines. The so-called 'classical' subjects in biology have suffered because of the archaic and indifferent teaching rather than those subjects themselves having become 'archaic'. The undue rush to introduce the so-called 'modern' biology courses with extremely poor infrastructure is seriously harming students as well as the existing 'traditional' departments. It is in this context that there is an urgent need to adopt the philosophy of integrative biology. H. Y. Mohan Ram (Delhi University, Delhi) emphasized the relevance of sub-disciplines like biodiversity, ecology, environmental biology, etc. to the basic understanding of biology as well as to exploiting the benefits of molecular biology and biotechnology to the full. The absence of competent 'taxonomists' in present times is alarming and he suggested that creation of biodiversity databases would help generate jobs in this area which would promote integrative teaching in biology.

N. Sathyamurthy (IIT, Kanpur), emphasizing the need for integration,

stated that biology-related courses were some of the most popular modules at IIT, Kanpur: the flexibility in curriculum and its modular organization were the key factors and must be emulated by other educational organizations. H. K. Jain (IARI, New Delhi) made some practical suggestions like 'one-time catch-up' grants to 'traditional' departments in universities to let them rebuild their infrastructure as required in the present context. He further suggested that bright students from traditional departments should be provided with adequate opportunities through one year 'conversion' courses at 'well-endowed' institutions/universities to make them uptodate in current topics. Jain opined that the 'American graduate school' model with its modular course system is ideal for achieving integration.

G. Govil (TIFR, Mumbai) used the biophysics course as an example of integration. Physicists and chemists generally find it difficult to comprehend the non-equilibrium situations common in biological systems and, therefore, there is a need for teaching of biology to students in these disciplines. While summing up this part of the session, P. N. Tandon (New Delhi) observed that the university system in our country has generally failed to recognize the needs of time which has resulted in its being under-valued today. K. N. Ganesh (NCL, Pune) emphasized the need for a greater use of the internet and web-sites for teaching and for an urgent need to break the 'language' barrier between different disciplines and sub-disciplines. S. S. Agrawal (SGPGI, Lucknow) discussed teaching of biology in relation to medicine and lamented the fact that

while teaching medicine is all biology, practising medicine is not biology. He also pointed out that while the medical curriculum includes 'modern' disciplines in biology like genetics, molecular biology, etc., the teachers are not ready or competent to teach them. He presented the structure of the 5-year integrated M Sc course in biological sciences proposed to be introduced at the Manipal Academy of Higher Education and suggested that this may be a model to promote integrative biology.

K. Muralidhar (Delhi University, Delhi) discussed the structure of courses in biology proposed to be introduced at the under-graduate level in Delhi University as a way to provide integrative training. P. N. Srivastava (JNU, New Delhi) while emphasizing the urgent need for integrative biology disclosed that nearly thirty years ago a committee set up by the University Grants Commission had already highlighted the concerns being voiced at this meeting and had made many far-reaching recommendations. What we need is a strong commitment and action in implementing the ideas emerging at such meetings.

R. C. Mahajan (PGI, Chandigarh) while summing up the deliberations at the seminar hoped that the awareness generated through this initial discussion would lead to more focused meetings and implementation of the emerging ideas.

**S. C. Lakhota**, Cytogenetics Laboratory, Department of Zoology, Banaras Hindu University, Varanasi 221 005, India.

(e-mail: lakhota@banaras.ernet.in)

## Annual meeting of the Mycological Society of India\*

The 26th Annual Meeting of the Mycological Society of India (MSI) was accompanied by a National Symposium on 'Mycology at 2000 and beyond', organized by I. L. Kothari of the Department of Biosciences, Sardar Patel University. Forty-one oral and thirteen poster

presentations were made during the symposium organized in three sessions – biotechnology, agriculture and environment/diversity.

The session on biotechnology comprised papers on varied topics, including fungal parasites of mosquito, cellulase, alkaline protease, auxin production by fungi and fungi as biocontrol agents.

Mechanisms of stress mediation by fungi, such as to metals and salinity,

enzymatic capabilities, evolution, dye decolourization and taxonomy-related papers were discussed under environment/diversity.

Papers presented in the session on agriculture were related to rhizosphere, natural herbicides and mycorrhizae. In keeping with current trends in mycology, many of the papers addressed issues related to molecular biology.

The symposium reflected the status and directions of mycology in India. It

\*A report on the annual meeting of the Mycological Society of India held at Sardar Patel University, Vallabh Vidyanagar, from 21 to 23 December 1999.

included a keynote address on 'Mycology at the turn of the century' by C. V. Subramanian and the MSI Presidential address 'A mycologist looks around' by H. C. Dube. Dr M. J. Thirumalachar Merit Award was instituted during this meeting. Awards were given to two oral presentations, 'Internal mycobiota of some conifers from Nilgiris' by K. Narayanan, Raja Huzefa, R. Rajesh and T. S. Suryanarayanan

and 'Salt stress-mediated regulation of P-ATPase and chitinase from *Aspergillus repens* ATCC 90531' by R. J. Vaidya, M. Bhatt and H. S. Chhatapar. The two best poster presentations, restricted to those below 35 years of age, were 'Alkaline protease secretion by *Basidiobolus* (NCL 97-1-1): Effect of cultural conditions and preliminary characterization of the enzyme' by Sujaya S. Ingale and Meenakshi V. Rele,

and 'Dynamics of extracellular enzymes during solid state fermentation of banana waste by two *Pleurotus* species (*P. ostreatus* and *P. sajorcaju*)' by Karamjit Singh, Prashant Kunjadia, G. V. Reddy and I. L. Kothari

S. Raghukumar, Biological Oceanography Division, National Institute of Oceanography, Goa 403 004, India.

## From the archives



Vol. I] APRIL 1933 [NO. 10

### Examinations and education

One of the reasons why examinations have acquired a vicious influence and undue importance in some of the Indian universities is that they constitute the only avenue for preferment in government service and more recently other employing agencies also have begun to appreciate the value of higher education in their servants. This intimate association of a purely academic function with the economic and service problems must necessarily produce a baleful effect upon both. The vision of an educated young man is restricted by the four walls of the office room and he devotes all his energies to pass his examination for the realization of his modest ambitions. Government should have at their disposal means other than the university examinations for discovering those qualities in their employees for the proper and efficient performance of administrative duties but the touching confidence they have all along reposed in the universal efficacy of these tests is a credit to the honesty of the whole transaction. This relationship has unfortunately exposed the system of educa-

tion and examination to the unmerited criticism that they are a cause of the evil of unemployment among the educated young men. In India failure in an examination amounts almost to forfeiture of one's social status and the young men whom the universities reject annually have no alternative except to pass through life like a perpetual blister. The remedy seems to be to throw open those services for their absorption, which are at present treated as close preserves and to encourage settlement on the land, to promote cottage and minor industries and to facilitate emigration...

The influence that examinations now exercise on the destiny of education will relax the moment the government and other employing agencies cease to look upon them as a *sine qua non* for employment in their services. It is true that a specialized knowledge of any narrow field of science such as an Honours graduate possesses may not be of direct use in the discharge of the administrative duties, but what is invaluable in him is the disciplined training, the mental alertness and the power of applying scientific knowledge to the problems of government and those of the practical affairs of the people. Admirable as these qualities are, they are not enough in an administrator who needs wisdom, foresight, driving power, ability to command men, to organize and consolidate the forces of civic life and finally the power to take quick and correct decisions and most important of all a natural sweetness of temper. The competitive examinations which are only duplicates of university examinations are, when applied to discover these

traits of character, undoubtedly a bad test. Examinations on prescribed books or on definite fields of knowledge can be easily and successfully met by resorting to the aids provided by the ingenuity of commentators and annotators. What the competitive examinations really test is not the knowledge or intelligence, much less any of the personal qualities of the candidate but the amount of cunning with which he can anticipate the questions and provide the examiner with information crammed from 'tips'. There can possibly be nothing better than a wise education for the making of public servants but little can be said in extenuation of an employing agency which requires the best public service and applies the wrong tests for securing it. Is it impossible for the Government to devise a scheme other than competitive examinations for the purpose of selecting competent and wise public servants? The merit of a competitive examination is not the logic or the fairness of it but its power to fulfil the purpose for which it is instituted. Ostensibly the university examinations are intended to test the power to think on the part of the candidates but, generally speaking, the question papers succeed in finding out how much of literary and scientific lumber is stored in the mind and is capable of being unpacked. The Public Services Commission attempt nothing better: We cannot go back to the system of nomination which is attended by fear and distrust, but probably a scheme in which the co-operation of the university professors is enlisted may be found more satisfactory.