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### The future of mycological research in India

Mycology touches upon a number of other sciences and in turn is influenced by them. Amongst the applied sciences in which it has long been of importance, first and foremost comes plant pathology, closely followed by soil science. More recently it has begun to play an increasingly large role in chemistry. It is of significance in human nutrition. In medicine, where it has hitherto taken a comparatively minor place, it has in the past three or four years loomed large. As a branch of botany the study of the fungi themselves has long been interesting and important because the fungi provided useful and comparatively easy material for the study of form, of physiology, of specific relationships, and particularly of sexuality, where it has been possible to observe processes taking place in small groups of cells under a high-powered microscope *in vivo*. The classification of fungi is unique inasmuch as they represent the largest group of living things which are classified mainly on the basis of micro-morphology. The result has at times been a tendency to place undue emphasis on minor morphological characters which has often led taxonomy into disrepute, but the realization in recent years of the immense significance of fungi in a wide range of

human activities has compelled the applied mycologist to return to the field of taxonomy with increasing energy and to devote to it a measure of time and skill which was hardly imagined a generation ago.

This diversity of activities of mycologists is to-day giving rise to certain serious and difficult problems of organization. There is now a need for teams of skilled workers having a profound knowledge of the habits of fungi from entirely different points of view and with bearings on completely different problems. In plant pathology, the mycologist must have a deep insight of plant physiology, agronomy and taxonomy, accompanied by some understanding of both organic and inorganic chemistry, which is called upon constantly for the control of plant diseases by the use of chemicals and by other methods. In soil mycology, a subject sadly neglected in India, an understanding of soil physics and chemistry, as well as bacteriology, is essential. If the useful fungi are to be developed in India, it can only be possible by the collaboration of mycologists with biochemists and nutrition experts. In the realm of fungal therapeutics, there is need for skilled research workers possessing adequate and well-equipped laboratories for research on human and animal medicine, as well as first-class biochemists, all working in teams. Modern inventions of food processing, the fabric industries, leather, timber, and (in rapidly expanding measure) electrical equipment, are facing problems due to fungal damage of a very special nature, requiring a type of technological expert not known a few years ago. These problems would not be difficult to solve were it not for the fact that mycology is in itself a separate science requiring wide knowledge and the ability to grasp the fundamental relationships of a great range

of micro-organisms. The problem of organizing research in mycology, is, therefore, one of co-ordinating the activities of specialists in a science who have to be distributed and carry on their work in a number of quite disconnected branches. It is, in fact, a problem of so directing the activities of a group of scientists that their services can be placed at the disposal of a number of un-related sciences without their losing the unity which they must retain if the science of mycology itself is to advance. It is a problem of how to disperse and yet to integrate.

If anyone does not believe that this is a real problem, let him examine any well-known classification of fungi – that, for instance, of Saccarado, and then read one of the well-known works on medical mycology. If, after mastering the former, he is capable of comprehending the latter after one or even two readings, he will have proved himself to be indeed a master of multiple and confused conceptions. The classification and description and also the terms used to describe the same thing are often quite different; while frequently, on the other hand, the same terms, even the same generic names, are used to designate organisms or organs unrelated both morphologically and physiologically.

We may assume that the nature of the various kinds of work to which we have referred indicate clearly enough that specialist mycologists have to work along with teams of other scientists to which mycology is little more than a name. What we have to decide is the number and nature of the various kinds of specialist mycologists, the type of institution in which they will have to work and how the work of all of them can then be integrated so that unity of terms, conceptions and outlook can be maintained....

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