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## RECENT RESEARCHES IN PLANT SCIENCES

S. S. BIR

Convenor of the Symposium

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A NATIONAL symposium on "Recent Researches in Plant Sciences", was held at the Department of Botany, Punjabi University, Patiala, during January 20-22, 1977. Ninety plant scientists representing 30 universities and institutes from all over India took part in the symposium, inaugurated by Mrs. I. K. Sandhu, Vice-Chancellor, Punjabi University. Apart from presentation of papers, special and plenary lectures by eminent botanists constituted the important part of the symposium.

Prof. P. N. Mehra discussed the structural and morphological variability in the Himalayan orchids. Role of the structure and behaviour of chromosomes in relation to the amount of DNA and other constituents in a species was explained by Prof. A. K. Sharma. He formulated a new concept of chromosomal dynamism in evolution and stressed that the flexibility of chromosome behaviour has high potentialities in genetic engineering for crop improvement. Dr. T. N. Khoshoo stressed the need for the improvement of ornamentals in India for earning foreign exchange. Genetical basis of monoecism and dioecism in plants was discussed by Prof. R. P. Roy and he made a strong case for exemplifying indigenous material in teaching of cytogenetics. Prof. V. Puri pleaded for the avoidance of the present practice of forcing fossil specimens into descriptions of modern genera. Prof. T. V. Desikachary pointed out that in spite of fine structure studies in algae, we are still in the beginning of our search for the possible ancestors of land plants from aquatic plants and heterotrichous condition is an important step in this direction. Production of adventitious roots, according to Prof. K. K. Nanda, is controlled by a balance between auxin, IAA oxidase, inhibitors of IAA-oxidase and bound auxins in the system. Prof. C. P. Malik explained the metabolic changes that take place during pollen germination. An elaborate account of the recent palaeobotanical discoveries and their phylogenetic significance was

discussed by Prof. D. D. Pant whereas the role of enzymes in *Zizyphus* gall tissues was outlined by Prof. H. C. Arya. A strong plea for adopting an integrated approach in taxonomy by utilizing data from other aspects of plant studies was made by Prof. B. M. Johri.

Nearly 100 research communications dealing with morphology, cytogenetics, biosystematics, anatomy, taxonomy plant functions and diseases covering both basic and applied aspect were presented and discussed during 10 academic sessions of the 3-day symposium.

As a result of panel discussions on the concluding day, the following recommendations with regard to teaching and research in plant sciences have been made :

1. Basic researches should be strengthened in the universities and there should be no strings attached to research.
2. While planning and conducting basic researches, plants of economic importance should be selected. Further there should be an inter-disciplinary approach for finding solutions to problems of plant productivity. This could best be achieved through teacher and scientist exchange programme.
3. Researches on lower groups of plants with particular reference to teridophytes need to be promoted.
4. Local and regional floras of the country must be compiled, and work on plant taxonomy, systematics and phytogeography should be promoted. by U.G.C.
5. Work on preparation of 'Chromosome Atlas' of plants of various regions of the country is urgently needed.
6. Researches on forest biology, environmental botany, pollen physiology, seed treatment, plant nematology and reproductive biology need to be strengthened.

7. There should be stress on fundamental and evolutionary approach in teaching of Botany.
8. Cytogenetics, plant geography, ecology and taxonomy need to be given more weightage at undergraduate level whereas forest biology, economic botany, palaeobotany, mathematics, biostatics, biochemistry and biophysics should form important part of the postgraduate curriculum.
9. Proper practical manuals with examples from local flora must be compiled for different levels of botany teaching.
10. With the possible introduction of 10 + 2 + 3 system the syllabi at school and undergraduate

levels need to be suitably upgraded. Integrated syllabi with interdisciplinary bias must be evolved from plus two stage to M.Phil.

Since the flora of the country is undergoing rapid change due to the highly accelerated biotic factors, there is an immediate need to set up regional plant conservatories for preserving the wild germ plasm to be used in future for plant improvement. State and district level museums and botanic gardens must be established for creating interest of general public in plants for habitat improvement and economic progress. Facilities available in nearby institutions must be made accessible to all the workers. Finally, the research centres must pay attention to the local problems.

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