

## INSECT-PLANT INTERACTIONS WITH SPECIAL REFERENCE TO VECTORS, GALL-MAKERS AND POLLINATORS

A three day discussion meeting on the above subject sponsored by the Indian Academy of Sciences as part of its Golden Jubilee activities, was convened by Prof. T. N. Ananthakrishnan at the Entomology Research Institute, Loyola College, Madras, from 18–20th November 1983. Three essential aspects discussed were: Insect Vectors of plant disease, Insects and Cecidogenesis, and Insect Vectors of Pollination. In his key-note address, Prof. H. Y. Mohan Ram of the Delhi University highlighted the basic trends in floral evolution and development of attractants for pollination, indicating that among the major factors in the rapid rise and evolutionary diversifications of Angiosperms, during the Cretaceous era was the development of the flower into a highly efficient structure for cross pollination and dispersal. While stressing the role of small insects in anthecology, he indicated that pollination has become a part of intrafloral ecology involving energetics and gradually being developed on an ecosystem basis.

Prof. M. S. Mani, Emeritus, Professor in his thought provoking address on Insects and Cecidogenesis indicated that cecidogenesis is a highly specific and specialised plant reaction, to the normal feeding activities of the associated species and that polyploidy, nuclear gigantism, multinuclear syncytial complex, excess of free aminoacids, presence of specific proteolytic enzymes associated with the saliva of the gall insects are all essential evidence of changes in the chemical and functional links. The nutritional interactions, independence and control of the normal and cecidogenetic fields are strong evidence of concomitant adjustments and coevolution of the gall inducing organism and the gall bearing plants. He emphasised that the problem of galls is essentially ecological.

Dr V. Muniyappa (University of Agricultural Sciences, Bangalore), in his in-depth discussion on the arthropod vectors of virus, Mycoplasma and Rickettsia-like (MLO and RLO) pathogens in India, indicated that around 80 arthropod species acted as vectors, transmitting 183 viruses including MLO's and RLO's of plants in India, the Aphididae with 48 species being among the largest vector group in India and elsewhere. He also discussed the epidemiology of Cowpea mild mottle virus (CMMV) and transmission by Whiteflies and indicated that the evidence of the disease could be closely correlated with the vector populations in the field.

Prof. S. Mukhopadhyay (Plant Virus Research

Centre, Kalyani, West Bengal), stressed that differential responses of the vectors to different plant species appear to influence virus transmissibility and that high transmissibility is found in plants which have high susceptibility to both viruses and vectors.

Prof. S. Kannan (Theagarajar College, Madurai), discussing the dynamics of the root knot nematode galls indicated that the gall syncytium and the nematodes have dynamic relationships, and that the syncytium functioned as a nutrient sink drained by the nematode, whose presence maintained the syncytium and that the nematode is the metabolic sink into which the metabolites drain. Energy relations involved in the synthesis and the Redox-Enzyme activities, confer the functional and physiological resistance operative during pathogenesis in susceptible relations.

Dr C. Subba Reddi (Andhra University, Waltair), presenting a detailed discussion on Bee-flower interactions and pollination potential, as well as on butterflies and pollination biology indicated that plants encourage the visit of 'trapliners' promoting outcrossing, and that mass bloomers are visited by 'opportunists'. He also pointed out that the foraging preference of pollinators are being explained as cost-benefit relations in terms of calories of food energy, as against the attractants.

Prof. K. J. Joseph (University of Calicut, Calicut), highlighted the ecophysiological changes in the interior of the ripening fig syconia which play a vital role in pollination during the post-emergence behaviour of the males and females in some Agaonids. He stressed the fact that each species of Ficus has its specific agaonid pollinator and a close mutualistic symbiosis and several adaptive modifications in the course of evolution of this relationship.

Other useful discussions related to Plant-Insects-Fungus association in some plant galls by Dr K. V. Krishnamurthy (Bharatidasan University, Tiruchirapalli), Biology of florocercidia by Prof. T. A. Lourdasamy (Loyola College, Madras), *Orseolia oryzae* – rice interactions by Mr. Rajamani (Centre of Rice Research Institute, Cuttack), Aspects of gall associated Chalcids by Dr T. C. Narendran (University of Calicut, Calicut), Gall insects-host plant relationships: an ecological perspective by Dr A. Raman (Entomology Research Institute), Leaf hopper – Plant hopper transmitted viruses of cereal crops by Dr C. B. Sulochana (University of Madras), and Thrips-Fungus interactions with special reference

to their vector potential by Dr T. N. Ananthakrishnan. Dr P. Dayanandan gave an exquisitely illustrated lecture on "Insect-Plant Interactions through Ages".

The plenary session, provided a forum for extensive

discussions on the three areas, pinpointing the prospects and direction of future investigations on this very important area of Biological Research having considerable economic significance.

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### DR V. L. CHOPRA ELECTED PRESIDENT OF INTERNATIONAL GENETICS FEDERATION

At a meeting of the International Genetics Federation held in New Delhi on 19 December 1983, Dr V. L. Chopra, Professor of Genetics, Division of Genetics, Indian Agricultural Research Institute, New Delhi was unanimously elected President for the period 1983-1987. This is for the first time since the Federation was established that a scientist from a developing country has been given this honour.

Well-known for his researches on mutagenesis in a wide variety of organisms of different levels of com-

plexity like *E. coli*, *Azetobacter* and higher plants and animals as also on genetics of host-pathogen relationships and wheat rust resistance, Dr Chopra was presented the plaque of Honour of the Indian Society of Genetics and Plant Breeding by the Prime Minister Mrs. Indira Gandhi on December 12, 1983. Dr Chopra is the Secretary-General of the Congress which is being attended by over 2,500 Geneticists from all parts of India and abroad.

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### PLATINUM JUBILEE OF INDIAN INSTITUTE OF SCIENCE, BANGALORE

The Indian Institute of Science Alumni Association is planning with the co-operation and support of the Indian Institute of Science, to bring out a Directory of all the Alumni of the Institute in 1984—the PLATINUM JUBILEE YEAR (1909-1984) of the Institute. The Alumni, are requested to inform the Secretary, IISAA, of their present address and also of

their class-mates and friends who were once students at the Institute. The interest and action of the Alumni in the matter will be greatly appreciated.

For further detail please contact Dr Narain Mahishi Secretary - IISc Alumni Association, Indian Institute of Science, Bangalore 560 012.

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### INSA ALBERT EINSTEIN CENTENARY RESEARCH PROFESSORSHIP

The 'Albert Einstein Centenary Research Professorship' has been awarded to Prof. G. N. Ramachandran, Distinguished Scientist, CSIR,

Bangalore. Prof. Ramachandran was the Editor, *Current Science*, from 1950 to 1957.