

FOREWORD

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The International Study Workshop on *Host Plant Resistance and Its Significance in Pest Management* convened by and held at the International Centre of Insect Physiology and Ecology (ICIPE), in Nairobi, from 10 to 15 June 1984 was an event of great significance to that component of the international scientific community concerned with the vital part that plant resistance can play to the overall strategies for long-term, environmentally acceptable, cost-effective integrated pest management (IPM) methodologies for the small-scale farmer in the tropics. In a real sense, one could regard plant resistance as the foundation element on which the overall IPM for the tropical small-scale farmer should be built. It is not only environmentally safe; it is also low cost (in the direct terms of the farmer) and economically feasible (insofar as the State Governments are concerned).

As a consequence of this review, various national and international agricultural research centres have been engaged over the past three decades in a vigorous programme of identifying sources of host-plant resistance, and developing these into varieties of crops which would be resistant to their major insect pests as well as exhibiting other desirable agronomic characteristics. The dilemma that has faced this strategy is that, having identified and developed a large number of pest-resistant varieties of several crop plant species which have been released and cultivated in different ecologies of the world, serious difficulties (amounting in some cases to national or regional emergencies, as has happened in the case of the brown planthopper of rice in South-East Asia) have arisen resulting from the widespread and continued use of these varieties. This has been caused, more often than not, by the rapid erosion or even breakdown of this original resistance in a particular region or a specific ecological situation, or by the development of pest biotypes able to penetrate the defences of the erstwhile resistant varieties.

In order, therefore, to strengthen the programmes of development of time-insensitive insect-resistant varieties of crop plants, it is important to consider and study in depth different aspects of host-plant resistance to insects. Study of the mechanisms responsible for such resistances would generate de-

tailed information vital for developing durable insect-resistant varieties having desirable agronomic characters.

With a view to achieving these goals, the ICIPE has established a research section dealing with *Plant Resistance to Insect Pests* as part of its *Crop Pests Research Programme*. To further its objectives of host plant resistance research, the ICIPE convened the International Study Workshop whose *Proceedings* is the subject of this special issue of *Insect Science and Its Application*. The purposes of the Workshop can be summarized as follows:

- to review the present status of research on host-plant resistance and its potential role in pest management and, hence, increased food production in the tropical developing world;

- to promote increased awareness of and to stimulate efforts for application-oriented host-plant resistance research;

- to review the significant advances made in recent years in research in plant resistance (including the basis and factors of resistance); and

- to explore the types of collaborative projects between research institutions interested in research on host-plant resistance.

The 33 or so papers presented at the Workshop went a long way to fulfilling these purposes; and they have been made available here for a wider public.

Over the last 4 years, the journal has provided special issues which deal with pest management in the tropics, and these should be taken into consideration when reading the present issue.

The Biology, Ecology and Control of the Sorghum Shootfly, *Atherigona soccata* Rondani (Vol. 2, No. 1/2, 1981).

Crop-Borers and Emerging Strategies for their Control (Vol. 4, No. 1/2, 1983).

Perception and Management of Pests and Pesticides (Vol. 5, No. 3, 1984).

It is an interesting series of special issues, which is beginning to indicate important interlocking problem-areas in the whole IPM strategy for the tropical small-scale farmer.