

operation of a world food security is to operate. Involvement in this decision is not within the remit of this conference. However the development of appropriate systems for national food security, needed to meet the expectations of considerable fluctuation in annual rainfall, are, or should, be the concern of this conference.

The paper by Gray discussed one system for food security that is already in successful operation. Where food production and demand are close to each other total national stocks can be quite small with a high degree of confidence that food security, through a continuing availability of food grains, is assured. The demand of the national exchequer is thus modest compared to the conventional approach to food security systems and thus internal funds may be released for economic and social development. For the converse situation of food production being significantly below demand, or in areas where high fluctuating annual rainfall can be expected, as is the case for most target countries, larger stocks are needed at greater cost.

Gray's paper clearly showed the need for a critical examination of storage structures, their location, size, pest and quality control operations if these costs are to be minimised and brought within economically acceptable limits. Some of this conference proceedings, but only a small proportion, has been directed to these topics.

Large stocks imply a significantly increased risk of old stocks. The greatest cost of old stocks was shown to be loss of quality. Dr Faure discussed quality parameters used in sale contracts and processing requirements; however quality demands by consumers are nebulous and so far no parameters of quality have been defined for purchase, or for putting into store, or for management operations that are practical and feasible for maintaining stock quality, particularly rice, acceptable to consumers. Until this deficiency is rectified large country stocks are at risk and if, when required, they are found to be not acceptable to the consumer, resources are wasted which could have been used to increase economic development or improve the social welfare of that country. Our efforts to understand quality, clearly must be moved higher in the priority stakes.

SYMPOSIUM 7: THE FUTURE OF STORED PRODUCT PROTECTION
D.A. Griffiths, U.K.

The limited time set aside for such an important symposium, coming as it did at the end of an exhaustive conference programme, made the choice of subjects most difficult. A theme, covering one aspect of storage protection such as cereals, did not seem appropriate since all the major areas of research were adequately catered for under other symposium headings. Accordingly, my aim was to select particular speakers whose subject would introduce new data or novel approaches or both, which from my long experience I judged to be important in influencing the future of stored product protection.

The first paper "A global view of arthropod pest status in relation to changing storage and marketing practice" by J A Conway, ably read by his colleague Philip Dobie, is a subject to which we pay

far too little attention. The operative word in his title is 'global' since storage pests like the food they prey upon know no national or geographic boundaries. His message aptly supported by examples, is "we might do well to reflect upon past experiences in an attempt to foresee and possibly forestall changes in possible arthropod pest status which could have serious economic implications." It is my own opinion that the Permanent Committee should encourage, within countries, the collection of information relating to changes in pest status, and an exchange of results between them.

The second paper upholds the wisdom of the Permanent Committee in accepting and implementing the wishes of the previous conference that the scope of our activities be widened to include fields of storage research other than entomology. Therefore, Dr Zofia Lawrence's paper "The importance of specific mould identification in relation to mycotoxins" represents a most timely presentation. It is perhaps doubly apt in that the data provided, if properly exploited by storage specialists, should provide the means whereby storage mycology research could advance to the level of related disciplines such as entomology. Undoubtedly, the inherent difficulties associated with the correct identification of storage fungal species has both confused and hampered research not only in the study of mycotoxins but also in relation to the many areas of geographic and ecological investigation, including that on physical parameters for safe storage. Based on a new technique, the data which she has presented and which was so well received by this conference will considerably re-dress the balance in our favour. It not only resolves current anomalies but provides an accurate method of species identification for the storage aspergilli.

I selected the subject of the third paper of this symposium on the basis that resistance to pesticides is for some, already a serious problem, which in the future I believe will become all embracing. The paper by A.J. Prickett, "Maintaining insecticide susceptibility in stored grain pests" analyses and examines the consequences of the development and spread of resistance within the United Kingdom of Britain. It shows that the problem is widespread and that for particular species it has become serious. It also highlights that, with the exception of a few countries such as Australia, information on resistance levels, within Europe and third world countries is poor and that little or no monitoring appears to be in progress. The need for an international approach, such as the 1972 FAO survey, is in my opinion, an urgent requirement.

The final paper of the symposium written by Professor Izuru Yamamoto "Some echochemicals related to stored product insects", admirably presented by Dr Al Perry, was selected because it introduces the research topic attractants- which must become of increasing importance to stored-product protection. His paper which by specific reference to Callosobruchus species, shows the importance of the role of detailed behaviour studies in any work involving attractants.

Convener's Observation

At the end of a conference on "Stored Product Protection", the summary of this symposium, concerned as it is with the future of such protection, should finish with some review, albeit a personal one, on the overall achievements of the conference.

Firstly I would like to compliment the organizing committee for a programme, which has not only successfully highlighted the problems we face as an international body but, at the same time, has provided the right kind of sessions to report and evaluate world research concerned in their solution.

The widening of the scope of the conference to include such subjects as mycology, storage design and engineering and rodent control has been successful. Undoubtedly, of these new areas, mycotoxin research together with storage engineering were well represented and auger well for future meetings. I would welcome a strengthening of contributions both from storage mycologists and rodent specialists. The success of this initial venture may encourage such participation.