EXTENDED REPORT ON THE WORK I HAVE UNDERTAKEN AT THE FOURTH INTERNATIONAL FLORA MALESIANA SYMPOSIUM AND AFTER THE SYMPOSIUM

FOR: THE CHAIRMAN AND THE COMMITTEE OF THE
JAMES RENNIE BEQUEST
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Following my letter reporting my work at the Fourth International Flora Malesiana Symposium and after the symposium (13 September 1998) I would like to include further details as follows.

1) The key issues discussed at the symposium.

They were divided into six topics.

1.1) Taxonomy and systematics of Malesian plants.

Six sessions were devoted to this topic. Scientists from several countries including the UK, the Netherlands, Austria, Denmark, Germany, the USA, Hong Kong, Australia and New Zealand gave their lectures on taxonomy and systematics of different genera in families such as Gesneriaceae, Melastomataceae, Euphorbiaceae, Leguminosae, Rubiaceae, Begoniaceae, Zingiberaceae, Myrsinaceae, Myrtaceae and Symplocaceae.

1.2) Phytogeography.

An interesting keynote address by R.J. Morley on " Tertiary history of the Malesian flora" was followed by other papers on biogeography and evolution of plants in the Malesian region.

1.3) Contributed papers in tribute to Professor E.J.H. Corner.

The papers given in this topic were mainly based on E.J.H Corner's contributions to the study of palms, tropical mycology and tropical forest ecology and conservation.

1.4) Progress in local floras.

This topic provided the participants with useful and up-to-date reports of certain groups of plant in the Malesian region. Examples of the papers are "The non-orchid monocotyledons of Mount Kinabalu" (J.H. Beaman & R.S. Beaman) and "Checklist of the orchids of Sarawak" (T.E. Beaman *et al.*)

1.5) Ecology and conservation.

Papers such as "Ecology and conservation of montane *Nepenthes* (Nepenthaceae) in Sumatra" (C. Clarke) and "Endemic riverine Araceae of Peninsular Malaysia" (B. Sulaiman & M. Mansor) were given. It was hoped that areas covered for plant species conservation in the Far East will be greater and more wide spread.

1.6) Ethnobotany.

A short but interesting session included a paper entitled "Effect of disturbance on the economic potential of tropical rain forest" (J.L.C.H. van Valkenburg).

2) How my Ph.D. study makes a significant contribution to the study of the flora.

In the Zingiberaceae workshop session with Prof. Kai Larsen from Aarhus University (Denmark) as a chairman, an intellectual discussion was carried out among specialists from several countries. Prof. Larsen emphasised the need for the preparation of a checklist, a database, generic handouts, **Ph.D. projects and studies of large genera** for the study and the revision of Zingiberaceae in the Malesian region.

In the family Zingiberaceae, *Alpinia* Roxb. is the largest genus with c.226 species (Smith 1990). There are c.180 species occur in the Malesian region. Previous studies of *Alpinia* based on morphology by Schumann (1904), Holttum (1950) and Smith (1990) did not yield a consensus classification of the genus. Therefore, my Ph.D. project which involves a molecular phylogenetic study using the internal transcribed spacer region of nuclear ribosomal DNA provides an alternative to the previous studies. The study shows promising results and gives a new insight for the infrageneric classification of *Alpinia*. It is hoped that the results will make a significant contribution to the study and the revision of the flora in the near future.

3) What I learned about *Alpinia* on the field trip.

My next destination after Kuala Lumpur was Sabah (East Malaysia). I attended a private post-symposium trip arranged by two experts in Zingiberaceae: Mr. Anthony Lamb from Agricultural Research Station in Sabah, Malaysia and Mr. John Mood from Waimea Arboretum and Botanical Garden in Hawaii, USA. The aim for this trip was to study *Alpinia* and other genera of Zingiberaceae in the wild.

We visited Crocker Range National Park and Nabawan to see natural habitats of the Zingiberaceae. Most gingers were found at 2,000-3,000 ft. in damp and shady areas of the herbaceous forest. At Crocker Range National Park *Alpinia havilandii* was flowering and a note was taken in detail about the plant. After taking photographs as well as leaf material for DNA study, voucher specimens were made. In Nabawan however, no *Alpinia* was located. Instead, the area was rich in genera such as *Hornstedtia*, *Etlingera*, *Amomum*, *Elettaria* and *Plagiostachys*.

In addition, we also visited Kinabalu Park and the Agricultural Research Station in Tenom. Most *Alpinia* species (*A. purpurata*, *A. havilandii*, *A. mutica*, *A. zerumbet*, *A. ligulata*, *A. nieuwenhuizii* and *A. aquatica*) found in these two places were cultivated. At the Agricultural Research Station I was delighted to see Mr. Lamb's voucher specimens and spirit collections of *Alpinia capitellata* and *A. beamanii*.

For this trip I learned not only about gingers but also about the remarkable diversity of vegetation which includes pitcher plants, orchids and rhododendrons. I also gained an invaluable experience in the field and learned to work more efficiently as a team.