

CONCLUSIONS AND RECOMMENDATIONS

Only the ones agreed upon by great majority of the workshop participants have been taken up. The conclusions and recommendations of the six subtheme groups appeared to overlap to such an extent that we have rearranged them according to the following categories:

- 1. Floras: organization and management**
- 2. Floras: contents**
- 3. Education: floristics and collecting**
- 4. Collections: organization and management**
- 5. Collections: what to collect and proper documentation**

1. FLORAS: ORGANIZATION AND MANAGEMENT

1. The quality of the product, which is based on regional taxonomic research, should be maintained within the concept of a stronger management approach to attain the product faster. Flora Malesiana is considered an indispensable tool utilized at the local level in floristic and applied endeavours.
2. A stronger management approach is considered the most important issue and it is recommended that the services of an individual to manage the project (interface with international funding agencies, recruit and deal with collaborators in a systematic way) be obtained for the project.
3. Symbiosis can be achieved between Flora Malesiana and local/national projects and significantly increase the rate at which Flora Malesiana treatments appear, by fostering cooperation between the projects that would upgrade the contents of Flora Malesiana. The latter would benefit from local/national projects via:
 - a) the intimate field knowledge of local botanists: ecology and field characters;
 - b) their knowledge of ethnobotany and uses;
 - c) the use of local projects to enhance the field opportunities for Flora Malesiana botanists;
 - d) sharing illustrations and producing them in the Malesian region.
4. In view of the urgent need for an inventory of plant resources in the tropics, flora-managers should expedite the production of Floras and widen their political and financial support by clearly defining their strategy and products. They should:
 - a) investigate the availability of external funding with a view to appointing a team of full-time writers and editors;
 - b) find funding for further inter- and intra-regional travel, for study leave and for short-term technical support for production of Flora treatments.

5. Flora Malesiana should encourage the establishment of an 'Expertise Centre' in the University of Leiden and should explore the possibility of a database system central to the Flora Malesiana project.
6. A flexible approach to floristic writing should include different formats and products for different audiences, including national planners, professional scientists and the general public.
7. Stronger interaction between participating organizations should be encouraged and the new technology will enable a wide range of information from the Malesian region, vital to the Flora Malesiana project, to be collected and disseminated much more effectively.
8. The aim of Flora Malesiana work should be the writing up of available material succinctly in the form of a concise flora which may in many respects be provisional but will lay the foundations for subsequent monographic work.
9. The current state of knowledge of families in the Flora Malesiana region should be assessed and used as the basis for setting a schedule for production of a concise Flora Malesiana.
10. In view of the shortage of manpower necessary to acquire materials ensuring a sound basis for Flora Malesiana, the available manpower must be used more effectively.

2. FLORAS: CONTENTS

11. The format of Flora Malesiana should be adjusted to reduce some less useful parts. The changes recommended relate to the following: concise descriptions; selective bibliography, but retaining complete (regional) synonymy; elimination of unreliable vernacular names and uninformative photographs; in general, no distribution maps.
12. Floras should have keys and descriptions which are user friendly, and should include supplementary keys (e.g. based on vegetative characters, preferably in cooperation with the field workers) with diagnostic illustrations where convenient.
13. Flora writers should acknowledge taxonomic problems, such as complexes of species, and treat them in commentaries or, if necessary, in alternative publications.
14. This meeting strongly supports the moves by the International Union of Biological Sciences (IUBS) to adopt for all plants a list of standard names that would not be upset by mere nomenclatural priority.

15. Species distinguished in a Flora should as much as possible agree with biological reality. As a consequence, herbarium taxonomists:
 - a) should try to recognize species which can be distinguished on characters visible in the field, although not necessarily in herbarium specimens.
 - b) are reminded that flexibility in approach is needed to cope with different patterns in nature which may demand different taxonomic solutions. Splitting or lumping must be decided on a case-by-case basis.
16. Decisions to merge taxa should be taken as seriously as decisions to recognize new taxa. The taxonomist should specifically justify decisions to merge taxa. To enable fieldworkers to refer to infraspecific forms which may seem separable on a local scale but not throughout the taxon's distribution, the herbarium taxonomist should adequately discuss the patterns of variability within a species. He might recognize this local infraspecific variance as varieties, formae, or as informal taxa.

3. EDUCATION: FLORISTICS AND COLLECTING

17. Taxonomists should offer instruction at different levels to introduce as many people as possible to plant diversity, and to encourage those especially interested to enter plant taxonomy in a practical, independent way.
18. To sustain development of plant taxonomy in the Malesian region there should be further training courses, such as the Leiden-Bogor-UNESCO training program.
19. Education, field training and motivation of particular staff should be an integral part of future collecting programs.

4. COLLECTIONS: MANAGEMENT AND ORGANIZATION

20. Herbaria should be associated with living collections and field stations, and, where possible, should take part in the production of local floras and field guides.
21. The rate of botanical collecting in Malesia needs to be increased if future taxonomic decisions made in Flora Malesiana are to be soundly based on a representative sample of existing biological variation, and the growth of plant systematics into the 21st century is to be ensured. It is therefore essential to step up the search for neglected plant groups and for improvement of field data.
22. Shortages of manpower, materials and/or space are seriously affecting many herbaria worldwide. Collecting programs which do not address the problems of documentation, mounting, distribution and preservation of specimens are not likely to function effectively.

23. There is a need for close communication and collaboration between systematic botanists and applied biologists if data resulting from collecting programs are to be effectively utilized such as by researchers on medicinal and food plants. Also logging and mining companies should be approached to arrange collecting before or immediately behind the bulldozer.
24. One useful way to obtain collections is through long-term, including multidisciplinary, research projects, preferably initiated by the Malesian countries with the possibility of expatriate participation. This reduces costs and helps solve problems with obtaining visa. Such types of exploration should have a training/education component benefiting local scientists and technicians.
25. The field worker should be aided to publish relevant results from his own observations. This might include checklists, florulas, or co-authorship of preliminary results.
26. New databases for the exchange of and storage of field knowledge should be mutually compatible. Any such database should be specimen based, not taxon based.
27. The establishment of new collecting programs should not result in the slowing down of existing monographic work, or delay the completion of Flora Malesiana. Additional recourses will be required.

5. COLLECTIONS: WHAT TO COLLECT AND PROPER DOCUMENTATION

28. There is a great need for specialist collecting. By specialist collecting is meant all collecting involving special techniques and all collection of data on groups of plants or data on features that have so far been neglected. This type of collecting need not necessarily take place in remote, undercollected areas. It may even be more efficient in easily accessible, otherwise well-known areas.
29. More interaction and more exchange of information should take place between the herbarium taxonomist working on a Flora and the field worker. The following suggestions are made:
 - a) The field worker should provide representative collections of vegetative parts (e.g. sterile twigs, reiterant shoots, bark, wood samples) as well as fertile material. He should be encouraged to provide more complete field notes, including ecological data, vernacular names, ethnobotanical notes, useful specific field characters, in short anything that is not evident from the actual specimen.
 - b) The field worker should adequately sample the pattern of local morphological and ecological variation within taxa by the use of multiple collections.

- c) Immediate identifications to the collections made by field workers should always be provided by the herbarium taxonomist, even if these identifications are provisional. The herbarium taxonomist should promptly respond to request from the field worker for (provisional) results, and solicit feedback on taxonomic problems.
 - d) When making labels for his collections, the field worker should take care to differentiate clearly between data and interpretations (e. g. "said to be used for ...", unless the use is actually observed).
30. Flora Malesiana Bulletin should have a 'Bulletin Board' with offers of and requests for collections, collecting facilities etc.
31. The Flora Malesiana project is asked to commission a manual for field collecting. This manual should be compiled with input from herbarium taxonomists working on different plant groups. Fill-in forms of suggested label information might be included for the groups which are especially problematic to collect.