

Ethiopian flora project

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ABSTRACT

After thorough planning, an Ethiopian Flora Project has recently been initiated, financed by the Ethiopian Science and Technology Commission from a Swedish grant. The planning was effected by a working group including representatives of the Biology Department at Addis Ababa University and the Institute of Systematic Botany in Uppsala as well as some international experts selected by AETFAT, and was finalized by an Ethiopian Flora Committee. The project leader is Professor Tewolde Berhan G. Egziabher in Addis Ababa, assisted by an Ethiopian secretariat under the Director of the National Herbarium. A European counterpart secretariat, headed by the author, has also been organized with Dr I. Hedberg as co-ordinator. Collecting expeditions to insufficiently known areas, loans from the Addis Ababa Herbarium to collaborating taxonomists, and other activities inside Ethiopia are organized by the Ethiopian secretariat, whereas the Uppsala secretariat is responsible for the initiation and co-ordination of the taxonomic revisions and family accounts needed for the Flora. Collaborators for several of the roughly 200 families of Ethiopian vascular plants have already been secured, but many more remain to be covered. AETFAT members with specialist knowledge of the remaining families are requested to help fill the gaps in our list of contributors.

RÉSUMÉ

PROJET DE FLORE ÉTHIOPIENNE

Après une planification minutieuse, un Projet de la Flore éthiopienne a récemment vu le jour, financé par la Commission Éthiopienne des Sciences et de la Technologie, à partir d'une subvention suédoise. La planification a été effectuée par un groupe de travail qui incluait des représentants du Département de Biologie à l'Université d'Addis Ababa et de l'Institut de Botanique Systématique d'Uppsala ainsi que certains experts internationaux choisis par AETFAT, et elle fut mise au point par un Comité de la Flore Éthiopienne. Le chef du projet est le Professeur Tewolde Berhan G. Egziabher d'Addis Ababa, assisté par un secrétariat éthiopien sous l'autorité du Directeur de l'Herbarium National. Un secrétariat européen correspondant, sous la direction de l'auteur, a également été organisé avec le Dr. I. Hedberg comme coordinateur. Les expéditions de récolte dans les régions insuffisamment connues, les prêts faits par l'Herbarium d'Addis Ababa aux taxonomistes qui collaborent et d'autres activités en Éthiopie sont organisés par le secrétariat éthiopien, tandis que le secrétariat d'Uppsala est responsable de la mise en route et de la coordination des révisions taxonomiques et des traitements des familles nécessités pour la Flore. Des collaborateurs pour plusieurs des quelque 200 familles de plantes vasculaires éthiopiennes ont déjà été assurés, mais beaucoup d'autres doivent encore être couvertes. Les membres AETFAT ayant une connaissance spécialisée des familles restantes sont requis d'apporter leur aide pour combler les lacunes dans notre liste de collaborateurs.

INTRODUCTION

The botanical exploration of the inland regions of tropical Africa started rather late (see accounts in Fernandes, 1962), but today most of the continent is considered to be comparatively well explored (Hepper, 1979). One of the earliest countries in Africa to yield botanical material was Ethiopia, but difficulties of access and travel made its exploration rather patchy and even today most of this country is poorly known botanically (Moggi, 1976).

The first general flora of Tropical Africa was the classical 'Flora of Tropical Africa' (Oliver, 1868–Hill, 1937). This was a very ambitious project, but its scope was too wide to make it really useful for any of the individual countries it comprised. When publication was discontinued, it was not quite complete and the earlier parts were already long out of date. Even before World War II the need for regional or national floras was becoming more and more obvious, and flora projects were started for a number of regions and countries, such as Flora of West Tropical Africa (Hutchinson & Dalziel,

1927–1936 — a second revision edited by Keay and Hepper appeared 1958–1972), *Conspectus Florae Angolensis* (Exell & Mendonça, 1937–), *Flore du Congo et du Ruanda Burundi* (1948–), *Flora of Tropical East Africa* (Turrill & Milne Redhead, 1952–), *Flora Zambesiaca* (Exell & Wild, 1960–), *Flore du Cameroun* (Letouzey, 1963–) and others. The practical and economic importance of a flora for a developing country was well understood by the colonial powers (cf. Brenan, 1963), and they were quite willing to supply the money and manpower needed to prepare such floras for their colonies. Decolonization in the middle of this century obviously caused administrative and economic difficulties for these projects, but fortunately the earlier colonial powers in most cases took responsibility for the continuation of the flora projects they had started.

The only tropical African country which, apart from a brief Italian occupation, remained independent during the colonial epoch was Ethiopia, for which consequently no flora project was initiated by a colonial power. The explorations and revisional work started during the Italian occupation led to the foundation of a colonial herbarium in Florence and the starting of the series 'Adumbratio Florae Aethiopiae' (Chiarugi, 1953).

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EARLIER FLORA WORK

The absence of current political incentives to produce an Ethiopian Flora does not mean that the country has been neglected by botanists in the past. On the contrary, it was one of the first African countries to have its flora enumerated in a published work, namely A. Richard's 'Tentamen Florae Abyssinicae' (1847–1851). The primary object of this book was to document the botanical findings of the two young French naturalists, Antoine Petit and Martin Dillon, both of whom died in unfortunate circumstances in Africa, but it also enumerates the earlier series of invaluable material collected by Schimper. It therefore constitutes a very useful conspectus of what was known of the Ethiopian flora at that time, and contains original descriptions of hundreds of African plant species. Numerous smaller contributions have subsequently been published on various Ethiopian plants, as well as checklists for a number of areas, but no recent comprehensive account of the flora has appeared. As a preparation for a new Flora of Ethiopia, Cufodontis (1953–1972) published an annotated compilatory checklist, 'Enumeratio Plantarum Aethiopicarum' — but this, of course, had neither keys nor descriptions. How far from complete it is, may be indicated by the fact that the account of the family Leguminosae prepared for the new flora project contains about 100 species not enumerated by Cufodontis, many of them new. The need for an up to date flora of the country has been increasingly felt, both inside Ethiopia and among botanists working on other parts of tropical Africa.

NATIONAL AND INTERNATIONAL IMPORTANCE OF AN ETHIOPIAN FLORA

On the international scene, a Flora of Ethiopia is badly needed, because so many East African plants were described from Ethiopian material. As long as the variation of the Ethiopian type population is unknown, the taxonomy of such a group is often difficult to unravel. Since Ethiopia is one of Vavilov's centra of origin of cultivated plants, the Ethiopian flora is of large practical importance for plant breeding. It is evidently the country of origin for cultivated coffee, *Coffea arabica* (Friis, 1979) as well as for ensete (Smeds, 1955) and tef (*Eragrostis abyssinica*). It also houses a rich store of genetic variability of, *inter alia*, barley (*Hordeum*) and wheat (*Triticum*), and it is therefore not surprising that a gene bank has been started in Addis Ababa.

This brings us to the national importance of an Ethiopian flora (cf. also Brenan, 1963). Access to such a flora and to a National Herbarium will make possible, rapid and accurate naming of plant specimens. This again will very much facilitate vegetation classification and land use planning, leading to long needed improvements in agriculture, forestry and conservation of nature. A new flora is also very much in demand for scientific research and teaching, at the University as well as at secondary schools. When I visited Ethiopia in the autumn of 1967, I was informed about this need by representatives of several government departments and asked

to help in soliciting support for an Ethiopian flora — which led me to investigate the possibilities for such a project.

HISTORY OF THE FLORA PROJECT

After preliminary discussions in the late sixties involving Prof. R.E.G. Pichi Sermolli, Prof. H.C.D. de Wit and others, a small meeting was convened at the 7th Plenary Meeting of AETFAT in Munich to discuss the planning of a Flora of Ethiopia. A planning committee and an advisory committee for the Flora Project were elected. After a considerable amount of discussion, both during occasional meetings and by correspondence, the planning committee produced a plan for a Flora of Ethiopia, which was presented at the 8th Plenary meeting of AETFAT in Geneva in 1974. As chairman of the planning committee, I had been asked to try to find ways of funding the project. It soon turned out, however, that neither the committee nor any of the European botanical institutions involved stood a good chance to raise the money required. The Ethiopian participation in the planning, which had been rather weak from the start, gradually became more powerful, and some time after the revolution an Ethiopian Flora planning committee was founded. At the 9th Plenary Meeting of AETFAT in Las Palmas in 1978 it was therefore decided to dissolve the advisory and planning committees of AETFAT and leave the initiative required to the Ethiopian Flora planning committee. This committee later applied for funding of the project from the grant given by SAREC (Swedish Agency for Research Co-operation with Developing Countries) to Ethiopia and distributed by the Ethiopian Sciences and Technology Commission. The Commission put a high priority on the flora project, and from 1st July 1980 the project has been under way. Funds have been granted for an initial 2½ year period, and it is hoped that SAREC together with the University of Addis Ababa will provide the additional funds needed for completion of the project, estimated to take a period of 10–15 years.

PURPOSE AND ORGANIZATION

The purpose of the Ethiopian Flora Project is threefold: (1) to write up an Ethiopian Flora within the shortest possible time, (2) to strengthen the Ethiopian National Herbarium in Addis Ababa with its library, and (3) to train Ethiopian taxonomic botanists.

The project leader is Professor Tewelde Berhan Gebre Egziabher at the Biology Department in Addis Ababa, who has at his disposal a secretariat under the Director of the National Herbarium. A European counterpart secretariat has been organized at my Institute in Uppsala with Dr Inga Hedberg as co-ordinator. The latter secretariat is responsible for the initiation and co-ordination of the taxonomic revisions and family accounts needed for the Flora. It also assists in the purchase of equipment and literature needed for the project and effects payments outside the Ethiopian border. The

field trips and collecting needed in Ethiopia as well as loans from the National Herbarium to collaborating botanists are organized by the secretariat in Addis Ababa, whereas the postgraduate training of Ethiopian taxonomic botanists required for the project is organized in collaboration between Addis Ababa and Uppsala.

The Flora is planned to appear in eight small volumes, seven of which will include the taxonomic accounts and follow the family sequence used in J. Hutchinson, *Families of Flowering Plants* Edn 1 (1926–1934). These volumes will appear as soon as they are completed, starting with Volume 3 (Grossulariaceae–Umbelliferae). A sample treatment has been prepared and distributed to all registered contributors.

For the 200-odd family revisions required for the Flora we are hoping for assistance from the many taxonomic specialists available, some of whom have already contributed to other national or regional African floras, and most of whom are no doubt members of AETFAT. Practically all AETFAT members should already have received a first circular soliciting collaboration, also reproduced in AETFAT Bull. 30, and a considerable number have pledged support for our project. In this way we have catered for practically all the families of the first volume to be published (Vol. 3), and a considerable proportion of the later ones. But many more families need 'revisers' and I therefore appeal to you all to help fill the gaps remaining in our list of collaborators. A pamphlet listing the families remaining to be tackled is available.

In spite of the collaboration already pledged and that expected in future, there will obviously always remain a number of groups for which no external collaborator can be found, but which must be tackled by a taxonomist employed by the project. The necessity of having all family accounts for a certain volume ready before publication may also call for urgent action by project staff. Since some of our external collaborators may find it difficult or impossible to visit (or borrow from) all the important herbaria housing Ethiopian and East African collections, it may be necessary to provide them with some service at those herbaria. For these reasons, the Planning Committee has engaged the services of one fulltime botanical taxonomist, Dr Kaj Vollesen, to be based primarily at Kew. In 1982 we are hoping to employ a second botanist for the same purpose. We shall also endeavour to select Ph.D. thesis projects for Ethiopian and Swedish students working on the African flora, so as to benefit the project as much as possible.

PROGRESS ACHIEVED

The most conspicuous progress achieved so far for the project is that the family Leguminosae has been completed and is ready for printing — it is hoped to distribute this as a preprint for the flora. Economically, Leguminosae is one of the two most important families in Ethiopia and comprises roughly 10% of the flowering plants of the country. The revision of

the sub-family Papilionoideae was completed by Dr Mats Thulin (supported by a grant from the Swedish Natural Science Research Council), that of Mimosoideae by Mr Asfaw Hunde (sponsored by the Salen Foundation and the Swedish Institute), and the revision of the Caesalpinoideae was contributed by Dr Roger Polhill, Kew. Draft manuscripts of some further families of Volume 3 of the Flora have been received, and it is hoped to have the whole of this volume ready for publication within two years.

As regards the National Herbarium in Addis Ababa, considerable progress has been made. The herbarium has been moved from its earlier situation to much more spacious premises, made vacant through the moving of the Biology Department into a new building. New herbarium cupboards are being installed, new equipment has been bought, the staff increased, and this progress will continue during the coming years.

As regards post-graduate training, one M.Sc. student specializing in palynology, spent five months in Uppsala and Stockholm obtaining good grounding for his work. The curator of the National Herbarium in Addis Ababa, Mesfin Tadesse, spent nine months in Uppsala following a postgraduate course and started work on the genera *Bidens* and *Coreopsis* in Ethiopia for a Ph.D. thesis. Another Ph.D. student, Sebsebe Demissew, is scheduled to spend most of the academic year 1981/82 in Uppsala for a similar purpose.

CONCLUSION

In conclusion, I would like to suggest that the Ethiopian Flora Project described above, be regarded as a child of AETFAT. It was conceived through collaboration between botanists from three different European herbaria, whose contacts had been built up within AETFAT. The fundamental planning was achieved by a committee nominated at an AETFAT meeting, and the completion cannot be accomplished without substantial international collaboration in the best AETFAT spirit. I would therefore like to conclude my paper by requesting members of AETFAT to assist in taking good care of this child of ours!

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