

SABONET

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Editorial

Welcome to the Spring 1997 edition (at least in southern Africa) of *Sabonet News*. In parallel with the new leaves and flowers that are appearing on the plants in southern Africa at this time, this issue brings with it some new information which I hope you will find interesting. I have also included an update of selected southern African botanists' e-mail addresses which I hope you will find useful. I would like this list to be expanded to include

botanists outside of southern Africa that are working on southern African plants - so if you live outside southern Africa but are interested in, or working on southern African plant taxa, please contact me via e-mail so I can include your e-mail address in future updates of the list. With one of the main aims of the SABONET project being promoting collaboration amongst botanists in southern Africa, it has been particularly pleasing to have received such a positive response to calls for articles. A special word of thanks to those who have submitted articles, and, in anticipation, to those who are still going to supply articles for future publication in this newsletter.

One issue that has been very much in my mind recently is that of sustainability and human resources in regional projects such as SABONET. Much of the success of a project (and I am treading on very thin ice here, as I have little experience of managing projects) depends on its human resources. A large portion of the SABONET project is involved with training staff from herbaria (and, later, botanical gardens as well) in southern Africa, with the underlying assumption that, after training, those staff will return to their institutions, apply what they have learnt and, through working with others, help train their colleagues. In this way, the knowledge that is gained through training courses is used for the good of the institution, country and project as a whole. In all the training that is done through the project (and here one can generalise to include all project staff, including staff attached to the secretariat) there is a large investment of both financial and human resources (on the part of the trainers), and it really hampers progress if, after someone

has undergone extensive training, that person leaves the institution where he/she is attached, creating a large gap which needs to be filled again, at additional expense. I guess that is one of the inherent risks associated with projects, where people are contracted for the duration of the project.

Nevertheless, one hopes that the investment made in individuals attached to botanical institutions will be a permanent one. If training has made them more marketable, they may move on, but their contribution to the conservation of botanical diversity is not limited to specific institutions. An institution may lose a botanist, but hopefully the individual is not lost from botany.

Christopher Willis
EDITOR

Profile : Liz Matos

Lizabeth (Liz) Merle Matos was born in England in 1938 and educated at Haberdasher's Aske's School, Acton, Middlesex, UK. Liz completed her BSc degree in Biology at the University of London, Birkbeck College in 1964, whereafter she moved to Cuba and was employed as a Lecturer in Genetics and Ecology in the Faculty of Biological Sciences, University of Havana, Cuba, from 1964 to 1970. Whilst at the University of Havana, Liz conducted research on lucerne (*Medicago sativa*) and the pigeon pea (*Cajanus cajan*) at the Pasture and Forage Research Station, Matanzas, Cuba. In 1972 Liz moved to Africa and settled in Zambia, where she was Lecturer in Genetics and Evolution in the School of Biological Sciences, University of Zambia, Lusaka. Whilst in Zambia (1972-1975), Liz conducted research on sunflower breeding under Dr Revagnan, Head of the FAO Oilseeds Programme at Mount Makulu Research Station, Zambia.



▲ Elizabeth Matos, south western Angola (photo: SABONET/ Christopher Willis).

In 1975 Liz moved west across the border to Angola, where she took up the post of Lecturer and Reader in Genetics, Evolution, Conservation and Management of Biological Resources at the Agostinho Neto University in Luanda. Liz has been in Angola since 1975, and has lived through at least two decades of civil war. She was Head of the Genetics Section of the Biology Department from 1993-1997, and despite the war, continued with research (national and regional variety trials, and the production of basic seed of the hybrid variety "Kilunda") in sunflower breeding between 1979 and 1987. Liz was instrumental in developing the National Plant Genetic Resources (PGR) Centre in Angola (1987-1997) as well as the Luanda Gene Bank (first as a "satellite" bank and later as the National PGR Centre). She conducted several collecting missions to various parts of Angola in both the early and mid-nineties. She was the Vice-Chairperson on the National PGR Committee from 1990 to 1992, and has been Chairperson of the National PGR Committee as well as a member of the SADC (Southern African Development Community) Regional Plant

Genetic Resources (SPGRC) Board since 1992. Liz coordinated the first National Plant Genetic Resources Workshop that was held in Luanda in 1993, and has been the Angolan representative at the FAO Plant Genetic Resources Commission meetings in Rome since 1993. She was the spokesperson for Africa at the May 1997 Commission meeting on the Revision of the International Undertaking. Liz was also the National Coordinator for the Angola Country Report on Plant Genetic Resources for the 1996 International PGR Technical Conference, and leader of the first provincial PGR workshop at IIA Huambo for extension workers and NGOs. In 1996, Liz was the national counterpart of the IPGRI mission to PALOPs (Cape Verde, Guinea Bissau, Mozambique and Angola) to propose cooperation with Brazil for PGR training for PALOPs in Portuguese. With all these responsibilities, Liz has managed to produce several publications on Angola's biodiversity and plant genetic resources and attended international plant genetic resources conferences.

Amidst her responsibilities associated with the Agostinho Neto University and the National Plant Genetic Resources Centre, Liz has also taken on the added responsibility of being the Angolan representative on the SABONET Steering Committee and the Chairperson of the SABONET-Angola National Working Group. At the time when SABONET was set up, Angola had no professional taxonomist working in the country in this field. Of all the countries in the region, and with a treasure-house of plant resources, Angola was, and remains, the country most in need of the SABONET project. For years the three national herbaria were carefully looked after by a very few dedicated herbarium technicians (in Huambo overseen by IIA Director Eng. Marcelino, in Luanda by botanist Eng. Azancot de Menezes and in Lubango now by Sr Daniel). Liz saw SABONET as a principal instrument to help

get Angola started in the recovery and development of a national botanical conservation programme. Experience with the SADC genebank network has shown her the value of regional cooperation ("even if at times it is unwieldy to manage!").

Liz was instrumental in saving the Huambo Herbarium (LUA) collection in 1995 from deteriorating in the aftermath of Angola's civil war - an amazing feat considering the conditions that were experienced in the country at that time. Liz arranged for a large military aircraft, loaded with a truck, to fly from Luanda south east to Huambo, where the specimens from the Huambo Herbarium were loaded onto the truck, the truck loaded back into the aircraft and flown back to Luanda. The specimens are presently being temporarily stored in the Luanda Herbarium (LUA) for safe-keeping. The following is an extract from an article that appeared in the WWF South Africa magazine *Our Living World* in May/June 1996: "The herbarium's (*referring to the Huambo Herbarium*) library was recently pillaged and some of its cabinets damaged in grenade explosions. Books, documents, including some of the original field notes made by Angola's founding botanists, were later retrieved from Huambo's market where they were put up for sale. The project was led by Dr Elizabeth Matos, a botany lecturer at the Universidade Agostinho Neto in Luanda".

What about her future plans? In the short/medium term, Liz plans to establish (i) the National Plant Genetic Resources Centre, and (ii) a national emergency collection and promote the *ex situ* conservation of threatened PGR resources, principally local landraces and farmers' varieties. Her second priority is medicinal plants. Her long term vision is the establishment of a national biodiversity centre, linking all role players concerned with biodiversity conservation. For all aspects of regional biodiversity

conservation, including *in situ* and *ex situ*, wild and domesticated PGR conservation, Liz realises that the development of taxonomic capabilities is essential. She sees immense value in extending phytogeographical mapping throughout the region, sharing of regional expertise and the use of common regional botanical databases. SABONET is indeed fortunate to have someone of the calibre of Liz Matos on the team, and as botanists are humbled by her ability to get things done, often under extremely difficult conditions. She is testimony to the fact that if one has enough determination and drive, anything is possible. May she be an example and inspiration to all botanists working in southern Africa...□

Project Document to GEF

The Project Document (PD) that was submitted to the UNDP on 2 April 1997, has been approved by the UNDP Headquarters Project Appraisal Committee (PAC) in New York, USA, and has been sent to the GEF Council and CEO in Washington for final endorsement and approval. Once this has been completed, the PD must be signed by the ten southern African governments participating in the SABONET project.



▲ "The long and winding road to GEF" (actually the pass down the escarpment from Lubango to Namibe, south western Angola)(photo: SABONET/Christopher Willis).

The photograph, showing the pass down the escarpment (Serra da Bandeira) between Lubango and Namibe in south western Angola, has been entitled the "Long and winding road to the GEF" - reflecting the "long and winding road" that the SABONET project has gone along in accessing funds from the GEF. The project is now hopefully on the last bend of the "pass".□

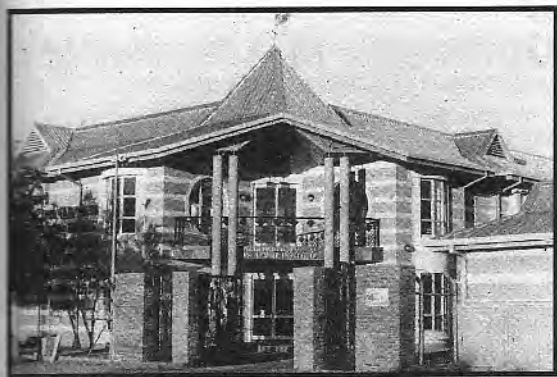
PD APPROVED

Dr John Hough, UNDP GEF Africa Coordinator for Biodiversity and International Waters, informed the SABONET Secretariat on 5 September 1997 that the GEF CEO had approved the SABONET Project Document! This is a significant event in the history of the project and means that the ten individual governments participating in the project can now start to formally sign off the document.

COUNTRY VISITS

NAMIBIA/ANGOLA

Professor Brian Huntley and the Coordinator, Christopher Willis, visited Namibia and Angola between 5 and 12 June 1997. In Namibia they attended the official opening of the National Botanical Research Institute (NBRI)(see photo, and the *Regional News Updates* later in this issue) in Windhoek, as well as attending meetings with Mr Oddvar Jacobsen of the UNDP-Namibia office and staff of the National Herbarium and Botanic Garden.



▲ The National Botanical Research Institute (NBRI) housing Namibia's National Herbarium (WIND), Windhoek, Namibia (photo: SABONET/Christopher Willis).

In Angola, hosted by Liz Matos, meetings were held with the SABONET-Angola National Working Group, the Ministry of Environment as well as staff of both the Luanda Herbarium (LUAI) in Luanda and the Lubango Herbarium (recently provided with the acronym LUBA by Patricia Holmgren of the New York Botanical Garden and co-editor of *Index Herbariorum*) in Lubango, south western Angola. Information that will be used towards the southern African supplement to *Index Herbariorum* (expected to be published in early September as the second number in the *Sabonet Report Series*) was collected from the Luanda and Lubango herbaria. □



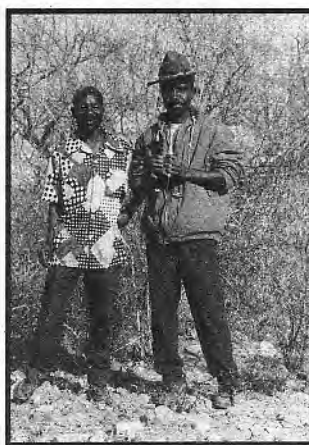
Flower of *Balanites maughamii*
(Balanitaceae)

illustrated by Ossitene

Bintone Juliasse (OBJ) (*Plantas Medicinais - seu uso tradicional em Moçambique* 3, 1990)



▲ Participants at the second SABONET-Angola National Working Group meeting held in the Luanda Herbarium (LUAI), Luanda, June 1997 (photo: SABONET/Kostadin Loutchanska).



◀ L-R. Mr José Daniel, Curator of the Lubango Herbarium (LUBA), Lubango, Angola, and Mr Agostinho da Silva, a botany teacher associated with the herbarium (photo: SABONET/Christopher Willis).

Training Courses

Computer Course

A successful computer training course, presented by Mr Trevor Arnold, Head of the NBI's Data Management Section, was held in the National Herbarium, Pretoria, South Africa, from 21-30 May 1997 (see centrefold for photographs). The eight course participants came from the following countries and herbaria: Botswana (PSUB), Lesotho (ROML), Malawi (MAL), Mozambique (LMA), South Africa (PRE), Swaziland (SDNH), Zambia (UZL) and

Zimbabwe (SRGH). The course was entitled: *Introductory Course on the Design, Management and Use of Herbarium Specimen Databases*, and the objectives were as follows:

(a) to improve the participants' knowledge and use of Windows 3.11, specifically the Windows File Manager; (b) to develop and improve the ability of participants to backup and restore data using Windows backup and the Colorado/IO Mega tape backup; and (c) for participants to become proficient in the use of the Specimen Database, specifically with respect to (i) capturing data from existing and new specimens and generating labels for those specimens, (ii) generating detailed reports for selected specimens, and (iii) providing a good understanding of the associated lookup tables and how to add data to these tables.

The course participants also had a chance to do some botanising during the only weekend of the course when they undertook a one-day field excursion to the Waterberg (see photographs in the centrefold), a mountain range a couple of hours drive north west of Pretoria. Led by Fanie Venter, a botanical consultant (and former Curator of the University of the North Herbarium) from Pietersburg in South Africa's Northern Province, the participants were given instruction in collecting and pressing plants, and found out just how difficult it can be to properly complete field data sheets. Based on the experiences of that day, some of the features of the *Specimen Database* have been changed - just goes to show the value of field exercises!

2nd Herbarium Management Course

SABONET's Second Herbarium Management training course was held at the National Herbarium in Pretoria, South Africa, from 4-22 August 1997. Photographs and information about this course will be published in the December 1997 issue of *SABONET News* (Vol.2(3)). □

Obituary: M.A.N. Müller

Michiel (Mike) Adriaan Niklaas Müller, second curator of the National Herbarium of Namibia (South West African Herbarium) died tragically in a motor car accident on 4 April 1997. Botany in Namibia has lost a valued scientist and colleague in the prime of his career at age 49.

Mike was born in Citrusdal in the Cape (South Africa) on 25 January 1948, where he also matriculated before registering for a BSc degree at the University of Stellenbosch. After graduating in 1970, he took up the position of Professional Officer at the SWA Herbarium in Windhoek. By the time he succeeded Mr Willie Giess as Curator in 1975, Mike had already developed a keen interest in the genus *Eriocephalus* (Asteraceae), the subject of his Masters degree from the University of Pretoria obtained in the same year. An extensive taxonomic revision of the genera *Lasiospermum* (Asteraceae) and *Eriocephalus*, resulting in the description of 4 new species of the latter (unpublished), earned him a PhD from the University of Stellenbosch in 1988. Mike held the position of Officer-in-Charge of the Herbarium and Agricultural Laboratory until his promotion to that of Deputy-Director of Forestry in 1991.

Mike's infectious enthusiasm for the unique Namibian flora and his incomparable knowledge thereof, resulted in numerous popular articles. His impressive and informative exhibits of indigenous plants at the annual Agricultural Show contributed greatly to public awareness of our flora. Perhaps Mike is most well-known for his publication *Grasses of South West Africa/Namibia*, available in three languages. This book continues to be in great demand by scientists, students, farmers and tourists. At the time of his death, Mike was completing a monumental work on the *Trees and Shrubs of*

Namibia, a project which had kept him occupied for almost 15 years. It is anticipated that this book will be published within the foreseeable future, and will no doubt be acclaimed as a historic and comprehensive reference work.

For those of us who had the privilege of working closely with Mike, the loss is far more than the passing of a colleague. Mike was a sincere and generous person. He cared about others and displayed all those characters which we associate with inherent goodness but that are so seldom encountered.

A tragic incident has robbed Namibia of a well-known and respected botanist. However, his influence will continue to be felt through his writings and the love of plants he instilled in the hearts of so many. □

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In *SABONET News* Vol. 2 No. 1: 25-26 (1997), Prof. Nagendran gave a brief explanation of CITES, what it is and how it works. In this article he mentioned that new resolutions on the implementation of the Convention are considered at biennial conferences. I recently had the

'dubious' opportunity to attend the 10th Meeting of the Conference of the Parties (COP), held in Zimbabwe from 9-20 June 1997, as part of the official South African delegation. I say 'dubious', because during the depths of lengthy debates on animals like Sturgeon, African Elephants, Vicunas, Minke Whales, etc., I wondered what I, as a botanist, was doing at such a meeting. At times the political rhetoric also made me wonder if I had the wrong venue and was at a political debate rather than a meeting to address conservation issues! I soon realized that this initial pessimism was not a fair reflection of what CITES COPs are all about. Although the COPs are driven to a large extent by political agendas and are dominated by animal rather than plant issues, they provide an essential mechanism for nations to get together to address common concerns about species threatened by international trade. It certainly was a valuable learning experience for me and enabled me to make contact with botanists from many other countries working on similar problems. COP-10 will certainly go down in history as a watershed conference where sustainable use was firmly placed on the agenda and given long overdue recognition by the Parties present and it was a privilege to have been part of this.



COP-10 will undoubtedly be remembered for the heated debates over the African Elephant and the eventual downlisting to Appendix II of the elephant populations in Botswana, Namibia and Zimbabwe. Unfortunately, the debates around this issue dominated the conference and the global media and did nothing to reduce the perception that CITES is an animal-based convention. If one looks at the number of species listed on the appendices of CITES, one gets a very different perspective of this, one of the oldest environmental conventions. Of the 39 000 species listed, 36 000 of them are plants. There is an increasing realisation about the importance of plants and the role they play in ecosystem functioning and at COP-10 it was clear that CITES is increasingly turning its attention to plant issues. This change has largely been brought about by the high profile of timber species.

Summary of plant-related proposals to amend the CITES Appendices at COP-10.

FAMILY	PROPOSAL	PROPONENT	RESULT
Cut flowers of artificially propagated plants	Amendment of the current annotations #1, #2, #4 and #8 to include the following exemption: "Cut flowers of artificially propagated plants"	Switzerland at the request of the Plants Committee	Adopted
Timber species	Amendment of annotation #5 to read: "Designates logs, sawn wood and veneer sheets"	Switzerland at the request of the Plants Committee	Adopted
Araliaceae	<i>Panax quinquefolius</i> (Ginseng), amendment of annotation #3 to read: "Designates roots, rhizomes or rootstocks, and specimens recognizable as being parts thereof"	Switzerland at the request of the Plants Committee, with additional amendments by the USA	Adopted
Theaceae	<i>Camellia chrysantha</i> (Golden-flowered Camellia), deletion from Appendix II	China	Adopted
Mexican Cactaceae	Cactaceae spp., amendment to annotation #4a) to indicate the seeds of Mexican cacti are included on Appendix II, except those obtained from artificial propagation in Production Units	Mexico	Adopted
Cactaceae	Annotate Cactaceae spp. in Appendix II to exclude artificially propagated specimens of the following hybrids & cultivars: <i>Hatiora x graeseri</i> , <i>Schlumbergera</i> , <i>Gymnocalycium mihanovichii</i> & <i>Opuntia microdasys</i> ("Supermarket Plants")	Denmark	Adopted
Euphorbiaceae	<i>Euphorbia</i> spp. in Appendix II, inclusion of an annotation to exclude the artificially propagated specimens of the cultivars of <i>Euphorbia trigona</i> (Cowboy Cactus)	Denmark	Adopted
Primulaceae	<i>Cyclamen</i> spp. in Appendix II, inclusion of an annotation to exclude the artificially propagated specimens of the hybrids and cultivars of <i>Cyclamen persicum</i> , except when traded as dormant tubers	Denmark	Adopted
Meliaceae	Include in Appendix II the Neotropical populations of <i>Swietenia macrophylla</i> (Bigleaf Mahogany) and its natural hybrids with <i>S. humilis</i> , including logs, sawn wood, veneer sheets and plywood sheets	USA & Bolivia	Rejected
Portulacaceae	<i>Lewisia tweedyi</i> (Tweedy's Bitterroot), deletion from Appendix II	USA	Adopted
Proteaceae	<i>Orothamnus zeyheri</i> (Marsh Rose), transfer from Appendix I to Appendix II	South Africa	Adopted
Proteaceae	<i>Protea odorata</i> (Swartland Sugarbush), transfer from Appendix I to Appendix II	South Africa	Adopted
Ranunculaceae	<i>Hydrastis canadensis</i> (Golden Seal), inclusion in Appendix II, with annotation #3	USA	Adopted
Scrophulariaceae	<i>Picrorhiza kurroo</i> (Katki), inclusion in Appendix II, with annotation #3	India	Adopted
Valerianaceae	<i>Nardostachys grandiflora</i> (Indian Nard), with annotation #3	India	Adopted

At COP-9 in Fort Lauderdale, USA, it was agreed to establish a Timber Working Group to see whether the protocols of CITES could be applied to timber species which are traded in significant volumes on the international markets. This was largely to determine if regulation would assist in the sustainable use of such timber species in developing countries. This group has made excellent progress and many of the recommendations they proposed were adopted at COP-10. These recommendations will enable CITES to enter a hugely commercial area involving many powerful trade organizations. Despite the progress made by the Timber Working Group, the proposal by the USA and Bolivia to list mahogany (*Swietenia macrophylla*) on Appendix II was unsuccessful. Nevertheless, the debate around the listing was very constructive and it was agreed by all range states to work closely together in future and that a number of countries would probably request listing of their populations of mahogany on Appendix III.

Another significant development concerning plants is the increasing involvement of CITES in issues concerning trade in traditional herbal medicines. CITES together with the IUCN-The World Conservation Union, has established a specialist group to look at the whole topic of traditional plant use and trade, particularly to identify those species most at risk. Three plant species traded for medicinal use were in fact proposed for listing on Appendix II at COP-10.

There were numerous issues in the many resolutions and decisions which were adopted at COP-10 which have implications for plant conservation in southern Africa. These are all mainly to do with the implementation and enforcement of CITES. There are too many decisions to discuss here, but if anyone is interested they can contact me for further details. There were also 15 proposals to amend the appendices which involved plants, these are presented in the summary table attached, together with an indication of whether they were adopted or not.

During the period between Conferences of the Parties many of the tasks identified and decisions made by the Parties at the last COP are carried out by the CITES Secretariat and a number of

appointed committees. The composition of these committees is largely determined by the regional groupings within CITES. For example, the Africa Region nominates which African countries will represent the region on the Animals and Plants Committees. At COP-10, the Africa Region nominated Morocco and Malawi as the two regional representatives on the Plants Committee with Burundi and South Africa as the respective alternates. The nominee from Morocco will probably be Dr. Rejdali Moh and from Malawi, Prof. Jameson Seyani. I have been nominated as the alternate representative from South Africa. The Plants Committee meets once a year and either Prof. Seyani or myself will attend these meetings.

The agenda of activities for the Plants Committee for the next couple of years includes assessments of a number of southern African species; this, together with the fact that Africa was singled out to be the test region for the development of a new CITES information management strategy, indicates that botanists in southern Africa will become increasingly involved with CITES. If there are any CITES issues which are of concern to you and for which you need help, please contact either Prof. Seyani or myself and we will try our best to help you. COP-11 is to be held in Indonesia in late 1999 or early 2000 and I look forward to being part of the CITES team tackling the increasing challenges to plant diversity as we approach the next century. □

Craig Hilton-Taylor

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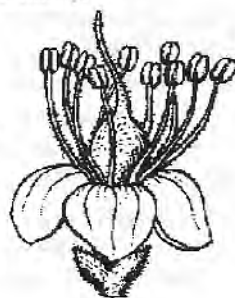
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Flower of
Gossweilerodendron
balsamiferum
(Fabaceae) from
Conspectus Florae
Angolensis 2 (1956)



Namibian Tree Atlas Project

The Namibian Tree Atlas Project has just been started, with a projected initial run of three years. The object of the project is to map the distribution of the woody plant species (trees and shrubs) in Namibia and to try to gather as much additional information about them as possible. The plan, as with other successful projects such as the bird atlas, is to rope in as many amateur and professional people as we can, not only to assist in getting information, but also to make people aware of the importance of trees and shrubs, to have fun and to learn in the process.

Woody plants have a multitude of uses - such as fuel, shade, building materials, tools, for wood carving, as a source of food and medicine, for religious ceremonies, as browse for livestock and wild animals alike - and of course, most importantly, they provide food and shelter for birds! Traditional uses are passed down from generation to generation by word of mouth and many are largely unrecorded. Due to urbanization and the loss of traditional family life, some of these uses may be lost. With an ever-increasing human population and demand on our woody plant resources, many species are being over-used to the point where plant populations in some areas are seriously affected.

We need to find out as much as possible about these species so that we can provide the information needed for land-use planning and conservation management. In addition to gathering information we want to make all Namibians aware of the diversity and importance of woody plants.

We would like to produce an atlas mapping the distribution, status and abundance of all our woody plant species, and including as much additional information as possible. The information will be made available to all interested parties, both in the form of a published atlas and on computer disc. Anyone interested in knowing which species occur in a particular area; in a certain habitat; or what the distribution of

certain species is in Namibia, will be able to obtain this information from the Tree Atlas database.

The project is funded by the GTZ (German Agency for Technical Co-operation) via the National Biodiversity Programme. It is housed at and co-ordinated by, the National Botanical Research Institute (NBRI).

If you would like to know more, please contact Barbara Curtis or Coleen Mannheimer at tel: (264) 61 202-2181 or 202-2169, fax (264) 61 25-8153 or e-mail: gillianm@nam.lia.net. Anyone who has experience in atlas projects of this kind who can give advice on data collection and databases, or any other aspects, is welcome to contact us, please. □

Staff changes in the Secretariat

The Coordinator's Administrative Assistant, Ms Mmabatho Phuduhudu, resigned and left the project at the end of May 1997. The new Project Finance Officer, Ms Carina Haasbroek, started in the Coordinator's office on 1 August 1997. Ms Haasbroek will be responsible for the overall financial management and reporting of the SABONET project.



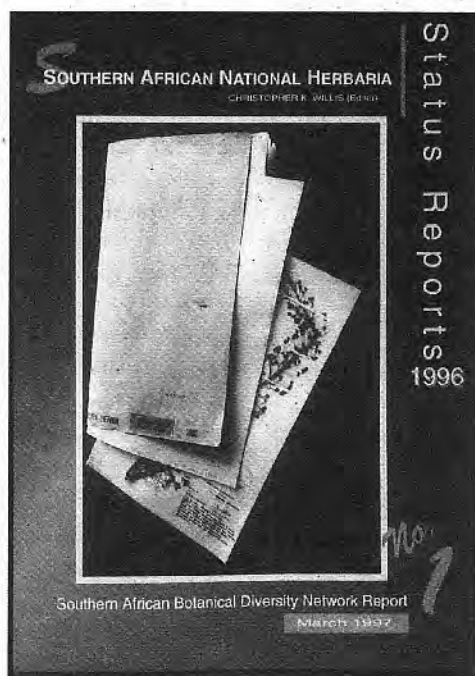
▲ Carina Haasbroek,
SABONET's new Finance
Officer.

Carina grew up on a farm in the north eastern Free State in the Vrede District (South Africa), where she matriculated at the local High School. After school she studied at the University of Pretoria where she obtained a B.Com degree. After her studies, she joined the South African Reserve Bank, where she worked in the Balance of Payments section of the Economics Department. She then moved to Middelburg and worked in the Management Accounting department of the regional ESCOM (Electricity Supply Commission) office. For the last few years Carina was involved in part time teaching and managing her own small business. She is married and has two children. □

Maiden issue of SABONET Report Series

At the end of March 1997, the first number in the *SABONET Report Series*, entitled: *Southern African National Herbaria: Status Reports, 1996* was published. This report is a compilation of the presentations that were delivered by participants (from each southern African country) at the training course workshop held at the National Herbarium, South Africa, in July 1996. This publication, which has been distributed to selected southern African, European and North American herbaria, will provide a useful baseline for measuring the impact of the SABONET project on the various southern African national/university herbaria over the next few years.

Inflorescence of
Trichoscypha
cabindensis
(Anacardiaceae) from
Conspectus Florae
Angolensis 2 (1956)



▲ *SABONET Report Series*
Number 1.

The full citation for the publication is as follows: Willis, C.K. 1997. (ed.) *Southern African National Herbaria: Status reports, 1996*. Southern African Botanical Diversity Network Report No.1. SABONET, Pretoria, South Africa. ISBN 1-874907-36-6. □

Design for a Xylotheque

The term *xylotheque* is an English translation of a term apparently coined in the Netherlands; *Xylotheek* from the Greek Ξυλον, wood, and Θηκη, a case, by analogy with *bibliotheek*, a library. This term is usually restricted to collections of the boxlike structures described in this section and the Japanese equivalents described below, but extensions to include all wood collections are known. I feel that it is more useful to use the term *xylotheque* in a more restricted sense, and to denote the more general modern collection of less sophisticated samples by the term *xylarium*.

Xylotheques are known from two areas, namely the German-speaking parts of central Europe, excluding Switzerland, and Japan. That they were invented independently in these two parts of the world is shown by the very different forms characterising xylotheques of European and Japanese origin. It appears that xylotheques are unknown in North America (Bridson U1984*, Stern U1984), and so in all probability the Wehde mann xylotheque is the only one to have originated outside these two areas.

The idea of making collections of wood samples in the form of small book-like boxes apparently arose in Germany in the latter part of the eighteenth century (Den Oudsten 1980). Each box in the set was made of a different kind of wood, and could be opened to reveal material, such as drawings, notes and pressed specimens, illustrating the life and uses of the subject species. In general these boxes opened like books, with a hinge at the spine allowing the front cover to be opened so as to give the easiest possible access to the contents. These contents would normally include a description with scientific and common names, often an illustration of some sort, a pressed flowering twig, fruits, a seedling, a charcoal sample and in some cases even specimens of insect pests.

The original German name for one of these sets was a *Natürliche Holzbibliothek*, or natural wood library, and a complete set might contain anything from 50 or 60 to as many as 400, or rarely even more, boxes. Den Oudsten refers to a set of 154 at Leiden (transferred to Utrecht), one of 146 at Harderwijk (now at Enschede) and one of 158 at Franeker. Due to over-use and fire, only the last-named set is in a state approaching completeness. Venema (1942) described the Franeker set in loving detail.

Clemenz Heinrich Wehde mann, maker of the only southern African xylotheque, was born in Breda-Resa, in the Kingdom of Hanover (Germany) in 1763 (ffolliott & Liversidge 1963). At the age of 22 he enrolled in the army of the Dutch East India Company (VOC), and was sent to the Cape Colony, where he rose to the rank of Sergeant. His military career seems to have survived the demise of the VOC in 1795 and the First British Occupation of the Cape from that date to 1803. He was certainly in the garrison of

the Batavian Republic from then until 1806, when the Second (and longer-lived) British Occupation commenced. The unemployed Wehde mann tried his hand at a number of jobs, including running a public lending library in Cape Town and teaching the rudiments of watercolour painting. At this time he developed an interest in natural history, and started making paintings of trees and flowers, and botanical and entomological specimens, all of which he sold to raise money. Within a few years of the arrival of the British he started to move eastwards, teaching farm children the "three R's" and observing the forests from Swellendam in the west to Van Stadens River in the east. By 1824 he was established in Uitenhage, but not long thereafter he moved to the farm Liechtenstein (Somerset East dist.), which at that time belonged to a friend of his, the notable Prussian collector Ludwig Krebs. Wehde mann died, destitute, on that farm in 1836.

It is well known that many species of trees can be identified, with greater or lesser accuracy, from the wood alone. In order for this to be done satisfactorily, it is necessary to maintain a reference collection of named wood samples with which the unknown specimen can be compared. Therefore, it is not surprising that collections of wood samples have been made over some centuries, and are still made. Höfker (1937) expressed some surprise that up to that time no attempt had been made to establish a list of wood collections that could be consulted by those who needed to do so. In fact the first editions of both *Index Xylariorum* and *Index Herbariorum* (recent editions cited in the bibliography (obtainable from the author) under Stern 1967 and Holmgren *et al.* 1990, respectively) only appeared after World War II. Both documents have, however, amply showed their usefulness.

However, wood characters are rarely used in the description and characterisation of plant species, and so the identification of a wood sample with no further information must remain to some extent suspect. The xylotheque, especially as constructed by Wehde mann, is an original and to some extent successful attempt to overcome these problems. Each of Wehde mann's specimens includes bark and seeds, in addition to pieces of wood; however, bark and seed characters are also of at best secondary importance in identifying

trees. Inside the boxes are his watercolours of flowering branches, and these give the necessary clues, as they show details of the leaves and flowers which are found in all the identification aids used by modern botanists. While it would be ideal if he had included a small pressed specimen in his boxes, Wehdemann's watercolours are more than adequate for the purpose, if not nearly up to the standard required for publication in modern botanical works.

In recent decades, much has been learned about the way of life of long-perished settlements by the examination of carbonised plant material retrieved from archaeological investigations (cf. Renfrew 1969, Curtis *et al.* 1979).

Authenticated charcoal specimens such as those mentioned above would be of considerable value in verifying identifications made in the course of such work. However one cannot help feeling that specimens for this purpose would be more useful if stored as preparations for viewing with the light microscope or SEM (scanning electron microscope), rather than a raw, fragile lump of charcoal.

One use which Wehdemann would not have foreseen, only becomes evident when one considers the period of time (some 170 years) which has elapsed between the time he made his boxes and the time of writing. This makes his xylothèque the longest-running experiment known to me which can yield information on the durability of articles made from indigenous timber. Some woods, such as yellowwood, are known to have problems under certain circumstances. Others, which one might have expected to be problematic, have survived remarkably well (such as *Erythrina caffra*, the coral tree).

The existence of a box made from the timber of *Scutia myrtina*, a woody liane, is a salutary reminder that not all wooden items need to be made from huge tree trunks. Various species of *Dalbergia* (another group of woody lianes), for instance, are recorded by Pooley (1994) as being used for walking sticks etc., and there is a case on record of an experimental clarinet having been made from *Dalbergia melanoxylon*.

Schildbach's xylothèque, in which exact localities of the trees used are given, suggests a further use to which Wehdemann's set could be put, given

some ingenuity in tracing his localities. Follmann (n.d.) points out that several of the trees have disappeared from the areas where Schildbach collected them in the 200-odd years since the boxes were made. This allows this set to be used as a source of data in a research program designed to determine secular changes in the environment in northern Hesse (the part of Germany around Kassel). Follmann also indicates that bark-dwelling epiphytic lichens attached to Schildbach's boxes can be used as extremely sensitive indicators of environmental degradation in this area.

It would be difficult to retrieve the same amount of high-quality information from Wehdemann's boxes, for several reasons. One is that the area where he collected his material was, at that time, only recently settled, and so place names were not ideally stable. He is either vague, saying that the tree is widespread in such-and-such an area, or he only saw one, on a farm belonging to whoever. In the latter case it would, theoretically, be possible to trace the landowner in the Cape Archives. In fact, in most cases the information required is more easily found in Skead's (1993) Algoa gazetteer. Secondly, the bark attached to Wehdemann's boxes is generally free from epiphytes. In South African forests, the epiphytes most likely to be encountered are mosses and liverworts, which are much less firmly attached to their substrate than the lichens mentioned by Follmann. Even without any conscious effort at 'cleaning' the bark, it is improbable that these would have survived from 1826 until today. Finally, much less is known about the environmental requirements of any southern African epiphytes than about European lichens. Even if the information were there, the background needed to interpret it does not exist.

Nevertheless, it would in theory be possible to compare Wehdemann's notes with the presently known distribution of the trees he used. This could make it possible to determine secular change in the distribution of the trees. In this regard, it is remarkable that in several cases he records that the tree in question does not grow west of Grahamstown (or some spot nearby), yet distribution maps which are prepared from all available data regardless of age, show the trees growing several hundred kilometres west of the western limit claimed by Wehdemann. Herein

lies a possible future research project of some usefulness, bearing in mind that most previous detailed work on secular change in vegetation has focussed on the boundary between Karoo shrubland and grassland (for example, Hoffman & Cowling 1990, Bond *et al.* 1994).

Global warming, or possibly cooling, has in recent years become a topic fascinating to environmentalists and others, and a conference held in 1989 may be seen as South Africa's first step towards a rational definition of, and response to, the problems that any change in climate may cause (Shackleton 1990). That South Africa's climate has changed continuously for hundreds of thousands of years at least is as much of a commonplace as the idea that a change in climate at any point will result in a change in the vegetation there. However the evidence of secular change in climates here is sparse, and its interpretation is confusing (*cf.* Partridge *et al.* 1990, and literature cited therein). One wonders if the specimens and notes made by Wehde mann and others could help elucidate the problem of secular change in vegetation and possibly climate in the Eastern Cape. Knowing the changes in vegetation that have occurred with changes in climate in the past would make prediction of future changes in vegetation and hence possible land use easier and more accurate.

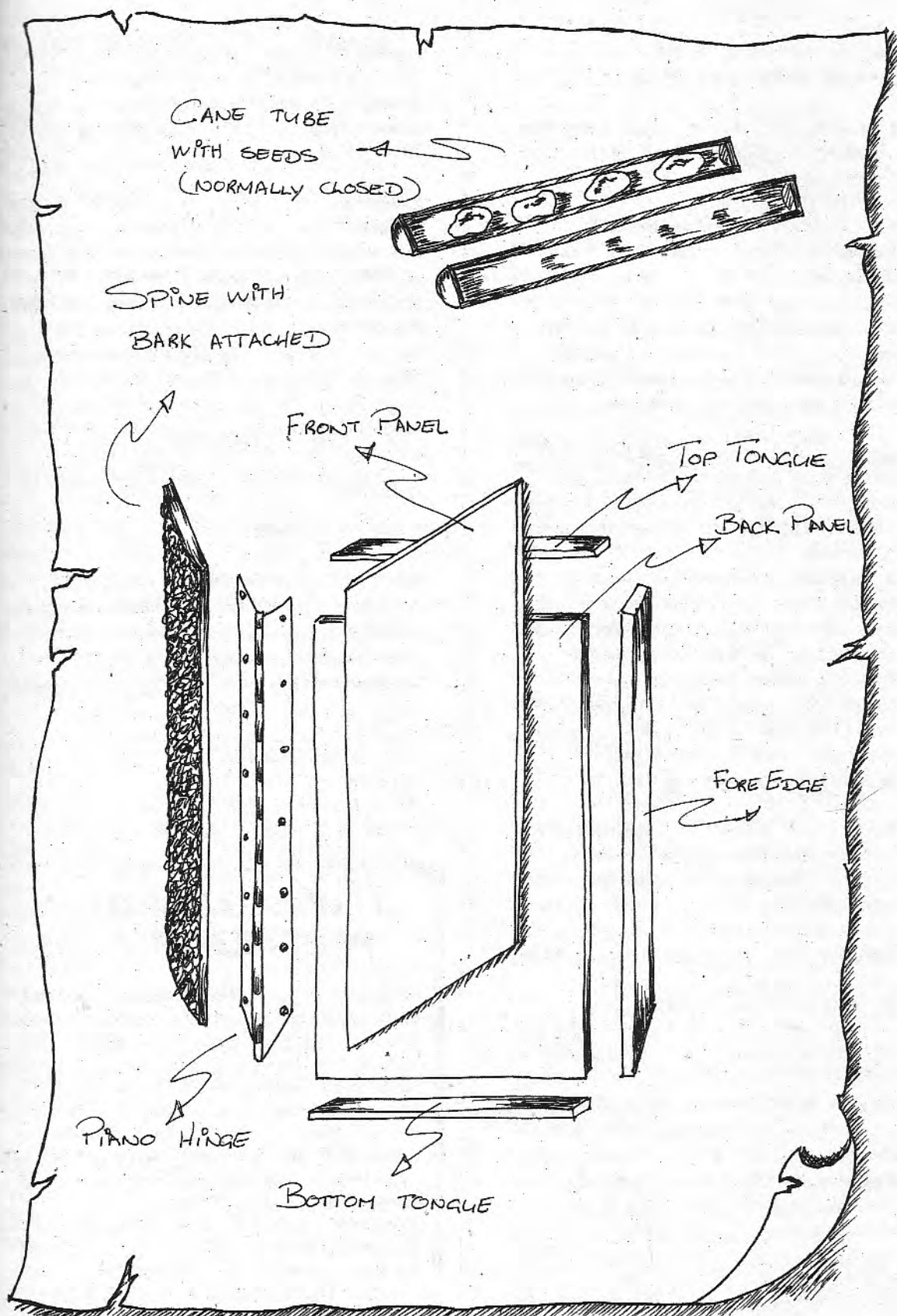
It is evident even from the small sample of forest trees of southern Africa represented in Wehde mann's xylot heque that there are two kinds of distribution pattern among the trees present in the Eastern Cape (where the patterns overlap). One has its centre in the Western Cape, and trees related to these are often to be sought in southern South America or Australia. The other, more interesting in this context, has its centre in Kwazulu-Natal or further north, and trees related to these are to be found primarily in tropical Africa, and secondarily in the Old World tropics. If the climate of the Eastern Cape were to become warmer and moister than at some starting time, one would expect trees in the latter group to spread westwards and southwards from the limit of their range at the starting time, provided that no other influence is active.

The period of botanical exploration of the Eastern Cape, about 200 years, is probably close to the minimum length of time in which such changes

could be observed. One could test the possibility of making such observations in the following manner. The first step would be to select a few species most likely to show the phenomenon sought; those claimed by Wehde mann to occur only in the east of the area known to him, but shown by the modern distribution maps to occur significantly west of this, would be ideal. Then, one would plot early specimens of each species, with their dates of collection, on a map showing the currently known distribution of that species. An ideal demonstration of forest advance in the last 200 years would be that the westernmost specimens of the species were consistently younger than their neighbours to the east, which should be younger than the oldest of their neighbours, and so on.

This experiment makes at least two assumptions which are at best incapable of proof. The first is that the earliest explorers of the area would invariably record the westernmost specimen of the tree in question. Although this is by no means certain, it is reasonable to suppose that the first occurrence they noted would be near this limit, because firstly of the natural inclination of botanical collectors to record each 'new' plant as soon as it is first seen (or, at least, first seen in a fit state to collect), secondly, of the slow rate of progress of a collector on foot or in an ox wagon, and thirdly, of the fact that most of the early explorers of this area travelled eastwards from Cape Town. Indeed Burchell's route, passing southwards from the interior to Uitenhage, then westwards to Cape Town, is unique at this time.

Another assumption which is open to question at least, is that human activity over the last 200 years has had no significant effect on the forests. In some cases at least this is demonstrably not true, and examples would need to be chosen with some care to avoid the worst cases of human interference. For example, stinkwood (*Ocotea bullata*) has been so heavily over-exploited in the last two centuries that it is now restricted to the least accessible parts of the forests where it used to grow; *Podocarpus falcatus* (yellowwood) is a similar case. White stinkwood (*Celtis africana*) has suffered differently; being a tree of forest margins, it is much more susceptible to fire than trees of the interior of forests, and so its present distribution will to some extent reflect the use of fire by pastoralists and others to limit the growth



▲ Sketch of a slightly modified xylotheque (design, Hugh Glen; artwork, Ilse van Oudtshoorn).

of forests in their grazing or farm lands, or to increase these at the expense of forests.

There are some 1075 species of indigenous trees (Von Breitenbach 1986) and about 2000 species of trees cultivated in southern Africa alone (Glen 1995). Therefore a South African collection of wood samples requires to be planned on the assumption that at least 3000 samples are needed to be workable as a 'quick guide'; if account is to be taken of variability in wood characters this number must at least be doubled. The bulk of material to be handled imposes obvious constraints on what is practical in designing the ideal wood collection.

Wehde mann's boxes overcome the problem of connecting wood samples to leaf and flower characters in a highly original way. However, they are not an ideal solution to the problem for several reasons:-

- They are very labour-intensive. The construction of each box needs considerable time and effort from someone who is skilled in carpentry. The water colour paintings may, in a modern replica, be replaced by photographs (at some cost in the ease with which critical detail can be highlighted), but considerable skilled labour is still needed.
- A certain minimum amount of wood is needed.
- The boxes as made by Wehde mann are in fact too small to house good herbarium specimens (which conflicts with the previous comment); they are approximately the size of a demy octavo book, and a standard herbarium specimen is approximately A3 in size.
- Yet if they were any larger, they would be very difficult to store. Bulky specimens are the bane of the herbarium curator's life.

Design for a modern xylotheque

In view of the interest shown by several amateur woodworkers who have seen the Wehde mann xylotheque, a drawing of a slightly modified box (see sketch) is attached. This differs from Wehde mann's design in that the front panel is attached to the rest of the box by a strip of piano hinge at the spine end, and a closure of unspecified design at the fore edge; in addition, the top tongue is fixed. This allows much more fragile specimens to be placed in the box.

Dimensions are not specified, in order to allow would-be constructors of xylotheques to determine the size that suits them best. The measurements of Wehde mann's boxes are about 195 x 122 x 24 mm.

Indigenous timber is not easily come by, at least in South Africa. In order to procure the makings of a modern xylotheque would be to enlist the aid of a friendly sawmill, whose owner would be prepared to donate wood samples (and the other bits and pieces, such as specimens and bits of branch one could use for the spine) to his local National Herbarium. With the present price of skilled labour, the only way a set could be assembled today is for an amateur to make boxes as a labour of love. Therefore, it would take a very long time to assemble a national xylotheque. □

* unpublished letters

NOTE: Due to a limitation of space, the references have not been included with this article. A comprehensive list of the references cited can, however, be obtained directly from the author or from the SABONET Coordinator.

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FLORA ZAMBEZIACA: PROGRESS REPORT

Of the c. 9860 species of flowering plants and ferns native and naturalised in the FZ area, 4946 have been published and over one third of the unpublished species have been written up. Recent publications include vol. 11(1), 358 spp. (comprising most of the FZ terrestrial orchids), and vol. 9(4), 293 spp. (FZ Euphorbiaceae, excluding Euphorbieae). Parts to be published by 1998 include 9(2) Podostemaceae - Hernandiaceae, 10(2) the grass tribes Arundineae, Cynodonteae and Eragrostideae, and 11(2) comprising the FZ epiphytic orchids and the large terrestrial genus *Eulophia*.
Contact: Gerald Pope (44) 181 332 5246
Reproduced from *Kew Scientist* Issue 11, April 1997.

Internet & Web Pages

One of the most innovative features of the world of computers and electronics that has developed over the last decade is the Internet and the World Wide Web.

This has expanded dramatically in almost logarithmic proportions over the last few years and is only just beginning to affect southern Africa. Such terms as "the Web", "the Net", "surfing the web" are becoming everyday terms in businesses, universities, schools and even private homes. Talk of a revolution in information technology points to the unlimited opportunities for those who have access to Internet, and all this at the touch of a mouse button in your office or home! During the height of the recent Mars landing by the US space probe and Sojourner, it is estimated that the NASA website and its mirror sites on different continents were receiving up to 100 million calls a day!! This is clearly a very important aspect for SABONET to address in the near future.

In South Africa the universities have been up and running their Web pages for quite a few years now and have some excellent Home pages full of information which, among other things, covers two major herbaria, Bolus Herbarium (University of Cape Town) and Schonland Herbarium (Rhodes University/Albany Museum) and two small herbaria, Schweickerdt Herbarium (Pretoria University) and Stellenbosch University Herbarium.

The NBI is just beginning to put up its own web site which should be online in a preliminary form in August. It will cover brief outlines of our Institute's gardens, research and educational activities (SABONET is also listed). We hope to be able to add lots of interesting and useful aspects in the months and years to come.

These will include things like the Plants of Southern Africa list for everyone to be able to browse and individual pages for researchers and their projects and an expanded profile of SABONET and participating herbaria. Who knows, we may be able to put aspects of PRECIS on the web before the year 2000, but that will be a major operation.

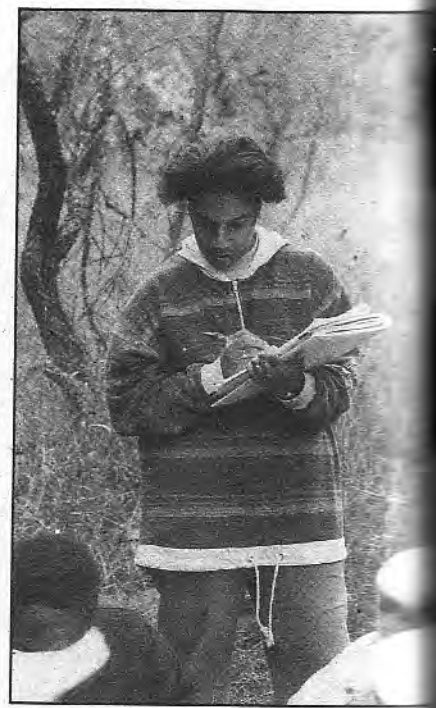
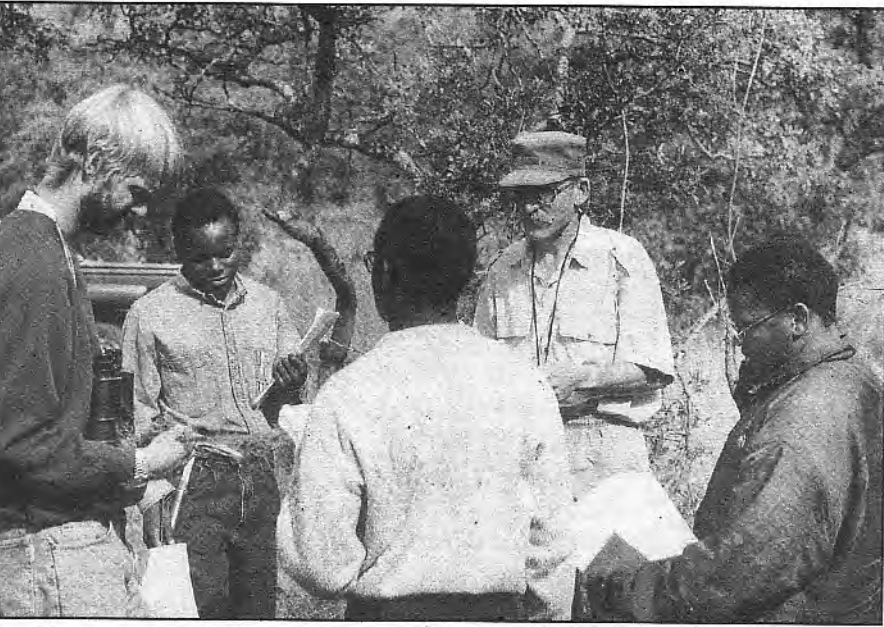
Web pages offer lots of information about their host organisations and also cross links to other Web pages and search sites with similar interests, thus opening up a remarkable amount of information possibilities to the viewer. An important aspect of a Web page is the amount of publicity a page can give an organisation or individual, particularly if it is well represented in national and international search sites and directories. But a web site is only as good as the information that is put into it.

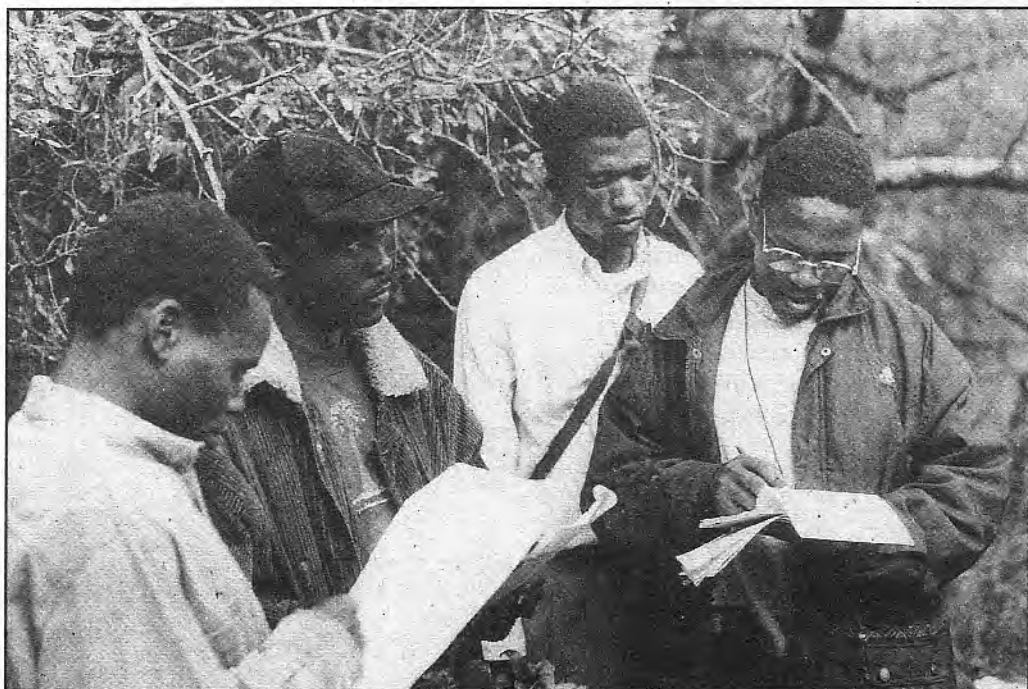
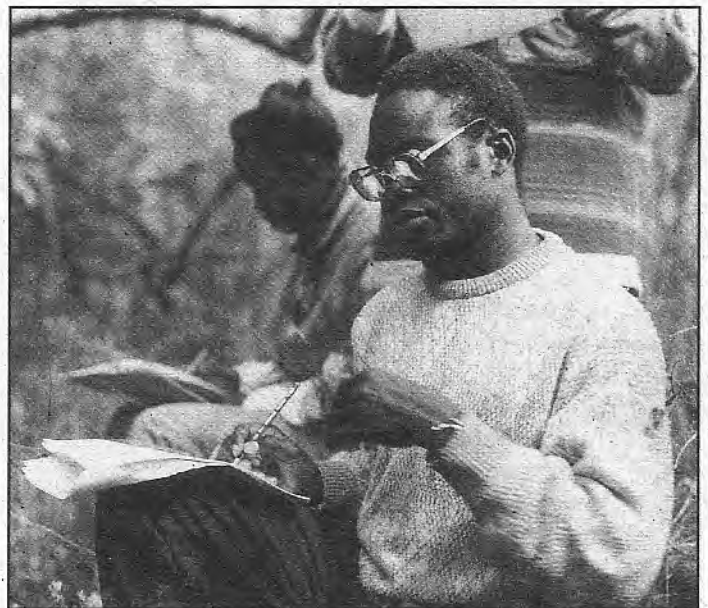
Two additional very important aspects should be kept in mind.

1) Web pages should be made attractive, interesting and worth visiting for outsiders. Some botanical gardens and herbaria have superb pages, others have dismally dull pages.

2) Web pages must be kept as up-to-date as possible – never have old news unless it is in a special archival reference section. One site of major organisation I 'visited' recently, has a whole long tale of what a certain researcher was going to do on his visit to Europe in 1995!

Internet and Web pages offer a wonderful opportunity for SABONET members, institutes and individual staff members, to advertise themselves and their work and to add value to the SABONET programme and its ideals (see *The Paper Chase* below for information on specific Web sites/pages).





Watch the pages of *SABONET News* and we will keep you informed of progress. □

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A Recovery Plan for Plant Taxonomy

Plant Taxonomy seems in poor health. The production of reports on its demise has become a cottage industry in recent years. Yet somehow in the 1990's, despite the buffets of the winds of change, taxonomy remains alive, even if many of its populations are diffuse, reduced in size and frequently threatened. Now it needs a Recovery Plan.

Taxonomists classify wild and cultivated plants. They provide a conceptual framework to understand plant diversity, and practical identification manuals. Not only botanists, but other scientists, foresters, geneticists and horticulturists; doctors, farmers, gardeners and lawyers depend upon taxonomists to sort out one plant from another - and name those we use in our daily lives. Plant taxonomy cannot be ignored. It is the very basis of the study of botany and genetic resources.

'Hard' science cannot function without taxonomy. There is little point in carrying out a laboratory observation or experiment on a root disc, cell suspension, enzyme or DNA fragment - unless you know the identity of the plant from which it comes. Many observations on chromosomes, for example, are devalued because material has been poorly identified and no voucher specimen retained.

The neglect of taxonomy is not universal, but appears to be spreading. In France, traditional botany and taxonomy have all but disappeared within tertiary education, and in the UK just a handful of universities remain centres of taxonomic research and teaching. By contrast, institutional support in North America is much more widespread, and in Italy and Spain plant taxonomy has undergone a veritable renaissance over the last 30 years. In parts of Eastern Europe plant taxonomy continues to flourish in universities, despite limited resources. Some would argue that there are actually more taxonomists than ever before and that it is our needs that have escalated. What all would agree, however, is that the current efforts in practical taxonomy are insufficient given the speed of loss of vegetation and species.

In some countries taxonomy has become more the domain of the non-professional botanist or hobbyist. These excellent people need professional training, and the back-up of institutes with herbaria, libraries and garden facilities. They cannot function in isolation.

Despite its central role in biology, the ancient discipline of taxonomy is for many a closed book. This is partly because it has been unfashionable in many countries for over 30 years, even within the botanical community. When many of us were learning science, our teachers were often mesmerized, to borrow a political slogan from the progressive 1960s, by the "white heat of the technological revolution". Teachers and their students - who today may occupy positions of influence - frequently failed to accept a synthesis of traditional and contemporary approaches to botany. This failure of botanists themselves to support taxonomy has often been reflected in a lack of governmental and public support.

It is vital that governments and funding bodies address the importance of taxonomy. Above all, taxonomy suffers from a lack of young recruits. Governments must therefore fund training, research and long-term employment in taxonomy. We should all encourage the enthusiasm of young botanists for natural history, conservation and field-based scientific research.

The last decade has seen a growth of awareness of herbal medicine and the use of plants by indigenous peoples and local communities. The medicinal plants of tropical America, especially, have grabbed the imagination of botanists and public. Yet vast tracts of this species-rich region, holding perhaps a third of all higher plants, are unexplored botanically and thousands of plants have still to be identified and to be named. Modern molecular methods alone may be too slow and expensive to classify these plants in time.

Many would say that taxonomy is being undermined by unhelpful intellectual debate about cladistics, phylogeny or bigger and better databases. Of course, botanists should be elucidating the genetics, evolution and phylogeny of plants. At the same time they should be careful not to stray from practical realities if they wish to retain public support. One reality is that more young botanists need to be trained in plant identification and the generation of end-products such as user-friendly Floras and Field Guides, both as books and CD-ROMS, rather than concentrating all efforts in expensive molecular work in the laboratory.

Taxonomy should be the very motor of the biodiversity debate. Only trained taxonomists can tackle the inventory of global diversity hands-on in field, herbarium and botanic garden. Botanists and their supporters must make governments, funding bodies and the scientific community aware that without a healthy taxonomic base, it will simply not be possible for governments to fulfil the promises they have made in their commitments to the Biodiversity Convention. Here lies taxonomy's most potent argument. □

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Dr Elmar Veenendaal was inspired to comment on the editorial from Plant Talk:

A Recovery Plan for Plant Taxonomy? Some comments

Plant taxonomy as a scientific discipline has, since the mid-nineteen seventies, certainly been "under stress" in many parts of the world. The editorial in the April 97 edition of *Plant Talk* cogently points out this development. For instance, the decline of funding for taxonomy in The Netherlands, to which I was witness as student in the early eighties was precipitated by a downward economic trend and, as a result, a reduction in funding for scientific research. In my former university, the Free University of Amsterdam, today neither plant nor animal taxonomy (once the Chair in animal taxonomy was held by the famous ornithologist Voss) exist as a scientific discipline other than in support of teaching. The downsizing in the number of taxonomy departments in The Netherlands was justified in the name of economising and efficiency. Since the Rio Conference in 1992, things have been less bleak for taxonomic research, at least temporarily. Biodiversity became hot and fundable and who else could better study species diversity than the species specialists - taxonomists. As a result, taxonomy has again become the recipient of significant funding.

The opinion that the study of biodiversity is first and foremost the realm of taxonomists is currently widely held among taxonomists and comes through in the editorial in *Plant Talk*, e.g. "Only trained taxonomists can tackle the inventory of global diversity". Surprisingly, for a discipline that tends to be very specific over the nitty-gritty of, for instance, plant nomenclature, the practical application of the concept of biodiversity conservation and management seems, at least for some, less of an issue. Too often biodiversity is interpreted to mean the description of the plant and animal species in a given area only (but what about biodiversity of genetic resources or habitats). In the eyes of some taxonomists, a response of the policy makers appears to have to follow automatically from the species inventories, but in a recent contribution in *Trends in Ecology & Evolution* (Bawa & Menon 1997) this position was rightfully criticised as too narrow.

It already follows from the *Plant Talk* editorial itself, that taxonomists have to re-assess their role in the discussion about biodiversity management. If we consider the example of the current rate of loss of biodiversity in the tropical American regions in rainforests (but also, and often forgotten, dry tropical rainforests; see for instance Bullock, Mooney & Medina 1995) where a third of all higher plants apparently remain undescribed, then the last item we should possibly spend our money on is in describing the remaining taxa. They might have disappeared before the results would have been published. *Plant Talk* also notes a large part of the taxonomy and biodiversity information is actually collected by what are referred to as "non-professional" botanists. This is certainly correct. For instance, the Peter Smith Herbarium in Maun is based on the collections and vast contribution to the knowledge of the Okavango Delta's biodiversity by Peter Smith, who in terms of *Plant Talk*, probably should be classified as a non-professional (I would not dare to say this personally). While the important supportive role of the professional taxonomist is recognised, it is the people in the field who often provide the applied function and thus justification of funding for taxonomy, perhaps because they see their role as less narrow?

Bawa & Menon (1997) point out that in monitoring biodiversity a whole set of issues, including socio-economic, should be addressed in order to operationalise the concept for policy making. Otherwise (see Ghilarov 1996, also in *Trends in Ecology and Evolution*) biodiversity may sooner or later just be considered an excuse for taxonomists to raise money to go on doing what they have been doing before the concept of biodiversity became in vogue. The funding for descriptive species lists as the way to monitor variation and change in biodiversity will certainly dry up sooner rather than later. Agencies, such as the IUCN and WWF appear in fact less and less willing to fund these activities without taking other factors into consideration.

Another point that could easily be misinterpreted (I am sure they did not mean it like that) from the *Plant Talk* editorial is that "classical" approaches in taxonomy should be seen as separate from, or even competitive to, new techniques (Plant Chemistry & Molecular Genetics). The latter are,

however, essential for scientific progress in taxonomy, both in theoretical and applied terms. For instance, the understanding of kinship between species and populations will be greatly assisted by molecular techniques (this technique incidentally plays an important role in two projects for which staff at the Okavango Research Centre have obtained funding). The importance of molecular techniques for the understanding of evolutionary relationships and processes has long been emphasised (see e.g. Richard Dawkins' remarks in *The Blind Watchmaker* (1986). Taxonomists should really hold the view that these techniques provide the basis for an important renaissance period for taxonomy and go hand in hand with, and build on the base that "classical" taxonomy has been providing. Molecular genetics is essential for the progress in taxonomy as a scientific discipline rather than its competitor.

In conclusion, rather than taking up a defensive posture, taxonomists should go out and find their nearest ecologists, physical geographers, molecular scientists, economists and planners and play an active role in the fulfilment of promises in the Biodiversity Convention through strong multi-disciplinary approaches. New recruits can, in my view, be found easily, if the new approaches are adopted and promoted as part and parcel of the field of taxonomy. The Southern African Botanical Diversity Network could well play this essential role in providing the way forward in southern Africa and classical and new approaches will continue to thrive in the region! □

References available from the author.

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Maerua edulis (Capparaceae)
illustrated by Ossitene
Bintone Juliasse
(OBJ)(*Plantas Mediciniais -
seu uso tradicional em
Moçambique* 3, 1990)



FLORA ZAMBEZIACA DONATED TO SABONET

*SABONET would like to express its sincere thanks to the Flora Zambeziaca Managing Committee for its donation of a full set of **Flora Zambeziaca** to the project. The copies will be used as essential reference material during field excursions, training courses and official collaborative collecting expeditions run by the project in southern Africa.*



▲ Ben Dlamini, Prof. Robert Compton and Mia Karsten outside the Swaziland National Herbarium (then at Mbabane), 1964. On his retirement, Compton (1886-1979) settled in Swaziland, where he collected about 8000 plant specimens (Gunn & Codd 1981)(photo: NBI/Ted Oliver).

The National Vegetation Map of South Africa Project

The History of Vegetation Mapping in South Africa

The National Botanical Institute has been involved with vegetation survey for many years, mainly through the work of members of the former Botanical Research Institute. The familiar *Memoirs of the Botanical Survey*, forerunner to *Strelitzia*, was originally instituted as a medium for the publication of botanical surveys in South Africa. Dr I.B. Pole Evans prepared one of the first vegetation maps of the southern African region. It was published in 1936 together with a text as *Botanical Survey Memoir No. 15*. In 1953 the first edition of the well-known Veld Type map with accompanying text by John Acocks was published. This study was mainly aimed at describing grazing potential of different types of natural veld but this work had a significant effect on ecology in South Africa and soon became the standard reference by which ecologists, farmers and other students of natural systems referred to the indigenous vegetation of South Africa. Such was the demand for Acocks' work that the second edition of Veld Types of South Africa was published by the mid-seventies. The second edition included photographic illustrations but the map and text, apart from an update of plant names, was otherwise unaltered.

Acocks recognized the need for revision and augmentation of his work almost immediately after the publication of his first assessment of the southern African vegetation. Many areas were inadequately documented and Acocks continued revision of his work until his death in 1979. After Acocks' death and with limited remaining stocks of the second edition of Veld Types of South Africa the Botanical Research Institute considered publishing a third edition in the mid-eighties. This posed the question of whether Acocks' work should be revised or reprinted in the original form. The decision was to reset the original text, making minor changes such as updating plant names and then to reprint the text and map without substantial changes.

Recent initiatives: the SAAB Map

What is the present situation? Dr Bernard de Winter, former Director of the Botanical Research Institute, in his foreword to Veld Types of South Africa, Edition 3 (1988) stated, 'At present there is a gap in the South African ecological literature, namely that of a fully illustrated overview of the diverse and interesting vegetation ecology of South Africa.' This situation persisted until 1992 when a group of botanists under the auspices of the South African Association of Botanists (SAAB) initiated the production of a vegetation map of South Africa based on vegetation structure and species composition. This so-called 'SAAB Map' with its accompanying booklet was published in 1996. The map and booklet were aimed at filling the particular need of schools and tertiary education institutions for such information.

The question now is whether this is the last word on the matter of a definitive map of the vegetation of South Africa? The short answer is that it is not. Although the 'SAAB Map' drew on the expertise and opinions of a number of South African botanists and has strong merit, the approach adopted in its production was largely subjective. Scope therefore remains for a definitive vegetation map of South Africa that will replace all previous maps of this kind. 'Why re-invent the wheel?', you may ask! That is a valid question but whereas the 'SAAB Map' is essentially a qualitative product, the rationale for re-evaluation lies in the need for a reassessment of all the quantitative information accumulated from vegetation surveys in South Africa. For this reason a new project has been initiated, entitled the 'National Vegetation Map of South Africa Project' or 'VEGMAP Project'.

Current initiatives: the National Vegetation Map of South Africa

The 'VEGMAP Project' is a new initiative to establish a database of vegetation data for southern Africa and to map the vegetation using modern computer-based analytical and mapping techniques. Both Acocks' original data which is now on the ACKDAT plant ecological database and more recent vegetation data from as many sources as possible will be included in the analyses. The product will be a definitive map of the vegetation of southern Africa which will ultimately replace Acocks' map as the benchmark.

for interpretation of vegetation types in southern Africa. A handbook similar to that which accompanied the Veld Types map will be produced in conjunction with the new map. However, the new handbook will not only provide descriptions of the various vegetation units found in southern Africa but will also give information about the relationships between the vegetation units in the classification.

In an attempt to bring the veld to life for users of the handbook and map, the possibility of the production of a video of the vegetation of the different units will be investigated. Through this medium it will hopefully be possible to demonstrate some of the dynamics of the vegetation types such as the effects of fire on fynbos and grasslands and the regeneration of the vegetation following such disturbance events. The effects of mismanagement of veld such as overgrazing could also be visually displayed in this way. For teaching purposes it has been proposed that descriptions and photographs of the vegetation types be put onto CD-ROM. In this way information about vegetation can reach a wide audience through 'virtual reality' and stimulate the desire to understand it as a vital natural resource. In this way conservation of vegetation will be encouraged.

The role of the National Botanical Institute and other botanists

The 'VEGMAP Project' is funded by the Department of Environmental Affairs and Tourism and the National Botanical Institute (NBI) has accepted responsibility for the project. Four NBI staff members, Drs Mike Rutherford, Mike O'Callaghan, Tony Rebelo and Dave McDonald are involved with the project. In addition numerous botanists from around the country are involved. Prof George Bredenkamp of the Botany Department, University of Pretoria is overseeing activities in the 'northern region' including the grasslands, savanna and Kalahari and Dr Ed Granger of the Botany Department, University of Natal, Pietermaritzburg and Dr Tony Palmer are coordinating activities in KwaZulu-Natal and Eastern Cape respectively. This is an ambitious project and without the commitment of additional assistance and data from phytosociologists at a number of universities and nature conservation agencies, the project could not be tackled.

We are confident that through the collective efforts of the community of vegetation scientists and other botanists in southern Africa, an extremely valuable and useful classification of the vegetation can be achieved which will heighten the awareness of the average South African citizen to the value of natural vegetation as a fundamental natural resource. □

Further information....

Any inquiries concerning the VEGMAP Project may be directed to Dr D.J. McDonald, Project Coordinator: VEGMAP Project, Kirstenbosch Research Centre, National Botanical Institute, Private Bag X7, Claremont 7735 or at Tel. (27) 21 762-1166, Fax (27) 21 797-6903 or E-mail: mcdonald@nbict.nbi.ac.za.

David J. McDonald

Project Coordinator

In Situ Conservation Projects for Gauteng

The Gauteng Directorate of Nature Conservation has recently initiated two projects pertaining to the *in situ* conservation of flora within Gauteng, one of the nine provinces of South Africa. Both projects involve the determination of conservation statuses, but at different hierarchical scales. At a finer scale, the conservation status of all rare and threatened plant species in Gauteng will be investigated, while, at a larger scale, the conservation status of the vegetation types occurring within the province's boundaries will be determined.

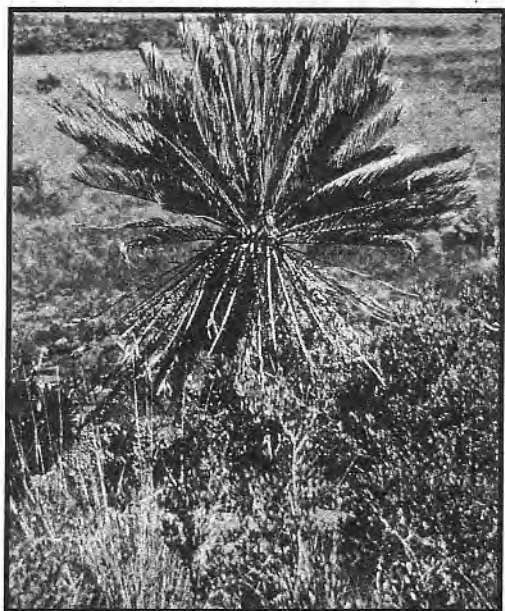
According to current distribution records, 28 rare and threatened plant species occur within Gauteng, five of which are confined to the province. These endemics include *Agrostis eriantha* (Poaceae), *Brachystelma discoideum* (Asclepiadaceae), *Ceropegia decidua* subsp. *pretoriensis* (Asclepiadaceae), *Holothrix micrantha* (Orchidaceae) and *Mossia intervallaris* (Aizoaceae).

The succulents *Frithia pulchra* and *Aloe peglerae* also occur within Gauteng. Although currently listed as rare in the Red Data List of Southern

African plants (Hilton-Taylor 1996), pressure by collectors may have rendered *A. peglerae* more threatened than currently believed.

Gauteng is also not without its share of cycads. The distributions of *Encephalartos lanatus* and *E. middelburgensis* overlap within the province. *E. lanatus* has a limited distribution in sheltered valleys and kloofs, while the individuals of *E. middelburgensis* (see photograph), currently listed as endangered, are often too scattered (Goode 1993) to form viable populations.

Rare species belonging to the orchid family are well-represented in Gauteng. In addition to the Gauteng endemic *Holothrix micrantha*, these species include *Disperis concinna*, *Eulophia coddii*, *E. cooperi*, *Habenaria bicolor*, *H. kraenzliniana*, *H. mossii* and *Nervilia kotschyi* var. *purpurata*. Many of these species are either currently listed as insufficiently known or indeterminate (Hilton-Taylor 1996), categories characterised by a lack of information. This is possibly due to their inconspicuous nature. As such, orchids may present a particular problem and many of them may be more threatened than currently thought. Of particular significance is the sensitive riparian habitats in which many of these species occur.



▲ **Encephalartos middelburgensis**
(photo: Gauteng Directorate of Nature Conservation/Michèle Pfab).

Of the six poorly conserved vegetation types occurring within Gauteng, two are found within the savanna biome and four within the grassland biome. Rocky Highveld Grassland, Moist Cool Highveld Grassland and Mixed Bushveld occupy the greatest areas of the province (Low & Rebelo 1996). Other minor vegetation types in Gauteng include Clay Thorn Bushveld, Moist Clay Highveld Grassland and Dry Sandy Highveld Grassland (Low & Rebelo 1996).

It is hoped that a variety of objectives will be achieved by this larger-scale project, which will involve stratified sampling of all six vegetation types. For example, it is intended that land suitable for conservation purposes as well as vegetation types in which open space planning is essential, be identified. Additional objectives include the recommendation of areas for alien plant removal and control together with management plans for problem plants. The results will be summarized as numerous GIS data bases.

The Gauteng Directorate of Nature Conservation welcomes any assistance in determining the localities of rare and threatened plant species in the province. For more information, please contact

Michèle Pfab

Gauteng Directorate of Nature Conservation,
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Pretoria, 0001 SOUTH AFRICA
Tel: (27) 12 303 2290
Fax: (27) 12 303 2046

References

- Goode, D. 1993. Cycads of Africa. Struik, Winchester, Cape Town. 256 pp.
- Hilton-Taylor, C. 1996. Red Data List of Southern African Plants. *Strelitzia* 4. National Botanical Institute, Pretoria. 117 pp.
- Low, A.B. & Rebelo, A.G. 1996 (Editors). Vegetation of South Africa, Lesotho and Swaziland. Department of Environmental Affairs and Tourism, Pretoria. 85 pp. □



THE PAPER CHASE

by Hugh Glen &
Ashley Nicholas

The object of this column is to keep an eye open for literature that SABONET users may find useful. This will mostly be new publications, but may well include older information in answer to questions such as "what's the best key to ...". It is neither possible nor desirable that the flow of such information should be one-way, from Pretoria outwards, so would readers please feel free to submit notes and useful information to Hugh Glen's address at the end of this column.

The citation of an item here does not imply any guarantee of its contents or even its existence; very often the compiler has not seen the documents referred to.

A friend of mine got a catalogue from a bookseller called Mike Slotow in Pietermaritzburg, and told me vast quantities of it over the phone. It seems he has the makings of an excellent South African botanical library, but at fairly horrific prices (mind you, what isn't these days). If anyone is interested I'll get the gory details for the December number.

New books in the Mary Gunn Library, Pretoria, include these which someone may find worth getting for other libraries in SABONET:-

Bisby, F.A., Russell, G.F. & Pankhurst, R.J. 1993. Designs for a global plant species information system. Systematics Association special vol. 48. Oxford University Press, Oxford.

Cropper, S.C. 1993. Management of endangered plants. CSIRO, Melbourne.

Three volumes of the new Flora of Taiwan - much bigger than the first ed. (recently reviewed in *Taxon*; the books are free but you pay the postage).

Zorich, D. 1995. Status, resources and needs of systematics collections. Association of Systematics Collections, Washington DC.

Rosemary Davies, who compiles *Index Kewensis*, tells me that the paper copy of the 20th supplement of that esteemed publication was published by Kew in January, price £75.00. Orders to Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AE, England (E-mail: books@rbgkew.org.uk). Please note that Oxford University Press, who always used to publish IK, claim that this supplement does not exist, so do not try to order it from them; they will try to sell you a CD-ROM at a price that translates to about R10,000.00!

Here are some updates from April's column:-

- *Strelitzia* 5 and *Bothalia* 27(1) are out.

- A copy of Meg Coates Palgrave's Zimbabwe tree key has arrived at Mary Gunn Library. It's worth the wait!

- The *Juniperus* turned out to be a *Thuja*.

Relevant literature for *Thuja* includes:-

Lewis, J. 1986. *Thuja*. in *European Garden Flora* 1: 80-81.

And, of course, there's a key to genera of Cupressaceae in *European Garden Flora*.

Ashley Nicholas writes from University of Durban-Westville:-

TAXONOMIC/HERBARIUM DECLINE

A few weeks ago I was given an article to read called "Taxonomic Impediment & the Convention on Biodiversity". This article, written by K.E. Hoagland, is one of the best that I have read on this topic, and is a must read for every taxonomist and herbarium curator. It can be accessed on the Homepage of the Association of Systematics Collections (ASC) at <http://www.ascoll.org>. For those of you who do not have access to the Web (I believe there are some of you out there?) the article can, apparently, also be purchased from the ASC, although it was also reproduced (without permission) by the *Australian Systematic Botany Society Newsletter* No 90 March 1997 (which is where I saw it). The ASC Web page is well worth a visit, and contains much of interest. Another article on the same subject appeared as an editorial in *Plant Talk* in April 1997. This is also important reading and is entitled "A Recovery

Plan for Plant Taxonomy" (*reproduced with full permission in this issue of SABONET News*). For those interested in this topic, two other articles, both by F.P.D. Cotterill, are excellent, viz. "Systematics, biological knowledge & environmental conservation" in *Biodiversity & Conservation* 4, 183-205 (1995) and "The Second Alexandrian Tragedy, & the Fundamental Relationship between Biological Collections & Scientific Knowledge" in *Proceedings of the International Conference on the Value & Valuation of Natural Science Collections*, Manchester Museum 1995.

THE PARAPHYLETIC/MONOPHYLETIC TAXA DEBATE

Not that I want to get into cladistic bashing - I find it an invaluable tool with extremely useful terminology - however, this particular debate is important for every practising taxonomist. Although I can see the necessity of having only monophyletic taxa (and part of me desperately strives to produce these) I am aware of the practical and theoretical impossibility of such things. A recent paper by M.S.M. Sosef entitled "Hierarchical models, reticulate evolution & the inevitability of paraphyletic supraspecific taxa" in *Taxon* 46 (1997) is a must for anyone into this interesting debate. Recently on TV they screened a documentary on "Chaos & Science & the unexpected". To our detriment biologists have largely ignored chaos science. Unfortunately, Chaos is inappropriately named, but basically it is that condition between fixed pattern and randomness. What came out strongly in this documentary is that almost all natural phenomena including evolution and speciation are chaotic, as a result the mathematical expression of speciation is more non-linear (fractal) than linear. For me this suggests that the end results of cladistics, which are based on dichotomous but linear mathematics cannot possibly trace evolutionary patterns which are non-linear. As a result, Cladograms could end up being highly misleading.

EXCITING/RELEVANT WEB SITES

I have found the following Web sites really helpful or interesting:

a) Biological Resources on the World Wide Web at - Webster.comnet.edu/webpicks/weblist/bio-list.html.

b) The Tree of Life at - phylogeny.arizona.edu/tree/phylogeny.html. The angiosperm section is done by Donoghue so is pretty up to date and very cladistically orientated. This site is a must to visit.

c) Internet Directories for botany can be found on both the Stellenbosch botany pages (www.sun.ac.za/local/academic/natural/botany/botany.html) and at the botany department of the University of Texas, Austin (www.botany.utexas.edu). This last site also has a searchable list of all its type specimens. The herbarium has over a million specimens making it almost comparable with South Africa's National Herbarium. This site is at www.utexas.edu/ftp/depts/prc.

d) Stephen Downie & Kenneth Robertson have an interactive systematics course on their Web site at www.life.uiuc.edu/plantbio/260. This site is well worth surfing especially for those teaching systematics at university level. Their page is also useful because it connects through to similar cyber systematic teaching sites at the following universities: Maryland, Colby, TAMU, Oregon & Stanislaus. If you follow the TAMU hyperlink you will end up at the University of Texas, Austin, where, besides their type specimen database, you can also access pictures to many of Texas' plants. The Ascleps are particularly stunning - although I am, naturally, biased. The exact address for these pictures is www.csdl.tamu.edu/floras/tfplab/labla.html. Finally this page also links through to other important sites dealing with evolution, phylogenetic systematics and biodiversity.

e) Journey into Phylogenetic Systematics (Cladistics on the web) - A site by Collins, Guralnick & Speer at Berkeley is a must for anyone interested in Phylogenetic Systematics, better known of course as Cladistics. Their address is www.ucmp.berkeley.edu/clad/clad4.html. Through this site you can link into another site (www.ucmp.berkeley.edu/help/taxaform.html) which is similar to the tree of life. This deals with the systematics of all living things in great detail, giving morphology, taxonomy, evolution and fossil information. This site is well worth spending an hour or two looking at.

MANY cpDNA TREES MAY REFLECT TOKOGENY RATHER THAN PHYLOGENY

This was clearly demonstrated by D.E. Soltis & R.K. Kuzoff in 1995 (viz. "Discordance between nuclear and chloroplast phylogenies in the *Heuchera* group Saxifragaceae in *Evolution* 49(4): 727-742), but seems to have been largely ignored by molecular systematists. Tokogeny (+/- chloroplast capture) seriously throws into doubt many classifications that have been based solely on the cladistic analysis of cpDNA. Ouch!□

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Regional News Updates

News from Angola

Extract from a letter written by Ms Mariette Manktelow (Uppsala University, Sweden) to Ms Beatriz Marcelino (England):

"I have found your name and address through Ms Maria Adélia Diniz at Instituto de Investigação Científica Tropical in Lissabon, Portugal. I am a botanist, specializing in tropical systematic botany. One year ago I finished my thesis at Uppsala University in Sweden. During my thesis work I got to know your father, Dr. Fernando Branco Marcelino, who helped me with great

enthusiasm in my efforts to borrow some important herbarium material from Angola. I was shocked and very sad when I got the terrible news about his death. He is one of the most helpful and kind persons I have met, and he had an important role for the botanical work in Angola during some very difficult years. I have later learnt that he did many more good things than I knew of at the time. When I finished my thesis I decided to name one of my new species in honour of him.

I would like to send you a copy of my thesis where I described the species *Phaulopsis marcelinoi*, in the plant family Acanthaceae. It is a low, perennial herb with white flowers. The species is relatively rare, and occurs only in the mountains west of Huambo in Angola...It is my great wish that the knowledge of this species will not only remain among botanists, but extend to Dr Marcelino's family".

News from Botswana

Dr Moffat Setshogo rejoined the University of Botswana Herbarium (UCBG) at the end of March 1997 after successfully completing his doctoral studies at the University of Edinburgh, Scotland, United Kingdom. His research interests are in (i) taxonomic studies in the Poaceae; (ii) useful indigenous plants of Botswana; and (iii) general plant ecological studies.

News from Lesotho

❖ SABONET - LESOTHO successfully conducted a plant identification course to the staff of the Conservation Division of the Ministry of Agriculture from 5 to 9 May 1997. Lectures on the following topics were covered:

- i. Need for Systematic identification
- ii. Lesotho plants and their economic importance
- iii. Grasses and grasslands of Lesotho, and
- iv. Plant identification procedures and practices.

The course ended with a field trip to Koró-koro.

- ❖ Jeff Duckett, Professor of Botany at the University of London's Queen Mary & Westfield College (QMW) delivered a lecture entitled, "Preserving Lesotho's International Heritage" on 30 April 1997. He visited the Biology Department of the National University of Lesotho (NUL) to enhance the reference collection of Lesotho plants in general and bryophytes in particular. The British Council facilitated his visit to the NUL under a QMW - NUL link programme.
- ❖ Ms M Koekemoer (PRE Curator) and Dr S Perold visited the ROML Herbarium from 23 - 25 April 1997. They discussed several points with Prof. CR Nagendran about the ongoing SABONET Project. The computerized information about Lesotho plants at NBI, Pretoria was transferred to the ROML Herbarium.
- ❖ The Lesotho Mountain Research Group (LMRG) was formed to facilitate integrated, interdisciplinary research in the mountains of Lesotho. Soil erosion and range degradation are recognised as critical environmental problems in the mountains of Lesotho. LMRG comprises a network of researchers and practitioners from a number of natural and human science disciplines who are interested in co-ordinating their research efforts in the exchange of information relating to the mountain environment. A report on the inaugural meeting held from 28 - 29 September is available from:

Dr None Mokitimi
Institute of Southern African Studies
P O Roma 180
LESOTHO

*Information from Lesotho supplied by
Prof. CR Nagendran (ROML).*

News from Namibia

**TRANSCRIPT OF A TALK PRESENTED BY
MR JP VENTER AT THE OPENING OF THE
NEW NBRI BUILDING IN ORBAN STREET,
WINDHOEK, NAMIBIA, ON 5 JUNE 1997.**

Ladies and gentlemen, after 44 years of leading a nomadic life style and of staying over in numerous scaly places like cellars and stables, the NBRI and its staff at last found a permanent haven, and rest, here in Orban Street. To the staff of the NBRI we all say: **WELCOME HOME!!**

Yes, Ladies and Gentlemen, it was 44 years back, in 1953, that the Herbarium was born and at that time it occupied the cellar right underneath Mr de Klerk's present office. From there it moved to the old "Kameelstalle" and numerous other non-descriptive and unsuitable locations. For many years plant collections were kept in carton boxes. If you take into account that the National Collection comprises more than 64 000 plant specimens then you can imagine what problems were experienced over all these years.

Mr Willie Giess became the first Curator of the Herbarium in 1957 and the late Dr Mike Müller took over from him in 1975 and filled this position until 1990, when he was transferred to the Directorate of Forestry.

After independence the Herbarium changed its name and became the National Botanical Research Institute comprising the subsections National Herbarium of Namibia, the National Plant Genetic Resources Centre, the Vegetation Survey Unit and the Botanic Garden.

The design for this building was completed in 1992, but funds were made available only in 1994 and then the staff had to move from here (a prefab building at that stage) to the Hüster Building in Krupp Street where frustrations really ran high, as diagnostic services almost ground to a halt, without literature being available and the collections not being accessible to undertake plant identifications.

From Krupp Street the last Great Trek took place to this brand new building.

The construction of this building was also not without its problems and frustrations as the builder, before completion of the project, just left. However, it is foreseen that within this financial year everything will, finally, be completed.

The design of the building is, indeed, eye-catching and aesthetically-pleasing, and it caters for all the specialised activities that take place under its roof. Future expansions were also taken into account. The architect, Mrs Katrina Vaatz, must be congratulated in this regard.

A computer network has been installed here and staff have access to Internet and e-mail which facilitates regional and international interaction. Included in the building is a mycology lab with facilities, available for the first time, as well as the National Plant Genetic Resources Centre (Genebank).

It is hoped that the occupation of this new building signals a turning point for botany in Namibia. Through the Convention of Biological Diversity, international attention has focused on the untold importance of systematic biology and through the construction of such a facility, Namibia acknowledged the important role that this science can play in the conservation and sustainable utilisation of the environment, including our more than 4 000 species of flowering plants and ferns.

Lastly, Ladies and Gentlemen, I would like to address the staff of the NBRI.

You can be proud of these facilities but you also have a big responsibility to show us and future generations, that you are worthy of all these luxuries! In order for this to become true, you as scientists must have, and display, certain characteristics. I would like to mention the following five: **HONESTY, ACCURACY, PUNCTUALITY, PERSEVERANCE** and a **YEARNING** to serve, to achieve something worthwhile and to be the best.

If you combine the first letters of these five words, you will see that it spells out the word

HAPPY. Often you hear people saying "Don't worry, be happy", but if you make these characteristics part of your life-style, you will be able to turn this around and rather say, "be **HAPPY**, and there will be no worries".

When you are sitting at your desk tomorrow, write down these five words and think about the importance of each one of them in your situation. Then make them part of your everyday life and it will become very easy to live out the NBRI's motto: **PROTECT, PROMOTE, UTILISE**.

May God bless this building and all the people working inside it, now, and in the years to come.

Mr JP Venter

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Directorate: Agricultural Research & Training
Ministry of Agriculture, Water and Rural
Development
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Tel: (264) 61 202 2138
Fax: (264) 61 233 459*

Gillian Maggs in Denmark

Gillian Maggs will be in Denmark from 18 August 1997 to the end of 1997. She can, however, be contacted at the following address in Denmark:

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(KVL)
Department of Agricultural Sciences
Section Crop Science
40 Thorvaldsenvej
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Frederiksberg C
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Denmark

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E-mail: jlc@kvl.dk

NBI Field trip to Kaokoland

A field trip to Kaokoland was organised by staff members of the Kirstenbosch National Botanical Garden, South Africa, from 25 June to 2 July 1997. The NBRI was consulted and Mr H. Dauth

accompanied Mr E van Jaarsveld, Dr R Archer (National Herbarium, Pretoria), Mr F van Wyk and Mr Alex March on the trip. The aim was to collect plants from Kaokoland and Northern Namibia to display in the Namib section of the conservatory erected at Kirstenbosch National Botanical Garden (Cape Town) with the emphasis placed on the ethnic uses of the plants. Dr Archer collected material for the description of a new *Euphorbia* species.

This successful venture was a great learning experience, judging from the field work techniques gained, and bodes well for future cooperation between Kirstenbosch and the National Botanical Garden of Namibia.

Henk Dauth

National Botanical Garden

*National Botanical Research Institute
Windhoek*

News from South Africa

List of southern African succulent plants

Southern Africa (here defined as the *Flora of southern Africa* region, i.e. South Africa, Namibia, Botswana, Lesotho and Swaziland) is widely known for its rich and diverse floral wealth. The succulent plants of the subregion constitute a significant and important part of this flora. For centuries the shapes of these fascinating plants have interested plant collectors from other countries. The local study of succulent plants has now finally come of age with the production of a comprehensive list of all succulents. This book has been produced by taxonomists of the NBI, in association with the publishers, Umdaus Press.

However, this book is more than only a list: it presents a brief introduction to every plant family, along with references to the most important literature on the various groups, thus providing the key to unlock the vast store of published information on the biology of these plants. An additional feature is the distribution maps for the families, indicating the localities of both succulent and non succulent members on the

subcontinent. These were extracted from the specimen PRECIS (National Herbarium, Pretoria (PRE), Computerised Information System) database. Finally, at least one representative black-and-white line drawing is given for every family.

For more than twenty years the National Botanical Institute (NBI) of South Africa has been maintaining PRECIS, a corporate database in which information on the plant wealth of southern Africa is stored. The list of southern African succulent plants presented in this book was generated from PRECIS and represents the efforts of a generation of NBI taxonomists who have been and are still constantly updating and maintaining the database. Through their endeavours it is possible today, virtually by striking a key on a keyboard, to generate a list of all the plants that are indigenous to, or naturalised in, southern Africa. This technology has enabled the NBI to be uniquely positioned to respond to the requirements of the international Convention on Biological Diversity which was ratified by the South African Government of National Unity on 2 November 1995.

The book will be on the shelves soon, so look out for publication details in the next copy of *SABONET News*.

Gideon F Smith

Director: Research

National Botanical Institute

Private Bag X101

Pretoria 0001

South Africa

News from Swaziland

Swaziland became the 136th party to the CITES Convention on 27 May 1997.

News from Zambia

MSc Programme in Biosystematics and Ecology, University of Zambia

As the world focuses attention on the fate of global biodiversity, a two-year postgraduate

programme has been developed by the Department of Biological Sciences, School of Natural Sciences, University of Zambia, to provide knowledge in taxonomy of tropical plants and animals, and offer theoretical and practical skills in animal and plant ecology. One third of the programme deals with principles of taxonomy and two thirds covers integrated concepts of ecology. The first academic year, comprising two semesters, shall constitute course work to cover such topics as: principles of plant and animal taxonomy; systematics of tropical plants, vertebrates and invertebrates; forest inventories and management; concept of terrestrial and aquatic habitats; vegetation types of southern Africa; concept of phytochoria; animal population and behavioural ecology; management of wildlife and fisheries; and environmental impact assessments.

The second year shall be devoted to research and writing of the dissertation.

Enquiries to:

The Director

Directorate of Research and Postgraduate Studies

University of Zambia

PO Box 32379

Lusaka

Zambia

New Head for Department of Biological Sciences

It is with great pleasure that we announce that Dr Luke E. Mumba, who is the Zambian Alternate Representative on the SABONET Steering Committee, has been appointed as the new Head of the Department of Biological Sciences, School of Natural Sciences at the University of Zambia. His term of office commenced with effect from 1 July 1997.

Dr Mumba is specialised in the areas of Plant Genetics and Molecular Biology.

Collaborative Work in southern Africa

The indefinite closure of the University of Zambia has caused anxiety on the academic staff. The government instituted a Commission of Enquiry to probe and find a lasting solution into problems that have brought about student unrest punctuated by frequent closures of both the

University of Zambia in Lusaka and the Copperbelt University in Kitwe. The closure had its blessings in disguise as more collaborative work has been initiated between the University Herbarium and staff of South Africa's National Herbarium. In May 1997, Mrs Lyn Fish and Patrick Phiri shared the amazement of finding the grass *Capillipedium parviflorum* (R.Br.) Stapf at the edge of the small dam within the Lusaka Campus area. This is a species that has been documented to occur in eastern Africa and as far south as Malawi, Mozambique and Zimbabwe. This finding may be the first record for Zambia. The genus *Capillipedium* Stapf consists of 14 species distributed in the tropical regions of eastern Africa, Asia and Australia. Another taxon exhibiting disjunct distribution is *Monochoria africana* (Solms) N.E.Br. (Pontederiaceae), which occurs in Kenya, Sudan and South Africa. This species has recently been recorded in the Luangwa Valley of Zambia. There are several areas of the country that remain under-collected. Lack of transport in the Department has been the major constraint. The anticipated joint collection ventures through the SABONET programme are most likely to yield more fine detail of our rich biological diversity in southern Africa.

Independent Earth Conservation Volunteers seeking funds to develop botanical reserve

The senior students of Biology at the University of Zambia, in collaboration with the Wildlife Conservation Society of Zambia, are actively involved in conservation projects. They have formed an Association called 'Independent Earth Conservation Volunteers' whose objectives are to (a) promote and encourage youth participation in environmental/natural resource management and environmental education; (b) promote projects that enhance the preservation of the earth's biological diversity as well as those that promote environmentally and ecologically sustainable development; (c) lobbying and networking in the environmental and community development fraternity. The Association has come up with a project to develop the natural woodland within the grounds of the Mulungushi International Conference Centre as a Botanical Reserve. Their first bold step was to drag Patrick S.M. Phiri from his herbarium for a reconnaissance survey and identification of the principal woody taxa of

the Mulungushi Centre. Dr Phiri was impressed with the potential of the site which can be transformed into a Botanical Garden and attract a diversity of people as a pleasure resort and offer living education facilities. The area is about 10 hectares or more in area, underlain by two geological formations: a strip of limestone on the lower terrain and quartzite on the higher grounds covered by *Acacia/Combretum* and Miombo woodlands respectively. The members of the Association are sourcing for funds to translate their brilliant idea into a conservation reality.

Tasila receives Fulbright Scholarship

Miss Tasila Banda, alias Mrs Tasila Sakala, recently received a Fulbright Scholarship Award to pursue the MSc degree in Plant Ecology at the Graduate College of the Arizona State University, Tempe (an industrial suburb of Phoenix), USA. Her study programme is of two years duration commencing on 17th August 1997.



▲ Tasila Banda (photo: SABONET/Christopher Willis).

Tasila left for the USA in mid-July 1997 to attend the summer orientation programme. Mr Sam Sakala, Tasila's husband, has provided material and moral support in preparation for her studies abroad. The Department of Biological Sciences would like to wish her the best of luck in this study programme.

Editor's note: We hope to keep our readers updated on Tasila's progress in the course.

Above information supplied by Dr Patrick Phiri (UZL).

During the same visit of Ms Lyn Fish, Patrick and Lyn collected material of the liverwort *Riccia erubescens* Perold (see photograph) that was described by Dr Sarie Perold (PRE) in 1991. The material was collected from the type locality, 36 km north of Lusaka, Zambia. For the first time it could now be observed that the tapering apices of the branches form subterranean stolons which enable the plants to survive the dry season. *R. erubescens* is also known to occur in Angola, Malawi and possibly Mozambique. It is the only *Riccia* species yet examined that sometimes contains gelatinous material in discrete globules inside the thallus; these globules forcibly distort the inner tissues and are gradually extruded onto the dorsal surface (Perold 1991). The specific epithet, *erubescens*, refers to the reddish purple colour which the thallus develops on exposure to the sun.



▲ *Riccia erubescens* from Zambia (photo: NBI/Sarie Perold).

References

Perold, S.M. 1991. Two new species of the liverwort genus *Riccia* L. from tropical Africa: *R. somaliensis* and *R. erubescens*. *J. Bryol.* 16: 367-377.

News from Zimbabwe

Staff

Two officers contracted through the SABONET programme are no longer being directly supported by the programme.

Mr E. Kwembeya, contracted as a Research Officer, is now part of the SRGH establishment as from February 1997.

Mr J. Uzande, who was a Technical Assistant, left SRGH at the end of April 1997 to join the Agricultural Rural Development Authority (ARDA).

Congresses/Conferences

One officer from SRGH - Mr Stephen Mavi, attended a Global Biodiversity Forum (GBF) workshop from 6 to 8 June 1997. The workshop's objective was to look at synergies between the Convention on Biological Diversity (CBD) and the Convention on International Trade in Endangered Species (CITES).

The Head of SRGH - Ms Nozipo Nobanda was one of the Zimbabwean delegates who attended the CITES congress. It was held at the Harare International Conference Centre from 9 to 20 June 1997 (*for more information on this congress see the article by Craig Hilton-Taylor earlier in this issue*).

Field Excursions

One of SRGH's Research Officers - Mr Alfred Maroyi, has been part of a team that has been collecting wild rice for the SADC Plant Genetic Resources Centre (SPGRC). This was carried out in the months of June and July 1997.

PRECIS Database

More than 700 entries have been made into the PRECIS database. These cover the following families: Rutaceae, Burseraceae and Acanthaceae.

Information from Zimbabwe supplied by Mr Soul Shava (SRGH). □

In the December issue of Sabonet News...

❖ **Profile: Brian Huntley (SSC Chairman)**
Note: See also the July 1997 issue (page 6) of the plant conservation magazine Plant Talk for a profile on Prof. Brian Huntley, entitled "Brian Huntley: Visionary in South Africa".

- ❖ SABONET training courses
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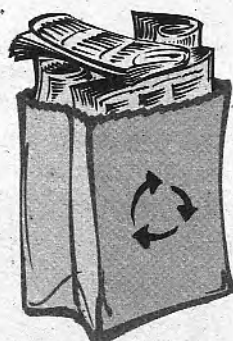
SABONET News is published in April, August and December and distributed free-of-charge to interested persons. Manuscripts submitted for publication should preferably be in English. Submissions for the next issue should reach the editor before 10 November 1997. The editor would be grateful for material submitted on diskette (preferably using WordPerfect or MS Word) as well as an accompanying hard copy. Articles can also be submitted via e-mail. If possible, please include black and white photographs, slides or line drawings to illustrate your material. Please caption all tables, figures and photographs clearly on a separate sheet. Each photograph or slide should be labelled with a photographer credit. Each author should provide name, affiliation, postal address, telephone and fax numbers as well as an e-mail address (if available). Contributors should study the most recent issues of SABONET News for stylistic conventions.



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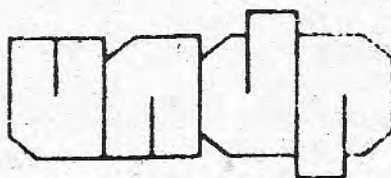
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IUCN

The World Conservation Union



United Nations Development Programme

Southern African Botanists' E-mail addresses

The following is a list of the e-mail addresses for staff working in some of the national/university herbaria, botany departments and botanical gardens of southern Africa. Thanks to all those who sent their e-mail addresses to the editor for inclusion in this list.

SPECIAL APPEAL: Should you be aware of any changes to one or more of the addresses listed below, or would like to be added to the list, please notify the editor at ckw@nbipre.nbi.ac.za so that the list can be updated on a regular basis.

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NOTE: Additional South African botanists' e-mail addresses can be accessed on the internet at the following address:

<http://www.ru.ac.za/departments/herbarium/SAHWG/address.html>

The web page entitled "Southern African Botanists' addresses" was prepared by Peter Phillipson, Rhodes University and the Selmar Schonland Herbarium, Grahamstown, with thanks to Nigel Barker and Les Powrie.

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28 August 1997