

# SABONET NEWS

*Newsletter of the Southern African Botanical Diversity Network*

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**Living Collections:  
Kirstenbosch**

***Brachystegia* in  
South Africa**

**Southern African  
Botanical Gardens  
Needs Assessment**

**16th AETFAT Congress**

SABONET



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**FRONT COVER:** *Spring daisies next to the main lawn, Kirstenbosch. (Photo: Colin Paterson-Jones)*



## Editorial

Welcome to the 15<sup>th</sup> edition of *SABONET News*, the last newsletter of the Southern African Botanical Diversity Network Project for the year 2000. This is the official newsletter of a GEF/UNDP supported regional capacity building project, more commonly known as SABONET. The major event to have taken place recently has been the transfer of Christopher Willis from his current position as Regional Coordinator of the SABONET Project, to Director: Gardens & Horticultural Services within the National Botanical Institute, South Africa. Fortunately Christopher will remain at the same address where he will be able to provide guidance to the new SABONET Regional Coordinator, Stefan Siebert. We wish Christopher all the best in his new position and we are certain he will successfully transform this new challenge into an exciting achievement. Special words of thanks and gratitude from his team, country coordinators and colleagues are featured in this issue.

In this edition we report back on the Fifth International Solanaceae Conference, held in July 2000. The Second World Conservation Congress was held in Amman, Jordan, from 4-11 October 2000. This congress focussed on aspects concerning conservation of biodiversity and programme development, in the light of the predicted extinction crisis. The XVIth AETFAT 2000 Meeting was held in Meise, Belgium (28 August to 2 September 2000). A report takes a look at the history and aspirations of AETFAT. The 9th Meeting of the SABONET Steering Committee and the 2nd TriPartite Review of SABONET were held shortly before the AETFAT meeting in Meise, Belgium, on 27 August 2000.

In addition to our regular features, this issue of *SABONET News* launches a new series featuring the living collections in southern African botanical gardens. The first garden to be portrayed is Kirstenbosch—one of southern Africa's most renowned gardens. Our series on southern African herbaria continues, with the Compton Herbarium, South Africa, being featured. We have also included a follow-up article on the computerisation of specimens in southern African herbaria. We have finally managed to appoint a SABONET

programmer, Mr Franco Alberts, who will be responsible for the future advancement in the computerisation of participating herbaria. We welcome him to the SABONET team.

The Red Data List project has enhanced its capacity-building actions over the last few months, with three major training courses and workshops held in Mozambique, Swaziland and Zimbabwe. We publish a report on these meetings to illustrate how these countries made contributions to the Red Data List and resolved discrepancies as part of their assessment process.

This edition includes articles on the first discovery of *Brachystegia spiciformis* in South Africa; a new SABONET publication: *Southern African Botanical Gardens Needs Assessment*; as well as a profile on Prof. Dr. Esparança Costa from the Agostinho Neto University in Angola.

As new Regional Coordinator I should probably say something about myself. I was born in a small town called Empangeni, and grew up in other small towns named Hluhluwe, Mandini and Matatiele—all wonderful places in the green province of South Africa, KwaZulu-Natal. I am a botanist with an interest in biodiversity studies and am currently finalising my Ph.D. at the University of Pretoria. For this project I spent a lot of time in the undulating hills of Sekhukhuneland, kingdom of the Pedi in South Africa, an intriguing place with a rich human, botanical and geological history.

I am sure that you will once again join me in thanking Christopher Willis, Janice Golding, Nyasha Rukazhanga-Noko, Carina Haasbroek and Marthina Mössmer for their tremendous dedication and enthusiasm during another successful year of the SABONET project. From the SABONET editorial team, we would like to wish our readers a peaceful and safe holiday season and a successful and productive New Year. □

Stefan J. Siebert  
SABONET Regional Coordinator

15 December 2000

**SABONET web site:**  
**[www.sabonet.org](http://www.sabonet.org)**

# PROFILE

## Esperança da Costa



▲ *Esperança da Costa*

*(A summary in English follows the Portuguese.)*

Esperança Maria Eduardo Francisco da Costa, casada, nascida aos 3 de Maio de 1961 no bairro Indígena uma zona modesta da cidade de Luanda. Em 1967 ingressou na escola primária no 227 do referido bairro, onde estudou até à 4.ª classe. Ainda durante a fase de infância cedo se revelou o seu gosto pela natureza principalmente por plantas ajudando sempre a sua mãe nos cuidados de jardim.

Ingressou na Escola Secundária General Geraldo Victor na Villa Alice em 1970 onde concluiu em 1972 o 2.º ano do secundário. Em 1977 terminou o ensino Liceal que efectuou no Liceu Feminino D. Guiomar de Lencastre, em Luanda, tendo se destacado pelas médias que possuía ficando apertencer ao quadro de Honra da Escola. Foi encaminhada para o ensino Superior no Pré Universitário de Biologia que funcionou no ano lectivo 1978/79 na Faculdade de Ciências.

Frequentou a licenciatura em Biologia na mesma Faculdade onde pela excelente média que possuía foi em 1982 recrutada como monitora coadjuvando o Professor Carlos Alvarez na regência prática da disciplina de Cormófitos, tendo elaborado um "Manual de protocolos de aulas práticas da disciplina de Cormófitos". Terminou a licenciatura em

Biologia em Fevereiro de 1985 com a defesa da tese. A tese que constituía um estudo "Taxonómico da família *Bignoniaceae* para *Conspectus Florae Angolensis*" foi elaborada no decorrer do estágio de um ano que efectuou, sob a orientação da Dra Maria Adélia Diniz Martins, de 1983 a 1984 no Centro de Botânica do Instituto da Investigação Científica em Liboa Portugal. O estágio foi suportado por uma bolsa de estudo da Fundação Calouste Gulbenkian de Portugal, comparticipada pelo Instituto Nacional de Bolsas de Angola (INABE).

Regressando a Luanda em 1985 foi contratada como assistente para a disciplina de Biologia das Plantas no Departamento de Biologia da faculdade de Ciências, e cedo assumiu a chefia da secção de Biologia das Plantas tendo organizado um Herbário que hoje constitui o Herbário didático da Faculdade.

Foi convidada em 1985 pela African Biosciences Network (ABN) a participar no meeting que se realizou em Harare em Dezembro do mesmo ano sobre "Forest Management in Africa", tendo por isso assumido a responsabilidade de ponto de contacto da ABN em Angola.

Dirigiu o Departamento de Biologia da Faculdade desde 1986 a 1990. Em 1988 concorreu para a categoria de Assistente graduado e foi aprovada. Em 1990 integrou o grupo de quadros da Universidade Agostinho Neto seleccionados e autorizados a frequentar cursos de Pós graduação no exterior do País. Assim frequentou em 1990 a parte curricular do curso de Mestrado em Produtividade Vegetal da Universidade Técnica de Lisboa (UTL) e em 1992 iniciou o desenvolvimento de pesquisas na área da Fitoecologia conducentes á elaboração de uma tese de Doutoramento, que viria a terminar com sucesso em 1997 no Instituto Superior de Agronomia da UTL.

È membro de várias organizações científicas, nacionais e internacionais. Participou em vários congressos científicos, organizou em 1999 as 3as Jornadas Científicas da Faculdade de Ciências. É autora de cerca de 10 artigos científicos.

Orienta teses de licenciatura aos alunos do último ano da licenciatura em Biologia e participa activamente na colaboração com Instituições científicas

nacionais para o estabelecimento de programas científicos de biodiversidade, multidisciplinares de carácter nacional e regional.

Hoje é Professora Titular da Universidade Agostinho Neto, Vice-Directora para os Assuntos Científicos da Faculdade de Ciências e responsável pelo Herbário de Luanda. Como tarefas e objectivo principal a atingir, pretende dinamizar a investigação científica em Angola, aliciar recursos humanos para a área da docência e investigação botânica por forma a contribuir para a inventariação do coberto vegetal em Angola, contribuindo assim para uma gestão integrada dos recursos naturais existentes.

Para além das tarefas ligadas ao profissionalismo gosta de andar a pé e de cozinhar e de ouvir música.

## ENGLISH SUMMARY

Esperança Maria Eduardo Francisco da Costa was born on 3 May 1961 in a modest suburb of Luanda. In 1967 she started Primary School in her home suburb. Her love of nature—especially plants—was visible at an early age, as she loved helping her mother care for their garden.

She started Secondary School in 1970 at the Escola Secundária General Geraldo Victor in Villa Alice. In 1977 she completed her high school education which took place at the Liceu Feminino D. Guiomar de Lencastre in Luanda. Esperança excelled in her studies at high school and was awarded academic honours. She then studied for a degree in Biology at the Science Faculty [of Agostinho Neto University] where she was appointed as an Assistant Lecturer to Professor Carlos Alvarez. She completed her degree in 1985 with her thesis on the taxonomy of the family Bignoniaceae for *Conspectus Florae Angolensis*. She then furthered her research by spending a year under the mentorship of Dr Maria Adélia Diniz Martins, from 1983 to 1984 at the Centro de Botânica (Centre for Botany) at the Instituto de Investigação Científica (Institute for Scientific Research) in Lisbon, Portugal. The visit was supported by funding from the Calouste Gulbenkian Foundation in Portugal and from the

INABE (National Institute of Bursaries of Angola).

Returning to Luanda in 1985, Esperança was appointed Assistant in Plant Biology within the Biology Department of the Science Faculty at the University of Agostinho Neto. She soon progressed to head this unit and helped to develop the Luanda Herbarium, which is an invaluable asset to the faculty. In December 1985 she was invited by the African Biosciences Network (ABN) to participate in a meeting on “Forest Management in Africa” in Harare, Zimbabwe. She thus became the contact person for ABN in Angola. She headed the Biology Department at the University of Agostinho Neto from 1986 to 1990. In 1990 she was given the opportunity to undertake a Masters Degree in Plant Productivity at the Technical University of Lisbon (UTL), Portugal. In 1992 she began researching an area of plant ecology, which culminated in a doctorate being awarded to her in 1997 by the Institute for Agronomy of the UTL, Portugal.

She is a member of various scientific organisations, both nationally and internationally. She has participated in several scientific congresses and authored approximately ten scientific articles.

She now supervises students in Biology and actively participates in scientific programmes concerning biodiversity, both nationally and regionally. Esperança is currently National Coordinator for the SABONET Project in Angola. She is a Professor at the Agostinho Neto University, Vice-Director for Scientific Matters within the Science Faculty and manages the Luanda Herbarium. Her main objectives are to promote scientific research in Angola and mobilise human resources into lecturing and botanical research in order to contribute to the inventory of vegetation cover of Angola, in this way contributing to an integrated approach to natural resource management. Esperança is married, and besides the activities related to her profession, she enjoys hiking, cooking and listening to music. □

*Translated from the original Portuguese by Carla Willis.*

# Goodbye (but not farewell), Christopher Your big heart will be missed



▲ Chris with Dr Alan Rodgers of UNDP/GEF, Arusha, Tanzania, and Prof. Brian Huntley, CEO of the National Botanical Institute, South Africa. (Photo: G.F. Smith)

The major recent event to take place within the SABONET Project has been the transfer of Mr Christopher Willis from his current position as Regional Coordinator of the SABONET Project, to Director: Gardens and Horticultural Services within the National Botanical Institute, South Africa. He has been a great inspiration to all the people involved in the SABONET Project and the driving force behind its success. It would be inappropriate to publish this edition without words of goodbye to the man who made this newsletter possible. This is what his colleagues had to say:

*Prof. Gideon Smith, Office of the Research Director, National Botanical Institute, Pretoria, South Africa:*

Since the appointment of Chris Willis to the position of SABONET Coordinator in 1996, I have had the pleasure and privilege of working closely with him on a number of major initiatives. This has meant that together we have travelled almost 70 000 km by car and aeroplane, sharing innumerable meals spiced up with Nali (a rather sharp Malawian chilli sauce) and enjoying a variety of chocolate mousses of widely differing quality! Perhaps I can therefore claim that over the past five-odd years I have had many opportunities to get to know Chris rather well. Most impressive of his numerous positive qualities has been his energetic commitment to SABONET and the

pleasant way in which he has always given encouragement to colleagues at the National Botanical Institute and further afield in southern Africa. He is always friendly and helpful and believes in personal involvement to get things done. It should therefore not come as a surprise that Chris has contributed the lion's share of copy for many numbers of *SABONET News* been co-author of most books in the occasional *Report Series*, arranged a number of training courses (some single-handedly), kept up a lively correspondence with the National Coordinators of ten countries, participated actively in field trips, represented the Project at a variety of different national, regional and international forums, I could go on ...

Chris is now Director for Gardens and Horticultural Services of the National Botanical Institute, based in Pretoria, and I am looking forward to many more years of close and productive collaboration. I am sure he will rise to the occasion of this very important responsibility and make a great success of it. Above all, Chris, I am sure you will enjoy this new challenge and bring to it the same levels of drive, inspiration and commitment and, of course, maintain an active interest in SABONET.

Go well!

*Rosemary Williams, Natal Herbarium,  
National Botanical Institute, Durban, South Africa:*

Best wishes and many thanks to Chris from all at Natal Herbarium. We're sure his energy and hard work that have been a driving force in making SABONET so successful, will be much appreciated in his new post.

*Mbaki Muzila, University of Botswana Herbarium,  
University of Botswana, Gaborone, Botswana:*

To show our appreciation of the support we have received from SABONET, through Mr Chris Willis's hard work, I would like to congratulate him on his new appointment.

*Annaniah, Angela, Florence and Patrick,  
Herbarium, University of Zambia, Lusaka, Zambia:*

Christopher Willis, SABONET-Zambia will miss you very much. You have been such a nice person to work with in this Project. We'll never regret having been under your leadership as the SABONET Regional Coordinator.

Your approach was so open and very sociable; but you stood firm in championing the ideals of SABONET. Having come this far, we thank you for your words of wisdom and encouragement. You made life so easy and comfortable during all SABONET training courses, culminating in one of the most successful international efforts, in the form of the Nyika 2000 Botanical Expedition. Your hard work and input to SABONET will be remembered and we hope we'll still come back to you to learn. We wish you all the best in your new post.

Remember the SABONET-Zambia team loves you. Chris, keep your smile. We wish you the best of luck.

*Titus Dlamini, Swaziland National Herbarium,  
Swaziland:*

It is difficult for me to find enough words to describe the tremendous amount of work Mr Willis has done for SABONET. Evidence of his invaluable efforts is the level of achievement reached by the project, especially the long list of SABONET publications. Working with ten differ-

ent nations is quite a challenge but he took it on boldly and very professionally. His tireless, unsparing and dedicated work was complemented by a positive attitude towards his task and colleagues. I think we can all learn from his example. I wish him success in his new task and hope to see his continued support for SABONET.

*Esperança Costa, Luanda Herbarium, Luanda,  
Angola:*

We wish Christopher Willis all the best in his new job and please Chris, stay close to us.

*Puleng Matebesi, Herbarium,  
National University of Lesotho, Lesotho:*

It has been a pleasure working with Chris, especially during the tough days in Lesotho. We wish him good luck and know he will work hand-in-hand with his new colleagues.

#### **Farewells from Zimbabwe:**

It was nice having you in the SABONET programme. You were quite an inspiration to us—  
*Memory Chandinyira*

Thank you so much for being a blessing to SABONET and to many people. You have been a great help in SABONET. I wish you all the best in your new position—*Erina Nyamhanga*

Thank you very much for all the work and commitments you put into the SABONET programme. May God bless you in your new post—*Nancy Mugarisanwa*

It was a great privilege working with you in SABONET. You coordinated the project with great wisdom and patience, and always made an effort to accommodate all of us! Your unique leadership and your well-designed programmes groomed us into competent botanists. Thank you for your input in our careers and best wishes in your new job—*Ratidzayi Takawira*

Your work in SABONET has been outstanding; thank you so much for your good leadership and endurance. You bring good qualities to your new post—*Christopher Chapano*

It was nice to work with you in SABONET. Best wishes in your new job—*Anthony Mapaura*



I really appreciated your sterling efforts and support under the SABONET programme. Best wishes in your new post—*Soul Shava*

It was nice having you in the SABONET programme. I wish you the very best in your new job—*Phelex Manyanga*

Your work in SABONET was greatly appreciated. I wish you success in your new post and hope you will continue the good work—*David M. Mutigwa*

You were a pleasure to know and work with. The success of SABONET thus far has been mainly the result of your hard work and well-developed diplomatic skills. I am sure you will be greatly missed at our SABONET Steering Committee Meetings—*Nozipo Nobanda*

*Staff of the Coordinator's Office  
Pretoria, South Africa:*

Imagine the pain one feels when the head of the family leaves to stay with someone else—although that person continues supporting the family, the pain will still be there and it will definitely not be the same as when the person was home all the time. This is exactly the pain the SABONET team is feeling about Mr Christopher Willis's move from being the SABONET Regional Coordinator to the position of Director: Gardens and Horticultural Services. We know it is the best move for him and that it will be very challenging—but at the same time we feel envious because we know what an asset he will be and how lucky the people who will be working with him are.



▲ Chris next to a giant lobelia on Mount Kilimanjaro. (Photo: E. Romanowska)



During the years that we have known Chris, we have known him to be a gentle person, dedicated to his work and in particular to the SABONET Project. His laptop was his "second wife", which he carried around all the time. Now that he is no longer part of SABONET, we think it will not harm mentioning the name that we have given him over the years, which we doubt he knows about as we only called him that when he was not within earshot: "Mr Perfect". This was because Chris always wanted things done the right way. Even the printers of SABONET publications knew

that if they made a mistake, even omitting a full stop, they had to re-print the whole lot! Chris was very committed to his work and the phrase *Lead By Example* really applies in Chris's case. We worked like a family and there are a lot of things each and every one of us learnt from Chris. He will be greatly missed by the SABONET team; the advantage is that his office will be just three doors away from the SABONET offices. We have however been blessed by getting a good replacement for him: Stefan is proving to be an equally nice and gentle person. □

*Coleen Mannheimer, National Herbarium, Windhoek, Namibia:*

**AG PLEASE CHRISTOPHER**  
(sung to tune of *Ag please Daddy*)

Ag, please Christopher don't leave us all here crying –  
All us sabonetteers needing you so much.  
We don't want you to garden there, to horticult or to direct.  
We just want you to see us safely home and dry.

*refrain*

Workshops, meetings, budgets, people's bleatings,  
Computers, vehicles, and all those publications.

We promise to obey your rules, to write our news and use our tools  
That SABONET and you have given us so far.  
We're sorry we were sometimes late, we won't get you into a state  
Just come back Chris and we will all be nice to you.

*refrain*

Please, please Willis, man, don't be mean and leave us now  
Just when we were starting to like you so much  
We'll all be bad and down our tools, go on strike and act like fools  
SABONET will wish they'd never heard of us.

*refrain*

So OK, friend go if you must, we'll see you now and then we trust,  
We hope your new position is more fun for you.  
If it turns out you miss us too, we'd really like to hear from you  
So bye-bye Chris and don't forget that WIND loves you.





# 16th AETFAT Meeting: Opening speech

Meise, Belgium, 27 August 2000

by Jan Rammeloo

Ladies and gentlemen, I wish to welcome you to the opening session of the AETFAT congress which takes place in one of the auditoria of the Free University of Brussels, the same venue where, 50 years ago, the first congress was held. My heartfelt thanks to the rector who allowed us to organise this meeting at this venue. At the same time I would use the occasion to point out that the rector himself has vast experience of research in Africa. AETFAT is doing well. Almost 230 members have registered and have arrived in Belgium for this congress. Almost half of them work or live in Africa.

Botanists, and certainly taxonomists, face the difficult task of having to classify and to give names to plants. Taxonomic decisions are not always evident, and even the best-trained taxonomists often struggle with taxonomic concepts when studying a group in detail. This was true one hundred years ago, it was true fifty years ago, and now, at the beginning of a new century, it is still true. Although molecular data are very helpful nowadays, botanists doing fieldwork need practical tools.

Communication and exchange of ideas is very useful when trying to solve problems, to get answers to scientific questions. If this exchange can be organised in front of a live, critical, and specialised audience, and if this leads to a better direct contact between researchers, resulting in collaboration, exchange of ideas and joint research programmes, then scientific research has a much higher chance of being effective and successful.

Fifty years ago, the basic need for contact between scientists was already apparent. In 1950, when Jean Léonard, assistant at the "Institut national pour l'étude agronomique du Congo" (INEAC), was working on the Ranunculaceae for the Flore du Rwanda Burundi, he met Mr Exel

(British Museum) and Mr Milne-Redhead (Kew) in the British Museum in order to discuss taxonomic problems in the genus *Clematopsis*. The two British scientists had been working on the same family for flora projects in other parts of Africa. The result was not that their problems were completely solved—they needed more field observations for that, but that these three botanists became enthusiastic about the fact of having met and discussed scientific matters.

This meeting, which later proved to be historic, must be seen in its period: 50 years ago, five years after the Second World War, a time of handwritten or typewritten letters, a time when travelling, even within Europe, was still rather hazardous. A journey by boat to Africa, and certainly to central Africa, took very long. Even by plane, travelling time was very long, with more than one stopover for refuelling. Upon arrival in the tropics, botanising was very difficult too. At that time, scientists were working in a rather isolated manner.

Seen in this context, it is clear that the three botanists were extremely happy with their London meeting. M. Léonard proposed to organise meetings of that kind on a regular basis, and Mr Exel proposed to create a new association—a bilingual association—to embrace French- and English-speaking countries in Africa, covering nearly the whole of tropical Africa. The "Association pour l'Etude Taxonomique de la Flore d'Afrique Tropicale" was proposed as a name. The abbreviation AETFAT was to be pronounced in an English way.

In December 1950, 21 botanists gathered at Kew, accepting the idea of a new association, electing Mr Meikle as Honorary Secretary. The seven main objectives of the association were published in the first *Bulletin* of 1951 to improve co-operation and communication between botanists interested in

Tropical African taxonomy. The objectives were (AETFAT *Bulletin* No. 1):

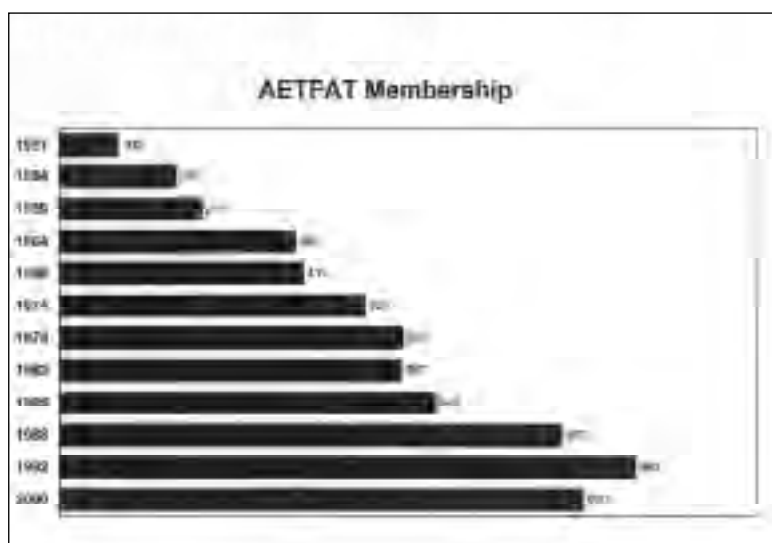
1. To invite those botanists actively engaged or interested in the study of the Tropical African flora to join the association, and to inform the Honorary Secretary of their particular interests.
2. To circulate periodically a list of names and addresses of members giving their special interests, requirements and desiderata (specimens or information).
3. To facilitate exchange of separates of published works, so far as is possible—members are specially requested to send at least one copy of each work as published to the Honorary Secretary.
4. To correlate work on floras in course of publication by attempting to reach agreement on nomenclature of species common to these floras, and, as far as possible, on the major points of taxonomy involved.
5. To produce a series of maps showing the distribution of species of ecological importance or of special interest.
6. To provide a link between members working in herbaria and those engaged in field studies in all parts of Tropical Africa.
7. To arrange meetings between members of the Association for discussion of particular taxonomic problems, and for collaboration in their solution.

The objectives which are enumerated have always been the leitmotiv of AETFAT. Today, we can conclude that

1. The association has a growing number of members
2. The list of the members and their addresses is regularly published in the AETFAT *Bulletin*. Members can make announcements or make requests to colleagues via the *Bulletin*.
3. A library has been created and new acquisitions are regularly published in the *Bulletin*.
4. Scientists have more contacts for their work on the different floras: they can exchange ideas, with respect for divergent opinions.
5. Contacts between botanists working in the field and herbarium botanists have improved.
6. Plenary sessions and congresses are organised on a regular basis, generally every third year. This is our sixteenth congress.

The main objectives of the association have remained important. The means of achieving them have strongly evolved over the last fifty years, following the developments of modern society. This evolution is apparent in the increasing number of members, the history of the *Bulletins*, the congresses and the proceedings of the congresses.

From the numbers shown in Figure 1, it is clear that AETFAT has become a recognised forum for botanists working on the African flora.



◀ Figure 1

Let us have a look at the congresses and the places where they were organised:

Brussels 1951; Oxford 1953; Paris 1957; Lisbon & Coimbra 1960; Genova & Firenze 1963; Uppsala 1966; Munich 1970; Genève 1974; Las Palmas 1978; Pretoria 1982; St Louis 1985; Hamburg 1988; Zomba 1991; Wageningen 1994; Harare 1997; Meise 2000.

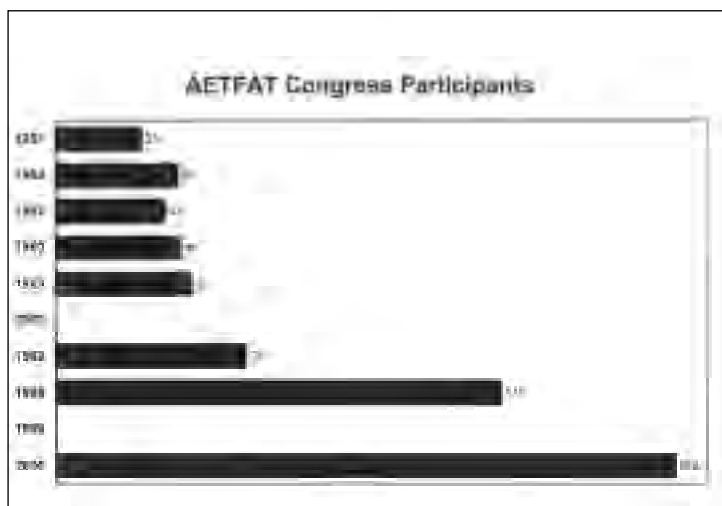
AETFAT started with one hundred members at the beginning of the fifties, growing steadily to about 200 members (1954), 244 (1959), 405 (1964), 419 (1968), 525 (1974), 590 (1978), 587 (1982), 646 (1985); 863 (1988), 990 (1992), 900 (2000).

The Brussels Congress (1951) had 33 participants from 11 countries. In Lisbon and Coimbra there were 48 participants from 12 countries, and the number of participants increased to 235 for this congress. Another feature, not to be neglected, is that on the first photographs you can hardly find any African participant—AETFAT was a European-driven organisation. Later on, as can be judged from the Wageningen Congress photo, Africans became more numerous, and now, nearly half the participants in the Meise Congress are living or working permanently in Africa. I think that everybody is happy with this evolution. African botanists have been formed and are spreading their knowledge all over Africa. Nevertheless, a strong collaboration with European or Western countries will remain important. The number of specimens conserved in European herbaria largely exceeds the number of specimens

kept in African herbaria and, furthermore, botany and herbaria are not always—or even not at all—the main concern in African countries. African herbaria do not always get the means they deserve, which is harmful for continuity,—continuity being of vital importance to herbaria and botanical collections.

Nine congresses have been organised in Europe, followed by one in Africa, one in the USA, one in Europe, one in Africa, one in Europe, one in Africa, one in Europe. The fact that the congresses are now organised alternately in an African country and in a country from another continent (usually Europe for historic reasons), is a highly appreciated evolution.

Not only the number of congress participants and the number of members are important. When considering the member lists by country, it appears that in the beginning AETFAT was primarily an organisation of Europeans; even the members from African countries were Europeans. In 1965 (*Bulletin 16*), 126 members came from African countries, 38 of them were from South Africa. In 1979, 167 members were from African countries, 79 of them from South Africa. This higher number of South African members is important for the history of botany in Africa, considering that South Africa became the motor behind SABONET, the botanical network of southern African countries. The creation of SABONET has really strengthened botanical research in the southern part of Africa, develop-



◀ Figure 2

ing a south-south collaboration, a type of collaboration that is considered extremely valuable for the future. Since the creation of SABONET, the number of AETFAT members of African countries has increased considerably.

AETFAT activities are centralised by the Secretary General, who changes after each congress. Between two congresses contact is maintained through the publication of the *Bulletin*, which is sent to all members.

The first *Bulletin* was a stencilled leaflet of two pages. Now the *Bulletin* is a hefty volume and modern offset printing techniques are used. Meise introduced the use of the Internet as a major facility for keeping contact and organising the congress.

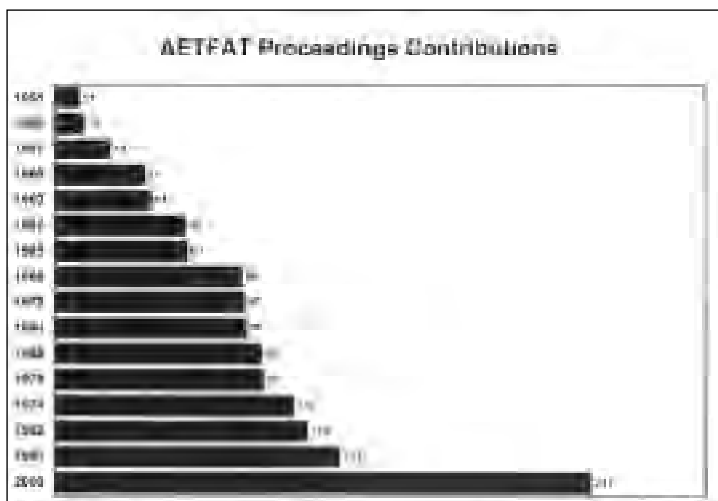
Of even greater importance is the forum that is given to botanists working on the African flora to publish the results of their research in the proceedings published after each congress. The Brussels meeting gave rise to 135 proceedings pages, totalling 11 contributions. The most prolific was the Zomba Conference with 1 512 pages of proceedings from 131 contributions. Even if the number of pages does not necessarily give an idea of the scientific quality of the contents, these proceedings have always been supervised by a scientific reading committee, and therefore quality is not questioned.

More and more, AETFAT conferences have been focusing upon a general theme. Over the years, the general themes have been the following:

- Brussels 1951: Flore et végétation de l'Afrique tropicale.
- Uppsala 1966: Conservation of vegetation in Africa south of the Sahara.
- Genève 1974: Origines des flores africaines et malgaches.
- Las Palmas 1978: Taxonomic aspects of African economic botany.
- Zomba 1991: Plants for the people.
- Wageningen 1994: The biodiversity of African plants.
- Harare 1997: African plants. Biodiversity, taxonomy and uses.
- Meise 2000: Systematics and geography of plants for the understanding of African biodiversity.

During the Oxford Conference of 1953 a committee was formed to prepare a vegetation map of Africa, which was published six years later with the financial assistance of UNESCO. This map was essentially based on information collected by field workers in order to show the vegetation at the moment of mapping, not representing the presumed climax types.

Ten years later, because of the success of the first map, it was decided at the Florence business meeting to prepare a new edition of the map. This new map—accompanied by a 356-page book written by Frank White—was published in English in 1983, in French in 1986.



◀ Figure 3

The publication of an annually produced index, which enumerated all new taxa from Africa published in that period, was an important tool for AETFAT scientists for many years. More recently, this publication has been replaced by other publications and other resources.

AETFAT was also a motor for the publication of a number of indexes: indexes on the exploration of Africa, indexes of families dealt with in African floras, indexes of collection localities in different parts of Africa, collector indexes, indexes to illustrations of vascular plants from Africa, indexes to distribution maps of African plants....

Ladies and gentlemen, it is clear that AETFAT has played an important role and will always play an important role in the development of African botany. But AETFAT is a relatively singular organisation; few similar ones exist. The singularities of AETFAT made it a strong organisation, but they can also make it vulnerable. The most remarkable characteristics are the following:

- It is an international association where the members do not pay a membership fee. To become a member, it is sufficient to submit one's name and address, and confirm from time to time if one wishes to remain a member. Entry therefore is extremely easy. Consequently, the secretariat must occupy itself with a large number of less active members by sending them bulletins, which nowadays has become an expensive operation. To give you an idea, and not at all wanting to alarm my successor, the cost of sending out the first bulletin, before the congress in Meise, has become as high as about 90 000 Belgian francs.
- Because all the financial responsibility rests with the Secretary General, that person should be assured of a large enough budget to enable thorough preparations for a congress.
- The number of delegates grows constantly, and it will become more and more difficult to find a convenient venue for the organisation of a congress.
- If the congress takes place in Europe, outside Africa, one of the tasks of the secretary-general is to find enough aid to ensure significant participation by Africans.

- The growing number of participants at congresses leads automatically to larger and larger proceedings, which on the one hand is a good thing, but on the other hand represents a great deal of work for the editor and demands an initial investment which is not negligible.
- If the congress is organised in Africa, the Secretary General is, in most cases, obliged to associate himself with institutions situated in richer countries to be able to do good work.

I wish to be clear, the above points did not at all make me regret the preparations for the congress, but one day AETFAT should do a SWOT analysis, in order to get a clear idea of its possibilities and potential dangers.

I had the feeling that this congress has been a turning point, in the sense that a "home page" for the congress has greatly facilitated the often difficult contacts with certain African countries. E-mail has certainly worked miracles, while evidently not solving all the problems. I cannot imagine the difficulties in organising a congress such as this without contacts by e-mail.

The information tools are a challenge for Africa. Information technology will certainly aid African scientists to overcome an often great isolation. But I should not develop these ideas, I leave to Prof. Sebsebe Demissew of Addis Abeba the care to disclose his own, it is he who is going to indicate the future of AETFAT for us as he sees it.

At any rate, I wish that AETFAT will be able to prosper as it has done up to the present. □

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*Parts of the speech were originally presented in French. These sections were kindly translated by Ms Mienkie Welman of the National Herbarium, National Botanical Institute, Pretoria, South Africa.*



# Vision for AETFAT in the next millennium

by Sebebe Demissew

## Introduction

At the University of Addis Ababa, Ethiopia, we think of AETFAT (Association for the Taxonomic Study of the Flora of Tropical Africa/*Association pour l'Etude Taxonomique de la Flore d'Afrique Tropicale*) primarily as an association of botanists working on the Flora of Africa, but also on the taxonomy of African plants, the plant geography of Africa, the vegetation of Africa and the biology and uses of African plants.

But before going to talk more about these subjects, it would be worthwhile to highlight some facts, not only about AETFAT, but also about Africa.

- Africa is the world's second largest continent, with 30 million square kilometres of land mass (North America, the third largest continent, has an area of 24 million square kilometres of which very extensive areas are boreal or arctic).
- Africa has a moderately sized population for its size of *ca* 680 million inhabitants. The population density ranges very widely, from less than one per square kilometre in desert and deep forest to over 500 per square kilometre in the highly cultivated Nile Delta at Cairo.
- Africa is a continent with very diverse cultures and languages. It is possible to distinguish *ca* 1 500 ethnic groups with *ca* 1 500 different languages, which fall in six language families with a total of 15–20 distinct branches. For example, in my country Ethiopia, with an area of 1 134 000 km<sup>2</sup> (approximately the size of France, Spain and Portugal combined), which has a population of about 60 million people, there are over 85 nationalities, each with its own distinct culture and language.
- Africa is a continent with diverse topography, climate and vegetation, ranging from ex-

tremely dry and hot deserts in the Sahara and Kalahari to hot and very humid rain forest on the slopes of Mount Cameroon and cool, high mountains in the Eastern Africa.

- The vascular plant flora of Africa is somewhere between 40 000 and 45 000 species (according to the World Conservation Monitoring Centre 1992), approximately one fifth of the world's flora. Only tropical and subtropical Asia (with *ca* 50 000 species) and Central and South America (with *ca* 85 000 species) have more.
- Africa is a continent with a long history of colonialism in the form of rule from another continent. There were Roman colonies in North Africa. Dutch colonies were established in South Africa about 350 years ago and Portuguese colonies were established in tropical Africa not much later. The situation culminated within the last hundred years, when the majority of Africa was under the control of only seven or eight European countries. Independence came in the 1960s—a little bit later for some.

Meeting	Venue	Month and Year
1st	Brussels	Oct. 1951
2nd	Oxford	Sept./Oct. 1953
3rd	Paris	Sept. 1957
4th	Lisbon & Coimbra	Sept. 1960
5th	Genova-Firenze	Sept. 1963
6th	Uppsala	Sept. 1966
7th	Munich	Sept. 1970
8th	Geneva	Sept. 1974
9th	Las Palmas	March 1978
10th	Pretoria	Jan. 1982
11th	St Louis	June 1985
12th	Hamburg	Sept. 1988
13th	Zomba	April 1991
14th	Wageningen	Aug. 1994
15th	Harare	Feb. 1997
16th	Brussels	Aug./Sept. 2000
17th	Addis Ababa	Sept. 2003

▲Chronology of AETFAT Congresses, 1951 to 2000.



This is a short summary description of Africa, the plant world of which AETFAT has undertaken to study. It is a formidable task, but AETFAT has managed well, and we hope it will continue to do so.

AETFAT—as we know from this 50-year jubilee being held in Brussels, Belgium—was established in 1950, when most of Africa was still under colonial rule. It was also during this period when many of the European botanical institutions started writing modern Floras of their colonies. For example:

- *Flora of West Tropical Africa* (FWTA) was first published between 1927 and 1936, with the second edition appearing between 1954 and 1972.
- *Flora du Congo Belge* began appearing in 1948.
- The first part of *Flora of Tropical East Africa* (FTEA) was published in 1952.
- *Flora zambesiaca* (FZ) was first published in 1960.
- *Flore du Cameroun* and *Flore du Gabon* both began in 1963.

AETFAT started as a working forum for Flora writers and editors, and the problems the association addressed were at first those of the individuals or groups of European botanists working on

these floras. The importance of the Floras was recorded in the early proceedings where reports on progress with Flora writing were often placed first (for example in the sequence of proceedings from the third to the eighth meetings of AETFAT (1957–1974).

Another important subject was agreement on the concepts and terminology of African vegetation, both in English and French. Broad descriptions of vegetation were a theme at a number of early meetings, including the first AETFAT meeting in Brussels which, incidentally, was held in 1951, not 1950, when the organisation was founded.

The species concept in Flora writing has also been the subject of a meeting, i.e. the 3rd AETFAT Meeting in Paris, 1957.

However, AETFAT soon began to change and adapt, almost like a species of plant or animal living under changing environmental conditions. We can clearly see this change if we look through the sequence of proceedings from the previous 15 AETFAT meetings held from 1951 to 1997.

Practical subjects of use for Flora writing, such as information on collectors and collections, were of great importance in the early volumes, for example, the proceedings from the fourth Plenary Meeting held in Lisbon and Coimbra in 1960.



▲ Participants at the first AETFAT meeting in Brussels, Belgium, held in 1951.



▲ *Participants at the XVIth AETFAT Meeting held in Meise, Belgium, August 2000.*

Very soon AETFAT took an interest in floristic plant geography, encouraged by the enthusiasm of one of the founding fathers, Frank White, for that subject. This gave rise to a number of papers in the proceedings of the Plenary Meetings, for example, the second meeting in Oxford (1953) and the fifth meeting in Genova-Firenze (1963).

We see the ideas of the conservation of African flora and vegetation appearing on the agenda quite early. Conservation was, for example, the main theme at the sixth Plenary Meeting held in Uppsala, Sweden, in 1966.

AETFAT also soon included the scientific studies of useful plants. Useful African plants were an important theme at the ninth Plenary meeting in Las Palmas in 1978 and again at the twelfth meeting in Hamburg, 1988, and the thirteenth Meeting in Zomba in Malawi in 1991.

Gradually, AETFAT has widened its scope to include more and more basic sciences within botany. For example, plant anatomy, cytology, phytochemistry, ecology and plant geography. It

has also held symposia on algae, fungi, lichens and mosses. Thus, AETFAT has become a broad forum for dialogue and scientific research on African plants.

It is interesting to note when the first tropical African botanist presented a paper at AETFAT. As far as we can tell, the first names pertaining to tropical African countries appear in the proceedings from the fourth meeting in Lisbon and Coimbra, when Dr C.F.A. Onochie from West Africa talked about the identification of forest trees. Later, at the sixth meeting in Uppsala (1966), L. Aké Assi and E. Adjanohoun from Côte d'Ivoire appeared.

At the seventh meeting in Munich (1970) there were more tropical African contributors, mainly from West Africa, both the French- and English-speaking parts. Probably the first East African was A.B. Katende from Uganda, who gave a paper at the 8th meeting in Geneva in 1974. The number of tropical African participants giving papers has been growing drastically since. There

has been a fairly steady increase in African representation and contributions in subsequent AETFAT meetings and obviously also in the present sixteenth AETFAT meeting, where over 50 percent of the participants are African.

So AETFAT became a forum for discussion and collaboration between both the young and the more established European/American botanists from established herbaria and laboratories and botanists from new African institutions. However, it is probably true to say that the discussion within AETFAT was nearly always on the personal level, and institutional involvement only secondary. The advantage of this has been that we have avoided the collaboration from being too deeply ingrained with politics. It has been a principle not to exclude individuals even if the politics of their governments were not always generally approved. The price of this arrangement has been that it has often been difficult to raise funding for the various activities, unless the necessary personal links could be established.

Connected with this fact—that AETFAT is a botanist-to-botanist organisation—is the unique feature that there has never been a membership fee for belonging to AETFAT, neither for European nor for African members. This has made life much more difficult for the General Secretary, but much easier for everyone else!

We must not forget to mention the collaborative projects, supported by small groups of enthusiastic AETFAT members with the moral support and occasional help from everyone else. Soon after its start, AETFAT became a forum for big and useful projects on a continental scale other than the regional and national floras, for example:

- The AETFAT vegetation map of Africa (first version by R. Keay in 1959, the second version by Frank White in 1983).
- The *Distributiones plantarum africanarum*. This is a useful tool and we all hope it will continue to grow. It was initiated in December 1969, partly following a proposal by Frank White at the Uppsala meeting in 1966.
- Lebrun & Stork's checklist of tropical African vascular plants (Lebrun & Stork 1991–1997).

## Our vision for AETFAT in the next millennium

1. AETFAT, at the association level, should strengthen informal collaboration between scientists in Africa and Europe/America (or, in due time, scientists from other continents with an interest in African plants). We think we should maintain emphasis on individual scientists rather than on collaboration between the institutions. However, individual scientists should be encouraged to establish institutional bonds for specific purposes. We also feel that the General Secretary of AETFAT should continue to work for the membership of AETFAT to remain free of charge. That requires the goodwill of some donors, but we will have to work for that.

2. We think that AETFAT should encourage and maintain the healthy combination of both applied and basic sciences, for which it has been known throughout its 50-year history.

3. We think that AETFAT should encourage new collaborative projects like the Vegetation Map of Africa. Perhaps it is time for an updated version. We should also not forget that AETFAT initiated an annual index of new taxa and publications on African seed-bearing plants in 1953. This was very cheap for AETFAT members—an idea which was taken up for the whole world in 1971 by the Royal Botanic Gardens, Kew (*The Kew Record of Taxonomic Literature*) at a considerably higher price. We have had a checklist of tropical African plants (Lebrun & Stork 1991–97). We also have an AETFAT library holding literature relevant to the study of African plants. A great tradition to continue!

4. AETFAT should generally encourage use and knowledge of modern methods (for example, DNA-studies) in the study of African plants. Africa needs botanists who can understand the new taxonomic methods. But it is also important that the knowledge of the classical methods is kept alive and is actively developed. Collaboration through AETFAT members can help us strike a good balance between alpha-taxonomy and the modern methods.

5. AETFAT should encourage the development of human capacity based on good personal relations within the wider disciplines of botany in African institutions through training, in order to realise our vision for the future.

Many African countries gained their independence in the 1960s, and many of the African herbaria (or other botanical institutions) were established at that time. But in the last three decades, neither the old colonial masters nor the new African national governments have been too keen to train Africans in botany. Earlier European/American botanical collectors tended to use local African people to serve as guides or assistants in major botanical collecting trips rather than to encourage the young ones to develop academic expertise. This has been the state of affairs in many African institutions. There are a number of excellent exceptions, which can act as very encouraging examples, but still the problem is urgent. In this connection, I would like to remind this distinguished audience that training young taxonomists was on the decline for a number of years in the past, even in institutions of the temperate regions. We all hope the focus on biodiversity and some of the new instruments, for example, the Global Taxonomy Initiative, might change the trend if we all participate positively.

6. AETFAT should encourage voluntary repatriation of information. For historical reasons, major herbaria in the temperate regions keep large collections from tropical Africa. These collections include type specimens. Most national herbaria in Africa lack reference material for a number of species occurring in their respective countries.

Thus it is most desirable that major herbaria repatriate information. This could be achieved in at least three ways. Primarily making joint collections by partner institutions in the North and South, based on a clear Memorandum of Understanding, and making sure the material collected is properly named. This is a sure way of repatriation of information. Secondly, by making more information (for example type specimens, with good pictures of the specimens) available on the Internet, as is now being done in the Netherlands

National Herbarium (Leiden, Utrecht & Wageningen). More on-line service and better links/internet-connections in Africa is very important. Thirdly, by trying to promote more databases for botanical information both in Europe, America and Africa. Support for such activities could be sought from OECD, EU, UNESCO, and others.

African herbaria should play an active role in this process of repatriation, strengthening the relationship with major herbaria and carrying out collaborative research at the national, regional and international levels with those herbaria that address their concerns.

7. AETFAT should promote the development of a code of conduct in the North-South collaboration in botanical research and also try to encourage positive use of the principles in the Convention on Biological Diversity (CBD). Most research collaboration is said to be purely scientific, e.g. taxonomic work or other basic botanical research. There are, however, researchers or funding organisations with implicit motives, like the development of marketable products (e.g. pharmaceutical or agricultural). In such cases, agreement should be made, based on the principles of benefit-sharing and prior informed consent by the parties involved. We hope and believe that such reasoning is in the classical spirit of AETFAT. □

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## SSC9 held in Meise, Belgium

The Ninth SABONET Steering Committee (SSC) meeting was held at the National Botanic Garden in Meise, Belgium, on 27 August 2000. The meeting was held in Belgium to coincide with the 16th AETFAT Congress held at the same venue from 28 August to 2 September 2000. All ten participating countries were represented at the meeting. Dr Alan Rodgers of UNDP/GEF, Arusha, Tanzania and Mr Thulani Mabaso of UNDP-South Africa also attended.

Issues discussed at the meeting included post-graduate support for 2001, computerisation, publications, staff dedicated to SABONET activities in participating herbaria, training and the planned SABONET Mid-Term Review. This external review is scheduled to take place in the region during the first quarter of 2001, and will be reported on in the April 2001 edition of SABONET News.

SABONET's Second TriPartite Review (TPR)

Meeting, chaired by Dr Alan Rodgers, was held on the same day, using the Annual Programme/Project Report as a basis for discussion.

The following recommendations were made by the TPR meeting:

- To continue linking the log frame to the budget, reassessing the availability of funds in 2000–2001, and prioritising the future use of available funds.
- To give priority to information technology issues, and for this aspect of the project to be speeded up.
- To mobilise the botanical gardens aspect of the project.
- To fast-track outputs from participating herbaria in the region (such as national plant checklists, computerisation of selected plant groups/taxa, plant distribution maps linked to other data sets using GIS). □

## Extracts from NBI's External Review September/October 2000

An External Review of South Africa's National Botanical Institute (NBI) was conducted from 28 September to 3 October 2000. Botanists included in the review group included Prof. Peter Crane (Royal Botanic Gardens, Kew, UK), Prof. Jameson Seyani (Commonwealth Science Council, London, UK and Director, National Herbarium and Botanic Gardens, Zomba, Malawi), Ms Stella Simiyu (Chair, East African Plant Specialist Group, IUCN Species Survival Commission and National Museums of Kenya, Nairobi) and Mr Mark Richardson (Alice Springs Desert Park, Australia).

This is what the review group had to say about the SABONET Project:

### Summary of major conclusions

The SABONET Project has been a key contribution to building the capacity for managing, utilising and ensuring the conservation of plant diversity in southern Africa. The National Botanical Institute has taken a leadership role in this initiative and it is important that this crucial vehicle for communication, cooperation and coordination is maintained beyond the life of the current

funding of this project. SABONET will continue to evolve but it is one of the National Botanical Institute's most significant and enduring contributions to the African Renaissance.

#### **Response to the report of the 1995 External Review Group**

The implementation of the SABONET Project has also been a key achievement in the period since the last review.

#### **Implementation of the 1996–2000 Corporate Strategic Plan**

“To contribute significantly to preventing the extinction of southern Africa's plant species, and to maintain the diversity of species, ecosystems and ecosystem processes.”

The SABONET Project has enhanced further the National Botanical Institute's contribution to this goal, becoming a model both regionally and internationally. Further linkages between the Conservation and Ecology Subdirectorates of the NBI, the Red Data List and the ethnobotanical database will improve the National Botanical Institute's contribution to meeting this goal. This focus should continue.

#### **Relevance of programmes and activities in the new South Africa**

Forging of regional collaboration in southern Africa to promote capacity building (i.e. SABONET), has improved human resources and infrastructure development for SABONET countries.

#### **Research and scientific services**

The Red Data Listing programme implemented through SABONET is a welcome initiative that has resulted from the leadership of the National

Botanical Institute. This project has built on the previous excellent work done by the National Botanical Institute on threatened plants. The approach and implementation has been well designed. In order to enhance the delivery of the outputs of this project, it is important from an NBI perspective that active linkages are maintained between the Red Data Listing Project, the PRECIS database, the Conservation and Ecology Programme and the Herbarium. These linkages should in turn be consolidated to develop an effective conservation policy for the NBI gardens and guidelines for integrated species conservation projects with relevant parties and stakeholders.

The robust training experience, the development of modern research facilities and implementation of innovative and adaptive research programmes, make NBI a centre of excellence in Africa. NBI therefore is strategically placed to meet some of Africa's training and capacity building needs. Avenues to enhance this need to be explored, especially post-SABONET.

The SABONET Project has achieved tremendous success in contributing to building botanical research infrastructure and capacity in southern Africa. The improved ability within the region is an asset to the National Botanical Institute, which is a regional centre of excellence. It will therefore be strategic to pursue options that keep the network going post-GEF funding.

SABONET has effectively publicised its activities through its newsletters and reports. There is need to maintain this communication in an acceptable and affordable format to maintain the profile of the project. □

“The challenge for conservation biology is to shift our focus—both in terms of the areas and problems that we work on, and the ways we interact with landowners and local communities—so we can successfully conserve indigenous biodiversity on the unprotected lands that dominate the world's land surface.”

Norton, D.A. in *Conservation Biology* 14(5): 1222. (2000)

# An African Workshop on the Global Taxonomy Initiative

by Gideon F. Smith

"The taxonomic community globally sees an urgent need for capacity-building and infrastructure renewal if taxonomy is to keep up with the demand for up-to-date information on species. The Convention on Biological Diversity (CBD) has recognized this taxonomic impediment and has formulated the concept of a Global Taxonomic Initiative (GTI) to promote a concerted effort between international funding agencies, national and sub-national governments, and non-government bodies. The COP and SBSTTA have been quite clear that the role of the GTI is to help implement the Convention."

Cresswell & Bridgewater (2000: 12)

Cresswell, I.D. & Bridgewater, P. 2000. The Global Taxonomy Initiative—Quo vadis? *Biology International* 38: 12-16.

A three-day Global Taxonomy Initiative (GTI) Workshop for Africa will be held under the auspices of the Convention on Biological Diversity from 27 February 2001 to 1 March 2001. The Workshop will be hosted jointly by the National Botanical Institute of South Africa and the National Herbarium and Botanic Gardens of Malawi, and will take place at the Kirstenbosch National Botanical Garden, Claremont, Cape Town. A four-day field trip, arranged by Gariep Travel, will follow directly after the Workshop. The Workshop and field trip is being made possible with funds from the Swedish International Development Cooperation Agency (SIDA).

The major objectives of the Workshop will be to:

- Enable African countries and collaborating institutions to **gain clarity** on the principles, role and mechanisms of the GTI.
- Establish a **comprehensive strategy** and **achievable workplan** according to which funding for building capacity in taxonomic research in Africa can be obtained from the GTI.
- Urge governments to support the **completion** of regional, subregional or national **taxonomic needs assessments**, and initiate the **compilation** of new taxonomic needs assessments where these do not exist.

- Formulate specific national, subregional or regional **projects aimed at meeting the most urgent taxonomic needs**.
- Produce a Final Report that can act as a **guide to achieve these objectives**.

Over the next few months invitations to attend the Workshop will be sent to a broad spectrum of African systematic biologists (fauna, micro-organisms, flora, etc.) and other stakeholders. The Workshop will consist of plenary and break-away sessions, allowing ample opportunity for discussion, airing of views and the compilation of a workshop document.

For further information you could contact either Prof. Gideon F. Smith, Director: Research of the National Botanical Institute of South Africa (gfs@nbipre.nbi.ac.za; fax no. (27) 12 804 5343) or Dr Augustine C. Chikuni, Director: National Herbarium and Botanic Gardens of Malawi (augustine@sdpn.org.mw; (265) 524 108 or 164). o

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# THE VTH INTERNATIONAL SOLANACEAE CONFERENCE

23–28 JULY 2000

by W.G. Welman

## Background

Many species of the economically significant family Solanaceae provide important sources of food, medicine, ornamental crops and drugs; several species have also served well in pioneering biotechnology, genetic engineering and analysis, and in molecular research on plant breeding and reproduction. This type of research is beginning to unravel the genetic resources of both cultigens and wild relatives of many solanaceous crops. Molecular techniques for introducing specific genes into existing crops, with regard to disease resistance, for instance, has led to renewed interest in their wild relatives as well as other wild species. Local uses of Solanaceae, also in Africa, encompass a very large range of species and open up a whole new area of research challenges.

## Introduction

The Executive Committee of the National Botanical Institute was kind enough to enable me to attend the Vth International Solanaceae Conference held at the Catholic University of Nijmegen in the Netherlands from 23–28 July 2000 and to present a poster as part of my registered project: "The genus *Solanum* (Solanaceae) in southern Africa". The conference organising committee consisted of Dr. G. Barendse, Ms T. Mariani and Dr. G. van der Weerden, all from the Botanical Garden, University of Nijmegen and Dr. R. van den Berg of the Department of Plant Taxonomy, Wageningen University. The previous International Solanaceae Conferences were in 1976 (Birmingham, UK), 1982 (St. Louis, Missouri, USA), 1988 (Bogotá, Colombia), and 1994 (Adelaide, Australia). The next conference, to be organised by Dr. D. Spooner, will probably be held in Madison, Wisconsin, USA, in July 2005. The Proceedings of each conference were subsequently published as books.

## Delegates

This well-organised and informative conference was attended by about 100 delegates from almost 25 countries. Most delegates represented the Netherlands and the USA; Brazil, France, India and Russia were also represented by several delegates. I was the only representative from South Africa. Other African countries with one or more delegates were Algeria, Cameroon, Ghana, Kenya, Sudan and Uganda. Forty talks and 25 posters were presented; abstracts of all of these were printed in the abstract book that delegates received with registration. An interesting feature of this congress was the separate category of "Abstracts only" which also appeared in the abstract book. This chapter consisted of 50 summaries of work completed/in progress by researchers who could not attend the conference, mainly from Armenia, India, Russia and the Ukraine. Notable delegates to this conference were some of the famous names in the study of the Solanaceae, scientists who had been involved with these conferences since the first one in 1976, namely Dr. Jack G. Hawkes (Birmingham University, UK), Dr. Armando T. Hunziker (Cordoba, Argentina), Dr. Charles B. Heiser (Indiana University, USA) and Dr. Richard N. Lester (Birmingham University, UK).

## Subjects

Looking at the total number and range of topics of the oral presentations, posters and abstracts, it becomes clear that the most popular subjects at this congress were the economically important species of the Solanaceae. These were *Capsicum* (chillies, paprika and sweet peppers), *Lycopersicon* (tomatoes and related species), *Nicotiana* (tobacco and related species), *Solanum melongena* (aubergine, brinjals or egg-plant), and *S. tuberosum* (potato). Other species of *Solanum* with potential economic importance that were discussed, are the

New World *S. quitoense* (naranjilla) and *S. muricatum* (pepino), the almost cosmopolitan *S. nigrum* complex (black nightshades) and the tropical African *S. aethiopicum* including *S. gilo* (garden-egg or scarlet egg-plant) and *S. macrocarpon* (Gboma egg-plant). The natural or wild species discussed, were mostly from the New World and/or related to the above economically important species. It became obvious that, because *S. melongena* originated from Old World ancestors, several natural species in the subgenus *Leptostemonum* especially sections *Oliganthes* and *Melongena* from southern and tropical Africa can be crossed with it to improve resistance to various kinds of diseases, parasites and also climatic factors.

### D'Arcy commemorative lecture

The first plenary talk was the W.G. D'Arcy commemorative lecture presented by Dr. Mike Nee (New York Botanical Garden), entitled "Where do we go from here in Solanaceae taxonomy?" The late Dr. William (Bill) D'Arcy published extensively on the systematics of the family; he was particularly knowledgeable about the Solanaceae of the New World. He organised the second Solanaceae conference held in 1982 at the Missouri Botanical Garden in St. Louis, where he was employed during his entire professional career. Dr. Nee emphasised that some groups, notably the economically important taxa, have been and continue to be thoroughly investigated with traditional and modern methods, while other groups, such as the large New World genus *Cestrum*, are still without any sort of modern systematic treatment. *Solanum*, comprising about half the species of the family, desperately needs a world-wide infrageneric classification, while most of the sections and subgenera require additional studies of various kinds.

### Interesting topics

A number of talks delivered, posters presented and abstracts submitted, were significant from an African or southern African perspective:

Dr. Lyn Bohs (University of Utah, USA) in a talk entitled "Major clades in *Solanum* molecular data and morphological synapomorphies", proposed some major changes to the subgenera and sec-

tions of *Solanum*. The African non-spiny taxa represented by *S. guineense* L. (= *S. aggregatum* Jacq.), so far the only representative of subgenus *Lyciosolanum* Bitter, should be joined by two species of subgenus *Solanum* L. namely *S. africanum* Mill. (= *S. quadrangularis* Thunb. ex L.f.) from section *Quadrangularis* Bitter and *S. terminale* Forssk. from section *Afrosolanum* Bitter. She also regards the tomato, *Lycopersicon esculentum*, on DNA grounds, as a species of *Solanum*, a view not shared by all Solanaceae workers.

K.O. Bonsu and colleagues (Crops Research Institute, Kumasi, Ghana), discussed *S. macrocarpon* in "Gboma egg-plant, a potential new export crop for Ghana". This species, indigenous to West Africa, shows considerable variation in plant height ( $\pm 25$ –75 cm), stem colours (purple and green), days from sowing to first flower (56–84 days), fruit shape (heart-shaped, through round to flattened), fruit size and weight (up to 80 mm, 133–500 grams), fruit colour in unripe fruits (white to dark green, sometimes shaded purple), fruit colour in ripe fruits (mostly yellow, also brown). Both the leaves and the fruit are eaten; some plants are more "fruity" and others more "leafy".

Marie-Christine Daunay (INRA, Montfavet, France) and co-workers delivered "Genetic resources of egg-plant (*Solanum melongena* L.) and allied species: a new challenge for molecular geneticists and egg-plant breeders". *S. melongena* [section *Melongena* Dunal of subgenus *Leptostemonum* (Dunal) Bitter] was domesticated in the Indo-Chinese region in ancient times and is now the seventh most important vegetable in the world; it is very popular in Mediterranean and Eastern countries. Egg-plant is not resistant to many pests and diseases, but its resistance can be improved through genetic engineering with genes from other Solanaceae. African species such as *S. richardii*, *S. linnaeanum*, *S. tomentosum*, *S. catombelense*, *S. burchellii* and *S. supinum* have already been crossed with *S. melongena*.

K.J. Dehmer (IPK, Gatersleben, Germany) spoke on "Conclusions on the taxonomy of the *Solanum nigrum* complex by molecular analyses of IPK

germplasm accessions". The various species of black nightshades are cosmopolitan in their distribution, very variable in morphology and, Dehmer says, is believed to have no clearly defined interspecific boundaries. He was, however, able to differentiate species on a molecular level. It was also found that *S. nigrum* sens. lat. is a potential source of resistance in potato breeding for potato or tobacco mosaic virus.

T. Doroszevska (Pulawy, Poland) spoke on the "Germplasm collection of the genus *Nicotiana* in Poland", and found, inter alia, that *N. africana* the Namibian endemic belonging to *Nicotiana* section *Suaveolentes* resistant to potato virus Y.

I.M. El Tahir (Agricultural Research Corporation, Wad Medani, Sudan) delivered "Variability in morpho-agronomic traits of local hot pepper germplasm in the Sudan". Hot pepper is an important spice crop in the Sudan, and although introduced, considerable variation can be observed in the local traditional cultivars of *Capsicum chinense* and *C. frutescens*.

M.V. Rajam and colleagues (University of Delhi, New Delhi, India) spoke on "Development of RAPD markers for resistance to *Verticillium dahliae* in egg-plant, *Solanum melongena* L." The egg-plant's nutritional value equals that of the tomato and it is an important vegetable crop of the temperate and tropical parts of the world. Among the many pests and pathogens which attack it, *V. dahliae* is one of the serious pathogens causing root wilt. The tropical African *S. aethiopicum* (both *Gilo* and *Aculeatum* groups) and the New World *S. sisymbriifolium* and *S. torvum* (both introduced to Africa) are resistant to *Verticillium* wilt, and are used to develop resistant cultivars through somatic hybridisation.

R. Bukenya-Ziraba (Makerere University, Kampala, Uganda) spoke about "Variation within *Solanum incanum* L. complex in Uganda and its relationship with *S. cerasiferum* Dunal". Tremendous morphological variation was observed in the *S. incanum* complex. This species has medicinal and traditional uses in East Africa. This variation could be used by plant breeders to improve the related *S. melongena* L. Crossing

experiments showed that *S. incanum* is a single species complex and that the north tropical African *S. cerasiferum* is very closely related.

M.A. Onyango, J.K. Imungi and J.K. Chweya (Nairobi University, Kenya) submitted an abstract "Evaluation of vegetable quality of four variants of black nightshade, *Solanum nigrum* fl. Black nightshade is a popular vegetable in tropical Africa. Three groups of variants of the *S. nigrum* complex are eaten as vegetables in Kenya, namely *S. eldoretii*, *S. nigrum* sens. str. and *S. pseudonigrum*. The crude protein, b-carotene, total ash, iron, calcium and fibre contents of the edible parts of the above taxa were evaluated. The results showed some significant differences between the groups of variants.

Luping Qin and Hanchen Zheng (Second Military Medical University, Shanghai, China) delivered a paper, "The medicinal plants of Solanaceae used in traditional Chinese medicine." More than 60 species of Solanaceae are used in traditional medicine in China. The following New World taxa introduced to both Africa and China, are listed as medicinal plants: *Datura innoxia*, *D. metel*, *D. stramonium*, *Nicandra physaloides*, *Physalis angulata*, *P. minima*, *Solanum mammosum*, *S. pseudocapsicum*, *S. torvum*. In addition, *S. nigrum*, probably indigenous to both areas, is also used medicinally.

R.W. Robinson, Yanxin Gao and colleagues (Cornell University, New York, USA) delivered a paper "Interspecific hybridisation of egg-plant for *Verticillium* wilt resistance and other useful traits." It was found that some accessions of *Solanum incanum* depending on geographical origin, produced fertile interspecific hybrids with *S. melongena* that were resistant to *Verticillium* wilt. Closely related wild species of *Solanum* have other attributes that are useful for egg-plant breeding, such as resistance to the Colorado potato beetle and flea beetles. *S. sisymbriifolium* is resistant to *Verticillium* and has a remarkable degree of cold tolerance—it produces berries in the North American winter.

A. Child and R.N. Lester from the UK presented a poster "Conspectus Solani: a survey of the genus *Solanum* L. (Solanaceae) and its infrageneric taxa".

An attempt is made to provide a comprehensive classification of the more than 1000 species of the genus, based on the conventional wisdom of classical systematics, but awaiting the full illumination of DNA phylogeny. This classification includes *Cyphomandra*, *Lycopersicon* and *Normania* in *Solanum* and treats all species in 89 taxa at sectional level, providing keys to these, and discussing their morphological and phytogeographical attributes.

A poster "Flora of Tropical East Africa Solanaceae" by J.M. Edmonds (Royal Botanic Gardens, Kew

and University of Leeds, UK) was shown in her absence. Ms Edmonds will prepare the taxonomic treatment of the Solanaceae for the *Flora of Tropical East Africa*. This is important news for southern Africa, as several species are indigenous to both areas. In Kenya, Uganda and Tanzania the family is represented by 17 genera and 100 species, many of them introduced. *Solanum* with over 70 species, exhibits its usual taxonomic complexity and diversity.

L.A. Mentz and P.L. de Oliveira (Porto Alegre, Brazil) submitted an abstract "Trichome types in *Solanum* section *Acanthophora* and related species". Trichomes from leaves of species of this section such as *S. aculeatissimum*, *S. capsicoides* and *S. viarum*, also introductions to southern Africa, were analysed by scanning electron microscopy. Species of *Acanthophora* (except *S. capsicoides*) have stellate trichomes at the abaxial leaf surface



▲ The declared weed, *Solanum mauritianum* Scop. (bug tree), introduced from South America. (With permission from the National Botanical Institute, Pretoria. Artist: Cythna Letty.)

only, with two or more lateral rays of about the same length. Cuticle ornamentation in *Acanthophora*s verrucose in wing-seeded species and with interrupted helicoidal striae in species with non-winged seeds.

A. Alighanadi, N. Tavakoli and O. Sadeghpour (Isfahan University of Medical Sciences, Iran) submitted an abstract "Quantitative analysis of solasodine in *Solanum nigrum* L. grown in Iran". *S. nigrum* is widely distributed in Iran and different parts of the plant have been used in Iranian

folk medicine for various disorders. A quantitative analysis of the solasodine content of aerial parts (stems) of the plant gave results that ranged from 7.66–26.90% (microgram per millilitre).

M. Diouf (Dakar, Senegal) submitted an abstract "Étude des mécanismes de tolérance du Jaxatu (*Solanum aethiopicum*) aux acariens (Tarsonemidae et Tetranychidae) et tentatives de transfert des caractères à des variétés sensibles". In Senegal, Jaxatu (*S. aethiopicum* L. Kumba group) has become an important fruit and leaf vegetable. Unfortunately cultivation of Jaxatu can be difficult because of various pests and parasites of which mites are the most important. Some genotypes of Jaxatu are more tolerant to mites and these lines are used to improve the crop in hybridisation experiments. Hairs on stems and leaves provide an efficient barrier against the

larger species of mites. Hybridisation with glabrous tolerant genotypes of *S. macrocarpon* has also been attempted.

D.O. Ojo (National Horticultural Research Institute, Ibadan, Nigeria) submitted an abstract "Clipping height and harvesting frequency on the production of *Solanum macrocarpon* in the humid tropics of sub-Saharan Africa". Field experiments were carried out to determine the best clipping height and harvesting frequency for concurrent vegetable (leaf and stem) and seed yields of *S. macrocarpon*. It is concluded that concurrent vegetable and seed production optimises resource use efficiency better and gives more economic returns than growing *S. macrocarpon* only either for vegetable or seed. Seed production gives better economic returns than vegetable production. This result indicates that clipping management might increase productivity of other similar vegetables and has potential for mechanisation of the vegetable harvest.

D.O. Ojo (National Horticultural Research Institute, Ibadan, Nigeria) submitted an abstract "Influence of harvesting frequency on garden-egg (*Solanum gilgii*) yield and vegetable value". Despite the importance of the garden-egg in traditional farming systems, its dietary qualities, its significance in diversifying and improving the food basket among urban and peri-urban gardeners and also Fadama growers, especially in the dry season. Very little is known about improving the productivity of this crop by harvesting techniques. Field experiments were carried out to determine the best harvesting frequency for garden-egg production.

W.G. Welman (National Herbarium, National Botanical Institute, Pretoria) presented a poster "*Solanum* (Solanaceae) in southern Africa: preview of section *Oliganthes*". This poster summarised the present state of knowledge of *Solanum* subgenus *Leptostemonum* section *Oliganthes* in southern Africa. All 15 species including four varieties are indigenous; 11 of these taxa are endemic. Taxa of this section occur in all areas and climatic regions of southern Africa. These plants are usually small, more or less spiny shrubs (not drought-deciduous) with an

indumentum of simple to stellate hairs and leaves that are entire to deeply lobed, mostly shorter than 100 mm. The solitary to few flowers are hermaphrodite with stellate corollas and lanceolate anthers with small terminal pores. The juicy fruits are red to orange with a thin pericarp and pale brown seeds. The poster showed colour photographs of dried herbarium specimens, mostly fruiting, illustrating the morphology of these species and varieties. The distribution maps were based on herbarium records in the National Herbarium (PRE); they showed that most taxa occur in clearly defined areas. A preliminary key to the 17 taxa, which was distributed to interested persons at the conference, gave more detailed information on their morphology and distribution.

#### **University of Nijmegen Botanical Garden**

The conservation of the genetic resources of the Solanaceae is of the utmost importance. This Botanical Garden has brought together an impressive living collection of Solanaceae from all over the world. Most of these are housed in six glass houses; a few are grown out in the open. The collection of more than 1000 accessions, many of wild origin, comprises 478 species and 45 genera—about 50% of the total number of genera and about 20% of the total number of species in the family. Tuber-bearing members of the genus *Solanum* are excluded from the collection; they are dealt with by Plant Research International in Wageningen, also the Agricultural University of Wageningen, not far from Nijmegen.

The following 21 species of *Solanum* that occur in southern Africa were noted (introduced species are indicated with \*): *aculeastrum*, *aculeatissimum*, *capsicoides*\*, *giganteum*, *hispidum*\*, *jasminooides*\*, *kwebense*, *linnaeanum*, *mammosum*\*, *mauritanum*\*, *panduriforme*, *pseudocapsicum*\*, *giftbergense*, *rostratum*\*, *rubetorum*, *seaforthianum*\*, *sisymbriifolium*\*, *terminale*, *torvum*\*, *viarum*\*. Species of *Solanum* from tropical Africa are also grown, notably *S. aethiopicum* and *S. macrocarpon*.

The collection is maintained with emphasis on taxonomic verification and propagation for seed production of a wide range of genera and species. Seeds are stored in a seed bank to keep a perma-

nent gene resource of the Solanaceae. Data on each accession as well as general information on the family are kept in a computer based reference system. Herbarium specimens, seed samples of each accession and a collection of more than 3 000 slides are kept for taxonomic reference.

The Department of Experimental Botany of Nijmegen University, associated with the Botanical Garden, carries out molecular research on reproduction in the Solanaceae, such as: gene regulation in pollen development in *Nicotiana tabacum* and *Solanum tuberosum*, the role of gibberellin-regulated genes in premeiotic anther and pollen development in *Lycopersicon esculentum*, actin-binding proteins in pollen-pistil interaction and characterisation of pistil-specific proline-rich proteins in *N. tabacum*, *Datura* and *Petunia*.

The Solanaceae collection of this Botanical Garden will soon be enlarged vastly with the addition of most of the germplasm collection of the University of Birmingham, UK. Many African species are represented in this collection, such as *S. anguivi*, *S. capense*, *S. tomentosum* and various species of the *S. nigrum* complex.

### **Plant Research International**

During the conference, delegates had the chance to pay a visit to Plant Research International in Wageningen. This institute does market-orientated research for its clients on various crop plants. Their fields of expertise are plant genetics, plant reproduction, crop physiology, agrosystems, soil fertility and the optimisation of plant health and plant product quality. Their facilities are

among the most advanced in Europe and include greenhouses, growth chambers, a modern gene bank, up-to-date laboratories and effective data management and communication systems. Delegates were taken on a guided tour of their research work on Solanaceae, particularly *Solanum tuberosum*, *Lycopersicon esculentum* and *Capsicum*

### **Art exhibition**

A Solanaceae art exhibition was held in the foyer of the building where the conference was presented. The British botanical painter, Doreen Hamilton, showed some 30 paintings of Solanaceae; these were for sale at NLG520–NLG1360 unframed, frames were NLG40 extra. (NLG1= ± R3,30). The subjects were mostly New World members of the family. The following species, which also occur in southern Africa as cultivated plants or weeds, were included: *Datura stramonium*, *Nierembergia cv.*, *Physalis peruviana*, *Solanum jasminoides*, *S. pseudocapsicum*, *S. rostratum* and *S. sisymbriifolium*. In November 1999 Ms Hamilton was awarded a silver medal at the exhibition of the Royal Horticultural Society. □

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Since 1919, IUBS has been facilitating the advancement of biology, and yet today, it is still a somewhat distant acronym to many biologists—IUBS stands for the International Union of Biological Sciences. Last month, I had the invaluable opportunity of attending the 27<sup>th</sup> General Assembly of IUBS as a young scientist and was funded by the National Research Foundation (NRF). The Assembly was held in Naples, Italy, from 8–12 November and was linked to a symposium on *Biological Sciences: Challenges for the XXI Century*. In this article, I provide some background to IUBS and its scientific programmes.

IUBS is one of 25 international scientific unions affiliated to the International Council of Science Unions (ICSU). It is an NGO and serves as an umbrella body for a number of scientific organisations. National academies or national research councils, for example, the National Research Foundation in South Africa, can sign up as Ordinary Members of IUBS. International scientific committees, associations and societies, for example, the International Organisation for Succulent Plants (IOS), make up the Scientific Members of IUBS. These organisations have direct access to

the Union's programmes and activities. It is intended that the organisations link IUBS with individual researchers and educators in the various biological disciplines. Institutions and individual researchers are connected to IUBS through their membership to an international scientific committee, association or society.

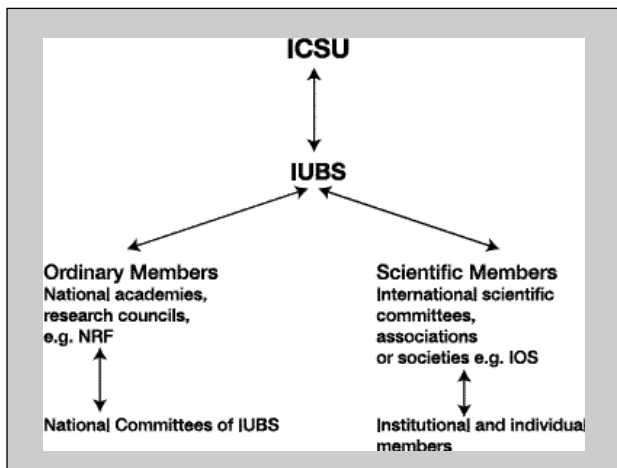
The primary mandate of IUBS is to coordinate international programmes that promote the study of biological sciences. Through its programmes, IUBS initiates and facilitates research activities that promote information sharing and capacity building, and in so doing supports international conferences and publications that result from cooperative research. The Union's Secretariat is headed by an Executive Director and is responsible for the coordination of its programmes and activities. The present secretariat resides in Paris.

IUBS is governed by an Executive Committee which is elected by the General Assembly for a three-year period. The Executive Committee is composed of six officers (President, Past-President, two Vice-Presidents, Secretary General and Treasurer) and fourteen members representing



▲ *Members of the Executive Committee of IUBS for the period 2000–2003 at a meeting during the 27th General Assembly in Naples in November 2000. (Photo: Yashica Singh)*





different countries and diverse biological disciplines. IUBS holds a General Assembly every three years and this serves to develop, maintain and strengthen liaison between the Union and its Ordinary and Scientific members. The Union also communicates with members through the IUBS news magazine, *Biology International*

Current IUBS programmes include

- *Towards an Integrative Biology (TAIB)*
- *DIVERSITAS*
- *Reproductive Biology and Aquaculture (RBA)*
- *Bionomenclature and Taxonomy*
- *Biological Education and Bioethics*



▲ Motonori Hoshi (Vice-president of IUBS), Himansu Baijnath (Chairman of the South African National Committee of IUBS and member of the IUBS Executive Committee) and Talal Younès (Executive Director of IUBS), inspired by the week's deliberations at the General Assembly in Naples. (Photo: Yashica Singh)

IUBS projects of direct relevance to herbarium scientists are Systematics Agenda 2K-I and the Global Taxonomic Initiative (GTI). These are initiatives within the *DIVERSITAS* Programme. The scientific and technical aspects for implementing the GTI are being addressed at various workshops. In the previous issue of *SABONET News* the article *Feedback from the Conference of Parties 5* outlines the decisions taken regarding the GTI at the CoP meeting.

The recent IUBS publication *Implementing the GTI: recommendations from DIVERSITAS core programme element 3, including the assessment of present knowledge of key species* covers the state of our knowledge of species diversity. It gives the global and continental numbers of known species for the major groups of organisms. In comparing species numbers, it identifies regional and taxonomic gaps and suggests criteria for filling the gaps by way of the GTI. Various IUBS activities to create awareness and to kindle participation in the GTI are being planned for the next triennium and we can look forward to one such activity in South Africa in 2001.

Maintaining biotic diversity poses a constant challenge to scientists. It calls for foresight and spontaneity in research design and approach and demands novel ideas. IUBS is a dynamic organisation offering countries a forum to develop innovative research programmes that involve international cooperation. Through national and continental participation in IUBS activities we as botanists are able to influence the shaping of research in biology in the 21<sup>st</sup> Century.

For details on IUBS and its scientific programmes, visit the web site <http://www.iubs.org>. □

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# Red Data List em Moçambique— um Caminho para a Conservação



Por: Samira Izidine, Angelina Martins e Filomena Barbosa



▲ Representatives from various government, academic and NGO institutions joined the workshop participants for an informal discussion on the value of Red Data Lists. (Photo: J.S. Golding)

(A summary in English follows the Portuguese.)

Moçambique possui uma área total de 784 755 km<sup>2</sup> dos quais apenas 2 676 km<sup>2</sup> são reservas florestais. Tendo cerca de 5 500 espécies de plantas superiores, acredita-se que algumas dessas espécies estejam sobre pressão por várias razões.

A guerra civil que assolou o País, provocou um grande exódo rural, facilitando uma exploração desenfreada dos recursos vegetais principalmente na periferia das cidades. Com estabelecimento da paz, Moçambique tem sido um polo de atracção de projectos de desenvolvimento que têm provocado o desmatamento de grandes áreas o que leva a perda de espécies vegetais.

Outras causas de perda de espécies, são as práticas tradicionais de agricultura, os assentamentos, etc. Pensa-se que as recentes cheias ocorridas no País, possam ter resultado na perda natural de algumas espécies de plantas. Algumas espécies ameaçadas de Moçambique foram

listadas nas seguintes publicações: “1997 IUCN Red Data List of Threatened Plants”, 1998 e no “The World Threatened Trees”, 1998. Contudo as mesmas foram categorizadas com base nos antigos critérios e categorias da UICN nas duas primeiras publicações. “The World Threatened Trees”, 1998 listou 78 espécies, das quais 50% tidas como nativas de Moçambique possuem dados insuficientes que não permitem a sua inclusão nas diferentes categorias.

O Complexo da Barragem dos Pequenos Libombos localizado no distrito de Boane a 30 km da cidade de Maputo acolheu de 23 a 27 de Outubro de 2000 o workshop sobre plantas ameaçadas ou potencialmente ameaçadas de Moçambique, ou seja “Workshop sobre Red Data List em Moçambique”.

O objectivo do workshop foi de inventariar, reavaliar e categorizar com base nas categorias da UICN (1994) as espécies ameaçadas ou potencialmente ameaçadas de extinção em Moçambique.

Uma listagem preliminar das referidas espécies foi elaborada pelo Grupo Nacional de Trabalho para o “Red Data List” tendo sido usada como documento base durante o workshop.

**O Grupo Nacional de Trabalho foi criado a 19 de Junho de 2000, e é constituído pelas seguintes instituições:**

- Departamento de Botânica (INIA)—  
Coordenação
- Departamento de Ciências Biológicas (UEM)
- Unidade de Inventário Florestal (DNFFB)
- Centro de Experimentação Florestal (DNFFB)
- Direcção Nacional de Florestas e Fauna Bravia (DNFFB)
- União Mundial para Conservação da Natureza (UICN)
- Ministério para Coordenação da Acção Ambiental (MICOA)
- Grupo de Estudos de Medicina Tradicional (INS)
- Impacto, Projectos e Estudos Ambientais

**As instituições participantes do Grupo Nacional de Trabalho realizaram as seguintes actividades:**

- Realização da primeira reunião do Grupo Nacional de Trabalho
- Elaboração do plano de trabalho
- Sintetização de toda a informação sobre plantas ameaçadas ou potencialmente ameaçadas de extinção (raras, endémicas e sobre exploradas).
- Produção de uma lista preliminar de plantas ameaçadas de extinção, priorizando as espécies endémicas, medicinais e madeiras com base nas seguintes listas: Bandeira et al (1994, 1996), Van Wyk (1994) e Hatton & Munguambe (1998).

O workshop contou com os seguintes participantes: Dra Janice Golding (SABONET, NBI), Dr Peter Philipson (Universidade de Rhodes), dra Samira Izidine (INIA, SABONET-Moçambique), Dr Salomão Bandeira (UEM) dra Filomena Barbosa (UEM), dra Ana Bela Amude (UEM, SABONET-Moçambique), dra Angelina Martins (UEM), Eng<sup>a</sup> Carla Ruas (DNFFB), Eng<sup>a</sup> Marta Monjane (UIF), dr Silva Mulhovo (GEMT/INS), dra Köeti Seródio (UICN-Moçambique), Dr Paul Dutton (Consultor independente).

A lista preliminar produzida contém 238 espécies pertencentes a 63 famílias de Angiospérmicas, 5

espécies pertencentes a 4 famílias de Gymnospérmicas e 1 espécie de uma família de Pteridófitas.

Foram adicionados a lista preliminar mais dados com base em informação da Flora Zambeziaca, Flora de Moçambique, “The World List of Threatened Trees”, 1998 e de alguns artigos científicos e mapas de vegetação. De realçar que para complementar a informação sobre distribuição foram consultados espécimens do herbário LMA.

Durante o workshop foram inventariadas e reavaliadas cerca de 346 espécies das quais 144 (42%) endémicas de Moçambique.

**A categorização foi feita tendo em conta o seguinte:**

- (a) Planta endémica no País
- (b) Distribuição restrita a pequenas áreas
- (c) Usos (Madeira, Medicinal, Ornamental, etc.)
- (d) Pressão sobre a espécie

**Algumas espécies com antigas categorizações foram re-avaliadas e categorizadas através dos novos critérios e categorias da UICN, por exemplo:**

- *Ozoroa reticulata* (Bak.f) R. & A. Fernandes var. *mossambicensis* R. & A. Fernandes (Anacardiaceae), endémica de R para **LRnt**
- *Xylopia torrei* N.Robson (Annonaceae), endémica de R para **Lrnt**
- *Elaeodendron fruticosum* N.Robson (Celastraceae), endémica de Vu para **VUB1B2Cd2**
- *Sarcocomia mossambicensis* Brenan (Chenopodiaceae), endémica de E para **ENB1B2c**
- *Crassula maputensis* R. Fernandes (Crassulaceae), endémica de Vu para **ENB1B2c**
- *Icuria dunensis* (Fabaceae), endémica como **ENA2c**
- *Centella obtriangularis* Cannon (Apiaceae), endémica de Chimanmani como **VUD2**
- *Cycas thoursii*, como

- *Encephalartos aplanatus* como **ENA1acdB2abcde**
- *E. chimanimaniensis* como **ENC2a**
- *E. ferox* como **LRnt**
- *E. gratus*, endémica, como **LRnt**
- *E. lebomboensis* como **CRA1acdB1B2abcde**
- *E. manikensis* como **LRnt**
- *E. munchii*, endémica, como **ExW?**
- *E. ngoyanus* como **CRB1B2abcde**
- *E. pterogonus*, endémica, como **VUD2**
- *E. senticosus* como **CRB1B2ae**
- *E. turneri*, endémica, como **LRlc**
- *E. umbeluziensis* como **CRA1acd/A2cB1B2abcde**
- *Stangeria eriopus* como **VUC2bD1D2**

No dia 25 de Outubro de 2000 realizou-se um encontro mais abrangente com técnicos ligados a área de conservação e outros parceiros para a apresentação dos resultados e discussão sobre as acções futuras a preconizar.

A abertura da sessão foi feita pelo Dr Antonio Muacorica, Director Geral Adjunto do Instituto Nacional de Investigação Agronómica (INIA), que durante a sua alocução referiu-se a importância dos recursos naturais em particular das plantas e da necessidade da sua conservação.

Como conclusão do workshop verificou-se que muito a ainda a fazer a nível do Red Data List em Moçambique como seja: Inventários das espécies em campo, procura de mais informação sobre as espécies (Herbário, monografias, consultas a locais etc.)

#### **O Grupo Nacional de Trabalho propõem as seguintes acções futuras a preconizar:**

- (a) A elaboração de um plano nacional para inventariação e recolha de dados quantitativos das espécies em risco.
- (b) Promover uma maior colaboração entre as instituições envolvidas na conservação ambiental
- (c) A criação de uma base de dados sobre o estado de conservação das espécies
- (d) A criação de grupos multidisciplinares para áreas consideradas estratégicas
- (e) Promover a propagação de espécies in-situ e ex-situ

- (f) A divulgação dos novos critérios e categorias da UICN a todos os níveis (Nacional, Provincial e Local)
- (g) A consciencialização do público em geral para conservação das plantas em risco (Programas de TV, Rádio, Publicação de cartazes em dias comemorativos nas escolas, locais de trabalho, etc.)

Contudo todas as acções estão dependentes de futuros financiamentos que poderão facilitar a realização das actividades a nível do programa Red Data List.

Assim foi recomendação do workshop a continuação do trabalho de consulta para melhorar e actualizar a lista existente para a produção do Red Data List para Moçambique. Afinal o Red Data List é um caminho para a conservação.

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# Red Data List in Mozambique: a Way to Conservation

by Samira Izidine, Angelina Martins & Filomena Barbosa



Mozambique covers a total area of 784 755 km<sup>2</sup>, of which an area of a mere 2 676 km<sup>2</sup> is under conservation. Considering that Mozambique contains *ca* 5 500 species of vascular plants, it is likely that some of these are under threat for several reasons. These include recent flooding, over-exploitation and changing land use, as a result of development and traditional agricultural practices.

The *World List of Threatened Trees* listed 78 tree species. From 23 to 27 October 2000 a Plant Red Data Listing Workshop was held in the Boane District, Mozambique. The objective of the workshop was to compile an inventory, re-assess and categorise the threatened or potentially threatened species of Mozambique in terms of the new IUCN Red Data categories.

**A National Working Group, established on 19 June 2000, consists of the following institutions:**

- Botany Department (INIA)(Coordinator)
- Department of Biological Sciences (UEM)
- Several sectors of the National Directorate of Forestry and Wildlife (DNFFB)
- IUCN-Mozambique
- Ministry for the Coordination of Environment Affairs (MICOA)
- Study Group of Traditional Medicine (INS)

This group developed the preliminary baseline species list for the workshop. The preliminary list produced for the workshop contained 238 species belonging to 63 angiosperm families, five species belonging to four families of gymnosperms and one pteridophyte taxon.

During the workshop, additional information was added to the preliminary list of taxa from *Flora zambesiaca*, *Flora de Moçambique*, *Flora of Tropical East Africa* and other publications, maps and data from specimens within the INIA Herbarium (LMA).

At the workshop, 346 species were assessed. Of these, 144 (42%) are near-endemic (occurring in one or two countries and having a narrow distribution range) or strict endemics to Mozambique. Other species included medicinal plants, over-utilised plants and several tree species used for commercial timber. Recategorisation according to the IUCN categories and criteria (1994) has resulted in the change of the status of some of the plant taxa.

The cycads of Mozambique are part of a larger body of work covering the southern African region. The study

was undertaken by SABONET in collaboration with P.J. Hurter (Lowveld National Botanical Garden, Nelspruit, South Africa) and a number of others. Assessments of Mozambique's 14 cycads were prepared and are available from the authors, on request.

Further research needs regarding the Plant Red Data List for Mozambique were identified at the national workshop. The list emanating from the workshop was discussed with a broader stakeholder group in Maputo on 25 October 2000.

**The National Working Group has proposed the following actions:**

- Develop a national plan for collecting quantitative data on species at risk.
- Promote greater collaboration between institutions involved in environmental conservation.
- Create a database about the conservation status of the species.
- Establish multidisciplinary groups for strategically important areas.
- Promote the propagation of species, both *ex situ* and *in situ*.
- Publicise the new IUCN criteria and categories at all levels (national, provincial and local).
- Raise public awareness of threatened plants.

Implementation of these activities is largely dependent on the availability of future funding.

One of the final recommendations of the workshop was to strive towards improving and finalising the existing list, in order to produce the Plant Red Data List for Mozambique. After all, the Plant Red Data List is a means towards the conservation of Mozambique's threatened flora.

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*Translated from the Portuguese by Carla Willis.*

## Spotlight on Swaziland: Red Data List

by Titus Dlamini and Linda Dobson



▲ A subset of the participants at the Swaziland Red Data List Workshop. Starting at the back, from left to right: B. Dlamini, J. Culverwell, R. Boycott, T. Dlamini, L. Dobson, P. Masson, N. Dlamini, K. Roques. (Photo: J.S. Golding)

The Swaziland Red Data List (RDL) Workshop was held at the Happy Valley Motel Conference Room on 15 September 2000. The venue initially booked was the nearby Mantenga Lodge, but had to be switched at the eleventh hour due to unforeseen circumstances. Most participants responded positively and the workshop turned out to be a great success.

The workshop was a very significant occasion since this was the first meeting of its kind in Swaziland. It presented an opportunity to the country's botanists and conservationists to be introduced to the SABONET RDL. The participants took to the task with unanticipated enthusiasm and spent the whole day working through the country's RDL. James Culverwell and Peta Masson, who have valuable experience on the Swazi Flora, but are now based outside Swaziland, even travelled all the way from Maputo (Mozambique) and Nelspruit (South Africa), respectively, in order to make the day a success.

There were 14 participants in the workshop and the day's main activity was re-assessing the 198 species included in the RDL for Swaziland. As time was a limiting factor, we initially planned to split the list into three and form three groups around Kim Roques, Peta Masson and Linda Dobson. However, when the *modus operandi* was discussed at the beginning, the group unanimously decided that we all go through the entire list.

Using the new IUCN categories (1994), we systematically re-assessed the species one by one, making changes where necessary and providing

additional information where it was available. In total, we assessed 198 species, 41 (21%) of which were threatened or in the *Lower Risk* categories. The remainder were either *Not Threatened* or *Data Deficient*. It is noteworthy that these figures are similar to those in Hilton-Taylor (1996), implying that the information required to revise species assessed as *Data Deficient*, primarily through field work, has not been acquired since then. As a first step, we are currently using herbarium specimen information from the PRECIS database to further help identify localities.

The participants left the workshop with positive feelings and a sense of gratitude for Janice Golding's efforts in the coordination and organisation of the workshop. As a way forward, copies of the list as it now stands have been distributed to the participants for further assessment and comments during their day-to-day work. A follow-up workshop needs to be scheduled for the near future. This effort will provide useful material when the schedules of protected flora are appended to the Flora Protection Bill, No.10, 2000, in the near future. The bill has been gazetted by the Swaziland Government and is now being debated in parliament. □

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# Red Data List: The Zimbabwe Workshop

by Anthony Mapaura



▲ The participants at the Zimbabwe Red Data List Workshop. (Photo: J.S. Golding)

The Zimbabwe Red Data List working session was held at the National Herbarium & Botanic Garden from 16–20 October 2000. The team consisted of Mr. W. Fibeck, Ms. V. Phiri, Mr. M. Kimberley, Mr. Mushongahande, Mr. T. Müller, Mr. J. Timberlake, Mr. R.B. Drummond, Ms M. Coates-Palgrave, Ms. S. Childes, Dr. F. Robertson, Mr A. Maroyi, Mr. C. Mujaju, Mr. C. Chapano, Mr. A. Mapaura and Ms. J. Golding.

The assessments concentrated on a pre-drawn list of species but new species were also added during the working session. Species which took priority were country endemics (mainly from Chimanimani and Great Dyke), species with narrow distribution ranges occurring in one or two other countries, utilised plant species, orchids, succulents and forest species. The working session relied heavily on the field knowledge of the more experienced participants for relevant botanical data. Literature and herbarium specimens augmented the field knowledge especially with regards to distributions and taxonomy. In order to be consistent in the application of criteria, specific standards and approaches were adopted.

For example, for the Chimanimanis, the following were adopted:

- Chimanimani quartzite is taken to cover an area of about 100 km<sup>2</sup> in Zimbabwe.
- Endemics at the highest altitudes have an Extent of Occurrence of about 10 km<sup>2</sup>.
- Plants with more than 2 500 mature individuals are considered to be widespread on the Chimanimanis.
- The autecology of many Chimanimani species are adapted to fires.
- Chimanimani is a National Park and is well protected. There is no marked evidence of population reduction or habitat loss for many species.
- The only species that could possibly face risk of threat are the very showy ones (orchids, succulents, etc.) at lower, more accessible altitudes.
- There are few instances of threats from invasive plants (pines, wattles, etc.) in the Chimanimanis.
- Forest outliers on the lowlands are not protected and are under great threat as people require agricultural land.



For the Great Dyke, the following were adopted:

- Serpentine soils (the centre of endemism) cover an area of about 2000 km<sup>2</sup>.
- The dyke is not protected and faces threat from mining operations.
- Serpentine grassland covers about 70% of the total area of the Great Dyke.
- An area of 1000–1500 km<sup>2</sup> of the serpentine grassland covers the Great Dyke, and most of the endemics are known from this habitat.
- The Great Dyke was divided into two ecologically distinct zones (North and South), each with an area of over 750 km<sup>2</sup>.

A total of 115 species were assessed as qualifying for the threat categories (CR, EN, VU). 56 of these were assessed as *Critically Endangered*, 17 as *Endangered* while 42 were *Vulnerable*. In addition four species were recorded as *Extinct* (in the wild) in Zimbabwe. The remainder of the 400 or so species that were assessed were placed in the Lower Risk categories or *Not Threatened*. It should be noted that the assessments are preliminary and need to be treated as such until extensive field surveys take place. The participants are currently working on those species that could not be covered during the working session due to lack of time. After editing and checking, the list will be sent out for peer review. Any comments are welcome.

The working session was very successful, thanks to the participants' enthusiasm and the contributions of those who could not attend the session. We would also like to thank the Head of the National Herbarium & Botanic Garden for having allowed us to use the facilities of the institute and SABONET for funding the workshop. We hope to have another one sometime next year (2001).

#### Species assessed as Extinct (in the wild) in Zimbabwe

*Triceratella drummondii* Brenan (Commelinaceae)

This species has only been collected from Southern Zimbabwe in Chitorapudzi in Beitbridge District. Several trips to the area were made to

collect this species again but with no success. The only record so far is the type collection by Bob Drummond. The species was recently collected from Mozambique at the coast north of Quelimane.

*Angraecopsis trifurca* (Rchb.f.) Schltr.  
(Orchidaceae)

It is an epiphytic or lithophytic orchid occurring in evergreen rain forest and mossy rocks in shade. This species was last collected in 1951 (Crook 398) and numerous, extensive searches have been fruitless. It is believed to be extinct in Zimbabwe. It is said to also occur in the Comoro Islands but this requires confirmation.

*Encephalartos chimanimaniensis* Dyer & Verdoorn (Zamiaceae)

It is known from the Eastern districts, and has always been known to be rare. It was only known from a single site in the catchment of the Buzi River. Recent field surveys have been unable to locate any individuals in Zimbabwe. The species appears to have been illegally wiped out for horticultural and traditional medicine purposes.

*Oeceoclades decaryana* (H. Perrier) Garay & P. Taylor (Orchidaceae)

The species occurs in riverine forest in rocky areas and under bushes on rocky outcrops; it was also recorded in coastal forest. It is said to be extinct in Zimbabwe (W. Fibeck, *pers. comm.*). The first known population was destroyed when a road was constructed but individuals were rescued 2–3 years ago (1988–1987). The species grows very well in cultivation. Cyclone Elene destroyed the only known habitat in March 2000. □

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# *Brachystegia spiciformis* an exciting discovery

by Erich van Wyk & Johan Hurter

*“Discovery favours the well equipped”*

The recent acquisition of a new Toyota Hilux 4X4 by the National Herbarium in Pretoria, through SABONET, has opened up new frontiers in botanical exploration in the northern provinces of the RSA. Since May 2000, the authors have used this vehicle to gain access to many remote areas of Mpumalanga and the Northern Province. This has led to several new plant distribution records for these provinces as well as the discovery of undescribed plant taxa, some with extremely localised distributions. Many more areas need exploration and we believe that many more interesting discoveries will be made now we have this vehicle. The year 2000 will however be best remembered for the first discovery of *Brachystegia spiciformis*, a mainly central African tree, within the borders of South Africa (Hurter & Van Wyk, in press).

Contrary to popular belief in the Western world, Africa is not covered by vast “impenetrable tropical jungles”. The single biggest vegetation type on the continent is a thornless, deciduous woodland called “Miombo”. This vegetation type covers some 2 800 000 km<sup>2</sup> of the African continent and is centralized on the central African plateau (Smith 2000). The magnificent spring flush of Miombo has been compared to the spectacular New England fall and is one of the most colourful spectacles on the African continent.

Miombo is characterized by the dominant presence of *Brachystegia* species and in the more southern parts of the range this is usually *B. spiciformis*. The vernacular “Miombo” is derived from “Muombo”, which describes these trees in several languages indigenous to the vast plateau, including parts of Malawi, Zambia, DR



▲ South Africa's new miombo woodland. (Photo: Erich van Wyk)

Congo and Tanzania. Miombo also extends into Angola, Mozambique and Zimbabwe (Smith 2000). However, until recently *B. spiciformis* has been conspicuous by its absence from South Africa. Many people have tried to locate this tree in the past, including one of the authors, but without success.

During the last week of August 2000, the authors were investigating new seed sources for the Millennium Seed Bank Project (an internationally collaborative project driven by the Royal Botanic Gardens, Kew, in partnership with the National Botanical Institute in South Africa). They were in a remote part of the Northern Province with the aid of the new SABONET vehicle. The area is known as Venda and over the years it has yielded several surprising discoveries of generally more tropical plant taxa and narrow endemics. It takes a day to reach the area and another to return to our respective bases. Effective transport in the field is therefore of cardinal importance, in what becomes only a three-day expedition in a five-day workweek.

We spent one day in the more arid parts of the southern Limpopo valley, concentrating on the

Malonga sand flats and the northern slopes of the Soutpansberg. On the second day we decided to investigate a nearby population of the endemic *Combretum vendae* as a possible seed source. Venturing deeper into the Soutpansberg on our way to one of the known populations, we noticed a "new turn-off" leading off into unexplored territory. However, with our minds set on the *Combretum*, we decided to investigate the road on the way back, should time allow. At 16:00, after a long hard day, we decided to head back to base camp at Tshipise some 200 km by road from the *C. vendae* stands. Passing the "new turn-off", we headed straight for base.

The third day was spent in the same general area, investigating a few endemic species as potential seed sources. After various successful collections we decided to return to base and prepare for the following day's long drive to Nelspruit and Pretoria respectively. On the way back we stopped at a stand of *Albizia adianthifolia*, once again passing the "new turn-off", and decided to investigate it later if we had time. At last, returning from our *Albizia* foray we drove down the "new turn-off". Suddenly, after about 5 km, the



▲ Flowering South African *Brachystegia spiciformis*. (Photo: Erich van Wyk)

vegetation started changing, becoming more mesic in nature. As we came over a slight rise, the most magnificent sight in Africa greeted us: there in front of us and in full spring colours was a valley of thousands of *B. spiciformis*. As the sun was setting, we hastily decided to collect fertile herbarium vouchers and left the scene only after the last rays had disappeared. Overjoyed by our find, we reached base camp at about 20:00.

This discovery is a most significant find, extending the distribution range of *B. spiciformis* southwards across the arid Limpopo valley.

Palaeopalynological evidence suggests the presence of this vegetation type as far south as Naboomspruit dating back to 19 000 BP (Scott 1982; Frost 1996). It is believed that during geological times, Miombo woodlands had expanded and contracted in response to climatic change (Campbell 1996). The discovery could shed some light on various vicariant events that might have taken place some 19 000 years ago.

The ecology of this population is now being studied and we hope to present more detailed technical information in a formal publication.

### Acknowledgements

We are indebted to Prof. A.E. van Wyk for confirming the identity of herbarium material. We also thank Mrs Emsie du Plessis for improvements to the text.

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## New publications from the National Botanical Institute

Goldblatt, P. & Manning, J. 2000. *Cape plants: A conspectus of the Cape Flora of South Africa*. Strelitzia 9, National Botanical Institute. ISBN 0-620-26236-2. Hard cover, A5 size, pp. 743.

A complete synoptic account of the Cape flora, including ferns and fern allies, gymnosperms and angiosperms. With keys to families and genera. Species entries include a diagnostic description, flowering time, habitat and distri-

bution. Species are arranged alphabetically and grouped in natural clusters to facilitate identification. *Cape plants* follows the most recent available treatments for all plant groups, and the accounts of several families and many genera have been contributed by specialists in those groups. An introductory essay describes the geology, climate and the physical and floristic characteristics of the flora. With 12 pages of colour photographs of Cape plants.



## Kirstenbosch National Botanical Garden

by Anthony Hitchcock

The flora of southern Africa (Namibia, Botswana, Swaziland, Lesotho, South Africa) is very rich and diverse with over 24 000 species distributed over a number of biogeographical regions. One of the strengths of the South African National Botanical Institute (NBI) is its national network of eight gardens spread across several of these regions. This enables it to grow many species under conditions close to that of their natural areas.

The living plant collections at Kirstenbosch play a pivotal role in helping the NBI achieve its mission to “promote the sustainable use, conservation, appreciation and enjoyment of the exceptionally rich plant life of South Africa, for the benefit of all its people”.

Kirstenbosch is the largest and second oldest of our botanical gardens (only the Natal National Botanical Garden is older) and receives a large number of tourists and professional visitors. The garden is located in Cape Town, which experiences a mild Mediterranean climate with most rain falling during the winter months, and has traditionally grown a representative range of our flora. The summers are warm and dry, making it a very good climate for growing a range of plant types. In addition, a conservatory has been built

to house xerophytic plants that cannot be grown outdoors. As Kirstenbosch is located in the centre of the Cape Floral Kingdom, the main emphasis of the garden is on plants from this region.

The Kirstenbosch collections can be divided into two categories. The first category comprises those collections grouped into families or parts of families, including Proteas (Proteaceae), Ericas (Ericaceae), Restios (Restionaceae), Pelargoniums (Geraniaceae), Buchus (Rutaceae), *Streptocarpus* (Gesneriaceae), Ferns (Pteridophytes), *Disa* (Orchidaceae) and Cycads (Zamiaceae).

The second category comprises collections of similar plant form or habitat such as trees, shrubs, alpiners, succulents, bulbs, annuals and herbaceous perennials.

### **Protea Collection**

The Proteaceae, Restionaceae, Ericaceae and Rutaceae families form the Fynbos collection at Kirstenbosch. Thirteen of the 14 genera and 220 of the 387 species are represented in the collection in the garden and nursery. In addition, 74 of the 161 rare and endangered species are grown.

*Leucospermum*, *Leucadendron* and *Protea* are the main genera represented. The collection in the

garden has been planted with plants from other fynbos families and is aimed at providing horticultural, as well as botanical, interest. The collection is used intensively by schools and tertiary educational organisations. It is also very popular with tourists.



▲ Silver trees (*Leucadendron argenteum*) on the lawns in the protea garden. (Photo: Colin Paterson-Jones)

### Restio Collection

The family Restionaceae forms an integral part of Fynbos vegetation. The Restios are divided into 19 genera of which 13 are represented in the collection. Fifty-five of the 314 species are grown at Kirstenbosch, including eight of the 65 rare and endangered species. The collection is used for education and research. Horticultural research into germination methods for this group has seen great strides over the last decade; previously, very few species could be germinated. The germination of the nut-seeded species still present a challenge. Plants are displayed in the garden to test their potential and promote them to nurserymen and gardeners. The species are tested for their longevity and horticultural potential. Selected species are mass-produced and sold to the wholesale trade as seedlings or bigger plants.

### Erica Collection

The *Erica* collection is a representative display of the largest genus in South Africa—*Erica* comprises about 660 species, of which more than 430 occur in the southwestern Cape. The collection consists of about 252 species of which many are displayed in the garden. A special pot collection including the rare and endangered species is

housed in the nursery. Fifty-three of the rare and endangered plants are grown. The collection serves as a source of material for reintroduction programs. Two species extinct in the wild, *Erica verticillata* and *Erica turgida*, have been successfully reintroduced to a local nature reserve on the Cape lowlands. The collection serves as an educational, research and horticultural resource.



▲ Fernwood Buttress towers over the erica garden. (Photo: Colin Paterson-Jones)

### Rutaceae Collection

There are 14 genera in the Rutaceae; most are fynbos species occurring in the Cape Floral Kingdom. The Kirstenbosch collection consists of 11 genera and 122 species. This group of aromatic shrubs includes some of the most promising horticultural plants in the country. A number have become very popular garden subjects and are arousing interest overseas. As with other fynbos plants there are some that still present horticultural problems. This group is represented widely in the gardens and in a dedicated section of its own. A pot collection of selected forms is grown in the nursery.

• Continued on page 179



## Pelargonium Collection

The genus *Pelargonium* is part of the Geraniaceae family and consists of about 220 species. Most are found in southern Africa with about 80% confined to the winter rainfall area of the western Cape. *Pelargonium* is a very diverse genus and is divided into 14 taxonomic sections. The collection houses 119 species representing all 14 sections and thus displays the range of diversity of the genus. The collection is a good source of plant material for the University of Stellenbosch for DNA studies; it is also being investigated for potential anti-bacterial properties. Plants are displayed in a section in the garden and in a comprehensive pot collection in the nursery.



▲ *Pelargonium cucullatum*.  
(Photo: Colin Paterson-Jones)

## Streptocarpus Collection

This is a small collection of ornamental plants with a lot of potential as breeding stock. *Streptocarpus* is used in various shade sections of the garden and in the conservatory for display. The main collection is housed in the nursery.

## Disa Collection

Orchids are a diverse and specialised group. Orchid collections require intensive maintenance and the Kirstenbosch collection is therefore

limited to some of the species in the genus *Disa* and especially the different forms of *Disa uniflora* that occur in the southwestern Cape. These forms are selected for use in breeding programs. This orchid is exceptionally beautiful and has been recognised locally and overseas to have good cut-flower and pot-plant potential. An effort has been made to rebuild the collection after a period of neglect. The collection is housed in the nursery and flowering specimens are displayed in the Botanical Society Conservatory.

## Fern Collection

There are about 331 known native species of pteridophytes in the southern African sub-region, of which 246 occur in southern Africa (including Botswana). The fern collection houses 72 species of which 28 are endemic to the Cape Peninsula. The collection is housed in a glasshouse and is used intensively for educational purposes. Plants are displayed in one of the corner units of the conservatory.

## Cycad Collection

The cycad collection at Kirstenbosch is the largest cultivated collection in existence. There is no active collecting to increase the collection—the main objectives of the collection are conservation and providing information on the propagation and cultivation of cycads. Rare and endangered species are grown for distribution to botanical gardens world-wide. Pollen and seed are also distributed. The collection is displayed in the cycad amphitheatre and in the nursery.

## Clivia Collection

At present, the *Clivia* collection is not as representative as we would like and John Winter is actively collecting to improve it. The objective is to systematically collect as many forms of *Clivia miniata*, *C. nobilis*, *C. gardenii* and *C. caulescens* throughout their known distribution as possible, and to bulk up the material collected for display in the garden.

## Bulb Collection

The collection comprises approximately 700 species. Bulbous plants from all parts of South Africa are cultivated, but most are winter rainfall

species, due to the exceptionally high number of species that occur in this region. The bulk of the collection is housed in the nursery, under cover, as many of the species cannot survive the heavy winter rainfall and heavy soils in the garden. In addition many bulbs fall prey to moles, porcupines and guineafowl if planted in the garden. Only the toughest bulbs such as *Watsonia*, *Agapanthus*, *Dietes* and *Clivia* can be grown successfully in the garden. A major function of the collection is for horticultural and taxonomic research, which has given rise to a number of books. Attractive genera are displayed in the Kay Berg Bulb House in the Botanical Society Conservatory. Seed is collected and distributed to members of the Botanical Society and for sale. Approximately 100 rare and endangered species are maintained in the collection, and where possible, re-introduced into the wild, or distributed to other botanical gardens world-wide.



▲ *The cycad amphitheatre. (Photo: Colin Paterson-Jones)*

### Alpine Collection

The Alpine collection is one of the youngest Kirstenbosch collections. The alpine flora of South Africa—although unfamiliar to the South African gardening public—is attracting much overseas interest. The collection is drawn from the Lesotho highlands and the Drakensberg. Collections are also made from the high mountains in the southwestern Cape. The developing collection is housed in the nursery and plants are displayed in one of the specialist units in the Botanical Society Conservatory. Many of the plants require special growing conditions, such as high light intensity and low moisture and humidity. Horticultural research is being conducted to determine their horticultural potential and methods of growing and displaying these plants. The Alpine group has been determined to have about 137 genera and over 300 species.

### Succulent Collection

This is a representative collection of the South African succulent flora and other xerophytic plants, with an emphasis on plants with horticultural potential and those that are rare and endangered. It consists of the collection in the gardens in the Mathews' Rockery and other rockeries displaying Aloes and the *Lampranthus* group. Collections needing protection from the weather are kept in the nursery and as display material in the Botanical Society Conservatory. There is also a concerted effort to make succulent plants available to the public and other botanical gardens. The strength of the collection lies in groups like Aloaceae and Mesembryanthemaceae families. About 1 000 of the approximately 4 000 indigenous succulent species are represented.

Current research is being done into the horticultural potential of succulents as garden and houseplants as they are true "waterwise" plants. A study of the cliff-dwelling succulents is also being done and a section of the Conservatory is being developed to display these. Regular field trips are undertaken to increase the range of the collection with special emphasis on medicinal plants. The Botanical Society Conservatory is five years old and most of the plants, including the baobab, are



well established. Education is seen as one of the major attributes of this collection. Garden staff have published a number of books, papers and magazine articles to popularise succulents.

### Tree and Shrub Collection

This is a representative collection of South African trees and shrubs. The emphasis is on plants with horticultural potential and those that are threatened or rare. The collection is represented throughout the garden with the subtropical coast section displayed in Section Q. The collection serves as material for display, research and education. Material from this collection is propagated for sale to the public and distribution to other botanical gardens. The strength of the collection is in the representation of plants from the subtropical coast, a complete *Ficus* collection and afro-temperate forest species.

At least 350 of the approximately 1 000 South African tree species are grown at Kirstenbosch. Current activities include establishing a subtropical forest, making use of natural succession using *Virgilia* and *Trema orientalis*. Plants of the local silver willow, *Salix mucronata* subsp. *hirsuta*, which became extinct in the Cape Peninsula, have been reintroduced into the streams at Hout Bay and Constantia. Field trips are aimed at collecting species that will be useful introductions.

### Herbaceous Collection

Herbaceous plants include annuals, herbaceous perennials such as *Diascia*, *Plectranthus*, *Sutera*, *Lobelia* and *Nemesia*, and a range of free-flowering plants that are used to great effect in the most visited parts of the garden. This group consists of some of the most colourful species and is a group recognised overseas as having huge commercial potential. This is still a relatively young collection and growing rapidly with an almost unlimited resource of suitable material in all regions of South Africa. The main function of the group is display with the main emphasis being on spring and summer when most of our visitors come to Kirstenbosch. The *Diascia* collection has also been the subject of pioneering research on plant-insect interrelationships (pollination biology).



▲ *Mesembs* provide a riot of colour in October.  
(Photo: Colin Paterson-Jones)

### Maintenance of the Collections

Collections held at Kirstenbosch and other botanical gardens are a valuable resource. A huge amount of time and resources is dedicated to develop them and research them. It is therefore imperative that this effort and expense is not wasted. At Kirstenbosch, a maintenance plan is being established to ensure that the essentials of day-to-day and season-to-season maintenance of the collection are documented in detail. This information is not only necessary for the present incumbents, but also for future persons who would be required to look after our collections. We hope that with the introduction of the maintenance plan, which will be updated and amended on an annual basis, we can improve on the quality and sustainability of these valuable national collections. □

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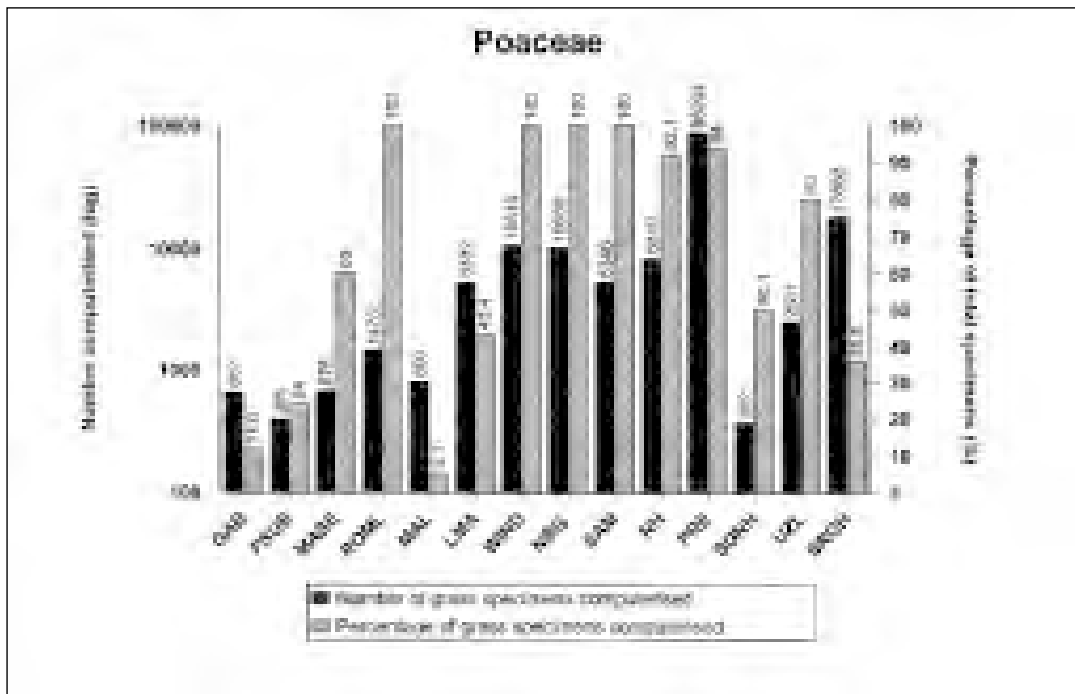
The National Herbarium in Namibia (WIND) has the highest percentage of computerised specimens: 90.3% of a total of ca 70 000 specimens have been computerised. WIND is followed by the National Herbarium (PRE) of South Africa with 63.7% of a total of ca 1 200 000 specimens and the Herbarium of the National University of Lesotho (ROML) with 51.3% of a total of ca 16 000 specimens.

### New directions

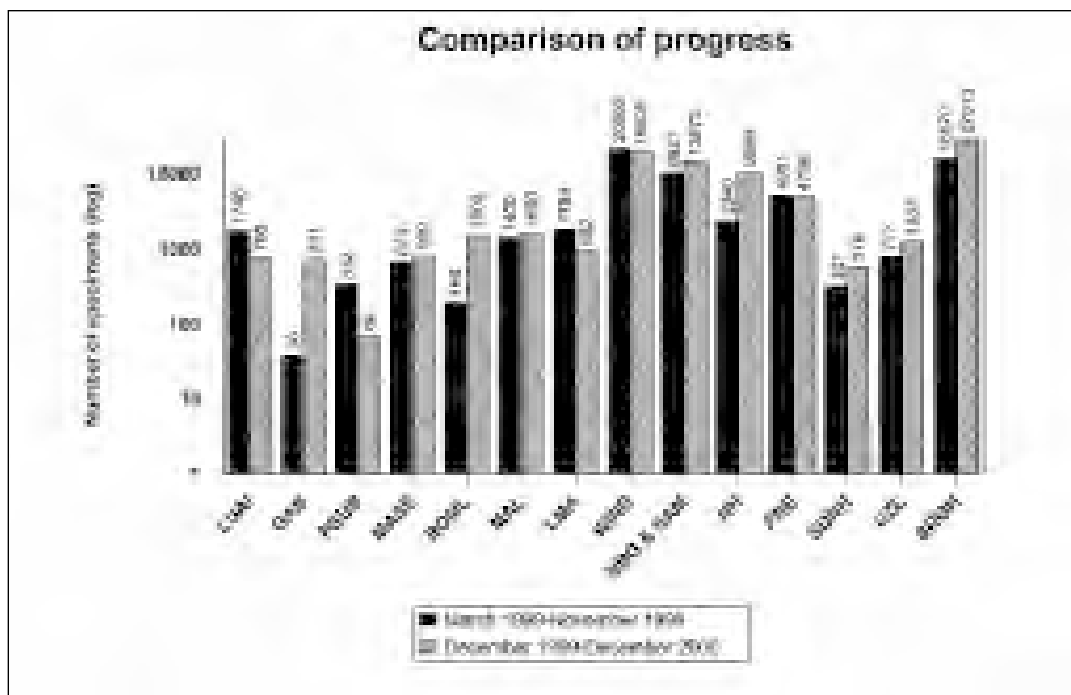
The data computerised in the regional herbaria are of great importance to southern Africa, as this is the first attempt ever to compile a comprehensive, organised database of all known plant taxa occurring within selected herbaria of the southern African sub-region. Decision 2 of the Tripartite Review Recommendations of 25 August 2000 suggested that IT issues be given priority and speeded up and that the level of training be addressed where possible (Minutes of the Ninth SABONET Steering Committee meeting 22.2.2). Improvement of the computerisation process will be given a high priority in the coming year.

We hope that the computerisation rate will increase once all the data capturing computers have been upgraded at the participating herbaria. The current rate is 78 700 specimens per annum—312 specimens are computerised per working day in the southern African herbaria. On average, every participating herbarium computerises 24 specimens per day.

In Decision 7 of the Tripartite Review Recommendations of April 1999, it was suggested that the SABONET members should become more proactive in biodiversity issues (Minutes of the Ninth SABONET Steering Committee meeting 22.1.7). This implies that we should find ways to use our newly acquired capacity to address issues surrounding plant diversity, such as manipulation of our databases for conservation actions, compilation of Red Lists, regional planning, research proposals and networking. This will affect the future development of computerisation in SABONET-participating herbaria. Relevant comparative statistical data sets will assist us in determining the key plant groups that have to be computerised.



▲ Number of grass specimens computerised (solid bars) and the percentage of the total grass specimen collection this represents (striped bars) in selected southern African herbaria using the PRECIS Specimen Database.



▲ A comparison of total number of plant specimens computerised by participating southern African herbaria during each of the two periods March–November 1999 and December 1999–December 2000.

## Geographical Information Systems

The computerised information will be far more valuable in future if the data is suitable for data manipulation techniques. In this regard, georeferencing is of the utmost importance. Quarter-degree grid square references should be attached to all computerised specimens. The Poaceae will again be the first group to be tackled. The aim is to link the distribution data of this family with a Geographical Information System (GIS). This will enable us to plot the distribution of the taxa, which will be of more than just taxonomic use.

## Conclusion

We are hoping to enhance the computerisation process by developing personnel skills, implementing user-friendly and efficient software and collaborating with the SECOSUD project. Capable staff should be appointed and a course will be scheduled to train the new data capturers. □

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“Based on projected extinction rates, botanic gardens are likely to accumulate more samples of the living dead, only a portion of which are likely to be reintroduced. These taxa therefore represent a long-term horticultural cost; accordingly, their potential for public education and fundraising should be fully exploited.”

Maunder, M. *et al.* in *Conservation Biology* 14(5): 1348-9. (2000)

# SOUTHERN AFRICAN BOTANICAL GARDENS NEEDS ASSESSMENT PUBLISHED



SABONET has recently published the *Southern African Botanical Gardens Needs Assessment* by Daan Botha (recently retired), Christopher Willis and John Winter of South Africa's National Botanical Institute. This is the eleventh number in SABONET's occasional *SABONET Report Series* and was published in November 2000.

Twenty botanical gardens from eight of the ten countries in southern Africa (Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Zambia and Zimbabwe) were included in this needs assessment. Although they participate in the SABONET Project, neither Angola nor Swaziland has botanical gardens.

Extracts from the publication are included below. The *Needs Assessment* is available free of charge to anyone interested around the world, and those who would like to receive a copy can request it from the SABONET Regional Coordinator at the following address:

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## Extracts from the *Southern African Botanical Gardens Needs Assessment*

### Executive summary

The network of southern African plant scientists developed as a result of the GEF/UNDP and USAID/IUCN ROSA-funded SABONET project has proved to be an important mechanism for cooperation, collaboration and capacity-building amongst botanists in the ten countries of southern Africa. Although many of the details still need to be worked out by the countries and participating institutions concerned, SABONET could, at least for the duration of the project, serve as the coordinating body for a regional network of botanical gardens in southern Africa. Preliminary results of this regional botanical gardens needs assessment have indicated that the staff attached to those gardens surveyed have relatively similar needs in terms of training, computerisation of plant records and general botanical garden management. These needs can be addressed by tailor-made training courses and workshops developed and conducted within the region. Closer collaboration, however, needs to be developed with national universities, herbaria and conservation agencies, as well as with the BGCi and other gardens and networks around the world.

### Introduction

This report represents the results of the first needs assessment of southern Africa's botanical gardens. The gardens survey was conducted between July 1998 and December 1999, following the request and approval of the necessary funds by the Southern African Botanical Diversity Network's (SABONET) Steering Committee at its fifth meeting, held in Gaborone, Botswana, on 27 April 1998. Following the decision, mechanisms were put in place for personal visits to the region's national botanical gardens by the authors, together with individual Curators (where avail-

able) of South Africa's National Botanical Gardens. In addition to those gardens surveyed outside South Africa, South Africa's eight National Botanical Gardens and the Durban Botanic Gardens were surveyed through correspondence during 1999/2000. Preliminary results of the gardens needs assessment were presented in earlier editions of SABONET's newsletter, SABONET News (Willis, Botha & Winter 1998, 1999). The needs assessment was conducted with the aim of determining the needs of and gathering first-hand information about the various botanical gardens in the region. The needs, particularly with regards to training, will be used to design a tailor-made Botanical Gardens Management Course for garden staff within the southern African region. This will form part of SABONET's capacity-building activities within the region (Huntley, Matos, Aye, Nermark, Nagendran, Seyani, da Silva, Izidine, Maggs, Mannheimer, Kubirske, Smith, Koekemoer, Dlamini, Phiri, Nobanda & Willis 1998).

SABONET has already produced several recent publications concerning the status of botanical resources in the southern African region, publishing a status report on southern Africa's national herbaria in March 1997 (Willis 1997), as well as the results of a needs assessment of 55 southern African herbaria conducted by Gideon Smith and Christopher Willis during 1998 and 1999 (Smith, Willis & Mössmer 1999). In addition, SABONET has also published two editions of *Index herbariorum: southern African supplement* (Smith & Willis 1997, 1999a); the second edition covers 95 herbaria in the region. A directory of southern African plant taxonomic and diversity expertise was published in July 2000 (Mössmer & Willis 2000). Whilst up-to-date information on southern Africa's herbaria is now readily accessible, little has been written or published about southern Africa's botanical gardens, particularly those outside South Africa. A manual on environmental interpretation in botanical gardens has, however, recently been published by SABONET (Honig 2000).

This report builds upon information about southern Africa's botanical gardens published in the

*International Directory of Botanical Gardens* (Heywood, Heywood & Wyse Jackson 1990), and is a first attempt at synthesizing the information available on southern Africa's botanical gardens in a single publication, as well as publishing the needs of selected botanical gardens in the region. It is anticipated that this information can, and will, be used by national botanical gardens within the region to source their own funding.

The database of southern African botanical gardens developed during this survey, as well as the rest of the publication, will be added to SABONET's dedicated web site (<http://www.sabonet.org>) in due course. Curators and staff of the surveyed botanical gardens are encouraged to inform the SABONET Regional Coordinator of any changes to the garden-specific information contained in this publication. In this way, the database can be kept current.

### **Summary of infrastructural/developmental needs**

- Administrative staff
- Bookshop
- Boreholes
- Botanical literature
- Computer(s)
- Conservatory/Glasshouse
- Directional signage
- Education Centre
- Erosion control
- Fax machine
- Fencing of garden
- Fertilizer storeroom
- Fuel storeroom
- Garden Centre
- Gardens mapped
- Greenhouse development
- Horticulturists
- Index nursery maintenance and development
- Interpretive Officer/Education Officer
- Interpretive signage and story boards
- Irrigation systems installed/upgraded/expanded
- Lawnmowers

Nursery development  
 Office space  
 Parking area  
 Part-time herbarium assistant  
 Photocopier  
 Plant labels  
 Plant records database and accessioning  
 Poison storeroom  
 Quarantine area  
 Radios (2-way)  
 Removal of alien invasive plants  
 Restaurant  
 Spraying equipment  
 Storage for growing media, soil, sand, compost, etc.  
 Storeroom for tools and supplies  
 Theme gardens  
 Tractor and trailer  
 Upgrading/replacement of old equipment  
 Vehicle(s)  
 Visitor Interpretation Centre  
 Workshop (for maintenance of vehicles and equipment)

## Recommendations

It is important that southern Africa's botanical gardens develop their visions, missions and master plans in order to guide their development. Gardens need to consider their development within a local context, and not to try and emulate other gardens in the region or in other parts of the world. Support must be obtained from the local surrounding community, and the garden should be seen as an essential part of community life. It is only through soliciting support from the local community that the gardens surveyed will have any chance of sustainability. Gardens must also demonstrate their relevance to the conservation and sustainable use of botanical diversity in the area and country. Linkages also need to be developed with national and provincial conservation agencies responsible for environmental management, and staff attached to gardens need to become involved in national planning exercises

and contribute to national and local conservation projects. Botanical gardens as collections of living plants must be justified from every possible point of view "in order to be able to continue to assert their right to support" (Raven 1981).

Most of the staff training needs of the various southern African botanical gardens could be addressed in tailor-made training courses hosted by the National Botanical Institute in South Africa. Components of this course, or a separate course, could be presented on the development of master plans and also the computerisation of collections. The NBI's Data Management section has recently developed an in-house PRECIS Garden Records Database (developed using Microsoft Access), which is currently being used by several of South Africa's National Botanical Gardens to computerise their collections, and could be adopted by gardens elsewhere in southern Africa.

Other training needs, although not specifically mentioned by the gardens surveyed, might include workshops on the role of gardens with relation to both the Convention on Biological Diversity (CBD) and the operation and implications of other important conventions, such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the United Nations Convention to Combat Desertification (CCD), the United Nations Framework Convention on Climate Change (UNFCCC), Agenda 21 (concerning sustainable development in the 21st century) and the Convention on Wetlands (Ramsar). Peter Wyse Jackson (1997) has written a very useful article on the impact of the CBD on botanical gardens, as well as producing a basic checklist for botanical gardens to guide their involvement in implementing the CBD. This has been supplemented by articles by Peter Wyse Jackson, Etelka Leadley and Christopher Hobson (1999) in the June 1999 edition of *Botanic Gardens Conservation News*. The BGCI's publication *A CITES Manual for botanic gardens* (Akeroyd et al. 1994) is also an essential document guiding gardens in their implementation of CITES. Other useful publications produced by Botanic Gardens Conservation International (BGCI) include



*The Botanic Gardens Conservation Strategy* (IUCN-BGCS & WWF 1989), *Handbook for Botanic Gardens on the Reintroduction of Plants to the Wild* (Akeroyd & Wyse Jackson 1995), *Botanic Gardens Conservation News* and the forthcoming *Handbook on Plant Conservation in Botanic Gardens* (in prep.). Closer links need to be developed between SABONET, the BGCI, Royal Botanic Gardens Kew, and other botanical garden networks and capacity-building programmes around the world. An MoU between SABONET and the Australian Network for Plant Conservation (ANPC) has recently been endorsed by the respective governing bodies. The project's newsletter, *SABONET News*, and the occasional *SABONET Report Series* can serve as useful vehicles for sharing relevant information amongst botanical gardens in the region as they are currently doing for staff attached to southern African herbaria.

With reduced membership fees now available for botanical gardens in developing countries, each of southern Africa's botanical gardens should be encouraged to become a member of the BGCI. According to the BGCI's membership directory for 1999 (Holland 1999), national botanical gardens in only *two* of the southern African countries surveyed (Malawi and South Africa), are currently members of the BGCI. Being members of the BGCI will allow staff in each of southern Africa's botanical gardens to receive BGCI's regular publications (*Botanic Gardens Conservation News* and the environmental education newsletter, *Roots*) as well as a wide range of other technical publications, and allow staff to be kept informed of recent developments in, and share experiences and information with, botanical gardens from around the world. It will also illustrate commitment on the part of the staff attached to the botanical gardens to be part of the global network for botanical gardens and plant conservation.

The following general recommendations, several of which are closely aligned with the BGCI's *International Agenda for Botanic Gardens in Conservation* (Wyse Jackson & Sutherland 2000), can be made with regard to the development of southern Africa's botanical gardens:

## Inventory/Garden Records

- Computerisation of living collections should be seen as a priority, and computerised information should be backed up regularly.
- Good records should be kept of plants growing in the garden.
- Prepare checklists of the non-landscaped areas of the garden (which should involve integration with herbaria and associated staff).
- Maintain an up-to-date inventory of plants in the garden.
- Ensure that the botanical garden collections, data and expertise are made available and utilised to the fullest extent possible.

## Funding

- Gardens need to source locally/nationally for additional funding and infrastructural support; where available, this can be supplemented by international funding.
- Solicit private sponsorship when government funding is meagre or non-existent.

## Collaboration

- Closer collaboration with conservation agencies should be encouraged, specifically with regard to the propagation, cultivation, reintroduction and subsequent monitoring of threatened plants, as well as in the preparation and implementation of species recovery plans and programmes.
- Network with other gardens to share resources and knowledge.
- Carefully planned and considered short-term (up to 3 months) attachments or fellowships should be developed between gardens within the region.
- Communication between the region's garden staff should be enhanced, particularly through the medium of electronic mail.
- Collaborate and develop partnerships with other African botanical gardens and gardens with similar climates and vegetation types (e.g., Katse Botanical Garden with other alpine botanic gardens around the world).
- Establish collaborations with development agencies that work to integrate biodiversity conservation with sustainable use of plant genetic resources.



## Conservation

- ▶ Integrate *ex situ* activities and *in situ* plant conservation through botanical gardens.
- ▶ Promote public awareness of the importance of *in situ* conservation and need for integrating *in situ* and *ex situ* conservation activities.
- ▶ *Ex situ* conservation should be seen *as a means to an end*, not an end in itself.
- ▶ Become relevant to the surrounding community in an integrated way, without losing sight of the fact that the primary focus of botanical gardens should be on the conservation and sustainable use of plants; use every opportunity of visitors visiting the garden to promote the conservation of plants.
- ▶ Endemic, rare/threatened, 'flagship' species (which stimulate conservation awareness) and economically-important plants should receive priority for inclusion in *ex situ* collections.
- ▶ Identify priority tasks, institutional responsibilities and resources that will be available to support specific conservation programmes.
- ▶ Become involved in national planning processes, such as in the preparation and implementation of National Biodiversity Strategies and Action Plans (NBSAPs).
- ▶ The Convention on Biological Diversity (CBD) should guide the operation of the botanical garden.
- ▶ Develop policies, procedures and practices based on the recommendations of the CBD.
- ▶ Ensure all staff are aware of and follow the garden's policies, procedures and practices relating to implementing the CBD based on the recommendations of the CBD; publicise the CBD and its objectives to garden visitors and supporters.
- ▶ Support and contribute to the implementation, where possible, of the following conventions apart from the CBD: Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Convention to Combat Desertification (CCD), United Nations Framework Convention on Climate Change (UNFCCC), World Heritage Convention, Convention on Wetlands (RAMSAR).

- ▶ Botanic gardens must prove their relevance to the conservation of natural and cultural heritage and their importance as national institutions for science, culture, recreation and tourism.
- ▶ Adopt and implement, where possible, the new International Agenda for Botanic Gardens in Conservation.
- ▶ Become involved in the monitoring and identification of plant diversity at all levels.

## Education/Training

- ▶ Support and empower staff through relevant training, skills and knowledge development.
- ▶ Where possible, use the skills within the garden to provide courses that build the capacity of the general public.
- ▶ Botanic gardens should be developed as centres for environmental education and sustainability by having well planned environmental education programmes *with appropriate resources allocated*.
- ▶ Develop an environmental education strategy identifying and prioritising the target groups, conservation messages, sustainability and development issues to be addressed.
- ▶ Education programmes should incorporate a vision for a more socially and environmentally sustainable future.
- ▶ The design and implementation of a mentorship programme should be considered for botanical garden managers and horticulturists.
- ▶ Develop interpretive and directional signage appropriate to the surrounding community.
- ▶ Relate the role of environmental education to demographics in southern Africa, e.g. number of children/proportion of population below a certain age.
- ▶ Demonstrate the interdependence and relationship of society and nature.

## Management

- ▶ Work with staff in developing and documenting practical and realistic strategic plans, institutional policies and business plans, and put in place mechanisms for their implementation.

- ▶ Involve staff in all levels of planning and decision making.
- ▶ Develop relationships with expert support teams to assist in botanical garden development.
- ▶ Modern, high-technology equipment is not necessary for a garden to be effective. Gardens can do a lot with a little. Consideration of the questions “how/what/why” are important.
- ▶ Gardens need to concentrate on getting the basics right.
- ▶ Develop a management plan for the natural area of the garden.
- ▶ Encourage the involvement of volunteers in the management of the botanical garden and the establishment of a “Friends” of the garden.
- ▶ Manage collections according to strict scientific and horticultural standards.
- ▶ Actively remove exotic and alien invasive plant species from the natural areas of the garden.
- ▶ Update and re-evaluate collection, conservation, research, labelling, education and other policies on a regular basis to ensure that they remain relevant to the changing needs of the organisation and national and international policies.
- ▶ Promote occupational Health and Safety within the botanical garden.

## Marketing

- ▶ Promote the garden so as to attract tourists, and work with local, national and international tourist authorities to seek their advice and assistance in publicising the botanical garden.
- ▶ Promote sustainable tourism, and all appropriate activities that are associated with it.

## Botanical Garden Management Course

Regarding the training needs amongst botanical garden staff within the southern African region, a tailor-made course should include most, if not all, of the subject areas listed below.

Proposed course modules are

- ▶ Development of vision, mission and master plans
  - ▶ Development and implementation of business plans
  - ▶ Fund-raising
  - ▶ Propagation and cultivation techniques
  - ▶ Landscape design
  - ▶ Environmental education
  - ▶ Interpretive signage and labelling
  - ▶ Irrigation techniques
  - ▶ Use of chemicals
  - ▶ Use of chain saws, brushcutters
  - ▶ Nursery development and management
  - ▶ Garden Records Database
  - ▶ Financial Management and budget control
  - ▶ Plant Record System
  - ▶ Preparation of compost areas
  - ▶ Field collecting techniques
  - ▶ Research techniques
  - ▶ Customer service
  - ▶ Pest control
  - ▶ Human resource management/staff supervision
  - ▶ Equipment/machinery operation and maintenance
  - ▶ Arboriculture
  - ▶ Health and Safety
  - ▶ Commercial horticulture
  - ▶ Integration of *ex situ* and *in situ* conservation
  - ▶ Development of living collections policy
- Some of these may need to be held as stand-alone courses, for example:
- ▶ Environmental education
  - ▶ Garden Records Database
  - ▶ Human Resource Management □

The Second IUCN World Conservation Congress met in Amman, Jordan, on 4–11 October 2000. An estimated 2 000 individuals from 140 countries—representing governments, non-governmental organisations (NGOs), United Nations Agencies and the private sector—were invited by IUCN Headquarters to participate. The congress was hosted by the Government of the Hashemite Kingdom of Jordan under the auspices of His Majesty King Abdullah and in the presence of the IUCN's patron, her Majesty Queen Noor. The Congress was the first major conservation event of the new millennium and the largest environmental gathering ever to be held in the Middle East. Queen Noor of Jordan officially opened the Congress at the Amman Roman Theatre, requesting a moment of silence for those suffering in the Middle East.

## Background

The first IUCN Congress was held in Montreal in 1996. IUCN Congresses are convened every three or four years to determine policy and the broad elements of IUCN's global programme. The Congress is also a forum for IUCN members to elect the President and other IUCN officials, and to approve the Union's Programme and budget-and-craft resolutions. Guatemala has offered to host the Third World Conservation Congress.

## Quadrennial Plan

IUCN's new streamlined global programme for the next four years—the Quadrennial Plan—was adopted at this Congress. The Plan is designed to meet the IUCN's primary conservation goals, namely facing the extinction crisis and restoring and maintaining ecosystem integrity. The framework of the Quadrennial Plan is based on seven Key Result Areas (KRAs):

- KRA1: Effective management and restoration of ecosystems
- KRA2: Institutions, agreements, processes and policies

- KRA3: Incentives, including finance, for conservation of biodiversity and sustainable use of natural resources
- KRA4: Equitable sharing of the costs and benefits
- KRA5: Assessment of biodiversity and of related social and economic factors
- KRA6: Information management and communication systems
- KRA7: Effective management of the Union

The IUCN global Quadrennial Plan incorporates socio-economic factors into the traditional biological approach of the IUCN and represents a shift to a results-driven, more integrated programme. Projects do not have to fit exclusively into a single KRA; many overlap two or more KRAs. Secretariats at the Regional Level and Country Office level will adopt the KRA framework.

## Thematic Sessions

Congress delegates met in 12 short, parallel thematic sessions on Thursday, 5 October, and Saturday, 7 October. The purpose of these thematic sessions was to consider issues ranging from ecospace and a global culture for sustainability, to environment and security, to local solutions promoting social equity and cultural diversity. Each of the IUCN's six Commissions, including the Species Survival Commission to which the IUCN Red Data List Programme, amongst others, is attached, hosted thematic sessions. The *Species Survival Commission* is the largest of the Commissions, having approximately 6 800 members followed by the *World Commission on Protected Areas* with some 1 300 members.

One of the most interesting thematic sessions hosted by the Species Survival Commission was entitled Integrating biodiversity science into environment policy and management: biological

research priorities to achieve conservation. Tim Sullivan (Chicago Zoological Society) was the facilitator. Panelists outlined current priority research areas for biodiversity, including

- Habitat loss
- Fragmentation
- Overexploitation
- Exotic species
- Pollution
- Climate change
- The implications of local and commercial bushmeat consumption for conservation in tropical forests
- Methods for exchange of scientific information and local knowledge between biologists and artisan fishers, in particular regarding seahorse populations
- Strategies and policies to address invasive species, particularly grey squirrels in Europe
- Ways to conserve fragmented landscapes by establishing biodiversity corridors
- Research priorities for designing effective marine reserve networks
- Ecological implications of economic crises

Panelists focused on how to make research relevant and accessible to local communities and decision-makers. Participants of the thematic session were then divided into Working Groups to consider interactions between scientists and practitioners and how to better integrate information from biological science into policy and management. On the first topic, participants noted that scientists must provide user-friendly data, clear data maps and information on ecological restoration and economic valuation of biological functions to practitioners while working with a multidisciplinary approach. Participants suggested practitioners could benefit from understanding the value and limits of science, taxonomic methodology and emerging scientific areas including genetics, metapopulation dynamics and geographic information systems (GIS). On integrating scientific information into policy, group members stressed that scientists must improve synthesis of information, understand core cultural

differences, ensure that science is relevant and make information accessible in a timely manner.

Representatives from each thematic session reported on the outcomes of the Working Groups in a Plenary Session on Monday, 9 October.

### **Plenary sittings**

The IUCN Congress convened in nine plenary sittings over the course of the meeting to hear reports from the President, Director General and Commission Chairs, as well as to approve the IUCN Commission mandates, the programme, the budget, membership-related matters and resolutions. The resolutions formed a significant component of the Plenary sittings. For the Commission mandates, the Species Survival Commission—represented by the Chair, David Bracket—overviewed programme priority areas:

- Species information service
- The Red List Programme
- Sustainable use
- The Wildlife Trade Programme
- The Plant Conservation Programme
- Invasive species
- Digital libraries

He said SSC is concentrating on developing fisheries-related programmes and a focus on trade in medicinal plants.

### **Resolutions**

More than 100 separate resolutions, recommendations, expressions of opinions and proposals were reviewed before the IUCN Congress. This took place through numerous working/contact groups often long after dark or just after the crack of dawn. In the end, the Congress adopted 104 resolutions on a wide range of conservation, programme and governance topics. The resolutions adopted by IUCN members will orient IUCN's new Quadrennial programme and strategies for the next four years. The resolutions addressed a wide range of issues, from saving endangered species such as river dolphins, Houbara bustards and black rhinos, to the management of ecosystems in Antarctica, Meso-America, and the Mediterranean. After adopting or withdrawing all outstanding resolutions and

hearing closing statements, participants left the Plenary Hall of Amman's Sports City for the last time shortly after noon on the last day of the Congress.

### Conclusion

IUCN's Regional Office for Southern Africa (IUCN-ROSA)—to which SABONET is attached—and its member institutions met almost every day to discuss Congress issues relevant to the southern African region. All the southern African countries (except Namibia) were represented by member institutions. These meetings were extremely constructive: they afforded a rare opportunity to meet with other IUCN member institutions in the region and enabled the southern African countries to get clarification and consen-

sus on membership and voting issues surrounding Congress resolutions and the IUCN Regional Counsellors (for southern Africa and Africa). Ms Julianna Chileshe (Zambia) was re-elected as the southern African region's counsellor.

The Second IUCN World Conservation Congress was a truly global event and also a reminder to us all that economic and political agendas are almost at the forefront of environmental issues. □

### Janice Golding

*Southern African Plant Red Data List Coordinator  
National Botanical Institute  
Pretoria, SOUTH AFRICA  
E-mail: golding@nbipre.nbi.ac.za*



## New BGCI Initiative: World-wide checklist of plants in cultivation

Botanic Gardens Conservation International (BGCI) has initiated an exciting new project to prepare the first-ever preliminary checklist of plant taxa in cultivation in botanic gardens of the world. South Africa's National Botanical Institute, with its network of eight national botanical gardens spread across five provinces of the country, will be participating actively in this new initiative. We encourage all other southern African botanic gardens to participate in this initiative as well, and to contribute data for inclusion in the checklist.

In return for providing data, botanic gardens will receive:

- A copy of the preliminary checklist (in electronic form and as a printed list)
- An analysis of their holdings, in comparison to other collection holders (i.e. an indication of the taxa that are held uniquely by them and highlighting any plants they grow that are critically endangered)
- Technical assistance to allow them to exchange data in electronic form with collaborating institutions

The BGCI does not intend to publish or make available information on the origins of plants included in the database or checklist, nor the names of botanic gardens growing each taxon as in some cases these data may be sensitive. Instead the checklist will document the name of the taxa in cultivation as well as the number of botanic gardens with wild material and the number of botanic gardens with material of unknown origin.

If your botanic garden is interested in participating in this project, please contact the BGCI at the following address:

### Diane Wyse Jackson

*Botanic Gardens Conservation International (BGCI)  
199 Kew Road  
Richmond  
Surrey TW9 3BW  
United Kingdom  
Fax: (44) 20 8332 5956  
E-mail: bgci@rbgkew.org.uk*

# Southern African herbaria

## Compton Herbarium (NBG)

### History

The herbarium at the Kirstenbosch National Botanical Garden has had a chequered history over the last 80 years. The first building was erected in 1924 and housed the University of Cape Town's Bolus Herbarium for some 14 years before it was relocated to the University. The then director of the garden, Prof. Robert Harold Compton, had started a separate collection in his own office and appointed Miss Buddy Barker to curate and expand it in 1935. This collection housed in 18 cabinets was moved to the vacant herbarium building in 1940. Then began a vigorous expansion of the collections, which amounted to 57 000 sheets in 119 cabinets when Compton retired in 1953. (He then moved to Swaziland where he began building another herbarium collection!) In 1956 the trustees of the South African Museum transferred their herbarium (SAM) of 118 cabinets, as well as the botanist Dr Joyce Lewis and another staff member, to Kirstenbosch. With the amalgamation of the Botanical Research Institute (BRI) and National Botanical Gardens (NBG), the Compton Herbarium became part of the National Botanical Institute (NBI). In 1996 the Stellenbosch Herbarium (STE) was integrated with the Compton Herbarium in the newly erected research complex at Kirstenbosch. The Compton Herbarium is now the second largest herbarium in southern Africa.

The South African Museum Herbarium (SAM), the oldest in Africa and one of the oldest in the

southern hemisphere, originated when the visiting German collector, C.F. Ecklon, deposited 325 of his specimens in the museum in 1825. Dr. Ludwig Pappe took charge of the herbarium when the museum was reorganised in 1855, and he is considered to be its founder. He was appointed as the first Colonial Botanist in 1858. On his death in 1863, his private collection, which included Carl Zeyher's main herbarium, was bought for the Cape Government Herbarium. This was housed in the same room in the Museum as the Museum Herbarium. Under Prof. Peter MacOwan, Colonial Botanist, the two collections gradually merged and increased considerably. In 1910 the Cape Government ceded the so-called "Cape Government Herbarium" to the Museum. It has been housed in the Compton Herbarium at Kirstenbosch since 1956 and was finally donated to the NBI by the Trustees of the South African Museum in 1988.

The Stellenbosch Herbarium (STE) was founded by Dr. Vera Duthie on her appointment to the Victoria College (now the University of Stellenbosch) in 1902. Owing to lack of funds, the University Council handed the general herbarium over to the State and in 1960 it became known as the Government Herbarium/Staatsherbarium, Stellenbosch. The District Herbarium covering the Stellenbosch area was retained by the University (STEU). With the rationalisation of the state botanical interests in 1989 it became part of the new National Botanical Institute, but was only combined with the NBG herbarium in 1996.



▲ Prof. Robert Harold Compton.

### Collections

The collections are housed in the modern research complex built in 1996 in the Kirstenbosch National Botanical Garden in Cape Town. The building is situated on the eastern slopes of Table Mountain just below some patches of fine afro-montane forest.

The modern metal cupboards have magnetically sealing doors. Ventilation is of the filtered, forced-air variety—full air-conditioning being too expensive. The specimens are arranged following the system employed in the *List of Southern African Plants* based on PRECIS.

The approximately 500 000 specimens mainly cover the winter-rainfall region of southern Africa and contribute towards the understanding of the biodiversity of the unique Cape Floral Kingdom. There are many valuable old specimens from around the world in SAM. The collections consist only of pteridophytes, gymnosperms and angiosperms. The marine algal collections were recently donated to the University of Natal, Pietermaritzburg (NU), the fungi to the National Mycological Herbarium in Pretoria (PREM), and the lichens and bryophytes to our sister herbarium, the National Herbarium in Pretoria (PRE). For historical reasons the SAM collections, the oldest in the country, are kept separate from the general herbarium and are sent out on loan under the SAM label.

For the last two years the herbarium has had assistance from the SABONET programme with the databasing of these collections. To date 28 000 specimens have been encoded, covering the grasses and the first of the important families in our area: Amaryllidaceae and Iridaceae. These will be followed by the Restionaceae, Ericaceae and Proteaceae. At the current rate it will take some 15 years to encode all the herbarium collections. Problems have arisen with deciphering the old handwriting—especially German Gothic script and Latin.

### Information service

The herbarium provides a wide-ranging information service to the public, environmental planners, conservation bodies and other researchers. On average the staff identify about 3 000 specimens a year.

### Research

The research undertaken by the staff mainly covers plants from the winter-rainfall region—Proteaceae, Ericaceae, Stilbaceae, Amaryllidaceae, Iridaceae, Mesembryanthemaceae, Thymelaeaceae, Campanulaceae, and Orchidaceae. The herbarium fortunately received a grant from Mr. Leslie Hill, a 90 year-old Cape Town businessman, recently. This will be used to set up a laboratory for molecular studies, which will greatly assist staff in their work on the phylogenetics and evolution of Cape taxa. A recently published joint project was 'Cape Plants: a Conspectus of the Cape Flora of South Africa' covering the 9 000 species in our area.



▲ The new building housing the Compton Herbarium.

### Staff and research interests

*Curator:*

Dr John Rourke (Proteaceae, Stilbaceae)

*Assistant Curator:*

Dr Josephine Beyers (Thymelaeaceae)

*Scientific staff:*

Ms Pascale Chesselet (Mesembryanthemaceae)

Mr Christopher Cupido (Campanulaceae)

Ms Ferozah Conrad (Molecular studies)

Dr Hubert Kurzweil (Mesembryanthemaceae,  
Orchidaceae)

Dr John Manning (Iridaceae, pollination biology)

Dr Ted Oliver (Ericaceae)

Dr Gail Reeves (Molecular studies)

Dr Koos Roux (Pteridophyta)

Dr Dee Snijman (Paterson-Jones)  
(Amaryllidaceae)

*Technical staff:*

Mrs Cathy Cupido

Mrs Judith Leith

Mrs Edwina Marinus

*SABONET staff:*

Botanist (vacant)

*SABONET data encoders:*

Ms Angela Baatjes

Ms Michelle Engelbrecht

Mrs Veronica Williams

*Secretary:*

Mrs Susette Foster

*Contact e-mail address:*

herbarium@nbict.nbi.ac.za ☐

***Dr E.G.H. Oliver***

*Compton Herbarium (NBG)*

*National Botanical Institute, Kirstenbosch*

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E-mail: [oliveregh@nbict.nbi.ac.za](mailto:oliveregh@nbict.nbi.ac.za)



▲ The research complex is situated on the eastern slopes of Table Mountain.



# OBITUARY

## Aubrey Amos Kalonga Banda (May 1963–October 2000)



▲ *Aubrey Amos Kalonga Banda (1963–2000)*

Aubrey Amos Kalonga Banda, Scientific Officer with the National Herbarium and Botanic Gardens of Malawi (NHBG) 1996–2000, died in Zomba, Malawi on Monday, 9 October 2000.

Aubrey was born in Mwimba Village, Traditional Authority Lukwa, Kasungu District (Central Region of Malawi) on 12 May 1963. He attended various primary schools before going to St John Bosco Secondary School in Mzimba District (Northern Region) in 1981. In 1985 he enrolled for a Degree in Education, majoring in Biology and Earth Sciences, at Chancellor College, a constituent College of the University of Malawi. He obtained his Bachelor of Education degree in 1990.

In 1991 he got a job with the Ministry of Education and was posted to Mchinji Secondary School where he taught Biology and Mathematics. A year later, he enrolled for a full time MSc degree in Applied Biology (Weed Science) with the University of Malawi. He rejoined the teaching profession after receiving his MSc in 1994.

Aubrey joined the National Herbarium and Botanic Gardens of Malawi (NHBG) as Assistant Scientific Officer in 1996 and was promoted to the rank of Scientific Officer in 1998. Aubrey was interested in the taxonomy of *Cyperaceae* especially the genus *Pycneus* P. Beauv.

After joining the NHBG, Aubrey was involved in a number of committees, such as the Social Welfare, Housing, and National Herbarium Committees. He also served on the national Technical Committee on the Environment. This Committee is mandated to look into the EIA processes of new and existing projects.

Aubrey attended two SABONET-organised courses: the Aquatic Plants Training Course held at Mboma Island, Okovango Swamps, Botswana, in 1998, and the Database Management Course, Pretoria, in 1999. In addition he also participated in the Earth Watch Botanical Survey in Taita Hills, Kenya in 1997.

Before his death, Aubrey was Project Officer for an Italian funded project: "Service for Environmental Conservation of Biodiversity and Sustainable Development" (SECOSUD).

Aubrey is survived by his wife, Lynn, and two daughters, Thokozani (8 years) and Mtendere (5 years). □

*Dr Augustine Chikuni*

*National Herbarium and Botanic Gardens of Malawi  
augustine@sdn.org.mw*



# THE PAPER CHASE

by Stefan Siebert and Hugh Glen

The object of this column is to keep an eye open for literature which 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 readers should please feel free to submit notes and useful information to the 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.

## **New books received in the Mary Gunn Library**

Breuer, I. 1999. *Haworthia* photographs used to typify taxa described by Dr Karl von Poellnitz.

Breuer, Niederzier. ISBN 3-936573-11-2. Paperback, A5+ size, pp. 200. Price unknown.

Von Poellnitz published many names in various groups of succulents before the Second World War. The identities of the plants he named are not always easy to determine, as he worked from live material grown in his own collection, and it has long been believed that he did not always make herbarium specimens of his "pets". However it seems that in *Haworthia* the question is somewhat more involved. Here the plants were sent to Berlin, where they were photographed and preserved. Any dried material that was prepared, was destroyed in the course of World War II, and the fate of any other specimens or photographs was unknown to most fanciers. Breuer has found not only the photographs that were taken when

the plants arrived in Berlin, but specimens pickled in alcohol of 11 species. These latter survived because the Berlin pickle collection was in a different building to the main herbarium.

Due to the destruction of the dried specimens, the pickled material and photographs must serve as types for Von Poellnitz's names. Breuer has cited the photographs as lectotypes in previous publications, which has not made the study of the taxonomy of *Haworthia* all that much easier, as the pictures remained unpublished. Now, at last, he has published all the photographs that matter in relatively large reproductions, with the plants appearing almost life size. Now it becomes much easier than ever before to determine the correct usage of Von Poellnitz's names in this genus, at least. The introduction lists the 11 names typified by spirit material. Text with each photo gives the place of publication of the name, and the origin of the plant depicted.

The prefatory text rhapsodises about the beautiful pictures; specialists may agree, but the reproductions leave this scribe musing on the extent to which beauty resides solely in the eye of the beholder. This book is nomenclaturally important, probably essential to the dedicated *Haworthia* specialist, and will leave the rest of us (those interested in neither nomenclature nor succulents) wondering what the fuss is about. As a nomenclature enthusiast I see the point; as a non-succulentophile I am unmoved by it.

## **Additional books and theses received in the Mary Gunn Library**

► *Flórula de la Reservas Biológicas de Iquitos, Perú*. R.V. Martínez. Missouri Botanical Garden Press, St. Louis, 1997.

▶ **A taxonomic study of *Brachystegia* Benth. (Caesalpinioideae–Leguminosae).** A.C. Chikuni. Ph.D. thesis, University of Oxford, 1998. [Doubly welcome and well-timed because of Erich van Wyk's discovery of *B. spiciformis* in the Soutpansberg!]

▶ **Keep the Lowveld green!** P. Joffe. Environmental Resource Guide: Greening SA 7, 2000.

▶ **A taxonomic revision of the genus *Ruppia* L. (Ruppiaceae) in KwaZulu-Natal.** S. Ramdhani. B.Sc. (Hons.) University of Durban-Westville. 1998.

▶ **Orchids of Guatemala: A revised annotated checklist.** M.A. Dix & M.W. Dix. Missouri Botanical Garden Press, St. Louis, 2000.

▶ **Systematics of *Masdevallia*, Part 1.** C.H. Leur. Missouri Botanical Garden Press, St. Louis, 2000.

▶ **Gametofitos de Helechos.** B. Péres-García & R. Riba. Missouri Botanical Garden Press, St. Louis, 1998.

### **Books still in the cataloguing queue, so further details are not yet available**

▶ **Biogeography: an ecological and evolutionary approach, edition 6.** C.B. Cox. & P.D. Moore. Blackwell, Oxford. Quarto, pp. 300. ISBN 0-86542-778-X. Price unknown. 2000.

▶ **MAFF International workshop on genetic resources: Wild Legumes.** Anon. Ministry of Agriculture, Fisheries and Food, Tsukuba, Japan. 1999. This is a Japanese publication, from an organisation not to be confused with the British government department of the same name. It records the proceedings of a conference held in Tsukuba in October 1999, and has apparently been assembled without an editor.

▶ **The new Oxford book of food plants.** J.G. Vaughan & C.A. Geissler. Oxford University Press, Oxford. Approximately A4, pp. 240. ISBN 0-19-850567-1. Price GBP 14.99. 1999.

▶ **Describing species: practical taxonomic procedure for biologists.** J.E. Winston. Columbia University Press, New York. Quarto, pp. 518. ISBN 0-231-06825-5. Price unknown. 1999.

### **Recently published papers**

*Africa—Environment & Wildlife* (September 2000)

▶ **The Lubombos.** J. Culverwell. Pages 55–61. “At your feet you might find tiny fig trees rooted in a nutrient-poor fissure, possibly no more than 10 centimetres high, yet decades old, or a clump of Africa's only cactus species, *Rhipsalis baccifer*”

*African Journal of Ecology* 38 (2000)

▶ **Wildfire reduces elephant herbivory on *Colophospermum mopane* (Fabaceae).** A.D. Kennedy. Pages 175–177. An interesting study looking at the manipulation of elephant distribution through the application of prescribed wildfires. This might be a probable solution to the management of elephant populations through non-destructive means.

▶ **A reassessment of the fire-tolerance of some miombo woody species in the Central Province, Zambia.** A.E. Cauldwell & U. Zieger. Pages 138–146. Fire-tolerance classification of indigenous woody plants has useful applications in the fields of forestry and protected area management. The proposed method is useful to assess and monitor the fire regime status of woodlands.

▶ **Trends in woody vegetation cover in the Kruger National Park, South Africa, between 1940 and 1998.** H.C. Eckhardt, B.W. van Wilgen & H.C. Biggs. Pages 108–115. Changes in the cover and density of shrubs and trees were assessed from aerial photographs. The changes in woody cover were meaningful showing the long-term effects of overgrazing and prescribed burning.

▶ **The influence of large mammalian herbivores on growth form and utilization of mopane trees, *Colophospermum mopane* in Botswana's Northern Tuli Game Reserve.** C.V. Styles & J.D. Skinner. Pages 95–101. Mopane veld is of great value to ungulates in times of drought. It is shown that elephants and eland are responsible for the scrub mopane. This phenomenon is necessary to ensure reliant nutritious resources are available for browsers during the stressful spring to summer transition.

*Aloe* 37(1) (2000)

- ▶ **A new *Cheiridopsis* (Mesembryanthemaceae) from the Richtersveld.** G. Williamson. Pages 4–7.
- ▶ **Will the real *Ruschianthemum gigas* please stand up!** P.M. Burgoyne. Page 8.
- ▶ **Remarkable succulents from Africa.** K. Retief. Page 9.
- ▶ **The *iNtelezi* plants of the eastern Cape: traditional and contemporary medicines.** T. Dold & M. Cocks. Pages 10–13.
- ▶ **The Gamsberg zinc mine project.** A. Fick. Pages 14–17.
- ▶ **Type locality of *Haworthia springbokvlakensis* preserved.** A. Fick. Page 18.

*Bothalia* 30(2) (October 2000)

- ▶ **Studies in the Sphaerocarpaceae (Hepaticae) from southern Africa. 3. The genus *Riella* and its local species.** S.M. Perold. Pages 125–142.
- ▶ **FSA contributions 17: Casuarinaceae.** C.M. Wilmot-Dear. Pages 143–146.
- ▶ **Three new species of *Erica* (Ericaceae) from Western Cape, South Africa.** E.G.H. Oliver & I.M. Oliver. Pages 147–156.
- ▶ **Notes on African plants. Pteridophyta. A new combination and new records for the *Flora of Malawi*.** J.P. Roux. Page 155.
- ▶ **Notes on African plants. Convallariaceae. A new combination in *Eriospermum*.** J.C. Manning. Page 157.
- ▶ **Notes on African plants. Hepaticae and Zannichelliaceae. New records from an ephemeral pan, Blouvillei, in Western Cape, South Africa.** W.R. Harding, S.M. Perold & R.P. Glen. Page 157.
- ▶ **Combining floristic and growth form composition in a gradient-directed vegetation survey of Matjiesrivier Nature Reserve, Western Cape, South Africa.** R.G. Lechmere-Oertel & R.M. Cowling. Pages 161–174.
- ▶ **Wetland vegetation of southern KwaZulu-Natal, South Africa.** L. Perkins, G.J. Bredenkamp & J.E. Granger. Pages 175–186.

▶ **Wetland vegetation in the North-eastern Sandy Highveld, Mpumalanga, South Africa.** P.M. Burgoyne, G.J. Bredenkamp & N. Van Rooyen. Pages 187–205.

▶ **Miscellaneous notes. Aloaceae. The conservation status of *Aloe* in South Africa: an updated synopsis.** G.F. Smith *et al.* Page 206.

▶ **Miscellaneous notes. Apocynaceae. Chromosome studies on African plants. 15. Periplocoidea.** J.J. Spies *et al.* Page 211.

▶ **Miscellaneous notes. Poaceae. Chromosome studies on African plants. 14. Panicoidea.** A. Strydom *et al.* Page 201.

▶ **Miscellaneous notes. Picking up the pieces: Red Data Lists in southern Africa.** J.S. Golding. Page 213.

▶ **Obituaries: Otto Heinrich Volk, S.W. Arnell, Rosemary Charlotte Holcroft, and Werner Rauh.** Pages 215–224.

*Bradleya* 18 (2000)

▶ **Four new, succulent *Bulbine* species (Asphodelaceae) from the Western and Eastern Cape Provinces of the Republic of South Africa.** G. Williamson. Pages 31–40. Yet another example of the floristic richness of the Western and Eastern Cape. The paper shows how the growth habit of these new taxa is related to their environment.

*Cactus and Succulent Journal* 72(5) (September 2000)

▶ **Superb Succulents.** D. Benadom. Pages 286–287. Plants featured in this paper are award winners from the Gates Cactus and Succulent Society's show in the United States. Two southern African *Gasterias* species are featured as winners.

*Conservation Biology* 14(4) (2000)

▶ **Timber certification: where is the voice of the biologist?** E.L. Bennett. Pages 921–923.

▶ **International conservation education.** C.A. Acosta. Page 924.

► **Indicators of biodiversity for ecologically sustainable forest management.** D.B. Lindenmayer *et al.* Pages 941–950.

► **Making consistent IUCN classifications under uncertainty.** H.R. Akçakaya *et al.* Pages 1001–1013.

### *Haseltonia* 7 (2000)

► ***Aptenia cordifolia* (L.f.) Schwantes (Mesembryanthemaceae) in Zulu traditional medicine—An overview.** N.R. Crouch, G.F. Smith & M.T. Smith. Pages 30–36. *Aptenia cordifolia* is an attractive and hardy plant that is more familiar as a horticultural subject than as a medicinal one. This paper investigates the medico-magical value of this taxon to the Zulu as an association that has impacted on its human-assisted dispersal in the sub-region.

► **Succulent and xerophytic plants used by the Topnaar of Namibia.** P. van Damme & V. van den Eynden. Pages 53–62. The Topnaar people have learned to appreciate and utilize more than a hundred of the 450 plant species occurring in their area. This paper summarizes the various uses of the 18 species studied during ethnobotanical field research in the Topnaar's area of the desert.

### *Herbertia* 54 (1999)

► **Selected scientific literature on geophytic plants, 1995–1999.** A.W. Meerow. Pages 244–266.

► **Notes on some rare and newly published species of *Lachenalia* from South Africa and Namibia.** G. Duncan. Pages 171–179.

► **The high altitude pineapple lily *Eucomis vandermerwei*, a rare endemic from South Africa.** N.R. Crouch & S. Krynanuw. Pages 133–138.

► **Some bulbous flora of the Limpopo River drainage basin in the Northern Province.** C. Craib & L. Brown. Pages 129–132.

► **The seven species of KwaZulu-Natal *Crinum*: A horticultural review.** G. Petit. Pages 118–123.

► **The ecology and cultivation of rare and little-studied *Ledebourias* in southern Africa.** C. Craib & L. Brown. Pages 43–50.

### *Ingens* 22 (April 2000)

► **Resilient Baobab tree faces extinction.** J. Nyamayedenga. Pages 15–18.

### *Kew Scientist* 17 (April 2000)

► **Threatened Plants.** W. Stuppy. Page 8. Pioneering work conducted by Kew. An audit was undertaken to determine the number of species in their living botanical collection which bears an IUCN Category of Threat.

### *Ostrich* 71(1) (2000)

► **Community participation in the protection of Kenya's wetlands.** C.M. Gichuki. Pages 122–125.

### *PlantLife* 23 (September 2000)

► **The enigmatic family Mesembryanthemaceae; notes on identifying mesembs.** P. Burgoyne. Pages 5–8.

► **The underground forests of Maputaland.** M. Thornhill & I. Felton. Pages 9–11.

► **Plant collecting expedition to Blyde River Canyon Nature Reserve.** M. Lötter *et al.* Pages 12–15.

► **What? No Red Data List for Mozambique.** J. Golding & S. Izidine. Page 15.

### *Science* 289(5480) (2000)

► **Preservation of DNA from endangered species.** H.N. Poinar & G. Eglinton. Page 726.

### *South African Journal of Botany* 66(2) (May 2000)

► **Mangrove fungi on dead taproots of *Rhizophora mucronata* at three localities in**

South Africa. T.D. Steinke. Pages 91–95.

► ***Pelargonium quarticola* (Geraniaceae), a new species from the Knersvlakte.** U. Meve, U. Schmiedel & E.M. Marais. Pages 96–98.

► ***Metzgeria nicomariei*, a new species of Metzgeriaceae from South Africa.** A. Veltman, M.J. Potgieter & A.E. van Wyk. Pages 112–114.

► **Seasonal gas exchange responses under three different temperature treatments in a leaf-succulent and a drought-deciduous shrub from the Succulent Karoo.** M.R. Bowie, S.J.E. Wand & K.J. Esler. Pages 118–123.

► **Stump size and the number of coppice shoots for selected savanna tree species.** C.M. Shackleton. Pages 124–127.

► **Short Communications. Roots of *Colophospermum mopane*. Are they infected by rhizobia?** A. Jordaan, H.J. du Plessis & D.C.J. Wessels. Page 128.

► **Short Communications. New chromosome number records for South African *Oxalis* species.** L.L. Dreyer & C. Johnson. Page 130.

### *South Africa Journal of Science* 96 (August 2000)

► **Intellectual property rights: plants and phyto-medicinals — past history, present scenario and future prospects in South Africa.** J. George & J. van Staden. Pages 433–442. The ever-changing plethora of patent laws in Europe and the United States has caused the emergence of a new economic order that has provided the “North” with a commercial edge over several less developed nations gifted with a natural wealth of plant

resources. South Africa should gear itself to prepare well-drafted patent laws for plant products.

► **Facilitation of interdisciplinary collaboration in research: lessons from a Kruger National Parks Rivers Research Programme project.** G.P.W. Jewitt & A.H.M. Görgens. Pages 410–414. The paper deals with the obstacles which can be encountered when projects dealing with natural resource management draws upon the expertise of scientists in different disciplines. It uses the project in the Kruger National Park as a case study and draws on its problems and solutions.

### *The African Ethnobotany Network* 2 (September 2000)

► **Review of Ethnobotanical Literature for Central and West Africa.** E. Dounias, W. Rodrigues & C. Petit. Pages 5–117. Researchers often get frustrated when their literature search concerning ethnobotany in Africa only yields meagre results. To overcome the difficulties of access to relevant information, this Bulletin of the African Ethnobotany Network provides a survey of ethnobotanical literature from Central and West Africa, which compliments the review for East and Southern Africa published in the last Bulletin.

### *Trends in Ecology and Evolution* 15(8) (2000)

► **Eradication revisited: dealing with exotic species.** J.H. Myers *et al.* Pages 316–320. □



# Book Review



**Augrabies splendour.** Pieter van der Walt. Info Naturae. ISBN 0-620-26215-X. English. 73 pp. Soft cover, 210 x 150 mm.

The author describes the area as a “museum of natural forces” and the intention of the guidebook is to enhance the experience of visitors to the area. Although the adjacent Riemvasmaak is not part of the Augrabies National Park, it is included in this book because the author views it as an integral part of the Augrabies area. Colour photographs of the flooded river, geological formations, plants and lizards add to the text.

Fourteen chapters cover introductory information, geology, plants, animals and check lists of plants and animals.

The introductory chapters contain geographical, travel, climate, and reservation information on the Augrabies and Riemvasmaak areas. This is

supplemented with a description of the history of the Orange (Gariep) River and the people who lived along its banks. Colourful maps of the area are provided.

A detailed description of the geology of the area is included and the different geological types are illustrated with colour photographs. This is followed by historical information of the Augrabies and Riemvasmaak area with a short reference to management objectives of the Park.

The chapter on plants consists of descriptions of 23 of the most common plant species, distributed in hilltop veld, undulating veld and drainage channels. The author gives a general introduction to the vegetation and the species are described, but in no specific order. Scientific and common names are used and the text makes for easy and informative reading, although identification of some of the plant species from the photographs might be difficult for most visitors.

The chapter on animals refers to different animal groups including an extensive description and discussion of the Augrabies flat lizard. It is claimed that the main viewing area, where so many technicoloured lizards scurry about, has the densest lizard population on earth.

Checklists of flowering plants, mammals, birds, reptiles, fish and frogs complete the booklet and should be useful to the serious ecotourist. The literature references given at the end of the guidebook should come in handy to those in search of more information.

The layout is good and the guidebook provides interesting information to any ecotourists visiting the area. However, the information on animal life, except for the lizards, is somewhat superficial.

It is clear the author’s aim is to cater to the needs of ecotourists and he provides information on geology, plants and animals not readily available. The guidebook is recommended to people visiting this arid part of southern Africa. □

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# **Announcement**

## **10th International Conference of the International Association of Botanic Gardens**

### **Botanic Gardens and their Commitment to Society into the Third Millennium**

18–24 June 2001

Cordoba, Spain

Under the auspices of The International Association of Botanic Gardens (IABG)

Organized by the Botanic Gardens of Cordoba

With the collaboration of the City Council of Cordoba and the University of Cordoba

#### **Contact**

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#### **Objectives**

This Conference for experts and others interested in botanic gardens will study the current status and the priorities necessary for the social profitability, the financing and sustainability of botanic gardens in general. It will focus on gardens' role in education, their position within the framework of international Conventions such as CITES and the Convention on Biodiversity, their potential implication in the trade of plant species and in the collection and conservation of plant genetic resources, their ties to *ex situ* and *in situ* conservation programs, as well as the cultural and artistic heritage that is preserved in the gardens themselves.

#### **Potential participants**

Botanic garden personnel, nurserymen and scientists interested in plant resources conservation and sustainable management.

#### **Official languages**

Simultaneous English / Spanish translation. □





# 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, botanical gardens and biodiversity programmes of southern Africa. Thanks to all those who sent their e-mail addresses to the editors for inclusion in this list.

**PLEASE NOTE** that this list gets updated every issue of our newsletter. In order to avoid frustration and possible disappointment, our readers are advised to please use the most recent list available. Some of the addresses listed in previous editions of the newsletter may no longer be relevant.

**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 *Stefan Siebert*, at [stefan@nbipre.nbi.ac.za](mailto:stefan@nbipre.nbi.ac.za) so that the list can be updated on a regular basis.

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Dr Richard Knight - rknight@uwc.ac.za  
Lincoln M Raitt - lraitt@uwc.ac.za  
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**University of the Witwatersrand - Botany Department**

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**University of the Witwatersrand - Department of Pharmacy**

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**Witwatersrand National Botanical Garden**

Ms Sharon Turner (Curator) -  
witsnbg@mweb.co.za

Mr Andrew Hankey - witsnbg@mweb.co.za

**When sending mail to a staff member at the Witwatersrand National Botanical Garden, insert the name of the person in the subject line.**

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.

## SWAZILAND

### *National Herbarium (SDNH)*

Mr Titus Dlamini (Curator) -

sdnh@africaonline.co.sz (NEW ADDRESS)

This address can be used to contact Titus Dlamini, Gideon Dlamini or Bongani Dlamini at the National Herbarium. *Insert the name of the person in the subject line.*

## ZAMBIA

### *Forestry Herbarium (NDO)*

Mrs E.N. Chupa - sadctscn@zamnet.zm

Noah Zimba - sadctscn@zamnet.zm

### *Herbarium (UZL) - University of Zambia*

Ms Tasila Banda-Sakala (presently studying at the Arizona State University, Phoenix, USA) -

tbanda@ivillage.com OR

tasa@tcsn.uswest.net

OR tbanda@cactus.caed.asu.edu

Mr David Chuba - dchuba@botzoo.uct.ac.za

(currently studying for a MSc at the University of Cape Town)

Ms Florence Nyirenda -

fnyirenda@natsci.unza.zm

Dr Patrick Phiri - pphiri@impala.unza.zm OR

pphiri@natsci.unza.zm

### *Munda Wanga Trust (Botanical Garden)*

Mr Douglas Gibbs - biopark.zamnet.zm

### *Independent*

Mr Mike Bingham - mbingham@zamnet.zm

## ZIMBABWE

### *Biodiversity Foundation for Africa*

Mr Jonathan R. Timberlake -

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bfa@gatorzw.com

### *National Herbarium (SRGH) & Botanic Garden*

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Mr Claid Mujaju - srgh@mweb.co.zw

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Ms Nozipo Nobanda (Curator) -

nnobanda@mweb.co.zw

Ms Ratidzayi (Rattie) Takawira -

rtakaw@compcentre.uz.ac.zw (also available through SRGH)

### *TEAM VUMBA - The Environmental Association for Management of Vumba's Unique Mountain Biodiversity Areas*

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Dr Shakkie Kativu - skativu@zimbix.uz.zw

Mr I Mapaure - mapaure@trep.co.zw

Dr Clemence Zimudzi - czimudzi@biosci.uz.zw

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OR ies@harare.iafrica.com

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(cycads, orchids and succulents)

Ms Meg Coates Palgrave - megcp@zol.co.zw

Mr Darrel C.H. Plowes - amackie@mango.zw

Dr Fay Robertson - faykevin@internet.co.zw

(ecology of miombo and other dry tropical woodlands)

Ms Cathy Sharp - gsharp@zol.co.zw (ecology of macrofungi, especially in miombo woodlands)

Mrs Mary Wilkins/Ellert -

hivu\_byo@telconet.co.zw

Mr Bob Dehning - dehning@mweb.co.za (trees)

## Botanists working on southern African plant taxa

This section lists e-mail addresses of a few of the botanists living outside southern Africa that are working with southern African plant taxa. If you would like to be included in this list, please notify one of the editors together with the names of the families/taxa you are working on.



## AUSTRALIA

### *Queensland Herbarium, Toowong, Queensland*

Bryan Simon -

Bryan.Simon@env.qld.gov.au (work)

bryan.simon@altavista.net (home)

(Tropical grasses)

## ENGLAND

### *IUCN - World Conservation Union*

Craig Hilton-Taylor - craigh@wcmc.org.uk

### *Royal Botanic Gardens, Kew*

Diane Bridson - d.bridson@rbgkew.org.uk

(Rubiaceae; Vahliaceae)

Dr Dick Brummitt - r.brummitt@rbgkew.org.uk

Dr Thomas Cope - t.cope@lion.rbgkew.org.uk

(Poaceae)

Dr Phillip Cribb - p.cribb@rbgkew.org.uk

(Orchidaceae)

Dr David Goyder - d.goyder@rbgkew.org.uk

(Asclepiadaceae; Fabaceae)

Ms Yvette Harvey - y.harvey@rbgkew.org.uk

(Capparaceae; Lamiaceae; Sapotaceae)

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(Fabaceae; Xyridaceae; Zingiberaceae)

Dr Alan Paton - a.paton@rbgkew.org.uk

(Lamiaceae; Verbenaceae)

Dr Sylvia Phillips - s.phillips@rbgkew.org.uk

(Eriocaulaceae; Poaceae)

Dr Gerald Pope - g.pope@lion.rbgkew.org.uk

(Asteraceae)

Dr Brian Schrire - b.schrire@rbgkew.org.uk

(Fabaceae; Rhamnaceae)

Dr Kaj Vollesen - k.vollesen@rbgkew.org.uk

(Acanthaceae: *Blepharis Duosperma*)

## GERMANY

### *Friedrich-Schiller University, Jena*

Dr Norbert Zimmermann -

dr\_N.Zimmermann@t-online.de

(Euphorbiaceae; Mesembryanthemaceae)

### *University of Bayreuth*

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(Asclepiadaceae; Mesembryanthemaceae)

Dr Ulrich Meve - ulrich.meve@uni-bayreuth.de

(Asclepiadaceae)

### *University of Cologne - Botanical Institute*

Dr Joachim Thiede -

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(Aizoaceae; Crassulaceae)

### *University of Hamburg - Institut fuer Allgemeine Botanik*

Prof. Dr HEK Hartmann -

hartmann@botanik.uni-hamburg.de

(Aizoaceae; Mesembryanthemaceae)

Dr Pia Parolin - pparolin@botanik.uni-

hamburg.de (Desert ecology;

ecophysiology)

## NETHERLANDS

### *Agricultural University, Wageningen*

Ir Ben Groen - ben.groen@hs.pt.nl

(Asphodelaceae; Mesembryanthemaceae)

Prof. Dr LJG van der Maesen -

jos.vandermaesen@algem.pt.wau.nl

(Fabaceae; Mesembryanthemaceae)

Dr Ir Jan J Wieringa - Herbarium Vadense

(WAG) - Jan.Wieringa@algem.pt.wau.nl

(Fabaceae (Leguminosae): *Aphanocalyx*

*Bikinia*, *Icuria*, *Monopetalanthus* and

*Tetraberlinia*)

## NEW ZEALAND

### *Victoria University, Wellington*

Mr Fanie Venter - venter@tasman.net

## NORWAY

### *Agricultural University of Norway - Department of Biology and Nature Conservation*

Prof. Kåre Lye - kare.lye@ibn.nlh.no

(Cyperaceae)

### *Botanical Garden and Museum, University of Oslo*

Dr Brita Stedje - brita.stedje@toyen.uio.no

(Anthericaceae; Asphodelaceae;

Hyacinthaceae)

### *Botanical Institute, The Norwegian Arboretum, University of Bergen, Hjeltestad*

Dr Cornelis Berg - cornelis.berg@bot.uib.no

(Moraceae; Ulmaceae)

## SWEDEN

### *Swedish Museum of Natural History*

Dr Mari Kallersjö - mari.kallersjo@nrm.se  
(Asteraceae; Myrsinaceae; Primulaceae)

Prof. Dr Bertil Nordenstam -  
bertil.nordenstam@nrm.se (Compositae,  
especially Senecioneae and Calenduleae;  
*Syncarpha* Colchicaceae: *Anticharis*)

### *Uppsala University*

Prof. Kåre Bremer - kare.bremer@systbot.uu.se  
(Asteraceae)

Mr Mattias Iwarsson -  
mattias.iwarsson@botan.uu.se  
(Lamiaceae: *Leonotis*)

## SWITZERLAND

### *Institute for Systematic Botany, University of Zürich*

Prof. Christopher Cook - cook@systbot.unizh.ch  
OR cook@bluewin.ch (Hydrocharitaceae;  
Limnocharitaceae; Lythraceae;  
Podostemaceae; Pontederiaceae)

## USA

### *Bishop Museum (Department of Natural Sciences) - Hawaii*

Dr George Staples -  
gstaples@bishop.bishopmuseum.org  
(Convolvulaceae)

### *Iowa State University - Department of Botany (Ada Hayden Herbarium)*

Prof. Robert S. Wallace - rwallace@iastate.edu  
(Molecular systematics and phylogeny of  
Aizoaceae s.l. (including  
Mesembryanthemaceae);  
Aloaceae/Asphodelaceae; Cactaceae;  
Didiereaceae; Nyctaginaceae;  
Phytolaccaceae; Portulacaceae)

### *University of California - Jepson Herbarium*

Bruce Baldwin -  
bbaldwin@ucjeps.herb.berkeley.edu  
(Asteraceae: *Blepharisperмум*,  
*Welwitschiella*)

### *University of Missouri-Columbia - Dunn-Palmer Herbarium (UMO)*

Dr P Leszek D Vincent - leszek@missouri.edu  
(Asteraceae: *Senecia*; Iridaceae: *Aristea*)

## WALES

### *National Botanic Garden of Wales*

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cstirton@gardenofwales.org.uk  
(Fabaceae; Hyacinthaceae; Rosaceae;  
Verbenaceae)

Last updated 25 November 2000 ☐



## 27<sup>th</sup> ANNUAL CONFERENCE OF THE SOUTH AFRICAN ASSOCIATION OF BOTANISTS

**14-17 January 2001**

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Tel: (011) 4892436  
Fax: (011) 4892411

### **PLENARY SPEAKERS**

Prof. Ermias Dagne (University of Addis Ababa,  
Ethiopia)  
Dr Anthony Bleeker (University of Wisconsin,  
USA) ☐

# Regional News Update



## News from Angola

Luanda Herbarium attended the AETFAT meeting held in Brussels with financial support from SABONET.

Two posters were presented. The poster titled "Angolan Herbaria—New Prospects" focused on a brief historical review of the Angolan herbaria, present status and the main activities carried out with SABONET funding. The new survey of medicinal plants with the SECOSUD (Service for Environmental Conservation of Biodiversity and Development) project was also described. It referred to the contribution of the national herbaria to conservation of botanical diversity and genetic resources in Angola.

The other poster, with the title "Floristic Analysis of Miombo Woodland in Huila—Angola", focused on field work carried out at Huila Province in Angola. It dealt with floristic analysis of Miombo vegetation. The main species encountered were listed, and the habitat preferences of dominant taxa were discussed. Moreover, degradation of the environment was briefly described and some biological means for the recuperation of the degraded areas were formulated.

Computerisation of our herbarium specimens is currently focused on the genera *Abrus*, *Acacia*, *Brachystegia*, *Cassia*, *Crotalaria*, *Indigofera* and *Peltophorum* □

*Esperança da Costa*



## News from Lesotho

A Red Data List working session was held at ROML from 24 to 25 May 2000. Fifty-two plants were classified according to IUCN Categories and Criteria, although some were Data Deficient. The session was attended by three people from our Roma and Maseru herbaria, one person from

Lesotho's Conservation Division and two people with a private interest. Certain recommendations were made pertaining this working session:

1. Lesotho's Red Data List plants should be revised because the number might increase every year.
2. Vegetation survey studies need to be conducted countrywide and monitored annually.
3. Photographs of Lesotho's Red Data List plants should be taken during the survey.

The Lesotho National Working Group decided to rotate SABONET staff. Khotso Kobisi has moved from MASE to ROML, Khotso Sepamo from ROML to SNPH, and Lekhooa Fokothi from SNPH to MASE. Miss Puleng Matebesi was recruited to replace Mr Motebang Molise who resigned from SABONET in July 2000.

Computerisation of herbarium specimens in the participating Lesotho herbaria is progressing well. Currently 15 monocotyledon and 31 dicotyledon families have been fully computerised.

SABONET-Lesotho has nominated Ms Bokang Theko for a BSc Hons course in systematics at the University of the Orange Free State in South Africa. Other people from Lesotho who have previously received fellowships from SABONET for further studies are Mr P. Mafa and Ms L. Kose. □

*Puleng Matebesi*



## News from Swaziland

Many exciting developments have taken place in SABONET-Swaziland in recent times. A new appointment has been made, a connection for e-mail and Internet has been secured and a successful Red Data List Workshop has been held. It is hoped that all these developments will propel

the work of the SABONET project in the country to greater heights.

It is hereby announced that SABONET-Swaziland has appointed Mr Comfort Nhleko as a Herbarium Data Specialist with effect from 1 November 2000. Mr Nhleko holds a Diploma in Agriculture from the University of Swaziland. He finished his diploma in 1998 and before joining the herbarium he was employed as a temporary teacher. With his appointment we hope the management of the herbarium and the PRECIS database work will get a tremendous boost.

A Red Data List Workshop was held on 15 September 2000. Fourteen participants attended the one-day workshop and all 198 species in the Red Data List for Swaziland were re-assessed. □

*Titus Dlamini*



## News from Namibia

WIND has had a busy time since the last update in *SABONET News* Data capture has progressed well, and so have translations. The good progress made has prompted us to start checking and cleaning our data, and we feel that this has been a good exercise. Many queries have been addressed, and a large number of quarter-degree records have been checked and added. Our data capture should be finished and the checking process well in hand by the end of next year—so for us the end is in sight. We are already reaping the rewards of having our data on tap—field trips are easier to plan, undercollected areas are highlighted and the database has made a big contribution towards the provision of a vegetation diversity map for the Namibian Atlas Project.

Although our main field season is about February to May, we undertook two trips recently—one to Diamond Area No.1, and the other to an area just west of that, but outside the restricted zone. The first trip was somewhat extreme as regards weather. We thought the wind could not possibly get worse than it was at Pomona—until we reached Boegoeberg. Aus and Rosh Pinah had had snow, so temperatures were way down, and what we wore to bed at night (everything we had

brought along) said it all. Sonja Loots asked Henk Dauth to take a picture of us—and to make us look glamorous. Ever-honest Henk simply observed that “it would be a bit difficult”. Well Bang goes **his** career as resident photographer. Jokes aside, Henk is leaving us—he starts a new career as a missionary to children next month—and he will be sorely missed. We have threatened to take him along on future field trips though, and this seems to be fine with him.

The second trip was aimed at assessing the status of *Aloe pillansii* in Namibia. This was an extremely successful trip and you will be reading all about it soon. I might just mention that this species prefers only the highest mountains in the south—it took ages just to reach the things, never mind assess them. However, at the rate of one population a day, we think we did a reasonable job, and we are a lot fitter too, especially Henk and Sonja. Our SABONET vehicle was subjected to a major test during the trip—we took it over MacMillan’s Pass—and it passed (no pun intended) with flying colours. Going up as well as down we let it drive itself in first gear, low range, releasing all pedals and using the choke to adjust revs. This method works very well over extreme terrain, and it has the additional advantage of freeing up part of your brain for making mental promises to be a better person in future if you get through alive. I must confess I would have preferred not to have been driving on alloy rims, yet if the chariot can make it there, it can make it anywhere, as the song goes. As a reward for our courage we found another population of *A. pillansii*.

Our plans for the near future include a trip to undercollected squares in the central-east (Omaheke Region) of Namibia—but this will only be in April next year. We are also looking forward to getting our trainee, Silke Bartsch, back from UCT. We hate being short of slaves.

We welcome Stefan Siebert and wish all SABONETeers a very happy festive season and a great year ahead. □

*Coleen Mannheimer*



## News from Zimbabwe

The National Herbarium and Botanic Garden of Zimbabwe has published a brochure entitled *Zimbabwe's National Botanic Garden Map and Guide*. This brochure, which was sponsored by the Botanic Garden Fund and Astra Limited, briefly describes all the sections of the Garden. The brochure has been complemented with the development of a nature trail, which highlights the prominent plant species in each section. The brochure is being sold at a cost of Z\$50.00. Other new developments include the purchase of a tractor as well as the construction of a workers' kitchen complex that comprises a locker room, a rest room and a kitchen. □

*Soul Shava*

### In the April 2001 edition of *SABONET News*...

- SABONET Mid-Term Review
- Living collections: National Botanic Garden, Zimbabwe, and the Botanic Gardens of Malawi
- Southern African herbaria: National Herbarium, Namibia
- Regional Plant Red Data List
- The Paper Chase
- Regional News Update

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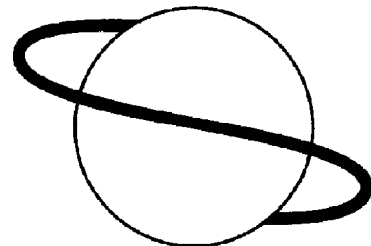
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