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NEWS-LETTER OF THE SOUTH AFRICAN ASSOCIATION OF BOTANISTS
NUUSBRIEF VAN DIE SUID-AFRIKAANSE GENOOTSKAP VAN PLANTKUNDIGES

COUNCIL FOR 1974/75: The following members will serve on the Council for 1974/75:-

President: Prof. O.A.M. Lewis
Vice Presidents: Dr. B. de Winter
Dr. A. Jacot-Guillarmod
Hon. Secretary : Dr. B.H. Downing
Hon. Treasurer : Prof. J.A. de Bruyn
Members : Dr. C. Breen, Prof. C.F. Cresswell, Dr. D. Edwards,
Dr. A. Eicker, Dr. F.M. Getliffe, Prof. B.R. Roberts,
Prof. H.P. van der Schijff, Prof. N. Grobbelaar,
Prof. W.J. Lütjeharms, Prof. M.C. Papendorf.

The new Executive consists of the President, Vice Presidents, Hon. Secretary, Hon. Treasurer and the Immediate Past President, Prof. C.F. Cresswell.

The Branch Representatives are: Dr. A. Eicker (N. Tvl.), Dr. A. Jacot-Guillarmod (E. Cape), Prof. W.J. Lütjeharms (SW Cape) and Prof. B.R. Roberts (OFS).

The new members are Dr. B.H. Downing, Prof. J.A. de Bruyn, Dr. D. Edwards, Prof. N. Grobbelaar and Prof. W.J. Lütjeharms.

NOTE - NEW ADDRESSES: Please make a note of the following for correspondence:

Hon. Secretary: Dr. B.H. Downing
Department of Botany
University of Fort Hare
ALICE
5700

Hon. Treasurer: Prof. J.A. de Bruyn
Department of Botany
University of Stellenbosch
Stellenbosch
7600

WORK OPPORTUNITIES FOR PROFESSIONAL BOTANISTS:- Questionnaires requesting details of the number and types of degreed botanists on their respective staffs were sent to all the universities, to museums, government and provincial departments and some private firms. Rhodesia, Botswana, Lesotho, Swaziland, Mocambique and Angola

were included. The questionnaires also requested the supply of details concerning existing vacancies for botanists.

Questionnaire recovery was 75%, the returns from the university section being particularly good. Unfortunately it has not been possible to obtain employment figures from the Education Departments of the four provinces, probably the largest employers of graduated botanists in the country, but it is hoped that these details will be available in the near future.

Replies to the questionnaire have been divided into three groups:-

- (1) Those from universities
- (2) Those from state or semi-state institutions concerned with management of the environment (Parks Boards, Conservation Boards, Transport Departments, Regional Planning Departments, City Parks Boards etc.)
- (3) Those from Plant research institutions and museums. As nil replies were received from industrial and commercial concerns approached, it must be assumed that opportunities for botanists in these fields are small or non-existent.

The facts revealed by the questionnaire returns are as follows:

I. Professional botanists employed by universities: Their numbers and fields.

(13 replies)

<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>	<u>I</u>
<u>Physiol.</u>	<u>Taxon.</u>	<u>Ecol.</u>	<u>Mycol/</u> <u>Pathol.</u>	<u>Genet.</u>	<u>Anat/</u> <u>Cytol.</u>	<u>Phycol.</u>	<u>Morphol.</u>	<u>General</u> <u>(non-</u> <u>special)</u>
34	27	12	15	6	6	8	13	10
(26%)	(21%)	(9%)	(11%)				(10%)	

TOTAL: 131

Vacancies:

3	1		1	1				
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II. Professional botanists employed by Plant Research Institutes and Museums:

Their numbers and fields.

(17 replies)

<u>Physiol.</u>	<u>Taxon.</u>	<u>Ecol.</u>	<u>Mycol/</u> <u>Pathol.</u>	<u>Genet.</u>	<u>Anat/</u> <u>Cytol.</u>	<u>Phycol.</u>	<u>Morphol.</u>	<u>General</u> <u>(non-</u> <u>special)</u>
8	35	19	3	7	-	5	-	8
(9%)	(41%)	(23%)						

TOTAL: 85

Vacancies

3	1	2	1					
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III. Professional botanists employed by institutions concerned with environmental management: Their numbers and fields. (16 replies)

A	B	C	D	E	F	G	H	I
<u>Physiol.</u>	<u>Taxon.</u>	<u>Ecol.</u>	<u>Mycol/</u> <u>Pathol.</u>	<u>Genet.</u>	<u>Anat/</u> <u>Cytol.</u>	<u>Phycol.</u>	<u>Morphol.</u>	<u>General</u> <u>(non special)</u>
3	4	16 (34%)	-	1	-	-	6	17 (36%)

TOTAL: 47

Vacancies

1 1

Categories II and III combined (i.e. Professional botanists outside universities).

A	B	C	D	E	F	G	H	I
<u>Physiol.</u>	<u>Taxon.</u>	<u>Ecol.</u>	<u>Mycol/</u> <u>Pathol.</u>	<u>Genet.</u>	<u>Anat/</u> <u>Cytol.</u>	<u>Phycol.</u>	<u>Morphol.</u>	<u>General</u>
11 (8%)	39 (30%)	35 (27%)	3 (2%)	8 (6%)	-	5 (4%)	6 (5%)	25

TOTAL: 132

Categories I, II and III combined (i.e. ALL professional botanists).

<u>Physiol.</u>	<u>Taxon.</u>	<u>Ecol.</u>	<u>Mycol/</u> <u>Pathol.</u>	<u>Genet.</u>	<u>Anat/</u> <u>Cytol.</u>	<u>Phycol.</u>	<u>Morphol.</u>	<u>General.</u>
45 (17%)	66 (25%)	47 (18%)	18 (7%)	14 (5%)	6 (2%)	13 (5%)	19 (7%)	35 (14%)

GRAND TOTAL: 259

Vacancies:

6 3 3 2 1

Total vacancies: 15

Conclusions:

(1) Universities are the largest employers of professional botanists in the country (50% of the numbers recorded in this report). No figures from Education Departments are available, however. Of the remainder, 32% are employed by Research Institutes and Museums (50% of these are in the employ of the B.R.I., only 7% on the staff of Museums) and 19% by Environment Control Institutions.

(2) At the Universities 26% of botanists are employed as physiologists, 21% as taxonomists, 11% as mycologists and only 9% as ecologists. Outside the Universities, 30% of botanists are employed as taxonomists, 27% as ecologists and only 8% as physiologists.

(3) At the present moment it would appear that the greatest demand for botanists in the country lies in the fields of taxonomy and ecology. In universities a strong demand for physiologists also exists. It would seem that the universities could be devoting more attention to the training of ecologists/taxonomists to meet the country's present needs in botanical manpower.

(4) It is significant that not a single City Council in the country employs a trained botanist, in spite of the tremendous amount of environmental planning that has to be carried out by these bodies. This should be a matter of great concern to environmentalists throughout the country.

(5) An important aid in ensuring that botanists play the role they should in development of the country would be to undertake a projection of this survey to indicate where botanists COULD and SHOULD be employed (e.g. 5 above). This information could be placed at the disposal of the country's official planning bodies for implementation.

It is realised that the division of botanists into the sub-groups listed in the tables is somewhat arbitrary and artificial, but to have done otherwise would have introduced too many complications. For those who wish to do so, please read "plant scientist" for "botanist".

(O.A.M. Lewis, Convenor of Committee).

MR. F.J. KRUGER, Research Officer and Officer-in-Charge of the Jonkershoek Forest Research Station, Stellenbosch, is at present on a tour overseas studying the role of fire in sclerophyll vegetation of the Mediterranean type ecosystems. His particular aim is to study the Australian communities and to seek parallels with the fynbos ecosystems of South Africa. Research techniques will also receive his attention.

A subsidiary object is to examine and discuss means of automating data capture and processing in catchment research. The aim is to come to a decision as to what kinds of systems, if any, are appropriate to the problems of catchment research in South Africa.

He left at the end of July and visited München and Göttingen in Germany, particularly Prof. A. Baumgartner in connection with the Sölling project. He then visited England principally the Institute of Hydrology at Wallingford, the Forest Fire Laboratory at Riverside and San Dimas Experimental Forest in California before going to Australia. In Australia he will be based at the Australian National University in Canberra.

He will be returning to Stellenbosch in February 1975.

RESEARCH GROUP ON INVASIVE PLANTS IN CAPE VEGETATION:- A need has been recognised in the South-Western Cape for the co-ordination of research on invasive trees and shrubs in the outstanding natural vegetation of the region. It is hoped to meet this need with a new Research Group, established at a meeting held at the University of Cape Town on 10th July, 1974.

This meeting was attended by conservationists, botanists, foresters and zoologists drawn from Universities and a number of Government Departments. The work of the new Group was started directly by identifying a number of immediate research priorities. It was noted that the natural vegetation of the South-Western Cape was regarded as one of the five richest in the world, and that the invasive trees and shrubs offered a high level of threat to many of its important species. A first priority was to seek the appointment of a Research Officer to carry out highly desirable studies of regional and local abundance changes of the invasive species, their floral biology and important details about their seeds. The chief invasive species are - *Hakea* spp., *Acacia* spp., and *Pinus pinaster*. Copious fertile seed is produced by the Rooikrans (*Acacia cyclops*), some ten thousand per square metre under a mature bush, most being probably capable of germination for up to some one hundred years. Attention was drawn to the excellent work of the Plant Protection Research Institute in investigating control of the invaders with seed-attacking insects. The new Research Group will collaborate closely with the Working Group on Terrestrial Weeds and Poisonous Plants, established by the National Programme for Environmental Sciences. (A.V. Hall)

BOTANICAL ART EXHIBITION: Miss Herrat March formerly of the Botanical Research Institute, will have her first one man exhibition from 21st to 26th October in the Department of Architecture, University of Pretoria, Lynwood Avenue, Pretoria.

Miss March held her first exhibition in October 1969 in Ottawa, together with Canadian artist, Gwenda Lambton. She has participated with her botanical paintings in three group exhibitions in South Africa, e.g. "Botanical Studies from the National Herbarium" in the Pretoria Art Museum, "International Botanical Art" in Johannesburg, Durban and Cape Town, "New Signatures" at the Art Association in Pretoria earlier this year. She will be holding two exhibitions with her botanical paintings overseas next year.

ZOO-HISTORICAL GAZETTEER by C.J. Skead, 1973. Vol. 10, Annals of the Cape Provincial Museums: i-v & 1-259. (Pub. jointly by the Cape Provincial Museums at the Albany Museum, Grahamstown, South Africa. Price: R6-00).

This detailed work covers most of southern Africa south of the Kunene and Zambezi rivers and a few localities of zoological importance farther north. Prepared for zoologists (especially those dealing with higher vertebrates), it provides an invaluable guide to place names, not only for those at whom it is directed, but also for many others, including botanists.

Such a guide is needed more today than ever before, as attempts are made to standardise spellings or to introduce new orthographies, as new territories emerge with their own identifies and with reversion to older spellings or to place names not hitherto known to European (white) scientific workers, in Africa or elsewhere. There are also the historical changes of name, which become so difficult to trace out in literature without a course in local history. Examples of these are:- Ponte da Pescaria - Durban Bluff; Se-Whoi-Whoi - Que-Que river; Port Lessie - Cawood's Bay; Qonce - Buffalo River; Princess Wilhelmina's River - Caledon River.

The many Buffalo Rivers, Buffelshouts, Buffelhoeks and other terms including the word Buffalo/Buffels, or other of our repetitive southern African names, are sorted out into today's localities, greatly to the relief of anyone dealing with older works or specimens collected many years ago, and writing up articles now. Many weary hours paging through documents, old books of travel and so on, can be avoided by using this work, while not all of us have access to old maps and atlases.

Though not intended for botanical use, this is a most helpful publication, worthy of a place on one's shelves. An additional feature which is most useful is the giving of the map reference in standardised latitude/longitude form (e.g. Grahams-town is 3319/2632).

For overseas workers too, this will probably come as a great relief, bringing some sense and system into the varied languages (English, Afrikaans, Portuguese, Dutch, French, Swedish, German and numerous African ones) from which place names have been formed in southern Africa. (A. Jacot Guillarmod.)

POSTS RECENTLY ADVERTISED: Applications were invited recently for the posts of lecturer in Microbiology and lecturer/senior lecturer in Plant Physiology in the Department of Botany of the Division of Biological Sciences in the University of Rhodesia.

Unfortunately the advertisements were received too late for inclusion in the September Forum. The closing date for applications was 31 August. However, it is felt that the following information given in the advertisement will be of interest to S.A.A.B. members.

For the applications special consideration was given for the microbiology post to those with experience in plant virology and serology and for the post in plant physiology, applicants would be required to take responsibility for all teaching and research.

The Departments of Botany and Zoology are combined into the Division of Biological Sciences. Chairman of the Division and Head of Zoology: Prof. E. Bursell. Head of Botany: Prof. H. Wild. In 1974 establishment of the Division is 2 professors and 15 lecturers. The technical establishment comprises a senior chief technician, 12 technicians (various grades) and 13 technical assistants.

The above figures refer to the permanent establishment. There are a number of research fellows and ancillary technical staff appointed under research grants.

The Division buildings comprise about 3 000 sq. metres (60 000 sq. ft.) and include 4 lecture theatres and 8 teaching laboratories, in addition to a variety of special facilities such as, for example, 11 constant temperature rooms, a plant physiology laboratory and a hydrobiology laboratory. Adjacent to the buildings complex there is an experimental garden with greenhouses and an animal house. A new stores complex has recently come into operation. The Division maintains a fleet of four land rovers for field work.

Students in the Division are prepared for undergraduate courses in Botany and Zoology at pass and honours levels and for undergraduate courses in Agriculture. Postgraduate M.Sc. courses are offered in Tropical Phytopathology, Plant Physiology, Tropical Resource Ecology and Tropical Entomology. Two year M. Phil. and three year D. Phil. degrees are also offered.

The appointees would be responsible for teaching undergraduate courses in plant physiology and a one year M.Sc. course in plant physiology, and for conducting and supervising research in the Plant Physiology section.

The appointee in the physiology post will be encouraged to develop an active group of postgraduate students for eventual employment in various Government and commodity research establishments throughout the country.

The Plant Physiology section comprises a large, well equipped general laboratory, a postgraduate laboratory and a suite of constant temperature rooms, dark room, etc. Supporting facilities include two photoperiod rooms, a heavy instrument room and two temperature controlled greenhouses. The section is well provided with instrumentation for teaching and research including G.L.C., and infra red CO₂ analyser, Gilson respirometer, Tri-carb scintillation spectrometer and numerous other items.

An electron microscope, a scanning electron microscope, radio isotope facilities,

workshops, photographic darkrooms and the facilities of a chemical analysis service laboratory are also available.

The physiology section is staffed by an experienced technician and a technical assistant.

There is a D. Phil. student engaged on research into the control of abscission in cotton.

A wide spectrum of research interest is covered by members in the Division of Biological Sciences, including: Hydrobiology, physiology of symbiosis and N. fixation, plant taxonomy and phytogeography, geobotany, insect biochemistry, parasitology, ecology, vertebrate and invertebrate physiology, etc.

The appointees to the microbiology post will be responsible for teaching in undergraduate microbiology and plant pathology courses in the Departments of Botany and Agriculture and in the M.Sc. course in plant pathology, and for conducting and supervising research in the Microbiology section.

There is ample scope and opportunity for research in plant virology. The Microbiology section occupies a single floor in the Botany Department. There are two large research laboratories, service rooms, constant temperature and instrument rooms and all the necessary facilities for Microbiology, including Virology, research. In addition there is a large controlled temperature and humidity, multi-cubicle greenhouse especially designed for plant pathological research. An electron microscope and scanning electron microscope, radio isotope facilities, workshops, darkrooms and animal houses are also available.

In the Microbiology section there are three members of academic staff (including a bacteriologist, mycologist and virologist), two research fellows, two research technicians and two research technical assistants.

There are at present four postgraduate students (M. Phil.) in the Microbiology section, working mainly on epidemiological and etiological problems in plant diseases. There is also some emphasis placed on research into the physiology and biochemistry of host-parasite relationships.

POSTS VACANT: UNIVERSITY OF FORT HARE: Applications are invited until 14th October from suitably qualified persons for appointment to the following posts:

Lecturers/...

Lecturers

- Post 1. Senior Lecturer/Lecturer: Physiology or Plant Taxonomy.
Post 2. Lecturer: Physiology or Plant Taxonomy.
Post 3. Lecturer: An interest in either Anatomy, or Ecology, or Taxonomy of the lower plants is recommended.

Favourable consideration will be given to applicants possessing at least an M.Sc.

Date of assumption of duty: 1st January, 1975.

Bantu Technical Assistant

Minimum requirements: Matriculation. A B.degree will be a strong recommendation.

Date of assumption of duty: 1st January, 1975.

General

In addition to the substantive salary (information obtainable from the Registrar), the following are payable to permanent staff members:

Vacation savings bonus as applicable to Public Servants

Non-pensionable allowance of up to 2½%

Territorial allowance of R150 p.a. subject to certain conditions.

Additional fringe benefits include group life assurance, medical-aid (subject to certain conditions) and pension scheme. Generous leave privileges, and financial assistance towards the university education of children.

Applications to: The Registrar
University of Fort Hare
Private Bag 314
ALICE, C.P.
5700

AETFAT CONGRESS: The eighth Congress was held in Geneva from 16-21 September at the Natural History Museum.

The following South Africans attended the Congress:- Prof. H.P. van der Schijff and Mr. G.K. Theron (University of Pretoria), Dr. B. de Winter, Dr. O.A. Leistner, Mr. H.C. Taylor, Miss M.F. Thompson and Mr. H. Tölken (Botanical Research Institute), Mr. O. Kerfoot (University of Witwatersrand), Dr. J.J.A. van der Walt (University of Stellenbosch) and Mr. J.J. Lavranos of Johannesburg.

The following papers were delivered by them:

- Lavranos: Note on the northern temperate element in the flora of the Ethio-Arabian region.
- De Winter: The distribution of arid plants and their bearing on the origin of the South African flora.
- Van der Schijff: The distribution and some interesting morphological and taxonomic aspects of *Podocarpus* in Africa.
- Van der Schijff: The genus *Dioscorea* in South Africa.
- Kerfoot: Origin and speciation of the Cupressaceae in sub-Saharan Africa.
- Theron: The distribution of summer rainfall *Protea* spp. in South Africa with special reference to aspects on the ecology of *Protea caffra*.
- J.W. Morris & Leistner: Progress with the computerisation of the National Herbarium, Pretoria.
- Van der Walt: Aspects of the genus *Commiphora* in Southern Africa.

Papers read by delegates for non-attendants were:

- K.D. Gordon-Gray & C.J. Ward: Floral variation in *Acacia karroo* in Eastern South Africa.
- P.J. Robbertse: Morphology of the leaf of South African Acacias.
- M.J.A. Werger & D. Edwards: Vegetation studies (mapping) in South Africa (read by Werger).

On South African subjects the following were delivered:

- H.D. Ihlenfeldt: Some trends in the evolution of the Mesembryanthemaceae.
- H.E.K. Hartmann: Speciation in Mesembryanthemaceae.

The Congress was followed by a half-day excursion to the Dôle in the Jura Mountains.

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- Mr. E.G.H. Oliver, Botanical Research Unit, Stellenbosch (Production)
- Miss. M. Welman, Miss S. Zwanziger, Mr. N. Pienaar, BRI, Pretoria (News)

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