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

BOTANICAL RESEARCH INSTITUTE - REPORT FOR 1978/79: Progress with botanical research has been good and the rate of publication has been maintained at a high level, a usually reliable indication of the state of field. The steady increase of the volume of material submitted for publication in the botanical journals of the Institute has made it necessary to investigate alternative methods of publication and funding to offset the steep rise in costs.

The need for more research in the plant-taxonomic and ecological fields is becoming increasingly evident and pressures building up will require a positive response in addition to the efforts already being made by the Department. The real awareness of environmental problems and their vital importance to man, which already exists and is growing, will make a large input into biological research, especially plants, unavoidable in the near future. Nevertheless, the contributions to both the fields mentioned, as is evident from this report, have been considerable.

The control of weeds particularly from a pasture point of view will require careful research planning as well as increased efforts to control, in order to deal with a potentially dangerous situation. In this respect, nassella tussock, Australian acacias, and jointed cactus and other members of this family, are examples of what can happen if weeds are allowed to get out of hand. Research on botanical aspects of weeds has therefore been regarded as of high priority. Amongst other activities, the compilation of a national weed list, which is now complete, is the first step towards monitoring weeds and establishing the status of potentially harmful plants with a view to control before the exponential stage of distribution expansion is reached.

The use of electronic devices and computers in research and information services is a fast expanding activity. The vast and complicated data bank for herbarium type information is now, after several years of activity, nearing the productive stage. It will provide a strong stimulus for types of research which, without this facility, would not have been possible, such as the large-scale production of distribution maps and check lists of a range of geographical areas.

The trend towards the integration of botanical research into environmental planning and development of the country has been maintained but, as said earlier, research will have to be expanded to keep pace with the demand for information.

There follows here reports of the activities of the various sections within the Institute. In this issue of Forum we will cover the Herbarium Services, Flora Research, and Plant Anatomy Sections, and those of the Botanical Survey, Data Processing, Economic Botany, and Garden Sections will appear in the next issue.

Herbarium Services Section: The five herbaria of the Institute continued to identify plants and provide information for a wide range of people including officers of the Institute, various State and Provincial Departments, universities and the public in South Africa and neighbouring countries.

National Herbarium, Pretoria (PRE): A total of 17 575 specimens was named and 706 visitors dealt with. Accessions to the herbarium numbered 26 571. During the year 8 300 specimens were sent out on loan to local and overseas researchers.

A few minor expeditions were undertaken to the eastern Transvaal. The main expedition was organised in conjunction with Prof. H.D. Ihlenfeldt and Dr H. Hartman of Hamburg. Originally it had been intended to mount a major expedition to the Southern Namib Desert in the area between Lüderitz and the Orange River; as a result of the poor rains only Messrs D.S. Hardy and S. Venter went from the Institute.

The repackaging of the moss collection has been completed and a start has been made on the liverworts. When these have been completed, the lichen collection will be tackled. The move to the new cryptogamic herbarium in the basement will take place during September 1979. It is hoped that the Herbarium will obtain the services of a lichenologist.

A new herbarium procedure was introduced with the establishment of a service room in the basement. This has centralized such activities as the receipt and dispatch of specimens for identification, loans, exchanges, and the preparation of herbarium labels.

On December 6th the Director and Mr E.G.H. Oliver attended the official opening of the Venda Herbarium at Tate Vondo in the eastern Soutpansberg in the Venda Homeland. The opening was performed by the Venda Minister of Agriculture and Forestry and attended by the Chief Minister and remainder of the Cabinet.

Among the numerous visitors who came to consult the collections and staff were the following:- Prof. H-D. Ihlenfeldt and Dr H. Hartman (Hamburg), Dr Juliet Prior (London: Swaziland Archeological Association), Prof. D. and Dr U. Müller-Doblies (Berlin), Mr R.B. Drummond and Mr I.C. Leach (Salisbury), Dr O.J. Hansen (UNDP, Botswana) and Dr H. van Gils (Botswana).

Wing A: Mr P.J. Vorster left the Institute in February to take up a post in the University of Stellenbosch. He completed his work on Mariscus for which he obtained his doctorate. Mrs E. van Hoepen took over control of this Wing.

Miss Smook continues with work on grasses and will assist Dr E.G. Gibbs-Russell with the treatment of grasses for the Flora.

Miss C. Reid began in February and is concentrating on petaloid monocots.

Dr R.E. Magill produced a checklist of the mosses (591 spp.) and liverworts (316 spp.) for Southern Africa and is continuing with revisions for the Flora. His assistant Mr J. van Rooy is dealing with most identifications and is working on Bryum.

Wing B: Mr T.H. Arnold left the Herbarium in November on transfer to the Economic Botany Section. He completed the curating and updating of the Cyperaceae resulting from his investigations at Kew.

Mr G. Germishuizen resumed charge of the Wing and has now taken up Polygonaceae for his research project. He has also been working on the botanical text for a book on medicinal and edible plants.

Mr D.A. Davies joined the staff in January and has been doing general naming and curating.

Wing C: Miss E. Retief has begun with a study of the Campanulaceae of Southern Africa. She delivered a paper on seed collections at the Annual Congress of the South African Association of Botanists in Stellenbosch.

Mr P.P.J. Herman joined the staff in March. He had already begun doing an M.Sc. degree on the anatomy of Pavetta.

Mrs M. Crosby moved to this Wing in January to assist with general identifications.

Mrs J.L.M. Grobler also moved back to this Wing as a result of Miss M. Evans having left in February. Mr S. Venter left in February to resume his studies.

Mr C. Hildyard has decided to take up botany as a career and is studying at the University of Pretoria. He is employed on a part-time basis.

Wing D: Miss W.G. Welman continues to be responsible for the Wing. She has recently taken over as South African extractor for Excerpta Botanica.

Mrs S. Smithies gained her M.Sc. degree with distinction at the Witwatersrand University with a thesis entitled 'Studies in the Middle Ecca (Lower Permian) Flora from Hammanskraal, Transvaal, with emphasis on the Glossopterid fructification'.

Mr G. Goosen joined the staff in February and will be going to university next year to do a B.Sc. degree.

Service Room: Mrs I. Ebersohn began in January and Mrs G.L. Radmacher in July 1970. The work in the Service Room is controlled by Mrs E. van Hoepen.

Natal Herbarium, Durban (NH): A total of 1 459 specimens was named and 414 visitors dealt with. Accessions to the herbarium numbered 3 167.

Mr P.C.V. du Toit is continuing with his work on Pentaschistis (Poaceae).

Mrs H.M.A. du Toit left the staff last year and her place was taken in February by Mrs B.J. Pienaar who worked for the first six months in the National Herbarium in Pretoria gaining experience. Miss A. Wright took over as technical assistant from Miss A.M. King who left in October.

Prof. K. Schlosser of Kiel, West Germany, again visited the Herbarium in connection with work on trees and associated folklore.

Albany Museum Herbarium, Grahamstown (GRA): A total of 2 528 specimens was named and 598 visitors dealt with. Accessions to the herbarium numbered 1 181.

Mrs E. Brink continues as Curator of the Herbarium. Miss G.V. Britten was transferred to the half-day post after serving for 57 years on the full-time staff. Colonel R.A. Bayliss left at the end of December.

Government Herbarium, Stellenbosch (STE): The number of specimens named totalled 4 853 with 333 visitors requiring information. Accessions to the herbarium numbered 1 696.

Mrs M.F. Rand (née Thompson) is continuing with her work on Hypoxidaceae and completed a revision of the small genus Pauridia. She is now dealing with Spiloxene. She delivered a paper on generic differences in the family at the S.A.A.B. Congress in Stellenbosch.

Miss L. Hugo completed her work on the section Campylia in Pelargonium and has submitted it for an M.Sc. degree at the University of Stellenbosch.

Miss A.M. Pieterse left the staff at the beginning of 1970 and was succeeded by Miss G. Garwood.

Several local collecting trips were undertaken, in particular to the site of the large Theewaterskloof Dam to record the flora before final inundation.

S.W.A. Herbarium, Windhoek (WIND): A total of 6 017 specimens was named and 366 visitors dealt with. Accessions of 2 386 specimens for the year brought the holdings up to 39 167.

Mr M.A.N. Müller continues to run the herbarium and work on a revision of Eriocephalus. His duties include lectures at the Neudamm Agricultural College and the Tsumis Agricultural College. He is also responsible for the issue of phytosanitary certificates and export permits for local products among which are the dried roots of Harpagophytum procumbens (Pedaliaceae).

Mr H.J.W. Giess continues his work on the local flora in conjunction with the Botanische Staatssammlung, München. He was recently awarded the Certificate of Merit by the South African Association of Botanists for his outstanding and valuable contributions to botany in South West Africa/Namibia.

Mrs J.L. van Aswegen and Mrs H.E.J. Stoffberg are still on the staff, the latter now in the newly created full-day post.

Flora Research Section: The main task of this Section is the preparation of floras of the subcontinent dealing with flowering plants, and cryptogams as well as fossils. Dr O.A. Leistner continues as officer-in-charge of this Section. Dr H.R. Tölken left the Institute in February to take up an appointment with Dr J.P. Jessop at the State Herbarium in Adelaide, South Australia. His place was taken by Dr E. Gibbs-Russell who was formerly at the University of Fort Hare. She has begun research on grasses.

Flora of Southern Africa: The third introductory volume to this series was published: a Bibliography to South African Botany (up to 1951) by Mr A.A. Bullock, formerly of Kew. This work of 194 pages contains some 10 000 references and consists of two parts, an author index and an index to plant groups. It comprises mainly taxonomic literature but deals also with ecology and other fields of botany.

Two volumes are in preparation for the series on Cryptogams.

vol. 11. A check list of the 907 species of mosses known in the region was published by Dr R.E. Magill. These species belong to 282 genera and 87 families. First drafts of the treatment for the Flora were completed for 71 species, and a total of 86 species was figured in detailed pencil drawings by Mrs Rita Weber.

vol. 12. In preparation for this volume on ferns a check list of the 241 known species and varieties was produced by Prof. E.A. Schelpe of the Bolus Herbarium and circulated. Most illustrations for this work have been completed by Mrs R.C. Holcroft and others and the greatest portion of the research work has already been done.

In the series on Flowering Plants the following volumes or parts thereof are at an advanced stage of preparation.

- vol. 3. A revision of the 65 species of Mariscus (Cyperaceae) and related genera by Dr P.J. Vorster was accepted as a D.Sc. thesis. In the complex genus Ficinia (Cyperaceae) more than 40 of the estimated 70 species have been researched in depth by Mr T.H. Arnold. A study of the pattern of silica deposition in the epidermis of seeds is providing an important aid in this investigation.
- vol. 4. part 2. Work on Xyridaceae, Eriocaulaceae, Pontederiaceae and Juncaceae, totalling 42 species, was completed by Mrs A.A. Mauve. Commeliaceae, the family still outstanding for this part, is being dealt with jointly by Prof. J.P.M. Brenan, Dr R. Faden and Mrs A.A. Mauve.
- vol. 5. In the Liliaceae Mrs A.A. Mauve progressed well with work on genera related to Urginea and she completed a publication on the genus Sypharissa.
- vol. 10, part 1. This part on Loranthaceae and Viscaceae by Prof. D. Wiens of the University of Utah and Dr H.R. Tölken, formerly of the B.R.I., has gone to press and should be available before the end of 1979.
- vol. 11. Revisions of Lampranthus and Gibbaeum (Mesembryanthemaceae) have been submitted for publication in the Contributions of the Bolus Herbarium by Dr H.F. Glen, who is now studying the sub-tribe Ruschiinae.
- vol. 14. In this volume on Crassulaceae by Dr H.R. Tölken, revisions of the following genera were completed: Cotyledon, Tylecodon, Kalanchoe and Adromischus. The revision of the genus Crassula, which was published in the Contributions of the Bolus Herbarium last year, is being converted to Flora format and the entire volume should be ready for the printers early in 1980.
- vol. 21. A treatment of the family Tiliaceae written many years ago by Prof. H. Wild is being prepared for publication. The 93 species of sub-genus Hermannia of Hermannia written up by Dr I.C. Verdoorn were submitted for publication in Bothalia.

vol. 25. A revision of *Grisebachia* (Ericaceae) will be going to press soon and work on Thumnus and Platycalyx of the same family was completed.

vol. 27, part 4. This part which is being prepared by Dr R.A. Dyer deals with a total of 130 species belonging to Brachystelma, Ceropegia, and Riocreuxia (all Asclepiadaceae). It has gone to press and should appear before the end of 1979.

vol. 28. Work on Lamiaceae, a family comprising about 250 species, should be completed by Dr L.E. Codd before the end of 1981.

Palaeoflora of Southern Africa: A revision of Dicroidium, a genus of seed-ferns, is being prepared for publication in a volume on the Upper Triassic Molteno Formation by Drs J.M. and H.M. Anderson. Complete copy for this volume is being typeset on a compositor in the Institute. Large composite photographic plates are compiled and will be reduced to the eventual A4 size. A world-wide review of genera of megaplants of the Permo-Triassic is being compiled by the same two authors with the co-operation of various authorities from different countries. It is planned to publish this work as an introductory volume to the series.

Botanical collectors in Southern Africa: For this work, which is being written by Miss M.D. Gunn and Dr L.E. Codd, the encyclopaedia dealing with plant collectors in alphabetical sequence was completed except for a few late entries which must still be included. An historical introduction was written to provide a chronological account of early collecting activities and of literature dealing with Southern African plants, with emphasis on illustrations, up to the time of Linnaeus.

Register of plant taxonomic projects: A new edition of this register, listing some 300 current projects on African plants, is in the last stages of preparation and will again be distributed world-wide in form of microfiche cards.

Southern African Plants: Material for a brochure on 20 of the most important water weeds in the region was compiled. For each species two to three colour photos and a distribution map are provided. The text comprises a short description, a comparison to related species, a note on distribution and paragraphs on ecology, importance, derivation of the scientific name and literature.

Pretoria Flora: With the completion of a further 298 line drawings only 40 species remain to be illustrated. Special attention was given to the large and difficult families Poaceae and Fabaceae. The 235 species of grasses were figured by Mrs Hester Wouda-du Toit while Mr P.C.V. du Toit wrote the text. Dr H.R. Tölken compiled the text for Fabaceae while Mrs R.C. Holcroft did most of the illustrations.

Ceropegia and related genera: A fully illustrated account of the genera Ceropegia, Brachystelma and Riocreuxia by Dr R.A. Dyer is in the final stages of preparation. It will provide information additional to that given in volume 27,4 of the Flora of Southern Africa and will cater for the world-wide interest in the group by amateurs.

Liaison Officer, Kew: The officer, Mr C.H. Stirton, was active along a broad front, especially in the fields of weed research, the taxonomy of Fabaceae and pollination biology. He participated in several symposia and scientific gatherings in the United Kingdom and on the Continent. Numerous herbaria were visited in the course of his research on the weed genera Lantana and Rubus as well as the genera Eriosema, Psoralea and related groups. Problems from different fields of botany were researched for scientists and institutes in South Africa and abroad and information was exchanged with botanists around the globe.

Plant anatomy: Mr R.P. Ellis who is in charge of this new Section continued his work on the anatomy of the Kranz syndrome in the southern African grasses. Very good correlations were found between the distribution of 'malate' and 'aspartate' type C₄ grasses in South West Africa and the rainfall. Malate formers were shown to increase with increasing precipitation whereas aspartate formers decreased and were most common in the Namib and pre-Namib areas. This is the first time that an ecological relationship has been demonstrated for these sub-types of the C₄ photosynthetic pathway. This has been possible only because of the extensive collection of grass leaf blade anatomical preparations assembled during the course of this project.

A further two field trips were undertaken to the Drakensberg mountains in Natal to collect and study members of the genus Merxmullera. Anatomical results clearly demonstrate that, in both M. disticha and M. stricta, three distinct anatomical "forms" all have characteristic leaf anatomy, display morphological similarities as well as having similar habitat requirements, and appear to warrant taxonomic status.

The most serious infestations of the noxious weed, Opuntia aurantiaca, occur in the eastern Cape area. Dr T.B. Vorster and Mr T.H. Arnold visited this area and determined, by cytogenetical studies, that in South Africa this problem plant originating from Argentina, is represented by only one biotype. In Argentina O. aurantiaca forms a complex consisting of hundreds of biotypes, but Dr Vorster is of the opinion that the plant which has invaded the eastern Cape is the vegetative progeny of a single plant, or a few genetically identical plants. Dr Vorster left the Institute at the end of June to work for the Anglo-American Corporation on a project dealing with sources of fuel from various plants.

UNIVERSITY OF THE WITWATERSRAND, DEPARTMENT OF BOTANY AND MICROBIOLOGY:

Faculty of Science Annual Lectures: Informal conversations with departments led Professor J.P.F. Sellschop, Dean of the Faculty of Science, to suggest that a series of three lectures be initiated. The intent was to acquaint each other and invited representatives from governmental and private organizations with research carried on in these departments. Mutual curiosity and interest already existed, in accordance with the true nature of science and this novel venture was therefore eagerly looked forward to by all.

The first of these lectures was arranged by Professor Sellschop and Professor H.M. Garnett, Chairman of the Biological Sciences Committee, for the evening of the 6th of June in the Biology Block. Professor Sellschop spoke casually but convincingly about the exploratory series and its purpose. Professor Garnett then introduced the speakers from the Department of Botany and Microbiology, with a brief explanation of the topic to follow.

Professor C.F. Cresswell, Head of the Department, and Director of the Photosynthetic Nitrogen Metabolism Research Unit, started these sessions with a talk on "Improving Crop Production Through Increased Efficiency of Photosynthesis and Fertilizer Nitrogen Use". The lecture proved to be a highly interesting and lively account of this important programme of research. Even a novice was able to follow the presentation and to glimpse the difficult complexities involved, especially in the biochemical and physical principles of photosynthesis and nitrogen utilization. Numerous carefully designed and colourful slides illustrated these features and relationships step by step. Plants as sources of energy were considered in the over-all perspective of food supply and energy needs. It was also pointed out that natural methods of soil fertilization, for example by microbial action are an alternative to nitrogen fertilizers, which require a large energy input during production.

The second speaker, Professor G. Bate, gave a further insight into this research effort. His account of experiments and observations on the cotton plant and on the nitrogen content of soil under different climatic conditions was both informative and entertaining. Illustrations were again strikingly absorbing. Here too, one could gain an appreciation of the pioneering and advanced work done by this unit. The report was a fitting introduction to the next lecture in the series, arranged for the 18th of June with Professor Pretorius, Chairman of the Earth Sciences Committee.

During a cocktail party that followed the lectures, guests from the CSIR, Agricultural Technical Services and Industry who attended the talks engaged in mutually interesting conversations and discussions with others. The evening ended with this pleasant occasion and there remained no doubt that the lectures were to become established as annual events that added to the scientific horizons of the University.

International Symposium: Professors C.F. Cresswell, B. Walker and G. Bate were involved recently in the International Symposium on Dynamic Changes in Savanna Ecosystems. After the symposium, the participants went on to the Kruger National Park where a workshop was held on various components of savannas. The Department of Botany and Microbiology is heavily engaged in ecosystem research.

Ph.D. Degree: Millicent L. Freaan obtained her Ph.D. degree in May 1979, the title of her dissertation being "Development studies on the formation of the wall in pollen in some members of the Euphorbiaceae". During July 1979 she attended the International Botanical Conference held under the auspices of the Royal Microscopical Society in the historic and beautiful city of York, England, where she presented a poster exhibit on pollen wall formation in Euphorbia obesa.

The main trends which emerged from this meeting are first that structure is being related more and more to function and second that maximum information must be extracted from micrographs at both light and electron microscope levels.

Enzyme and immuno cytochemical techniques play an important role in the achievement of the first aim while the second required quantitative analysis of micrographs. For the latter a wide range of electronic equipment is now available.

Microprobe analysis involving cryoultra-microtomy remains at the forefront of electron microscope techniques together with light voltage electron microscopy with subsequent stereometric viewing of micrographs.

Biologists continue to 'fall short' in their preparative techniques which do not utilise the resolving power of the transmission electron microscope to the full. Microtubules currently appear to be important organelles for study at the electron microscope level.

Research work at Nylsvley: Environmental Control of Gas Exchange in Savanna Woody species. The primary producer component of the Savanna Ecosystem study is being studied in a variety of ways to determine potential productivity. Studies that have been undertaken include biomass estimates of grasses, twig extension measurements of woody species and the determination of CO₂ and water vapour exchange in woody species

in relation to environmental variables. The latter work was undertaken by Pam Ferrar of Wits University to determine the importance of the environment in controlling gas exchange and hence the rate of production. This work included detailed measurements in the field of plant and environmental variables during the 1977/78 growing season and these were analysed for possible correlations. One obvious result was that the plants differed in their response to decreasing soil moisture and of the four species studied, Grewia flavescens was best adapted to withstand drought conditions. To separate the influence of the various environmental parameters, laboratory studies were also undertaken to determine gas exchange responses to radiation, temperature, humidity and water stress, each controlled independently. These studies have all been written up for publication. Pam left Wits at the end of June to take up an appointment at the University of Lancaster with Professor C.D. Pigott to work on shade tolerance and water relations of English woodland trees.

Sabbatical leave: Professor Brian Walker recently returned from a year's sabbatical leave spent overseas and writes as follows:-

"The objectives of my overseas study were threefold:

1. To collate current ideas and methodologies of integrated resource analysis and environmental impact assessment with the aim of developing procedures that would be suitable for southern Africa.
2. To work with leading groups in the field of ecosystem stability and resilience in order to understand and relate the concepts to the ecological conditions in southern Africa.
3. To see and discuss current research on the ecology and management of semi-arid regions.

To achieve these objectives, I visited three institutions and spent my time as follows:-

- i) The Environmental Management Unit of the University of London's Imperial College Field Station at Silwood Park.
Together with Dr G.A. Norton, Head of the Unit, I visited a number of University and Government Institutes and private firms involved in research units, and investigated the application of integrated resource planning and environmental impact assessment. The ideas and publications collected form the basis of a joint paper which outlines the procedures for these two activities which I believe

i) Contd

will be of help in implementing them in this part of the world. I was struck by the wide disparity in the procedures and techniques being employed overseas and also in the attitude towards this kind of problem. It is clear that we cannot apply directly any of the comprehensive planning and impact assessment procedures developed by particular groups or government institutions there and it is of considerable importance that we begin the development of our own approach. A prime requirement for the success of both activities is that the procedures are flexible and that the factors which they take into account and the manner in which these factors influence the outcome are based on sound, local research.

ii) The Hebrew University, Jerusalem: I delivered a paper at the Second International Congress of Ecology in Jerusalem and spent a further three weeks there with Dr I. Noy-Meir, a leading researcher in the field of ecosystem dynamics and in particular equilibrium analysis of grazing ecosystems. We developed an analytical model to investigate the stability of the grass to woody vegetation ratio in savannas and this analysis was included in a paper which I recently presented to the International Workshop on Dynamic Changes in Savanna Ecosystems in Pretoria (May 1979). While in Israel I also visited field research centres concerned with the management of their arid and semi-arid regions.

iii) The Institute of Animal Resource Ecology, University of British Columbia: I spent six months in this Institute with Professor C.S. Holling. It is a large, very active Institute which leads the world in the development of both theoretical and applied aspects of ecosystem stability and resilience. I participated in a number of their workshops and also spent much of my time developing a computer simulation model to explore plant competition and stability in savannas. It has focussed attention on a number of rather vague areas in savanna ecology and has already led to changes in my research programme in the South African Savanna Ecosystem Project at Nylsvley.

"On my return from Canada I spent 12 days in Venezuela with Dr E. Medina of the Venezuelan Institute for Scientific Investigation, during which time we visited the savannas of the Llanos, looking both at their basic ecology and management".

Apart from the new field research programme initiated at Nylsvley, Professor Walker has also developed material for an M.Sc. degree in Theoretical and Applied

Ecology which will begin either next year or in 1981 and he will continue the development of appropriate and efficient procedures for integrated resource planning and environmental impact assessment in southern Africa, based on what he has learned overseas.

His most important plans, however, are much more ambitious and, he believes, absolutely necessary. They concern the development of an Institute of Resource Ecology at the University of the Witwatersrand which he has every reason to hope will, in fact, be established in the near future.

Finally, as a result of his month's tour through Europe visiting the main ecology centres doing ecosystem studies, Professor Walker, reports that German beer is better than English beer which is better than Scottish beer which is better than French beer which is better than Israeli beer which is better than Swedish!

Staff Appointments:

Chair of Microbiology: We congratulate Professor Helen Garnett on her recent appointment to the newly-established Chair of Microbiology in the Department of Botany and Microbiology.

Three new lecturers have recently joined the staff of the Department, namely, Dr Doug. Rawlings completed a B.Sc. degree in chemistry and microbiology at Rhodes University in 1971 and in 1972 was awarded a first class honours degree in microbiology. He was a recipient of a Shell Research Fellowship during 1974 and 1975 and had the degree of Ph.D. conferred on him for a thesis on the activated sludge treatment of effluent from the tanning and fellmongering industries in 1976. For two years Dr Rawlings was head of the environmental research section at the Leather Industries Research Institute and was appointed lecturer in the Department of Botany and Microbiology at the University of the Witwatersrand in February 1978.

Dr. Rawlings has published several papers on effluent treatment and other aspects of microbiology and participated in several symposia. Mr E.R. (Robbie) Robinson: Subsequent to doing honours (in taxonomy and ecology) at Natal, Robbie spent three years (January 1972 until January 1975) at Gobabeb in the Namib. Here he worked on a diversity of general ecological and botanical projects, developed and curated the reference herbarium and completed his M.Sc. degree, the latter being a phytosociological study. During this period he took three month's leave and spent the time at Gottingen and Nijmegen seeing just how European ecology and phytosociology are practised. He was also fortunate enough to be included in long-distance collecting trips in the "dune sea" Namib north of Luderitz Bay and in the northern Namib up to the Kunene River. From 1975 until he came to Wits (July last year),

he lectured at the University of Fort Hare. The diverse nature of his teaching served as an excellent revision after spending three years happily ignoring those parts of Botany that did not specifically interest him! As a result of the close collaboration between the Botany and Pasture Science departments, he became involved in applied research, specifically, the problems of invasive species and the ecological effects of controlled burning on different grassland communities. The former led him to his present interest in the biosystematic field; once you know what makes a particular species "tick", it is possible to manipulate it and/or its environment in a moderately predictable way. Since moving to Johannesburg he has attended two conferences, namely the Grasslands Society and S.A.A.B. Conferences held in Stellenbosch during January. He presented a paper at the Grasslands Conference and co-authored one presented to the S.A.A.B. meeting. Dr John Fletcher: Dr Fletcher was born in Southport, Lancashire, England. After attending school in his home town he read for a degree in Botany at the University of Kingston-Upon-Hull, England, under Professor N.F. Robertson, and graduated with first class honours in 1964. His Ph.D. studies were on the physiology and ultrastructure of conidium formation and germination in Penicillium spp. and were carried out at Chelsea College of Science and Technology, London, England under the supervision of Professor A.G. Morton. He was awarded the Ph.D. degree of the University of London, England, in 1968. In January 1968 he was appointed demonstrator in botany in the Department of Botany at the University of Newcastle-On-Tyne, England. At Newcastle, in addition to carrying out various teaching duties, he continued ultrastructural studies on spore morphogenesis in fungi, working on several species of Zygomycetes, and on Aspergillus, as well as extending his Ph.D. studies on Penicillium. In 1973 he was awarded a Research Fellowship in the Department of Botany at University College, Dublin, Ireland, to work on the physiology and ultrastructure of oospore formation in Saprolegnia with special emphasis on the effects of calcium on oogonium and oospore morphogenesis. In Dublin, in addition to his research, he was involved in first year undergraduate teaching, and was an active member of a college committee responsible for the setting up and subsequent supervision of a new Electron Microscope Unit in the College. Dr Fletcher was appointed lecturer in the Department of Botany and Microbiology, University of the Witwatersrand in 1978, taking up the appointment in November of that year. He intends that his research activities at 'Wits' will include continuation of his work on morphogenesis in Saprolegnia. He already has some dozen publications in international journals, in the general field of spore morphogenesis in fungi, to his credit.

Collecting trips: Dr Christian Puff, senior lecturer in taxonomy in the Department, must surely rank as one of the most active botanical collectors in the Republic at the

moment. In the two and a half years during which he has collected in this country (1976, 1978 and half of this year) his travels have taken him to almost every corner of every province and also to South West Africa. Apart from general collecting, his current research interests lie in the Rubiaceae-Anthospermeae and his collecting trips have permitted him to do field studies, acquire herbarium specimens and fix material for morphological, anatomical and cytological work in the genera Anthospermum Galopina, Otiophora Nenax and Carpacoce.

Dr. Puff's journeys this year have been to the following places:-

Swaziland	- end of February
Zululand	- early March
Magaliesberg	- March, with the second year students' field trip
Transkei	- Easter
Natal South Coast	- end of April/beginning of May, with the third year students' field trip
Western Cape	- from 8-21 July, a visit to Calvinia area: Van Rhynsdorp; Garies, Khamieskroon and Hondeklipbaai; Cedarberg; and Ceres.

Dr Puff is a member of the Joint BRI-SAAB Organising Committee for the AETFAT-Congress to be held in Pretoria in January, 1982.

UNIVERSITEIT VAN PRETORIA

Plantkunde-projek in Venda: Die Departement Plantkunde van die Universiteit van Pretoria is aan die einde van 1978 deur die Kurator van die Venda-herbarium versoek om hulp te verleen met die uitbouing van die herbarium. Venda het 'n besonder ryk plantegroei wat inheemse bergwoude, grasveld en verskillende bosveldtipes insluit. Omdat die land 'n vinnige ontwikkelingsfase betree en van die natuurlike plantegroei verwyder word vir die vestiging van geboue, landbou- en bosbou-aktiwiteite en die ontwikkelende teebedryf, sal skaars spesies wat in baie spesifieke lokaliteite groei, later moontlik nie meer in die gebied opgespoor kan word nie.

Nadat daar met die Universiteitsowerheid en die Departement van Samewerking en Ontwikkeling onderhandel is, het die Departement Plantkunde toestemming verkry om met die Venda-projek voort te gaan. So 'n projek sou goed inpas by die navorsings-aktiwiteite in die Departement en ook aan nagraadse studente die geleentheid bied om met veldwerktegnieke vertrouwd te raak.

Gedurende die tydperk 17-21 April 1979 het 'n groep van nege personeellede en nagraadse plantkunde-studente onder leiding van professor P.J. Robbertse en

Dr P.D.F. Kok, besoek aan Venda gebring. Die groep het tuisgegaan in 'n huis van die Departement Bosbou op Tate Vondo vanwaar verskillende plantgemeenskappe besoek en ongeveer 300 plantspesies versamel is. Duplikaat-eksemplare is gemaak sodat voldoende materiaal vir die Venda-herbarium, die Schweickerdt-herbarium van die Universiteit van Pretoria en die Nasionale Herbarium wat die eksemplare identifiseer, beskikbaar sal wees.

Ná hierdie besonder geslaagde besoek is daar deur die Departement Plantkunde en die Venda-herbarium besluit op 'n projek wat oor 'n tydperk van vyf jaar sal strek. Personeel en nagraadse studente sal ongeveer drie besoeke per jaar aan Venda bring om planteksemplare te versamel waarvan een benaamde voorbeeld van elke spesie in die Venda-herbarium geplaas sal word. Gedurende tydperke tussen hierdie besoeke sal die personeel van die Venda-herbarium voortgaan met die versamelwerk. Tydens besoeke sal tegniese hulp ook aan die personeel van die Venda-herbarium verleen word om hulle sodoende tot selfstandigheid te lei.

Na die verloop van vyf jaar sal 'n spesielys van Venda se plantegroei saamgestel word vir publisering. Daarna sal daar besluit word of met die projek voortgegaan sal word en of daar na meer indringende projekte oorgeskakel sal word.

Besoeke aan die Buiteland: Professor P.J. Robbertse van die Departement Plantkunde van die Universiteit van Pretoria het vanaf 26-30 Augustus 1979 die Kongres van die Internasionale Vereniging van Houtanatome in Amsterdam, Nederland, bygewoon. Die Kongres is by die Koninklike Tropiese Instituut gehou. Tydens die Kongres het prof. Robbertse 'n referaat gelewer wat gehandel het oor die Houtanatomie van die Suid-Afrikaanse verteenwoordigers van die genus Acacia (doringbome). Hy het ook die geleentheid benut om waardevolle kontakte vir die Departement Plantkunde op te bou. Na afloop van die Kongres het hy verder besoek gebring aan die Universiteit van Amsterdam, die Saadtoetsstasie in Kopenhagen, Denemarke, die Universiteit van Wenen in Oostenryk en die Botaniese Tuin en Herbarium in Madrid, Spanje.

Gedurende Augustus 1979 het prof. N. Grobbelaar, Hoof van die Departement Plantkunde van die Universiteit van Pretoria, die Algemene Vergadering van die Internasionale Unie vir Biologiese Wetenskappe (IUBS) in Helsinki, Finland, bygewoon. Die Unie is onderverdeel in vyf divisies, elk met een stemgeregtigde lid en twee addisionele lede in die uitvoerende Komitee. Met die verkiesing van die nuwe Uitvoerende Komitee vir die volgende drie jaar is prof. Grobbelaar aangewys as die stemgeregtigde lid wat die Divisie Plantkunde en Mikologie verteenwoordig. Die ander vier Divisies is dié van Sel- en Ontwikkelingsbiologie, Omgewingsbiologie, Mikrobiologie en Soölogie. Daar

is egter tydens die afgelope vergadering besluit dat die lede van die Divisie Mikrobiologie 'n afsonderlike Internasionale Unie gaan stig. Daar is tydens die vergadering veral aandag geskenk aan sake soos die bewaring van die wêreld se natuurlike hulpbronne, beskerming van seldsame en bedreigde spesies, verhoging van die produktiwiteit van onder andere die oseane, die bestudering van medisinale plante, die belangrikheid van taksonomiese versamelings en die verspreiding van duplikate uit sulke versamelings na belanghebbende instansies. Verder is aandag geskenk aan die behoefte wat bestaan vir opknappingskursusse vir wetenskaplikes en ook aan die feit dat dit vir hulle moontlik moet wees om vryelik te reis ten einde aan wetenskaplike aktiwiteite regdeur die wêreld te kan deelneem. (E. du P.)

NEW MEMBERS: The following persons were accepted as members of S.A.A.B. at the Council Meeting held in Pretoria on the 1st September:-

Ordinary Members

Brits, mnr G.J., Protea-Navorsing, Privaatsak X5023, Stellenbosch, 7600.
Duggan, Miss K.J., Botanical Research Institute, Private Bag X101, Pretoria, 0001
Ferreira, mnr D.I., Navorsingsinstituut vir Tuinbou, Privaatsak X293, Pretoria 0001.
Götze, mnr E.A., Instituut vir Omgewingswetenskappe, Universiteit van O.V.S., Bloemfontein, 9300.
Jankowitz, mnr W.J., Privaatsak 13186, Windhoek, 9100.
Mogford, Dr. D.J., Department of Plant Sciences, Rhodes University, Grahamstown, 6140.
Myburg, mnr F.S., Privaatsak X1005, Brits, 0250.
Rossouw, mnr L.F., Departement Plantkunde, Universiteit van O.V.S., Bloemfontein 9300.
Sadie, mnr D.N., Instituut vir Omgewingswetenskappe, Universiteit van O.V.S., Bloemfontein, 9300.
Schlebusch, mev. V., Departement Plantkunde, Universiteit van O.V.S., Bloemfontein, 9300.
Van der Westhuizen, mnr A.J., Departement Plantkunde, Universiteit van O.V.S., Bloemfontein, 9300
Venter, mev. G., Kunenelaan 116, Doringkloof, Verwoerdburg, 0140.
Vermooten, mej. R., Departement Plantkunde, Universiteit van Pretoria, Pretoria, 0002.
Wilken, E., Instituut vir Omgewingswetenskappe, Universiteit van O.V.S., Bloemfontein, 9300.

Affiliated Members

Williamson, Dr G., P.O. Box 499, Oranjemund, 9015.

Student Members

Barkhuizen, mej. A., Posbus 16173, Pretoria-Noord.

Cloete, mnr. T.E., Instituut vir Omgewingswetenskappe, Universiteit van O.V.S.
Bloemfontein, 9300.

Crous, mej. S.M., Posbus 29046, Sunnyside, 0132.

De Kock, mej. C., Departement Plantkunde, Universiteit van Pretoria, Pretoria, 0002.

Ferreira, mev. J.C., Mahoniestraat 89, Doringkloof, Verwoerdburg, 0140.

Rabie, mej. A., Departement Plantkunde, Universiteit van Pretoria, Pretoria, 0002.

Smith, mej. H.M., Departement Plantkunde, Universiteit van Pretoria, Pretoria, 0002.

van Rensburg, mej. H.J., Posbus 18, Brits, 0250.

Winterboer, mej. A., Departement Plantkunde, Universiteit van Pretoria, Pretoria, 0002.

Zietsman, mnr. P.C., Departement Plantkunde, Universiteit van Pretoria, Pretoria, 0002.

DR P.H.B. TALBOT: Dr Talbot was curator from 1949 - 1960 of the Mycological Herbarium (PREM), which was formerly in the Division of Botany and Plant Pathology, Pretoria; he died in Adelaide, Australia, on 2 August 1979. Patrick Henry Talbot was born in Pietermaritzburg on 18 April 1919 and attended Maritzburg College from 1932 - 1935. From 1936 - 1939 he studied at Natal University College, graduating M.Sc. and receiving the Junior Capt. Scott Memorial Medal for 1940. In January 1940 he was appointed in the cryptogamic section of the Division of Botany and Plant Pathology, Pretoria, and shortly afterwards enlisted in the S.A.M.C., serving as a Staff Sergeant in North Africa and Italy. After his discharge he was sent to the Royal Botanic Gardens, Kew, as South African Liaison Officer from 1945 - 1948, and took the opportunity to enrol in London University where his work on classification of certain groups of Hymenomyces earned him the Ph.D. degree. On his return to the National Herbarium in 1949, he was placed in charge of the cryptogamic herbarium and his steady flow of papers in Bothalia serves as an indication of his industry and ability to crystallize his ideas. In 1960 he and his family emigrated to Adelaide, Australia, where he obtained a post of Senior Lecturer, later Reader in Mycology, with the Waite Agricultural Research Institute, University of Adelaide. In 1965 he had the opportunity for further study at London University, receiving the D.Sc. degree. A textbook which he wrote on "Principles of Fungal Taxonomy" appeared in 1971. In Pretoria he married Sonia Kemp and they had two children, a boy and a girl, all of whom survive him and to whom our sincere sympathy is extended. (L.E. Codd)

MISS FLORENCE HEWITT: Miss Hewitt died earlier this year in Pretoria. After retiring from teaching at Wynberg Girls' School, Cape Town, where she had become Vice-Principal, she joined the Division of Sea Fisheries (Dept of Commerce and Industries), housed at the University of Cape Town, and worked on seaweed taxonomy for a

few years. Ill health caused her to resign in April, 1977. Nevertheless, her sudden demise on the 20th May this year came as a shock to her family, friends and acquaintances. It was on the eve of her departure for Britain where she was to have spent a couple of months visiting friends and relations, and it was, in a sense, fortunate that Florence was in her brother's (Dr. F.J. Hewitt) home in Pretoria at the time of her death. Florence will be missed by her colleagues and friends of the Seaweed Research Unit and the Botany Department of the University of Cape Town. Our condolences go to her family and especially to Christine Wallace who shared a home with her. (R.H. Simons)

S.A.G.P. JAARLIKSE KONGRES:

Die Kongres en jaarvergadering van die Suid-Afrikaanse Genootskap van Plantkundiges vind vanaf 17 tot 19 Januarie, 1980, by die Pietermaritzburg kampus van die Universiteit van Natal plaas.

Die Kongres sal deur 'n ekskursie na die Natalse Drakensberg vanaf 20 tot 22 Januarie gevolg word. Hierdie ekskursie sal tot 45 persone beperk word en deelname sal deur die volgorde van aansoeke bepaal word.

Die koste van die ekskursie behoort nie R35,00 te oorskry nie, en moet voor registrasie vooruitbetaal word. Verdere besonderhede omtrent betaling sal in die tweede omsendbrief bekendgemaak word.

'n Tweede alternatiewe ekskursie na die laer Natalse Suidkus om die marine alge te bestudeer word ook gedurende die tydperk 20 tot 22 Januarie beplan. Die koste van hierdie ekskursie sal weer eens R35,00 nie oorskry nie.

Verblyf sal tydens die Kongres beskikbaar wees in die Eleanor Russell Koshuis teen 'n koste van R9,50 (hierdie bedrag is vir huisvesting in enkelkamers en sluit volle losies in) per dag.

Die organiseerders sal alle moontlike stappe neem om geskikte huisvesting vir getroude pare te verskaf.

Kongresgangers wat verkies om in hotelle in Pietermaritzburg tuis te gaan word versoek om hul eie huisvesting te reël.

Dit word beplan om gedurende een van die sittings 'n simposium te reël oor Algologie-navorsing in Suid-Afrika. Professor John West van die Universiteit van Kalifornië te Berkeley het toegestem om by hierdie sitting as gasspreker op te tree.

Die tweede omsendbrief sal slegs gestuur word aan persone wat op die eerste omsendbrief reageer. Kontakadres: Plaaslike Reëlingskomitee, SAGP, Departement van

Plantkunde, Universiteit van Natal, Pietermaritzburg, 3200.

XIII INTERNATIONAL BOTANICAL CONGRESS: The first circular for this Congress has been received. The Congress will be held at the University of Sydney from 21-28 August, 1981. All persons interested in receiving the second circular must contact the Executive Secretary, Dr W.J. Cram, 13th International Botanical Congress, University of Sydney, N.S.W. 2006, Australia as soon as possible and not later than December 1st, 1979. A detailed summary of the Congress will be given in the next issue of Forum Botanicum.

NOMINATIONS FOR THE COUNCIL 1980/81: A circular has been sent to all members calling for nominations for the S.A.A.B. Council. These must reach the Secretary not later than 14th November, 1979. A maximum of three nominations may be made by corporate members in good standing. Please remember that all nominations must be signed by the proposer and the nominee. Nominations to Hon. Secretary (Dr P.C. Keulder) Department of Botany, University of O.F.S., P.O. Box 339, Bloemfontein, 9300.

CORRECTION: On page 13 of this volume of Forum Botanicum the Council of S.A.A.B. for 1979 was announced but unfortunately an error occurred in the list, viz. the title of Vice President should have been placed after Professor R.N. Pienaar's name and not the following one of Professor J.G.C. Small.

EDITORS/REDAKSIE:

Mr E.G.H. Oliver and Miss W.G. Welman.

ADDRESS/ADRES:

Forum Botanicum,
Botanical Research Institute,
Private Bag X101,
PRETORIA, 0001