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

DEPARTMENT OF BOTANY AND MICROBIOLOGY, UNIVERSITY OF THE
WITWATERSRAND :

Sabbatical Leave : In August 1976, Professor C F Cresswell spent the first part of a year's sabbatical leave as Visiting Professor to Ben Gurion University of the Negev, Beersheba, Israel where he worked with Professor Herman Lips. Thereafter, in September 1976, he gave a paper at the International Photo-biology Congress in Rome and followed this up with a series of seminars which he had been invited to give at the Universities of Kaiserslautern and Marburg in Germany, on the work being undertaken in the C.S.I.R. Photosynthetic Nitrogen Metabolism Unit.

The rest of his leave was spent in South Africa where he based himself at the University of Cape Town. From there he travelled to the Namib Desert area in South West Africa where he undertook a study of photosynthetic characteristics of dune vegetation. His studies in the Cape were concerned with photosynthetic characteristics of selected species of Restionaceous genera e.g. Willdenowia and Restio spp. and Chondropetalum paniculatum. He also worked on the influence of nitrate nitrogen on the control of carbon exchange in Panicum maximum. The latter study formed the subject of a paper which Professor Cresswell presented at the International Photosynthetic Congress in Reading from 4th-9th September 1977. He was also invited to give one of the key papers at the 6th Long Ashton Symposium on Nitrogen Metabolism at Bristol University from 19th-22nd September 1977. His paper was entitled "The control of carbon metabolism in C₄ plants by nitrogen".

Honours Trip: Professor B H Walker accompanied by Dr Guy Bate and 2 Honours students completed a most successful 10-day trip to the Western Cape during the winter vacation. The four Transvaalers set out primarily to learn as much as possible about the structure of fynbos and were interested to see the problem of exotic invasion in Orange Kloof on Table Mountain at first hand. Dr John Rourke kindly and competently introduced the party to the vegetation of Bains Kloof and Mr Ben Durrant of the Forest Reserve Station was an expert guide in the Jonkershoek area. The party was also taken on a tour to the Cape Point Nature Reserve in order to become acquainted with environmental problems of the Peninsula in general. This tour was conducted by Professor Fuggle and members of his Department.

From the western Cape, the party travelled along the Garden Route, looking at its relocation and the associated revegetation problems, to Tzitzikama where they were shown around part of the Knysna Forest by Dr G Robinson and Professor Brian Rycroft. Finally, they turned their attention to marine vegetation, also at Tzitzikama and were rewarded with a bag of 22 species of macro algae.

Class field Excursions : The Department runs two undergraduate field trips each year, for the second and third year Botany and Microbiology classes. This year, the second year excursion was held in February, when 35 students and five staff members descended for a week upon the farm "Kloofwaters" in the Magaliesberg.

The purpose of this excursion was to familiarise students with the variety of form in different major plant groups, and to introduce them to some of the methods used in vegetation description and analysis. Activities included a foray of the fungi, lichens and lower plants in the area, characterisation of the vegetation and soils in chosen sites, in order to try to correlate the two features, and assessment of the vegetation in selected areas in terms of Raunkiaers Life Forms.

An unscheduled activity which gained some prominence was capturing or avoiding snakes. During the week, two puff adders, one cobra, a possible green mamba and innumerable grass snakes were sighted, both inside and outside the accommodation buildings.

The excursion was a valuable experience, providing a sound field basis for many of the academic courses throughout the year.

The third year trip has now become a major exercise. In April, 40 students

and 10 staff visited the Natal South Coast for 8 days. Both Botany and Microbiology students attended, so that not only did the students observe several plant communities not available in the Transvaal, but investigations of microbial activity in soil and water were also carried out.

The structures of Coastal and dune forests were investigated and an analysis of a mangrove community was conducted to determine age and size classes. Pattern analyses were carried out in grasslands, and two days were spent on the marine algal communities.

Microbiology activities included physiological investigations of microbial activity in soil, water testing by standard procedures, and collection of samples for detection of specific microbial groups after returning to the University.

This was a valuable excursion, providing opportunities for observing a great variety of plant communities, and also for integrating a thorough investigation at both macro-and microscopic levels, of plant communities.

Overseas Visits: Dr I M Jackson spent 7 weeks in the United Kingdom during March/April 1977 and enjoyed a programme organised by the British Council. As a lecturer to first year students in Biology she was interested to see how the British Universities such as Sussex, Leicester, Exeter and Southampton select their courses in Biology, how practical work is organised and how first year student performance is evaluated. Her other interest is in teacher training and this tour enabled her to visit places such as the Chelsea College Centre for Science Education, the relatively new Centre for Life Studies at London Zoo, the Schools' Services at London's Natural History Museum and Cardiff Museum. Here it was possible to gain much valuable information with regard to new resource material and the setting up of resource centres. These she hopes to utilise in the organisation of the Biology Laboratory which was opened this year for students of methodology in the Faculty of Education.

Visits to T. Gerard and Co. and Philip Harris Ltd. gave the opportunity to see the preparation of biological slides, mounts, models and charts by members of staff of these biological supply houses.

Third International Immunology Congress - Dr H M Garnett attended the congress and reports as follows :-

this congress was held in Sydney from 3-8 July with some 1 500 delegates participating. The mornings were filled with Symposia where the topics

ranged from fringe areas such as cell membrane structure and function through all aspects of immunology. Each afternoon there were poster sessions with associated workshops which dealt in detail with a specific topic.

An interesting interlude was the 'Harbour Touring Workshop'. These were informal discussion groups held on board a ferry, which toured around the famous harbour. The discussion was boosted by refreshments. Each delegate was unfortunately restricted to only one such afternoon's entertainment.

The term which must have been used most during this congress was 'Histocompatibility complex'. These are macromolecules expressed on our cell membrane which give each of us our identity. They are obviously important in many areas of medicine but it appears that if we have a certain set of these molecules we are more predisposed to certain diseases than if we had a slightly different set. An interesting symposium was 'Future Immunology' where it became obvious that politics and social conscience may tend to direct the areas of research in the future. Little is known about the immunology of parasitic diseases and these diseases are prevalent in Africa and Asia. It was felt that more attention should be turned to these problems and it is interesting to note that large institutes such as the Walter and Eliza Hall Institute in Melbourne are already moving in this direction. This is a sphere of science where we, already here in Africa with the parasites on our doorstep, could contribute.

As with all International Congresses there were social functions to allow the delegates to relax. Two of these were memorable occasions. The first was an opera performance by Joan Sutherland in the Sydney Opera House and the second the Congress Dinner where mountains of Sydney seafood - prawns and oysters - greeted us. In all this meeting was very successfully run with the characteristic Australian hospitality pervading throughout.

At the invitation of the Goulandris Natural History Museum, Kifissia, Athens, Mr O Kerfoot spent an energetic but instructive six weeks in the Hellenes during August and September defining the limits of the natural distribution of the Cupressaceae, analysing the communities with which the taxa are associated and collecting intensively in preparation for a revision of taxonomic concepts, particularly with regard to the genus Juniperus.

Despite the long tradition of botanical involvement by foreigners in Greece including some of the 'greats' of the past, it is interesting to note that new records are still being collected and much work remains to be done

particularly in Thrace and Macedonia. Greece has the richest flora in Europe with over 6 000 species and a high percentage of endemics. This is largely due to the vagaries of climate, the physical features of the country and its incredible 10,000 miles of coast-line so that elements of the Central European flora, the characteristic Mediterranean flora, and a strong North African element, play a major role in producing the variety encountered.

In no other country in Europe is man's influence on the flora so pronounced however, and it is to be hoped that reforestation programmes and further control of the ubiquitous sheep and goat, will restore some of the forest that used to cover much of the mountainous landscape. Thanks to the efforts of the Hellenic Society for the Protection of Nature belated steps are being taken to curtail many of the abuses. Over 700 species are rare or endangered and it is salutary to note that professional botanists and collectors are considered by many to be the worst offenders with respect to the increasing size of this list. Obviously the proper education of people is not necessarily the answer to conservation problems. In fact, at this elementary stage in deciding on conservation measures, lack of interest or 'conservation by neglect' is probably the most adequate way of leaving plants undisturbed.

South Africa could well take note of this aspect. How often have certain plants which hitherto passed unnoticed, on being given a special status attracted the attention of irresponsible people, botanists and laymen alike. Silence can be golden when dealing with rare and endangered species.

Mrs M Frean attended the 6th International School of Electron Microscopy which was held at the Ettore Magorana Centre for Scientific Culture in Erice, Sicily during March and April 1977. High resolution electron microscopy enabling examination of hydrated material i.e. biological specimens, formed a part of the theory discussed and gave a pointer to the direction in which electron microscopy is moving. This was followed by a visit to Dr T C Appleton's Laboratory in Cambridge to gain information regarding cryoultramicrotomy and its application to autoradiography of micro-soluble compounds at the electron microscope level.

Recent Appointments: In May 1977 Dr Guy Bate took up his appointment as Senior Lecturer in Plant Physiology in the Department. Dr Bate graduated from Natal University with a B.Sc. degree in Agriculture and then went on to the Gwebi Agricultural College where he lectured in Pasture Manage=

ment. From Gwebi he took up a post as research agriculturist with a commercial company before going to Canada in 1966 to do his Ph.D. at Queens University, Kingston. Under the auspices of the IBP programme he worked from 1966-70 on primary productivity in controlled environments and productivity modelling. In 1970 Dr Bate was appointed to the University of Rhodesia where he lectured in Plant Physiology to the Departments of Botany and Agriculture. His main research interests are:-

1. The physiology of nitrogen in indigenous grasslands
2. The physiology of flower abscission in cotton

Staff Changes: Dr John Tew leaves the Department at the end of the year to take up his appointment as Professor and Head of the Department of Botany at the University of Transkei in Umtata.

Dr Fiona Getliffe and Professor Richard E Norris were married in Durban on 25th March 1977. They left South Africa at the beginning of June and travelled to their home in Friday Harbour, Washington, U.S.A. by way of London where they stopped over for a few days.

Dr Robert E Lee resigned from his post in the Department in July 1977 in order to take up an appointment at Shiraz University in Iran.

BOTANY DEPARTMENT, UNIVERSITY OF RHODESIA, SALISBURY: Professor Wild continues with his research on vegetation of toxic soils and principally serpentine soils. He recently published a paper entitled "The evolutionary effects of metalliferous and other anomolous soils in south central Africa" which appeared in Evolution 31(2): 282 - 293 (1977) by H. Wild and A.D. Bradshaw. However, reprints have not been received from America yet.

Mr Colin Craig, a post doctoral Research Fellow in the Department has recently completed a Ph.D. on the adaptation to nickel toxicity as a factor affecting the colonisation of serpentine soils in Rhodesia and is continuing research in this field.

Mr John Hill, who recently obtained his M.Phil. on the vegetating of Rhodesian mine wastes is continuing part time with his work in this field for a Ph.D. He has so far had published several short papers in overseas mining journals and we now consider we lead the field in this type of research. Our vegetating programme involves the use of tolerant races, populations or species of indigenous and exotic plants and is now being widely used by a number of Rhodesian mining companies. The costs of establishment of vegetation by our methods are in the region of Rh.\$200 per hectare, about 10% of what is spent in South Africa and elsewhere for

the same purpose, largely through our efficient selection of tolerant plants which require little artificial assistance for their successful growth.

Professor Wild also continues his work on the Flora Zambesiaca Compositae Volume and is now working on the Inuleae, the last tribe requiring completion for what will be Volume 5, Part 1, of the Flora Zambesiaca. This should be achieved in about a year or so. It will then be possible to carry out the editorial preparation of the whole half volume for publication as an official part of the Flora Zambesiaca. Meanwhile individual tribal parts continue to be published in Kirkia as precursor articles.

Mr G V Pope has just completed an M.Phil. thesis on the genera closely related to Vernonia, i.e. the erlangeoid genera. The study was supervised by Professor Wild and largely makes use of information derived from electron scanning microscope techniques.

In the Microbiology section of the Department, Dr B.S.Purchase remains in charge. Dr Purchase's chief interest is nitrogen fixation associated with grasses. Promising grasses have been selected and one (Paspalum urvillei) is being studied in detail. Results so far have been encouraging.

Publications: Purchase, B.S. (1977) Nitrogen fixation associated with Eichornia crassipes. Plant and Soil 46, 283 - 286.

Dr Desirée Cole is continuing work on the effect of groundnut (Arachis hypogaea) foliar sprays on foliar diseases caused by Cercospora arachidicola and Phoma arachidicola and the effect of controlling these diseases on the incidence of pod rotting and thus yield loss. Last season's results showed the very important effect of foliar diseases on the incidence of pod rotting when the yield was reduced to 12%. There are several fungi involved in the pod rotting complex, the main ones are Fusarium oxysporum, Rhizoctonia solani and Aspergillus spp.

A new project on the classification of local mushrooms has been started. So far, a comprehensive freeze dried collection has been made for preliminary work.

Publications: Cole, D.L. and Caville, M.E. (1977). Use of selected fungicides as seed dressings for the control of Rhizoctonia solani in cotton. Rhod. J. agric. Res. 15: 45 - 50.

Mr Cecil Grimmer is continuing his study on the epidemiology of groundnut diseases. However, he is at present on full time national service in the Rhodesian Air Force and will not be released until later next year.

Throughout the year, Mr H.D.L. Corby has continued his study of types of leguminous root nodules and of their systematic occurrence within the Leguminosae, and it is now almost complete. This work will probably be submitted for a D. Ph. degree towards the end of 1978.

Dr Guy Bate, our Physiologist, left the University in May this year to take up a post as Senior Lecturer in Plant Physiology in the Department of Botany at Wits University. He has been replaced by Dr Ian Robertson, originally from Edinburgh University who has only just arrived and taken up teaching and will, hopefully, begin research projects in the near future.

Dr David Mitchell, our Cryptogamic Botanist and Limnologist, left the University last May to take up an appointment in charge of an aquatic plant research organisation at Griffith in Australia, (CSIRO, Division of Irrigation Research, Griffith, N.S.W. 2680, Australia). He has not been replaced in the Department but we expect to be able to do so in the next month or two.

Student Numbers :

Part I	40 students
Part II	22 students
Part III	19 students

All students major in two subjects in their last two years and attend courses in three subjects in their first year.

DEPARTMENT OF BOTANY, UNIVERSITY OF DURBAN-WESTVILLE : The Department has a student enrolment of 250 undergraduates, five Honours degree candidates and one candidate for a Ph.D.

Professor T.D. Steinke is Dean of the Faculty of Science for 1977. Despite the additional demands on his time occasioned by the Deanship, he is pursuing his research on the mangroves Avicennia marina (Forsk.) Vierh. and Bruguiera gymnorrhiza (L.) Lam., and on marine angiosperms.

Mr C J Ward, who spent a year's study leave in 1976 engaged in a plant ecological survey of the estuaries and lagoons of Natal on behalf of the Natal Town and Regional Planning Commission, has resumed duty in the Department this year. He is continuing his ecological research on estuaries and other coastal vegetation.

Mrs E F Hennessy is engaged in a taxonomic study of the genus Scleria Berg. for a Ph.D. She will visit the Hunt Institute for Botanical Documentation in Pittsburgh in November for the opening of their Fourth

Quadrennial Exhibition of Botanic Art, where she will contribute an illustrated lecture on South African flora and will have six paintings on exhibition.

Miss G Lambert is continuing her work on the Classification, Ordination and Biomass of the intertidal communities at Umdoni Park for a Ph.D.

Mr A D Barnabas is using a year's study leave to pursue a research project on the fine structure of the leaves of the marine angiosperm Zostera capensis Setchell for a Ph.D.

Dr G Naidoo has rejoined the Department on his return from the United States where he spent three years at the University of Tennessee and there obtained a Ph.D. in Plant and Soil Science. He is engaged in research on the chemical and physical properties of soils of the intertidal zone occupied by mangroves.

Mr D J Edgcumbe is investigating growth and reproduction in Zostera capensis Setchell, with emphasis on laboratory culture techniques and seed germination for a Ph.D. Transplant methods are also being investigated and it is hoped that the work being done on South African sea-grasses will enable the Department to produce a monograph on the subject.

Dr H Baijnath has recently returned from a three year sojourn in the United Kingdom where he worked at Jodrell Laboratory, Royal Botanic Gardens, Kew, on a revision of the genus Bulbine Wolf using a multi-disciplinary approach. He was awarded a Ph.D. by the University of Reading for this work. He also carried out taxonomic and anatomical studies in the families Cyperaceae and Liliaceae especially Asphodeleae and investigated the taxonomic rôle of cuticular features of leaves using scanning electron microscopy.

UNIVERSITY OF PORT ELIZABETH : Our permanent academic staff at U P E consists of Prof Chris Small, two senior lecturers, Drs. Albie van de Venter and Bruce Robertson, and two lecturers, Dr Ria Olivier and Judy McNaughton. For the last two consecutive years a member of staff has been away on study leave and we have been very lucky to have Mrs Lilianne Hosten to help with some of the lectures.

Student numbers for 1977 are as follows :

Biology	I	-	28
Biology for Teacher's	Diploma Students	-	30
Botany	II	-	7
Botany	III	-	7
Honours		-	1
Masters		-	4

Prof Small has been at the Vakgroep Plantenfysiologisch Onderzoek Landbouwhogeschool, Wageningen in The Netherlands since January 1977, where he is working in the laboratory of Dr Spruit. He is studying aspects of light involvement in seed germination. Prof Small and his family are due back in Port Elizabeth in December.

Albie van de Venter returned from Davis in September, 1976 after a wonderful year spent in the laboratory of Dr Currier. Albie, together with one of our M.Sc. students, Brian Whiting, has launched a study which is aimed at a better understanding of the basic principles governing the growth and control of jointed cactus, Opuntia aurantiaca. Aspects at present being studied include

- a) vegetative reproduction and growth
- b) uptake of herbicides
- c) the crassulacean acid metabolism, of the plant as influenced by environmental factors and herbicide application.

Bruce Robertson has two projects underway, namely 1) aspects of reproduction in Erica junonia 2) electron microscopic studies on Jubaëopsis caffra. In September 1978 Bruce plans to spend a year in Canada under Professor David D. Cass, University of Alberta, Edmonton. While there, he intends furthering his E M studies of aspects of plant embryology including the ultrastructure of O^+ and \varnothing gametophyte formation as well as the fertilization process.

Our herbarium continues to prosper as Ria Olivier continues her taxonomic and ecological work in the coastal areas from the Sundays to the Gamtoos River. During her long leave at the beginning of 1978 most of her time will be spent continuing her research but she also plans a visit abroad.

Judy McNaughton is doing embryological work on Erica junonia and has also done preliminary studies on propagation potential of Boscia oleoides.

At the beginning of September we were very lucky to have had Professor and Mrs Halevy here from Israel. Professor Halevy gave us a fascinating lecture on the water relations of cut flowers. This was an excellent inspiration for all of us especially our students. Other visitors to our department included Professor and Mrs R E Norris and also Dr A van der Walt and Mr Webb from the Pelargonium Society.

Ria Olivier and Bruce Robertson took the third year students to Keurbooms Rivier Mouth for their annual excursion. One day was spent getting to know the trees in the caravan park. These had all been previously marked by Ria. A stroll along part of the Elephant Walk gave the students an opportunity to concentrate on forest species. Finally, some time was devoted to the

fynbos on the plateau.

The new Botany labs out at Summerstrand are approaching a sort of readiness and we shall probably be moving in towards the end of 1979.

OPEN DAY - NYLSVLEY: The South African Savanna Ecosystem Project held a most successful open day at Nylsvley on the 29th of September. The Minister of Planning and the Environment, Dr S W van der Merwe, and the President of the C.S.I.R., Dr C v d M Brink, were the guests of honour. Among the fifty other distinguished guests were Dr W A Verbeek, Dr D W Immelman and Dr J C Strydom from the Department of Agricultural Technical Services, Dr D P Ackerman and Dr H A Lückhoff from the Department of Forestry and Dr S S du Plessis from the Transvaal Nature Conservation Department. Universities were represented by Prof H P van der Schijff, Prof S P Jackson, Prof N Grobbelaar, and others.

An introduction to and history of the Project was given by Dr A J Pienaar, Chairman of the Steering Committee. This was followed by a brief account of the research themes currently under study at Nylsvley by Prof B H Walker, Chairman of the Project Planning Panel. The eleven themes are : a) pattern and dynamics of the Burkea savanna and Burkea-Acacia mosaic; b) climatic characteristics; c) water relations; d) factors influencing primary production; e) the fate of photosynthate; f) faunal structure and dynamics; g) the impact of consumers on primary production; h) decomposition and reduction processes; i) the role of nutrients as limiting factors; j) the ecological effects of fire; and k) the influence of various management practices. This account served as an introduction to the project, for those not familiar with it. A vote of thanks was proposed by Prof H P van der Schijff of Pretoria University.

Before and after a braaivleis lunch, guests were given demonstrations in the field of work in progress. Botanical demonstrations included photosynthesis and respiration studies by Mrs P Ferrar (University of the Witwatersrand), tree growth measurement by Dr M C Rutherford (Botanical Research Institute) and root biomass estimation by Prof J J P van Wyk (University of Potchefstroom). The primary production component was introduced by Prof J O Grunow (University of Pretoria). Other demonstrations included the standard and automatic weather stations, decomposition and reduction studies and consumer component projects. The reptile and amphibian demonstration by Mr N Jacobsen where a large, live puff-adder was on view was a highlight of the consumer component exhibits.

The previous day's rain had cleared the air and the study area looked magnificent with masses of shiny new Ochna pulchra leaves giving the savanna a light green sheen. Sprays of Burkea africana flower buds on trees without leaves added to the display.

Although the 19 mm rain during the day before gave the organisers ulcers and forced the making of contingency plans in case of rain, the tight programme was followed without a hitch in cool, partly overcast weather. The Project Coordinator, Mr B J Huntley (C.S.I.R.) and the caterer, Mrs E Grei, deserve special mention for the smooth running of the open day although each of the 30 participants, through his or her enthusiasm and cooperation, contributed to the overall success of the event. (J W Morris)

BOTANICAL RESEARCH INSTITUTE, PRETORIA - HERBARIUM DATA BANK : This project involves the encoding of label data from Southern African specimens in the National Herbarium (PRE) into machine-readable form, and the provision of facilities for the extraction of information from the resulting Data Bank. A report on progress is given below.

About 500 000 specimens have been encoded, and at the time of writing, some 140 000 of these are in a form accessible to the retrieval programs. Checklists of collectors, common and scientific names can be and have been produced as required, mostly for correction purposes at this stage. A system for submitting queries from the computer terminals at the National Herbarium has been demonstrated. A draft version of the User Manual has been produced and is being checked to remove errors and ensure that it describes the system actually in use as accurately and comprehensibly as possible. We hope to announce the availability of the system to answer BRI user queries by the end of this year.

The first release of the system will probably not use the whole Herbarium Data Bank, but more specimens will be made available to it as soon and as often as possible. When the system becomes available, a procedure for submission of queries by outside users will be investigated. This will probably involve ordering copies of the User Manual and coding forms from the Institute, followed by submission of queries by post and return of answers the same way. We estimate that turnaround time from receipt of queries to dispatch of results will be about a week. This slow turnaround is due largely to the fact that the data files are so large that we can only obtain access to them at very slack times from the computer, for example, in the middle of the night.

The following description of the system is a modified version of that appearing in the User Manual.

The Botanical Research Institute Herbarium Data Bank will be a system of interlocking programs and data allowing the user access to information gathered from the labels of all specimens housed at the National Herbarium, Pretoria (PRE). The program system will have the following capabilities:-

1. Searching the Data Bank for records conforming to a particular user-defined profile.
2. Printing out complete or partial records in a variety of formats, e.g.

Maxi-Layout. This layout is meant for monographers and to accompany unmounted specimens through the naming process. A maxi-layout includes all available information for each record, printed out in full or nearly in full. To print more than 100 records in this format in a single run required the use of a privileged password because of the cost involved in printing such a large amount of information. 'Gold-Plated' Herbarium Labels are attached to newly-acquired and named specimens when they are mounted. Most users will not need to ask for them.

Mini-Layout is the standard format for query answers. About 80% of the available information for each record is condensed into three lines of somewhat abbreviated text. Normal limits to the output of mini-layouts are 10 000 lines (2 500 layouts roughly - including a blank line after each record - or about 400 pages of output.

Partial records. This feature, still to be implemented, will permit users to design their own output formats (within limits) allowing the suppression of unwanted fields.

Output may be supplied on microfiche instead of conventional hardcopy. Acceptance of microfiche may be made a condition of running queries producing large amounts of output.

3. Adding records to the Data Bank and changing existing records. This activity is strictly reserved for Data Section Staff for obvious reasons.
4. Distribution mapping. This could almost be thought of as an alternative output format. Maps are drawn on the line-printer with the result that the maps are slightly distorted, the north-south axis being at a different scale to the east-west axis. Special overlays with a similarly distorted base-map are used at BRI when reading these maps.

5. Library-data output. This section of the bank, still in the early stages of implementation, is designed to store and retrieve all botanical literature. Retrieval will be by key-words, and bibliographic references will be printed out.

Although it may appear to users that there is one monolithic data base, there are in fact three interlocking bases, each composed of a number of files.

1. Library base. The implementation of this was started very recently. It will contain references to literature relevant to all facets of the work of the Botanical Research Institute. These references will be drawn mainly but not exclusively from abstracting and bibliographic works received by the Institute library.
2. Taxon base. This base contains the names and authorities of all families, genera and species (subspective taxa being treated as species) about which there is information in the other two bases. Lists of synonyms and evaluations of correct names are also recorded here. The common-name index is regarded as part of the taxon base, although the data in the index are recorded from individual specimens as well as from whole taxa. The taxon base is the only one to be linked directly to both the other bases.
3. Specimen base. This is the most advanced area of the data bank at present. It contains label data on all specimens in the Data Bank (140 000 at present), in a number of files. It is expected that the greater part of any query will involve the interrogation of this base.

SAAB - NORTHERN TRANSVAAL BRANCH : The following were elected to the Northern Transvaal Regional Committee of SAAB at the Annual General Meeting on 1977.10.28 (elected to their posts at a committee meeting on 1977.11.02):-

Chairman	Mr W Reynecke
Vice-Chairman	Dr J C Scheepers
Secretary	Mr H F Glen
Assistant Secretary	Ms L Smook
Treasurer	Mr R Westfall
Members	Mr A E van Wyk
	Mr L Coetzer

BOTANISTS BACK FROM THE DEAD: The two long established professorships in botany at the University of Cape Town have been named in honour of two famous former botanists of Cape Town. The head of the department is the Harry Bolus Professor and the Director of the National Botanic Gardens also has the title of Harold Pearson Professor. Both of these former botanists died at the beginning of this century. But due to many misunderstandings about the purpose and meaning of the professorial titles correspondence still arrives at the University of Cape Town addressed to Prof Harry Bolus or Prof Harold Pearson! Needless to say the correspondence is mostly advertising blurb.

It was noticed recently that a South African scientific newsletter referred to the Journal of South African Botany which it said was edited by the Director of the National Botanic Gardens and by Prof Harold Pearson, professor of botany at the University of Cape Town!

CONSPECTUS FLORAE ANGOLENSIS: The 197-page volume on the Pteridophyta in this series has recently been published in Lisbon. This treatment covers 185 species in 65 genera and is illustrated by 33 plates. The major part of the work is by Prof E Schelpe, with the Selaginellaceae and Isoetaceae by Prof. Schelpe and A C Jermy, and the Marsileaceae by Dr E Launert.

COMPOSITAE IN NATAL by O.M. Hilliard. Pietermaritzburg : University of Natal Press. 1977. R24.

The scope of this work is "to provide keys for the determination of genera and species native to Natal and those aliens established there"; another purpose is to give descriptions of the tribes, genera and species, subspecies and varieties. The 113 genera and more than 600 species of the Asteraceae comprise about 12 per cent of the flowering plants of Natal, making it the most important family as far as number of species is concerned. Individual members of the Asteraceae are also common in the veld, embracing a wide range of growth forms to be found in nearly every habitat in Natal.

The descriptions are followed by notes on the whole geographical range, also outside Natal, the variation, the ecology and flowering times. Very useful comments are made on allied species and taxonomic problems. No new taxa are described in this work, but in this connection one is often referred to preliminary papers on Natal plants which the author

published in collaboration with B.L. Burtt in Notes Roy. Bot. Gard. Edinburgh since 1970. Dr Hilliard was responsible for the Asteraceae in that valuable work, the "Flora of Natal" by J.H. Ross, where naturally, many problems had to be left unsolved. It is therefore interesting to compare that work with "Compositae in Natal" and one finds that the two treatments differ considerably and that the last work is, of course, an improvement. This is mostly as a result of more investigation and field-work by the author and her collaborators, but also as a result of recent research and revisions by other workers e.g. in Relhania and Felicia.

An important use of this book will be in the identification of adventives which can sometimes be very difficult as in the case of Taraxacum, where the problem is discussed and a key and descriptions are given to all known species in South Africa, irrespective of their having been found in Natal or not.

A work such as this, dealing with a great number of species in a large area where in certain parts collecting has so far been quite inadequate, can not be expected to be complete. As the author says in her preface, there also are several taxonomic problems outstanding that need longterm study. "Compositae in Natal" is well-presented, the printing is of good quality and the lay-out clear, neat and orderly. Blythe Pascoe has contributed a number of very good line drawings. This work is a very valuable contribution to our knowledge of the flora, not only of Natal, but also of Southern Africa. It will prove to be an extremely useful reference work for professional botanists, students and serious laymen, some of whom have collected extensively in the Natal region. (M. Welman).

EDITORS/REDAKSIE

Mr E G H Oliver, Miss M Welman

CORRESPONDENCE/KORRESPONDENSIE

The Editors
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