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

DIE DEPARTEMENT VAN PLANTKUNDE, UNIVERSITEIT VAN STELLENBOSCH:

Die doserende personeel van die departement kon die akademiese jaar weer op volle sterkte onder die voorsitterskap van prof. P.G. Jordaan begin. Ons kan met dankbaarheid vermeld dat hy volkome van sy ernstige hartaanval herstel het.

Die departement voel baie verheug dat die resultate van prof. M.P. de Vos se werk oor *Romulea* gepubliseer is. Dit is die resultaat van 20 jaar se konsensieuse navorsingswerk wat as supplement 9 tot die "Journal of South African Botany" verskyn het. Sy het omtrent twintig nuwe spesies en subspecies ontdek en beskryf. In die werk het sy haarself openbaar as 'n kunstenaar aangesien haar werk baie goed geïllustreer is en selfs van die kleurillustrasies is haar eie werk. Met die drukkoste, wat geweldig hoog was (+ R7 000), was sy gelukkig om ruim ondersteuning te kry van die Jubileumfonds van Kirstenbosch, die Nasionale Botaniese Tuine en die WNNR, maar moes nog 'n groot bedrag uit haar eie sak betaal.

Die vernaamste resultate van dr. J.J.A. van der Walt se navorsing oor die Suid-Afrikaanse *Commiphora*-spesies, sal in die volgende uitgawe van *Bothalia* gepubliseer word. Hy onderneem tans 'n taksonomies-morfologiese studie van die *Commiphora*-spesies wat in Suidwes-Afrika voorkom.

Prof. M.P. de Vos is besig met 'n hersiening van die genus *Syringodea* (dit is naverwant aan die genus *Romulea*.) Sy onderneem ook om chromosoomstudies van die 8 spesies te doen.

Mnr. J.E. Watts, lektor in die departement, het sy navorsingsprojek oor die invloed van boor op die metabolisme van fenoliese verbindings in die grond-boontjieplant voltooi, en het 'n M.Sc.-graad (*cum laude*) ontvang op die gradeplegtigheid van die Universiteit van Stellenbosch aan die einde van 1972.

Navorsingsprojekte van Ph.D.-studente

Mnr. J.H. Jooste se ondersoek van die meganisme van mineraalsoutopname deur die wortels van blare van plante met besondere verwysing na spoorelemente is bykans voltooi.

Mnr. J. Aalbers ondersoek die invloed van boor op proteïen- en nukleïensuur metabolisme in plante.

Mnr. L.J. van Lelyveld is besig met 'n fisiologiese ondersoek van die swart-hartverskynsel by pynappels.

Navorsingsprojekte van M.Sc.-studente

Mnr. L.M. Raitt is besig met 'n projek getiteld: "Sodium tolerance in *Didelta* L'Hérit."

Mnr. P.S. Bester ondersoek die invloed van aluminiumtok^{si}siteit op plante.

Mej. J. van Reenen het begin met 'n studie van die anatomie en sitologie van die genus *Gethyllis*.

Mnr. A.D. Spreeth sit die taksonomies-morfologiese studie van *Agathosma* spp. voort.

Mnr. P.J. Laubscher gaan voort met 'n embriologiese studie van *Lachnanthes tinctoria*.

Mnr. M.C. Rutherford het sy navorsingsprojek getiteld: "A study of ecosystem function in *Burkea-Terminalia* savanna of the Northern Kalahari" wat hy onder leiding van dr. J.G. Smith onderneem het, afgehandel. Hy is besig om die resultate te verwerk vir sy M.Sc.-verhandeling. Daar het sopas 'n publikasie van hom in *Dinteria* no. 8, Nov., 1972, verskyn. Dit is getiteld:

"Notes on the flora and vegetation of the Omuverume Plateau-Mountain, Waterberg, South West Africa". 'n Kort verslag van die plantegroei en flora van 'n 32 vierkant kilometer area word o.a. daarin gegee.

Studentegetalle:

Daar het tot dusver vanjaar 345 studente ingeskryf vir die Plantkunde I-kursus. Die kursus in Plantkunde II word gevolg deur 51 studente en 15 studente volg die kursus in Plantkunde III. Twee studente het vanjaar vir die Honneurs-kursus ingeskryf.

Plantkunde toer

'n Toer na die Richtersveld en SWA onder leiding van mnr. A.D. Spreeth en dr. J.J.A. van der Walt word vir die Aprilvakansie beplan. Die toer sal meegemaak word deur personeellede en studente van die departement en dit word in die vooruitsig gestel om o.a. die volgende plekke te besoek: Mnr. Raitt wil probeer om materiaal van *Didelta* by die kus in die omgewing van Oranjermond te versamel. Die Visrivier^fgronde, Hardapdam, Namibwoestynpark en die Daan Viljoen Wildtuin naby Windhoek sal besoek word. Mej. Van Reenen beoog om materiaal van *Gethullis* te versamel. Dr. J.J.A. van der Walt sal die toergroep in Windhoek verlaat om saam met mnr. Giess plante in die Kaokoveld te gaan versamel.

Kyoichi Ogawa. The 24 year old Kyoichi Ogawa from Tokyo is a special post-graduate student studying aspects of the South African flora in the department of Botany at the University of Stellenbosch.

Mr. Ogawa obtained a bachelor degree in 1971 in the Tokyo University of Agriculture and is at present studying for a masters degree in the Graduate School of the University. His first two years at University were spent on general education and he studied subjects such as English, German, Psychology and Physiology. In the following two years - the final years for the bachelor degree - he studied genetics in all its aspects. For his second degree he specialised in cytogenetics (an aspect of genetics) and did research under Prof. Norio Kondo on the cytogenetics of *Sedum* - a genus of the Crassulaceae. Prof. Kondo is director of the Institute for Breeding Research at the Tokyo University

of Agriculture and was the leader of a scientific group which toured South Africa in 1961. He, and the botanists in the group, spent a day in Stellenbosch during their tour.

Mr. Ogawa's main aim is to study South African plants. He would like to become acquainted with the different vegetation types in South Africa and with our indigenous ornamental plants. He intends making a special study of our South African succulents (the University of Stellenbosch has a fairly good succulent collection.) Mr. Ogawa is studying general botany with particular regard for the morphology and taxonomy of the succulents. As a cytogeneticist he is particularly interested in publications on the cytogenetics, cytotaxonomy and micro-evolution of the South African succulent families. Since his arrival in South Africa he has developed a special interest in the cytogenetics, evolution and spread of the Proteaceae.

Mr. Ogawa's study programme has been drawn up by Prof. P.G. Jordaan in consultation with Prof. Kondo. Mr. Ogawa is not interested in spending his time on research while he is in South Africa. He is keen to go on botanical excursions, to visit botanical gardens and to see our botanical, genetical and cytogenetical laboratories.

Mr. Ogawa is a keen mountaineer but, with most of the mountains closed to the public during the dry summer and the students on vacation, has not had much opportunity for mountain climbing to date.

Mr. Ogawa arrived in South Africa on 1 December, 1972 at the start of the long summer vacation. After having stayed in a local hotel for a few days, he stayed with private people near the Botany Department so that he had easy access to his laboratory and the departmental library during the vacation. He is now in the new men's residence, Helshoogte. He is very keen on improving his English and uses every opportunity to do so. He is even keen on studying Afrikaans, but finds it very, very difficult!

SAAB COUNCIL MEETING: Council met on Saturday, 3rd February, at the University of Durban-Westville. Prof. C. Cresswell, Dr. L.E. Codd, Dr. B. de Winter, Mrs. E.P. du Plessis, Dr. A. Eicker, Prof. J.N. Eloff, Dr. F.M. Gétliffe, Dr. A. Jacot-Guillarmod, Dr. O.A. Leistner and Prof. O.A.M. Lewis were present.

A few of the important matters which were discussed are listed below:

(a) Destruction of plants during road construction. This subject has once again been brought to the attention of Council. Large scale destruction of *Encephalartos friderici-guilielmi* on the newly constructed road between Seymour and Whittlesea is the cause of grave concern, hundreds of large plants have been dug out and abandoned along the side of the road for nearly two years. The matter has been referred to the National Committee for Nature Conservation.

(b) Conservation in Bantu areas. A letter from the Adjunct Minister of Bantu Administration & Development was tabled. It was stated that with consolidation of the homelands, Mariepskop would become a white area.

(c) Constitution. Two important constitutional matters were discussed which will be put to the A.G.M. in June.

(d) International Congresses. A Council Committee has been appointed to launch a fund to be used to assist young botanists to attend International Congresses.

On behalf of the Council, Mrs. Du Plessis is still negotiating with Dr. A. Taktajan of the Kamorov Institute about the XIIth International Botanical Congress in Leningrad in 1975. Dr. Taktajan has said that he can see no reason why South Africans will not be given visas to enter the USSR for the Congress.

(e) Group tour to Colorado. Due to the lack of interest, this matter has been dropped, most South Africans attending this congress are making their own arrangements.

(f) The South African Medal for Botany. The first recipient of the S.A. Medal for Botany will be Dr. R.A. Dyer, who will be presented with the medal at the annual general meeting.

(g) Prof. H.P. van der Schijff. Council expressed their concern about the indisposition of their President, Prof. Van der Schijff, who has recently undergone two operations. On behalf of Council and thus all members, a letter was sent to him conveying their best wishes and wishing him a speedy recovery.

THE FIRST RECIPIENT OF THE SOUTH AFRICAN MEDAL FOR BOTANY: Robert Allan

Dyer, D.Sc., F.R.S.S.Af. was born in Pietermaritzburg in 1900 and was educated at Michael House, and Natal University College, Pietermaritzburg. All his working life he has been in the service of firstly the Division of Plant Industry, then the Division of Botany and Plant Pathology and finally the Botanical Research Institute of which he was chief and later Director from 1944 - 1963. Since his retirement Dr. Dyer has spent all his time at the Botanical Research Institute working on a new "Genera of South African Flowering Plants". He has no fewer than 428 Scientific papers to his credit.

Rightfully, Dr. Dyer may now be regarded as the present doyen of South African Botanists. For three decades he has played a leading role in botany in South Africa. His influence on the development of taxonomic and ecological aspects of this science in South Africa has been profound.

Dr. Dyer has written the text to several hundred colour plates in the Flowering Plants of Africa series; he was also the main contributor to The Succulent Euphorbiae and his Cycads of Southern Africa has become a classic.

Robert Allan Dyer has devoted his life to botany with great vision, zeal and perserverance and it is a fitting tribute that he receive the first S.A. Botany Medal for his contributions.

H.J.E. SCHLIEBEN RETIRES: At a small function at the Botanical Research Institute, Pretoria, on 31st January, 1973, Dr. Codd paid a tribute to Mr. Schlieben, on the occasion of his retirement after 17 years of service with the Institute, for the worthy contributions he has made to our knowledge of the African flora.

Hans-Joachim Eberhard Schlieben was born at Waldheim, Saxony, Germany on 26th May 1902. After obtaining a horticultural diploma, he gained experience in practical gardening from 1923 - 1928 in Holland, England, France and Algeria, returning to Germany to attend the Horticultural College in Geisenheim/Rhein from 1928 - 1930.

From 1930 - 1936 he was employed by Berlin-Dahlem Botanical Institute to collect plant specimens in Tanganyika Territory (Tanzania), where his

brother had previously settled as a farmer. Here he collected industriously at various places throughout the territory, including several areas such as Uluguru Mountains, the Mahenge Plateau and the Lindi District which were practically unknown botanically, amassing about 7 000 numbers, with about 10 duplicates of each. About 500 of these have been described as new and about 100 of them commemorate his name. His first set in the Berlin-Dahlem Herbarium was, unfortunately, destroyed during World War II, but duplicates of the majority are to be found in Kew, Paris, Brussels, Geneva, Zurich, Madrid, Stockholm, Lisbon and other herbaria, including some in PRE.

From 1936 to 1955 he remained in Germany, for most of the time at the Kolonial-Forst-Institut, Hamburg-Reinbek. In 1955 he emigrated to South Africa to join his brother who had, in the meantime, moved to a farm in the Soutpansberg, Transvaal. On 1st February, 1956, he was appointed as Technical Officer in the National Herbarium, Pretoria.

He has continued collecting, in his official capacity mainly in the Transvaal, Karoo, Bushmanland, Namaqualand and South West Africa, while during his vacations he has collected in Madagascar, the Mascarenes, the Comoro Islands and the Seychelles. In 1971 he made a point of returning, for a few weeks, to one of his most productive sites in Tanganyika, the Uluguru Mountains, mainly with the object of collecting living plants of *Aloe schliebenii*, which he succeeded in bringing back to Pretoria, together with a number of interesting plants for the garden.

He has contributed many articles to German horticultural journals and has two books to his credit: one on his Tanganyika experiences entitled "Deutsch Ost-Afrika einmal ganz anders" (Neudamm, 1941) and a description of the collecting expeditions of Ludwig Leichhardt in Australia, 1844-47 (Leipzig, 1959).

CHEMICAL CONTROL OF WEEDS ON RAILWAY PROPERTY: Information was received from the Chief Civil Engineer's Office of the South African Railways in response to the interest the SAAB has shown on previous occasions in the possible deleterious effects of spraying programmes. Extracts from the letters are reproduced below and indicate a co-operative spirit as well as an awareness of the possible dangers. Members are asked by Council to observe

the effects of spraying and to report any deleterious results to the Secretary. Members are also invited to comment on the extracts supplied should they wish to do so.

(a) Extracts from a letter received from the Chief Civil Engineer of the S.A. Railways:

"It is desired to inform you that this Administration is using the systematic spraying of commercial herbicides to control the growth of weeds and grass along the railway line formation, in marshalling yards and at stations adjacent to buildings and structures.

Agricura Laboratories, of Silverton, have contracted to treat railway property throughout the Republic. The railway line formation generally is sprayed by special train to a width of 6 m, shunting yards and areas are sprayed by mobile power sprays.

Recently the contractors have been asked to test granular herbicides, distributed dry on 2 m wide firepaths along both boundaries of the Administrations right of way between Meerhof and Doringspruit, and between Pienaars River and Tuinplaats, a total distance of 100 km.

Hyvar karmex G 15% will be used in varying coverages viz. 78, 95, and 112 kg/ha over 10 hectares and Hyvar-XG 15% at 56, 67 and 78 kg/ha over 30 hectares.

Confirmation that you have no objection and any comments you may wish to make will be appreciated. The Contractor is highly experienced in chemical weed treatment and the contract stipulates that he takes every necessary precaution against affecting adjoining property."

(b) Extract from information supplied by Chief of Weed Control of Agricura Laboratories who are executing the spraying programme for the Railways:

"I have pleasure in supplying you with the following information regarding the herbicides which we use on the Railway Contract Spraying: Hyvar X: (Active ingredient, Bromacil 80%). Karmex: (Active ingredient, Diuron 80%).

These are particularly stable herbicides with very long residual actions. They are wettable powders which are mixed with water and sprayed on to the ground during the period of active growth. Rain is required to carry these chemicals into the soil where they then become active and control growth by root-uptake only. There is no lateral movement of these chemicals in the soil nor is it possible to damage adjoining crops or any other vegetation by spray drift.

Practice has shown that vegetation is controlled up to the exact line of the outer limit of the spray pattern and that even very sensitive weeds and grasses growing immediately outside the area which has been sprayed are not affected by washing which may occur when heavy rains fall soon after spraying. Hyvar X controls grasses and broadleaf weeds. It will kill existing vegetation (by root-uptake) and, at normal rates, enough will remain in the soil to control subsequent seedling growth for one growing season. Trees and shrubs can be damaged by Hyvar X if the roots of these trees extend into the zone which has been treated. Trees growing 50 ft (15 m) from the track can be affected; some sensitive species will be killed, but mostly only signs of chlorosis will be seen on the leaves and later the trees will recover completely. In areas which have a high rainfall and deep soils, trees standing quite close to the track will remain completely unaffected because their roots do not extend into the track formation area.

KARMEX controls only seedling growth (by root-uptake) of broad-leaf weeds and annual grasses. It will not control existing vegetation nor can it cause damage to trees and shrubs. Both Hyvar X and Karmex are non-volatile, non-corrosive and non toxic to humans and animals.

On the Railway contract as well as for most other types of industrial weed control applications (road verges, storage sites, etc.) a 1 to 1 mixture of these two herbicides is now being used. This mixture gives an outstanding herbicide with a very broad spectrum of weed control and with a long persistence. At the same time, due to the reduced Hyvar X content, it is less toxic to trees.

The rates of application vary from 12 lbs (5,4 kg) to 24 lbs (10,8 kg) in 120 gals (5,46 l) of water per acre. On the S.A.R., verges width is 4 ft 6 ins. (1,4 m) plus 4 ft 6 ins. = 9 ft (2,7 m); therefore, 1 mile (1,6 Km) = approximately 1 acre (4047 sq. m). For ballast the width varies from 9 ft (2,7 m)

to 11 ft (3,4 m) and here control can be obtained with rates as low as 8 lbs (3,6 kg) to 10 lbs (4,5 kg) per mile (1,6 Km).

The application rate is dependent on soil type, rainfall and type of vegetation. A comparatively low rate on a light, sandy soil and under good rainfall conditions can, for instance, give a 100% result over the entire growing season, and yet this same rate on a heavy clay soil will produce no result whatsoever.

DALAPON (2,2 - Dichloropropionic acid). This is a systemic (leaf absorbed) grass-killer. We use this herbicide, in addition to Hyvar X and Karmex in areas where certain very resistant types of grasses occur. In areas where it is important to completely eliminate the risk of damage to trees and shrubs the Hyvar X can be eliminated and a mixture of Dalapon and Karmex used. This is still a very good herbicide but the omission of Hyvar gives a reduced measure of control on perennial grasses.

The basis on which the contract spraying is done is to apply the correct rates by a single annual treatment to ensure control for one growing season; there is, therefore, no danger whatsoever of contaminating adjoining farm lands and causing permanent sterility to the soil."

(Reported by B. de Winter)

DR. FRANK N. HOWES died in London on 26th Feb. this year. He was a student with Prof. Bayer and Dr. Dyer at the University of Natal and was on the staff of the Division of Botany from 1922 to 1924. He joined the Kew staff in 1925 and from there was sent to Ghana for two years. He returned to Kew as an assistant in the museum and became Keeper of the Museums on the retirement of Dr. John Hutchinson in 1948, eventually retiring himself in 1966. He was awarded a D.Sc. by the University of South African in 1935.

(R.A. Dyer)

WEEK-END SAAB EXCURSION: Please forward the enrolment forms included within the February edition of Forum Botanicum to Mrs. E.P. du Plessis, Division of

Information and Research, CSIR, P.O. Box 395, Pretoria before the 20th March, 1973 to allow for accommodation booking. The tour will start early on Saturday morning (30th June, 1973) to end on Monday morning (2nd July, 1973) in time for the afternoon official opening of the new Botanical Research Institute Building.

NAVORSINGSINSTITUUT VIR PLANTKUNDE: VAKATURES: Die volgende vakatures bestaan op die personeel van die Navorsingsinstituut vir Plantkunde:

(a) Tegniese Assistent - Tuinrekords

Pligte behels die hou van kaartindeks-sisteme en registers van ontvangste asook nagaan van etikette van lewende plante in die Botaniese Tuin.

(b) Tegniese Assistent - Anatomiese Laboratorium

Pligte behels die maak van anatomiese preparate en algemene laboratorium werk.

(c) Tegniese Assistent - Ekonomiese Plantkunde

Pligte sluit die beantwoord van navrae vir plantmateriaal, hou van rekords en algemene korrespondensie in.

(d) Tegniese Assistent - Herbarium

Pligte behels in hoofsaak onderhoud van die herbarium, monteer van eksemplare en indien voldoende aanleg openbaar word die benaming van plante.

Kwalifikasies:

Matriek Sertifikaat, verkieslik met biologie as vak. Dames sowel as mans sal oorweeg word en ouderdom speel nie 'n belangrike rol nie.

Aansoeke skriftelik aan: Die Direkteur
Navorsingsinstituut vir Plantkunde
Privaatsak X101
PRETORIA.

JOHANNESBURG BOTANIC GARDEN: Situated at Emmerentia, Johannesburg, this garden comprising over 120 ha was officially opened on Friday 16th February by the mayor of Johannesburg.

Approaches have been made to organizations in various parts of the world with requests for plant material from as many countries as possible. With the co-operation of Kirstenbosch, a section will be set aside for the South African flora.

The well-known rose garden, which was established some years ago, forms part of the new garden.

The Johannesburg Botanic Garden Society is collecting money to construct an education centre as one of its first priorities.

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