

The Opening of the Pretoria National Botanic Garden.

By

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After my return in 1934 from the Royal Botanic Gardens, Kew, I cherished the idea of a botanic garden attached to the National Herbarium, Pretoria. Kirstenbosch served the needs of the winter rainfall region of the Union, and a similar institution to serve the summer rainfall area was an obvious necessity. That it should be complementary to the National Herbarium also seemed obvious.

In 1944, towards the end of the war, the idea was given its first airing, in connection with the training of student gardeners, but the time was not propitious. In 1945 the botanical survey section of the Division of Botany was resuscitated with Dr. L. E. Codd in charge. The question of a new botanic garden was then brought into the open and the environs of Pretoria were explored for a suitable area.

At this juncture contact was made with Professor H. B. Davel, then director of the Agricultural Research Institute of the University of Pretoria. Together we inspected the piece of the University farm cut off from the main block by the Silverton and Brummeria roads, which had been found unsuitable for farm experimental purposes owing to its isolation and to the presence of an abundance of *gifblaar*, *Dichapetalum cymosum*. Other areas were considered including a portion of Rietondale Experimental Station, but the University ground was favoured above all others and this project gained the support of the then Minister of Agriculture Mr. J. G. N. Strauss.

The University Council gave formal approval of the development of the area as a botanic garden in June, 1946. Soon afterwards Mr. Jan Erens, head gardener at the Division of Botany, drew up a rough plan of the area, planted the first avenue of experimental trees, supervised the sinking of boreholes and saw to the building of 2 small reservoirs.

The decision in 1947 to purchase the western corner of portion F of Koedoespoort farm 299 proved abortive, owing to a ridiculously high price being placed on the property by the owner.

Mr. Erens was promoted into the Public Works Dept. in 1949 and Mr. A. van der Ende later took over his duties at the Division of Botany at Vredenhuis, while Mr. J. Admiraal was appointed to the gardening staff and placed in charge of the new botanic garden.

In 1951 the University Council donated 200 acres on the opposite (south) side of the Brummeria road to the C.S.I.R. for its head office and laboratories. The Division hoped to be treated in similar fashion, but the University Council decided to retain the botanic garden ground under the Agricultural Research Institute.

In 1954, the Bureau of Standards negotiated with the University for the purchase of the botanic garden ground, and interested parties suggested that an area in the Fountains Valley or the Wonderboom Reserve would serve equally well as a botanic

garden. A Commission consisting of Professors W. J. Lutjeharms, A. W. Bayer, R. S. Adamson and N. P. Badenhuizen, reported strongly in favour of the existing project and their recommendation was accepted by the Minister of Agriculture at the time, Mr. S. P. le Roux and the University Council.

The building of a residence on the botanic garden for the gardener in charge was sanctioned in 1955, and was soon completed under the guidance of the P.W.D.

With the support of the Minister, Mr. le Roux, the Secretary for Agriculture, Dr. C. H. Neveling and the Director of Technical Services Dr. M. S. du Toit, we succeeded, in a matter of 13 days, in obtaining Treasury authority to purchase, on 15/10/55, portion G of farm Koedoespoort No. 299, nearly 8 morgen in extent, with northern aspect, to add to the botanic garden.

Progress has been most encouraging and the present Minister of Agriculture (Technical Services) Mr. P. K. le Roux, accompanied by Mrs. le Roux, opened the garden officially on 23rd October, 1958.

By the greatest good fortune, considering the unsettled weather at the time, the morning of the 23rd was perfect for the outdoor ceremony. A Cabinet Meeting called for 11 a.m. on the 23rd, threatened to wreck the opening ceremony, but all obstacles faded away at the last moment.

Mr. le Roux addressed the gathering of about 150 guests, speaking for the first half in Afrikaans and then in English. The text of his address, with a translation, was as follows:—

„Die grond waarop ons vanmore staan is 'n deel van die Pretoria Universiteitsplaas—'n deel van die plaas wat vir die Fakulteit van Landbou opsygesit is. Effens oor die tien jaar gelede het die Universiteitsraad toegestem dat 'n botaniese tuin op hierdie terrein tot stand gebring kon word. Plantkunde, soos u sal begryp, is een van die basiese kursusse in die eerstejaars studiekursus van alle studente wat Landbou loop, dus is daar alle rede om noue samewerking tussen die Fakulteit en die Afdeling Plantkunde te hê.

Dit doen my groot genoë om op hierdie geskiedkundige geleentheid, naamlik die opening van hierdie botaniese tuin, die Rektor—Prof. Rautenbach—en die Universiteitsraad vir hulle vërsiende beleid om hierdie ontwikkeling aan te moedig, te bedank. Die grond is ongeveer 68 morg groot. Deur slegs rond te kyk sal u besef wat 'n uitstekende ligging dit as botaniese tuin het. Dit is maklik bereikbaar daar dit op die nasionale pad van Pretoria na die Oostelike Transvaal en die Kruger Wildtuin geleë is. Al hoe meer oorsese besoekers sal langs hierdie roete reis en hierdie vertoonvenster van ons Suid-Afrikaanse flora sien. Dit sal gedurig in die oog van die publiek wees.

Daar is noordelike en suidelike hange; daar is 'n groot golwende gebied wat uit diep sanderige grond bestaan, en daar is hierdie mooi koppie agter my wat die hele terrein oorheers en vanwaar 'n groot deel van Pretoria sigbaar is. 'n Mens kan ook na die imposante reeks geboue wat deur die Wetenskaplike en Nywerheids Navorsingsraad oorkant die pad opgerig is, tuur, en peins omtrent wat alles in hulle gedoen word. Ja, hierdie is waarlik 'n stimulerende omgewing en ons kan verwag dat hierdie tuin in die jare wat voorlê iets om op trots te wees sal word.

Plantkunde in die breë sin van die woord ken geen grens tussen sulke onderwerpe soos Tuinbou, Plantsiektekunde, Weidingsnavorsing, Veldbeheer, Plantfisiologie en Planteteelt nie. Plantkunde dien hulle almal. Wanneer 'n nuwe gebied ontgin word is een van ons eerste pligte om 'n opname van die inheemse plantegroei te maak. Die samestelling van die natuurlike onbeskadigde veld toon beste aan hoe die land gebruik moet word om die maksimum landboukundige opbrengs daaruit te verkry.

My vriende wat boer is sterk bewus van die aanhoudende pogings van die Departement om die land meer bekwaam te gebruik. Hulle is bewus van die verslag oor hierdie onderwerp wat deur die Afdeling Ekonomie en Markte uitgegee is. Veldwerkers van die Afdeling Plantkunde het 'n belangrike bydrae tot hierdie werk gelewer deur veldtipes en hulle verspreiding af te baken.

Die boer self moet sy veld ken. Hy moet soveel as moontlik van die afsonderlike plante, wat sy veld vorm ken. Hy moet die goeie voerplante, wat aangemoedig en teen oorbeweiding beskerm moet word, ken. Hy moet ook die giftige plante, wat gedurig 'n bedreiging vir sy vee is, ken. Die Afdeling Plantkunde het baie inligting omtrent hierdie onderwerpe versamel, maar sal in hierdie ontsaglik studieveld nooit alles kan weet nie. Ons kennis is nooit volledig nie. Plante uit die veld sal in hierdie tuin vir verdere studie gekweek word en die inligting aldus verkry sal soos in die verlede, vir die boeregemeenskap en algemene publiek, beide in die Unie en oorsee, beskikbaar gestel word.

Die geskiedenis van Landbou in die Unie gaan terug na die aankoms van Jan van Riebeeck aan die Kaap in 1652. Een van sy eerste pligte was om 'n tuin vir die kweek van groente, om handelssepe van die Hollands-Oos-Indiese Kompanjie daarmee te voorsien, tot stand te bring. Die geskiedenis van die Landbou in Transvaal dek egter 'n baie korter tydperk en begin kort voor 1900. Sommige van die vroeë gebeurtenisse is van algemene belang en toepaslik op hierdie geleentheid. In 1896 het die Volksraad 'n veearts, Arnold Theiler, aangestel om die Runderpes, wat toe gewoed het, te bestry. 'n Plantkundige, Burt Davy, is in 1903 aangestel, dus het die Departement van Landbou in die Transvaal met die aanstelling van 'n veearts en 'n plantkundige begin. Die plig van die plantkundige was om in die veld uit te gaan, boere te ontmoet, en die landboubehoefte van die verskillende streke te bespreek, om die voerplante van die natuurlike veld te bestudeer, sowel as die giftige plante, skadelike onkruid, ens. Daarby moes hy verteenwoordigende versameling van hierdie plante wat die kern van 'n herbarium sou vorm, bewaar.

'n Plantsiektekundige is in 1905 tot die span gevoeg om graansiektes te bestudeer.

Na Unie was die ontwikkeling vinniger en is die staf aansienlik uitgebrei. By die funksies van die Afdeling Plantkunde en Plantsiektekunde is Tuinbou, Akkerbou, Weiding, Insektekunde, Grondbewaring en Uitbreiding gevoeg, en die hele organisasie het die Afdeling van Plantnywerheid geword. By die hoofkwartier te Vrede Huis was slegs 'n klein botaniese tuin en bykomstige proefstasies om inheemse en ingevoerde plante te ontvang en te toets ten opsigte van hulle landboukundige moontlikhede, is opgerig.

Die skepper van die Afdeling van Plantnywerheid, Dr. I. B. Pole Evans het in 1939 op pensioen afgetree, en dit is toe besluit dat die leiding van die verskillende lyne van navorsing wat hy tot stand gebring het onder onafhanklike Hoofde van Afdelings voortgeset wou word. Op die manier het Tuinbou, Akkerbou en Weiding, Insektekunde, Grondbewaring en Uitbreiding afgeskei en die Plantkunde en Plantsiektekunde seksies was weer op hulle eie. 'n Tydjie later het Plantsiektekunde ook mondig geword en 'n Afdeling op sy eie geword.

Nadat hy hierdie satelliete met welslae afgevuur het, kon die Afdeling Plantkunde sy aandag skenk aan 'n meer eng botaniese navorsingsveld, en so is dit teweeggebring dat plantkundiges in die Nasionale Herbarium, wat grootliks besiggehou word met die opname en klassifikasie van ons inheemse flora, gevoel het dat 'n botaniese tuin, wat die naam waardig sou wees, waarin lewende plante gekweek en waargeneem kan word—'n tuin waarin die moontlikhede van elke soort afsonderlik bestudeer kan word—noodsaaklik geword het. Tegelykertyd sou dit 'n opvoedingsentrum en skoonheids-oord word.

Op hierdie tydstip is die verbond tussen die Afdeling Plantkunde en die Universiteit van Pretoria, waarna ek in die begin verwys het, gemaak.

Sedert die vroegste tye is plante in tuine versorg. Die vroegste tuine het hoofsaaklik te doen gehad met die kweek van geneeskragtige kruie en was werklik die eerste wetenskaplike plantkundige inrigtings. Selfs vandag, hoewel daar so 'n menigte van die nuwe sintetiese medisynes is, is daar nog 'n diep belangstelling in navorsing van die wêreld se plantegroei met die oog op die ontdekking van nuwe medisynes of nuwe bronne van bekende samestellings. Suid-Afrika dra reeds 'n belangrike deel by deur die uitvoer van aalwyn, boegoeolie en diosgenin, wat uit *Dioscoria* verkry word vir die vervaardiging van cortisone, om slegs drie voorbeelde te noem. Op die huidige tydstip is daar 'n skema wat deur handelsbelange in Amerika ondersteun word, om 'n pos vir 'n Afrikanerskeikundige wat die plantegroei van die Unie meer intensief as ooit tevore sal bestudeer, te skep. Die persoon aan wie die pos geskenk word sal van beide die W.N.N.R. en die Afdeling Plantkunde leiding ontvang, en in hierdie tuin waarin ons vanmore saamgekom het, sal plante deur hom versamel en gekweek word.

Wanneer ons die taamlik onlangse geskiedenis van botaniese tuine beskou vind ons dat baie van hulle dwarsoor die wêreld 'n belangrike rol in die toets en verspreiding van plante wat van ekonomiese belang is, gespeel het. Daar is die beroemde geval van die plantkundige wat toevallig 'n paar sade van die rubberboom in sy natuurlike omgewing in Suid-Amerika versamel het, en hulle na Kew Botaniese Tuin in Engeland gestuur het. Die jong rubberbome wat daaruit gespruit het is toe na die Singapoer Botaniese Tuin gestuur, en uit hierdie klein begin is 'n industrie met 'n geweldige waarde vir die mens, en bepaald baie miljoen pond werd, opgerig. Botaniese Tuine van die wêreld het 'n ewe belangrike rol in die ontwikkeling en uitbreiding van die katoen, kiena en tee-industrië gehad, en uit Australië het ons die voorbeeld van die uitgebreide koringnywerheid wat ontstaan het vanuit 'n paar sade wat na die Sydney Botaniese Tuin ingevoer is. Ek kan u ook as 'n voorbeeld noem een van ons eie veldgewasse, wat 'n belangrike plek in die landbou buite ons grense ingeneem het, deur die toedoen van wyle Dr. Maria Wilman wie op die flora van Griekwaland-Wes gewerk het. Dr. Wilman het saad van een van ons gewone veldgrasse—een wat destyds geen groot naam in die Unie gehad het nie—na Amerika gestuur. Hierdie gras, *Eragrostis curvula*, het spoedig in die Amerikaanse landbou in die guns geraak, met die gevolg dat dit vandag as weiding en grondverbetering oor groot landstreke gesaai word, en in die algemeen die “Wilman Love Grass” genoem word. Die Amerikaners het reeds verbeterde tipes daarvan by hulle navorsingsstasies voortgebring. Die waarde van hierdie gras word nou ook in die Unie meer besef en in die Griekwaland-Oos distrik alleen is reeds meer as 10,000 akker binne die afgelope 8 jaar met Love Grass beplant. Die plantkundige in sy Botaniese tuin was bepaald al in menige ekonomiese belangrike landboukundige sake betrokke.

Ek het met opset u aandag op hierdie paar voorbeelde gevestig, om u te herinner hoe nou die landbou en ons alledaagse voorspoed met plantkunde verbonde is. Sedert die tydperk toe dit slegs van mediese belang was, het die funksies van 'n botaniese tuin egter geleidelik verander. Dit is nog 'n setel van opvoeding en geleerdheid, maar geleidelik het die estetiese aspek na vore getree. Laasgenoemde is ook van groot belang wanneer ons sy invloed op die opbou van ons nasionale kultuur oorweeg. 'n Opgevoede gemeenskap moet besef dat dit sy plig is om op intelligente wyse in die flora van sy land belang te stel. En wat is daar in ons flora om 'n gevoel van nasionale trots aan te wakker?

In die eerste plek kan ons daarop aanspraak maak dat die Unie van Suid-Afrika, in verhouding tot sy grootte een van die rykste floras in die wêreld het. Hier word oor die 20,000 soorte plante gevind. Om 'n paar statistieke te noem het ons ongeveer 500 soorte Erica, 300 soorte Protea en sy verwante, oor 880 soorte grasse, en heelwat meer as 1,500 soorte vygies en ander vetplante.

Die versamel en kweek van vetplante, wat vanaf die vroegste dae toe ontdekkingsreise in die Kaap gedoen is, populêr was, is vandag nog 'n stokperdjie waarin baie spesialiste verdiep is. Daar is 'n aanhoudende belangstelling en handel in hierdie groep, waarin die eindelose verskeidenheid van vorm en kleur altyd 'n bron van bewondering is. Daar is die Aalwyne, die vensterplante wat half begrawe is in harde grond, die klipagtige plante wat op die oppervlakte groei en so harmonies met hulle omgewing saamsmelt dat hulle besonder moeilik is om raak te sien, en 'n menigte ander eienaardige vorms. Nêrens in die wêreld is daar 'n vetplante-flora so ryk soos ons s'n nie.

In sommige droë dele van Amerika is daar 'n groot verskeidenheid cacti, 'n groep wat in die Unie afwesig is; maar die vetplant-flora van die Unie is nie alleen geweldig ryk in soorte nie maar het ook verteenwoordigers in 'n aantal heeltemal onverwante families waarin parallelle ewolusie plaasgevind het.

Maar dit is nie al nie. Die Unie het 'n aansienlike bydrae tot botaniese tuine en tuinbou dwarsdeur die wêreld gelever, vanuit die seldsame en pragtige flora waarmee die natuur ons so mildelik bedeel het.

Selfs voor die eerste blanke nedersetting aan die Kaap ongeveer 300 jaar gelede, het daar reeds 'n klein handel in Kaapse plante met 'n aantal koninklike tuine in Europa ontstaan. Matrose wat in die tuinbou belanggestel het, het saad en bolle versamel wanneer hulle tydelik geland het. Hoewel van Riebeeck die eerste nedersetters aan die Kaap streng beveel het om nie verder as die Skiereiland te reis nie, is hierdie perke spoedig oorskry. Later het die twee Goewerneys, Simon en Adriaan van der Stel, vader en seun, spesiale ontdekkingsreise na die binneland georganiseer om onder andere plante en saad te versamel om die beroemde tuine van Holland te verryk.

Gedurende die agtiende eeu was daar 'n standvastige vooruitgang in die invoer van Suid-Afrikaanse plante in Europa totdat, aan die einde van die eeu, dit gesê kon word dat ons Ericas, Proteas, Stapelias en baie bolplante byna die kweekhuise van nie alleen Holland, maar ook van Engeland, Oostenryk, Swede, Italië en Frankryk oorheers het. Tussen die besitters van tuine was daar skerp mededinging om die rykste versameling uitheemse plante te mag besit. Die Kaapse flora was 'n ontsaglike ryk bron om uit te put.

Gedurende die neëntiende eeu het die ambisie om nuwighede te kweek bedaar, en ons Flora het gedeeltelik sy aantrekkingskrag verloor, egter nie voor sulke plante soos Agapanthus, Nerine, Gladiolus, Pelargonium en vuurpyle, varkblomme en selfs sommige van die Namakwalandse madeliefies, blywende plek in die tuine van Europa en die Nuwe Wêreld ingeneem het nie. Terwyl hierdie Suid-Afrikaanse plante oorsee makgemaak is, het hulle die aandag van plantekwekers getrek, met verreikende tuinboukundige gevolge. Onder die kruisings wat eerste in guns geraak het, was die Pelargoniums—gewoonlik onder die naam Geranium bekend—wat tot vandag so uitgebreid in tuine gekweek word. U sal u herinner dat die Geranium Vereniging van Britanje onlangs aan die Unieregering 'n versameling van die beste moderne kruisings geskenk het, as 'n blyk van waardering aan die land van hulle herkoms. Hierdie versameling is nou in bewaring van die Afdeling Tuinbou.

Dan is daar die rooi Barbertonse Madeliefie, wat deur seleksie en kruising 'n byna eindelose verskeidenheid van kleure en dubbelvorms voortgebring het, en wat die besonder goeie hoedanigheid het dat dit so lank in water kan hou. Om die waarheid te sê is daar maar min van ons gekweekte blomme wat hulle oorspronklike vorm behou het. Besoekers aan openbare tuine oorsee dink nie eers om navraag te doen oor die land van oorsprong van die vele tuinboukundige wondere nie.

Is dit dus nie paslik dat ons ons eie flora behoort te eer nie; dit in sy natuurlike toestand moet bestudeer, dit in hierdie botaniese tuin moet kweek en bewaar sodat almal dit kan sien en waardeer nie? Hier sal geen plek vir uitheemse plante wees nie.

Sonder twyfel is daar in die teenwoordige eeu dwarsdeur die Unie 'n algemene oplewing van belangstelling in die kweek van ons inheemse flora. Groot stappe vooruit is gemaak in die openbare tuine van sommige van die groter en heelparty van die kleiner dorpe. Uitgebreide gebiede is opsygesit vir die bewaring van aantreklike en interessante soorte. Dit werk alles ten goede en die neiging behoort soveel moontlik aangemoedig te word, maar uit die aard van die saak is die wetenskaplike toenadering afwesig of slegs tot 'n beperkte mate in ag geneem. Slegs inrigtings soos die Afdeling Plantkunde met sy staf bestaande uit opgeleide plantkundiges en tuiniers kan wetenskaplike studie met die kweek van plante verenig.

Die Nasionale Botaniese Tuin te Kirstenbosch, wat in 1913 tot stand gekom het, het 'n soortgelyke organisasie—'n tuin en 'n opgeleide plantkundige staf. Om die waarheid te sê word dwarsdeur die wêreld die kombinasie van 'n botaniese tuin met 'n herbarium en biblioteek erken as die ideale organisasie om plantkunde as wetenskap te bevorder.

Die Nasionale Botaniese Tuin te Kirstenbosch het tans 'n wêreldwye reputasie deur sy pragtige omgewing en groot natuurlike skoonheid. Sy reputasie is onlangs verder bevorder deur die toekenning van 'n goue medalje op 'n internasionale blommeskou in New York vir 'n versameling van Suid-Afrikaanse blomme wat hoofsaaklik uit Proteas bestaan het. Kirstenbosch kan egter nie 'n beeld gee van die flora van die hele Unie nie. Geen enkele inrigting sou dit kon doen nie.

Soos u almal weet word die Unie volgens klimaat in 'n oorwegende winterreënvalstreek en 'n oorwegende somerreënvalstreek verdeel, met 'n betreklik klein streek met reën dwarsdeur die jaar in die George-Knysna gebied. Soos te begryp is die flora van die twee hoofgebiede baie verskillend. Kirstenbosch, wat 'n hoë winterreënval geniet, is dus die mees gepaste plek om die flora van daardie gebied te bestudeer. Die plantegroei van die somerreënvalstreek is nie daar tuis nie, en dit is hierdie afdeling wat die meeste aandag in hierdie nasionale Botaniese Tuin sal geniet. Die Afdeling Plantkunde wil egter nie sy ambisie verswyg om ook sukses met sommige van die Kaapse plante te behaal nie, en aan my is meegedeel dat hierdie plan bevorder word deur Mev. Vogts, wat self vanmore hier aanwesig is, en self in Pretoria sukses daarmee behaal het na vroeëre ondervinding aan die Kaap.

Die gedagte het seker al by meeste van u verrys dat die ontwikkeling van 'n botaniese tuin met die bou van 'n nasie vergelyk kan word. Die stigters het hulle ideale en strewe; hulle lê die fondament, maar sien selde hulle arbeid tot volle bloei kom. Vandag lê ons dus spreekwoordelik die hoeksteen van 'n gebou wat baie jare sal neem om sy volle grootte te bereik. As simbool van die strewe van die Afdeling Plantkunde is ek gevra om 'n inheemse boom as aandenking aan hierdie geleentheid te plant. Die groei en ontwikkeling van die boom wat jaar na jaar in grootte en skoonheid sal toeneem, sal 'n inspirasie wees vir latere geslagte van tuiniers en plantkundiges. En met hierdie vooruitsig waarin ons ten volle vertrou het doen dit my genoë om hierdie Nasionale Botaniese Tuin oop te verklaar. Ons sal nou voortgaan om die boom te plant.”

“The ground we are standing on this morning is part of the Pretoria University farm—part of the farm set aside for the Faculty of Agriculture. It is now a little over ten years ago that the University Council agreed to the establishment of a botanic garden on this site. Botany, it will be appreciated, is one of the basic courses in the first year curriculum of all students taking Agriculture, so there is every reason why there should be close collaboration between the Faculty and the Division of Botany.

It gives me great pleasure on this historic occasion of the official opening of this botanic garden to thank the Rector—Professor Rautenbach—and the Council of the University for their far sighted policy in fostering this development. The area is approximately 68 morgen in extent. You have only to glance round to appreciate what an

excellent site it is for a botanic garden. It is readily accessible. It is on the national road from Pretoria to the eastern Transvaal and the Kruger National Park. Along this route more and more overseas visitors will travel and see this display window of our indigenous flora. It will be constantly in the public eye.

In this garden there are north and south facing slopes; there is a large undulating area of deep sandy soil, and there is this fine koppie behind me which dominates the whole site and from which one can survey a wide expanse of Pretoria. Or one can gaze and ponder about what goes on across the road in that imposing array of buildings erected by the Council for Scientific and Industrial Research. Yes, this is a truly stimulating environment and we can expect this garden to become a place of pride in years to come.

Botany in its broad sense knows no boundary between such subjects as Horticulture, Plant Pathology, Pasture Research, Veld Management, Plant Physiology and Plant Breeding. Botany serves them all. When a new territory is opened up one of the first duties is to take stock of the wealth of the indigenous vegetation. It is the composition of the natural undamaged veld which affords the best indication of how the land should be utilised for the maximum agricultural output.

My farming friends are well aware of the continuous efforts of the Department for more efficient land utilisation. They are aware of the report on this subject by the Division of Economics and Markets. The field officers of the Division of Botany played an important part in this project in demarcating veld types and their distribution.

The farmer himself must know his veld. He must know as many as possible of the individual plants which go to make up his veld. He must know the good fodder plants, those to be encouraged and protected against overgrazing. He must know also the poisonous plants which are a constant menace to his stock. The Division of Botany has a good store of information on these subjects but can never find out all there is to know in such a vast field of study. Our knowledge is never complete. Plants from the veld will be introduced into this garden for further study and the information obtained, will, as in the past, be made available to the farming community and general public both in the Union and oversea.

The history of Agriculture in the Union dates back to the arrival of Jan van Riebeeck at the Cape in 1652. One of his first duties was to establish a garden for the cultivation of vegetables to supply trading vessels of the Dutch East India Company on their way to and from the East Indies. The History of Agriculture in the Transvaal, however, covers a very much shorter period and begins shortly before 1900. Some of the early events are of general interest and relevant to the present occasion. In 1896 the Volksraad appointed a veterinarian, Arnold Theiler, to combat the scourge of Rinderpest which was then raging. A botanist, Burt Davy, was appointed in 1903. Thus it was that the Department of Agriculture in the Transvaal had its beginning in the appointment of a veterinarian and a botanist. The duty of the botanist was to go out into the veld, to meet farmers and discuss the agricultural needs of the different areas, to study the fodder plants of the natural veld, the poisonous plants, noxious weeds and any plant which might have some economic value. In addition he had to preserve for permanent record representative collections of these plants as the nucleus of a herbarium.

A Plant Pathologist was added to the team in 1905 to study cereal diseases.

After Union there was more rapid development and considerable staff expansion. To the functions of the Division of Botany and Plant Pathology were added Horticulture, Crops, Pastures, Entomology, Soil Conservation and Extension, and the whole organisation became the Division of Plant Industry. There was only a small botanical garden

at the headquarters at Vrede Huis and additional experimental stations were established to receive indigenous and introduced plants where they could be tested for their agricultural potentialities.

The Architect of the Division of Plant Industry, Dr. I. B. Pole Evans, retired on pension in 1939, when it was decided that the direction of the several lines of research which he had initiated should be placed under independent Chiefs of Divisions. Thus Horticulture, Crops and Pastures, Entomology, Soil Conservation and Extension hived off leaving the Sections of Botany and Plant Pathology on their own again. Some-time later Plant Pathology also attained its majority and became a fully fledged Division.

Having successfully launched these important satellites the Division of Botany was set to concentrate on a more strictly botanical field of research, and so it was that botanists in the National Herbarium, who are largely occupied with the stocktaking and classification of our indigenous flora, felt the need of a botanical garden, worthy of the name, in which to grow and observe plants in their living state—a garden in which to study the potentialities of each individual species. It would be at the same time an educational centre and a place of beauty.

It was at this stage that the alliance was made between the Division of Botany and the University of Pretoria to which I referred at the outset.

From time immemorial plants have been cared for in gardens. The earliest gardens were concerned mainly with the cultivation of herbs with medicinal properties and were in fact the first scientific botanical institutions. Yet even today, with the spate of new synthetic drugs there is still an intense interest in the exploration of the vegetation of the world for the discovery of new drugs or new sources of known compounds. South Africa is already making valuable contributions by the export of “aloes”, “buchu oil”, diosgenin, from *Dioscorea* for the manufacture of cortisone, to mention only three examples. There is now on foot a scheme sponsored by commercial interests in America to create a Fellowship for a South African to explore the chemical properties of the flora of the Union more intensively than ever before. The holder of the Fellowship will receive direction from both the C.S.I.R. and the Division of Botany, and this garden, in which we are gathered this morning, will receive any plant material which shows promise of beneficial properties.

If we look into the fairly recent history of botanical gardens we find that many of them throughout the world have played an important part in the trial and distribution of plants of economic importance. There is the famous case of the botanist casually collecting a few seeds of the rubber tree in its wild habitat in South America and sending them to the Kew Botanic Gardens in England. The resulting young rubber trees were then forwarded to the Singapore Botanic Gardens, from which small beginning an industry of immense value to mankind, and certainly one worth many millions of pounds, has been established. Botanical Gardens of the world played an equally important part in the development and expansion of the cotton, quinine and tea industries, and from Australia we have the example of the extensive wheat industry being founded on a few seeds introduced into the Sydney Botanic Gardens.

I can give you an example also of one of our veld plants gaining a place of importance in agriculture beyond our borders through the action of the late Dr. Maria Wilman who worked on the flora of Griqualand West. Dr. Wilman sent seed of one of our ordinary veld grasses—one with no great reputation in the Union at the time—to America. This grass, *Eragrostis curvula*, soon found favour in American agriculture, with the result that today it is sown as a pasture and soil improver over vast areas, and is commonly referred to as the ‘Wilman Love Grass’. The Americans have, in fact, already produced improved strains at their experimental stations. The value of

the grass is now appreciated more in the Union too, and in the Griqualand East district alone over 10,000 acres have been planted with Love Grass within the last 8 years. The botanist in his botanical garden has certainly had a finger in many a rich agricultural pie.

I have purposely drawn your attention to these few examples to remind you how intimately Agriculture and our every day welfare have been linked with the subject of botany. The functions of botanical gardens have, however, undergone a gradual change since the days of the purely medicinal concept. It is still a seat of learning and education and gradually the aesthetic aspect has gained prominence. This is also of great importance when we weigh its influence in the building up of a national culture. An educated community must recognise that it is its duty to take an intelligent interest in the flora of the country in which it lives.

And what have we in this flora of ours to inspire a national pride?

For a start we can claim that, for its size the Union of South Africa has one of the richest floras in the world. It supports nearly 20,000 species. To mention a few statistics we have about 500 species of Erica, 300 species of Protea and its allies, over 800 species of grass and well over 1,500 species of vygies and other succulents.

The collection and cultivation of succulents, which was popular from the earliest days of exploration at the Cape, is still an absorbing hobby for many specialists. There persists a steady interest and trade in this group in which the infinite variety of form and colour is a continual source of wonder.—There are the Aloes, the window plants half buried in hard ground, the stone-like plants growing on the surface and blending so harmoniously with their surroundings that they are extremely difficult to detect, and a host of other curious forms. Nowhere in the world can our succulent flora be matched for its richness.

Some arid areas of the Americas boast a great variety of Cacti which are absent from the Union, but the succulent flora of the Union is not only immensely rich in species but is represented in a number of unrelated families in which there has been parallel evolution.

But this is by no means all. The Union has contributed handsomely to botanical gardens and horticulture throughout the world from the rare and beautiful flora with which nature has so lavishly endowed us.

Even before the first European settlement at the Cape about 300 years ago, there had developed a small traffic in Cape plants to several royal gardens of Europe. Sailors with an interest in horticulture had gathered seed and bulbs during temporary landings. And although the first settlers at the Cape were given strict instructions by van Riebeeck to confine their wanderings to the Peninsula, it was not long before these bounds were broken. Later the two Governors, Simon and Adriaan van der Stel, father and son, organised special expeditions into the interior in order, among other things, to collect plants and seed to enrich the famous gardens of Holland.

Steady progress with the introduction of South African plants to Europe was made during the 18th century, until towards the end of the century, our Ericas, Proteas, Stapelias and many bulbous plants, may be said almost to have dominated the green-houses, not only of Holland but of England, Austria, Sweden, Italy and France. There was great rivalry among the owners of gardens to claim the richest collection of rare plants from foreign lands. The Cape Flora was a tremendously rich reservoir from which to draw.

During the 19th Century the ambition for novelty subsided and our Flora lost some of its attraction; not, however, before such subjects as *Agapanthus*, *Nerine*, *Gladiolus*, *Pelargonium*, the red hot pokers, *Arum* lilies, and even some of the Namaqualand daisies, had earned for themselves a permanent place in the gardens of Europe and the New World. During their domestication overseas these South African plants attracted the attention of plant breeders with far reaching horticultural results. Among the earliest hybrids to gain favour were the *Pelargoniums*—popularly referred to as *Geraniums*—which are so extensively used to this day. It will be recalled that the *Geranium Society* of Great Britain quite recently presented the Union Government with a collection of the best modern hybrids as a token of gratitude to the Country of their origin. This collection is now under the care of the Division of Horticulture.

Then there is the red Barberton daisy, which by selection and hybridisation has yielded an almost endless variety of shades and double forms, whose lasting quality as a cut flower is a special asset. There are in fact very few of our cultivated flowers which have retained their original purity. Visitors to public gardens overseas take so many of these wonders for granted that few pause to enquire about the country of origin.

Is it not fitting therefore that we should honour our own flora, study it in its natural condition, cultivate and preserve it in this botanical garden for all to see and appreciate? There will be no place here for exotics.

There is no doubt that the present century has seen a general awakening of interest in the cultivation of our indigenous flora throughout the Union. Rapid strides have been made in the public gardens of some of the larger and several of the smaller towns. Extensive areas have been set aside for the preservation of attractive and interesting species. This is all to the good and the trend should be encouraged as much as possible; but in the nature of these undertakings the scientific aspects are absent or, at best, observed only to a limited degree. It is only institutions such as the Division of Botany with a staff of trained botanists and gardeners that can combine scientific study with the art of cultivation.

The National Botanic Garden of Kirstenbosch established in 1913 has a similar organisation—a garden and a trained botanical staff. In fact throughout the world the combination of a botanical garden with a herbarium and library is recognised as the ideal organisation for the advancement of botanical science.

The National Botanic Garden at Kirstenbosch has earned for itself a world-wide reputation for its magnificent setting and its great natural beauty. Its reputation was enhanced still further recently by the winning of a gold medal award at an international wild flower show in New York for a collection of South African flowers consisting mostly of *Proteas*. But Kirstenbosch cannot feature the whole of the Union's flora. No single institution could do so.

As you all know the Union is divided climatically into a predominantly winter rainfall region and a predominantly summer rainfall region, with a relatively small region of equal proportions of winter and summer rainfall in the George–Knysna area. As one could guess, the flora associated with the 2 main regions is distinctive. Thus Kirstenbosch, which enjoys a high winter rainfall, is suited best for the study of the flora of that region. The summer rainfall flora is not at home there and it is this section which will receive most attention in this Botanic Garden in Pretoria. The Division of Botany does not disguise its ambition, however, to achieve success with some of the Cape specialities, and I have been told that this project is fostered by Mrs. Vogts, who is present this morning, and has herself had success in Pretoria after earlier experience at the Cape.

It must have occurred to most of you that the development of a botanical garden has a likeness to the building of a nation. The founders have their ideals and aspirations; they set the foundation, but rarely see the full harvest of their labours. Thus today, we are, so to speak, laying the foundation stone of an edifice which will take many years to reach maturity. As a symbol of the ambition of the Division of Botany I have been asked to plant an indigenous tree to commemorate this occasion. The growth and development of the tree—year by year gaining in stature and beauty—is to be an inspiration to future generations of gardeners and botanists. And on this note of confident expectation, I have pleasure in declaring this national Botanic Garden open. We shall now proceed to the planting of the tree.”

One of the staff said later: While we entertained our guests to tea some phrases of the Minister’s address seemed to linger on the air— a botanical garden worthy of the name, in which to grow and observe our plants in their living state—in which to study the potentialities of each individual species—a garden that would be at the same time an educational centre and a place of beauty.

Now we look forward to the building of a new herbarium on a site within the new botanic garden. It is sorely needed.

The title Pretoria National Botanic Garden—Pretoria Nasionale Botaniese Tuin—was approved by the Council of the Pretoria University and by the Department of Agriculture (Technical Services) in 1959.