

COOPERATION PROJECT REPORT BETWEEN KATSE BOTANICAL GARDEN AND THE BOTANIC GARDEN OF MUNICH

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Table of contents

| | |
|---|-----------|
| TABLE OF CONTENTS | 2 |
| A) INTRODUCTION TO THE DOCUMENTATION SYSTEM OF MBG..... | 4 |
| B) WORKING IN THE PROPAGATION SECTION FOR ALPINES | 5 |
| C) WORKING IN THE ORNAMENTAL SECTION (‘SCHMUCKHOF’)..... | 5 |
| D) INTRODUCTION INTO PLANNING AND WORKING IN THE ROCK GARDEN (‘ALPINUM’) | 6 |
| E) LANDSCAPING IN THE TREE FERN HOUSE IN THE MBG INDOOR AREA | 7 |
| F) TEMPERATE HOUSE | 7 |
| G) INTRODUCTION TO THE HERBARIUM | 8 |
| H) PARTICIPATION IN THE MEETING OF HORTICULTURISTS OF PERENNIALS AND ALPINES OF GERMAN BOTANIC GARDENS | 8 |
| I) VISIT TO INNSBRUCK UNIVERSITY BOTANICAL GARDEN AND ALPINE GARDEN PATSCHERKOFEL (INNSBRUCK, AUSTRIA) | 9 |
| J) INTRODUCTION INTO PLANNING, LANDSCAPING AND OTHER WORKS IN THE SCHACHEN ALPINE GARDEN..... | 10 |
| K) ROSENHEIM LANDESGARTENSCHAU) 2010 (INNSPIRATION) AND MUNICH BOTANICAL GARDEN ROSE SHOW..... | 11 |
| FIGURE 7: VARIETY DISPLAYS FOR EDUCATION AND ETC..... | 11 |
| L) DISCUSSIONS AND CONCLUSIONS AND PREPARATION FOR FUTURE CO-OPERATIONS | 12 |
| M) OUTSIDE THE GARDENS | 13 |
| N) ACKNOWLEDGMENTS | 14 |

1. Introduction

The basis for development of botanical gardens with their unique and special activities in most cases encompasses botanical conservation, displays, education and scientific research as such the prerequisite to achieve all these is always crucial to focus on the following: comprehensive planning, development and proper management techniques. The collaboration with München Botanical Garden was forged since 2005. Due to this collaboration, several projects have been implemented such as Horticulturist exchange programme, Development of landscaping concept plan for Katse Botanical Garden, production and publishing of joint annual seed catalogues, donation of Katse Botanical Garden with engraved labels for medicinal plants and other useful plant species and development of a cooperation information board. To continue this fruitful cooperation it was again possible for a visit to Munich Botanical Garden in order to continue to gain more practical experience in the planning and development of an Alpine Botanical Garden. It was also to receive first hand information that could be relevant in Lesotho in the field of Alpine plant cultivation, management, plant identification and documentation.

2. Experiences and lessons learned

a) Introduction to the Documentation System of MBG

A detailed discussion was held with Dr. Andreas Gröeger (Scientific Curator) on plant recording/database. This is designed as a management tool for the garden. It allows detailed information to be stored about plant and seed material, recording the location and subsequent movement of the material within the garden i.e. from propagation site to different garden sections / the location of material within the garden. It allows for the condition and extend of survival of material to be monitored through time. Reporting facilities include accession details such as accession number, plant name, material collected, collection date, name of collector, collection locality, GPS coordinates, altitude and lineage reports outlining the movement of collections through time and many more. Each year's accession should start from where the previous accession ended. The accession numbers for the year 2010 and 2012 were printed on stickers which will be attached on plant labels, this was reached upon the decision that the feasible number of accession to be collected, identified, labeled and well recorded for Katse garden could be in a range of 40 – 50 accessions per year for now. It was recommended that the data set for Katse garden should be managed by the Garden Curator

Examples of accession numbers for Katse garden were proposed to be as follows:

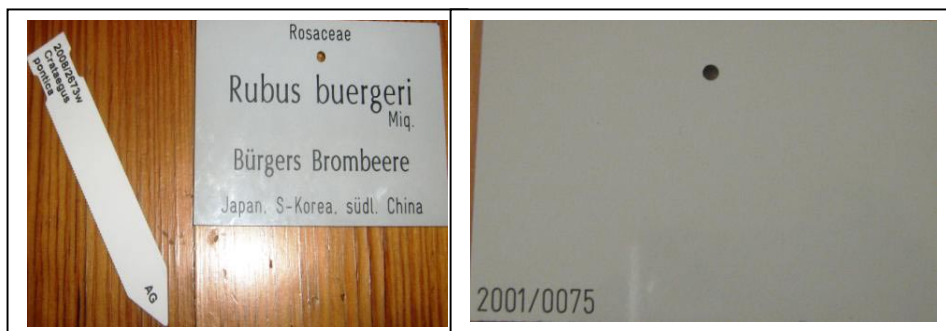
Year / unique number

2010 / 001

2010 / 002

And so on

Figure1. Plant labels with accession numbers



b) Working in the Propagation Section for Alpines

There have been discussions with Head horticulturist in the Alpine Propagation

(Jenny Wainwright-Klein) on germination, growing and management of various species from high altitude areas. Also toured the alpine propagation site for more understanding of germination trials that are carried out within the site, including the Lesotho collections that were already germinated for growing in the Schachen and Munich Alpinum section.

Figure 2: Germinated plants from Lesotho and practice on mixing the growing medium



c) Working in the Ornamental Section (“Schmuckhof”)

Introduction to planning, plant combinations and plantings of the ornamental displays was done through discussions with the head of the section (Mrs. Eva Marie). Practical removal of weeds, cleaning and storage of bulbs was carried out with the staff on the site. It was also emphasised that the section is more important as it is always providing first impression to the visitors as it is placed next to the garden entrance, also it is more educational as it gives the visitors an idea and information about growing the ornamental plants.

d) Introduction into planning and working in the Rock Garden ('Alpinum')

Most of the time was spend in this particular section and the following were experienced: Land preparation, weeding, insect pest control (collection of snails) and plantings were carried out in this particular section. All these were incorporated with planning and discussions with head of the section and staff on the site. The relevance of this section to Lesotho situation has always been noticed as there are various ecological habitats that have been created in order to accommodate species from all over the world especially in the high altitude mountains, hence the reason for spending most of the time on the Alpinum section.

Figure 3: Insect pests' control in the morning hour then other daily works follows immediately



e) Landscaping in the Tree Fern House in the MBG Indoor Area

A great challenge for Katse Botanical Garden as newly (13 years) emerged garden has always been proper landscaping with relevance to the prevailing natural landscape as such another opportunity was considered by working in the Tree Fern Section(‘Baumfarnhaus’) with Mrs Kaya Hertzog. Here a practical was carried out by placement of the rocks, building a drywall within the Tree Fern House this was done together with the filling of the lava on the empty pockets of the wall. Finally there was a tour of the Fern house where explanations were made about the ferns from the cold environment together with the management of Bromeliads and Ferns.

Figure 4: Landscaping works in the Tree Fern house



f) Temperate house

Information was provided by staff in this particular section on the management of different tree species from different regions of the world. A hands-on practical was carried out on the cleaning, dead heading and removal dead leaves and branches on the potted trees for good display.

g) Introduction to the Herbarium

A close guidance on plant identification and confirmation of species was carried out with **Dr. Andreas Gröeger** from his office through to Herbarium building. Two Lesotho collected specimen (*Cerastium sp* and *Helichrysum witbergense*) were closely looked into, also they were used as practical samples for learning and verification to species level. The task was duly done in order to embark skills for identifying the collected accessions in Katse Botanical Garden. It was also for appreciation of the importance of identification, proper documentation and storage of information as botanical gardens are scientific institutions.

h) Participation in the Meeting of Horticulturists of perennials and alpines of German Botanic Gardens

Travelled to Osnabrück University Botanical Garden where there was a participation of 26 horticulturists from 11 German Botanical Gardens. The following were offered:

- Guided tour by the Curator of Osnabrück University garden to the Impressive Palm glass house, Alpinum, Steppe, succulent conservation and Allium conservation and trial plots.
- Power point / slide presentation on establishment and of the Osnabrück Botanical Garden.
- Power point / slide presentation on conservation and research trials for Allium species.
- As part of the training / meeting a visit was taken to Münster University Botanical Garden. A structured tour guide was taken through out the botanical Garden. My impression was more on the whole setup of the garden but more interestingly was the Order beds, Food garden and Medicinal Garden and the Alpinum)
- Lastly the meeting with tours were completed by a visit to Silverberg Nature Reserve. An organized tour was also arranged for tour of the Nature Reserve which was mainly on the presentation of historical information on excavation of the silver on that particular area as was evinced by existing mining pits, the management technique that is implemented for the Nature Reserve (i.e. cutting of the grass and removal of the trees so that the indigenous terrestrial orchids could survive).

**i) Visit to Innsbruck University Botanical Garden and Alpine Garden
Patscherkofel (Innsbruck, Austria)**

A guided tour was also organized through to both the main garden and the Alpine Garden Patscherkofel which was done by Peter Daniel Schlorhauser. The impression and experiences on the Alpine Patscherkofel Garden was more of a research centre as the setting was semi natural and not much of the human disturbance is done in the garden as the garden has one circular route for walking around it. There are still several activities that were learned in the main garden in comparison to other gardens that were prior visited. It was also interesting to see several Lesotho plant species (*Manulea crassifolia*, *Hirpicium armerioides*, *Berkheya purpurea*, *Delosperma sp* etc) that were cultivated and displayed through the Joint seed catalogue between Munich and Katse Botanical Gardens.

Figure 5: Alpines displayed on top of the roofing in Innsbruck Garden



j) Introduction into planning, landscaping and other works in the Schachen Alpine Garden

One week visit was paid to Schachen Alpine Botanical Garden. The emphasis was again to receive a first hand information and practice on the management of a garden and plants in the extremely cold climatic conditions. In the first place the real admiration and appreciation were the first impressions upon landing on the German Alps. As such “*I felt my Journey was complete as it looked like all I wanted was just in front of me, I believed my dream came true*”).

All the learning here was more of a confirmation as it started from seeing a meadow (*Primula auricula*, *Viola sp*, *Saxifaga sp*, *Soldanella sp*, *Pinus mugo*, *Seline sp* *Gentiana species*, *Rhododendron*, *Salix herbacea*, etc) in their natural habitat and perfectly natured in the botanical garden. The hands on practical were: removal of weeds, plantings, cleaning of footpaths, preparation of compost, mounting of interpretation boards. A good hiking to the nearest high point for real appreciation of the view from the Alps, natural landscapes, plant species in their fragile habitat. A link of Schachen to Kings Castle was another lesson that an Alpine Garden needs to be attached to a nearby tourist attraction in order for additional support of its survival through gate taking from the tourists. It would not have been a complete journey to Schachen if one season was not experienced, as such before I left there was just enough snow to see the plants completely under the white blanket (snow).

Figure 6: Kings castle, Schachen and conservation



k) Rosenheim Landesgartenschau) 2010 (Innspiration) and Munich Botanical Garden Rose show

An opportunity to see both shows was an eye opener, to be able to realize how much effort is put on different plants by different plant lovers (horticulturists, landscapers, interior decorators, conservationists, gardeners etc). It has always been my wish to see an international plant show in reality as such I have captured information on variety of landscaping techniques, displays of plants and flowers and occupation of space in various forms. All in all I realized an opportunity for conservation education and marketing strategies.

Figure 7: Variety displays for education and etc.



l) Discussions and conclusions and preparation for future co-operations

- It is from projects (Horticulturist Exchange) like these where the local gardens gain international recognition. Katse Botanical Garden is a member of African Botanical diversity Network (SABONET) but it is the only Alpine garden in the Southern African region. Its participation in the Exchange network was recommended initially by SABONET during its needs assessment in the year 2000. As an overseer of all its activities I have benefited various horticultural skills, landscaping techniques and garden management etc, from experiences that I have gone through this visit
- The hands on practical will enhance my skills in managing the unique alpine botanical garden in Lesotho. The performance of the garden will improve in a long run.
- A long-term cooperation of both gardens will enhance the skills and experiences acquired from horticulturist in the European community and African community of botanical gardens.
- Joint future expeditions on plant and seed collections, plant rescue operations will strengthen and build up the success of both gardens in the cultivation of high altitude plant species.
- Joint publications (Seed catalogues, cooperation posters etc.) will widen the publicity of both gardens to the media and the general public world wide.
- On going exchange of information on horticultural experiences will benefit the cultivation of species in the extreme environmental conditions of Alpine gardens.

m) Outside the gardens

It is always an unforgettable opportunity to travel from Africa to overseas especially in Europe as a result it worth's mentioning that other life experiences were really enjoyed especially in the city of Munich (Hofbräuhaus watching traditional music band playing music wearing Lederhosen, watching 2010 football world cup in Hirschgarten, travel through English garden and enjoyed Swine knuckle etc).

Figure 8: Unforgettable moments in Munich for an outsider



n) Acknowledgments

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