



Mineralic cultivation with Tobias Brose in the cool house

Photo: Poppendieck

## The art of cultivation

In summer 2012, Tobias Brose started to restructure the greenhouse collection of bulbs in the Hamburg Botanical Garden. Coarse sand was needed, and he had to take it to the cool house barrow by barrow. Then he spread it out in shallow mounds on the raised beds. The bulbs had been re-potted into high terracotta pots, and were then placed into the sand up to the brim. "They do this 'mineralic' cultivation very successfully at the Gothenburg Botanical Garden", he said. "It is so successful that I wanted to try it at Hamburg too."

In spring 2015 results are striking. "Many species which in the past shrivelled or did not flower now even have an extra blooming period." What is the knack? The sand acts as a heat reservoir, accumulating it during the day and slowly giving it back at night. So the temperatures in the rhizosphere are balanced. During the resting period the sand is kept slightly moist. Then evaporation

creates a cool microclimate. And a small amount of moisture may diffuse into the terracotta pot and will save the plants from drying out and overwatering. There are many additional benefits, but one point is important for Tobias Brose: "We are cultivating many species which will be difficult or even impossible to obtain now. The new methods give me a good safe feeling that we will not lose such plant material."



Brose has applied this method also to Espeletias, plants from the high Andes which are notoriously difficult to cultivate. "In the Páramo at 3500 meters above sea level, the temperatures range between minus four and plus seven degrees centigrade. These plants have a difficult time during our summers." Cultivating the Espeletias in pots immersed in coarse sands was a crucial step forward because of the cooling effect of the evaporation.

New methods in cultivation are also applied outdoors. Take the geographical department. Here Frederick Gilbert has restructured the part for the alpine plants of the Rocky Mountains and for the woodland herbs of the Appalachian Mountains. A common theme is the meticulousness with which the soil conditions had been prepared. Frederick Gilbert, too, has been abroad with projects sponsored by the Gardeners International Exchange. He worked at the alpine department at the Gothenburg Botanical Garden and collected seeds in the Appalachian Mountains.

These examples show which challenges the cultivation of special plant groups may offer for botanical gardeners. To meet them, many qualities are required: You must have a keen eye for plants; you must have a penchant for experimenting; you must keep contact to colleagues from other gardens for a mutual exchange of know-how; and you should have seen the plants in their natural surroundings in order to understand their demands. The successful cultivation of difficult plant groups will be a synthesis of widely different fields of practical knowledge. This type of cultivation is a very creative business, it is an art in itself. To promote the art of cultivation – combined with the needed techniques – of plants in botanical gardens on a high professional level is a chief goal of the International Foundation for Gardener Exchange.

Successfully cultivated: Hoop Petticoat Daffodil (*Narcissus bulbocodium*) Photo: Poppendieck



2015

## Gardenersexchange in 2014

### Bucharest - Hamburg

*Nagodă Eugenia and Comănescu Petronela from Bucharest Botanical Garden visited the Hamburg Botanical Garden from June 1st to June 15th, repaying a visit of gardeners from Hamburg to Romania in 2014. Economic plants were the main topic of both visits.*

Many visits both inside the greenhouses and in the outdoor sectors helped us to identify solutions to some of the problems we face at Bucharest: fighting diseases, pest control, creating micro-climates needed for species' surviving, labeling taxa. Unfortunately, we couldn't find a solution for the Bucharest Botanical Garden biggest problem: weeds. The soil quality, climatic conditions and lawns regular maintenance turn weeds into a minor problem for The Hamburg Botanical Garden. Also, guided visits to the outdoor sectors of the Botanical Garden, to The Botanical Garden Museum and to The Pinneberg Arboretum inspired us to think of new ideas for a better exposition of The Botanical Garden's collections.

### Potsdam (Germany) - Columbia

*Christiane Benthin und Ingo Kallmeyer travelled Columbia from February 2nd to February 21st, 2014. They were able to explore some of the more important vegetation zones of that highly diverse country, from coastal mangroves and lowland rain forests to the Páramo at 3500 meters above sea level. They also visited bromeliad nurseries and coffee plantations and made contacts with the botanical gardens at Bogota, Bucaramanga and Medellin.*

We travelled by jeep to the Santuario de Flora y Fauna de Iguaque. This nature reserve is situated at 3500 meters above sea level and has a total area of 67 km<sup>2</sup>. The lagoons were shaped du-



*Weed control – an important aspect of gardeners work in Hamburg as well as in Bucharest Photo: Nagodă*



*Gardeners from Potsdam in the Columbian rainforest*

*Photo: Benthin*

ring the ice ages. The hike to the Laguna Iguaque was exhausting. We had to march 4.7 kms and to cope with 700 meters difference in altitude. But we were rewarded by the unique vegetation of the Páramo and its spectacular plants, most of which were unknown to us. We saw four species of Espeletia which are here called frailejones, many orchids and many evergreen shrubs. In the adjacent woodlands below there were many Bomareas, Begonias, Peperomias und gesneriads.

### Hamburg - Belo Horizonte (Brazil)

*The Liaison between the Botanischer Sondergarten Hamburg-Wandsbek and the Fundação Zoobotânica Belo Horizonte started in 2006 and has been supported by the International Gardener Exchange Foundation ever since. Helge Masch's visit to Brazil was the fourth instalment of this successful project.*



Weed control – also in Belo Horizonte an important task

Photo: Masch

*This time there was a special focus on trees, poisonous plants and on homoeopathy of plants.*

When I visited Belo Horizonte for the first time I could make contact only with a handful of gardeners who spoke English. Meanwhile I have improved my Portuguese, and I was able to overcome the language barrier between me and my Brazilian colleagues. This was a big benefit for all of us, and we have learned a lot from each other and were able to have many seminal discussions. On the last day I gave a presentation about gardening in Germany which led to a highly informative debate about the basics of our profession. The colleagues from Belo Horizonte at first could hardly understand why I had found their everyday work so interesting. On the other hand I came to realize that my everyday work at Hamburg apparently was highly interesting to them. Discussions like this one were something new to my colleagues.

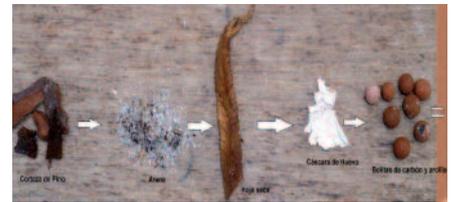
The task of the tree nursery at the Botanical Garden at Belo Horizonte is both to plant decorative tropical trees in the streets of the city, and to cultivate trees native in the state of Minas Gerais. I accompanied my colleagues

when they collected seeds from trees both in urban and in natural areas. It was good to see how much the citizens of Belo Horizonte cared for urban vegetation. We had to reassure them that we tampered with “their” tree for good reasons. The seeds were cleaned and sown immediately, but this has not always been successful. *Ouratea castanifolia* did not germinate at all. I suggested to try another type of substrate without fertiliser, which they did. Rodrigo, forest engineer at the garden, will keep me informed about the success by facebook.

### Leon (Nicaragua) – Munich

*For more than tree month –from mid of May to beginning September 2014 - the gardener Raúl Valle Mayorga, coming from the Jardín Botánico Ambiental in Leon, Nicaragua, had the opportunity to work with the colleagues in the Munich botanical garden.*

He documented the gardeners work in Munich with step by step photos. So other persons can learn from his photos about the gardeners work. For example different recipes for substrates for different plants. This can be understood without language – see for yourself:



Creating,



mixing,



sterilising



and using different substrates Photos: Mayorga



## Projects in 2015



*Espeletia in the Paramos, Columbia*  
Photo: Kallmeyer



*Raúl Valle Mayorga creating fog in the Munich greenhouse* Photo: Mayorga

## Visits to Germany

Fekadu Asseza from the University of Addis Abeba in Ethiopia will make a three week visit to the Botanical Garden at Bonn and to other gardens in Germany. This will be part of the Wondo Genet Arboretum Project (AR-BOPRO). In the first place he wants to inform himself about methods of training which may be adapted to his country.

The Botanical Garden of the Technical University Dresden will host Zahirul Islam and Fekhu Lal Ghosh from the Botanical Garden Dakha (Bangladesh). Their intent is to get ideas and information for a further improvement of their garden. The society of friends of the Dresden gardens will take over part of the accommodation expenses.

## German gardeners abroad

Michael Mauser is in charge of the alpine greenhouse at the Botanical Garden Tübingen where he has accumulated a valuable collection of the genus *Dionysia*. In order to complete this collection and to learn about the plants in their natural surroundings he will visit the Botanical Garden Teheran (Iran) for two weeks in May.

Oliver König is also working at the Botanical Garden Tübingen and is responsible for the succulent collection there. The greenhouse for plants from the

Canary Islands will have to be restructured, and in order to get first-hand experiences for this task, he will visit Tenerife, the largest and floristically most diverse island of the archipelago.

Güde Nissen is working as an apprentice at the Botanical Garden Hamburg. She had made a private trip to Nepal where she made contact with the Botanical Garden "Daman" which is situated at 2500 meters above sea level. She has been invited to this garden for work experience and also for taking part in an expedition for collecting medicinal plants. Our foundation will be sponsoring the visit by our special programme for young gardeners.

David Eder is responsible for cacti and other succulents at the Kiel Botanical Garden. He visited the Botanical Garden at Windhoek early in 2015 and has made excursions into the South of this country, an area which is very rich in succulents. His visits revives the special tradition which the Kiel garden has concerning the cultivation of succulents from Southern Africa.

Christina Schwerdtner works as an apprentice at the Botanical Garden of the Technical University of Dresden. She will visit the Botanical Gardens Tokyo and Nikko in Japan for work experience. Christina speaks Japanese which will be a great advantage for her. This is another visit which will be sponsored by our special programme for young gardeners.

### Young gardeners

may apply anytime for travel funds up to 500 Euro. Please contact us.

### Additional copies

as well as the German version of this newsletter can be ordered from the foundation. This newsletter and also more information on the gardener exchange can also be found on our website:

<http://www.gaertneraustausch.de/>

### Contact and Information

Please contact the executive board Hans-Helmut.Poppendieck@web.de or: gisela\_bertram@gmx.de, or our special contact person for gardeners Nils Kleissenberg.

Nils is a gardener at the Hamburg Botanical Garden and a member of the council of our foundation and will gladly give background information to colleagues: [nils.kleissenberg@uni-hamburg.de](mailto:nils.kleissenberg@uni-hamburg.de)

### Applications for 2016

are open until September 15th, 2015. Young gardeners may apply any time for travel funds up to 500 Euro.

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