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The **IOS Congress Preliminary Registration Form** is also included (as page 56, in lieu of the back cover illustration, here placed beside the front cover).

David Hunt
20 November 2009

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International Organization
for Succulent Plant Study

Organización Internacional
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IOS BULLETIN

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IOS Executive Board 2008–2010

Cover illustration

A view in the cactus and succulent garden at the Jardín Botánico 'Viera y Clavijo', Tafira Alta, Gran Canaria, the venue for the 31st IOS Congress in March 2010 (*photo: Juan Manuel López*)

This issue of IOS Bulletin compiled and edited by the Secretary

Message from the President

Since the inception of the IOS, the Board has met annually in one country or another, just before the start of a Congress or as a special meeting in the intermediate years. In 1985 it was decided to hold a seminar in conjunction with the Board meeting between congresses, and so the "Inter-Congress" was born. Within a few years the Inter-Congress grew almost to the size of a regular Congress, requiring much planning and arrangements for venue, accommodation, etc. By the time of the 7th Inter-Congress, held at the Huntington Gardens, California, it was felt by some that the Inter-Congress was becoming too big, and should be discontinued. At the 25th Congress, in Cape Town, South Africa, it was agreed that they should be "temporarily suspended". Even though there is much discussion between Board members by e-mail these days, the annual meetings continue. The present Board feels that an annual gathering of members is desirable, to exchange and discuss research results, and so an Inter-Congress was arranged to follow this year's Board meeting in early May. An account of the meeting, held in Bonn and kindly hosted by Prof. Dr Wilhelm Barthlott, will be found later in this issue of the Bulletin. With a full programme of presentations relevant to the two themes, it was a successful event.

One ambition of the present Board has been the development of our Internet website. Unfortunately the revision has been very slow to take off, but at last it is happening. Rainer and Ingrid Mecklenburg are working on this, and the revised version should be accessible before the next congress.

Len Newton in Monaco, with the *Cactus d'Or,* June 2009 *(photo: Jean-Marc Chalet)*

In June I had the pleasure of visiting Monaco to receive the *Cactus d'Or* award. This was my fifth visit to the Jardin Exotique. My first visit was in 1957, when the director was Louis Vatrican, a former IOS President, and I went again in 1963. In 1983 the second director, Marcel Kroenlein, invited me to speak at the garden's 50th anniversary celebrations, and my fourth visit was in 1991. It was pleasing to see that the present director, Jean-Marie Solichon, is maintaining high standards. The public garden is in good condition and the plants are healthy, and the greenhouse collections are well maintained. The garden is still a great attraction for any succulent plant enthusiast visiting the Côte d'Azur, and for researchers the collections behind the scenes are very well documented.

Two changes to the IOS Executive Board have occurred in recent months. Dr Dave Aplin is no longer working at the National

Botanic Garden of Belgium in Meise, and a few months later Dr Thomas Bolliger left his position as Director of Sukkulenten-Sammlung Zürich. They felt that they were unable to continue as IOS Assistant Secretary and Treasurer, respectively. Their service to the IOS is appreciated, and we note that Thomas has been our Treasurer since January 2001. In accordance with Article 8 of the IOS Statutes, the Board has nominated Rainer Mecklenburg to serve as Assistant Secretary until next year's Congress. Dieder Supthut, who has acted as our Senior Auditor, has been looking after the main IOS funds in Zürich pending the completion of new arrangements for their management (see pp. 52–53). Thereafter, Sara Oldfield has accepted the Board's nomination to act as Treasurer until the Congress next year. We are grateful to all three members for accepting these responsibilities on an interim basis.

Plans are now going ahead for the next Congress, to be held in the Canary Islands next March. I hope to see many of you there.

Len Newton

31st IOS Congress, Gran Canaria, 20-27 March 2010, in collaboration with the Jardín Botánico 'Viera y Clavijo', Cabildo de Gran Canaria, and Botanic Gardens Conservation International

All IOS members are cordially invited to attend the Congress, to be held at the above venue by invitation of the Director, Dr David Bramwell and the Cabildo de Gran Canaria. The Congress will take place during the centenary year of the garden's founder and first Director, Dr Eric Sventenius (1910–1973), who was a member of IOS, and will form part of the garden's own events marking the Sventenius centenary.

Eric Sventenius was born in the small town of Skirö, Sweden. Having studied botany at various universities and worked at the Marimurtra Botanical Garden (Blanes, Spain), he moved to the Canary Islands in 1931. From 1952, he worked at the Botanical Garden of Tenerife (*Jardín de Aclimatación de la Orotava*), and then proposed making a botanical garden dedicated to the Canarian flora and founded the Jardín Botánico 'Viera y Clavijo' in 1952 on Gran Canaria, close to Las Palmas. It opened its doors to the public in 1959. Sventenius died in a car accident in 1973 and was succeeded as Director by Dr Bramwell.

In his invaluable guide to the *Wild Flowers of the Canary Islands* (1974), also published in Spanish, David Bramwell remarks that the 'botanical garden contains a splendid collection of Canarian endemic plants and should be visited by anyone interested in seeing very rare plants growing in virtually natural surroundings'. With Dr Bramwell as our host and botanical guide, we can be sure of an unmissable introduction to the Canarian flora, first in the garden and on excursions around Gran Canaria, and then (for those able to stay longer) visiting other islands – probably Tenerife, Gomera and La Palma (where David expects to show us the endemic *Aeonium bramwellianum* and we have an invitation to visit a local winery!).

Modestly-priced **accommodation** for members registering in good time will be reserved at a hotel in pleasant surroundings in Las Palmas, and a bus or buses will take us to and from the Botanic Garden (a distance of approx. 7 km) and on local excursions to see the native vegetation and succulent flora. Congress sessions will be held in the Conference Room at the Botanic Garden.

Euphorbia canariensis in the Jardín Botánico 'Viera y Clavijo', Tafira Alta (*photo: J. M López*)

There is no **Congress fee** as such, but participants will be expected to pay for transport to and from the Botanic Garden, and for excursions, lunches and other refreshments. Approximate costs will announced in the final circular to those attending.

The formal **Congress Programme** will start on the morning of Monday 22 March and end on Friday evening 26 March (accommodation at the Congress Hotel will be available from Saturday 20 March). The programme is planned to include sessions devoted to Biogeography, Conservation, Crassulaceae, and Cactaceae, interspersed with excursions to various parts of Gran Canaria. There will also be the annual meeting of the Executive Board (Sunday 21 March), and the statutory Members' General Meeting (*see below*).

Post-Congress Excursion. As mentioned earlier, the proposed itinerary (lasting up to a week) will include visits to Tenerife and other islands to see the native succulents, led by Dr David Bramwell. It may be necessary to restrict the size of the group, so early booking is advised.

If you are hoping to attend the Congress, or would like further information, please complete the accompanying Registration Form as soon as possible. This will not commit you in any way, but will greatly help us to estimate the likely attendance and accommodation required, and to plan the programme arrangements.

31st IOS Congress: Formal Notice of the Members' General Meeting

Art. 16 of the IOS Statutes requires that a General Meeting of members "shall be held at each Congress for the transaction of the Organization's statutory business including the presentation, discussion and ratification of the Organization's reports and accounts for the preceding inter-Congress period and plans for the future, with the appropriate budget; election of Honorary Members; election of the Executive Board for the ensuing inter-Congress period; election of auditors; fixing of the annual subscription for the following two years and discussion of other matters raised by or submitted to the Executive Board prior to the Congress."

continued overleaf

The Secretary hereby informs members that the requisite General Meeting will be held during the forthcoming 31st IOS Congress in Gran Canaria and, in accordance with the Statutes, Article 11, formally invites written nominations, duly proposed and seconded and bearing the consent of the member nominated, for the posts of IOS President, Vice-President, Secretary, Assistant Secretary and Treasurer. If more than one nomination is received for any post, there will be a postal ballot*, to be decided by a simple majority.

The attention of members is also drawn to the Executive Board's draft proposals to amend the IOS Statutes (see pp. 53-54 below). Members' comments on the proposals, are invited. (In accordance with Article 17, amendments to the Statutes "may be proposed by the Executive Board or in writing by at least four members. Proposals must be in the hands of the Secretary at least three months prior to a Congress. To be adopted, any proposal involving a change to the Statutes, or the dissolution of the Organization, must be supported by at least two-thirds of the members present at the General Meeting.")

**To allow time for such a ballot, nominations must be in the hands of the Secretary at least three months prior to the Congress, i.e. not later than the end of January 2010.*

Report of the 8th IOS Inter-Congress, Bonn, 8–11 May 2009

Venue: The Nees-Institut für Biodiversität der Pflanzen, Friedrich-Wilhelms Universität, Bonn, Germany, by courtesy of the Director, Professor Dr Wilhelm Barthlott

The Inter-Congress commenced with the annual meeting of the IOS Executive Board on Friday afternoon 8 May, followed by symposia on Saturday 9 May and Sunday 10 May and a final seminar meeting on Monday morning 11 May. Summaries of the presentations at the two symposia follow here after a resumé of the Board Meeting. For subsequent developments, see the Secretary's Notes (pp. 52–53).

Annual meeting of IOS Executive Board 2009

Held in the Library of the Nees-Institut, Friday 8 May 2009, 15:45–19:15

Present: The President (Professor Newton), Vice-President (Dr Nyffeler) and Secretary (Dr Hunt). *In attendance:* Dr Eggli (representing the Treasurer, Dr Bolliger). *Apologies:* Dr Aplin (Assistant Secretary) and Dr Bolliger.

1. *Inter-Congress*. The expected attendance, including representatives of the Nees-Institut and the wives of two members, would be 26. It was pleasing to note that those attending would include six recently enrolled members (Mecklenburg, Ritz, Charles, Diagre, Gdaniec, Hoxey). The President would welcome them individually at the opening of the Saturday morning session. The Secretary would request all speakers to provide abstracts for inclusion in the next issue of IOS Bulletin.

2. *31st IOS Congress 2010.* Plans to hold this at the Jardín Botánico 'Viera y Clavijo' Tafira Alta, Gran Canaria, 20-27 March 2010, earlier discussed by the Secretary with Dr David Bramwell, Director of the garden, were discussed and approved. It was further agreed that the programme might include sessions on Crassulaceae and Biogeography and that excursions during the week should be to localities on Gran Canaria only. A Congress fee should be charged to cover local costs. Various possibilities were discussed for a post-Congress excursion to other islands

3. *IOS finances.* The accounts for 2008 had been audited by Dieder Supthut and René Deubelbeiss on 6 March 2009. Their report was submitted to the Secretary and circulated to the Board soon afterwards, stating that "the book-keeping is carefully done" and the accounts in order. Dr Bolliger had however given the Board notice of his intention to resign as Treasurer as he would shortly be leaving ZSS. The overall total for the IOS capital in that currency as of 31 December 2008 was CHF 85237 (equivalent to Euros 56825).

Following correspondence within the Board, a discussion followed concerning the rationale of seeking to enlarge the capital fund of IOS in order to fund research grants etc, since very few grant applications had been received, and the grants made had been small. It seems unlikely that IOS could ever be sufficiently well-endowed to be a significant funding agency in its own right, so it would be better to use the money for projects specifically designed to promote the aims of IOS. Since most IOS members reside in the EU, and banking arrangements would be simpler and more open than in Switzerland, the transfer of the main IOS funds to an EU country was favoured by the President and Secretary, and by the former Treasurer (Mr Supthut).

4. *Publications.* IOS Bulletin 15(1) for 2008 had been compiled by the President and Secretary and, for the first time, distributed as a pdf to all members with e-mail in December 2008. 40 copies in A5 format for members without e-mail were printed commercially from the pdf on a digital press at a cost of GBP 130. A copy was shown. Members receiving these were invited to make a donation towards the cost. The Secretary undertook to produce the issue for 2009, preceded as soon as possible after the Inter-Congress by a Newsletter.

IOS *Repertorium Plantarum Succulentarum* no. 58 (for 2007) had been compiled as usual by Drs Eggli, Zappi and Nyffeler, printed as hard copy in Zürich. [Costs, from the balance sheet were as follows: Printing CHF 1030.00 (E686.67), mailing CHF 483.70 (E322.47), total 1513.70 (E1009.14). "Sales of publications" for 2008 amounted to CHF 1147.90 (E765.27), thus covering about 75% of the costs.]

In response to questions whether the contents of RPS could be made available and searchable (by IOS members) on line, Dr Eggli reported that since September 2006, the bibliographic data from RPS have been available in a searchable prototype on-line version at http://www.zuerich-herbarien.unizh.ch/spic/ (see preface to RPS 56 and 57). Since the bibliography section of RPS is compiled on the basis of the library database of the Succulent Plant Collection Zürich, all bibliographic data from RPS have been available electronically for a long time at the collection. During early 2006, it was decided to produce a searchable prototype version of these data and make it available to the general public on the web via the University of Zürich, by Reto Nyffeler, co-editor of RPS. Currently, however, the bibliographic database is "down" for technical reasons. It will be available again in mid-June.

5. *IOS Membership Archive.* Response to the President's appeal (IOS Bull. 15(1): 22) has so far been abysmal.

6. *IOS Website.* It had been hoped that Dr Aplin and his staff at the National Botanical Garden of Belgium could offer an improved design and arrange hosting, and that he might take over as webmaster, but following his move from NBGB he had indicated this would not now be possible. Finding a way to improve the website is now very urgent. [Since the meeting, this task has been taken on by the new Assistant Secretary and his wife.]

Inter-Congress participants in the Bonn University Botanical Garden, beside the Poppelsdorf Palace, 9 May 2009. *Left to right:* Detlev Metzing, Graham Charles, Reto Nyffeler, Kirsten Hahne, Martin Lowry, Nadja Korotkova, Andrew Gdaniec, Wilhelm Barthlott, Sven Bernhard, Christiane Ritz, Maurizio Sajeva, Rainer Mecklenburg, Rainer Wahl, Willi Gertel, Paul Hoxey, Len Newton, Urs Eggli, Denis Diagre, Ulrich Meve, David Hunt. *Not in photo:* Pierre Braun, Lothar Diers, Marina Sajeva, Nigel Taylor and the photographer, Ingrid Mecklenburg.

8. *Special interest groups.* None have been formally established since the sectional structure of IOS was abandoned but the current meeting will focus on two topics where former IOS sections have been more successful than others, namely Conservation and Cactaceae, and spawned autonomous groups including numerous IOS members and some non-members (the IUCN-SSC Cactus & Succulent Specialist Group) and the International Cactaceae Systematics Group. Though "ad hoc", the latter (formerly the IOS Cactaceae Working Party) remains closely associated with IOS and most of its leading members are IOS members. The SSC group is mainly concerned with *in situ* conservation, but with the collaboration of Sara Oldfield and BGCI we also hope to make a useful contribution to the *ex situ* aspect. The establishment of other informal groups in IOS would be possible, given committed leadership.

9. *Constitution of Executive Board 2010-2012.* With the impending resignation of both David Aplin and Thomas Bolliger, the Board would be reduced to its minimum quorum of three members. Under the IOS Statutes, Art. 8, the Board may nominate members to fill the vacancies. It was suggested that Dieder Supthut might stand in as Treasurer till the Congress and that the role of Assistant Secretary could become that of Webmaster. The possible enlargement of the Board was briefly considered.

10. *Golden Cactus 2010.* The Board agreed on a nominee for this award, which is made by the Mairie de Monaco. The name of the nominee would be communicated to Dr Solichon at Monaco, but otherwise remain confidential until the Congress.

Summaries and Abstracts of Inter-Congress talks

Symposium 1: ***Public and private collections of succulents, their potential as a resource for research and conservation***

Aims of the IOS Reference Collections Initiative

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From the outset, the aims of IOS as set out in the Statutes included "organization and support of protective collections of living plants", and a byelaw was appended to the statutes stating the purpose of such collections in more detail (IOS Bull. 2(2): 44-45. 1964), later revised to specify pro-active ways in which support might be provided (l.c. 3(6): 180-181. 1977 (English), 185–186 (French), 190–191 (German)). There has always been close collaboration between IOS and the Sukkulenten-Sammlung Zürich but IOS has not up to now been successful in developing the sort of broader network that was envisaged.

Following a review of the cactus collection at the National Botanic Garden of Belgium, and its conclusions, which are the subject of the next presentation, a plan to revive the IOS initiative was discussed at a meeting between Dr David Aplin, who had asked for the review, Sara Oldfield, sometime chair of the IOS Conservation Section, compiler of the *IUCN Status Survey & Conservation Action Plan for Cacti and Succulents* (1997) and now Secretary-General of Botanic Gardens Conservation International, and myself. We agreed on a number of basic aims for the IOS initiative, as follows:

- Obtaining and maintaining inventories of living specimens of potential conservation and/or research or other resource value in the succulent plant collections of personal and institutional members of IOS;
- Assisting collection holders in assessing and recognizing the resource value of individual plants in their collections;
- Promoting good practice in the documentation and secure labelling of their plants;
- Promoting collaboration between collection holders in selecting groups to be treated as 'specialities' or as back-ups for collections elsewhere;
- Assisting collection holders and researchers to locate and obtain or exchange desiderata;
- Assisting collection holders with plant identification or verification via contacts with IOS experts;
- Encouraging collection holders to make a photographic record of plants when flowering etc, and if practicable to prepare herbarium specimens and other reference material.

The popularity of cacti and succulents means that many taxa regarded as 'Endangered' *in situ*, like *Echinocactus grusonii*, are relatively secure in cultivation, that is, *ex situ.* This suggests that a parallel system of conservation categories for taxa in cultivation could be helpful in prioritizing the maintenance of individual specimens in collections. Numerous criteria would need to be taken into account in devising such a system. Ultimately, using a 'points system' perhaps, it might be possible to 'rate' whole collections for their value and importance as an *ex situ* conservation resource.

Prickly Challenges: Conservation or Delusion?

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During the past two years the National Botanic Garden of Belgium (NBGB) took a dramatic step by radically evaluating the cactus collection the institution has been growing for many decades. That process was a consequence of several facts the NBGB had to face up to. Firstly, the cactus collection was the largest single plant collection growing at NBGB. Secondly, no scientific research on cacti or the collection had ever been conducted at the NBGB; thirdly despite the fact that many of the accessions were considered part of a conservation collection, most of them were devoid of data that would be useful for that purpose. Not only must we consider the costs in time and energy to keep plants, but also that times have changed – for example the *European Strategy for Plant Conservation* (ESPC, 2008) requires critical evaluation of the *ex situ* collections, including an evaluation of the scientific data that come with the plants.

So that is why, but what about the how and the results? Updating the nomenclature was a first step (more than 1,000 changes were made in our database). Two independent experts were involved in the process, David Hunt and Nigel Taylor, who scrutinized the whole collection of cacti in July 2007. Besides their nomenclatural expertise, they also came to the conclusion that two-thirds of the collection was of no importance at all for conservation. Only 21 out of 251 wild-collected accessions (0.84%) were actually regarded as valuable for that purpose. The main reasons for such conclusion were: poor data; wrongly identified plants; hybrids; taxa better represented and documented in other collections and the fact that none of the plants had ever been used for scientific research at NBGB…

As a result, the NBGB donated more than 1,000 plants to other institutions – amongst others the *Museum National d'Histoire Naturelle*, in Paris – who will use them for education and display.

Is this a depressing conclusion, or a new opportunity? Fewer, but better plants, means more time to care for them and better growing conditions. It gave us the opportunity to create an outside hardy bed with spare plants. Also, it allowed us to launch an *ex situ* seed conservation/production program and we even had time to put red-dotted labels in the pots of some cacti to mark those of particular conservation value.

Some of the lessons we learnt in the process of this evaluation were that we must involve the whole staff in the process; ask for independent experts; unveil the results in order to motivate other institutions to act similarly. The keywords would definitely be: quality rather than quantity. With such an approach a new era will dawn for living collections throughout the world. Success in protecting endangered species and, in the process, in managing public collections, will only come from an up-to-date and honest evaluation of the pots we keep in our botanic gardens and collections. Incidentally, liberating and extending the data held in the *BGCI PlantSearch* database would help considerably.

Public Collections: Plants between Entertainment, Education, Research and Conservation

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Public collections have varied duties to fulfil. The daily challenges can be grouped into four fields: Entertainment, education, research, and conservation. Each of these four fields poses different challenges as to what plants should be displayed, how these plants should be displayed, and with regard to corollary services (from playground and restaurant to "breeding for conservation", library, and herbarium). The "currency" to pay for all efforts is greenhouse space and working time. The competition of demands makes it necessary to set priorities for the best-possible allocation of both space and time. Demands and constraints associated with each of the four fields are discussed and evaluated. Main areas of conflict are the priority of space allocation, the priority of display value, and the priority of work time allocation. Excellence of information management is identified to be of primary importance to enhance the value of the "plants for entertainment / education" so that they concurrently serve for research and conservation. Research activities enhance the value of "plants for education" by acquiring, generating and disseminating scientific information. The living plant collection is the indispensable centre of all operations, and the plants cultivated in a collection are ideally "multi-purpose"-plants that simultaneously serve all fields of interest.

***Ex situ* conservation programmes for cacti and succulents at the Royal Botanic Gardens Kew**

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RBG Kew's mission: to inspire and deliver science-based plant conservation worldwide, enhancing the quality of life. Scientific advice and activity is delivered through Kew's 'Breathing Planet Programme' aimed at:

- Ameliorating the effects of climate change through a better understanding of plant/habitat diversity, to enhance the retention of the Earth's major remaining carbon sinks on land;
- Banking seed and practising restoration ecology;
- Identification of locally-appropriate useful plant species that can be used in sustainable ways;
- Informing the visitors to our Gardens and website about our work and what they can do as individuals to help us all live more sustainably.

By the 1970s botanic gardens began to recognize the role they could play in *ex situ* conservation – this linked to *in situ.* At Kew, micro-propagation and seed-banking facilities were established and the institute became the UK's Scientific Authority for CITES, offering a 'bonded warehouse' for Customs' seizures.

Many cacti and other succulent species are conserved *ex situ* in the Millennium Seed Bank (MSB). Fieldwork for the MSB has uncovered some very rare and long lost taxa in habitat, such as *Dioscorea elephantipes* and *Cylindrophyllum hallii*, the latter not seen since 1928, now re-discovered and with seeds in the Bank. While most of the seeds conserved in the MSB are

collected in habitat, a smaller proportion are obtained from Kew's living collections under controlled pollination conditions by gardens' staff.

Examples include various rare cacti from the genera *Melocactus, Escobaria, Thelocactus, Mammillaria* etc. and taxa from countries with which Kew does not yet have bilateral agreements to collect seed in habitat.

This is not only conserving these species, but also represents an insurance policy for the living collections, should a plant be lost to disease etc. *Ex situ* conservation depends on having well-trained, devoted staff.

The challenges that face re-introduction programmes using *ex situ* material include:
- Difficulty of maintaining sufficiently large and genetically diverse collections under glass;
- Danger of inadvertent selection of genotypes that prefer artificial glasshouse conditions, but may not be best adapted to wild environments;
- Seed-banking or back-up facilities at other gardens needed as insurance against failures;
- Capacity issue – staff resources often limited;
- Risks to wild populations from re-introduction (diseases, pests etc.).

Going, going, almost gone . . . *Ex situ* conservation of almost extinct species in Kenya

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Most of Kenya is arid, receiving less than 750 mm of rain *per annum*. The human population is rising rapidly, from under 2 million at the start of the 20th century to 33 million at the last census, in 1999. There is an increasing demand for land, for farming and for building homes, schools, etc. Consequently natural habitats are greatly disturbed, and some plant species are on the verge of extinction. In 1998 a botanical garden was established in the grounds of the Nairobi headquarters of the National Museums of Kenya. The first section to be planted up was an area of about one acre devoted to succulent plants. One corner is dedicated to the memory of Dr. Peter Bally, and planted with species named after him. The garden serves as a research facility and for educating the public, but is also important for the conservation of species that are highly endangered in the wild. The tree species *Euphorbia wakefieldii* (to 7 m high) is still plentiful but occurs only on a series of limestone outcrops in Coast Province. A large cement company is seeking a concession to use this limestone, in which case the plants will all be destroyed. Fortunately it grows well in cultivation. An even larger tree (to 25 m) is *Euphorbia cussonioides*, occurring in the highlands near Nairobi. It seems that only three mature plants remain in the wild, in an area already being encroached by development. Self-sown seedlings are often seen nearby, but they fail to grow to more than a few centimetres high, though they do grow on into trees when collected and grown in a garden. *Ex situ* conservation is probably the only hope for survival of these and some other species in Kenya.

Current research on Apocynaceae using living collections

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Different aspects of research involving living succulent Apocynaceae-Asclepiadoideae cultivated at the Dept. of Plant Systematics, University of Bayreuth, are presented. Presently our focus is on flower morphology and pollination, especially on the role of optical and olfactorial attractants of the flowers, be it foetid stapeliad flowers or pitfall flowers of *Ceropegia*. GC/MS analysis unveiled the chemical composition of the scent compounds, allowing so far the description of four different types of mimicry for the stapeliads. The special case of the Chinese *Ceropegia dolichophylla*, whose flowers seem to mimic dead insects, is pictured in detail. Such studies completely rely on living plants in cultivation, as do karyological (chromosome) studies. To have living plants available supports phylogenetic (molecular) analyses as well since quality of DNA gained from fresh plants material is much better than from herbarium specimens. Also, it improves taxon descriptions and presentations of all kinds such as the webpage "Genera of Asclepiadoideae, Secamonoideae und Periplocoideae (Apocynaceae)" by S. Liede-Schumann & U. Meve*. There, descriptions of all genera accepted are given; and photographs, usually taken from plants in cultivation, are provided in addition.

*See:*http://www.uni-bayreuth.de/departments/planta2/research/databases/delta_as/index.htm*

The *Kalanchoe*-collection of the Botanical Garden Darmstadt – a brief illustration

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The genus *Kalanchoe* (Crassulaceae) comprises 173 taxa (Descoings in Eggli, Sukkulenten-Lexikon 4: 147–188. 2003), with their natural distribution in three large regions; Africa (including the Arabian Peninsula), Madagascar and Asia (from India over the Indochina Peninsula to Japan). By human influence, single taxa can be found in many tropical regions of the world, partly weedy. In the 1990s Prof. M. Kluge assembled in the Botanic Garden Darmstadt a *Kalanchoe*-collection for research on CAM. In autumn 2004, based on this collection, the garden decided to establish the genus *Kalanchoe* as a collection focus and to build a special-collection on "one central point" to render these plants accessible for future research. As a first step, all accessible Indices Seminum were scanned for *Kalanchoe*. In the course of time, a wide range of new accessions became obtainable by visiting many Botanic Gardens in Germany.

Table 1. Development of collection and percentage of available taxa

Reference	Accessions	Taxa total	Africa	Madagascar	Asia
Descoings in Eggli (2003)		173	74	80	19
Date					
1 January 2004	56	45	8	35	2
1 January 2008	466	114 (66%)	48 (65%)	60 (75%)	6 (32%)

Table 2. Composition of the collection

Accessions total	466 (100%)
"Gartenmaterial": Garden-accessions: mostly without data	298 (64%)
"Wildmaterial": accessions of wild origin, but without precise locality, collector or number	62 (13%)
"Standortmaterial": accessions of wild origin with precise locality, collector, number date, etc.	106 (23%}

While the collection was being assembled it became obvious that in most gardens only a standard assortment was cultivated and only a few other taxa were available. Consequently it is likely that only very few additional taxa are in cultivation in other Botanic Gardens. The African and Malagasy species are well represented in cultivation, but not the Asian species, and this group is also poorly known.

Because of a change of the staff-member responsible for the collection in summer 2008, the continuation of collecting came to an end. The Botanic Garden and the Curator are trying to preserve the collection and to make it available for future research and contribution of living plant material.

The Potential of Private Collections

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Following the success of projects where professional botanists have co-operated with amateurs, such as for *The New Cactus Lexicon*, possibilities for future joint projects are outlined.

The benefits can be:
1. Living plant collections in private hands are maintained by a skilled, caring owner. An institution, however, can have difficulties maintaining standards of cultivation and data maintenance, particularly with a high turnover of staff and management. Amateurs often have good cultivation skills, particularly in relation to plants needing specialist care. The owner of a private collection is also more likely to know the plants and hence less likely to mix up the labels.

2. Amateur collections often include plants that are threatened in the wild. Seeds of these species may rarely be offered by nurseryman because they are not popular with the average collector. Even if they are, the gene pool from which commercial seed is collected is limited, or sometimes of dubious origin. Specialist collections can be a valuable source of propagations of rarely-cultivated species and information on how to grow them.

However, there are also problems:
1. Private collections rarely outlive their creators. When collections are split up and sold, any data about the plants are usually lost. No matter how threatened a plant might be in the wild, if it is ugly, or big, or unfashionable, it will probably be discarded.

2. Amateurs do not usually perceive institutions as reliable long-term custodians of their precious plants, so rarely donate their collections to them.

3. Trade regulations make it practically impossible for amateurs legally to introduce new genetic material into their collections from the wild. Blanket bans of seed exports do not serve the objectives of conservation. Without refreshing the gene pool, cultivated examples of a species will become less representative of its diversity, sometimes called the 'British Standard' problem, where all cultivated individuals come from a few stock plants in a single nursery.

Possible areas of co-operation:
1. The owners of documented collections can provide reliable plant tissue for DNA sequencing. The sources quoted in some recent studies give rise to doubt about the validity of the findings. There is much habitat-origin material in specialist private collections that could potentially be utilized in such studies.

2. The ease of sharing digital images enables amateurs to provide illustrations for journals and books.

3. Institutions have the opportunity to enrich their living collections with donations or exchanges.

Amateurs benefit too:
Mixing with botanists helps amateurs to understand the principles of subjects like taxonomy and nomenclature. It may even help reduce the number of superfluous new descriptions! We can get access to advice and institutional resources such as reserve collections, herbaria and libraries. We can also learn more about the value of the plants in our collections, for instance the importance of keeping data and their conservation status.

Conservation:
The ex-situ conservation of threatened plants could well be best managed by a number of co-ordinating institutions around the world, each concentrating on maintaining and propagating one or a few genera appropriate to their expertise, climate and facilities. Private collections could participate in this process with a view to improving the long-term sustainability of the plants currently in private hands.

A reference collection of the genus *Echinopsis*

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An introduction to the English National Collection of *Echinopsis* is presented. The collection began in 2000 as an amateur collection of *Lobivia* and was renamed to *Echinopsis* in 2005 to allow inclusion of *Echinopsis s.s., Trichocereus* and *Acanthocalycium.* There are now more than 1200 accessions with each recognized species represented by multiple specimens from several populations. The majority of the specimens are associated with detailed location information. Special emphasis is placed on the maintenance of a detailed accession record for each specimen. This information includes name, field number, source, propagation status (field-collected plant or seed, habitat or commercial) and accession date, and is linked to a digital photographic image database, now containing over 2500 images, stored in Adobe Photoshop Elements. A hierarchical XML scheme of tags has been developed which allows rapid selec-

tion of images by a variety of criteria including species-name and collector abbreviation. The living collection was used extensively as a source of comparative material during the preparation of *The New Cactus Lexicon* and in future it is hoped it can provide a source of well-documented material for use in molecular phylogenetic studies.

Succulents and CITES

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CITES (the *Convention on International Trade in Endangered Species of Fauna and Flora*) aims to regulate and monitor the international trade in selected species of plants and animals to ensure that such trade does not endanger the survival of populations in the wild. Up to May 2009, 175 countries signed the Convention. CITES is an international treaty to which only countries may become a Party. Each Party is required to appoint one or more Management Authorities, and at least one Scientific Authority. The Management Authority, always a government department, executes the provisions of the Convention and is responsible for issuing CITES permits.

Through this control system all parties assist in maintaining the listed rare and threatened species in the wild. CITES allows trade in wild specimens up to a level that is not detrimental for the survival of the species in the wild, that is, a use of nature commonly referred to as sustainable use. IOS is already co-operating with CITES, namely with the official checklists published by IOS experts. It is the opinion of the author that more co-operation between IOS and CITES authorities could contribute to a better implementation of CITES with regards to succulent plants.

Gdansk to Birmingham: Introducing myself

*Andrew Gdaniec**
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My adventure with succulents started with a windowsill collection in Poland when I was four years old, and from the age of 10 I helped in a succulent nursery. After school I studied biology at the University of Gdansk and did the equivalent of an MSc on seed-characters in *Parodia* (Cactaceae). Then I started a PhD on cactus taxonomy, and was given the opportunity to participate in an expedition to Ecuador. Unfortunately I was unable to secure a research grant in order to continue with my PhD work, and took a job with a firm specializing in micropropagation. In 2006 I decided to move to the UK. I got a job in a logistic warehouse, working a shift from 3 pm to midnight and doing voluntary work in the mornings for the Birmingham Botanical Gardens and Glasshouse. Eventually BBGG offered me a place on a one-year studentship. I joined the British Cactus & Succulent Society and I have tried to visit many succulent collections, either in private hands or in botanical gardens. After leaving Poland I had to sell my collection and decided I would not start a new one. But I'm addicted to plants and have started again, growing hardy cacti on the balcony of my apartment.

[**Current address: 54 Beechwood Avenue, Kew, Richmond, Surrey, TW9 4DE. Andrew is now a student on the diploma course at the School of Horticulture, RBG Kew. — Ed.*]

Symposium 2: Cactaceae: Current projects and the implications of molecular systematics for 'consensus' classification

Biodiversity mapping: towards an Atlas of Cactaceae Diversity and distribution patterns
Kirsten Hahne, Anke Stein, Jens Mutke, Pierre L. Ibisch & Wilhelm Barthlott

For the conservation and further study of cacti, the knowledge of their distribution is essential. For the first time, we present maps and analyses of the spatial diversity patterns for the complete family of the Cactaceae. The aim was to generate an Atlas of Distribution Patterns for all 1433 species. Based on three decades of distribution mapping for Cacti in the group of Wilhelm Barthlott, the current analyses were finalized in two diploma theses of Anke Stein and Kirsten Hahne in 2008/2009.

We established a high-resolution GIS dataset and corresponding database consisting of >45,000 data records with distribution data of cacti. As sources we used geographical works like floras and checklists and taxonomical works such as monographs and lexica. These data were complemented with electronically available herbarium data and published range maps. We generated diversity maps for all genera, tribes, subfamilies, and the complete family. In addition to species richness, genus richness patterns, patterns of endemic species, and the range size distribution are analysed.

The main centre of highest species richness is located in Central Mexico, but the Eastern Andes in Bolivia and Argentina and south-eastern Brazil are also important centres. The main centre of generic richness is also Mexico, but Bolivia/northern Argentina/Paraguay, south-eastern Brazil, the Caribbean region and Peru show high generic richness, as well.

The analysis of range sizes showed that only two species have range sizes of more than 10 million km^2 (*Rhipsalis baccifera* and *Epiphyllum phyllanthus*). According to our data,750 species (~50% of all Cactaceae) have range sizes <100,000 km^2 and 106 species (7%) are highly endemic with range sizes <10,000 km^2.

An important achievement of this study is that all data are available in an electronic database and GIS format. The next steps will be to publish the complete Atlas of Cactaceae diversity and distribution patterns and to analyse the information in terms of phytogeographical, macroecological, and conservation aspects.

We would like to thank the BIOMAPS project team for technical support and David Hunt for fruitful discussions and for access to data from the New Cactus Lexicon in electronic format. The project has partly been funded by the Academy of Sciences and Literature Mainz ("Biodiversity in Change" Program) and the Deutsche Kakteengesellschaft.

Mapping the genera of Cactaceae for the New Cactus Lexicon Supplement

Martin Lowry

An important part of the content of the first supplement to *The New Cactus Lexicon* will be the production of distribution maps for all genera and some subgenera of the Cactaceae. To be

useful the information in these maps must be as current and accurate as possible. Our objectives are to improve considerably on the earlier maps of Backeberg in his *Kakteenlexikon* by increasing both spatial and taxonomic resolution of the information presented. The base maps will be constructed using an inexpensive mapping package, Mapmaker (Map Maker Ltd, Carradale, Kintyre, UK), and GIS datasets of administrative boundaries freely available from the Internet. Sources of species distribution data will be combined from Internet-accessible databases, for example the Global Biodiversity Information Facility (GBIF), and from the personal records of professional botanists and leading amateurs. All geographic data will be transformed from GPS coordinates into linear cartographic coordinates using the Albers Equal Area Projection. To prevent misuse of the information we intend to produce distribution maps only to the generic/subgeneric level, thus it will not be possible to identify the location of individual species. Furthermore, the scale at which the maps will be produced and the size of the symbols used to represent an observation will also obscure the exact location. To date we have accumulated around 40,000 records, primarily from Internet databases. Unfortunately the observations in these data are very sparse even for some large, widely distributed genera, further, the taxonomic quality is highly variable with many misidentifications. We hope to improve both these faults by obtaining field observation data from leading amateurs. Initial indications from data on *Echinopsis* show that the two sources are complementary, for example, there were only 89 records for *Echinopsis* in the GBIF dataset whilst additional records from 3 amateurs increased this to 981 and filled in many gaps. Eventually we hope to collect around 70,000 records.

Cactaceae: recent molecular systematic studies and their taxonomic implications
Reto Nyffeler & Urs Eggli

The molecular systematic "revolution" of the past two decades is, inevitably, also affecting the higher classification of the family Cactaceae. Ancestor-descendant relationships are inferred by phylogenetic investigations on the basis of comparative sequence data and are depicted in the form of tree diagrams (i.e., hypothetical phylogenies). These diagrams provide the outline for a genealogical classification system that reflects the hierarchical pattern of the corresponding phylogenetic hypotheses. In a second step, and mainly motivated by maintaining conventions, the different groups (i.e., taxa) are ranked based on the "Linnaean" classification system. Major disagreement continues to smoulder concerning the recognition of paraphyletic extant supraspecific taxa and the relative importance of (1) objectivity, (2) stability, and (3) practicability in biological classification systems. A phylogenetic classification system – as proposed here – is based on the following three premises: (1) only synapomorphies are important for inferring phylogenetic relationships, (2) classification systems must be based directly and exclusively upon hypothesized phylogenies, and (3) only holophyletic (= monophyletic) supraspecific taxa are recognized and named.

Depicting hypothesized relationships in the form of tree diagrams has an extensive tradition in cactus systematics, dating back to the work by William F. Ganong on the morphology of embryos and seedlings in Cactaceae at the very end of the 19th century. The current suprageneric classification system of Cactaceae, recognizing three or four subfamilies (i.e., Cactoideae, Maihuenioideae, Opuntioideae, and Pereskioideae) and a variable number of tribes in the two larger subfamilies, is still to a large extent based on the studies by Franz Buxbaum during the 1950s and 1960s. Two decades of molecular systematic studies in

Cactaceae allow us now to come up with a refined classification system that better reflects the phylogenetic relationships among the major lineages as currently understood.

We propose to recognize four subfamilies (tough!) keeping in mind that Pereskioideae (and hence the genus *Pereskia*) is paraphyletic. Furthermore, we suggest that Cactoideae and Opuntioideae are classified into several tribes (i.e, Blossfeldieae, Cacteae, Cereeae, Notocacteae, Phyllocacteae, Rhipsalideae as well as Cylindropuntieae and Opuntieae) and, if they are diverse and rich in species, a few subtribes. However, our current knowledge still is fragmentary and, hence, a few genera, both in Cactoideae and Opuntioideae, remain "unplaced" and are recognized as orphans (i.e., *Calymmanthium*, *Copiapoa*, *Frailea*, *Maihueniopsis* p.p., and *Pterocactus*).

Cintia – Sulcorebutia – Weingartia: Spiny morphology and thorny genetics

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The genera *Cintia* Knize & Ríha, *Sulcorebutia* Backeb. and *Weingartia* Werderm. from high elevations of the Central Andes fascinate cactus breeders because of their enormous morphological diversity, especially in flower colour varying even within populations. Phylogenetic analyses based on chloroplast DNA sequences and an AFLP study demonstrated that these genera form a well-supported monophyletic group that is sister to *Rebutia* s.s., but do neither support the split between the genera *Sulcorebutia* and *Weingartia*, nor the current taxonomy. Species composition of the clades "*steinbachii*", "*verticillacantha*" and "*tarijenis*" were largely congruent between chloroplast and AFLP data and are distributed in the north western, northern and southern part of the distribution area, respectively. The clades "*canigueralii*" and "*mentosa*" were well-supported by the chloroplast phylogeny but their taxa were assigned to different clusters by a Bayesian clustering approach based on the AFLP data set. These incongruent clades are distributed in the central area of the range at moderate elevations of 2000–3000 m. These data support the hypothesis that taxa of the "*steinbachii*", "*verticillacantha*" and "*tarijenis"* clade from the edges of the distribution area may have evolved by recent colonization events after the last glaciations period, whereas the great genetic diversity within the "*canigueralii*" *and* "*mentosa*" may be maintained by ongoing hybridization.

This study has been initiated and financially supported by the Studiengemeinschaft Südamerikanische Kakteen e. V. (SSK). http://www.ssk-kaktus.org

Diversity in *Rebutia* and *Sulcorebutia*; an attempt to find out the genetic base

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[Abstract not received]

More on the phylogeny and evolution of *Echinopsis* s.l.

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As currently circumscribed, the genus *Echinopsis* is among the largest genera of Cactaceae, and is likely the genus with the highest morphological diversity in the family. A densely sampled molecular phylogeny based on chloroplast markers is presented, including all type species of genera that were merged with *Echinopsis*. Further, all genera of the tribe Trichocereeae and members of the BCT clade are represented, in most cases by their type species. The data suggest that floral characters and growth forms are not associated with deep phylogenetic splits, indicating convergent evolution of several traits often used in taxonomy. Thus, *Echinopsis* as a whole is polyphyletic, as are *Echinopsis* s.str., *Trichocereus* and *Lobivia*. However, the results are supported by some previously published morphological data, such as seed structure. The presented results further give new insight in the relationships in the Trichocereeae, indicating the need for restructuring certain genera.

Molecular systematics and evolution of epiphytic cacti

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Epiphytic cacti have been in the focus of research in Bonn over many decades. According to current knowledge, epiphytism has evolved at least twice in Cactaceae. A great number of morphological characters, including details of pollen morphology, has evolved in parallel in the clearly separate tribes Rhipsalideae and Hylocereeae. This has led to taxonomic confusion during the last century, and is an impressive example of the evolution of convergences in the context of epiphytism. Therefore, Cactaceae will be studied as apromising model group in order to gain insights into fundamental mechanisms of the evolution of epiphytism.

The first aim of this project is to generate highly resolved phylogenetic trees for the epiphytic tribes, based on chloroplast and nuclear data. These phylogenetic hypotheses will allow us to trace morphological characters, especially flower characters and growth forms and to detect changes of character states and putative key innovations during the evolution of epiphytism in Cactaceae/Rhipsalideae. Emphasis will be placed upon characters relevant in the context of pollination biology. In particular, the evolution of pollen characters will be traced and hypotheses on the adaptive value of pollen character complexes will be tested. Finally, the current, morphology-based circumscription of species within Rhipsalideae will be evaluated by means of the generated sequence data. The potential of the DNA regions used will also be tested for their potential as DNA-barcodes for species identification.

Diversity in *Cumulopuntia sphaerica*

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The genus *Cumulopuntia* in Peru is poorly studied and in *The New Cactus Lexicon* only *Cumulopuntia sphaerica* and *C. boliviana* are accepted as good species. In this publication *C. sphaerica* includes no less than nineteen published taxa (including some only published in the genera *Opuntia* and *Tephrocactus*) and in this wide sense encompasses all the taxa in S Peru and N Chile on the western side of the Andes. The distribution extends from Lima, Peru, in the north to Coquimbo, Chile, in the south.

During three field trips to southern Peru I have encountered specimens of *Cumulopuntia* in a number of localities and observed significant differences in vegetative morphology. Subsequent research identified a number of these populations as taxa that had been described as distinct species by various authors, and it is clear that including all under the single name *Cumulopuntia sphaerica* is in need of re-evaluation. Generally there is little diversity in plants within populations but significant diversity between populations. Several are clearly distinct taxa and some grow in association with other taxa without introgression. A tentative classification with four additional species is proposed with *C. sphaerica* retained to include only the large segmented plants from a number of low elevation localities (<2600m) from Arequipa northwards to Lima.

The next CITES Cactaceae Checklist and other collaborative projects

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It is 25 years since the IOS Cactaceae Working Party, later known as the International Cactaceae Systematics Group, first convened at the 18th IOS Congress at the Palmengarten, Frankfurt, in June 1984. Three years later, when the Working Party held a meeting at the IOS Inter-Congress meeting in California, it was attended by Dr Bruce MacBryde (US Department of Agriculture Fish & Wildlife Service). He was officially involved in the implementation of the CITES, the Convention on International Trade in Endangered Species and suggested that IOS should be contracted to produce a much needed Checklist of the family for the use of the CITES authorities internationally. With USDA and Kew support, this was eventually agreed, and with the help of numerous advisers and collaborators, I compiled the first edition of the checklist, published in 1992. It was followed by a second edition in 1999 and the CITES Plants Committee has now asked me to do a third edition for publication in 2010.

I have been asked to follow the generic classification adopted in the New Cactus Lexicon (NCL) so the re-classification of the opuntioids will be the main change from the previous edition. Additions and amendments to the species-list for individual genera will however be possible and I shall be circulating the draft lists and the lists by country for review by those on the updated list of advisers.

NCL Supplement. As earlier mentioned by Dr Lowry, the preparation of a supplemental volume to NCL is also under way. It is planned to include distribution maps of all genera, revised

treatments of some genera, identification keys and more illustrations. Potential changes to the generic classification will be discussed, mainly on the basis of the various molecular studies that have been made or become available since the classification adopted in NCL was agreed about five years ago.

Phylogeny of the Andean Opuntioideae. Various relevant taxa were not available to Wallace & Dickie when they did their pioneer cpDNA study of the Opuntioideae a decade and more ago, and several of us have been hoping a more comprehensive survey would help to clarify their inter-relationships. Earlier this year I asked Dr Christiane Ritz if she would be interested to take on this study. Since then a new paper by Griffith & Porter has been published covering some of the taxa we had in mind and providing more molecular evidence, but it omits several of the relevant taxa and some of the results raise doubts about the sources and identification of their material. At a meeting here with Dr Ritz yesterday evening, agreement in principle was reached to proceed with our original plans.

'Ritter in Colour'. The fourth and final collaborative project to be mentioned takes us back to Friedrich Ritter and could be described as a continuation of the so-called 'Ritter project' that IOS helped to initiate 20 years ago, resulting in the invaluable catalogue of his collections researched and compiled by Urs Eggli and Beat Leuenberger. An extensive set of Ritter's colour photos, which are believed to include the originals of many of the pictures in his magnum opus *Kakteen in Südamerika*, came into the possession of Mr K.W. Beisel when he acquired the library and slide collection of the late Mrs Else Gödde shortly before she died. Mr Beisel has entrusted these slides to me with a view to getting them scanned for possible publication, since they are mostly of good quality and much more informative in colour than in black and white. Paul Hoxey and I hope to complete the scanning by the end of this year.

The virtues of consultation, coordination, and collaboration

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Within the overall framework of co-operation, one can recognise an increase of commitment and complexity from consultation via coordination to collaboration. Consultation is basic for the achievement of any common goals. Coordinating separate activities among independent organizations avoids duplication in work and waste of resources. As co-operation intensifies, soft factors like mutuality, impartiality, transparency, good communication, and trust gain importance. Collaboration may require contractual safeguarding, organizational adjustments, and investment in staff that may neutralize the advantage of cost reduction associated with mere coordination. For reasons of flexibility and effectiveness, it might be advisable to coordinate but keep projects autonomous. Nevertheless, consultation as well as collaboration can be helpful in promoting motivation and achieving sound and complementary results. Among groups whose identity, methods, and resources are diverse, division of labour is based best on an organisation's comparative advantage.

The number of public and private organisations that are committed to promote the documentation, protection, conservation, and study of plants seems to increase steadily. Competition for recognition and allocation of resources may foster a non-cooperative attitude. However, coor-

dination and bundling of resources have become more than just an option with regard to funding, costs for Access and Benefit Sharing, access to suitable plant material in collections, and availability of specialists.

It is the declared aim of the IOS to encourage international co-operation by uniting scientists and amateurs and by improving communication and facilitating co-operation. The amateur's profound knowledge of plants and their habitats objectively qualify him as a collaboration partner for the interested professional. Vice versa the amateur can learn most about his plants when his expertise can be incorporated in professional research. However, social studies reveal a strong interest in amateur associations to isolate. Waste of resources or duplication of work might not be of prime concern. Therefore the ambitious intention to unite partners with different perspectives, motivations, and resources demands to recognise the manifold barriers to overcome. The advantage of amateur groups is their autonomy and flexibility to conduct small projects with a high cost-effectiveness. Such projects might not be easy to integrate in larger investigations without jeopardising the identity and the motivation of the amateur group. It is a challenging mission to counter a perceived threat that coordination will reduce autonomy, and concerns that the costs of co-operation will be higher than the benefits, and fear that credit for individual contributions may get lost or diffused in a coordinated effort.

It is suggested to review the IOS Internet presentation and compile information about worldwide research on succulent plants for a special website. This requires some effort in collecting information but less effort in bringing proper partners together. The interested individual who knows best what he is up to can select the most pertinent information and identify suitable opportunities to coordinate or collaborate. The entire community could benefit from this "blackboard" as it gains support, receives feedback, and provides access to research results. Since co-operation and competition are potentially conflicting issues, the willing flow of information is likely to promote desirable co-operative competition and superior results.

Inter-Congress excursion: Our new Assistant Secretary Rainer Mecklenburg and his wife Ingrid relax with new student member Nadja Korotkova (centre) by the bank of the river after a botanical ramble above the Ahr Valley vineyards (*photo: David Hunt*)

Secretary's Notes

Nominations for the IOS Executive Board 2010–2012. The attention of all members is drawn to the statutory request for nominations in the formal Notice of the Members' General Meeting (see above, pp. 33–34) at the forthcoming Congress.

Further proposals to amend the IOS Statutes and Byelaws (see next page). Your attention is also drawn to the Executive Board's proposals, which reflect our desire for closer collaboration with researchers and students in the countries where the great majority of succulent plants occur and also with all botanical gardens and institutions having, or wishing to have, a role in succulent plant study and ex situ conservation.

Collaboration with Botanic Gardens Conservation International (BGCI)
Following earlier discussions on ways we might collaborate to revive the IOS Reference Collections Initiative (see IOS Newsletter 1/2008: 3), BGCI has invited IOS to be one of its specialist 'Conservation Partners'. The invitation was accepted by your President and Secretary at a meeting with our member Sara Oldfield, who is Secretary-General of BGCI, at BGCI headquarters on 8 August 2009, and an initial announcement appeared on the BGCI website a few days later*. Initially, help is being provided by BGCI to compile an up-to-date list of specialist collections and a session at the forthcoming Congress will be aimed at producing a practical 'action plan' for the interval between the Congress and the following one.
* See *http://www.bgci.org/resources/news/0617/*

New arrangements for investment of IOS reserve funds
The intention of IOS and BGCI to cooperate and work together on a range of areas of mutual interest has also offered the Board a possible solution to a problem which has been under discussion for some time, namely how to achieve a better 'return'on the capital funds or reserves which IOS has accumulated over the years. The problems many members have experienced in the past in paying the subscription or making donations to IOS have been eased now that we have regional representatives holding 'cash' accounts in dollars, euros and sterling as well as Swiss francs, but our reserves have been earning very low interest and probably decreasing in value in real terms. Consequently, we have been considering alternative arrangements. As most of our members reside in the Euro zone, it was initially proposed to move the reserves to one of the Euro countries, but it soon became clear that registration for tax purposes would be obligatory in whichever country the funds were to be held, and that to apply for tax-exempt status IOS would need to afflilated to an already tax-exempt organization (or 'charity') in that country having similar aims. Though it might be possible to arrange such an affiliation with, say, a local botanical garden or a national hobby society, this was not considered appropriate for IOS in view of its international NGO status.

As a more satisfactory and flexible alternative, IOS and BGCI (which has tax-exempt status in both the UK and the USA, and has a Euro account) have now agreed arrangements, initially for a two-year trial period and renewable thereafter, under which BGCI will hold the IOS reserve funds in a clearly identified tax-exempt account and ensure an appropriate return is made from the fund and reinvested in it. The agreement includes provision for easy transfers to be made to and from the 'cash' accounts held by our representatives in Germany, the UK, USA and Switzerland, which are mainly for the collection of members' subscriptions and donations and for occasional disbursements in the appropriate currencies. Outgoing payments from the

reserve fund will normally be made via one or other of the regional accounts and will require prior authority in writing from the IOS Executive Board.

The Board is grateful to Sara Oldfield and BGCI's Director of Finance, Bruce Jamieson, for agreeing and undertaking the new arrangements. Sara has accepted the Board's nomination to act as IOS Treasurer until the Congress next year.

Proposals by the Executive Board to amend the IOS Statutes and Byelaws

Statutes
Art. 2: Objects

In clause 'e.', *amend* 'protective reference collections' *to read* 'Reserve Collections'

Art. 4: Membership

Insert a new category 'e. Regional/National Representatives'

[Rationale: Currency restrictions make it difficult for members or would-be members in many countries in Africa or Latin America where succulent plants are native to pay the IOS subscription, or to obtain relevant literature. To assist them and to improve the perception of IOS as truly international, admission to this category, like that of the former category of 'Guest Member', would be at the invitation or discretion of the Executive Board. Representatives would have free IOS membership, renewable biennially at the Board's discretion but would be asked to publicize IOS to other potential members in their area and keep in touch with the Secretariat on relevant local activities and publications.]

Art. 5: Admission

Para 1. *Delete* 'or Institutional' *and delete* 'and accompanied by a payment equivalent to the current biennial subscription'.

Para. 4. *Replace with*: 'Application for Institutional Membership may be made by any recognized Institution or Organization wishing to support the objectives of IOS, receive its publications and/or participate in its activities. Applicants are requested provide the name(s) and postal and e-mail address(es) of persons to whom IOS should send its publications and other communications including subscription renewal invoices'.

[Rationale: Currently none of our Institutional Members has a formally nominated representative or contact person. Some are explicitly library subscribers, but there are others, including botanical gardens and C&S Societies where there is a person who is separately listed as an Ordinary Member – but we do not get a separate subscription payment! In all cases it would be helpful to have a named contact or contacts.]

Insert new para. 5. [Joint members] 'If the partner of an IOS Ordinary or Emeritus Member wishes to participate in IOS activities they may do so, and be included in the membership list,

without applying for personal membership or paying the subscription, but will not be entitled to vote at the General Meeting.'

[Rationale: IOS currently has several members whose partner shares their interest in succulent plants, known affectionately in English as 'prickly pairs'!]

Bye-laws

[Note: The Board has the power under Art. 7 'to make, amend or delete bye-laws to assist the operation of the Statutes', but bye-laws 'may also be deleted by a simple majority vote at the Congress'.]

3. Publications. *Amend the end of the sentence to read* 'and normally free of charge to members', and add:

'Members wishing to receive printed copies of publications distributed to the majority of members electronically may be asked to contribute to the cost of printing and mailing in addition to the basic biennial subscription.'

4. IOS Documentation Centre. *Delete this bye-law in its entirety and replace with:*

'4. Research material. Members are recommended to donate type material of succulent plant taxa described by them, along with complete documentation and relevant publications, to the Zurich Succulent Collection (Zürich Sukkulenten-Sammlung) and/or other major botanical institutions associated with IOS.'

[Rationale: The Acting Director of ZSS has confirmed that the designation 'IOS Documentation Centre' etc is not recognized by the City Council (which funds ZSS). Moreover, 'research material' of all kinds including plants and books etc deposited there by IOS members has simply been integrated in the ZSS collections, so that it is impracticable to say what is or isn't IOS property 'on permanent loan', other than some archival material, mainly relating to membership records, and this has been handed over to the IOS Secretary. Paras. 1 and 2 of the Bye-law are therefore inapplicable. Para. 4 is superfluous, since, like those of other institutions, the ZSS herbarium, library and parts of the living collections not open to the general public may be visited by prior arrangement.]

5. Reference Collections. *Amend to read:* '5. Reserve Collections. IOS, in association with Botanic Gardens Conservation International (BGCI), will promote the establishment of a network of 'Reserve Collections' of living cacti and other succulent plants and measures to assess and enhance the potential of these collections as a resource for research and conservation.'

[Note: The designation 'Reserve Collections' expresses the dual role of such collections in both research and conservation more directly than 'Reference Collections'.]

6. IOS Research Fund. *Delete* 'a Committee of the President... Treasurer' *and substitute* 'the Executive Board'...

Membership Matters

Membership Status: [E] = Emeritus [I] = Institutional [O] = Ordinary [S] = Student

Listed here are changes to the Membership List printed in the previous *Bulletin*, pp. 23–27. Changes not already circulated in *IOS Newsletter 3/2009* are prefixed by an asterisk*. IOS membership as of 31 October totalled 152.

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Resignations

***Dr David Aplin**

***Harry Chi-King Mak**

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31st IOS Congress, Gran Canaria, 20-27 March 2010

in collaboration with

Jardín Botánico 'Viera y Clavijo', Cabildo de Gran Canaria
and Botanic Gardens Conservation International

Provisional Registration Form and call for presentations

Important note: Further information about the Congress will only be sent to members who provisionally register by using this form or who contact the Secretary by e-mail, fax or letter

If you are hoping to attend the Congress, or would like further information, please complete the form and return it to the IOS Secretary, David Hunt (dh@davidhunt.demon.co.uk) as soon as possible, or notify him by e-mail, as a matter of urgency. This will not commit you in any way, but will greatly help us to estimate the likely attendance and the accommodation required, and to plan the programe.

Name of Member _____

Accompanying person(s) (if any) _____

e-mail or other contact address _____

☐ **Yes, I hope to attend the Congress**

☐ **Please send me more information**

☐ **I would like to give a presentation on the following topic(s):**

☐ **I would be interested to join the Post-Congress Excursion (for up to one week) starting 27 March**

Please complete and return this form as soon as possible, and no later than 31 December 2009 to the IOS Secretary:

David Hunt, The Manse, Chapel Lane, Milborne Port DT9 5DL, UK
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