



NEWSLETTER

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Gesellschaft für Arzneipflanzenforschung · Society for Medicinal Plant Research

<http://www.ga-online.org>

Message from the President

Since 1988, I have been member of the Board of Directors of our Society; I have acted as vice-President (Jan 1990–Dec 1997) and during the last four years as President. Previously I had served the GA as Editor of the GA Newsletter. Although it was a great pleasure, in spite of the many extra duties, I decided not to be candidate for another term of office. However, I still hope that I can serve the GA for some more time as I am elected again as member of the Advisory Board.

Dr Frank, who has been active as GA Secretary for eight years and has performed a lot of work, also decided not to be candidate for another term of office. This means that after a period of four years, the Executive Council of our Society will have a new composition. Fortunately, Prof. Bauer, vice-President during the last four years, was willing to be candidate as president in the elections and was elected as such. Prof. Kopp and Dr Abel, who were vice-President and Treasurer, respectively, during the last four years, were re-elected. Prof. Kreis and Dr Seitz, are the newly elected members of the Executive Council, who will act as vice-President and Secretary, respectively.

As a result of the elections, the composition of the Advisory Board has also changed to some extent; details are given in the Minutes of the Members' Meeting, published below.

I am confident that the new Executive Council will successfully lead our Society to the next milestone, namely its 50th anniversary, which will be celebrated 8 April 2003.

Finally, I thank the many members who have been active for the GA in one way or another during the last four years, I like to express my gratitude to the Board of Directors for the pleasant cooperation and for the support, particularly that of my colleagues in the Executive Council, and – last but not least – I wish the new Executive Council, starting January 2002, much success for the years to come.

J.J.C. Scheffer

New GA Addresses – Nota Bene!

Due to the changes in the composition of the Executive Council of the GA, as a result of the elections in Erlangen (full details are given in the Minutes of the Members' Meeting, also published in this Newsletter), all correspondence to the GA secretariat should now be addressed to:

Dr Renate Seitz, GA secretary
Emmeringerstrasse 11
D-82275 Emmering
Germany
Phone/Fax: +49-8141-61 37 49
E-mail: GA-Secretary@t-online.de

Correspondence to the GA President, e.g. nominations for the Egon Stahl-Awards, should be sent to:

Prof. Dr Rudolf Bauer, GA President
Institut für Pharmazeutische Biologie
Heinrich-Heine-Universität Düsseldorf
Universitätsstrasse 1
D-40225 Düsseldorf, Germany
E-mail: bauerr@uni-duesseldorf.de

Egon Stahl-Awards 2002

Referring to the announcement in the previous Newsletter (published July 2001), again I kindly invite the regular members of our Society to submit nominations for the Egon Stahl-Award in Gold before 1 Mar 02. The Standing Rules have been published in the previous Newsletter, but they can also be seen via the homepage of the GA. Please, note that submissions should be sent to Prof. Dr R. Bauer, the new GA President.

The Egon Stahl-Award with silver or bronze medal (and with a monetary prize) can also be awarded in 2002. The corresponding Standing Rules can be read in the GA membership list as well as via the homepage of our Society. Please, note that it has recently been decided to change the Standing Rules with respect to the number of copies to be submitted (now in **triplicate!**). Nominations can be submitted by members of the GA to the President of our Society, Prof. Dr R. Bauer, up to 15 Mar 02.

J.J.C. Scheffer

Minutes of the Members' Meeting 2001 in Erlangen

The annual Members' Meeting was held on 3 Sept 01 in Erlangen; 97 members attended the session.

Prof. Scheffer started to welcome the members present in the meeting.

Topic 1 Passing of the Agenda

The agenda was passed after addition of Topic 4.6: Discharge of the Executive Council.

Topic 2 Minutes of the annual Members' Meeting 1999/Amsterdam

The minutes of the Members' Meeting held in Amsterdam on 29 Jul 99 were published in the GA Newsletter 1999, no. 2, which appeared in December 2000. Due to the delayed publication, the passing of the minutes was postponed in the Members' Meeting 2000 in Zürich to the Members' Meeting of today.

The minutes of the Members' Meetings were accepted without further remarks.

Topic 3 Minutes of the annual Members' Meeting 2000/Zürich

The minutes of the Members' Meeting held in Zürich on 5 Sept 00 were published in the GA Newsletter 2000, no. 1, in December 2000. The minutes of the Members' Meetings were accepted without remarks.

Topic 4 Annual reports

4.1 Report of the President: Prof. Dr J. J. C. Scheffer

Prof. Scheffer reported about some of the activities of the Executive Council (ExC) that were carried out since the previous Members' Meeting, held in Zürich on 5 Sept 00.

An ExC meeting in order to discuss various matters took place on 20 Oct 00 in Düsseldorf; this was particularly useful since the President had not been able to participate in the annual congress in Zürich.

On 13 Mar 01, the ExC came together in Leiden, among other things in order to prepare the elections of today, because of the vacancies of the president as well as of the secretary that were foreseen.

For the ExC and the Board of Directors (BoD), meetings were also organized in Düsseldorf which took place on 21 and 22 Mar 01, respectively. Yesterday morning an ExC meeting was held in preparation of a BoD meeting, that followed later that day, and of the Members' Meeting of today.

On 16 Feb 01, our President represented the GA at the 'LOF Symposium' that took place in Brussels. A report of the symposium was published in the GA Newsletter of July 2001. Recently, on 15 Jun 01, he gave a welcome address in a GA Workshop, organized by Prof. Melzig, which was held in Berlin. A report of that symposium appeared in the same Newsletter.

Our President also mentioned that the GA had again been active on a national and on an international level, e.g. with regard to "BfArM" and EMEA; Prof. Bauer would give more details about these topics.

Finally, Prof. Scheffer made known that it was decided that in future years the nominations for the Egon Stahl-Award (ESA) should be submitted in triplicate, and that the Editor-in-Chief of *Planta Medica* will replace the Secretary of the Society in the panel of judges for the ESA.

4.2 Reports of the Vice-Presidents: Prof. Dr R. Bauer and Prof. Dr B. Kopp

Prof. Dr R. Bauer

Prof. Bauer reported that the GA was invited to attend the annual public hearing of EMEA, held October 2000, in London; as a representative of the GA, Dr Frank attended the meeting and delivered a statement on the further perspectives of regulations for herbal medicinal products (HMP). The GA was also invited by the German "BfArM" to a meeting in Bonn in March 2001, in order to present its view and contribution to regulatory aspects of HMP; Prof. Bauer and Dr Frank attended that meeting.

The GA was invited by the German "Institut für die Arzneimittelverordnung in der gesetzlichen Krankenversicherung beim Bundesministerium für Gesundheit" to comment on a draft of drugs which will be considered for reimbursement by the general health insurance ('positive list'); a GA committee has been formed which will prepare a statement.

Prof. Bauer reported that there is still an increasing interest in the homepage of the GA; all necessary information on activities of the GA can be obtained via <www.ga-online.org>.

Prof. Dr B. Kopp

Prof. Kopp was responsible, together with Prof. G. König and Dr S. Alban, for awarding the GA travel grants. She reported that an amount of more than DM 19,000 was awarded to 25 young members in order to facilitate their participation in the present annual congress of our Society in Erlangen.

4.3 Report of the Secretary: Dr B. Frank

The society had 958 members on 1 Sept 01; 60 new members were accepted since 1 Sept 00. This means no further increase of the numbers, as the same number of members left our Society.

	1 Sept 01	1 Sept 00
Total Members	958	958
Honorary members	10	11
Company members	41	43
New members	60	59
Cancellations	53	52
Exclusions	5	49
Deceased members	2	0
Members from countries with reduced fee	56	47
Members with unknown address	23	

At the end of the year, a new membership list will be sent to the members as CD-ROM. Some questions about the information to

be given on individual members were answered in the meeting, e.g. should the e-mail address be given together with the postal address (answer: yes).

Because Dr Frank had done the work of the secretary now for 8 years and in view of a lot of other responsibilities, he decided not to be candidate again for secretary but for the membership of the advisory board (Board of Directors).

The secretary stressed again that members should inform the GA secretariat about changes of their address immediately. He repeated the GA internet address <www.ga-online.org> (the old address is still valid), and the e-mail address <GA-Secretary@t-online.de>.

Postal address: Dr B. Frank, Am Grundbach 5, D-97271 Kleinrinderfeld, FRG.

4.4 Report of the Treasurer: Dr G. Abel

Dr Abel presented the 'Annual Cash Report 2000', the 'Budget Draft 2001', and the 'Annual Statement 2000/Egon Stahl-Award'. The budget was accepted (unanimously).

In fact, the actual financial situation was very good – as in previous years – with deposits and liquid assets amounting to DM 163,887 at 31 Dec 00. The main aspects in the budget draft 2001 were: support of young scientists (members of the Society) by travel grants, support of GA workshops and congresses, and printing costs.

The cash auditors (Prof. Harnischfeger and Prof. Schilcher) reported that they were completely satisfied by the papers checked and that they were impressed by the activities carried out by the treasurer.

4.5 Discharge of the Treasurer

The treasurer was relieved from her responsibilities (unanimously). The cash auditors (Prof. Harnischfeger and Prof. Schilcher) were reconfirmed for the next cash audit. They accepted.

4.6 Discharge of the Executive Council

The other members of the ExC were also relieved from their responsibilities (unanimously).

Topic 5 Membership fee

A proposal to include Estonia, Latvia, Lithuania, and Iceland under the countries that are exempted from a reduced (50%) membership fee was presented.

Decision: the proposal was accepted.

Topic 6 Report of the *Planta Medica* Editor-in-Chief:

Prof. Dr A. Nahrstedt

In 2000 altogether 209 manuscripts on 784 pages in 8 issues of *Planta Medica* were published, representing 26 manuscripts per issue as a mean. Concerning the categories, this number of manuscripts comprised 4 Reviews, 1 Rapid Communication, 94 Full Papers, 107 Letters and 3 Notes. The manuscripts were submitted from 34 countries with Japan (26 = 12.4%), Germany (25 = 12%), Korea (23 = 11%), PR China (16 = 7.6%) and USA (16 = 7.6%) at the top; 35% of all published manuscripts stemmed from Europe. The main number of manuscripts still covered the topic 'Pharmacology/Toxicology', with more than 55%, followed by 'Natural Product Chemistry' with about 25% and 'Physiology/Biochemistry' and 'Analysis' with somewhat less than 10% each. Surprisingly the category 'Rapid Communication' was seldom used although it provides the chance to rapidly publish important data.

The number of submitted manuscripts in 2000 was 666 from 63 countries, reflecting a monthly mean of more than 55. This was less than in 1999 but still on a high level. China was the leading country (17%) followed by Japan (ca 10%), India (ca 10%), Korea (ca 10%) and Brazil (ca 6%); 75% of all submissions stemmed from outside Europe.

Though having increased the number of issues from 6 to 8 since 1998, the number of acceptable manuscripts was still too high to fit into the volume of one year. Thus, unfortunately, the time of

publication was not decreased in 2000. In order to cope with the high number of submissions and to reduce the time of publication, Publisher and Board decided to increase the number of issues per year by one in 2001, and finally up to 12 issues per volume with a monthly appearance in 2002. The additional work will be a new challenge for the Editorial Board. However, larger volumes with more information will also increase the price: The annual subscription rate in 2002 for members of the GA will be € 365.-; the normal subscription rate will be € 546.-.

For all who look at impact factors (IF): the 2000 IF of our journal (published mid 2001) was 1.831. This is again a good development (1.438 in 1999) and justifies to call *Planta Medica* the leading journal in its field.

For subscribers, *Planta Medica* is now available electronically. Interested colleagues should contact <www.thieme-connect.com> for more information. Contents, Abstracts and the guidelines are freely available via <www.thieme.de/plantamedica/>.

Prof. Nahrstedt emphasized that *Planta Medica* could not exist as the journal of our Society without the strong interest of authors to publish in *Planta Medica*, without the hard working Editorial Board and the helpful Advisory Board, and without the many referees spending their time to go critically through the submissions; their valuable service to the scientific community is highly appreciated.

GA Newsletter

The GA President informed the members that they were invited to send the titles of master and Ph.D. theses and "Habilitation" theses to Prof. Dr A. Hensel (e-mail: <ahensel@hswzfh.ch>), the editor of the GA Newsletter, for publication in this medium.

Topic 7 Reports of Permanent Committees (PC):

PC on Breeding and Cultivation of Medicinal Plants (Prof. Ch. Franz)
Prof. Franz gave a short overview about the workshop of this PC. The topics are Application of Plant Protection Products – Use and Residues and Good Harvesting Practice.

PC on Manufacturing and Quality Control of Herbal Medicinal Products (Prof. B. Meier)

Prof. Meier, who will replace Dr Linnenbrink as chairperson of this PC, gave an overview about the workshop in question entitled: Stability of Herbal Medicinal Products – Problems with the ICH Guidelines. He gave also an overview about the topics of the Workshops held in last years.

Prof. Meier and Prof. Scheffer thanked Dr Linnenbrink for his activities for the PC.

PC on Biological and Pharmacological Activities of Natural Products (Prof. H. Winterhoff)

Prof. Winterhoff gave an overview of the workshop she had organized, which was entitled: Anti-Inflammatory Activity (with a special focus on limitations of test systems).

Topic 8 Future Annual Congresses and Workshops

2002: 50th Annual Congress, Barcelona

This meeting, from 8 till 12 Sept 02, will be organized by Prof. Cañigueral, who gave an introduction about the congress location and various other topics. The first announcement of the congress was distributed during the present annual meeting.

The scientific topics of the congress 2002 are: Analysis of complex mixtures of natural products; Anti-inflammatory natural products; Clinical research on phytopharmaceuticals; Marine natural products; Medicinal plants from Latin America.

Workshops: Clinical trials with phytopharmaceuticals; Monographs on medicinal plants.

All correspondence concerning **scientific** items (abstracts, etc.) should be addressed to:

Prof. Dr. Salvador Cañigueral
Unitat de Farmacologia i Farmacognòsia
Facultat de Farmàcia

Universitat de Barcelona

Avda. Diagonal, 643

E-08028 Barcelona (Spain)

Phone: +34 93.402.45.31 Fax: +34 93.403.59.82

E-mail: <bcn50_ga@farmacia.far.ub.es>

All **other** correspondence (accommodation, registration, exhibition, etc.) should be sent to the Technical Secretariat:

Ultramar Express

Professional Congress Organizer

Diputació, 238 – 2nd

E-08007 Barcelona (Spain)

Phone: +34 93.482.71.40, Fax: +34 93.482.71.58

E-mail: <scastres@uex.es>

Hotel reservations should be made early!

Web page: <http://www.ope-uex.com/50congressmedicinalplant-research>, which can also be reached via the GA homepage <http://www.ga-online.org/events.htm>.

The second announcement will be delivered in January 2002. It will include the preliminary programme, forms for abstract submission, registration and hotel reservation.

2003: 51st Annual Congress, Kiel

The meeting organized by Prof. Blaschek, will start on 30 August.

2004: Joint meeting organized by the ASP, Phoenix (USA)

The meeting will take place 24-28 July (tentative dates) in Phoenix or Scottsdale near Phoenix, Arizona. Possible symposia topics are: Biotechnology; Desert; Herbal Products; Marine Products.

GA Workshops 2002/2003/....

2002

Feb 2002: 'LOF Symposium', Leiden, Prof. Verpoorte/
Prof. Scheffer

25 Mar 02: From Ethnopharmacy to Molecular Pharmacology (on the occasion of the retirement of Prof. Sticher), Zürich, Prof. Sticher/Dr Heilmann

Mar/Apr 2002: Polysaccharides, Prof. Franz/Prof. Blaschek
5 Jul 02: Isoflavonoids, Helsinki, Prof. Hiltunen/
Prof. Adlerkreuz (to be dedicated to Prof. Max von Schantz on the occasion of his 80th birthday anniversary)

10-12 Oct 02: Joint meeting of the 'Gesellschaft für Phytotherapie' and the GA, Berlin, Prof. Schulz.

2003

Early 2003: 'LOF Symposium', Antwerp, Prof. Vlietinck
8 Apr 03: 50th Anniversary of the Society for Medicinal Plant Research, Bad Camberg (near Frankfurt)

May/Jun 2003: 'Donau Symposium', Vienna, Prof. Jurenitsch/
Prof. Kopp

Autumn 2003: 3rd Mistletoe Symposium, location not yet known, Dr Scheer

Topic 9 Election of the Board of Directors

As an introduction, Prof. Scheffer mentioned that he was not ready to be candidate for a next term (for health reasons), and that Dr Frank was not anymore candidate either. He was pleased that Prof. Bauer was found ready to be candidate for the function of president, and Profs Blaschek, Kopp and Kreis for that of vice-president. Dr Seitz was willing to be candidate for the secretariat, and Dr Abel was ready to be candidate for another term as treasurer.

The present members of the Advisory Board, except Prof. Dinger-mann, were willing to continue their membership of the BoD. Additionally, Prof. Bechthold, Prof. Bohlin, Prof. Ch. Franz, Prof. Hamburger, Prof. König, Dr Theurer, and Dr Frank as well as Prof. Scheffer were ready to be candidate.

Prof. Dr E. Stahl-Biskup and Prof. Dr H. Schilcher were accepted as returning officers.

The President

Prof. Dr R. Bauer (votes: 88 yes, 1 no, 4 abstentions)

The vice-Presidents

Prof. Dr B. Kopp (votes: 75 yes)

Prof. Dr W. Kreis (votes: 59 yes)

Prof. Dr W. Blaschek (votes: 33 yes)

Result: Prof. Dr B. Kopp and Prof. Dr W. Kreis are elected.

The Treasurer

Dr G. Abel (votes: 90 yes, 0 no, 4 abstentions)

The Secretary

Dr R. Seitz (votes: 87 yes, 1 no, 6 abstentions)

The Advisory Board

The following candidates (in alphabetical order) were (re-)elected:

Dr S. Alban	Prof. Dr P. Houghton
Prof. Dr W. Blaschek	Prof. Dr B. Meier
Dr B. Frank	Prof. Dr A. Nahrstedt
Prof. Dr Ch. Franz	Prof. Dr J.J.C. Scheffer
Prof. Dr R. Hiltunen	Prof. Dr A.J. Vlietinck

Topic 10 Miscellaneous

Prof. Scheffer thanked the members for their participation in the Members' Meeting. Secondly he expressed his gratitude to his colleagues of the ExC for the nice cooperation during the last four years and for their support, especially in view of his health problems since March 2000. He thanked the members of the Advisory Board for their activities and for their advice given. Finally, Prof. Scheffer wished the new Board of Directors (ExC and Advisory Board), starting January 2002, much success for the years to come.

Würzburg,
Dr B. Frank, Secretary

Leiden,
Prof. Dr J.J.C. Scheffer, President

Egon Stahl-Award 2001

During the opening session of the 49th Annual Congress of our Society held in Erlangen, i.e. on Monday 3 Sept 01, the Egon Stahl-Award 2001 with silver medal was awarded. On the occasion of his 60th birthday, in 1984, Prof. Dr Egon Stahl donated a medal, a document and a monetary prize in order to recognize and to encourage young scientists working in the field of Pharmacognosy (or Pharmaceutical Biology) and Analytical Phytochemistry. According to the Standing Rules of the Egon Stahl-Award, the silver medal is meant to be given to a scientist up to the age of about forty years, who has published outstanding scientific work during the years following her or his graduation. After a careful evaluation of the nominations received, the panel of judges selected Dr Michael Keusgen for the Egon Stahl-Award 2001 with the silver medal.

Dr Keusgen was born in 1963. He studied pharmacy at the University of Bonn, and graduated as pharmacist in 1989. Subsequently he started a PhD study at the same university under the supervision of Prof. Glombitza. He defended his PhD thesis entitled "Phenolische Inhaltsstoffe der Phaeophyceae *Sargassum spinuligerum* Sond." ("Phenolic constituents of the brown alga *Sargassum spinuligerum* Sond.") in 1993. For this thesis he obtained the highest ranking ("summa cum laude"). Then Dr Keusgen worked for one year in the Institute for Marine Biosciences in Halifax, Nova Scotia, thanks to a research grant of the National Research Council of Canada, the so-called 'Summit Fellowship Award'. There he studied various lipids from marine sources, which showed for example an anti-HIV effect. After his return to Bonn, first in the group of Prof. Glombitza and later in that of Prof. Leistner, he started to form his own group. In November 1995, he was appointed scientific assistant at the University of Bonn, in the institute of Pharmaceutical Biology, where Dr Keusgen finished his

thesis for his "Habilitation" in 1999. The title of his thesis was "Biosensorische Methoden zur quantitativen Bestimmung von Cysteinsulfoxiden" ('Biosensoric methods for the quantitative determination of cysteine sulfoxides').

Some details about the research activities of Dr Keusgen: during his PhD study, performed in a relatively short period of time, Dr Keusgen isolated 77 phenolic chemical components from the brown alga he investigated. Identification of these components by spectroscopic methods showed that 49 of these had not been described earlier. For his studies on *Allium* species, reported in his "Habilitationsschrift", Dr Keusgen applied new methods, as he developed a biosensor for the quantitative determination of the cysteine sulfoxides present in the species under study. The method also allowed a high throughput of samples. By developing and using a biosensor, he made a real step forward in pharmaceutical research. For the development of this method it was required, among other things, that some enzymes had to be isolated – also on a preparative scale –, and characterized, that immobilization of enzymes had to be worked out, that some reference compounds had to be synthesized, and that reference methods had to be established. These procedures will also be applied for later studies, for example by using a biosensor for the determination of other plant constituents.

The list of publications of Dr Keusgen shows almost 30 papers in important journals, like Biotechnology and Bioengineering, Lipids, Pharmazie, Phytochemistry, and – last but not least – *Planta Medica*. In addition, Dr Keusgen has presented a number lectures and posters during several scientific meetings, for some of which he was awarded. Also his teaching activities are very much appreciated. Certainly as a result of his outstanding studies, Dr Keusgen has already been very successful in obtaining research grants. So he is co-ordinator of a joint project with 10 partners for which an amount of 4 million German Marks was obtained, to mention just one example.

The panel of judges for the Egon Stahl-Award was unanimous in its opinion, and considered the studies of Dr Keusgen an excellent example of modern pharmaceutical biology or pharmacognosy. The development of methods using a biosensor for an efficient screening of promising medicinal plants is an innovation that is supposed to be of great importance for future studies. Such an innovative study is extremely appropriate to be awarded in accordance with the Standing Rules of the Egon Stahl-Award.

Prof. Scheffer, the GA President, presented the Silver Medal, the Document and the Cheque belonging to the Egon Stahl-Award to Dr Keusgen. The "laudatio" in the document read 'in recognition of his valuable contributions to pharmacognosy (pharmaceutical biology) and analytical phytochemistry, in particular by his outstanding studies on the cysteine sulfoxides in *Allium* species using a biosensor for their quantitative determination – enabling a high-throughput of samples – which forms an excellent example for future medicinal plant research' (Erlangen, 3 September 2001). On the last day of the congress, Dr Keusgen gave a lecture in order to tell in more detail about the studies for which he was awarded.

J.J.C. Scheffer

Future GA Meetings**50th Annual Congress in Barcelona, September 2002**

The 50th annual congress of our society will be held from 8 to 12 September 2002 in Barcelona, Spain. The organizing Committee, chaired by Prof. Cañigueral, has planned an interesting programme with the main topics:

- analysis of complex mixtures of natural products
- anti-inflammatory natural products
- clinical research on phytopharmaceuticals
- marine natural products
- medicinal plants from Latin America

Poster presentations and short lectures are welcome.

All relevant informations are given on a special homepage:

<http://www.ope-uex.com/50congressmedicinalplantresearch>.

GA Travel Grants 2002

Graduate students who are members of the GA and like to present their scientific results during the meeting in Barcelona are eligible for a travel grant. Applicants must submit the following documents for review before the application can be considered:

- abstract of the paper (for poster or short lecture)
- letter of recommendation by the supervisor
- curriculum vitae

The appropriate registration fee must be paid in all cases by the participant. The number of grants is limited and recipients who will be informed by the GA Travel Grant Committee, will receive their grants during the meeting in Barcelona.

Applications should be sent before the deadline of April 30, 2002 to Prof. Dr G. König, Institut für Pharmazeutische Biologie, Nussallee 6, D-53115 Bonn, Germany.

Other Meetings

Leiden, The Netherlands, February 15, 2002

26th LOF Symposium: Medicinal uses of Cannabis (also under the auspices of the GA as GA Workshop)
Contact address: Prof. Dr R Verpoorte / Prof. Dr J.J.C. Scheffer, Division of Pharmacognosy, Leiden University, Gorlaeus Laboratories, PO Box 9502, NL-2300 RA Leiden
Phone: + 31-71-527 4510
Fax: + 31-71-527 4511
E-mail: fcogsymp@lacdr.LeidenUniv.nl

Wädenswil, Switzerland, May 14–15, 2002

Biotech 2002: 6th International Conference on Biotechnology – Biotechnology in Pharmacy. Workshop: 'From the protein to the product'
Contact: Dr R. Eibl, University of Applied Science, Wädenswil
Phone/Fax: ++41 789 9713, ++41 789 9950
E-mail: r.eibl@hswzfh.ch

Chiang Mai, Thailand, February 3–7, 2003

3rd World congress on medicinal and aromatic plants for human welfare (WOCMAP III):
From biodiversity through science and technology, trade and industry to sustainable use.
Organized by ICMAP, ISHS, CMU

Contact: Congress Secretariat WOCMAP3
or Mrs. Prof. Dr. Arayar Jatisatienr
Chiang Mai University, Dept of Biology, Fac. of Science
Chiang Mai 50202, Thailand
Tel.: +66-53-944933 or 943346
Fax.: +66-53-944934 or 892259
E-mail: WOCMAP3@yahoo.com or arayarj@yahoo.com

Meeting Reports of Selected Symposia in the Year 2001

Traits, Tracks and Traces – 49th Annual Congress of the Society for Medicinal Plant Research, September 2–6, 2001, Erlangen, Germany

This year's congress of the Society for Medicinal Plant Research was organised by Prof. Dr W. Kreis and Dr G. Abel and realised in the "Biologikum" of the Friedrich-Alexander-University in Erlangen. About 350 pharmacists, chemists and biologists from all over the world participated in the meeting. The scientific programme comprised 12 plenary lectures, more than 30 short lectures, 3 workshops, and a satellite symposium on bio-availability. About 220 posters have been on display throughout the whole conference dealing with various aspects of medicinal plant research. Poster Awards were donated to the authors of the best posters during the Closing Ceremony on Thursday afternoon. Biotechnology, biosynthesis, pharmacological test systems and trace analysis were chosen as the topics of the congress.

In the Opening Lecture Prof. Dr D. Heß, Stuttgart-Hohenheim, Germany, reviewed the advances made in recent years with respect to the genetic modification of plants. Gene transfer has become a routine method but its application in breeding programmes was restricted due to the use of selectable markers such as resistance to certain antibiotics. This problem has been overcome and transformation systems avoiding the use of selectable markers have become available. Prof. Heß also touched the field of transgenic medicinal plants. The successful breeding of transgenic *Atropa* plants producing scopolamine instead of hyoscyamine, or tobacco producing human proteins were but a few examples. Limitations are still seen with respect to gene expression which has to be enhanced considerably in order to make transgenic medicinal plants commercially viable sources of vaccines or therapeutic antibodies. In his lecture on "metabolic engineering" Prof. Dr A. Bechthold, Freiburg, Germany, focussed on the modification of biosynthetic pathways using genetic engineering techniques. He considers it promising to combine genes from different biosynthetic pathways and origin in order to generate novel antibiotics. Prof. Bechthold reported in some detail on the generation of new saccharide antibiotics by combinatorial biosynthesis and he addressed the question how we can improve this technology to speed up the hunt for (novel) natural products.

Dr Ch. Wawrosch, Wien, Austria, stressed in his lecture that many medicinal plants have become rare or even endangered as a result of over-harvesting, deforestation, erosion, alterations of the habitat, or pollution, and that about 150 species are threatened in one or more European countries. Micropropagation techniques may help to preserve genetic resources and realise domestication projects in cases where the propagation of the plant species by conventional methods is not easily achieved. Dr Wawrosch illustrated the potential of plant tissue culture methods using examples of his own research, including *Crataegus* and *Tussilago*. Prof. Dr R. Lieberei, Hamburg, Germany, reviewed in some detail the strategies followed to make the cultivation of *Baptisia tinctoria* commercially viable. *B. tinctoria* seeds do not germinate well for various reasons. Starting from a selection of well developed mother plants and seedlings an in-vitro mass propagation system was developed to produce large numbers of high quality plants.

Dr N. Linnenbrink, Bern, Switzerland, organised and chaired a workshop on "Stability of Herbal Medicinal Products", where issues and consequences of the revised ICH guidelines on stability testing of new drugs were discussed. Most of the short lectures presented on Monday were related to plant breeding and biotechnology including genetic engineering. Short lectures were generally organised in two parallel sessions throughout the conference. One of the Monday sessions addressed the use of pharmacological test systems in medicinal plant research.

The next day was devoted to the elucidation of biochemical pathways. Prof. Dr N. Lewis, Pullman, WA, USA, explained mechanisms by which vascular plants control phenylpropanoid coupling important for both lignan and lignin biosynthesis. In addition to these developments, he reviewed the status of manipulating lignan levels in edible plants. Recent progress achieved in lignan biosynthesis was documented by a series of short lectures and related posters.

Sterols are ubiquitously present in most eukaryotic cells in general and in higher plants in particular in addition to their key role in membrane structure and function and as precursors of important class of biologically active molecules. Dr A. Rahier, Strasbourg, France, described approaches to combine genetic analysis with molecular biology and enzymological studies including cloning of cDNAs encoding post-squalene sterol biosynthesis enzymes. Functional expression of these cDNAs allows the biochemical characterisation and elucidation of the catalytic mechanism of the recombinant enzymes. These approaches were exemplified by recent studies from his laboratory. Prof. Dr B. Dräger, Halle, Germany, reported on the biosynthesis of calystegines, which are polyhydroxy nortropane alkaloids derived from the tropane alka-

loid pathway, occurring side by side with tropane alkaloids in various members of the Solanaceae. Calystegines are glycosidase inhibitors and thus have a high therapeutic potential. Prof. Dräger focussed on the reduction of tropinone by specific tropinone reductases, the genes which were isolated from various sources and analysed on the molecular level. Finally, Dr J. Gershenzon, Jena, Germany, presented results obtained by the application of modern genomic tools to study the pathways of glucosinolate biosynthesis in *Arabidopsis thaliana*.

A workshop organised by Prof. Dr Ch. Franz, Vienna, Austria, on Tuesday addressed questions related to the application of plant protection products in the cultivation of medicinal plants.

A prelude to a break in the scientific programme was an event, generally regarded as the social high-light of the congress (by those who participated in it!): "Das Landfest" with a renowned group of professional, ambitious musicians performing on instruments providing a colourful bunch of melodies scored by composers of the baroque and renaissance. Wednesday gave everyone the opportunity to either participate in one of two excursions or to attend a satellite symposium on "Bioavailability of Herbal Medicinal Products" chaired by Prof. Dr R. Bauer, Düsseldorf, Germany, and Prof. Dr A. Nahrstedt, Münster, Germany. Although discussed controversially, a majority of the participants admitted that a break in between the busy days full of lectures has some advantages over a straight three-days-meeting with the excursions placed after-science.

The scientific programme of the Annual Congress of our Society continued on Thursday, focussing on various aspects of trace analysis. Prof. Dr F. Sörgel, Heroldsberg, Germany, stressed that LC-MS/MS has become a powerful technique to study the fate of foreign compounds, including herbal compounds, in the body. This issue has also been discussed in some detail by Prof. Dr U. A. Th. Brinkman, Amsterdam, The Netherlands, who focused on multi-dimensional separation techniques as a means to detect and identify trace-level constituents in a variety of environmental, biological, food and other samples. Short lectures introducing novel analytical approaches in drug analysis, such as biosensor technology, the use of monoclonal antibodies or enzyme-linked immunosorbent assays complemented the lectures on the use of "hyphenated" devices.

Issues on anti-inflammatory activity (of herbal medicinal products) was chosen as this year's topic of the workshop of the Permanent Committee "Biological and Pharmacological Activity of Natural Products" chaired by Prof. Dr H. Winterhoff, Münster, Germany. Prof. Dr R. Della Loggia, Trieste, Italy, was the invited speaker who reviewed methods and results and addressed various questions on this particular subject.

The Egon-Stahl prize and silver medal was awarded to Dr Michael Keusgen, Bonn, Germany, who explained in his lectures the concept and use of biosensors in general, demonstrating that biosensors are potentially useful for studies into interactions between plant constituents and biological targets like enzymes, receptors, and antibodies. He added that biosensors can also be used for quality control of herbal remedies, as has been demonstrated for garlic-containing drugs.

In the closing lecture Prof. Dr M. Zenk, Halle, Germany, addressed the question: Do animals produce morphine? Since the early 20th century, there were reports and suggestions published that morphine may occur also in animals and humans. Prof. Zenk presented evidence that the whole set of enzymes required for morphine biosynthesis is present in animals which, however, does not necessarily mean that morphine is actually produced and accumulated by animals.

The meeting in Erlangen was one of the smaller congresses the Society for Medicinal Plant Research has seen in recent years. Nevertheless, or maybe therefore, both the participants and the organisers experienced a very familiar atmosphere and enjoyed a memorable meeting.

Wolfgang Kreis, Erlangen

World Conference on Medicinal and Aromatic Plants, Budapest, Hungary, July 2001.

About 400 experts on production and cultivation of medicinal plants joined the conference, organized by the Szent Istvan University, the Hungarian Academy of Science and the Hungarian Pharmaceutical Society. Within 220 posters and several talks the diversity of classical phytomedicine and phytotherapy was discussed very interdisciplinary. Especially different perspectives of medicinal plant cultivation and the standardisation of plant quality from the field to the product were discussed intensively. On the other side different analytical aspects of the practical pharmacy showed discrepancies between regulatory "musts" and the scientific values. Additionally toxicological aspects, clinical studies and pharmacological aspects of new medicinal plants for the near future were presented. The GA was represented by Prof. Franz (Modern concepts of herbal extracts in the European Pharmacopoeia), Prof. Hamburger (Analysis of phytochemicals by hyphenated techniques), Prof. Schilcher (Traditional use and current status of phytotherapy in paediatrics), Dr Steinhoff (Harmonisation of assessment criteria for herbal products).

The conclusion of the very productive conference was that this kind of interdisciplinary meetings can push up practical phytotherapy very much. Only if researchers and regulatory people from industry work so close together on a fundamental scientific base a productive outcome can be guaranteed for industry and academics.

A. Hensel (Wädenswil), H. Schilcher (München)

New Books and Journals

Die Mistel in der Tumortherapie – Grundlagenforschung und Klinik

Ed. Scheer R., Bauer R., Becker H., Berg PA., Fintelmann V. KVC-Verlag – Karl und Veronica Carstens-Stiftung, Essen, 2001, ISBN 3-933351-22-7, 560 pages.

Conference proceedings of a mistletoe symposium held in November 1999 and organized by the Society for Medicinal Plant Research, the German Pharmaceutical Society, the Society of Anthroposophic physicians in Germany and the Karl and Veronica Carstens Society. The book contains 10 reviews and 27 original papers. The different sections are dealing with:

- pharmaceutical quality, stability, standardisation, ingredients
- basic research on immunology and cytotoxicity
- clinical use and studies

Journal of Cannabis Therapeutics.

The official journal of the international association for Cannabis as medicine.

Studies in endogenous herbal and synthetic cannabinoids.

Editor Ethan Russo, Professor of Pharmacy, University of Montana, Clinical Professor, University of Washington.

Co-published by: The Haworth Integrative Healing Press and The Haworth Herbal Press.

The journal started with Volume 1, No. 1 in 2001

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<http://www.haworthPress.com>

Anniversaries

On behalf of the Board of Directors of the GA, I like to cordially congratulate two of our honorary members who celebrated 'special' birthdays during the last months.

On 8 June 2001, Dr H.G. Menssen, honorary member since 1997, celebrated his 75th birthday, and on 21 August 2001, the same was true for Prof. Dr E. Reinhard, honorary member since 1992. We wish both of them many happy returns and much vigour for the time to come.

J.J.C. Scheffer

Prof. Dr. E. Reinhard 75 years old

On August 21, 2001, Prof. emeritus Dr Ernst Reinhard, honorary member of our Society since 1992, celebrated his 75th birthday. Born in Würzburg, Ernst Reinhard studied biology (1946–1953) and pharmacy (1954–1958) in his home town. In 1968 he joined the University of Tübingen as an assistant professor for pharmacognosy, already in 1969 he became a full professor for the new academic subject “pharmaceutical biology”. Ernst Reinhard is recognised as one of the pioneers in plant biotechnology. Initially interested in various aspects of plant hormone action and interaction he shifted to plant cell cultures and investigated their biotechnological potential in some detail. His scientific projects included the optimisation of alkaloid formation by *Catharanthus* and *Berberis* cell suspension cultures, forskolin production in submerged *Coleus forskohlii* root cultures, as well as biosynthesis and biotransformation of cardiac glycosides in *Digitalis* cell and shoot cultures, to name just a few. Ernst Reinhard is also famous for his textbook “Pharmazeutische Biologie, Band I” which was highly accepted already after its first release in 1977 and which is presently available in its 6th edition. His qualities as an academic teacher are reflected in about 50 PhD theses which emerged under his supervision. His professional reputation together with an obliging but dynamic personality led him into a great number of functions. Ernst Reinhard was president of the Society for Medicinal Plant Research (1974–1978), served as a scientific counsellor to the Bundesapothekerkammer and was engaged in the work of the Commissions D (homeopathy) and E (phytotherapy) at the German Ministry of Health. Furthermore, Ernst Reinhard was chairman of the committee on manufacturing rules of the German homeopathic pharmacopeia. Professor Reinhard was awarded the Flückiger medal (1983), the Lesmüller medal (1991), and the Bundesverdienstkreuz 1. Klasse (1993), the latter in recognition of his tremendous and successful dedication in the realisation of the German homeopathic pharmacopeia. After long years of successful work he retired in 1994. The GA cordially congratulates Prof. emeritus Dr Ernst Reinhard on his birthday and wishes him and his wife much vigour for the time to come.

W. Kreis

Dr Hans Georg Menssen 75 years old

Dr Menssen was born June 8, 1926 in Tessens (D). From 1947–1950 he studied medicine at the University of Kiel (D). Changing to pharmacy at University of Würzburg (D) he made his M.S. in Pharmacy 1957 and has been promoted to Dr.rer.nat. 1958. Subsequently being assistant professor of Pharmacy in Würzburg in 1960 he joined one of the well-known producers of phytomedicine: Nattermann, Cologne. After his promotion to the head of the phytomedicine producing division in 1962 he became director of the R&D-section in 1970. With some intermediate steps, in 1988 he rose to the position of a member of the top management of Nattermann, responsible for the section phytopharmacy and phytotherapy. He retired in 1990.

His scientific work on medicinal plant research and on the quality of herbal preparations is published in more than 100 papers and patents including co-authorship of some books on phytomedicine. From the beginnings of his industrial career he emphasized on efficacy and safety of herbal remedies. His contributions to standardisation and quality control of phytomedicines have been widely acknowledged by health authorities and scientific societies. As co-worker of the German and the European Pharmacopoeia commissions since 1963 and 1970, respectively he drafted medicinal plant monographs (DAB7, 8, 9 and Ph.Eur.) and since 1968 he has been elected as a member of the commission E of the German Federal Health Agency validating phytomedicine. Furthermore he has been a member of different commissions of the German pharmaceutical industry dealing with phytomedicines. In several scientific societies he held prominent positions for instance as secretary general of the German Pharmaceutical Society (DPHG).

The work of Dr Menssen has been acknowledged with some honorary distinctions including the “Bundesverdienstkreuz” (1986). Dr Menssen has been an active member of the GA since 1962 many years also as a member of the editorial board of *Planta Medica*. 1971 he has been elected as a member of the Advisory Board. 1988 and in the following years he organized the first steps of the permanent committee “Manufacturing and Quality Control of Herbal Remedies”.

The GA honoured his outstanding services to medicinal plant research and to the society 1997 with the honorary membership.

Prof. Dr E. Sprecher

Obituary

Prof. Dr Varro E. Tyler (1926–2001)

On 22 August 2001, Professor Varro E. Tyler passed away suddenly, just one day after he returned from a trip to Austria where he and his wife Ginny had celebrated their 54th wedding anniversary.

Prof. Tyler, honorary member of the Society for Medicinal Plant Research (*Gesellschaft für Arzneipflanzenforschung*) since 1994, was born 19 December 1926 in a small town in the southeastern corner of Nebraska. Following graduation from high school in 1943, Varro E. Tyler – known to his friends as “Tip” – studied pharmacy at the University of Nebraska in Lincoln. However, his studies were interrupted by military service; he did not see combat action anymore, but he served in the US occupation force in Japan. Upon his return from the army he resumed his studies and in 1949 he obtained his B.S. in pharmacy (with high distinction). Together with his wife, Tyler married her in August 1947, he moved east to the University of Connecticut, which was inaugurating a new graduate programme in pharmacy. He became the first student receiving a doctorate from this programme, under the guidance of Professor Arthur E. Schwarting. His Ph.D. thesis was on the chemistry and biological activity of the alkaloids produced by the ergot fungus, *Claviceps purpurea*.

Thereafter, in 1953, Prof. Tyler returned to the University of Nebraska, where he started his independent academic career (as associate professor of Pharmacognosy). Then, in 1957, he joined the University of Washington in Seattle, where he later became full professor and Head of the Department of Pharmacognosy. Finally, in 1966, Prof. Tyler was offered the deanship of one of the most prestigious schools of pharmacy in the USA, namely at Purdue University in West Lafayette (Indiana). In his role as Dean of this School of Pharmacy, he was instrumental in shaping the future of pharmacy as a profession by supporting the evolution of the field of clinical pharmacy, while at the same time he insisted on a strong scientific foundation. After twenty years as dean, he became the chief academic officer of Purdue University with overall responsibility for the entire academic enterprise of the University. Five years later, he returned to the teaching faculty as the “Lilly Distinguished Professor of Pharmacognosy”.

Prof. Tyler has greatly influenced the field of pharmacognosy (or pharmaceutical biology) through his research on ergot alkaloids and on biologically active constituents of mushrooms, particularly poisonous ones, but also through his widely used textbook “Pharmacognosy” which has seen seven editions under his guidance. The most recent one, by Robbers, Speedie and Tyler, was entitled “Pharmacognosy and Pharmacobiotechnology” and appeared in 1996. Another famous book by Tyler is “The Honest Herbal” an invaluable source of information for healthcare professionals as well as for the lay public with regard to the efficacy and safety of herbal remedies. Since 1997, when Prof. Tyler retired from Purdue University, he devoted himself entirely to writing and lecturing on the topic of herbal medicine. Perhaps less widely known is the fact that he



was also a renowned scholar in the field of philately, specialising in forgeries of Japanese postage stamps.

Prof. Tyler has also been a very active member of scientific societies; for example, he was a founding member the American Society of Pharmacognosy (ASP), and served as its first President, but he was also president of other organisations, and member of the Board of Directors of the GA.

Prof. Tyler has been a long-standing friend of Pharmaceutical Sciences in Europe, particularly in Germany. His ties to this country went back to his interactions with the late Professor Kurt Mothes, who was also much interested in ergot alkaloids. Prof. Tyler frequently visited Halle, and at the height of the cold war he spent one year (1963 – 64) in the Institute for Plant Biochemistry of Prof. Mothes. Probably he was the first US citizen who stayed for a sabbatical in communist East Germany.

Through his contacts with many colleagues in Europe, he not only made many friends, but he also developed a deep appreciation of the advances made in Germany with regard to the evaluation of herbal drugs, their standardisation, and the compilation and critical evaluation of data on herbal drugs.

By his activities Prof. Tyler has been for many years a bridge between Europe and the USA, which may also be well illustrated by the fact that he was the motivating force behind the publication of the English translation of the German Commission E monographs, and that he was a member of the Advisory Board of *Planta Medica* for a long period of time.

Both in the USA and abroad, Prof. Tyler was considered a great expert, namely on the medicinal use of plants and on the regulatory aspects of herbal medicinal products. His accomplishments have been widely recognised: he received the Research Achievement Award in Natural Products of the American Pharmaceutical Association, he was appointed honorary member of several organisations, e.g. of the American Society of Pharmacognosy and of the *Gesellschaft für Arzneipflanzenforschung*, he was a fellow of the American Association for the Advancement of Science, and – last but not least – he was awarded honorary doctorate degrees by the University of Nebraska, the University of Connecticut, Purdue University, and the Martin-Luther University of Halle (FRG). He was also honoured by the American Philatelic Society with the Luff Award for Distinguished Philatelic Research.

The loss of Prof. Tyler will be deeply felt in the whole world of Medicinal Plant Research, thus including the *Gesellschaft für Arzneipflanzenforschung*, as we not only have lost a great eloquent teacher but also a faithful friend. It is a privilege to have known him.

We wish his wife, children and further relatives much strength for the time to come.

J.J.C. Scheffer, GA President

Footnote:

data were kindly provided by Prof. Dr H. Floss and Prof. Dr D. Gröger; photograph by courtesy of the American Botanical Council.

Recent theses on medicinal plant research

Ph.D. thesis, April 2001: Chemical and pharmacological characterization of an anti-inflammatory plant constituent, isolated from Asteraceae. By Susanne Goeters; promotor: PD Dr. Peter Imming, Institute of Pharmaceutical Chemistry, Philipps-University, Marburg, Germany.

Ph.D. thesis, April 2001: Micropropagation of the threatened nepalese medicinal plants *Lillium nepalense* D. DON and *Allium walliichii* KUNTH. By Prakash. R. Malla; promotors: Prof. Dr. B. Kopp, Institute of Pharmacognosy, and Prof. Dr. M. Popp, Institute of Ecology, University of Vienna, Austria

Ph.D. thesis, May 2001: Isolation, structure elucidation and analytical analysis of natural compounds of *Rheum emodi* WALL. from Nepal. By Riddhi Pradhan; promotor: Prof. Dr. B. Kopp, Institute of Pharmacognosy, and Prof. Dr. M. Popp, Institute of Ecology, University of Vienna, Austria

Ph.D. thesis, June 2001: Isolation and structure elucidation of flavonoids in species of *Achillea millefolium* aggregate. By Denata Kasaj; promotors: Prof. Dr. B. Kopp, Institute of Pharmacognosy, and Prof. Dr. G. Buchbauer, Institute of Pharmaceutical Chemistry, University of Vienna, Austria

Ph.D. thesis, July 2001: Bioadhesive and mucosa-protecting effects of plant-derived and semi-synthetic poly- and oligosaccharides. By Jörg Schmidgall; promotor: PD Dr. Andreas Hensel, Institute of Pharmaceutical Biotechnology, University of Applied Sciences, Wädenswil, Switzerland.

Ph. D. thesis, July 2001: "Analytik flavonoidhaltiger Arzneipflanzen." By Elke Marchart; promotors: Prof. Dr. B. Kopp, Institute of Pharmacognosy, and Prof. Dr. E. Kendler, Institute of Analytical Chemistry, University of Vienna, Austria

Ph.D. thesis, August 2001: The search for biological activity in Finnish plant extracts containing phenolic compounds. By Jussi-Pekka Rauha, promotor Heikki Vuorela, University of Helsinki, Department of Pharmacy, POB 56, FIN-00014 University of Helsinki, Finland

Diploma thesis, Jan 2000: Zur Isolierung von Flavonoiden aus *Achillea nobilis* L. By Enne Pemp; promotor: Prof. Dr. B. Kopp (Prof. Dr. L. Krenn), Institute of Pharmacognosy, University of Vienna, Austria

Diploma thesis, May 2000: In vitro-Vermehrung von *Urginea maritima* (L. BAKER) s. str.. By Monika Witzelsberger; promotor: Prof. Dr. B. Kopp (Dr. Ch. Wawrosch), Institute of Pharmacognosy, University of Vienna, Austria

Diploma thesis, Sept 2000: An investigation of extracts of *Schumanniphyton* Problematicum with reference to its traditional use for treating psychiatric diseases. By Tina Stadlbauer; promotors: Prof. Dr. P. Houghton, Kings College, London, UK, and Prof. Dr. B. Kopp, Institute of Pharmacognosy, University of Vienna, Austria

Diploma thesis, Oct 2000: Biotechnologie und Analytik von *Drosera*-Arten. By Eva M. Vackar; promotor: Prof. Dr. B. Kopp (Dr. Ch. Wawrosch), Institute of Pharmacognosy, University of Vienna, Austria

Diploma thesis, Dec 2000: Screening of potential Traditional Chinese Herbs on SV-K14 keratinocytes in vitro against psoriasis and a phytochemical investigation of *Scutellaria baicalensis* Georgi. By Susanne B. Schlosser; promotors: Prof. Dr. P. Houghton, Kings College, London, UK, and Prof. Dr. B. Kopp, Institute of Pharmacognosy, University of Vienna, Austria

Diploma thesis, Jan 2001: Vasodilating principles of *Cedrelopsis grevei*. By Ingeborg Rabenau; promotors: Prof. Dr. R. Anton, University of Strasbourg, France, and Prof. Dr. B. Kopp, Institute of Pharmacognosy, University of Vienna, Austria

Diploma thesis, Feb 2001: Effect of Fenugreek and Karela extracts on toxicity of glucose in bovine retinal cells. By Karin Pointner; promotors: Prof. Dr. P. Houghton, Kings College, London, UK, and Prof. Dr. B. Kopp, Institute of Pharmacognosy, University of Vienna, Austria

Diploma thesis, Sept 2001: Etablierung von in vitro-Kulturen der Meerzwiebel *Charybdis numidica* (JOURD & FOURR.) SPETA. By Kirsten Peter; promotor: Prof. Dr. B. Kopp (Dr. Ch. Wawrosch), Institute of Pharmacognosy, University of Vienna, Austria

Diploma thesis, Sept 2001: Analytik der Flavonoide in *Achillea setacea* und der Phenolcarbonsäuren in Vertretern des *Achillea millefolium* Aggregats. By Hemma Smolnig; promotor: Prof. Dr. B. Kopp (Dr. E. Marchart), Institute of Pharmacognosy, University of Vienna, Austria