

## Message from the President



Dear Members,

the 57<sup>th</sup> annual congress of GA will be held this year in Geneva/Switzerland and will be organized by Prof. Hostettmann and his team. The scientific program will feature the topics "Lead finding from Nature, Conservation and biodiversity issues, Plants and aging of the population, Natural products and neglected diseases, Anti-cancer agents, HIV and viral diseases, Quality control and safety assessments of phytomedicines, Prevention of metabolic diseases by medicinal plants and nutraceuticals, Cosmetics, flavours and aromas". Thus, a broad spectrum of medicinal plant research will be covered and we expect interesting lectures and posters from scientist throughout the world. More information on the GA congress 2009 is available in this newsletter and at the homepage of the congress ([www.ga2009.org](http://www.ga2009.org)).

More than 600 abstracts of the presentations will be published in *Planta Medica*, the official organ of our Society. We are very delighted about this development and I would like to sincerely thank the publisher, Thieme, Stuttgart, for their ongoing support to our Society. You might have noticed that a low rate online access to *Planta Medica* articles for members of GA is available; I hope that this service will intensively be used and that more members will consider *Planta Medica* for the publication of their valuable results in the future.

In Geneva we will, for the first time, present the new *Bionorica Phytoneering Award* of the Society for Medicinal Plant and Natural Product Research (BPA)" which has been donated by Bionorica AG, Neumarkt (Germany) to promote excellent pharmacological and clinical research with herbal medicinal products as well as safety and pharmacovigilance studies. This award will complement our well known *Egon-Stahl-Award* which is dedicated to promote young scientists working in the field of pharmacognosy and analytical phytochemistry. Besides our annual congress, GA is again co-organizing several other symposia on medicinal plant research during this year, and I hope that you will

have the chance to attend some of these meetings as well. You can find the corresponding information in this Newsletter or on our web site. All our previous events clearly showed that there is a continuously high interest in medicinal plant research. Since last year, also a large number of colleagues have joined our Society, which I personally would like to welcome as new and active members of the GA family.

I am very pleased that GA has developed to a globally leading society in the field of medicinal plant and natural product research and has become a platform for an exchange of knowledge and ideas between scientists worldwide. It is our aim to make GA even more attractive by providing exchange opportunities that may facilitate such collaborative efforts. We anticipate a number of outreach programs including enhancing our representation around the world, particularly in countries where natural products research is historically strong. However, in order to realize these goals we need to count on a secure and predictable funding base. Therefore, I would like to bring your attention to the following issue: Our Society's budget largely depends on membership fees and donations from various organizations to maintain its operations. One reason for the significant budget cuts (e.g. reduced budget for travel grants for our youngest members) this year is that membership fees are not being paid in time. Just as a friendly reminder, the annual membership fees are due and payable at least in January of each year, therefore I kindly ask you to make arrangements to have the fee paid in time. This would highly contribute to develop a secure budget that preserves our Society's core educational and research missions, while positioning GA to withstand the economic realities in these challenging times. If you have already submitted your 2009 membership fee, please ignore this message. Otherwise, we would appreciate that you make the payment for your 2009 membership fee as soon as possible. These are difficult times, but with your help GA will continue to be an excellent Society.

I hope to interact with many of you in Geneva where also our next member's meeting will take place. I am cordially inviting all members, especially our new and young members, to attend the member's meeting. During this meeting we will have to elect the Executive Counsel and Advisory Board of GA. I hope that especially some young members are willing to candidate and to serve GA with enthusiasm and new ideas.

I look forward to seeing many of you in the famous city of Geneva, during an exciting and stimulating congress.

Cordially,

Brigitte Kopp (President of GA)

# Notes from the Society

## Invitation to the GA Members' Meeting 2009

During the 57<sup>th</sup> Annual meeting of our Society which will take place in **Geneva, Switzerland**, from August 16 – 20, 2009, a regular Members' Meeting will be held. It is scheduled for **Tuesday, August 18, 2009**, 6.30 p.m. – 8.00 p.m.

**Location: Hall #2** at the congress venue, the Centre International de Conférences Genève (**CICG**), 17, rue de Varembé, 1202 Geneva, Switzerland

This announcement in the Newsletter has to be considered as the official invitation to the Members' Meeting (in accordance with the GA bylaws), as this Newsletter is sent out to all members of our Society.

### Preliminary Agenda

1. Approval of the agenda
2. Approval of the minutes of the Members' Meeting held in Athens on 5 Aug. 2008 (published in GA Newsletter 2-2008)

3. Annual reports
  - 3.1 Report of the President
  - 3.2 Reports of the Vice-Presidents
  - 3.3 Report of the Secretary
  - 3.4 Report of the Treasurer and report of the auditors
  - 3.5 Discharge of the ExC
4. Report of the Editor-in-Chief of Planta Medica
5. Reports of the Permanent Committees
6. Election of the Board of Directors
  - 6.1 Election of the president
  - 6.2 Election of the two vice presidents
  - 6.3 Election of the treasurer
  - 6.4 Election of the secretary
  - 6.5 Elections of the members of the Advisory Board
7. Future congresses, symposia and workshops
8. Miscellaneous

On behalf of the Executive Council  
Prof. Dr. Brigitte Kopp, GA President

## GA-Elections 2009

During the Members' Meeting 2009 the Board of Directors for the period of 2010–2011 will be elected. Only GA members are entitled to vote. Supporting members are requested to transfer their vote to an authorized representative in writing to the GA secretary, no later than 1 Aug. 2009. Absent members may **not** be represented by proxy during the casting of ballots (§ 11.5 of the bylaws).

Nominations of candidates for the Board of Directors (Executive Council and Advisory Board) should be made in writing to the GA President, no later than 1 Aug. 2009; the nomination must include a written statement of consent by the candidate. Each candidate will be asked to submit a short CV on a powerpoint template for a presentation before the elections.

## Some Data from the Membership Data Base

GA acknowledges the **50 years** lasting individual memberships of Dr. Otto Isaac, Germany (since 5/1/1959), Prof. Dr. Max Wichtl, Austria (since 10/1/1958) and the

supporting membership of Klein GmbH & Co.KG, Arzneipflanzenforschung und -herstellung in Zell, Germany (since 3/9/1959).

We congratulate and thank them all for their support and loyalty over all the years! (members for even more than 50 years see NL 1-2008, p.3)

## Notes to all GA members




### Note to all GA members

Please inform the secretary by phone, fax or mail of any change in your coordinates, especially in case of changes in E-mail addresses.

Fax / phone: ++49 8141 613 749

e-mail:  
Ga-secretary@ga-online.org

The GA-homepage (www.ga-online.org) contains a special members area for which an access code is needed: username "gamember", password "morphine".



### Editorial remark

All contributions for the GA-Newsletter are welcome.

Deadline for submission is fixed to November 30<sup>th</sup> 2009.

Please send all contributions by e-mail:  
Prof. Dr. A. Hensel  
University of Münster, Institute for Pharmaceutical Biology and Phytochemistry, Hittorfstrasse 56,  
D-48149 Münster, Germany  
ahensel@uni-muenster.de

## 95 New GA members since June 2008

The society can announce 95 new members since December 2008 as well as 2 new supporting company memberships: **Merck Selbstmedikation**, Germany, and **Vitafreenet, Hungary**. Thanks for their support!

The Society welcomes you all warmly and wishes that GA may get a platform for many scientific and personal contacts. We are looking forward to your active participation in many GA events! All the best for you all!

**Aderibigbe**, Adegbuyi, Nigeria; **Adhami**, Hamid-Reza, Austria; **Agboola**, Isaiah, Nigeria; **Aiyelaagbe**, Olapeju, Nigeria; **Arawwawala**, Menuka, LK; **Armbrüster**, Nicole, Germany; **Arsic**, Ivana, Serbia; **Bolfi**, Pompei-Florin, Romania; **Bourgaud**, Frederic, France; **Boustie**, Joel, France; **Brudasca**, Florin, Romania; **Carlen**, Christoph, Switzerland; **Chaita**, Eliza, Greece; **Ching**, Fidelis Poh, Nigeria; **Chuenpitayaton**, Sittisak, Thailand; **Chularojmontri**, Linda, Thailand; **Cibron-Palmai**, Reka, Hungary; **Csupor**, Deszö, Hun-

gary; **Cuendet**, Muriel, USA; **Dafan**, Dalen, Nigeria; **Dimaik**, Chryssa, UK; **Eid**, Hoda, Canada; **El-Adawa**, Hala, Egypt; **Elsayed**, Ebada, Germany; **Emadi**, Fatemeh, Iran; **Eschenlohr**, Eugen, Germany; **Ezike**, Adoabi, Nigeria; **Fevre**, Jean-Paul, France; **Fidan**, Ozan, Turkey; **Gachet Otanez**, Maria Salome, Austria; **Heneka**, Bilkis, Germany; **Hosbas**, Sanem, Turkey; **Howard**, Caroline, UK; **Huck**, Christian, Austria; **Isachi**, Benedetta, Italy; **Ismail**, Amel, Tunisia; **Jackson**, Simon, UK; **Jimenez**, Pilar, Spain; **Kadkade**, Prakash, USA; **Kagaru**, Daniel, Nigeria; **Kainz**, Kerstin, Austria; **Kaya**, Gülem Irem, Turkey; **Kerr**, Conor, UK; **Klar**, Fabian, Germany; **Kokoska**, Ladislav, Czech Rep.; **Kraus**, Birgit, Germany; **Lerdvuthisopon**, Nusiri, Thailand; **Lirk**, Katarina, Austria; **Mahattanadul**, Sirima, Thailand; **Maxia**, Andrea, Italy; **Melo**, Francislete, Brasil; **Mertens**, Michaela, Germany; **Meybeck**, Alain, France; **Mignard**, Benoit, France; **Modarai**, Maryam, UK; **Mondal**, Anindita S. S., India; **Nemeth**, Eva, Hungary; **Ngwoke**, Kenneth, UK; **Niculae**, Mihaela, Romania; **Niehues**, Michael, Germany; **Odeleye**, Olukayode,

South Africa; **Olszewska**, Monika, Poland; **Opoku**, Andrew, South Africa; **Orhan**, Nilüfer, Turkey; **Patnala**, Srinivas, South Africa; **Pesin**, Ipek, Turkey; **Quintanilla-Licea**, Ramiro, Mexico; **Rajabi**, Afsaneh, Iran; **Rehecho**, Sheyla, Spain; **Rindt**, Julia Kristina, Romania; **Riviere**, Céline, France; **Rocha**, Graciela, UK; **Rohs**, Laura, UK; **Salazar-Olivo**, Luis, Mexico; **Saliou**, Claude, Singapore; **Sandru**, Carmen Dana, Romania; **Sarris**, Jerome, Australia; **Schwarzbach**, Andrea, USA; **Selvaraja**, Malarvili, Malaysia; **Sendker**, Jandirk, Germany; **Singhuber**, Judith, Austria; **Situ**, Chen, UK; **Spinu**, Marina, Romania; **Staiger**, Christiane, Germany; **Taiwo**, Bamigboye, Nigeria; **Tansakul**, Pimpinon, Thailand; **Tewtrakul**, Supinya, Thailand; **Thomsen**, Mette Goul, Norway; **Ueda-Nakamura**, Tania, Brasil; **Unver-Somer**, Nehir, Turkey; **Vogl**, Sylvia, Austria; **Wattanapitayakul**, Suvara, Thailand; **Yadav**, Narayan, India; **Yong**, Yoke Keong, Malaysia; **Zapata Bustoa** Rocio, Mexico; **Zugic**, Ana, Serbia

## Planta Medica online-only Subscription

*Planta Medica*, official organ of the GA, is available to all GA members at special rates as an online-only subscription. This special GA member subscription covers full text access to all articles, including eFirst and a range of back issues, depending on which option is chosen:

(1) an annual subscription to *Planta Medica* with access to back issues up to 1998 for EUR 60 per year or

(2) an annual subscription to *Planta Medica* with access to all back issues (i.e. up to and including 1953) for EUR 100 per year.

Subscriptions are valid for one full calendar year. All subscriptions include access to eFirst articles.

### How to order

In October of every year, the annual invoice for membership fees will be sent out together with the option for the *Planta Medica*

online-only subscription for the following year. Both have to be paid **before November 15**.

If you have joined the GA early in the year, you will receive an invoice for the membership fees with the option of taking out the subscription that will need to be paid **before June 15**.

If, as an existing member, you want to subscribe after November 15, please send an email to the GA treasurer to order and receive an invoice that will need to be paid **before June 15**.

Before January of the year of subscription (viz. before July 15 if you are joining during the year), the publisher, Georg Thieme Verlag KG, will provide subscribers with the necessary access data.

This offer is limited to individual members of the GA – Society for Medicinal Plant and



Natural Product Research – Gesellschaft für Arzneipflanzen- und Naturstoff-Forschung. Use of the articles is for individual purposes only (including individual research). No distribution, transferring or forwarding of articles to other persons or institutions (universities, libraries, companies) is allowed.

We hope that many members will take advantage of this exclusive GA subscription!

Prof. Dr. Brigitte Kopp, GA president and Georg Thieme Verlag KG (Publisher)

## Congratulations to GA president Kopp and vice president Blaschek

GA president, Univ.-Prof. Mag. Pharm. Dr. Dr. h.c. **Brigitte Kopp**, Vienna, as well as vice president Prof. Dr. Wolfgang Blaschek, Kiel Germany, celebrated their 60<sup>th</sup> birthday recently.

The Faculty of Life Sciences of the University of Vienna honoured Prof. Kopp, president of studies legislation of the University of Vienna and vice director of the Department of Pharmacognosy, with a birthday

symposium, where the rector of the University of Vienna, colleagues, friends and GA vice president Rudolf Bauer for GA painted the professional and personal path of Prof. Kopp as multi-engaged scientist and Academia member. She is the first female and Austrian president of GA.

GA vice president Prof. Dr. **Wolfgang Blaschek**, head of the Department Pharmaceutical Biology at the Institute of Phar-

macy of the Christian-Albrecht-University of Kiel, Germany, celebrated his 60<sup>th</sup> birthday on March 4<sup>th</sup> of this year in Australia, where he was invited as visiting professor at the University of Melbourne for several months.

*GA congratulates both and wishes them all the best and a lot of joy and energy for many more active years in our society as well as in their professional environment!*

# 57<sup>th</sup> International Congress & Annual Meeting of the Society for Medicinal Plant and Natural Product Research

Date/Place: August 16–20, Geneva, Switzerland

Chairman: Kurt Hostettmann

Dear Colleagues,

the 57<sup>th</sup> Congress of the Society of Medicinal Plant and Natural Product research will be held this year in Geneva, Switzerland. The congress venue is going to be at the CICG (Centre International des Conférences Genève) which is very well equipped to host such an important scientific event. As chairman of the Organizing Committee and also currently Director of the Laboratory of Pharmacognosy and Phytochemistry, School of Pharmaceutical Sciences, University of Geneva, University of Lausanne, I am highly pleased that the proposed programme attracted numerous scientists of 71 different countries who submitted more than 900 abstracts for poster or oral presentation.

The main topics of the Congress are:

- Lead finding from Nature
- Conservation and biodiversity issues
- Plants and aging of the population
- Natural products and neglected diseases
- Anti-cancer agents
- HIV and viral diseases
- Quality control and safety assessments of phytomedicines
- Prevention of metabolic diseases by medicinal plants and nutraceuticals
- Cosmetics, flavours and aromas

The programme of the Congress is offering invited lectures to be delivered by distinguished scientists, short oral communications which will be in parallel sessions and numerous posters. The opening lecture will be given by HRH Princess Chulabhorn Mahidol, President of the Chulabhorn Research Institute in Bangkok. The present issue of *Planta Medica* devoted to our Congress could be realized thanks to the help of Dr. Kuhlmann from Thieme Verlag and also because of the efficient work realized by staff members of my Laboratory, namely Karin Megzari, Martine Cabo, Prof. Jean-Luc Wolfender, Dr. Karine Ndjoko, Dr. Philippe Christen and Dr. Frederic Martin. My thanks go also to the agency selected for organizing this Congress, namely *Kuoni Destination Management* and their collaborators, Laetitia Roch, Franck Grosset and Steeve Girod. Checking more than 900 abstracts represents an enormous work which was achieved by the members of the scientific Committee. I express my gratitude to all of them for helping us to publish abstracts of good quality in this volume of *Planta Medica*.

I hope that everybody will enjoy his stay in Geneva.

Prof. Kurt Hostettmann  
Chairman, Organizing Committee of the 57<sup>th</sup> International Congress & Annual Meeting of the Society for Medicinal Plant and Natural Product Research

### Invited Speakers

- HRH Prof. Dr. Chulabhorn Mahidol (Thailand)  
*Recent investigation of diverse cytotoxic natural products from Thai bioresources*
- Prof. Dayar Arbain (Indonesia)  
*Recent study on the chemistry of Sumatran plants*
- Dr. Bettina Böhlendorf (Switzerland)  
*Nutraceutical discovery – from plant extracts to functional food*
- Prof. Jürgen Drewe (Switzerland)
- Prof. Mary Garson (Australia)  
*New chemistry from South East Asia medicinal plants*
- Dr. Paul Grothaus (USA)  
*Anti-cancer agents from plants, current and future prospects*
- Prof. Sami Khalid (Sudan)  
*Phytomedicines safety and pharmacovigilance: some important considerations*
- Prof. Hongxiang Lou (China)  
*Chemical constituents from Chinese liverworts and their biological significance*
- Prof. Alex Matter (Singapore)  
*Natural products for the treatment of HIV / AIDS*
- Prof. Elaine Perry (United Kingdom)  
*Phytotherapy for the ageing brain*
- Prof. Monique Simmonds (United Kingdom)
- Dr. Christian Starkenmann (Switzerland)  
*Screening botanicals for new tastes and new flavors compounds*
- Prof. Olov Sterner (Sweden)  
*Novel GABAA ligands, inspired by nature*
- Dr Emmanuel Tamchès  
*Mimopezil: a monthly injected AChE-I, derivated from Huperzine A*
- Dr Deniz Tasdemir (United Kingdom)  
*Natural products for the treatment of infectious neglected diseases*

# PRELIMINARY PROGRAMME

	Sun. Aug. 16	Mon. Aug. 17	Tue. Aug. 18	Wed. Aug. 19	Thu. Aug. 20
08h00 -			Session 1   Session 2		
08h30 -		Registration	Plenary lectures	Plenary lectures	Excursion
09h00 -					
09h30 -		Opening Ceremony		Plenary lectures	
10h00 -			Short-lectures	Key note lecture	
10h30 -		Opening lectures		Coffee break	
11h00 -		Coffee break	Coffee break	Coffee break	
11h30 -	Registration	Award lectures	Short-lectures	Plenary lectures	
12h00 -				Key note lecture	
12h30 -		Lunch	Lunch	Lunch	
13h00 -	Workshops for Young Researchers & Regulatory Affairs of Herbal Medicinal Products at University of Geneva	WORKSHOP: Biological and Pharmacological Activity of Natural Products		WORKSHOP: Breeding and Cultivation of Medicinal Plants	
13h30 -					
14h00 -		Plenary lecture		Plenary lecture	
14h30 -			Short-lectures		
15h00 -		Key note lecture		Key note lecture	
15h30 -		Coffee break		Key note lecture	
16h00 -		Plenary lecture	Coffee break	Coffee break	
16h30 -			Short-lectures	Plenary lectures	
17h00 -		Key note lecture			
17h30 -		Short lecture		Key note lecture	
18h00 -	Get together party	Poster session	Poster session	Closing Ceremony & Best Poster awards	
18h30 -			Member meeting with elections	Congress dinner	
19h00 -					



## Other Meetings

### Nice, France

June 8 – 12, 2009; 2<sup>nd</sup> Pharmaceutical Sciences Fair and Exhibition (Pharm SciFair); [www.pharmscifair.org/](http://www.pharmscifair.org/)

### Ljubljana, Slovenia

June 17 – 21 2009; 4<sup>th</sup> International Symposium Breeding Research on Medicinal and Aromatic Plants (ISBMAP2009); [www.isbmap2009.si/](http://www.isbmap2009.si/)

### Bonn, Germany

July 29 – 31, 2009; 13<sup>th</sup> International Congress "Phytopharm 2009"; [www.adaptogen.ru/phyto2009.html](http://www.adaptogen.ru/phyto2009.html)

### Vienna, Austria

September 25, 2009; Herbal Drugs and Herbal Drug Preparations [www.edqm.eu/en/Herbal-Drugs-Herbal-Drug-Preparations-Vienna-Austria-259.html](http://www.edqm.eu/en/Herbal-Drugs-Herbal-Drug-Preparations-Vienna-Austria-259.html)

### Berlin, Germany

Sep 10 – 12, 2009; 7<sup>th</sup> Berlin Conference on Phytotherapy 2009; information by the local flyer: First Announcement

### Shanghai, China

October 16 – 18, 2009; 2<sup>nd</sup> Shanghai International Conference on Traditional Chinese Medicine and Natural Medicines (S-TCM 2009); [www.s-tcm.com/english.html](http://www.s-tcm.com/english.html)

## News on regulatory affairs



### What's on top of European Medicines Agency EMEA concerning Herbal Medicinal Products?



#### Herbal Medicinal Products – New Regulatory Developments in Europe

Dr. Barbara Steinhoff; German Medicines Manufacturers Association (BAH); Co-chairperson of the ESCOP Scientific Committee; Ueberstr. 71–73; D-53173 Bonn, Germany, [steinhoff@bah-bonn.de](mailto:steinhoff@bah-bonn.de)

*Like all kinds of medicinal products herbal medicinal products have to prove their quality, efficacy and safety prior to gaining access to the market. Nowadays, in accordance with the European Directives, two options exist: in the area of "well-established medicinal use" a marketing authorisation based on bibliographic references or in the area of "traditional use" a registration as a "traditional herbal medicinal product". It depends on the interpretation of the legal requirements by the authorities in EU Member States on how intensively these*

*procedures can be used. In the past few months, the following new developments in scientific assessment and regulatory practice were observed.*

#### Registration of traditional herbal medicinal products

After implementation of the Directive into national legal systems of most of the EU Member States, only relatively few registrations for traditionally used herbal medicinal products have been granted so far, most of them in the United Kingdom, e.g. for Devil's Claw, Feverfew, Black Cohosh, Saw Palmetto, Valerian, Horse Chestnut or St. John's Wort. In Germany, approximately 350 applications for registration have been submitted until 31 December 2008, the deadline to apply for new registrations of the existing § 109a marketing authorisations for traditional herbal medicinal products.

#### The Committee on Herbal Medicinal Products

The Committee on Herbal Medicinal Products (HMPC) meets 6 times per year under the chairmanship of Dr. Konstantin Keller, Germany. Vice-chairperson as well as chairperson of the Working Party on Community Monographs and Community List (MLWP) is Professor Ioanna Chinou, Greece, since January 2009, and vice-chair of this working group Dr. Werner Knöss, Germany. All drafts released for public consultation as well as the finalised documents can be found on the EMEA website ([www.emea.europa.eu](http://www.emea.europa.eu)). Some important new documents, which might be of particular interest from the scientific point of view, will be discussed in the following.

#### Community herbal monographs

After preparation and discussion in the MLWP and adoption by the HMPC, the following finalised monographs as well as one list entry were published on the EMEA website:

- *Avena sativa* L., fructus
- *Avena sativa* L., herba
- *Harpagophytum procumbens* D.C. and/or *Harpagophytum zeyheri* Decne, radix
- *Mentha x piperita* L., folium
- *Peumus boldus* Molina, folium
- *Polypodium vulgare* L., rhizoma
- *Ruscus aculeatus* L., rhizoma
- *Salix* sp, cortex
- *Solidago virgaurea* L., herba
- List Entry for *Mentha x piperita* L., aetheroleum

Furthermore, several accompanying documents were published which were prepared in the MLWP. These documents provide further background information on the content of the published monographs and comprise HMPC opinions, assessment reports, lists of bibliographic references and overviews of comments received during the consultation period.

Scientific and herbal industry's associations in principle welcome the preparation of the above-mentioned Community herbal monographs which may provide harmonised assessment criteria for herbal medicinal products and thus facilitate mutual recognition in Europe. However, in many cases comments were submitted suggesting amendments on individual chapters of the draft monographs, e.g. on *Harpagophytum*. The associations were of the opinion that the draft which included only "traditional" indications did not take a number of clinical studies into account which were able to justify a "well-established medicinal use" of *Harpagophytum* extracts. Although no change was made when the final ver-

sion was published, apparently the Assessment Report will be revised mentioning additional clinical data.

Upon request of the herbal industry, the monograph on *Cassia senna* L., fructus, was revised in 2008 taking into account carcinogenicity studies performed with preparations of this herbal drug. For this reason, some modifications were included in the pre-clinical safety section together with the conclusion that the short-term use of Senna pods as recommended can be regarded as safe.

## Draft community herbal monographs

Upon recommendation of the MLWP, a large number of further drafts were adopted by the HMPC and released for public consultation:

- *Aesculus hippocastanum* L., semen
- *Artemisia absinthium* L., herba
- *Curcuma longa* L., rhizoma
- *Echinacea pallida* Nutt., radix
- *Hamamelis virginiana* L., cortex
- *Hamamelis virginiana* L., folium
- *Hamamelis virginiana* L., folium et cortex and *Hamamelis virginiana* L., ramunculus
- *Hypericum perforatum* L., herba
- *Juniperi communis* L., pseudo-fructus
- *Salvia officinalis* L., folium
- *Taraxacum officinale* Weber ex Wigg., folium
- *Taraxacum officinale* Weber ex Wigg., radix cum herba

For *Hypericum perforatum*, exceptionally a Draft Assessment Report was published simultaneously. This was highly appreciated by the interested parties because the explanations laid down in the Assessment Report facilitate understanding of the statements in the monograph and the preparation of comments.

Most of the drafts except *Aesculus hippocastanum* and *Hypericum perforatum* have only “traditional” indications. Comments submitted on *Hypericum perforatum* focussed on the variety of preparations listed for both areas of indications as well as to the “well-established” indications which were restricted to “mild depressive episodes” so far. However, there seems to be sufficient evidence available justifying “mild and moderate depressive episodes”. Furthermore comments were submitted on the risk of interactions which has been proven to be dose-dependent and not relevant for a large number of traditionally used *Hypericum* products. Although all in all the *Hypericum* monograph is considered a tremendous and extensive project based on a sound scientific evaluation, interested parties referred to a large number of data on efficacy and safety that should also be included in the *Hypericum* documents. Comments submitted for *Aesculus hippocastanum* mainly focussed on the selection of

extracts eligible for the “well-established medicinal use”, on the dosage form as well as on the traditional use which did not include any preparation for oral use.

Current overviews of the status of the HMPC assessment work can be found on the EMEA website, indicating for which projects a rapporteur has been assigned, a draft is under discussion or published, the assessment is close to finalisation or a final opinion has been adopted. In this context, it is important to mention that interested parties, e.g. scientific organisations from all over Europe, should take the opportunity to comment on the drafts in case they do not agree with the contents, e.g. with regard to indications, dosage recommendations or risk information.

During its meetings, the MLWP made further progress on the scientific work related to monographs and assessment reports. For the preparation of a large number of draft monographs and list entries, respectively, rapporteurs from the group were appointed who will take care of the preparation of the draft. At present, drafts on *Cimicifugae rhizoma*, *Urticae radix* and *Mate folium* are currently under discussion in the group.

## Guidance documents on quality

The “Reflection paper on markers (marker substances) used for quantitative and qualitative analysis of herbal medicinal products and traditional medicinal products” (EMEA/HMPC/253629/2007) was finally adopted in July 2008. It describes issues related to markers which are intended for quantitative and qualitative analytical control of herbal medicinal products and provides possible criteria for their selection.

The “Guideline on quality of combination herbal medicinal products/traditional herbal medicinal products” (EMEA/HMPC/214869/2006) became effective on 1 November 2008. This document addresses approaches for identification and quantitative determination of herbal substances/preparations in combination herbal medicinal products and takes into account their complex composition.

A draft “Concept paper on the development of a guideline on preparation of herbal teas” (EMEA/HMPC/451978/2008) was released for public consultation until 15 January 2009. It aims at providing instructions for the preparation of herbal teas and standardising the terminology used in HMPC documents. The herbal industry, in particular the manufacturers of herbal teas, did not see a necessity for the preparation of such a paper, because many issues are already regulated in the European Pharmacopoeia, and an additional standardisation of herbal teas does not seem appropriate. However, preparation of a reflection paper or glossary which is restricted to the explanation of terms commonly used for the prepara-

tion of herbal teas, could be seen as an alternative approach.

A draft “Reflection paper on the level of purification of extracts” (EMEA/HMPC/186645/2008) searches for criteria to distinguish the borderline between herbal preparations and isolated herbal constituents. Interested parties were invited to submit comments by 15 April 2009. According to some comments submitted, all levels of purification of primary extracts have to be classified as “herbal preparations” with the exception of “isolated single chemically defined substances” representing the final step of purification. Consequently, all guidelines for herbal preparations and herbal medicinal products (e.g. on quality, specifications, stability, declaration etc.) should apply for these purified preparations.

A revision of the “Guideline on declaration of herbal substances and herbal preparations in herbal medicinal products/traditional herbal medicinal products” (EMEA/HMPC/CHMP/CVMP/287539/2005 Rev. 1) includes an Annex with recommendations for applicants on the declaration of herbal substances and herbal preparations in the leaflet and labelling of herbal medicinal products. The deadline for comments was 30 April 2009.

A new “Reflection paper on stability of herbal medicinal products and traditional herbal medicinal products” (EMEA/HMPC/3626/2008) intends to generate a discussion on establishing guidance criteria for stability testing and application of existing guidance documents. Interested parties were requested to provide examples of possible stability scenarios specific for herbal medicinal products and traditional herbal medicinal products by 15 May 2009.

## Guidance documents on safety

In July 2008, the “Guideline on the assessment of genotoxic constituents in herbal substances/preparations” (EMEA/HMPC/104681/2007) had been published on the EMEA website. It provides guidance on the practical interpretation and implementation of genotoxicity testing, hazard identification and risk assessment of herbal medicinal products and might serve as a pragmatic approach to address the issue of genotoxicity testing describing a stepwise approach according to the ICH S2 guidelines. More recently, a “Concept Paper on selection of test materials for genotoxicity testing for traditional herbal medicinal products/herbal medicinal products” (EMEA/HMPC/315413/2008) has been prepared. In addition to the above mentioned guideline it contains further guidance for genotoxicity testing mentioning e.g. a “Bracketing & Matrixing” approach for testing different types of extracts from the same plant. This document is highly appreciated by interested parties because it represents a pragmatic approach for testing selected extracts that are able to serve as representative examples for a

broader range of preparations. Thus testing can be restricted to a reasonable extent.

The HMPC prepared a "Reflection Paper on the ethanol content in herbal medicinal products and traditional herbal medicinal products used in children" (EMA/HMPC/85114/2008) which is intended to reflect the need for safety limits for ethanol exposure by herbal medicinal products for oral use. It was released for public consultation until 15 March 2009. In their comments several associations made clear that the ethanol-related risk of herbal medicinal products is negligible when they are used in the recommended dose, in particular when compared to ethanol-containing beverages and food such as bananas and apple juice.

All respective drafts released for public consultation as well as the finalised documents can be found on the EMA website (<http://www.emea.europa.eu/hmts/human/hmpc/hmpcguide.htm>).

## ESCOP – The European Scientific Cooperative on Phytotherapy

ESCOP, the European Scientific Cooperative on Phytotherapy, was founded in Cologne on 18 June 1989. The vision of the original founder members was to establish a European umbrella organization of national societies and associations for phytotherapy. It was already evident at that time that the European review of medicines had not achieved a reasonable degree of harmonization in herbal medicinal products. The need to create harmonized criteria for assessment of the therapeutic uses of herbal medicinal products led to the concept of ESCOP monographs, the first ones being completed in 1990. ESCOP has now finalised its work on a supplement to the book containing ESCOP monographs. This supplement of approximately 35 monographs will contain revisions e.g. on Devil's claw, Eleutherococcus, Valerian and Echinacea as well as approximately 25 new

monographs e.g. on Milkthistle, Capsicum, Pumpkin seed and Hawthorn berries. On the exact date of ESCOP's anniversary, a scientific symposium will take place in Cologne, the city where ESCOP was founded 20 years ago. Representatives from health authorities, academia, industry and other interested parties will take the opportunity to discuss recent developments in the assessment of herbal medicinal products and the importance of phytotherapy from scientific, regulatory and political viewpoints.

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## New Books

### Mikroskopischer Farbatlas pflanzlicher Drogen



The advent of digital photography in pharmacognosy is here. This new book presents European official plant drugs in a novel and timely manner. Absolutely brilliant digital colour photographs show the main microscopic characteristics of over 140 drugs (8 photos per drug) in highly detailed and absolutely realistic form. Such realism could, of course, not be reached by previous works of this type based on drawings.

The finish of the book is also of very high quality: The brilliance and sharpness of the photographs is supported and emphasized by high paper quality. The protective synthetic-coated cover seems quite suitable for a book that may spend most of its time lying beside the microscope, not too far from reagent bottles of Lugol's iodine and chloral hydrate solutions.

The text of each drug monograph, besides the systematic and nomenclatorial details, a brief description of the plants, their active constituents and use, is made up of descriptions of the depicted microscopic details in a concise and precise manner – exactly what is needed to understand each characteristic detail in its anatomical context.

So far, only few shortcomings that might be worth mentioning were detected by the author of this review. One is the systematic

treatment of certain plants which have recently been re-classified (e.g. "Caesalpiniaceae" should no longer be treated at the family level since they now form a subfamily of Fabaceae). Another one is found in the rear inner cover, where the typical cross sections of the plant organs are presented in schematic form. These drawings – in some instances – lack certain details (or show some in excess) which, however, is easily detectable, at least for the teacher. Slight improvements in this part might be desirable in further editions.

All in all, the book can definitely be recommended and is certainly one that those of us who teach basic pharmacognosy, and – even more – our students, will profit from. Moreover, it will also represent a valuable reference for the practical pharmacist in identity control and for anyone involved (or interested) in classical pharmacognostic analysis.

It should finally not be left unmentioned that the price (€ 29,95) is really a scoop for a book of this quality.

Prof. Thomas J. Schmidt, Institut für Pharmazeutische Biologie und Phytochemie, University of Münster, Germany

*Rahfeld Bettina, Mikroskopischer Farbatlas pflanzlicher Drogen, TCM-Drogen und Rezepturen, ISBN 978-3-8274-1951-4, Spektrum Akademischer Verlag, Heidelberg, Germany, 2009, 307 coloured pages with many high quality photographs, german language, 29.95 €.*



### Pharmazeutische Biologie 1: Grundlagen für Studium und Praxis



"The Reinhard": nearly everybody in the German-speaking countries dealing with pharmaceutical aspects of herbal materials knows about this basic text book, edited now in the 7<sup>th</sup> edition and founded many years ago by GA honorary member Ernst Reinhard, Tübingen, Germany. The text book presents all basic and advanced knowledge for understanding Pharmacognosy and Pharmaceutical Biology. Main chapters are dealing with cytology, morphology, histology of plants, genetical aspects, physiology and aspects of developmental physiology, systematics and taxonomy of virus, bacteria, and a great chapter on systematics of eukaryotes. The 7<sup>th</sup> edition was redone concerning the colored figures, which are now in a high quality with a high didactic impact. A perfect text book and a must for students on undergraduate level, but also for scientists looking for quick information on basic pharmaceutical biology.

*Reinhard, Dingermann, Kreis, Rimpler, Zündorf, Pharmazeutische Biologie 1, 7 edition, ISBN 978-3-8047-2107-4, Wissenschaftliche Verlagsgesellschaft, Stuttgart, Germany, 2009, 558 pages, colour printing, german language, 64.90 €.*



## and their Institutes of Pharmacognosy: International, Interesting and Cooperative

We introduce and present two research groups working in the field of medicinal plants and natural products with their special characteristics. In this Newsletter: **India**.

GA has 29 regular members from India. Two working groups have prepared a short presentation of the group and the activities.



**Name of Institute: VNS Institute of Pharmacy, Bhopal (M.P.), India  
Department of Pharmacognosy and Natural Products Chemistry**

Address: Department of Pharmacognosy, VNS Institute of Pharmacy, Bhopal

Postal Address: 313-B, D.K. Surbhi, Gomti Colony, Nehru Nagar, Bhopal (M.P.) 462003 INDIA

Homepage: [www.vnspharm.org](http://www.vnspharm.org)

Head of Department: Prof. Umesh K. Patil ([umeshpatil29@yahoo.com](mailto:umeshpatil29@yahoo.com))

Working areas:

1. Standardization of Herbal Medicinal Products.
2. Pharmacological screening of plant drugs and natural isolates.

2 publications, representing the institution:

U.K. Patil, Bhargava C.S., Suchi Dave and Yadav S.K. Metabolomics: A tool for Safety and Toxicity studies of Medicinal Products. *Ind Journal of Pharmaceutical Education and Research* 2008. 42(3), Oct-Dec., 383-389.

Nahata A., Patil U.K., Dixit V.K. Effect of *Convolvulus pluricaulis* Choisy. on learning behaviour and memory enhancement activity in rodents. *Natural Product Research* 2008. 22(16), 1472-82

Coworkers: 15 Academic staff members, 2 PhD, 4 Postdocs, 3 Technicians, 2 Assistants

The "speciality" or the unique selling proposition of the institution:

The institute is committed to provide quality education in pharmacy and pharmaceutical research. Quality herbal drug research is an asset of Department of Pharmacognosy and natural product chemistry.

Running projects with industrial partners?

Three research projects based on standardization based on Herbal Medicinal Products are in progress.



**International Institute of Herbal Medicine 5/57B, Vineetkhanda, Gomtinagar, Lucknow**

**Run by: International Society for Herbal Medicine, 2/301, Vijaykhanda, Gomtinagar, Lucknow**

Address: International Institute of Herbal Medicine (IIHM), 5/57B, Vineetkhanda, Gomtinagar, Lucknow -226010.

Homepage: [www.synergylko.com/ishm](http://www.synergylko.com/ishm) or [www.ishm.in](http://www.ishm.in)

Head of institution: Dr. Narendra Singh

Working areas: Organic Herbals, clinical trials of herbal medicines, standardization of herbal drugs / formulations.

2 publications, representing the institution:

Kapoor V.P., Katiyar K., Pushpangadan P., Singh N. 2008. Development of natural dye based sindoor. *Natural Product Radiance*. Vol 7, National Institute of Science Communication and Information Resources, CSIR, New Delhi, pp. 22-26.

Singh N. 2008. Herbs – The Life of Man, Need Pharmacoclinical Studies for their Scientific Validation – Relevance of Modern Methods of Pharmacological Studies to Traditional Medicine, October 17–18, 2008, Department of Pharmacology & Therapeutics, C.S.M. Medical University, Scientific Convention Centre, Lucknow, pp 37-43.

Coworkers: 6 Academic staff members, 10 guest faculty members, 2 technicians and 2 lab assistants

The “specialty” or the unique selling proposition of institution:	Cultivation of Organic Herbs, through intensive training to farmers for organic farming dissemination of knowledge through holding national seminars, workshops and world conferences. Starting a superspeciality one year diploma in Herbal Sciences for training interested individuals, industries and proper formulation of herbal medicine for the benefit of suffering from various diseases that are not amenable to modern medicines for the benefit of mankind. The aim is to apprise all medical graduates about herbal therapy in true sense.
Running projects with industrial partners?	28 formulations including 6 variants of Tulsi tea for commercial utilization after due approval from the Ayurveda department of the State Govt. of UP. Many more (17 new formulations and some 6-7 variants of teas are in pipeline for Indian & US markets.) for detail visit global website of Organic India Pvt, Ltd. <a href="http://www.organicindia.com">www.organicindia.com</a>
Belief and concepts based on Scientific studies of 5 decades	Dr. N. Singh believes in holistic herbal treatment than extracts and chemical isolates. This is after 45 years of research experience with extracts in animal models and humans at upgraded Department of Pharmacology & Therapeutics, King George Medical College, Lucknow (31 years) and 14 years at International Institute of Herbal Medicine (IIHM). The whole is always better and less toxic than chemical isolates long term use of years in patient from 5 years to 30 years of whole herbs provides enough proof for such concept. He believes single blind and double blind studies are a farce and chemical isolates are toxic. Many Scientist know this yet the trend is on. Unfortunately there are no Medical Doctors (Scientist) involved in these studies, so the final aim to assess their usefulness in human remains irrelevant and unreliable.

## Recent thesis on Medicinal Plant Research



(Notices of Ph.D. and diploma theses to the editor are welcome any time!)

Ph.D. thesis (2009) Isolation and characterization of polysaccharides from liquorice (*Glycyrrhiza glabra* L.) and influence on adhesion of pathogenic bacteria. By: **Nicole Katharina Wittschier**; Promotor: Prof. Dr. Andreas Hensel, Institute for Pharmaceutical Biology and Phytochemistry, University of Münster, Germany.

Ph.D. thesis (2009) Isolation and characterization of water-soluble proteoglycans from Francincense from *Boswellia serrata* Roxb. and *Boswellia carteri* Birdw. By: **Andreas Herrmann**; Promotor: Prof. Dr. Andreas Hensel, Institute for Pharmaceutical Biology and Phytochemistry, University of Münster, Germany.

Ph.D. thesis (2009) Gewinnung glykosylierter Naturstoffe durch Biotransformation in *Saccharothrix espanaensis* sowie funktionelle Charakterisierung dreier Polyketidbiosynthese-gencuster aus dem Mensacarcinproduzenten *Streptomyces* sp. Gö C4/4. By: **Anton Linnenbrink**. Promotor: Prof. A. Bechtold, Pharmazeutische Biologie und Biotechnologie, University of Freiburg.

Ph.D. thesis (2009) Untersuchungen zur Biosynthese von Oligosaccharid-Antibiotika aus Actinomyceten. By: **Annette Erb**. Promotor: Prof. A. Bechtold, Pharmazeutische Biologie und Biotechnologie, University of Freiburg.

Ph.D. thesis (2009) Untersuchungen zur Aktivität der humanen Pyridoxinphosphat-Oxidase in Gegenwart von Strukturanaloga des Vitamin B6 und des Ginkgotoxins (4'-O-Methylpyridoxin) aus *Ginkgo biloba* L. By: **Nora Salamon**; Promotor: Prof. E. Leistner, Institut für Pharmazeutische Biologie, Universität Bonn, Germany.

PhD thesis (2009) A comprehensive metabolite profiling of *Isatis tinctoria* leaf extracts. By **Tobias Mohn**; Promotor: Prof. M. Hamburger, Pharmaceutical Biology, University of Basel, Switzerland.

PhD thesis (2009) Natural products acting on signal transduction pathways – molecules and methods. By **Sabine Kiefer**; Promotor: Prof. M. Hamburger, Pharmaceutical Biology, University of Basel, Switzerland.

PhD thesis (2009) Drug discovery for age-related diseases and their targets. By **Anna Koryakina**; Promotor: Prof. M. Hamburger, Pharmaceutical Biology, University of Basel, Switzerland.

DVM Thesis (2009) Einsatz von Malventee bzw. isotonischer Kochsalzlösung bei Vollhautwunden im klinisch-experimentellen Mäuseversuch zum Vergleich der Heilungsdauer. By: **Alexandra Kranzl**. Promotor: Prof. Ch. Franz, Institut für Angewandte Botanik und Pharmakognosie, Prof. T. Rülcke, Institut für Versuchstierkunde, Veterinärmedizinische Universität Wien, Austria.

DVM Thesis (2009) Vergleich von Therapieformen der idiopathischen hämorrhagischen Gastroenteritis (HGE) beim Hund. By: **Julia-Victoria Israiloff**. Promotor: Prof. J. Thalhammer, Deptm. Kleintiere und Pferde, Prof. Ch. Franz, Institut für Angewandte Botanik und Pharmakognosie, Veterinärmedizinische Universität Wien, Austria.

PhD thesis (2009) Neuropharmacological Assessment of *Salvia divinorum* Epling & Jativa. By: **Stephen Matthew Phipps**, Promotor: Prof. Dr. V. Butterweck, College of Pharmacy, University of Florida, Gainesville, U.S.A.

Ph.D. thesis (2009) Naturstoffe aus chinesischen Mangrovenpflanzen – Untersuchung der insektiziden, tumorhemmenden und vor UV-Licht schützenden Aktivitäten. By: **Mirko Bayer**; Promotor: Prof. Dr. P. Proksch, Institute of Pharmaceutical Biology and Biotechnology, University of Dusseldorf, Germany.

Ph.D. thesis (2009) Cytotoxic constituents from marine organisms. By: **Ashraf Nageeb El-Sayed Hamed**; Promoter: Prof. Dr. P. Proksch, Institute of Pharmaceutical Biology and Biotechnology, University of Dusseldorf, Germany.

Ph.D. thesis (2009) Secondary metabolites from marine sponges, with focus on the chemical ecology and biochemical characterisation of the stress induced biotransformation of Aplysina alkaloids. By **Annika Putz**; Promotor: Prof. Dr. P. Proksch, Institute of Pharmaceutical Biology and Biotechnology, University of Dusseldorf, Germany.

PhD thesis (2009) Untersuchungen zur Wirkung von *Valeriana officinalis* L. s.l. By: **Gabriele Trauner**; Promotor: Prof. B. Kopp, Department of Pharmacognosy, University of Vienna, Austria.

Ph.D Thesis (2009): Metabolomic changes of *Brassica rapa* under biotic stress. By: **I.B. Abdel-Farid Ali**. 2009, Promotor: Prof. Dr. R. Verpoorte, IBL, Leiden University, NL.

Ph.D Thesis (2008): The effect of bacterial isochorismate synthase on the *Brassica rapa* metabolome. By: **S. Simoh**. Promotor: Prof. Dr. R. Verpoorte, IBL, Leiden University, NL

Ph.D Thesis (2008) Anticancer Pharmacognosy of *Punica granata*. By: **E.P. Lansky**. Promotor: Prof. Dr. R. Verpoorte, IBL, Leiden University, NL.

Ph.D Thesis (2008): Polyketide synthases in *Cannabis sativa* L. By: **I.J. Flores Sanchez**. Promotor: Prof. Dr. R. Verpoorte, IBL, Leiden University, NL.

PhD thesis (2008) New antimycobacterial compounds from plants. By: **Doris Lechner**; Promotor: Prof. F. Bucar and Prof. K. Groschner, Institute of Pharmaceutical Sciences, University of Graz, Austria.

Ph.D. thesis (2008) Biodiversity of marine-derived fungi and identification of their metabolites. By: **Ine Dewi Indriani**; Promotor: Prof. Dr. P. Proksch, Institute of Pharmaceutical Biology and Biotechnology, University of Dusseldorf, Germany.

Ph.D. thesis (2008) Tropanalkaloidbiosynthese in Solanum-Arten. By: **Anna-Carolin Freydank**; Promotor: Prof. Dr. Birgit Dräger, Institut für Pharmazie, Martin-Luther-Universität Halle-Wittenberg, Germany.

Ph.D. thesis (2008) Spezifitätsuntersuchungen von Glycosyltransferasen am Beispiel der Landomycinbiosynthese. By: **Christine Krauth**; Promotor: Prof. A. Bechthold, Pharmazeutische Biologie und Biotechnologie, University of Freiburg.

Ph.D. thesis (2008) Monoxygenasen als Post-PKS modifizierende Enzyme in der aromatischen Polyketid Biosynthese von Polyketomycin und Simocyclinon D8. By: **Iris Peintner**; Promotor: Prof. Raimo Hiltunen, University of Freiburg.

Ph.D. thesis (2008) Dracocephalum moldavica L. and Melissa officinalis L.: Chemistry and bioactivities relevant in Alzheimer's disease therapy. By: **Keyvan Dastmalchi**; Promotor: Prof. Raimo Hiltunen, University of Helsinki, Finland.

Ph.D. thesis (2008) Evaluation of natural products in apoptosis, protein kinase C activation and Caco-2 cell permeability. By: **Anna Galkin**; Promotor: Prof. Raimo Hiltunen, University of Helsinki, Finland.

PhD thesis (2008) Prevention of Urolithiasis by *Ammi visnaga* L. By: **Pattaraporn Vanachayangkul**; Promotor: Prof. Dr. V. Butterweck, College of Pharmacy, University of Florida, Gainesville, U.S.A.

DVM (Doctor in Veterinary Medicine) Thesis (2008) Antioxidant Activity of Phytoenous Industrial Waste and Derived Extracts for the Production of Feed and Food Additives. By: **Sylvia Stockhammer**; Promotor: Prof. K. Zitterl-Eglseer and Prof. Ch. Franz, Institute for Applied Botany and Pharmacognosy, University of Veterinary Medicine Vienna, Austria.

Diploma thesis in Chemistry and Pharmaceutical Technology (2009) *Gardenia jasminoides* Ellis: qualitative and quantitative HPLC analysis of extracts and preparata. Studies of some formulations. By: **Chiara Righeschi**; Promotor: Prof. A.R. Bilia, Prof. M.C. Bergonzi, Faculty of Pharmacy, University of Florence, Italy.

Diploma thesis in Chemistry and Pharmaceutical Technology (2009) HPLC analysis of different extracts of *Artemisia annua* L. and evaluation of their activity in some neglected disease. By: **Michela Burico**; Promotor: Prof. A.R. Bilia, Prof. M.C. Bergonzi, Faculty of Pharmacy, University of Florence, Italy.

Diploma thesis in Herbal Technologies (2009) Rapid isolation *Hypericum perforatum* naphthodianthrones and inhibition of thioredoxin reductase system. By: **Alessandro Reggioli**; Promotor: Prof. A.R. Bilia, Dr. Anastasia Karioti, Faculty of Pharmacy, University of Florence, Italy.

Diploma thesis in Herbal Technologies (2009) Evaluation of cytotoxicity and insights in the antiinflammatory activity of bergenin, proanthocyanidin B3 and prodelfphinidin C. By: **Monica Galigani**; Promotor: Prof. A.R. Bilia, Dr. Anastasia Karioti, Faculty of Pharmacy, University of Florence, Italy; Prof. M.C. Recio Iglesias, Faculty of Pharmacy, University of Valencia, Spain.

Diploma thesis in Herbal Technologies (2009) Aromatherapy: a rational use. By: **Chiara Caleri**; Promotor: Prof. A.R. Bilia, Dr. Anastasia Karioti, Faculty of Pharmacy, University of Florence, Italy.

Diploma thesis in Herbal Technologies (2009) Analysis of the volatile constituents of *Artemisia annua* L. By: **Giuliabeatrice Bianchini**; Promotor: Prof. A.R. Bilia, Dr. Anastasia Karioti, Faculty of Pharmacy, University of Florence, Italy.

Diploma thesis (2009) Phytochemical and toxicological research of *Rhododendron ferrugineum* L. By: **Daniela Harmannstein**; Promotor: Prof. B. Kopp, Department of Pharmacognosy, University of Vienna, Austria.

Diploma thesis (2009) Metabolic profiling of *Vaccinium macrocarpon* using <sup>1</sup>H-NMR: Application for quality control of cranberry juice. By: Maria **Kundračiková**; Promotor: Prof. B. Kopp, Department of Pharmacognosy, University of Vienna, Austria; Prof. Robert Verpoorte, Institute of Biology, Leiden University, the Netherlands.

Diploma thesis (2009) Vermehrung von Süßholz über somatische Embryogenese. By: **Marina Winter**; Promotor: Prof. B. Kopp, Department of Pharmacognosy, University of Vienna, Austria.

Diploma thesis (2008) Genomische Untersuchung zur Biosynthese der Urdamycine C und D in *Streptomyces fradiae*. By: **Barbara Wackler**; Promotor: Prof. A. Bechthold, Pharmazeutische Biologie und Biotechnologie, University of Freiburg.

Diploma thesis (2008) Versuche zur Isolierung und Charakterisierung von Alkaloiden aus *Chiazospermum erectum* BERNH. By: **Cornelia Rammer**; Promotor: Prof. S. Glasl-Tazreiter, Department of Pharmacognosy, University of Vienna, Austria.

Diploma thesis (2008) Isolierung polarer Flavonoide aus der mongolischen Arzneipflanze *Dianthus versicolor* FISCH. By: **Tina Radovic**; Promotor: Prof. S. Glasl-Tazreiter, Department of Pharmacognosy, University of Vienna, Austria.

Diploma thesis (2008) Krebszellen als Targets für VIP-Rezeptor-Liganden? By: **Anna Ortner**; Promotor: Prof. S. Glasl-Tazreiter, Department of Pharmacognosy, University of Vienna, Austria.

Diploma thesis (2008) Chemische Charakterisierung von suedosteuropäischen Individuen aus der Gattung *Achillea*. By: **Peter Leidenmuehler**; Promotor: Prof. S. Glasl-Tazreiter, Department of Pharmacognosy, University of Vienna, Austria.

Diploma thesis (2008) Krebszellen als Targets für VIP-Rezeptor-Liganden? By: **Anna Ortner**; Promotor: Prof. S. Glasl-Tazreiter, Department of Pharmacognosy, University of Vienna, Austria.

#### Editorial remark

All contributions for the GA-Newsletter are welcome. Deadline for submission for the next edition is fixed to November 20<sup>st</sup> 2009. Please send all contributions to: Prof. Dr. A. Hensel, University of Münster, Institute for Pharmaceutical Biology and Phytochemistry, Hittorfstrasse 56, D-48149 Münster, Germany; ahensel@uni-muenster.de