

Message from the President



Dear members,

the 66th International Congress and Annual Meeting of the Society for Medicinal Plant and Natural Product Research, jointly with the 11th Shanghai TCM conference held in Shanghai, China, from August 26 to August 29, 2018, has been very successful! I am deeply grateful to Prof. De-an Guo and his team to organize a very attractive scientific program which included eight invited plenary lectures, twenty-eight key-note lectures, forty-one short lectures on recent topics of natural product research, and two poster sessions. I am also very grateful to the sponsors who allowed to keep the fees relatively small. More than 600 scientists from 53 countries attended the congress! Participants were very delighted about the organisation and this meeting will keep in best remembrance. On Sunday the Young Researcher Workshop took place and more than 60 young researchers attended the workshop. Prof. Xiao-hui Fan (Zhejiang University) gave the outstanding impulse lecture "Transcriptomics-based TCM Network Pharmacology-from methodology to real-world application". The pre-conference workshop on Regulatory Affairs was set up on "Examples of multi-national harmonization of regulatory frameworks". In addition, a pre-symposium on Traditional Chinese Medicine Workshop focused on the Evidence-based Chinese medicine held during Sunday. GA donated an extraordinary number of prizes and awards: seventeen travel grants to PhD students and one travel grant to a post-doc, Dr. Willmar-Schwabe Research Scholarship for Young Scientists, Dr. Willmar-Schwabe award, Egon Stahl-Award in Bronze, Planta Medica Best Paper, and the last but not the least the "best poster" prizes. Prof. Zhong-zhen Zhao opened the conference with an astonishing commemoration of the 500th anniversary of Li Shi-zhen Chinese scholar of the Ming dynasty (1368–1644) who compiled a highly influential materia medica, the Bencao Gangmu (Compendium of Materia Medica), which described 1,892 drugs and presented directions for preparing some

11,000 prescriptions. You can find a detailed report meeting in this NL.

This year GA has supported many congresses and workshops because they represent an exceptional opportunity to reinforce existing relationships, to generate new collaborations and friendships, to engage efforts among the diverse players – academics, industry and regulatory organisations. The remarkable list include the joint meeting Phytotherapie 2018 in Vienna, Austria; Phytopharm 2018 in Wädenswil, Switzerland; 8th Symposium on MAP in Bonn, Germany; Workshop on Cannabis in Vienna, Austria; 30th International Symposium on the Chemistry of Natural Products and the 10th International Congress on Biodiversity in Athens, Greece. Also a symposium on emerging trends in natural product biotechnology took place in Dortmund, Germany. You can find detailed reports concerning these events in this NL.

I cordially invite all the members to attend next year the 67th Annual Conference, which will take place in Innsbruck, Austria, from 1st to 5th September, 2019. I would like to thank Prof. Hermann Stuppner and his team to accept the organisation of the meeting and I believe he will set up a very attractive scientific and social program. The congress will start on Sunday with the Young Researchers Workshop, a workshop on African Research Network and a pre-congress Symposium on Veterinary Phytotherapy. Next year the Regulatory Affairs Workshop will held during the main conference.

On occasion of the conference, GA will donate the Egon Stahl-Award in Silver, the Bionorica Phytoneering Award, and Willmar Schwabe-Scholarship. I heartily invite all the GA members to read the announcements in this NL and on the GA website to submit proposals for the next year awards. I strongly encourage also the young members to apply for the travel grants, there were numerous opportunities for both PhD students and post-doc! Again I wanted to draw the attention of ALL GA members to these awards and prizes of our society. You all should consider whether your research, or maybe that of a research group you closely collaborate with, would fit with the aims of these prizes, or if you know of an outstanding young scientist that would be eligible for the Egon Stahl-Award in Silver. Scientists (normally younger than 45 years of age) or research groups of universities and other non-commercial scientific institutions focusing research in phytomedicine are cordially invited to submit a candidature for the Bionorica Phytoneering Award. If you are a senior scientist from a lesser developed country, inform your PhD students of the Dr. Willmar-Schwabe Research Scholarship! And if you are one of our numerous young GA members from lesser developed countries, talk to your supervisor and explore with him a possible application. I can only repeat that this scholarship may be a unique opportunity for your career! Thus, I look forward to numerous applications. Finally, I would like to remind your participation to the

Annual Member Meeting because the elections of Advisory Board and Executive Council! I want to welcome all new colleagues who have joined our Society in the last year as new and active members of the GA family. Just as a general friendly reminder, the annual membership fees are due at the beginning of each year, preferably by January, please pay the fee in time. I invite all the GA members to read the detailed announcement of the congress in this newsletter, and consult the congress website (www.ga2019.at) for further details on this important event!

Other meetings co-organised by GA will take place next year, in particular the Phytopharm 2019 in St. Petersburg (Russia) and 7th Mistletoe Symposium in Nonnweiler, Germany. Please consult the GA website for details and further announcements!

Finally, I would like to reiterate my invitation to all of you: submit manuscripts to Planta

Medica and Planta Medica International Open! Our official journals thrive especially with the contributions of GA members. Four important reasons to encourage all of you to further support publications in Planta Medica: the increased IF (2.494), the recognition as Q1 journal in integrative and complementary medicine, the option to have an open access, and a low rate online access to Planta Medica articles is available for GA members. I hope that these motives, in addition to the "Thieme Award for the Most Innovative Paper of the Year" will intensively be used and that more members will consider Planta Medica for the publication of their valuable results. My heartfelt congratulations to Prof. Veronika Butterweck and her staff for the successful goals with Planta Medica and Prof. Luc Pieters and his staff for the take care of Planta Medica International Open. Regrettably, Prof. Butterweck, has decided to step down from her function as

Editor-in-Chief by the end of 2018. I am grateful to her profound dedication to the journal in the last two years and extraordinary motivation aiming to increase submissions with outstanding quality. Thank you for the great job!

In order to further advance this remarkable trend, I would like to encourage once more all GA members to publish their relevant articles in Planta Medica, which clearly represent an excellent platform for exchange of knowledge and ideas between scientists worldwide.

Thank you very much to Prof. A. Hensel for all his efforts to organise contributions of GA members, and providing a very attractive and valuable NL.

Finally I wish you a healthy, lucky and successful year 2019 and I am looking forward to seeing you in Innsbruck!

Anna Rita Bilia, GA President

Editorial change at Planta Medica

Dear members of GA,

two new Editors-in-Chief will take over from 1st January 2019 to continue editorial work of Planta Medica. Planta Medica is the scientific journal of our society and publishing excellent papers submitted by you and other international well-known scientists. As Senior Editor-in-Chief, Oliver Kayser from TU Dortmund University, Germany, will be responsible for handling original papers with you distinguished reader and author. He studied pharmacy at WWU Münster University, Germany, and started his academic career in pharmaceutical biology and moved to plant biotechnology and metabolic engineering of secondary natural product pathways. Robert Fürst from Goethe University Frankfurt, Germany, accepted the invitation to act as Junior Editor-in-Chief with the special responsibility for reviews and special issues. He is a pharmacist by training (LMU Munich, Germany) and engaged in the preclinical characterization of biogenic compounds in the field of inflammation and cancer.

To run the journal with two Editors-in-Chief is a strategic decision taken jointly with the publisher Thieme and the GA society. Running a journal like Planta Medica with an outstanding tradition does not mean that we will not compete in a dramatically changing landscape of open access, online journals and of course new research fields coming up. We decided to be closer to our authors and to act smarter in the identification of new trends in natural product sciences. Following the right decision Veronika Butter-

weck as former Editor-in-Chief has taken, we know that simple administration of the journal is history and we have to implement and live new ways of attracting authors who have not considered publishing in Planta Medica. We are open to accepting submission from related fields of biosynthesis, plant biotechnology and OMIC based sciences in phytopharmacology. For us as incoming Editors-in-Chief, it is a great challenge to address these topics to new research questions. Applying new sophisticated analytical techniques, the impact of genetics and molecular biology will bring new insights to still open questions but will also open new avenues in drug and gene discovery. We want to keep Planta Medica as one of the top journals in preclinical phytopharmacology communication, but we are aware that discovery of new exciting natural products with medicinal value and studies to understand the genetic and metabolic blueprint of biosynthesis in plants or heterologous organisms are important as well.

We want to keep the core commitment to offer our authors a transparent, fair and short review process. This must be a future benchmark to express the importance of each author to us Editor-in-Chief. This will keep you as an excellent author close to Planta Medica to publish more of your valuable work and will increase the impact factor in the future. With the substantial support of Regina Wenzel and her team, we are in the best position to do so.

We want to thank Veronika Butterweck as former Editor-in-Chief for doing an excellent



job in the last three years to push Planta Medica towards higher awareness in the natural product and medicinal plant area. Most importantly, she strongly improved the handling of manuscripts so that authors can experience a rapid and fair review process of the manuscripts. Veronika's tremendous efforts have been rewarded by an all-time high of the journal's impact factor. Veronika, we wish you all the best for your new challenge.



Prof. Dr. Dr.
Oliver Kayser



Prof. Dr.
Robert Fürst

2nd Research Award of the Foundation Plants for Health

“Plants for Health” aims at supporting highly motivated and talented research groups. The foundation want to provide start-up funds, which help to develop projects leading to promising developments in the area of medicinal plant and natural product research including the search for innovative lead compounds, exciting product ideas and novel pharmacological, clinical and other approaches in medicinal plant and natural product research.

As the foundation successfully has started to receive donations and additional endowments from different sources, an initial monetary support was granted to two research groups for the initiation of a high quality research projects. The following project has been awarded from 8 applications, submitted on the call of Plants for Health.

Prof. Dr. Adnan Amin (Gomal University, Pakistan) for a cooperation project together with Prof. Dr. Luc Pieters (University of Antwerp, Belgium) for the project:

“Investigations on Ayurvedic medicinal plants towards inhibition of quorum sensing and biofilm produced by periodontal bacteria isolated from diabetic patients.”

GA congratulates!

The winners are:



Prof. Dr.
Adnan Amin



Prof. Dr.
Luc Pieters

2nd Research Award of the Foundation Plants for Health to Prof. Dr. Adnan Amin (Gomal University, Pakistan) for a cooperation project together with Prof. Dr. Luc Pieters (University of Antwerp, Belgium)



The expert in interview with Prof. Hensel (Board of the foundation)

Prof. Hensel: Dear Prof. Amin, Congratulations on the PLANTS FOR HEALTH award for your research project on the influence of selected medicinal plants on bacterial quorum sensing and biofilm produced by periodontal bacterial from diabetic patients. Could you please get us some details on this project concerning your motivation and the expected outcome?

Prof. Amin: It is indeed a matter of an honour to explain my motivation and possible outcomes covering the project. Well, you know that traditional medicine is linked with folk wisdom and that it benefits from the centuries old knowledge on safety and efficacy around the globe. Among various traditional medicinal systems, Ayurveda keeps a vital role and is practiced in the Indian subcontinent. I was actually impressed by Ayurvedic approaches to treat various

ailments (including diabetes), that are mainly based on phenotypes (*prakrities*) or constitutional types of human beings.

Diabetes is a serious metabolic disorder that is featured by various micro and macrovascular complications that boost the patient sufferings. One of such serious conditions is periodontitis, that is fairly common in uncontrolled diabetics, and ultimately can lead to teeth loss and other serious consequences. After a detailed literature review and close monitoring of people, we noticed that diabetics, using selected medicinal plants (described by Ayurveda or Tibb) for oral hygiene have less or no issues of periodontitis. We therefore decided to initially analyse such Ayurvedic medicinal plants towards clinical isolates from patients with periodontitis. This initial screening will not only prove authenticity of Ayurveda, but also help to de-

velop formulations promoting oral hygiene in diabetics.

Prof. Hensel: Why do you combine diabetic patients with pathogens responsible for periodontal diseases?

Prof. Amin: Well, the data from various epidemiological investigations have confirmed that diabetes is a major risk factor for periodontitis and that susceptibility to periodontitis is three times higher in people with diabetes. Also, a clear relationship between degree of hyperglycaemia and severity of periodontitis has been reported that could involve aspects of immune functioning, neutrophil activity, and cytokine biology. In addition, periodontal inflammation negatively affects glycaemic control.

Sometimes diabetics are vulnerable to poor hygienic conditions, which could be mainly due to progression of diabetes and a hasty life style (thus making patient a sort of lazy and lethargic). This provides an opportunity for bacteria to grow and produce periodontal pathologies. Therefore, in first instance we are trying to improve oral hygiene.

Prof. Hensel: What kind of bacteria are you expecting? Mostly bacteria from the so-called “red-complex” or also different bacteria?

Prof. Amin: Yes, the microorganisms involved could be the “red complex” (*Porphyromonas gingivalis*, *Treponema denticola* and *Tannerella forsythia*).

Prof. Hensel: How are you going to select the plants? Are the herbs mainly from your area in Pakistan?

Prof. Amin: The plants are selected based on traditional usage based on Ayurvedic and Tibb information. The plants will be from Pakistan in various locations.

Prof. Hensel: In case you can identify anti-q.s. activity or significant anti-biofilm activity what are your strategies for further preclinical or clinical investigations? What kind of products are you thinking of?

Prof. Amin: Well, in case of outstanding success, we will extend our research for clinical trials in diabetics. A mouth wash will be the preferred formulation, in order to make it easy to use.

Prof. Hensel: Some experiments are going to be performed in Belgium, others in Pakistan – how can you combine the expertise of both labs?

Prof. Amin: The project mainly has two phases, i.e. initial screening followed by the characterisation of active compounds. The initial screening will include extraction, and antimicrobial activity to be performed in Pakistan NPRL, Gomal University, based on available facilities and expertise. Isolation of compounds and their characterization will be accomplished in Belgium (Lab Natural Products & Food Research and Analysis, University of Antwerp).

Prof. Hensel: Just for our readers and GA members: can you get us a very short insight into your CV and your activities?

Prof. Amin: Currently I am assistant professor in Pharmacognosy at the Department of Pharmacognosy, Faculty of Pharmacy, Gomal University D. I. Khan, Pakistan, and head of the Natural Products Research Lab (NPRL). I have completed my Ph.D. at the University of Antwerp, Belgium in 2016. My Ph.D. fellowship had been awarded by the Higher Education Commission of Pakistan (HEC), and I am currently working on a HEC funded project. My main research interests are phytochemical characterization, isolation and biological evaluation of active constituents from plants used against diabetes that are mainly mentioned in traditional medicinal systems such as Ayurveda. I am author of 35 publication published in peer review journals and I am a member of the editorial board of various journals.


Prof. Hensel: Dr. Amin, thanks for the interview and success for the studies within the awarded project. GA is looking forward to your talk during the next GA meeting on the first results of the investigations.

Notes from the Society

**Deceased members**

Prof. Dr. Rudolf Hänsel,
Berlin, Germany
passed away on 14th of June 2018
in the age of 98 years.
He had been
Honorary Member of GA.
Obituary see in this Newsletter.

Prof. Dr. Horst Rimpler,
Freiburg, Germany
passed away on 24th of August 2018
in the age of 82 years.
Obituary see in this Newsletter.

**Editorial remark**

All contributions for the
GA-Newsletter are welcome.

Deadline for submission is fixed
to May 25th 2019.

Please send all contributions
by e-mail to:
Prof. Dr. A. Hensel
University of Münster,
Institute for Pharmaceutical
Biology and Phytochemistry,
Corrensstrasse 46,
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Engagement of a Scientific Officer (SO) for the Society for Medicinal Plant and Natural Product Research



As decided in the last BoD meeting and announced in the members meeting during our annual conference in Shanghai last August, the Society for Medicinal Plant and Natural Product Research is going to announce a position for a SO. This person shall be responsible primarily for administration and promotion of the GA, which includes the

support in the organization of the annual conferences, the transfer of knowledge and the communication with the GA members, e.g. via social media, and the contact to funding bodies. These tasks shall be accomplished in a flexible part time job and shall serve our members to receive information on different channels and for a smooth

and professional organization of GA-related events.

Since other societies, such as the “Kooperative Phytotherapie” (KOOP Phyto) and the “Deutsche Gesellschaft für Phytotherapie” (GPT) have very similar tasks to cope with, our Society is currently in contact with these

organizations to combine and share our efforts and interests for the engagement of a mutual SO in one person. Further discus-

sions are ongoing and we will be happy to inform you as soon as all aspects are clarified.

Prof. Dr. Judith M. Rollinger (vice president) on behalf of the GA Executive Council, Nov. 2018

Statement on the future of GA

As outlined and discussed at the General Meeting of GA at the Shanghai Meeting this year, GA must be prepared for a more active role as international society in changing times like these. The society has to face changes in professionalization (see report by Vice President above) to compete with other organizations and societies in the field of natural product chemistry and medicinal plant research. Here, new drug discovery approaches from marine and insect biology will impact our today perspective of natural products. OMIC technologies will influence analytical techniques from preclinical validation over clinical studies to post regulation of HMP. Our society must communicate to the public that we assemble the experts worldwide and we have to be more active in dissemination the member's voice. To do so,

one initiative is participation at various conferences as reported in the newsletter but also to strengthen our communication in working groups (Africa WG) and to promote members and research via social media and webinars. The very successful series of webinars will be continued and you can await a special webinar series on Cannabis soon. We will ask members to record short video shots about own work and labs to present themselves on the GA website. The website will be updated to be more interactive and provide more service for each of you by relevant social media channels like Twitter and Instagram. This all take our time, but we are happy that the new scientific officer will help us to make our society more lively and to bring it closer to our members.



Prof. Dr. Oliver Kayser, University of Dortmund, Germany

Minutes of the GA Members Meeting 2018

The Members Meeting took place during the annual congress in Shanghai on August 28, 2018, from 6 pm. to 8 pm. at Bibo Ballroom AB, Parkyard hotel. 40 GA Members attended the meeting.

Approval of the agenda

GA President Prof. A.R. Bilia welcomed all participants. The preliminary agenda published in the GA-Newsletter 1-2018 and circulated via e-mail to all GA-members on August 14, 2018, was presented and the point 3.5 'Discharge of the Executive Council' was removed from the agenda. A proposal for the change of the bylaws as circulated by the treasurer to GA-members via e-mail on August 14, 2018, was added to the agenda (8. 'Change of the bylaws'). The members agreed to the amendments and the agenda was unanimously approved.

Approval of the protocol of the Members' Meeting held in Basel on September 5, 2017

The minutes of the previous Members Meeting, which took place on September 5, 2017, in Basel, and was published in the GA Newsletter (NL) 2-2017, were unanimously approved.

Annual reports

Report of the President Prof. A.R. Bilia

She was in exchange with the chairs of the future GA meetings in 2018 (Shanghai) and

2019 (Innsbruck) as well as with the organisers of the Joint meeting 2020 (San Francisco) and 2021 (Bonn). She was in exchange with the GA-treasurer for the Shanghai congress in 2018. An agreement with De-an Guo was signed. She contributed to the selection of abstracts with the help of Prof. Wang. She was responsible for the Awards selection: Egon Stahl-Award in Bronze 2018, Willmar Schwabe-Award 2018 and Willmar Schwabe Research Scholarship 2018. She prepared the president letter and the agenda of the members' meeting in the last GA NL. She was in contact with Prof. Hensel and the members of the Executive Council (EC) to prepare the proposal for GA Officer and with the members of the African Network. She was in contact with the GA treasurer and the board of Plants for Health to propose a change of the GA bylaws. She was also involved in organization of the Joint Phytotherapy Congress 2018 in Vienna and Phytopharm 2018 in Wädenswil and evaluated some abstracts. She was in contact with the chair of 'Cannabis – Phytochemical, Pharmacological and Clinical Evidence', which will take place in November 15, 2018, in Vienna, Austria. She was also in exchange with the Thieme staff for the organisation of the Planta Medica (PM) Editorial Board in Florence, organisation of the PM session and discussion for the proposal of the new Editor-in-Chief. She was in contact with the partners of the European projects finalizing some docs and programming the next workshop in Germany (8th symposium on MAP Sept 10–13, 2018 Bonn, Germany). She is also still in contact with the or-

ganisers of the 30th International Symposium on the Chemistry of Natural Products and the 10th International Conference on Biodiversity (ISCNP30 & ICOB10), Nov. 25–29, 2018 in Athens, Greece, and 7th Mistletoe Symposium, Nov. 7–9, 2019, in Nonnweiler, Germany.

Reports of the Vice-Presidents

Report of Prof. Judith Rollinger

She was in contact with Prof. Hensel and the members of the EC to discuss the future of GA and the feasibility for the GA to announce a GA scientific officer and to prepare a proposal. She worked on the update of the homepage together with Prof. Fokialakis and the EC. She was in contact with the YRW organizers and the Shanghai congress organizers (abstracts, posters for YR, visa application, registration bugs, interactive agenda). She was in contact with Thieme to elaborate benefits for GA members, implementation of CSEARCH, etc. She was also in the organization team of the Joint Phytotherapy Congress in Vienna 2018 and the contact person for GA. She evaluated abstracts for the Shanghai conference 2018 as well as the Joint Phytotherapy Congress in Vienna 2018.

Report of Prof. Oliver Kayser

He chaired the working group communication. He regularly updated the German and international Wikipedia-Website of GA. Together with the EC he was active to ask for

consent by e-mail and to implement all guidelines of the EU General Data Protection Regulation. He prepared a definition of profile for employment of a Scientific officer (SO). He also co-organized conferences such as the MAP Conference, Bonn, Sept 12, 2018, the symposium "Emerging Trends in on Natural Product Biotechnology", Sept. 21–22, 2018, and the GA Meeting in Shanghai Aug. 26–28, 2018.

Report of the Secretary – presented by Prof. Anna-Rita Bilia due to the absence of Dr. Heba Abdel-Kalbhenn

Member statistics were presented: there are 1162 active members (Regular fee: 580; Reduced fee: 525; Company members: 29; Honorary members: 9; Waived fees [>40 years membership]: 39; Preliminary members: 121). In total (active+preliminary) it gives 1283 members.

Additionally, an important issue has been raised concerning GDPR regulations. All GA Members need to comply with DSGVO. E-mails sent to all members to give their active consent leading to 234 consents. Reminder to all members leading to ca. 150 replies so far. It was discussed that many members have not yet replied to agree on GDPR – the EC agreed to solve the issue: Olaf Kelber suggested that as a member of the GA you automatically have agreed to receive information from the society; Michael Heinrich suggested that members who oppose should actively contact the society.

Questions were raised as to an alternative for the secretary in the future; ARB said, that she is in contact with Bayer to get an assistant to support our secretary to step in after her maternity leave; if there will be no solution in reasonable time, the position might have to be reorganized.

Report of the Treasurer Dr. Ulrike Reusner

She reported about the current financial situation of GA: The total assets of GA currently amount to 223.442,73 EUR (thereof cash: 177.109,12 EUR). The Egon Stahl fund currently amounts to 55.767,66 EUR (thereof cash: 3.597,83 EUR). She presented the budget report of 2017 and the budget plan for 2018.

She reported about software problems with the accounting software for which the resolution caused delays in preparing the financial reports. It was therefore not possible to timely submit the reports to the auditors. Therefore, it was decided to postpone the Discharge of the Executive Council to 2019.

Report of the Auditors (postponed to 2019)

Discharge of the Executive Council (postponed to 2019)

Report of the conference 2018 in Shanghai, Prof. De-an Guo

He presented the numbers representing the financial situation and progress of the conference. As the agreement was signed with GA the organizers have to cover costs for Honorary members and other invited people. He also donated 10 000 for travel grants and is currently trying to balance the financial situation of the conference. He agreed to encourage Chinese students to join the GA this year in order to benefit from travel grants and awards in the next years (already done during the closing ceremony).

Report of the Editor-in-Chief of Planta Medica: Prof. Judith Rollinger (as representative for Prof. Veronika Butterweck)

Prof. Judith Rollinger presented key figures and facts regarding Planta Medica and Planta Medica International Open. A total of 164 manuscripts has been published in Planta Medica in 2018. The impact factor increased to 2.494. The average turnaround time from submission to first decision (by regular editors) is 28 days. It takes less than 15 days from article acceptance to e-first publication. The Planta Medica Best Paper Award was given to the authors Nurkhalida Kamal, Christina V. Viegelmann, Carol J. Clements and RuAngelie Edrada-Ebel for the manuscript: "Metabolomics-Guided Isolation of Anti-trypanosomal Metabolites from the Endophytic Fungus *Lasioidiplodia theobromae*" during the Editorial Board Meeting in Florence, Italy (July 2018). The Special Issue in Honor of Prof. Dr. Robert Verpoorte was published in August 2018 (Guest Editor: Prof. Young Hae Choi). Further special issues that have been published: Cannabis (J. Gertsch, 4/2018), Quality Control (S. Glasl, I. Khan, 6_7/2018), Women in Natural Products Science (A. Braca, J. Rollinger, V. Butterweck, 9_10/2018). Special issues in preparation include: Dermatology (A. Hensel), Special Issue on the occasion of the 70th birthday of Cosimo Pizza, Neuroprotection (J.L. Rios). She presented the CSEARCH Molecule/Structure Check – a user-friendly service that allows to check for C-NMR structures and performs similarity checks in a data base of more than 181 billion spectra which is available at <https://www.thieme.de/de/planta-medica/authors-5605.htm>. Submission and acceptance numbers were presented for Planta Medica International Open. At the end she thanked all authors and editors for their work and contributions and invited all members to submit papers, and proposals for reviews and special issues.

Report of the Working Groups

Communication Working Group (Chair: O Kayser): The GA will introduce a position for a Scientific Officer. This position will support the annual congress preparation as well as other events organized by the GA and support fundraising activities with the aim to guarantee continuity in professional business administration of the society. Expected

tasks to be performed by the Scientific Officer and the costs for the position were presented.

Awards (Chair: A.R. Bilia): Three awards were announced in 2018, namely the Egon Stahl-Award in Bronze, the Dr. Willmar-Schwabe Research Scholarship 2018, and the Dr. Willmar Schwabe-Award 2018. The ESA Bronze was given Dr. Emmy Tuenter. The Dr. Willmar-Schwabe Research Scholarship 2018 for Young Scientists to Barbara Michalak, and the Dr. Willmar Schwabe-Award 2018 to Dr. M. Engel.

Young Researcher Working Group (chair: R. Fürst): Prof. Robert Fürst presented the new composition of the working group, the travel grant committee and the Webinar working group. The activities of the working group were presented, namely the awarding of travel grants and the organisation of the Young Researchers Workshop. He reported on the progress of the Webinars and gave an outlook on the next season of Webinars which will be available as recorded talks only.

African Research Network (chair: C. Vissienon): Dr. C. Vissienon presented the new composition of the working group and the progress of core activities. A mission statement and short- and long-term goals were defined and a call for registration was published in the last newsletter (GA-Newsletter 1-2018). She announced the upcoming African Research Workshop, which will be organized as a pre-conference event to the annual GA meeting in Innsbruck on Sunday Sep 1, 2019.

Report Foundation "Plants for Health" Prof. Rudolph Bauer

Prof. Bauer presented the current activities of the foundation. The annual meeting of the Foundation Board took place on July 17, 2018. The second research award was suspended due to lack of adequate applications, and thus, the awarded grant of the third research award, which is already advertised, will be increased to 4.000 EUR. He reported about advertising activities and discussions with the GA about a closer collaboration and sustainable financial support of the foundation.

Future congresses, symposia and workshops

GA 2019: Innsbruck, Austria (organizer: Prof. H. Stuppner); Prof. H. Stuppner reported about the current status of the congress preparations and gave an overview about congress venue, programme and social events. It was agreed that the social event will be announced as 'conference event' including a visit of the Swarovski Kristallwelten and a light dinner (finger food). The costs will be included in the registration fee to allow the participation for all congress participants. An additional conference dinner will not be necessary any more.

Phytopharm 2019, June 24–26, 2019, St. Petersburg

Cannabis – Phytochemical, Pharmacological and Clinical Evidence, Nov 15, 2018, Vienna, Austria

European Conference on Natural Product Biotechnology, Sep 20–21, 2018 Dortmund, Germany

8th Symposium on MAP, Sep 10–13, 2018 Bonn, Germany

7th Mistletoe Symposium, Nov 7–9, 2019, Nonnweiler, Germany

30th International Symposium on the Chemistry of Natural Products and the 10th International Conference on Biodiversity (ISCNP30 & ICOB10), 25–29 Nov. 2018 in Athens, Greece

Proposal for Change of Bylaws

A proposal to change the bylaws of the GA was circulated by the treasurer to all GA-members via e-mail on August 14, 2018, for the purpose to connect the Plants for Health foundation closer to the GA. The proposed new wording of the bylaws was presented in German and English. The final paragraph to be inserted at the end of §3 of the GA by-

laws in English was set as follows: “Surplus that is generated by a commercial operation (e.g. during the yearly congresses) of the GA can be paid over to the foundation for statutory use or can be added to the assets of the foundation to preserve the non-profit character of the GA. The amount of the donation to the foundation and the dedicated use will be decided each year by the Board of Directors during the Board of directors meeting.” A vote among all present GA-members resulted in 32 votes in favor and 2 against. The proposal was accepted.

Some Data from the Membership Data Base

New GA members

In 2018 the following 118 members have joined our Society:

Oluwasegun **Adedokun**, Nigeria; Mariia **Biehunova**, Germany; Salwa **Bouabdallah**, Tunisia; Gerold Armin **Evanzin**, Austria; Farnoosh **Fattahi**, Iran; Leslie Quianeth **Gomez Ramirez**, Mexico; Hilou **Hilou**, Burkina Faso; Anna Maria **Iannuzzi**, Italy; Samantha **Mills**, USA; Candy Andreina **Montaño Pérez**, Mexico; Wande **Oluayemi**, Nigeria; Aikaterinh **Papakonstantinou**, Greece; Thanet **Pitakbut**, Germany; Barbara **Reher**, Germany; Amanda **Respass**, USA; **Rivière**, France; Angelica Nallelhy **Rodriguez Ocampo**, Mexico; Gabriela Victoria **Ruiz Castillo**, Mexico; Agnieszka **Soltys**, Poland; Kiran Shaker **Sudha**, India; Ammar **Tahir**, Austria; Nicole **Teusch**, Germany; Timo **Thumann**, Austria; Jarel Elgin **Tolentino**, Philippines; Ekaterina-Michaela **Tomou**, Greece; Uddin **Shaikh Bokhtear**, Bangladesh; Reza **Mohsenian Kouchaksaraee**, Iran; Aman **Karim**, Pakistan; Martin **Fitzgerald**, Ireland; Furkan **Coban**, Turkey; Angelica Nallelhy **Rodriguez Ocampo**, Mexico; Abubakar **Mohammed**, Nigeria; Dhiraj Lakhichand **Jain**, India; Mohamed **Nooman**, Egypt; Amr **Al-kashef**, Egypt; Theresa **Vavvas**, Germany; Aliyu **Nuhu**, Nigeria; Aliyu **Nuhu**, Nigeria; Adam **My-**

narski, Poland; Eva **Mittermair**, Austria; Yasanandana **Wijayasinghe**, Sri Lanka; Benyakan **Pongkitwitoon**, Thailand; Archana **Joshi**, India; Kumaramagame Dona Krishanthi Peshala **Kumari**, Sri Lanka; Daniel **Foil**, Germany; Ernest **Oppong-Danquah**, Germany; Mohsin **Khan**, Pakistan; Kah Yean **Lum**, Australia; Simon Vlad **Luca**, Rumania; Mariia **Biehunova**, Germany; Simon **Remy**, France; Oluwasegun **Adedokun**, Nigeria; Huyen Thi **Tran**, Austria; Fatma Tosun, Turkey; Meryem Seyda **Erbay**, Turkey; Seçil **Karahüseyn**, Turkey; Nurdan **Yazıcı Bektaş**, Turkey; Teresa Marie **Pirker**, Austria; Panitch **Boonsongcheep**, Thailand; Rajasekaran **Aiyalu**, India; Lee Myeong Soo **Lee**, South Korea; Jungbin Song, South Korea; Michael **Fagbohun**, Nigeria; Jakub **Strawa**, Poland; Marta **Rogowska**, Poland; Faezeh **Fathi**, Iran; Christina **Barda**, Greece; Ekaterina-Michaela **Tomou**, Greece; Eirini **Baira**, Greece; Elodie **Bossard**, Greece; Evanthia **Dina**, Greece; Andreas **Douros**, Greece; Maria-Eleni **Grafakou**, Greece; Aikaterini **Papakonstantinou**, Greece; Pinelopi **Vlachou**, Greece; Aleksandr **Stremoukhov**, Ukraine; Damilola Alex **Omoboyowa**, Nigeria; Jennifer **Munkert**, Germany; Marion **Mackonochie**, Great Britain; James **Barlow**, Ireland; Hisae **Oku**, Japan; Raphael

Reher, USA; Kosar **Babanezhad-Harikan-dei**, Iran; Justine **Stehn**, Australia; Hyebeen **Choi**, South Korea; Mohammad-Taghi **Ebadi**, Iran; Yin-Quan **Tang**, Malaysia; Thanet **Pitakbut**, Germany; Nicole **Teusch**, Germany; Khaled **Nematallah**, Egypt; Humaira **Yasmeen**, Pakistan; Feng **Qiu**, China; Alok **Agarwaol**, India; Aaron **Koay**, Ireland; Talent **Chipiti**, South Africa; Marco Aurelio **Rodriguez-Monroy**, Mexico; Maria Margarita **Canales-Martinez**, Mexico; Massimiliano **D'Ambola**, Italy; Pille **Wetterauer**, Germany; Laura **Weber**, Germany; Gerold Armin **Evanzin**, Austria; Evangelia **Tsiokanou**, Greece; Aleksandar Ž. **Kostić**, Serbia; Claudia **Simões-Pires**, Switzerland; Ofo-sua **Adi-Dako**, Ghana; Xuehong **Gao**, Austria; Venumadhav **Kusuma**, India; Wande Michael **Oluayemi**, Nigeria; Céline **Rivière**, France; Amanda **Respass**, USA; Julie **Carette**, Belgium; Felicitas **Mück**, Norway; Fatimah **Lawal**, South Africa; Jarel Elgin **Tolentino**, Philippines; Katrin **Fischhuber**, Austria.

GA warmly welcomes all new members and hopes that the Society may serve them as an international platform for many scientific and personal contacts.

Dr. Heba Aziz-Kalbhenn, GA Secretary

Announcement of the Egon Stahl-Award in Bronze 2019 of the Society for Medicinal Plant and Natural Product Research (GA)



Egon Stahl-Award in Silver 2019 of the Society for Medicinal Plant and Natural Product Research (GA)

On the occasion of his 60th birthday, Professor Dr. Dr. h.c. mult. Egon Stahl donated a

medal, a document and a monetary prize in order to recognize and promote young scientists working in the field of Pharmacognosy (Pharmaceutical Biology) and Analytical Phytochemistry.

As a rule, the silver medal and an award of €3,000 should be awarded to scientists up to the age of about forty, who have published outstanding scientific work during the years following their graduation.

In 2019 the ESA Silver Award will be given during the **67th International Congress and Annual Meeting of the Society for Medicinal Plant and Natural Product Research (GA), Innsbruck, Austria, September 1–5, 2019.**

Members of the Society for Medicinal Plant and Natural Product Research (GA) are invited to submit nominations for candidates together with supporting data to the Presi-

dent of GA and Head of the Awards Committee, Prof. Dr. Anna Rita Bilia.

A nomination for the prize has to include a motivation letter explaining the significance of the scientific achievements of the candidate, a curriculum vitae of the candidate, an index on her/his publications, and reprints of several of his/her more recent publications. All publications can be taken into consideration. **Deadline for submissions for the**

Egon Stahl-Award 2019 is March 15, 2019.

All documents have to be submitted by e-mail to: Prof. Dr. Anna Rita Bilia, Department of Chemistry, University of Florence, I-50019 Sesto Fiorentino, Florence, Italy; e-mail: ar.bilia@unifi.it

November 2018, Prof. Dr. Anna Rita Bilia, GA President

Announcement of the Dr. Willmar Schwabe Research Scholarship 2019 for Young Scientists by the Society for Medicinal Plant and Natural Product Research



Dr. Willmar Schwabe
From Nature. For Health.

Awarding Institution: Society for Medicinal Plant and Natural Product Research (GA)
Endowing Sponsor: Dr. Willmar Schwabe GmbH & Co. KG, Karlsruhe (Germany)
Endowment: 10,000 EURO

Objective: The aim of the **Dr. Willmar Schwabe Research Scholarship for Young Scientists** is to support young scientists, especially from developing countries, in a research attachment to a leading research institution. Projects focusing on pharmacological or clinical research of phytopharmaceuticals and their active substances are particularly welcome. The award is exclusively used for travelling and living costs of the awardee, and not for consumables. Duration of the attachment of at least 6 months is mandatory.

Criteria for Application

- Advanced PhD students (year 2 onwards), and postdocs.
- In case of similar scientific quality of applications, those from developing countries shall have priority.
- GA membership for at least one year prior to application, with paid fees.

- Age: preferably 30 years of age (postdocs) or younger (PhD students).
- The hosting institution states in the Letter of Acceptance that (i) it is prepared to cover the cost of consumables used for the research project; (ii) that the student will have an adequate laboratory infrastructure and; (iii) that a tutor is assigned who will supervise the applicant during his/her stay.

Documents for Application

- Letter of Motivation (applicant)
- Letter of Support (supervisor)
- CV and list of publications
- Project description including experimental design, time schedule and justification why the research shall be performed in the respective institution
- Letter of Acceptance (hosting institution)
- Confirmation of the host institution to cover the laboratory costs (consumables)
- Specification of costs for travelling and living

The Dr. Willmar Schwabe Research Scholarship for Young Scientists will be bestowed in a ceremony during the will be

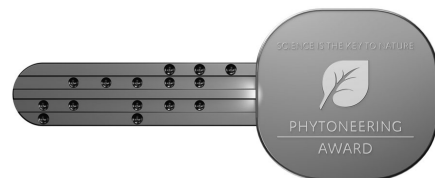
granted during the 67th International Congress and Annual Meeting of the Society for Medicinal Plant and Natural Product Research (GA), Innsbruck, Austria, September 1–5, 2019. The scientific results of the project shall be presented during the next annual congress, preferably in a short lecture. The awardee has to prepare a final report on the project supported by this grant. This report is to be signed by the head of the host institution. A copy of the signed report has to be sent to the GA president and to Dr. Willmar Schwabe GmbH & Co. KG. In case of publication of the results the award has to be mentioned in the Acknowledgement.

The deadline of submissions for the 2019 announcement is **February 28th 2019.**

Applications are to be sent in electronic form, attached to an e-mail to: Prof. Dr. Anna Rita Bilia, Department of Chemistry, University of Florence, I-50019 Sesto Fiorentino, Florence, Italy; e-mail: ar.bilia@unifi.it

November 2018, Prof. Dr. Anna Rita Bilia, GA President

Bionorica Phytoneering Award 2019 of the Society for Medicinal Plant and Natural Product Research (GA)



BIONORICA SE is globally one of the leading companies in the area of phytopharmaceuticals producing plant-based medicines with proven efficacy, safety and quality. BIONORICA's Headquarters are located in Neumarkt i.d. Opf. (Germany/Bavaria). The company is family owned since more than 80 years.

A significant focus of BIONORICA's work is concentrated on R&D activities with annual capital investments of about 15% of the company's turnover. Although the centre of all R&D activities is in Neumarkt, BIONORICA has established further research institutes in Innsbruck (Austria) and Hong-Kong. In addition, BIONORICA has built a

scientific network with multiple renowned institutions, organizations and scientists worldwide.

The *Bionorica Phytoneering Award* (BPA) acknowledges outstanding research in the field of development and application of herbal medicinal products. The award is

endowed with 10,000 €. The purpose of the award is to motivate primarily young scientists (normally younger than 45 years of age) to perform research in phytomedicine focusing on following areas: generally any new discovery and innovative application related to phytomedicine; pharmacodynamics and pharmacokinetics of herbal medicinal products and their active principles; clinical research in the areas of respiratory tract infections, inflammation, women's health, pain, oncology and metabolic syndrome; safety and pharmacovigilance studies.

Scientists or research groups of universities and other non-commercial scientific institutions are entitled to apply.

The *Bionorica Phytoneering Award* will be granted during the **67th International Congress and Annual Meeting of the Society for Medicinal Plant and Natural Product Research (GA), Innsbruck, Austria, September 1–5, 2019**. The award-winning scientific results shall be presented during the congress in a lecture of 30 minutes.

Scientific publications on a specific topic which have been published during the last three years will be considered. They must be submitted in **electronic form** via e-mail until **15th March 2019**, along with a CV and a list of publications to the president of GA, Prof. Dr. Anna Rita Bilia, e-mail: ar.bilia@unifi.it

November 2018, Prof. Dr. Anna Rita Bilia, GA President

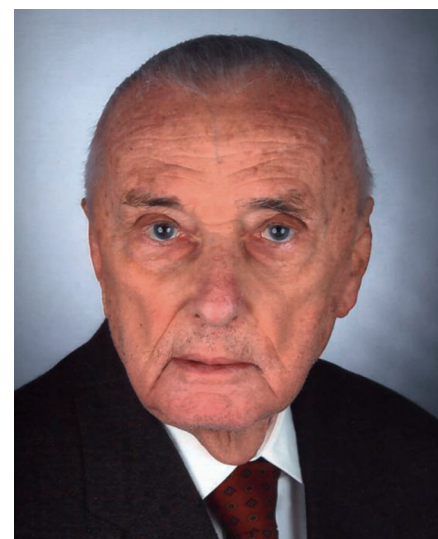
Obituary, Awards and Honours

Obituary: Professor Dr. Rudolf Hänsel passed away in June 2018 at the age of 98

The honorary member of GA, Prof. Dr. Rudolf Hänsel, Professor Emeritus of Pharmacognosy (1956–1987) at Freie Universität Berlin died on June 14, 2018. He was born in Bohemia/Zinnwald in 1920 and studied Pharmacy at Ludwig-Maximilians-Universität München. After having obtained the licence to work as pharmacist in 1947 he started his doctoral studies at his university and finished the dissertation in 1950 continued by the habilitation in 1955, also at Ludwig-Maximilians-Universität München. In 1956, already, he was appointed as professor for Pharmacognosy at the Institute of Pharmacognosy at Freie Universität Berlin. Until his retirement in 1987 he was director of his institute and a very successful university teacher and researcher well-known in Europe. The Society of Medicinal Plant and Natural Product Research granted him the honorary membership in 2003. His scientific work was characterized by natural product research in the field of European and rather exotic medicinal plants, e.g. Kava-kava. His extensive scientific work

started with isolation, structural characterization and biological testing and was continued by elaborated analytical procedures which were published in monographs of pharmacopoeias. All German speaking students of pharmacy know the famous textbook of Pharmacognosy he founded together with Ernst Steinegger in 1963. Rudolf Hänsel continued and guided 9(!) editions of this textbook until 2010, then together with Prof. Otto Sticher, also honorary member of our Society. It was rather spectacular that an author was able to edit a textbook over such a long time period with excellent quality and updated content. The names of Prof. Hänsel and Prof. Sticher are also mentioned in the current 10th edition from 2015. All readers of Hager's Handbook know the name Rudolf Hänsel because of the long period he was engaged in editing this lexical reference work.

After his ninetieth birthday he was honored with the Aurelius-Celsus-Medal by the German Zentralverband der Ärzte für Naturheil-



verfahren in 2002 and the honorary membership of the German Pharmaceutical Society/National group Bavaria.

Due to his scientific work and his textbooks Prof. Hänsel will always be remembered by researchers active in natural product chemistry and Pharmacognosy.

Prof. Dr. Matthias F. Melzig, Freie Universität Berlin

Obituary: Professor Dr. Horst Rimpler passed away in August 2018 at the age of 82

Professor Dr. Horst Rimpler, Professor Emeritus of Pharmacognosy (1956–1987) at the Institute of Pharmaceutical Biology at the Albert-Ludwigs-Universität Freiburg, Germany, passed away at 24. August 2018 in the age of 82.

Horst Rimpler, born in Berlin, studied Pharmacy from 1957 to 1960 at University of Berlin. After his dissertation (1964) at the Institute of Pharmacognosy under the mentor-

ship of Prof. Dr. Rudolf Hänsel he obtained in 1969 his habilitation at the same institute. 1976 he took over the chair of the Institute of Pharmaceutical Biology at University of Freiburg where he worked until 2000. His main scientific interest was dedicated to phytochemistry and pharmacology of traditional medicinal plants from Europe and South America. Especially iridoids from Verbenaceae and Lamiceae have been investigated in great detail by him. At this time he



started also to use brand new techniques and strategies of combining morphology, phytochemistry and computer-assisted evaluation methodology. Additionally structural investigations on tannin-containing plants, especially concerning oligomeric proanthocyanidins got more and more into the focus of his research.

More than 30 PhD students finished their graduation under his mentorship. Many text books and monographs have been edited and compiled by Prof. Rimpler. He was co-editor of "Hagers Handbuch der Pharmazeutischen Praxis", author of the text book "Pharmazeutische Biologie 1" and of the famous text book "Biogene Arzneistoffe".

Due to his scientific work Prof. Rimpler will always be remembered by all researchers active in natural product chemistry and pharmacognosy.

Prof. Dr. Michael Heinrich, London
Prof. Dr. Andreas Hensel, Münster

Dr. Willmar Schwabe Research Scholarship 2018 to Barbara Michalak



Dr. Willmar Schwabe
From Nature. For Health.

The aim of the **Dr. Willmar Schwabe Research Scholarship for Young Scientists** is to support research of young scientists, especially from developing countries, to join a leading research institution for at least 6 months. Projects focusing on pharmacological or clinical research of phytopharmaceuticals and their active substances are particularly welcome.

The 2018 Research Scholarship was awarded to Barbara Michalak from the Department of Pharmacognosy and Molecular Basis of Phytotherapy of the Medical University of Warsaw, Poland. With the support of scholarship she joined the group of Prof. Andrea Floto at the Cambridge Biomedical campus in Cambridge, UK, to carry out a project entitled "Antiinflammatory and anti-

bacterial properties of selected extracts and pure compounds isolated from plants used in traditional medicine to treat respiratory diseases". The award was given by Dr. Günter Meng, Dr. Willmar Schwabe Company.

Barbara Michalak will present the results of her project at the 2019 GA Congress in Innsbruck, Austria.

Dr. Willmar Schwabe-Award 2018 to Dr. med. Matthias Engel



Dr. Willmar Schwabe
From Nature. For Health.

The Dr. Willmar Schwabe-Award as acknowledgement of outstanding results in pharmacological and/or clinical research in the field of medicinal plants and natural products. The aim of the award is to motivate preferentially young scientists (normally 40 years or younger) to resolve phytotherapeutic and phytopharmaceutical problems in

an interdisciplinary approach, in order to support the evidence-based use of natural products. The 2018 Dr. Willmar Schwabe-Award was given to PD Dr. med. Matthias Engel, Senior Physician of Internal Medicine, Department of Medicine, at Erlangen University Hospital, Germany, for his excellent research "The role of transient receptor

potential (TRP)-receptors in nociception and inflammation in the context of inflammatory bowel disease".

The award was handed over by Dr. Günter Meng, Dr. Willmar Schwabe Company.

Egon Stahl-Award in Bronze 2018 to Dr. Emmy Tuentler



On the occasion of his 60th birthday, Professor Dr. Dr. h.c. mult. Egon Stahl donated a medal, a document and a monetary prize in order to recognize and promote young scientists working in the field of Pharmacognosy (Pharmaceutical Biology) and Analytical Phytochemistry. The Bronze Medal is awarded to young scholars up to the age of thirty whose PhD theses are of outstanding quality.

Pharmaceutical Sciences, University of Antwerp, Belgium. Dr. Tuentler obtained her PhD in Pharmaceutical Sciences at the University of Antwerp with an outstanding thesis in the field of Pharmacognosy and Analytical Phytochemistry entitled "Cyclopeptide Alkaloids: Isolation, Structure Elucidation, Antiplasmodial Activity and AGEs Inhibiting Properties". Her PhD fellowship was granted by the Agency for Innovation by Science and Technology in Flanders.

Dr. Tuentler has already receive some prizes and awards and her active involvement in many different projects has resulted as an impressive list (for a junior scientist) of 19 publications in international scientific journals.

The award was given by the President of GA, and Dr. Tuentler delivered a lecture on her research during the GA session of the congress.

The 2018 Bronze Medal was awarded to Dr. Emmy Tuentler from the Department of

Qihuang Prize to Prof. Dr. Anna Rita Bilia

This year the prestigious China Association of Chinese Medicine has bestowed the International award "Qihuang Prize" dedicated to non-Chinese citizens two European scientists, Prof. Dr. Anna Rita Bilia, the GA president and Dr. Mei Wang of the LU-Euro-

pean Center for Chinese Medicine and Natural Compounds, of the Institute of Biology of Leiden University (The Netherlands) for their studies in the field of Traditional Chinese Medicine. Prof. Bilia and Dr. Mei received the prize on 25th November 2018 in

Shanghai, China. Award was given by the ministry of health Wang Guo Qiang and Yu Wen Ming, the general director of state administration of TCM.

Honorary Doctoral Degree for Prof. Dr. Matthias Melzig

The Medical University of Warsaw (Warszawski Uniwersytet Medyczny), Poland, honored within an academic symposium at 14.12.2018 GA member Prof. Dr. Matthias Melzig, Berlin, with the Honorary Doctoral Degree *Doctor honoris causa*. As stated by the Dean of the Pharmaceutical Faculty and the Rector of the University, Matthias Melzig contributed over many years immensely

within the cooperation between both universities in Warsaw and in Berlin, and pushed forward enormously the science and many joint projects in the field of pharmacognosy and medical plant research.

GA congratulates to Prof. Dr. Dr. h.c. M. Melzig



Meeting Reports

66th Annual Meeting of GA in Shanghai, PRC

The 66th Annual Meeting of the Society for Medicinal Plant and Natural Product Research (GA 2018) jointly with the 11th Shanghai International Conference on Traditional Chinese Medicine and Natural Medicine (S-TCM 2018) was held in Shanghai, China, from 26th to 29th August, 2018. More than 700 participants from 50 countries gathered for the conference, taking place at the Parkyard Hotel, located in the Pudong New Area.

The conference started on 26th August with three pre-meeting workshops, Young Researchers Workshop, chaired by Alessandra Braca and Jürg Gertsch, and co-chaired by Anastasia Karioti and Robert Fürst, Traditional Chinese Medicine workshop organized by Jing-Yan Han, and the Regulatory Affairs Workshop chaired by Werner Knöss.

The Young Researchers Workshop started with an impulse lecture by Prof. Dr. Xiaohui Fan, followed by a Meet-the-Expert session and ten selected short lectures. In Traditional Chinese Medicine workshop, four prominent speakers from Chinese universities or hospitals addressed their scientific research on the mechanism of TCM herbal formulas and TCM theory. During Regulatory Affairs Workshop, regulators or experts from FDA, BfArM, EDQM or Chinese representative gave talks on the status quo in regulatory aspect for herbal or traditional medicines in their own systems, following by an inspiring discussion on how to harmo-

nize and globalize TCM in the international arena.

The Main Congress formally inaugurated on August 27th with the opening, GA award ceremony and the Commemoration. Conference Chair, Prof. De-an Guo, from Shanghai Institute of Materia Medica, CAS, Dr. Qigao Zhu, Deputy Director representing Science and Technology Commission of Shanghai Municipality, Dr. Jian-zhong Shen, Deputy Director of China National Center for Biotechnology Development, Ministry of Science & Technology of China, Dr. Huai-qiong Zhang, Deputy Director, Shanghai Municipal Commission of Health, and Prof. Hua-liang Jiang, Director of Shanghai Institute of Materia Medica, CAS, delivered the welcome addresses to the conference.

Prof. Anna Rita Bilia, the president of GA formally announced and addressed the opening of the 66th Annual Meeting of the Society for Medicinal Plant and Natural Product Research (GA 2018), followed by handing over of the GA Travel Grants, the bestowment of the Dr. Willmar-Schwabe Research Scholarship, the Dr. Willmar Schwabe-Award, the Egon Stahl-Award in Bronze Award, the Planta Medica Best Paper and Special Issue. The Dr. Willmar Schwabe Research Scholarship went to Barbara Michalak, Department of Pharmacognosy and Molecular Basis of Phytotherapy of the Medical University of Warsaw, Poland. The Dr. Willmar Schwabe-Award



went to PD Dr. med. Matthias Engel Senior, Physician of Internal Medicine, Department of Medicine, Erlangen University Hospital, Germany, The Egon Stahl Award in Bronze went to Dr. Emmy Tuenter. The opening ceremony closed with the Commemoration of the 500th anniversary of Li Shi-zhen, the most celebrated herbalist ever who compiled the great book *Compendium of Materia Medica*, with a 7 minutes video featuring the history and developing process of TCM in China since Li Shi-zhen era.

Plenary lectures were delivered by an array of world known professors like Rudolf Bauer, Kai-xian Chen, Yu-liang Zhao, Thomas Efferth, Judith M. Rollinger, Jean-Luc Wolfender, Anna Rita Bilia, and De-an Guo. Close to 100 invited or short lectures were delivered in three parallel sessions that were held during the three days of the conference, and over 300 posters were presented and discussed in two poster sessions held in the afternoon of 27th and 28th of August.

In the exhibition area, more than 20 exhibitors showed their brand and launched their latest products. The GA member's assembly took place in the evening of 28th August, with over 120 GA members attending.

Congress Dinner was intriguingly arranged on a boat cruise for a night view on the modern development of Shanghai along the bay of Huangpu River.

For the conference there was a "Guide" which included a program book, plenary speakers' resume, exhibitors & sponsors introduction and some other useful information. There was an interactive browsable agenda which could be checked both on computer and cell phone, and we had an "Abstract book" printed for every attendee. I would like to conclude that 66th Annual Meeting of the Society for Medicinal Plant and Natural Product Research (GA 2018) completed all the set goals in a satisfactory

manner and achieved wide applause in the GA members' crowds and also in Chinese counterparts with its first ever try to held the GA meeting out of European continent. We are looking forward to the success of 67th GA annual meeting in Innsbruck.

President, the Organizing Committee of GA 2018,
Prof. Dr. De-an Guo

GA strongly supports the career of postdocs and PhD students: 19 Travel Grants for young GA members from all over the world to join the 2018 annual meetings of the Society in Shanghai

25 applicants, including 3 postdocs, from 14 different countries applied for a travel grant

17 graduate students and 1 post doc were awarded



Graduate students

Addotey John	Germany
Andrade Joana M.	Spain
Goels Thomas	Austria
Hiebl Verena	Austria
Houriet Joëlle	Switzerland
Marquardt Peter	Germany
Michalak Barbara	Poland
Piazzini Vieri	Italy
Rivera Mondragón Andrés	Belgium
Schultz Fabien	Germany
Vontzalidou Argyro	Greece
Zwirschmayr Julia	Austria

Daneshfard Babak_	Iran
Eze Elijah Ajaegbu	Nigeria
Jibira Yakubu	Ghana
Tabefam Marzi	Iran
Treasure Ujam Nonye	Nigeria

Post Docs

Klein Luiz Carlos	Brasil
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12th Young Researchers' Workshop (YRW) 2018 – first time in China

The concept of this workshop was established 12 year ago: It aims at bringing together young scientists, in particular PhD students, for the presentation and discussion of their work, thus promoting presentation skills, scientific exchange and networking. In Shanghai, this concept was successfully continued. This year's YRW was chaired by Professor Alessandra Braca from the University of Pisa, Italy, and by Professor Jürg Gertsch from the University of

Bern, Germany. They were supported by Professor Krystyna Skalicka-Woźniak from the Medical University of Lublin, Poland, and by Professor Robert Fürst from the Goethe University Frankfurt, Germany.

The YRW started with an impulse lecture given by an established, but still young scientist. This year, Professor Xiaohui Fan from the College of Pharmaceutical Sciences, Zhejiang University, China talked about

"Transcriptomics-based TCM Network Pharmacology – from methodology to real-world applications". His great lecture provided an excellent insight into the current developments of this exciting field of natural product research.

About 60 participants gathered in one of the lecture halls of the Parkyard Hotel in Shanghai to listen to the presentations. All talks were of great scientific quality and the dis-

cussions were quite lively. The YRW ended with a wrap-up session and with a short discussion on future perspectives. The participants did not only appreciate the current format of the YRW, but also enjoyed the “meet the expert” lunch, which was joined by members of the board of directors of the GA. Most importantly, also the awards were bestowed in this closing session. Due to the generous support of Professor Gertsch and the company Bionorica SE (Neumarkt, Germany), we were able to award two prizes for the best presentations. The “Innovation

Award” by Jürg Gertsch (1,000 Euro) was bestowed to Timo Thumann and the “Bionorica YRW Award” of 600 Euro was given to Máté Vágvölgyi. Moreover, both awardees had the exciting opportunity to present their results also during the main conference program in front of a much bigger audience. The proud winners were honored in the opening ceremony of the congress.

Thanks to the very enthusiastic speakers, the high scientific standard of the presented work and the active audience, the YRW

2018 was a great success. The concept of a pre-symposium that is solely dedicated to our scientific youngsters has again proven to be of great importance for the congress and, thus, our society. The next YRW will take place in Innsbruck, Austria, on Sunday, September 1, 2019. We are very much looking forward to hearing about the latest research of highly talented young researchers!

Robert Fürst on behalf of the GA Working Group “Young Researchers”

GA Animal Workshop during the Shanghai meeting

Thanks to the efforts of the GA Executive Council Members and the local Organizing Committee, the 66th International Congress and Annual Meeting of the Society for Medicinal Plant and Natural Product Research (GA) in Shanghai was another opportunity for scientists and practitioners interested in veterinary phytomedicine to meet and exchange experiences. Topics related to natural product usage in animals were presented during one oral session “Natural products in health care and veterinary medicine” which was held on the last day of the congress as well as during two poster sessions which took place in the previous days. Delegates responsible for the presentations were representing numerous institutions from African and European countries. The oral session gathered an audience of a few dozen of listeners and generated an inspiring discussion. Similarly, the posters gathered significant attention, provoked interesting talks and certainly became an inspiration for further research activities. Besides, the presentation of experimental data was a chance for practitioners to update their knowledge and consider the practical use of newly generated data. The success of the short lectures session and numerous posters proves that the topic Animal Healthcare and Veterinary Medicine should become a permanent part of Annual Meetings of the Society for Medicinal Plant and Natural Product Research (GA).

A change in the Committee of the GA Animal Health Network

Anette van der Aa was member of the Committee of the GA Animal Health Network since the very beginning. She initiated and kept alive the e-mail activities of our Network to inform about recent events or interesting research results. Furthermore she co-organized all meetings including our meeting in Basel last year. As mother of young children and heavily involved in professional activities it was easy comprehensible that Anette wants to reduce some responsibilities – so she leaves our Commit-

tee. We are all happy that she will stay in close relation to our Network. Thank you very much, Anette, for your effort!

Fortunately Marta Mendel gladly agreed to complete our Committee again and enlarge it for one more country. Marta graduated from Warsaw University of Life Science, Faculty of Veterinary Medicine (2005), where she later received her doctorate (2010) and postdoctoral degree (2018). She continues her academic carrier as Associate Professor at the Faculty of Veterinary Medicine in Warsaw, Poland. Her main research fields focus on the verification of the effects of medicinal plants and their constituents on gut motility, liver metabolism and gut barrier integrity in livestock species. She is a member of the Society of Medicinal Plants and Natural Product Research since 2009 and an active member of the Animal Health Network group since 2015.

Future activities at the 67th GA-Congress in Innsbruck – Pre-Congress Symposium on the 1st of September 2019 and more ...

Thanks to Professor Hermann Stuppner, the local organizer of the GA-Congress 2019, we will have our next one-day Pre-Congress-Symposium “Animal Healthcare and Veterinary Phytotherapy: Science and Practice” on Sunday 1st September 2019 in Innsbruck, Austria. Invited key lectures as well as invited and contributing short lectures will be the base of a diverse program with regards to veterinary phytopharmacology, ethnoveterinary medicine, plant derived feed additives and clinical uses of natural products as well as herbal drugs and phyto-genic health care products in animals. Practitioners, scientists and industry in this field are invited to submit contributions, to participate and to have a broad discussion. Just like in 2017 in Basel, there will be enough space for professional, scientific and personal exchange during the breaks in the international industrial exhibition. During the main congress animal health will be the



Marta Mendel, representative of the committee of the GA Animal Health Network in Shanghai

theme of one keynote talk for the first time. Furthermore, one of the scientific parallel sessions as well as one poster exhibition will address our issue. All abstracts of the pre-congress symposium and of the main congress will be published in a special edition of “Planta Medica International Open”. The submission platform will open early 2019 (please have a look on the website: www.ga2019.at).

Looking forward to many interesting contributions and seeing you all soon in Innsbruck,

Dr. Marta Mendel and Dr. Michael Walkenhorst for the Committee of the GA Animal Health Network

Tetranational Phytotherapy Conference 2018 in Vienna

The International Phytotherapy Congress “Phytotherapy 2018 – with Phytotherapy to the Future” took place from May 31 to June 2, 2018 in the Pharmacy Center of the University of Vienna (Austria). It was organised by the phytotherapy societies of Austria (OeGPHYT), Germany (GPT), Switzerland (SMGP) and the Netherlands (NVF) together with GA, ESCOP and OePhG (Austrian Pharmaceutical Society). A total of 289 registered participants took part at this congress. There were 22 lectures, 56 posters and 2 plenary discussions. The main topics were: Cannabis; infectious diseases; CNS diseases; inflammation; regulatory affairs. According to the big tradition of Vienna as “City of Music”, the congress was opened by two movements from the “Grand Trio” by Beethoven which the composer had dedicated to Johann Adam Schmidt who used the terms “Pharmacognosis” and “Pharmacodynamics” for the first time in 1811. Another highlight was the visit at the “Heurigen” Fuhrgassl-Huber on June 1 in the evening where the fine weather allowed to sit outside



and to enjoy Viennese food and wine during a pleasant summer night.

We are looking forward to preparing the next international phytotherapy congress in Zurich (Switzerland) on June 12–13, 2020.

Dr. Heribert Pittner, Vienna

GA supported conference: Emerging trends in Natural Product Biotechnology



The biotechnology of secondary natural product plays a more and more important role in drug and gene discovery as well in pharmaceutical bioengineering. The symposium *Emerging Trends in Natural Product Biotechnology* held at TU Dortmund University from 20th to 21st September 2018 gave a forum for intensive discussions and talks on various topics like natural product biosynthesis, pathway design, metabolic engineering and biocatalysis. Prof. Nett, Prof. Kayser and Prof. Lütz organized the international two day symposium to bring experts from genetics, natural product chemistry and biotechnology together.

Prof. Birger Møller from Copenhagen University gave an excellent key note lecture on recent status of plant cytochrome biochemistry and future development of artificial plant pathways in designed. An outstanding talk was delivered by Dr. Jan Marienhagen, FZ Jülich, about pathway design for polyphenols in bacteria and yeast. As well, early carrier scientist got many opportunities for presenting own research and projects. Overall a fruitful discussion started after all talks showing the high interest in pushing this young field of natural product biotechnology forward.

The hosts acknowledged deeply the support of GA without this meeting would not have been possible. “This is an excellent primer for future meetings on a still neglected topic in natural product research” to cite Prof. Kayser. In times of Metabolic Engineering, an exploding number of genomes and analytical OMIC technologies, medicinal plants will stay tuned as attractive objects of life science research.

Oliver Kayser, TU Dortmund University

GA supported conference: Rural Entrepreneurship is challenge and solution for modern medicinal plant breeding in Europe

GA invited to join the workshop “Supporting rural entrepreneurship through the production and exploitation of medicinal and aromatic plants” (www.remap-project.eu) held at the DFA meeting on 12th September 2018 in Bonn, Germany. Speakers from academia, industry and regulation bodies gave their insight view to problems and challenges for farmers starting new business in medicinal plant cultivation. Based on the outcome of a two-year EU project coordinated by EcoHerbal S.C., Romania, data and figures of the report were discussed. Prof. Adam Matkowski from the University of Wroclaw, Poland, explained the importance of accepting natural variability (biotic and abiotic factors) of plants in an industrial breeding process. Plant biology is still very complex and facing many questions to get

a fully standardized breeding and cultivating process today. He gave an insight in limitations and potential of micropropagation in the near future. Even new aspects of epigenetics, plant-microbe-interactions and or simple choice of variety will still provide more questions than answers. Dr. Hansjörg Hagels, Boehringer Ingelheim, Germany, gave a very personal view and explained the industrial perspective ruled by high quality demand according to pharmacopeia but also by economic factors. In a constant growing market medicinal plant extracts but also pure natural product will play a crucial play and need international reliable supply chains. Besides of keeping broad global biodiversity and avoiding species extinction, wild plant collection is getting very problematic due to costs and legal restric-

tions (e.g. Nagoya protocol). More cultivation by trained farmers is welcome and one important way of meeting future demands. Dr. Hagels lined out the pre- and post-harvesting process from outdoor cultivations, where bottlenecks in industry (yield, pesticides) are and how industry keeps up sustainable cultivation (yield, genetic variability, plant biotechnology) over years by integrating constantly recent scientific methods. The important legal perspective was provided by Dr. Reh, BfArM, Germany. Regulating agencies have a special view on herbal medicinal products (HMP) and Dr. Reh wants to see them as a partner for industry for the development of European guidelines. With regard to the action, GACP and GMP as international standards must be introduced to farmers and they must be aware of them. This should not be seen as stumbling block, but as a hurdle to take and to ask later for higher selling prices for better products.

In the afternoon session EcoHerbal S.C. presented the report on rural entrepreneurship and education in South-East Europe. Medicinal plant agriculture shows many opportunities for various economic developments to gain prosperity in mostly neglected rural areas. It is obvious that farmers must be trained to see legal requirements for medicinal plant breeding but also delivering high quality will be of advantage to gain higher selling prices. All speakers pinpoint that there is a gap of knowledge between highly motivated and untrained farmers and pharmaceutical industry being strictly ruled. Overall, this EU initiative shed light on hid-



Mr. Use, EcoHerbal S.C. introducing data on the outcome of his study

den opportunities in South East Europe where climate conditions for farming for most commercially important plants are very good. The initiative showed clearly the urgent need to establish training programmes at applied high schools or universities in cooperation with NGO and industry. Here, GA will stay as a reliable partner and will stay active and address these questions at future annual meetings and associated working groups of the society.

Oliver Kayser, TU Dortmund University



INSTITUTE OF PHARMACY
ST. PETERSBURG

PHYTOPHARM 2018

22st International Congress
25-27 June 2018, Horgen, Switzerland



Zürich University of Applied Sciences
zhaw Life Sciences and Facility Management
Institute of Chemistry and Biotechnology
PSE:

The 22nd International Congress PHYTOPHARM 2018 was successfully held in Horgen and ZHAW Wädenswil from 25 till 27 June 2018! Ever since the first Phytopharm conference in 1990, it has become one of the important events of the year in Phytopharmaceutical Science, aiming to present interesting, state-of-the-art research relevant to professionals working in various

fields of herbal medicinal plants and natural product research, and to foster networking and collaboration across the globe and building bridges between East and West. This year, more than 270 participants from 40 countries, namely Algeria, Australia, Austria, Bulgaria, Brazil, China, Croatia, Czech Republic, Egypt, United Kingdom, Finland, France, Germany, Greece, Hun-

gary, India, Indonesia, Iran, Italy, Japan, Latvia, Moldova, Nigeria, The Netherlands, Norway, Philippines, Poland, Romania, Russia, Saudi Arabia, Senegal, Serbia, Slovenia, South Korea, Switzerland, Thailand, Turkey, USA, Vietnam, and Zimbabwe have accepted our invitation and have come to Switzerland. The scientific program of PHYTOPHARM covers natural product

research from phytochemical studies, safety, efficacy and quality aspects until phytotherapeutic and other health related applications. The aim of the congress is to serve as a forum for discussions on trends, and the latest results, and to exchange ideas relating to phytochemical analysis, ethnopharmacology, TCM and Tibetan medicine, pharmacology, safety and clinical trials of natural products as well as biotechnology. In total, 105 posters, 15 plenary, and 47 short lectures were presented during the three days of the congress. In addition to plenary lectures – 8 parallel sessions allow an appreciable number of participants to present results in oral talks – featuring one special young research session each day. 171 abstracts were published in the special issue of the journal and “Reviews on Clinical Pharmacology and Drug Therapy”. Most ac-

tive were scientists from Switzerland, Germany, and Russia.

The poster sessions at central time frames within the congress also provided an opportunity for scientific discussions. In addition, the Natural Health Science Foundation (NHSF) held its inaugural meeting at the Congress and has offered a poster prize for outstanding applied research in Quality Assurance and Clinical Equivalence. The prize has been awarded to Dr. Olaf Kelber (Bayer-Steigerwald) and coauthors Prof. Karin Nieber (University Leipzig) and Prof. Karin Kraft (University of Rostock) for their poster “Safety assessment of herbal products: common pitfalls”.

The visit of the TCM Garden (www.tcm-garten.ch) at ZHAW Wädenswil as well as the

excursions to Max Zeller Söhne AG, Romanshorn, Vitaplant AG, Uttwil and Bioforce AG, Roggwil provided for a real and practical insight into plant based natural products and their sources.

Detailed information about congress is available on the web-site: <http://www.phyto pharm2018.ch>

We are looking forward to seeing you at the 23th International Congress PHYTOPHARM 2019 in Saint-Petersburg, Russia, on July 1–3, 2019!

Prof. V. Makarov, St. Petersburg and Dr. W. Evelyn, Zürich University of Applied Sciences

Next Conferences



Dear friends and colleagues,

on behalf of the Society for Medicinal Plant and Natural Product Research (GA), it is our great pleasure and honour to invite you to the 67th Annual Conference which will take place in Innsbruck, Austria, from 1st to 5th September, 2019. We hope to follow in the successful footsteps of the GA meetings in Copenhagen, Basel and Shanghai.

The scientific program will cover a large variety of topics in natural product research. Leading researchers from the academia and industry will present their recent achievements and will discuss the most exciting developments.

The congress will start on Sunday 1st of September, 2019 with three pre-congress events. The Young Researchers Workshop will offer a platform for young scientists to present their latest findings. A workshop on African Research Network and a pre-con-

gress Symposium on Veterinary Phytotherapy will round off the programme. The Regulatory Affairs Workshop will be held during the main conference and will serve as a forum for industry to update on the latest trends in regulation of phytomedicines and related areas.

The scientific programme of the Main Conference includes plenary lectures by invited speakers, award lectures, and contributed short lectures and posters. Short lectures will be held in three parallel sessions, and three poster sessions will provide a perfect forum for networking and lively scientific discussions. The meeting will be also an excellent platform for exhibitors to present their latest products and services.

Innsbruck, the capital of Tyrol, is located in the Alpine region of Austria, in the valley of the river Inn. It is surrounded by mountain ranges and numerous peaks which reach an altitude of approx. 2,700 metres above sea level. The city has 121,000 inhabitants and hosts one of the oldest universities in Europe, founded in the year 1669. Today, approximately 30,000 students attend the university in Innsbruck which will celebrate its 350 year anniversary in 2019. Due to its location, Innsbruck has an excellent tourist infrastructure and is best known for its rich cultural heritage, as well as for its endless opportunities in sports and recreation. Con-



gress Innsbruck as our venue offers a perfect setting for an international conference. It is located at the city center, next to the river Inn and within easy walking distance to the charming Old Town and to most hotels. There is no need to say that Innsbruck is readily accessible by air, railroad and car.

The conference evening event at Swarovski Crystal Worlds Wattens is planned on Monday evening and will be available for all delegates and exhibitors. We will update you with more details on our congress web-site (www.ga2019.at).

We look forward to seeing you in Innsbruck! On behalf of the Organizing Committee,

Prof. Dr. Hermann Stuppner

The African Research Network will meet during the 67th annual congress of the GA in Innsbruck



During the next annual congress of the GA, the African Research Network will organize a workshop to promote natural products research conducted in Africa. The workshop will take place as a pre-congress workshop

of the GA-conference on Sunday, 1 September 2019 in Innsbruck.

The African Research Network of the GA aims to stimulate and facilitate the interac-

tion of African researchers within the GA with the intention to foster the scientific development of the continent in the area of natural products research. Our goal is to promote and expand the regional research

capacity by providing a networking and exchange platform for scientists from Africa.

As an interaction platform for researchers from all over the world, the annual congress of the GA offers an ideal setting for an Africa-related networking event. Aim of the African Research Workshop 2019 is to present

and discuss natural products related research and to stimulate the dialogue between African scientists.

Researchers from Africa are cordially invited to join the African Research Workshop on 1 September 2019 in Innsbruck and present their scientific findings. A



Dear GA-members,

it is our utmost pleasure to invite you to the 6th World Congress on Medicinal and Aromatic Plants for Human and Animal Welfare (WOCMAP VI), which will take place between the 1st to the 5th of May 2019 in Antalya, Turkey.

WOCMAP is an official series of congresses that is part of the International Council for Medicinal and Aromatic Plants (ICMAP), which have been organized since 1992 in every five years on a different continent.

International Council for Medicinal and Aromatic Plants (ICMAP) is an international non-governmental body working to promote cooperation between national and international organizations on the impact of medicinal and aromatic plants in science, medi-

cine and different industries while working to increase the exchange of scientific information and trade volume between high value products and countries.

The first time ever WOCMAP was held in Maastricht, the Netherlands (1992) followed by WOCMAP II in Mendoza, Argentina (1997); WOCMAP III in Chiang Mai, Thailand (2003); WOCMAP IV in Cape Town, South Africa (2008) and WOCMAP V, in Brisbane, Australia (2014).

WOCMAP – heavily attended by chemists, biologist, pharmacists, physicians, medicinal and aromatic plant producers, cosmetic producers, academia, journalists and scientists in general – has been highly regarded as a congress covering all aspects of medicinal and aromatic plants ranging from ethnobotany, natural product chemistry, pharmaco-

call for contributions will be published at the beginning of next year. Please refer to the GA-website for the announcement.

Not a member of the African Research Network yet? Visit our website and fill out the registration form to join us!

ogy, biological activity, phytomedicines, standardisation, adulteration, (bio)technology, pharmaceuticals, marine veterinary medicines, cosmetics, food use/nutraceuticals, flavours and fragrances, regulatory activities to trade and commerce including uses for human and animal welfare.

Antalya is an excellent venue for organizing congresses, thanks to her natural, historical and cultural beauties and for being an attractive spot with excellent conferencing facilities. It is in close proximity to the International Airport and downtown.

You are cordially invited to attend the congress and contribute with your latest findings in the form of oral and/or poster presentations or expo of your products. More information is available on the website. Please follow the website for new announcements and info.

We look forward to meeting you next year in Antalya, Turkey.

Prof. Dr. Kemal Hüsnü Can BAŞER, President, WOCMAP VI <http://wocmap2019.org/>

Dr. Barbara Steinhoff Regulations and assessment of Herbal Medicinal Products in Europa: Current Developments

Herbal medicinal products have to fulfil the same requirements for quality, safety and efficacy like all other medicinal products. The regulatory framework is very complex and includes legal provisions, guidance documents of the European Medicines Agency (EMA), Pharmacopoeia monographs, and further specific rules issued by national health authorities. In the following, some recent developments from the past few months shall be presented and discussed.

New guidance documents of the HMPC

The numerous documents compiled by the Herbal Medicinal Products Committee (HMPC) at the EMA give guidance on specific requirements for quality, safety and efficacy of the products. Moreover, European Union herbal monographs provide all infor-

mation necessary for the use of a herbal medicinal product containing a specific herbal substance or preparation and are based on information on clinical and non-clinical data as well as long-standing use and experience in the EU. The HMPC meets six times per year, however, currently due to the EMA's scheduled move there are some restrictions with regard to the meetings of the Committees and its Working Groups. In 2018, many new or revised guidance documents were finalised, e.g. the updated, revised versions of the following monographs after assessment of new data: *Agni casti fructus*, *Cimicifugae rhizoma*, *Oenotherae biennis oleum*, *Pelargonii radix*, *Hederae helioides folium*. In June 2018, the final EU herbal monograph on *Silybi mariani fructus* was adopted by majority in the HMPC after two public consultations and published in October 2018. The agreed indication is "Tradi-



tional herbal medicinal product for the symptomatic relief of digestive disorders, sensation of fullness and indigestion and to support the liver function, after serious conditions have been excluded by a medical doctor". For soybeans (*Glycini semen*) a Public Statement was adopted which stated that there was not sufficient information available to establish a monograph. Moreover, it was agreed that a revision of the monograph was required for *Hippocastani semen*.

One of the reasons for revision might be the adaptation to the new Ph.Eur. monograph.

General information on the status of HMPC assessment work is available in the following lists which can be found on the HMPC website

<https://www.ema.europa.eu/en/committees/committee-herbal-medicinal-products-hmhc>:

- Inventory of herbal substances for assessment – proposals for assessment
- Overview of assessment work (Priority list)
- HMPC monographs: Overview of recommendations for the uses of herbal medicinal products in the paediatric population

In summer 2018, the following updated guidelines were released as drafts for public consultation:

- Quality of herbal medicinal products/traditional herbal medicinal products [1]
- Guideline on specifications: test procedures and acceptance criteria for herbal substances, herbal preparations and herbal medicinal products/traditional herbal medicinal products [2]

Both these documents underwent a complete revision taking into consideration cross-references to other new guidance documents as well as new requirements for testing potential contaminants. Moreover, the HMPC is working on a

- Concept paper on the development of a reflection paper on new analytical methods/technologies in the quality control of herbal medicinal products [3]

and invites interested parties to submit data, examples and comments on new methods/technologies used in quality control of herbal substances/preparations.

As a priority project, the draft Public Statement on herbal medicinal products containing estragole [4] is being discussed in the HMPC. The existing document proposes a maximum daily intake of 0.5 mg per day but based on new toxicological considerations, the HMPC might lower this limit. As a consequence, existing fennel tea products in the market would have difficulties to comply with such a new limit.

All drafts released for public consultation as well as the finalised documents and further important information can be found on the EMA website (www.ema.europa.eu).

Pyrrrolizidine alkaloid contamination by weeds

For several years now, a potential contamination of medicinal plant material with pyrrolizidine alkaloid (PA)-containing weeds e.g. *Senecio* species, is being discussed. In May 2016, the HMPC issued a “Public Statement” [5] recommending a transitional limit of 1.0 µg PA daily for three years. After that period, a daily limit of 0.35 µg PA will apply. The Public Statement also contains

three categories for the frequency of testing depending on the knowledge of potential contamination based on existing data. E.g. in case no or insufficient data is available, routine testing has to be performed.

Measures of the herbal medicinal products industry were started in Germany with the objective to avoid and/or reduce PA contamination as far as possible. Activities consisted e.g. in the adoption of a “Code of Practice” that was elaborated together with herb growers [6, 7]. This document provides a framework for the implementation of individual measures in pharmaceutical companies along the entire process chain from cultivation up to control and release of the finished product. Starting also in 2013, the German industry has established an extensive database compiling results of testing herbal drugs, herbal extracts and homoeopathic mother tinctures from currently 47 companies. Summary reports are submitted to the German BfArM and to the HMPC on a regular basis, to further health authorities upon request. The database results confirm that application of the Code of Practice permits an identification of critical herbal drugs and extracts as well as a continuous verification of the efficiency of the performed measures. It also shows that for most of the herbal drugs the limit of 1.0 µg PA/day related to the final product can be met, however, a general reduction to 0.35 µg PA/day by 31 May 2019 is not realistic.

With regard to the compilation of documents on specifications, analytical methods including validation data and reference substances to be submitted by companies, the development of a framework for a determination method in the European Pharmacopoeia is considered extremely useful. For this purpose, an expert group was founded at the European Directorate for the Quality of Medicines and Healthcare (EDQM).

Moreover, with respect to the solution of the extremely complex PA issue, research projects play an important role. The following projects might serve as examples for numerous activities in different areas:

- Data collection on weed flora in cultivated medicinal plants with specific view to PA-containing weeds (“weed data base”), public funding with participation of FAH (Forschungsvereinigung der Arzneimittel-Hersteller e. V.). The project also contains investigations on PA exposure from the soil conducted by Braunschweig University.
- Preparation of “weed characteristics” („Unkrautsteckbriefe“) for use in cultivation and collection, describing the species *Crotalaria*, *Echium*, *Heliotropium*, *Myosotis*, *Senecio*), established by member companies of FAH.
- Weed management in conventional and organic cultivation by selection of suitable herbicides or non-chemical methods.
- Development of methods for identification and mechanical separation of foreign matter from harvested material.

- Development of an immunological screening method (ELISA test) to determine toxicologically relevant levels of pyrrolizidine alkaloids in herbal teas and related matrices, public funding.
- In vitro testing of hepatotoxicity and genotoxicity of 10 selected alkaloids (University of Kaiserslautern/Germany) with the objective to allow a better comparability of the individual alkaloids, supported by Kooperation Phytopharmaka.

In September 2018, the University of Kaiserslautern organized a workshop “Risk assessment of pyrrolizidine alkaloids in food and herbal medicines: current status and way forward”. The experts’ presentations discussed chemistry, occurrence, exposure, toxicokinetics, toxicity and risk assessment of PA and concluded that since PA differ over several orders of magnitude in their relative toxic potencies, it may be over-protective to treat them like they were the most toxic congeners. The refinement of the concept of relative potency factors for major individual PA was regarded as a prerequisite for a rational risk assessment.

In June 2017, the European Food Safety Authority (EFSA) [8] had published a new exposure assessment including an update of the characterisation of the carcinogenic risks of PA by a new Reference Point of 237 µg/kg b.w./day. Applying the rationale used by the HMPC, this would result in a limit dose of 1.185 µg instead of 0.35 µg PA/day.

All in all, potential contamination of medicinal plants with PA is an enormous challenge for growers and manufacturers with regard to their precise determination as well as to their reduction. Manufacturers are able to keep the limit of 1.0 µg PA per day for most products, reduction to 0.35 µg/day, however, is not realistic. Moreover, it does not seem necessary according to the new EFSA assessment.

Status of information: 28 November 2018

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medicinal products with pyrrolizidine alkaloids – Transitional recommendations for risk management and quality control (EMA/HMPC/328782/2016). 31 May 2016.

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- [8] EFSA Panel on Contaminants in the Food Chain (CONTAM). Risks for human health related to the presence of pyrrolizidine alkaloids in honey, tea, herbal infusions and food supplements. EFSA Journal 21 June 2017. <https://www.efsa.europa.eu/de/efsajournal/pub/4908>

Recent thesis (2018) on Medicinal Plant Research



(Notices of Ph.D.- and M.Sc./diploma thesis to the editor are welcome any time!)

Ph.D. thesis (2018) Intracellular signaling pathways involved in human keratinocyte differentiation induced by natural products. By: Stefan Esch; Promotor: Prof. Dr. A. Hensel, Institute of Pharmaceutical Biology and Phytochemistry, University of Münster, Germany.

M.Sc.thesis (2018) Bioassay-guided fractionation of an antiadhesiv extract from cellery fruits against uropathogenic *E. coli*. By: Kim Grube, Promotor: Prof. Dr. A. Hensel, Institute of Pharmaceutical Biology and Phytochemistry, University of Münster, Germany.

Ph.D. thesis (2018) Evaluation of C-Prenylating enzymes for the heterologous biosynthesis of cannabigerolic acid. By: Sara Friederike Degenhardt. Promotor: Prof. Dr. Dr. O. Kayser, Technical Biochemistry, TU Dortmund University, Germany.

Diploma thesis (2017) Einfluss von Naturstoffen und deren Derivate auf nukleäre Rezeptoren, die im Metabolismus eine wichtige Rolle spielen. By: Christina Huber. Promotor: Prof. Dr. V. Dirsch, Department of Pharmacognosy, University of Vienna, Austria.

Diploma thesis (2017) Identification of natural products as novel NF-κB inhibitors and nuclear receptor modulators. By: Julia Rappai. Promotor: Prof. Dr. V. Dirsch, Department of Pharmacognosy, University of Vienna, Austria.

Diploma thesis (2018) Analysis and chemical investigation of the bryozoan *Flustra foliacea* and generation of a separation protocol for polar and non-polar triterpenes from *Gloeophyllum odoratum*. By: Dominik Salzer. Supervisors: Prof. J. M. Rollinger, Dr. U. Grienke, University of Vienna, Austria.

Diploma thesis (2018) A supercritical fluid workflow for the fast separation, isolation, and quantification of major constituents in *Liquidambar* (styrax) resins. By: Johanna Scheuba. Supervisors: Prof. J. M. Rollinger, Dr. U. Grienke, University of Vienna, Austria.

Diploma thesis (2018) SFC based analysis, identification and quantification of hop ingredients. By: Carmen Schretter. Supervisors: Prof. J. M. Rollinger, Dr. U. Grienke, University of Vienna, Austria.

Diploma thesis (2018) Dünnschichtchromatographische Identifizierung von Aromatischer Tinktur, Bitterer Tinktur, Zusammengesetzter China- und Wermuttinktur. By: Eva Auer. Supervisors: Prof. J. M. Rollinger, University of Vienna, Austria; Mag. Macas, AGES, Austria.

Master Thesis (2018) Examination of neovascularization and oxygenation of the subcutaneous adipose tissue after long-term implantation of continuous subcutaneous insulin infusion catheters. By: Melanie Ballach; Supervisor: Univ.-Prof. Dr. Rudolf Bauer, University of Graz, Institute of Pharmaceutical Sciences, and Dr. Jasmin Hauenberger, Medical University of Graz, Clinical Department of Endocrinology and Diabetology, Austria.

Diploma Thesis (2018) Airborne bacteria in the environment of a Styrian poultry farm. By: Katharina Fraissler; Supervisor: Ao. Univ.-Prof. Dr. Franz Bucar, University of Graz, Institute of Pharmaceutical Sciences, Austria.

Diploma Thesis (2018) Qualitative and quantitative analysis of selected citrus oils. By: Michelle Hert; Supervisor: Ao.Univ.-

Prof. Dr. Franz Bucar, University of Graz, Institute of Pharmaceutical Sciences, Austria.

Diploma Thesis (2018) Airborne bacteria in the environment of a Styrian pig farm. By: Lisa Neuhauser; Supervisor: Ao.Univ.-Prof. Dr. Franz Bucar, University of Graz, Institute of Pharmaceutical Sciences, Austria.

Diploma Thesis (2018) Latest findings on Gnaphalium-, Pseudognaphalium-, Helichrysum- and Anaphalis-species. By: Sandra Ruprecht; Supervisor: Ao.Univ.-Prof. Dr. Franz Bucar, University of Graz, Institute of Pharmaceutical Sciences, Austria.

Diploma Thesis (2018) Comparative Study on Morpho-anatomy and Histo-chemistry of Leaf, Fruit, Root and Petiole of *Centella asiatica* (L.) Urb. and its Adulterant Plant *Hydrocotyle umbellata* L.. By: Vera Klapfer; Supervisor: Ao.Univ.-Prof. Dr. Adelheid Brantner, University of Graz, Institute of Pharmaceutical Sciences, Austria.

Diploma Thesis (2018) Development of an LC-MS method for analysis of gut microbial metabolites of phenolic plant constituents. By: Katrin Ernst; Supervisor: Dr. Eva-Maria Pferschy-Wenzig, University of Graz, Institute of Pharmaceutical Sciences, Austria.

Editorial remark

All contributions for the GA-Newsletter are welcome. Deadline for submission for the next edition is fixed to May 25th 2019. Please send all contributions to: **Prof. Dr. A. Hensel**, University of Münster, Institute for Pharmaceutical Biology and Phytochemistry, Corrensstrasse 48, D-48149 Münster, Germany; ahensel@uni-muenster.de