

Climate Change: Scientists Warning Letter

New projects

African Research Network

New GA Board

Research Awards Announcement

GA Newsletter
2-2019

Announcement of the 4th Research Award of the Foundation Plants for Health

In 2014, GA has established the Foundation "Plants for Health" aiming at supporting highly motivated and talented research groups. We provide start-up funds, which help to develop collaborative 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, we are again able to support researchers from our (still limited) revenues. In order to be eligible, you must be a member of the GA at the

time of the application and for the entire duration of the project.

The foundation offers a research subsidy of 5.000€ for a high quality, early career project in the field of medicinal plant research.

The grant aims to support post docs in their own ongoing research project. Applicants have to demonstrate the innovative and promising character of the project by two already published (or accepted) papers in high impact journals (as first or last author).

Applications with an informative and concise description of the project (1 page), reprints of the two papers, and a CV, need to be sent to the chair of the foundation, Prof. Dr.

Rudolf Bauer (E-mail: rudolf.bauer@uni-graz.at) by **Feb 28th 2020**.

The awardee will be announced by end of March 2020. It is expected that results will be presented at the GA meeting 2021 (Bonn, Germany).

We are looking forward to your exciting concept notes and to many applications.

The Foundation's Board:

Prof. Dr. Rudolf Bauer, Graz, Austria
Prof. Dr. Michael Heinrich, London, U.K.
Prof. Dr. Andreas Hensel, Münster, Germany
Dr. Bernd Röther, Neumarkt, Germany

Message of the Newsletter Editor

Dear members,

I was asked in 1999 by the former president of our society if I would be willing to edit the Newsletter of GA. I immediately agreed to this, and as a young researcher, working on the future scientific career, I was very proud to serve for the society. I refurbished in the next 2 years the content and the layout of the newsletter, later on we switched from hard copy to electronic emailing, we connected the newsletter to the GA homepage, and many other steps were undertaken to keep up to date and to improve content and layout. The newsletter always reflected the dynamics of our society. Additionally, the newsletter serves also not only as a platform for news and information, but has been and still is the archives of our society.

I was always very happy to count on the help of many GA members, colleagues and

members of the BoD and ExC to get the relevant information on time. I enjoyed always the fruitful discussions, and the help of so many people.

After more than 20 years editing this Newsletter it is time to hand over this task to the younger generation, maybe also to someone at the early stages of his scientific career. I am sure the ExC will contact the members to identify enthusiastic medicinal plant researchers as the new editor(s) of the newsletter.

Thanks to all who helped me in the last 21 years for editing the newsletter! For me it was fun and it has been an honour to serve this great society.

Best regards

Prof. Dr. Andreas Hensel



Welcome of the new incoming president

Dear members,

Maybe you had the chance to actively participate and vote on the new board and executive council at the members' meeting on the occasion of the very successful and inspiring 67th International Congress and Annual Meeting of our Society in Innsbruck last September organized by Hermann Stuppner and his team. In this case it is not much news that I can present you here.

For all the others, it is with great pleasure that together with the recently elected vice-presidents I welcome you. Before introducing the new crew, I personally like to express my sincere thanks to the GA board for proposing me as vice-president two years ago, and this year to renew their confidence in me to stand for presidential elections. I am aware that this task will not always be easy and straightforward and will require much effort and time. At the same time, it is – without any doubt – an honour and a privilege. There are many upcoming challenges. In the next months and years important changes for the GA have to be discussed and implemented; nevertheless, what makes me in particular confident and literally happy is the fact that the GA crew around me is tremendously supportive and simply great.

At first, the GA can count on a continuum by the charm and expertise of our outgoing president, Anna Rita Bilia, Professor at the Department of Chemistry, University of Florence, Italy. She promised to further serve the GA for an additional period as vice-presi-

dent. Our previous vice-president Oliver Kayser decided not to go for a renewed candidature in the executive council, but will remain as a board member. The reason for this is quite obvious, since Oliver as editor-in-chief of *Planta Medica* has overtaken a very time-consuming job. As incoming president, I am very lucky to have the support not only of Anna Rita, but also of the new incoming vice-president, Michael Heinrich, Professor of Pharmacognosy and Ethnopharmacology from the UCL School of Pharmacy, London, UK. Since many years he has served in his diplomatic and constructive way as a GA board member and as one of the initiators and council members of the foundation "Plants for Health".

It is by far not this elected trio, who can handle all the duties of the GA. We will be supported proactively by two renowned experts: Dr. Olaf Kelber, Research and Development Phytomedicines from Steigerwald Arzneimittelwerk, Bayer Consumer Health, Darmstadt, Germany, agreed to assume the role of GA secretary. Dr. Bernd Roether, after a two years' break is coming back as a long-standing GA-treasurer. Many, many thanks to both of you for offering your expertise and valuable time you promised (-;-) to spend in our Society.

Also the five of us in the meanwhile completed executive council, could not do anything without the board members. They form the backbone of our Society bringing inspiration, ideas, reason, action and activity. It is the board of directors, who finally decides about the GA's directions. Within the



board we have a balanced structure of members being highly experienced "old hands", as well as younger, highly active and inspiring members – all of them unites the same overall aim, which is to support the GA members. To my mind, it is exactly this balance, which is required to navigate the GA.

... and what about you, the one of the more than about 1200 GA-members? You are the most important among us and the reason why we decided to spend so much time and effort in this endeavour. It is you and your active participation that makes us strong as a Society and gives the scientific community a platform and a global voice to promote natural product research and education.

Judith M. Rollinger (incoming GA president)
Department of Pharmacognosy, Faculty of Life Science, University of Vienna, Austria.

Message from the President

Dear GA members,

the 67th International Congress and Annual Meeting held in Innsbruck has been very successful and one of the greatest GA Congress ever had. More than 600 participants from 56 countries attended the congress. I am thankful to Prof. Hermann Stuppner and his coworkers of the Local Organizing Committee for kindly hosting the event and put together a very attractive scientific programme, to have set up a perfect organization, and for the hugely fun social event, which will keep this meeting in best remembrance. GA has generously supported 20 young scientists from 15 countries with travel grants to attend the congress.

The congress started on Sunday with four pre-congress events, the "Young Researcher Workshop", the "African Research Workshop", the "Animal Healthcare and Veterinary Phytotherapy: Science and Practice"

Symposium and the "Economic Adulteration of Botanical Ingredients" Symposium. This year the "Regulatory Affairs Workshop" occurred during the main conference with two additional workshops, "Access and Three invited Benefit Sharing, Practical Advice, Questions and Answers" and "Efficient Visualisation and Annotation of Natural Extract Metabolite Profiles with Molecular Networks". Detailed reports of these events are in this NL. Three GA honorary memberships were bestowed to meritorious members who have rendered special service to the Society, Prof. Chlodwing Franz, Dr. Renate Seitz, and Prof. Elisabeth Stahl Biskup. The prestigious award of GA, the Egon Stahl Award in Silver, was bestowed to Prof. Samad Nejad Ebrahimi from Iran, while the Dr. Willmar Schwabe Research Fellowship was granted to Ms. Shereen Omer Elfarrow AbdAlgaffar from Sudan. GA donated special awards to two young researchers selected from the participants of the "Young Researcher



Workshop”, an award to a young scientist selected from the speakers of “African Research Network workshop”, and six prizes were bestowed to young scientists for the best poster presentations. The “Most Innovative Planta Medica Paper” for 2019 was donated to Maria-José Ferreira from Portugal and a special issue of *Planta Medica*, was dedicated to Prof. Dr. Cosimo Pizza, Italy. Finally, two special 70th Anniversaries of the former Presidents Prof. Brigitte Kopp and Prof. Wolfgang Blaschek were celebrated. A comprehensive description on these awards and prizes, and details on the scientific program of 67th International Congress and Annual Meeting held in Innsbruck are reported in this NL.

During the member’s meeting in Innsbruck, the Executive Committee and Advisory Board of GA have been newly elected. The detailed results of the elections are published in this NL. After my second term as a president, I was very honoured to continue to serve and support GA as vice-president. Thank you very much for your confidence! I am very excited to inform you that the incoming president is Prof. Judith Rollinger. She is very active and truly motivated, I hugely believe she will serve and develop our Society in an optimum way. The new vice-president is Prof. Michael Heinrich who has always supported GA in a very constructive manner. Dr. Bernd Roether will act again as the treasurer and I am very happy he will continue to support our foundation “Plants for Health”. The newly elected GA secretary is Dr. Olaf Kelber, who has already started to dedicate his time to GA. I would like to thank very much the former members of the Executive who have decided to resign their positions, in particular our treasurer Dr. Ulrike Reusner. She has been excellent in managing and accounting a sound financial administration, a very nice person with a profound sense of responsibility. She always helped me during these years to solve problems and imperative needs. I constantly appreciated her charming, composed and gentle personality! Thank you for the great job for GA! My acknowledgments to the secretary Heba Aziz-Kalbhenn who decided to resign her position. I would like to express my gratitude to Prof. Oliver Kaiser for the time and the enthusiasm he has spent for GA! He will continue to serve GA as a member of the Advisory Board. I would like also to thank all the meritorious colleagues from the Advisory Board who have decided to resign their positions, and I am grateful with the members who have decided to continue to support GA and a warm welcome to the new elected ones!

Special thanks to Prof. Andreas Hensel who has dedicated a lot of time to GA with passion and hard work, in particular as Editor of the Newsletter.

A special appreciation for Prof. Nikolas Fokialakis for the tremendous dedication to the GA website and for his key activity in GA communication. I would like also express my sincerest gratitude to the chairs of

Young Researchers and African Research Network Working Groups Prof. Robert Fürst and Dr. Cica Vissiennon, and to the chair of the Regulatory Affairs Workshop Dr. Werner Knoess for their significant contribution to the GA activities.

This year GA has been involved in the co-organization of several meetings, the Symposium “Edelweiss-Phytochemical, pharmacological and clinical evidence”, April 25, in Graz, Austria, the 23th International Congress “PhytoPharm 2019”, July 1–3, in Saint-Petersburg, Russia and the 7th Mistletoe Symposium “Mistletoe in Tumour Therapy Basic Research and Clinical Practice” November 7–9, Nonnweiler, Germany. Detailed reports of these meetings are in this NL.

Next year GA will be involved in the International Congress on Natural Products Research (ICNPR 2020), the Joint Meeting of the sister scientific societies ASP, AFERP, GA, JSP, PSE, SIF, and, for the first time, the Korean Society of Pharmacognosy (KSP) will join this event. The Congress location is the Hyatt Regency Hotel in San Francisco, California, from Saturday, from 25th to 30th July, 2020. Preparations are well underway, and it will be a major event with well over 1000 participants. Announcement of the ICNPR 2020 is reported in this NL and you can find more details at GA website (<http://www.ga-online.org/events>). For those members who are not able to reach USA, a GA co-organised event in Europe is planned, the 20th International Congress of the International Society of Ethnopharmacology, April 27–29, 2020, Thessaloniki, Greece. Please find the announcement of the meeting, on the GA website (<http://www.ga-online.org/events>), and Congress website (www.ethnopharmacology2020.org), and in this NL.

Finally, the 24th International Congress “PhytoPharm 2020”, will take place next year July 1–3 in St. Petersburg, Russia, (please visit the website <http://www.phyto-pharm.pro>).

Publication of the second newsletter coincides with the end of the year. This is the moment where, on the one hand, one looks back on events and developments and on the other hand, looks forward on what the future will bring. This NL is a very special one for me; it represents the last President’s message. This is a unique opportunity to thank all the dedicated members who have offered (and will continue to offer) to GA family their time and expertise in many skills. GA has significantly invested in science dissemination organizing scientific conferences, webinars, and workshops, which have represented an exceptional opportunity to reinforce existing relationships, to generate new collaborations and friendships, to energise efforts among the diverse players – academics, industry and regulatory organisations – all focused on promoting the scientific study and application of natural products. I am convinced that GA is a virtuous

platform for discussion and spreading novel knowledge in the field of medicinal plants and natural products in a critical interdisciplinary vision, and such global networking is extremely necessary and fruitful.

GA donates every year numerous awards, prizes and travel grants. I heartily invite all the young GA members who are eligible for a travel grant, and would like to present their scientific results during the next annual congress in San Francisco, to submit their proposals for the next year travel grants! I am very glad to announce that four awards are scheduled for 2020, the Egon-Stahl-Award in Gold, the Egon-Stahl-Award in Bronze, Dr. Willmar Schwabe Research Scholarship for Young Scientists and the Dr. Willmar Schwabe Award. Their announcements are reported in this NL and have been published on the GA website (<http://www.ga-online.org/awards>), where you can find the details for the application. Again, I wanted to draw the attention of all of you to these awards and encourage the participation of both GA members and non-members. You all should consider whether your research, or maybe that of a research group you are taking part would fit with the aims of these prizes, or if you know of an outstanding young scientist that could be eligible for the Egon-Stahl Award in Bronze or Silver. If you are a senior scientist from a reduced fee country, inform your PhD students of the Dr. Willmar-Schwabe Research Scholarship! This scholarship may be a unique opportunity for your career! Thus, I look forward to numerous applications.

GA has also endorsed two official scientific journals, *Planta Medica* and *Planta Medica International Open*. The abstracts of the 67th International Congress and Annual Meeting will be published in a special issue of *Planta Medica*. I invite all members to consider these scientific journals for the publication of their valuable studies and to enquire for the low rate online access, and I would like to encourage you to publish your relevant articles in our journals, which clearly serves as an excellent platform for exchange of knowledge and ideas between scientists worldwide. A further reason to publish your valuable results is that you should be the next awardee of the “Most Innovative Paper”!

I express my heartfelt gratitude to the Editors in chief of *Planta Medica* Prof. Olivier Kaiser and Prof. Robert Fürst, to the Editor in chief of *Planta Medica International Open* Prof. Luc Pieters and the respective Editorial Boards for their precious efforts aiming to the constant development of these journals.

I would like to remind to all the members the foundation “Plants for Health”, created to promote research and scientific knowledge in the field of natural products, medicinal plants and phytotherapy, especially of outstanding young scientists. I hugely invite all of you to make donations to support these activities. Prof. Rudi Bauer, the President of

the Foundation has reported in this NL the announcement of a fellowship, please find also the details at the on the foundation homepage (<http://www.plantsforhealth.org/>).

During the last years we have started a critical discussion about the future development of our society, future activities and research fields to be supported by our society, embedment of industrial partners, principles in

voting rules, and how non-European members can get more influence and GA has recently acquired a Scientific Officer, Mrs C. Kern. I am confident she will give a great contribution to a variety of tasks in the renovation and future orientation of GA but I am also expecting from all the GA members new ideas and concepts focused to the future of GA.

I want to take the chance to thank all the GA members have spent their time for GA during last years.

Wishing you a prosperous, healthy, brilliant and successful 2020, I am looking forward to seeing you in San Francisco!

Cordially, Anna Rita Bilia, GA President

The new Scientific Officer of GA: Cornelia Kern

Dear Members of GA,

My name is Cornelia Kern, and I'm *Kooperation Phytopharmaka's* new Scientific Officer and Office Manager. I started my job on the 5th of August and will be succeeding Cornelia Schwöppe who will be retiring at the end of this year.

During the past nine years, I have been taking an active part in setting up a foundation aiding patients with blood cancer. I was mainly concerned with public relations work, fundraising and financial control. Apart from that, I was responsible for organising congresses and seminars for patients as well as for physicians. When the foundation had prospered and ran profitably, I started searching for another challenging task and was delighted to be offered the above mentioned appointment.

After having worked with the *Kooperation Phytopharmaka* for three months, I can already state that my expectations were not

at all dashed! There are, for example, many valuable projects to be coordinated, such as our current research project concerning the toxicity of certain pyrrolizidine alkaloids. Furthermore, I will be supporting the *Society for Medicinal Plant and Natural Product Research* by taking an active part in the organisation of their annual congress in 2021 and by taking on further administrative tasks.

Above all, I think the field of medicinal plants and natural product research is crucial when talking about a modern, future-oriented health care. I am very happy to participate in promoting this topic!

My favourite plant this year is, by the way, the lavender-shrub growing in my garden which exudes its compelling odour in the evenings!

I'm looking forward to meeting you!

Cornelia



Contact Information:

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From the Editors in Chief of *Planta Medica*

Dear Members of GA,

It is my pleasure to introduce Robert Fürst as Junior Editor-in-Chief and myself as Senior Editor-in-Chief to you. We both took over responsibilities for leading one of the most important journals in the field of medicinal plant and natural product research at the beginning of 2019 from Veronika Butterweck. It is a great honor and pleasure to thank her for the outstanding work she has done for *Planta Medica* over the last years.

Robert and I are also committed to serve the journal and to translate your valuable research into the public awareness your important work deserves. To keep it simple, our mission is not to only publish your data but to tell your scientific story behind. To meet this demand, Robert takes responsibilities for reviews and special issues and I take charge of your original papers. A third person must be mentioned, who keeps the

engine running: René Prétôt, the Editorial Office Manager. When submitting your manuscript, he is the person handling it with care and you will have contact with him.

Here, we want to thank you all for giving us your trust when you submit your manuscript. We want also to thank all peer reviewers doing an outstanding job and sharing their valuable time and experience to keep up the quality of the journal. This is also an important reason why the impact factor (IF) of our journal is continuously increasing over time and reached an all-time high this year at 2.746.

For 2020, we have planned exciting special issues in the fields of Brazilian ethnopharmacology and endophytes in medicinal plants to name only some of them. We have changed the Board of Editors and here I want to thank Judith Rollinger who left the board after election as president of



GA. We wish her much success for the new endeavor and thank her for the outstanding job she did on the board. Two new colleagues joined the board, Elke Heiss from Vienna University and Alexander Crawford from Oslo University. Elke will be responsible for in vitro testing and Alexander will handle all manuscript dealing with in vivo pharmacology. Both are very experienced and we are more than happy that they share their experience with us.

Dear members of GA, *Planta Medica* is YOUR journal. It is the official journal of our society. We welcome all submissions from you and we are happy to be with you on the success story as one of the leading journals in the field of medicinal plant and natural product research.

Best regards

Oliver Kayser and Robert Fürst

Recorded Lectures & Webinars of GA

Online tools for the dissemination of research are widely available. GA, however, has access to a very special treasure that we – the GA Working Group “Young Researchers” – want to share with all GA members via our homepage: The plenary lectures of GA’s annual meetings. These talks are given by outstanding scientists who provide fascinating insights into their cutting-edge research. Thus, we thought it would be of great advantage to record these plenary lectures and to make the videos available to all of you.

The first video has already been released: The link to Professor Norberto Peporine Lopes’ lecture on the “Analysis of bioactive compounds from frogs, plants and microorganisms from the Brazilian biodiversity” is available on the GA homepage (www.ga-

online.org/webinar-workshops). We have three more recorded lectures that will be released step by step, so please stay tuned and keep an eye out for the next email announcements.

The working group is very pleased that the GA Board of Directors decided to invest in this new project. We feel that this approach gives an additional benefit to you. And we hope that the dissemination of these videos will start fruitful discussions leading to new ideas and, hopefully, new collaborations. Because this is the major goal of our scientific society: to support research by fostering academic interaction.

By the way: There will be not only recorded plenary lectures from the last GA annual meeting. We are also planning a revival of



the webinars in the first half of 2020. If you have any suggestions on topics or speakers for a webinar, please feel free to contact me via email: fuerst@em.uni-frankfurt.de

Prof. Dr. Robert Fürst

On behalf of the GA Working Group “Young Researchers”

Notes from the Society

**Deceased members**

Prof. Dr. Max Wichtl, Mödling, Austria, passed away on 30th of July 2019 in the age of 94 years. He had been former President of the society and Honorary Member of GA.

Dr. Herman Jaggy, Karlsruhe, Germany passed away on 9th of June 2019. He had been GA member since 1972.

Obituary see in this Newsletter.

Honorary GA Memberships to Prof. emer Dr. Chlodwig Franz, Dr. Renate Seitz, and Prof. Dr. Elisabeth Stahl-Biskup

The Society for Medicinal Plant and Natural Product Research appoints meritorious members who have rendered special service either to medicinal plant and natural products research or to the Society, as Honorary Members. At the 2019 Annual Congress of GA, three familiar and esteemed members have been awarded with the Honorary Membership of the Society for Medicinal Plant and Natural Product Research. They are in alphabetical order: Prof. emer.

Dr. Chlodwig Franz, Dr. Renate Seitz, and Prof. Dr. Elisabeth Stahl-Biskup.

Prof. emer Dr. Chlodwig Franz studied Biology (Botany), at the University of Vienna and 1971 he obtained the PhD. in Pharmaceutical Biology/Phytochemistry. He was Head of the Division of Medicinal and Aromatic Plant Production of the Technological University of Munich and full Professor and head of the Institute for Applied Botany and



Pharmacognosy, at the University of Veterinary Medicine Vienna. From 1997 to 2003 he was Vice Rector, and since October 2012 he is Emeritus Professor.

Coordinator of numerous projects worldwide, partner of various European projects, international expert, chairperson of several International Conferences, President of International Council for Medicinal and Aromatic Plants, founding Member and Vice-President of the Herbal Medicinal Products Platform Austria, Initiator and Member of the Board of the Postgraduate Education 'Veterinary Phytotherapy' of the Austrian Association of Veterinarians, he has been bestowed of many distinctions and decorations. He was a brilliant scientist in different research fields, author of more than 300 scientific papers, 10 book chapters, over 100 scientific plenary lectures; 9 patents and protected plant varieties.

He served GA from 1988 to 2011 as chairman of the Permanent Committee Herbal Materials, and as initiator of the Veterinary Phytotherapy Group.



*Prof. emer Dr.
Chlodwig Franz*

Honorary membership was bestowed to Prof. Franz in recognition of his research on biodiversity, genetics, breeding and quality control of medicinal and aromatic plants; and for his generous and extensive service to GA as a chair of the Permanent Committee of Herbal Materials and initiator of the veterinary phytotherapy and animal health care group.

Dr. Renate Seitz, studied Pharmacy at the University of Munich and in 1979 she obtained a PhD in Pharmaceutical Biology under the supervision of Prof. Wagner at the University of Munich and partly at the Florida State University, under the supervision of Prof. Herz. From 1982 to 1990 she had a position at the Munich Institute of Pharmaceutical Biology. From 1990 to 1995 she was

member of the editorial staff of the famous book Hagers Handbuch, from 2003 to 2010 general secretary of International Council of Medicinal and Aromatic Plants, and from 1996 to 2008 she was a freelance author of several scientific journals.

Since 1984 she has attended all annual GA congresses and between 2002 and 2010 she was the GA Secretary and member of the executive. Her main aim as secretary was to create a very personal and familiar atmosphere in the society (very often people spoke of the "GA family"). She very much liked this job in the GA and fulfilled her task with great joy and satisfaction.



Dr. Renate Seitz

She was excellent in the daily routine activities as GA secretary, she dedicated her time to raise funds and scholarships but also for the numerous contacts with members (in 2010 GA had gained more than 1,300 members and she knew most of the members and congress participants personally). She performed the digitalization of the handwritten member's data and created the electronic GA members data base. She was an excellent organizer of the annual congresses and minor symposia of GA, and many other international congresses. She was very active in publishing and reporting about the GA activities in German and international journals.

Honorary membership was bestowed to Dr. Seitz in recognition of her exceptional and longstanding commitment to the causes of GA as secretary, significantly contributing to the scientific reputation of GA meetings over the years and creating a very familiar atmosphere in the society.

Prof. Dr. Elisabeth Stahl-Biskup, Hamburg, Germany studied pharmacy from 1968 to 1971 at the University of Freiburg, Germany, on 1975 she obtained the PhD in Pharmacognosy (today: Pharmaceutical

Biology) under the supervision of Prof. Kubezcka at the University of Hamburg. She was Scientific Assistant at the "Pharmaceutical Biology" at the University of Hamburg, where she obtained the habilitation in 1982. From 1984 to 2012 she was Professor for Pharmaceutical Biology at the University Hamburg

Her main research fields was analysis of essential oils, isolation and structural elucidation of unknown plant components, chemical polymorphism of Lamiaceae, glycosidical bound to volatiles in Lamiaceae.

She was co-editor and authors of many international books, of the commentaries on the European Pharmacopoeia and author of 30 monographs in the Handbook of Medicinal Plants and natural products.

Concerning GA-Activities she was member of the Advisory Board, Editor of the GA-Newsletter, returning officer, and since 2004 she is auditor. She joined GA in 1974 on the occasion of the 22nd Annual Congress in Tübingen "To see and be seen". She reported that GA very quickly became an important forum for the exchange of scientific experience, an important stepping stone in her "career", creating many longstanding professional and personal contacts which exist to the present.



*Prof. Dr. Elisabeth
Stahl-Biskup*

Honorary membership was bestowed to Prof. Dr. Elisabeth Stahl-Biskup in recognition of her important developments in the studies of volatile constituents from medicinal plants, and for her distinctive service to GA as member of the Board of Directors, editor of the GA-Newsletter and auditor.

Sincere congratulations from the GA family!

Prof. Dr. Anna Rita Bilia, GA president

Dr. Willmar Schwabe research Scholarship 2019 to Ms. Shereen Omer Elfarouk AbdAlgaffar

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 for at least 6 months. Projects focusing on pharmacological or clinical research of phytopharmaceuticals and their active substances are particularly welcome.

The 2019 Research Scholarship was awarded to Ms. Shereen Omer Elfarouk AbdAlgaffar, M. Sc., of Faculty of Pharmacy, University of Science and Technology, Omdurman, Sudan. With the support of the

scholarship she will join research group of Prof. Wendy van de Sande of the Department of Medical Microbiology and Infectious Diseases, Rotterdam, The Netherlands. The award was given by Dr. Günter Meng, the representative of the Dr. Willmar Schwabe Company. Ms. Shereen Omer Elfarouk AbdAlgaffar will present the results of her project at the 68th. International Congress and Annual Meeting of GA and 10th. Joint Natural Product Conference 2020 (Joint Meeting with ASP, AFERP, JSP, PSE and SIF) in San Francisco (USA), July 25–30, 2020.

Prof. Dr. Anna Rita Bilia, GA President



Minutes of the GA Members Meeting 2019



PROTOCOL OF THE GA MEMBERS' MEETING – 2019

The members Meeting took place during the annual congress in Innsbruck on September 3rd, 2019 between 6.30–8.10 pm. 144 members attended the meeting.

1. Approval of the Agenda

GA President Prof. A.R. Bilia welcomed all participants. The preliminary agenda published in the GA Newsletter 1-2019 on time, was approved unanimously.

2. Approval of the protocol of the Members Meeting 2018

The protocol of the Members Meeting, which took place on July 28th, 2018 in Shanghai that had been published in the GA Newsletter 2-2018, was unanimously approved.

3. Annual Report

3.1. Report of President Prof. A.R. Bilia

In the last year she was constantly in exchange with the organisers of the 2019 GA meeting in Innsbruck and she revised the submitted abstracts. On occasion of the congress, she was involved in the organization of the presidential lunch, in the management of the GA elections, and running of the GA workshops. She was responsible for the evaluation and selection of GA awards.

She was regularly in contact with the organisers of the Joint meeting 2020 in San Fran-

cisco and with the 2021 GA meeting in Bonn.

On behalf of GA she was in contact with the chair of Joint Phytotherapy Congress in Vienna (2018) and she revised some submitted abstracts. She participated to meeting Cannabis – Phytochemical, Pharmacological and Clinical Evidence, November 2018, Vienna, and she gave the welcome address. She participated to the meeting Edelweiss – Phytochemical, Pharmacological and Clinical Evidence, April 2019, Vienna, and she presented the welcome address. She was in contact with the organisers of the 7th Mistletoe symposium 2019 and with the chairs of Joint Phytotherapy Congress in Zurich 2020.

She was in exchange with the chairs of the Phytopharm 2019, July, St. Petersburg and participated to the Congress giving the welcome address and a plenary lecture.

She participated to the institution of GA Scientific Officer with several phone calls and discussions with KOOP representatives. She prepared for the second GA NL of 2018 and president's address, GA awards announcements and report awards 2018, Quihuang Prize, and for the first GA NL 2019 the president's address and the agenda of the members' meeting.

3.2. Reports of the Vice Presidents

Report of Vice President Prof. J. Rollinger

She engaged herself in the implementation of the position of Scientific Officer and coor-

dated the proceedings with Kooperation Phytopharmaka KOOP.

A good solution was found that took the legal aspects of the German Society's Law (deutsches Vereinsrecht) into consideration. The chosen candidate, Dr. Cornelia Kern, will support the organisation of future GA congresses as expert for congress organisation, among other things.

She supported the review of submitted abstracts for the GA congress Innsbruck.

She organised the templates for the GA Board elections and contacted possible candidates for the elections. She contributed to the GA Newsletter, for example an obituary for the Honorary Member Prof. Max Wichtl.

Report of Vice President Prof. O. Kayser

He was involved in the implementation of the position of the Scientific Officer for GA. He represented GA on congresses. He mainly concentrated on his new function as Editor in Chief of *Planta Medica*.

3.3. Report of Secretary Dr. H. Aziz-Kalb-henn

She presented the members statistics.

GA has 1095 active members (regular fee: 582, reduced fee: 441, company members: 25, Honorary members: 10, waived fees due to more than 40 years of membership: 40).

She reported that at the end of 2018 memberships of members with outstanding fees of 2 or more years were statutory cancelled. This accounts for the lower number of members in comparison to the previous years.

Additionally, 173 new members registered for membership but did not pay the fee yet (=preliminary members). The total number of members (active and preliminary) accounts to 1268 (2019: 1095, 2018: 1283, 2017: 1456, 2016: 1346, 2015: 1225, 2014: 1190).

3.4. Report of Treasurer Dr. U. Reusner

She reported the current financial status of the Society:

The total assets of GA amount to 255.916 EUR (thereof cash 209.582 EUR). The Egon Stahl fund amounts to 55.382 EUR (thereof cash 3.213 EUR). She presented the budget 2018 and the budget plan 2019. She reported about the Awards given in 2019 (Innovation Award, Young Researchers Award, Bionorica Award, ESA Silver, Wilmar Schwabe Research Scholarship, GA Poster Awards, Finzelberg Poster Awards, Thieme Best Paper Award).

3.5. Discharge of the Executive council

Prof. E. Stahl-Biskup presented the reports off he cash auditors (Dr. B. Frank and Prof. E. Stahl-Biskup) for 2017 and 2018. According to the reports, the expenses and revenues were plausible and appropriate. Both auditors expressed their compliments for a good accounting and cost awareness. The surplus increased for 46 000 EUR in those years in total.

Prof. Stahl-Biskup therefore asked for the discharge of the ExC for 2017 and 2018, which was accepted unanimously by the whole assembly.

4. Reports of the Editors in Chief of *Planta Medica*, presented by Prof. O. Kayser

Since the beginning of 2019, Prof. O. Kayser and Prof. R. Fürst are responsible for *Planta Medica* as Editors in Chief.

They thanked the previous Editor in Chief, Prof. Veronika Butterweck.

The impact factor of *Planta Medica* could be raised to 2.74 in 2019, due to the outstanding work of Prof. Butterweck.

The new team of Chief editors wants to continue in the same way and is planning to raise the impact factor to 3.0 in the coming years.

Prof. Kayser presented changes to the editorial board:

Prof. Kayser will be responsible for Original Papers, Prof. R. Fürst for Reviews, Special Issues as well as Abstract Books. Prof. Kayser emphasized that no invitation was need-

ed to submit a review article the article could simply be submitted.

The Editorial Team now consists of Prof. J. Rollinger, Dr. Olivier Potterat, Prof. Alessandra Braca, Prof. Jose-Luis Rios.

Additions to the team are Prof. Elke Heiss as expert for in vitro-Assays, as well as Alexander Crawford as expert for in vivo studies.

Prof. Kayser presented the key figures and facts to *Planta Medica*:

The Impact Factor increased from 1.99 (2015) to 2.74 in 2019.

The main topics that were reflected in submitted articles are pharmacology, immune modulation, pain management/analgesia. The natural products discussed in the articles are mainly terpenoids, pteromols and alkaloids.

The number of submitted articles is high but not all articles can be accepted. Rejection rate is about 90%.

The special Issues are highly renowned in the scientific community.

80–85% of all submitted articles stem from China. Submissions from countries that submitted many articles in the past (Germany, Austria) are going down.

Prof. Kayser called for submission of high quality articles to further raise the impact factor and strengthen the reputation of *Planta Medica* and therewith also the reputation of the society.

5. Reports of the Working Groups

• Future Congresses:

J. Rollinger shortly presented the current plans (see also 7).

• Awards (Chair: A.R. Bilia)

For 2019 GA donated the Egon Stahl-Award with Silver Medal to Prof. Dr. Samad Nejad Ebrahimi. The Dr. Willmar Schwabe Award was donated to Ms. Shereen Omer Elfarouk AbdAlgaffar, M. Sc.

Dr. Dr. habil. Chlodwig FRANZ, Prof. emer., Dr. Renate Seitz, and Prof. Dr. Elisabeth Stahl-Biskup have been bestowed as GA Honorary Members.

Four Awards will be given by GA 2020: ESA in Gold, ESA Bronze, Wilmar Schwabe Research Scholarship and Wilmar Schwabe Award. The announcements will be published in the second newsletter of 2019.

• Communications (Chair O. Kayser)

The GA website was updated, e.g. job offers are posted regularly. A facebook site for GA was set up.

The editor of the newsletter, Prof. A. Hensel will not continue in this position.

O. Kayser thanked Prof. Hensel for the excellent work of over 20 years in the name of the complete GA board.

A new concept for the GA newsletter will be set up. How this concept will be, will be decided by the new GA Board.

• African Research Network (Chair C. Vissiennon)

C. Vissiennon informed about the activities of the working group.

Contact data of meanwhile 53 members were collected via registration form. Additional members will be acquired. During the GA congress in Innsbruck, an African Research Workshop could take place for the first time. The best presentation of the presentations given during the workshop was selected to be re-presented during the main conference.

The workshop should be repeated in the future. C. Vissiennon organised a "Networking happy hour" taking place right after the members assembly, to discuss the future orientation of the African Research Network. As platform for networking a Linked-in group will be established.

Further plans include organisation of a "summer school" in sub-saharan Africa to focus on the education of young scientists and instructions in sense of "best practise". A local organisator will be found.

• Young Researchers (Chair R. Fürst)

Prof. Fürst presented the activities of his working group, travel grants and organisation of the Young Researchers Workshop. The Young Researchers Workshop was very successful as it had been in the past: 75 abstracts had been submitted, 90 participants registered for the workshop.

He thanked Prof. Elke Heiss for her engagement in the team for many years.

He presented the new webinar team: E. Ferreira Queiroz und K. Skalicka-Wozniak.

A youtube channel has been established for the webinars, only accessible via the GA homepage. In the last two and a half years, 11 webinars have been recorded. It is planned to further enlarge the online library for webinars.

6. Report on the Foundation "Plants for Health"

Prof. Rudolf Bauer presented the current activities of the GA foundation "Plants for Health".

The annual meeting of the Foundation Board took place on August 27th, 2019.

The Board Members of the foundation are Prof. A. Hensel, Prof. Rudolf Bauer, Prof. Michael Heinrich and Dr. Bernd Röther.

The assets of the foundation are currently at approx. 100 000 EUR.

The foundation wants to support mainly young scientists.

To interest new sponsors and acquire additional donations, a Charity Dinner and a Charity walk were organised taking place during the GA annual congress 2019.

At the end he concluded that further dissemination is needed to gain interested sponsors. An information brochure is available as download from the website of the foundation a/o copies are available from R. Bauer and B. Röther.

7. Future Congresses, Symposia and Workshops

7.1. GA Annual Congresses

2020 San Francisco, USA (Joint meeting organised by ASP). The current status of the organisation was presented by Prof. J. Rollinger.

2021 Bonn, Germany.

2022: a location has not been fixed yet but several possibilities are in discussion. The

decision will be presented soon on the GA Website.

8. Miscellaneous

A "Note for concern – Scientists second Warning" was put up for discussion.

It was decided unanimously to support the "note of concern" as Society GA.

9. Election of the Board of Directors

Dr. B. Gehrman coordinated the elections.

Election committee: Elisabeth Stahl-Biskup, Renate Seitz, Chlodwig Franz, Matthias Gehrman, Anett Lahse

9.1. Election of the President

Candidate: J. Rollinger (143 Votes)

9.2. Election of the Vice Presidents

Candidateen: A.R. Bilia (129 Votes), M. Heinrich (123 Votes)

9.3. Election of Secretary

Candidate: O. Kelber (144 Votes)

9.4. Election of Treasurer

Candidate: B. Röther (144 Votes)

9.5. Election of the Advisory board

• Candidates for Regular positions
A. Braca, A. C.P. Dias, R. Edrada-Ebel, E. Ferreira Queiroz, R. Fürst, N. Fokialakis, O. Kayser, A. Hensel, A. Hunyadi, A. Karioti, H. Warzecha

During the members assembly the following Candidates were added to the list:

S. Gafner, M. Halabalaki

Outcome R. Fürst (111 votes), O. Kayser (84 votes), N. Fokialakis (81 votes), A. Hunyadi (70 votes), E. Emerson Queiroz (66 votes), A. Hensel (66 votes)

• Candidates Junior positions
A. Cheilari, K. Skalicka-Wozniak, C. Vissienon, Ancuta-Cristina Manolica, nee Ralariu

Outcome: C. Vissienon (115 votes), K. Skalicka-Wozniak (111 votes)

Neumarkt, December 2019, U. Reusner, GA Treasurer

Some Data from the Membership Data Base

New GA members

In 2019 the following new members have joined our Society:

Omar Estrada, Venezuela; Katarzyna Gawel Beben, Poland; Aboli Girme, India; Rebekka Merki, Switzerland; Kalpana Palani, Germany; Anastasia Papachristodoulou, Greece; Michael Plioukas, Cyprus; Alexandros Polyzois, France; Sarshar Beydokhti, Germany; Geraldine Saunders-Hibbert, UK; Gita Susanti, Indonesia; Amina Yusuf Jega, Nigeria; Inge Sindbjerg Fomsgaard, Denmark; Kourosh Hooshmand, Denmark; Agnieszka Michalik, UK; Dipak Raut, India; Athanasios Arampatzis, Greece; Anna-Maria Keaveney, Ireland; Onyedika Emmanuel Okpala, Czech; Amina Yusuf Jega, Nigeria; Giustino Orlando, Italy; Iqbal Bin Imran, Finland; Irawan Wijaya Kusuma, Indonesia; Tri Widyawati, Indonesia; Sondès Rahoui, Tunisia; Ikenna Nnaoma, Nigeria; Mayu Hibi, Japan; Takaaki Yamaguchi, Japan; Panneerselvam Krishna Murthy, India; Omar Estrada, Venezuela;

Abba Pacôme Obouayeba, Ivory Coast; Arthus Richmond, Ghana; Michael Laryea, Ghana; Frederic Bonte, France; Andrew Mtewa, Malawi; Chona Gelani, Phillippins; Dennis Abatis, Greece; Apostolis Angelis, Greece; LEMONIA ANTONIADI, Greece; Gabriela Belen Lemus Ringele, Greece; Panagiotis Mavros, Greece; Sofia Mitakou, Greece; Theodora Nikou, Greece; Johnalyn Go, Philippins; Maxime Le Bot, France; Sorphon Suor Cherer, France; Camille Beaugendre, France; Aboli Girme, India; Panupong Puttarak, Thailand; Alexandros Polyzois, France; Paul Reddell, Australia; Gita Susanti, Indonesia; Kalpana Palani, Germany; Ka Woong Wong, Malaysia; Geraldine Saunders-Hibbert, UK; Katarzyna Gawel Beben, Poland; Sandra Elisa Kunrath, Brasilia; Anca Lucia Pop, Rumania; Miguel Peña-Espinoza, Chile; Óscar González López, Spain; Luis Quiros, Switzerland; Adriano Rutz, Switzerland; Marina Kritsanida, France; Anastasia van der Auwera, Belgium; Eirini-Maria Bata, Greece;

Anastasia Papachristodoulou, Greece; Pierre-Marie Allard, Switzerland; Robin Huber, Switzerland; Roméo Arago Dougué Kentsop, Italy; Yvonne Holm, Finland; Vera Isca, Portugal; Triet Thanh Nguyen, Vietnam; Shabana Shabana Khan, USA; Aliyeh Salehi, Austria; Michael Plioukas, Cyprus; Olanakanmi Olawuwo, South Africa; Marine Canton, France; Juuso Laitila, Finland; Milla Leppä, Finland; Marianna Manninen, Finland; Patricia Farinacci, Switzerland; Urszula Latek, Poland; Franziska Jürgens, Germany; Rebekka Merki, Switzerland.

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. Olaf Kelber, GA Secretary

Prof. Dr. Andreas Hensel

Announcement of the Egon-Stahl-Award in Gold 2020 of the Society for Medicinal Plant and Natural Product Research (GA)



The Egon-Stahl-Award in Gold is the highest scientific honour of the Society for Medicinal Plant and Natural Product Research (GA). It can be awarded every third year.

The Egon-Stahl-Award in Gold acknowledges the outstanding scientific lifetime oeuvre of an eminent scientist who has been closely attached to Pharmaceutical Biology (Pharmacognosy, Chemistry of Natural Products) throughout his scientific career.

The prize will be awarded during the 68th International Congress and Annual Meeting of GA and 10th Joint Natural Product Conference 2020 (Joint Meeting with ASP, AFERP, JSP, PSE and SIF) in San Francis-

co (USA), July 25–30, 2020. The award winner will be invited to present a lecture.

Nominations can be made by all regular members of the Society for Medicinal Plant and Natural Product Research. Nominations of oneself can not be considered. The following must be enclosed with the nomination:

- a detailed appreciation of the scientific oeuvre of the proposed candidate
- names of experts who could be consulted

The Executive Council of the Society for Medicinal Plant and Natural Product Research (GA) will give expert advice about the nominations submitted and make a

selection. The Egon-Stahl-Award in Gold is endowed with € 5.000.

Documents are to be sent in electronic form 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 2019, Prof. Dr. Anna Rita Bilia, GA President

Egon-Stahl-Award in Bronze 2020 of the Society for Medicinal Plant and Natural Product Research



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 and an award of € 1.500 is announced to young scholars up to the age of about thirty whose thesis are of outstanding quality.

In 2020 the Egon Stahl Award in Bronze will be given in a ceremony during the 68th International Congress and Annual Meeting

of GA and 10th Joint Natural Product Conference 2020 (Joint Meeting with ASP, AFERP, JSP, PSE and SIF) in San Francisco (USA), July 25–30, 2020.

Members of the Society for Medicinal Plant and Natural Product Research are invited to submit nominations for candidates, together with supporting data. A nomination for the prize (self-nominations will not be considered) should include a motivation letter explaining the significance of the scientific achievements of the candidate, a curriculum vitae of the candidate, an index on his/her publications, and reprints of his/her most significant publications.

Deadline for submissions for the Egon-Stahl-Award 2020 is **March 15, 2020**.

Documents are to be sent in electronic form 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 2019, Prof. Dr. Anna Rita Bilia, GA President

Announcement of the Dr. Willmar Schwabe-Award 2020 by the Society for Medicinal Plant and Natural Product Research



Dr. Willmar Schwabe
From Nature. For Health.

The Dr. Willmar Schwabe-Award acknowledges outstanding results of pharmacological and/or clinical research in the field of herbal medicinal products. The award is endowed with 10,000 € by the endowing sponsor Dr. Willmar Schwabe GmbH, Karlsruhe (Germany).

The aim of the award is to motivate younger scientists (preferably 40 years or younger) to resolve phytotherapeutical and phytopharmaceutical problems in an interdisciplinary approach, in order to support the evidence-based use of natural products.

Scientists and research groups of universities and other non-commercial scientific in-

stitutions are entitled to apply. Up to three relevant scientific publications on a specific topic which have been published during the last three years can be considered. They must be submitted together with CV(s) and list(s) of publications, along with an accompanying document explaining the significance and relevance of the submitted publications in the broader scientific context. Deadline for submissions for the Dr. Willmar Schwabe Award 2020 is **February 29th, 2020**.

The Dr. Willmar Schwabe Award will be announced in a ceremony during the 68th International Congress and Annual Meeting of GA and 10th Joint Natural Product Confer-

ence 2020 (Joint Meeting with ASP, AFERP, JSP, PSE and SIF) in San Francisco (USA), July 25–30, 2020.

Documents are to be sent in electronic form 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 2019, Prof. Dr. Anna Rita Bilia, GA President

Announcement of the Dr. Willmar Schwabe Research Scholarship 2020 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 announced in a ceremony during the will be granted during the 68th International Congress and Annual Meeting of GA and 10th

Joint Natural Product Conference 2020 (Joint Meeting with ASP, AFERP, JSP, PSE and SIF) in San Francisco (USA), July 25–30, 2020. 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 2020 announcement is March 31, 2020.

Documents are to be sent in electronic form 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 2019, Prof. Dr. Anna Rita Bilia, GA President

Obituary, Awards and Honours

Obituary: Professor Dr. Max Wichtl passed away in June 2019 at the age of 94

Honorary member of the GA, Prof. Dr. Max Wichtl Professor Emeritus of Pharmaceutical Biology, Director of the Institute of Pharmaceutical Biology (1973–1993) of the Philipps-University in Marburg, Germany, passed away at 30. July 2019 at the age of 94.

Max Wichtl, born 1925 in Vienna, studied Chemistry, Botany and Pharmacy at the University of Vienna, Austria. He obtained his habilitation in 1965 at the Institute of Pharmacognosy in Vienna, where he served first as University Assistant, then as Associate Professor. In 1973 he was appointed as full Professor of Pharmaceutical Biology and Director of the Institute of Pharmaceutical Biology at the Philipps-University in Marburg until he retired and became Professor Emeritus in 1993.

In Vienna and Marburg for many years his experimental studies were dedicated to herbal drugs with cardiac glycosides, namely from plants of the genera *Digitalis*, *Urginea*, *Convallaria*, *Adonis* and *Helleborus*. In this field he pioneered new developments in chromatographic separation, isolation and structural elucidation of new cardiac glycosides. He further investigated their biosynthesis and developed methods for their biological quantification in drugs. In recognition

of his scientific achievements he was honoured with the Dr. Willmar-Schwabe-Award in 1971.

Max Wichtl was an extraordinary dedicated university teacher able to generate enthusiasm of pharmacy students for phytochemistry and herbal drug analysis. His excellent leadership and teaching skills in Pharmacognosy/Pharmaceutical Biology are adequately reflected in the training of numerous graduate and undergraduate students, and the organization of several pharmacobotanical excursions and seminars, such as “herbal medicines in the pharmacy” and “herbal teas in pharmacy”.

Many generation of pharmacy students will know him from his famous textbook called “Der Wichtl” alias “Teedrogen – ein Handbuch für Apotheker und Ärzte”, which he launched in 1984 together with some renowned colleagues in his field. Meanwhile translated into English, French, Italian, Spanish and Japanese, and since 2016 edited by Prof. Dr. Wolfgang Blaschek in collaboration with Max Wichtl, pharmacists and all kind of natural product scientists appreciate the 6th edition.

Max Wichtl has always been deeply committed to the *Society of Medicinal Plant and*



Natural Product Research (GA), where he served as member of the Advisory Board, Vice-President and from 1990 to 1993 as President. He further served as co-editor of *Planta Medica* from 1984 to 1994. The GA honoured his achievements by awarding him the honorary membership of the GA (1995) and the most prestigious distinction, the Egon Stahl-Award in Gold in 2008.

We lost an excellent natural product researcher, a unique university teacher, a sharp pharmacognostic mind and a charming Viennese gentleman.

Prof. Dr. Judith M. Rollinger, Vienna and Prof. i. R. Dr. Dr. Brigitte Kopp, Vienna

Note of the Editor: An academic symposium in honour of Prof. Max Wichtl will be held at February 28th 2010, 13:00 to 18:30 at University of Marburg, Germany. Guests are welcome!

Univ.-Prof. i. R. Mag. Dr. Dr. h. c. Brigitte Kopp celebrated her 70th birthday – The Passionate Advocate of our Society

In March 2019, Brigitte Kopp, previous and long standing professor of the Department of Pharmacognosy in Vienna, celebrated her 70th birthday.

Born in upper Austria as Brigitte Zacherl, she studied Pharmacy at the University of Vienna. Immediately after her first degree (Mag. pharm.) she was accepted as University Assistant at the Institute of Pharmacognosy. Additionally, she qualified for teaching in Chemistry and Physics at the Technical University of Vienna (1975–1979). Brigitte Kopp obtained her PhD degree (Pharmacognosy) from the University of Vienna 1976 and a few years later the *Venia legend* for this field. Focus of her *habilitation* thesis was the isolation and structure elucidation of cardenolides and bufadienolides and the

use of radioisotope techniques to clarify important steps in the biogenesis of these natural products. With these biogenesis studies she established a new and innovative research field within the Vienna Pharmacognosy and laid early ground for today's Pharmaceutical Biotechnology group at the Department of Pharmacognosy. Soon she received her first offer for a full professorship from the University of Innsbruck (1989) and a second 1999 from the University of Graz. Despite these offers and several research interims outside Vienna, she has remained loyal to the University of Vienna and was promoted full professor in 2000. In 2003 she was awarded an honorary doctorate by the University of Iasi.



In private life she found her destination and happiness with Günther Kopp and their son Christoph. As young mother, she managed her academic life with full enthusiasm and diligence. Starting from the 1990s she took over more and more responsibility in

academic positions, e.g. dean of studies (2001–2004), head of department (2003–2005) and *Studienpräses* (president of studies legislation) (2004–2014). Outside of her *Alma Mater* she was member of many national and international working groups, e.g. the expert committee 13B of the European Pharmacopoeia, the expert group of the Austrian Pharmacopoeia, the Austrian Pharmacopoeia Commission, just to mention a few. Many of these activities are accompanying her still today, as e.g. the vice presidency of the Herbal Medicinal Platform Austria. Next to her scientific activity that led to more than 200 scientific papers, she was very dedicated to education and teaching by contributing to several new curricula in Pharmacy, educating numerous pharmacy students and supervising many master and doctoral theses.

Already in 1976 as a young University Assistant, Brigitte Kopp has started to regularly attend the annual conferences of the “*Gesellschaft für Arzneipflanzenforschung*” (GA), which and later on she has coined for many years as member, vice-president and finally president from 2008 to 2011. In her presidential time, GA was renamed to the “*Society for Medicinal Plant and Natural Product Research*”. Her deep commitment and engagement to and for the Society is still vivid. In her time, the international reputation of the Society increased far beyond the German speaking countries. As an appreciation, Brigitte Kopp was awarded honorary member of the Society in 2015.

Brigitte Kopp has always accepted responsibility and long working days. She distinguished herself by foresight, integrity, will-

power and correctness. Even today in her well-deserved retirement she is an extraordinary diligent member of the pharmacognostic community. We hope to count on her for many, many further years to come. *Ad multos annos!*

On behalf of the Society of Medicinal Plant and Natural Product Research and the Department of Pharmacognosy (Vienna):

Judith M. Rollinger, incoming president of Society of Medicinal Plant and Natural Product Research Vice Head of the Department of Pharmacognosy, University of Vienna, Austria

Verena Dirsch, Head of the Department of Pharmacognosy, University of Vienna, Austria

Egon Stahl-Award in Silver 2018 to Prof. Dr. Samad Nejad Ebrahimi

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 Silver Medal is awarded to scientists up to the age of about forty who have published outstanding scientific work during the years after their graduation.

This year, during the 67th International Congress and Annual Meeting, the Egon Stahl-Award in Silver is bestowed to Assistant Professor Dr. Samad Nejad Ebrahimi from the Department of Phytochemistry, Medicinal Plants and Drugs Research Institute, Shahid Beheshti University, Evin, Tehran, Iran for his research on searching for new potent drug candidates against neglected protozoal diseases, natural antimicrobial and cytotoxic compounds from Iranian medicinal plants.

After the bachelor in Chemistry, at Tabriz University, he got the M. Sc. in Phytochemistry, at the Shahid Beheshti University. In 2013 he gained the Ph.D. in Natural Product Chemistry, at University of Basel, and from



2013 to 2015 he got a Postdoctoral Fellow in the lab of Prof. Matthias Hamburger, University of Basel. Since 2015 he is Assistant Professor in Phytochemistry, Medicinal Plants and Drugs Research Institute, Shahid Beheshti University. During his career

he has received numerous awards, from Ministry of Science, Research, and Technology of Iran, and Iranian organizations, he was top researcher of year from Shahid Beheshti University of Tehran. He has been principal investigator of numerous research projects financed from Iranian National Sciences Foundation, Shahid Beheshti University, Islamic Azad University and private companies. His research focuses on new potent drug candidates against neglected protozoal diseases, natural antimicrobial as well as cytotoxic compounds from Iranian medicinal plants. He has an impressive number of scientific publications in peer reviewed Journals, 114 lectures in national and international conferences, and very high number of citations.

The award was given by the president of GA, and Prof. Ebrahimi delivered a lecture on his research during the GA session of the congress.

Prof. Dr. Anna Rita Bilia, GA President



Meeting Reports

First African Research Workshop on medicinal plant and natural products research took place in Innsbruck on 01 September 2019



During the 67th annual congress of the GA, the African Research Network has hosted its first scientific workshop on medicinal plant and natural products research. An inspiring impulse lecture on African traditional medicine and eight scientific short lectures gave an overview about diverse topics related to natural products research conducted in Africa.

Since the establishment of the GA-Working Group "African Research Network" in 2014 the desire to meet in a dedicated scientific session among African researchers was high and the idea of organizing an African research focused workshop during the annual congress was established.

The aim of the African Research Workshop is to provide an exchange platform for African scientists working in the field of natural products research within the GA and to stimulate the dialogue between them. As an interaction platform for researchers from all over the world, this year's annual congress of the GA in Innsbruck offered an ideal setting for hosting this scientific workshop for the first time.

The workshop was organized and chaired by Dr. Emerson Ferreira Queiroz from the

University of Geneva, Switzerland and Dr. Cica Vissiennon from the University of Leipzig, Germany. Prof. Dr. Sami Khalid from the University of Science and Technology, Sudan opened the dialogue with an inspiring lecture on "Revisiting African traditional medicine within the 21st century context – past, present and future perspectives" where he has highlighted the vast potential of the continent based on its biodiversity and the deeply rooted ethnobotanical tradition. He has emphasized current challenges to streamline research efforts in order to maintain a sound scientific capacity in Africa which will further consolidate the ethnomedicinal heritage and empower young scientists.

A total number of 45 participants attended the workshop and created a dynamic and collaborative atmosphere. Abstracts from eight different countries have been received out of which the scientific committee selected eight contributions for oral presentation. The presented short lectures on phytotherapy, veterinary medicine, botany, phytochemistry and ethnopharmacology have been lively discussed among the participating scientists allowing a fruitful scientific but also personal exchange between the attendees.

At the end of the workshop the scientific committee has announced the *Best Presentation Award of the African Research Workshop 2019*, which was selected out of the presented short lectures. Mr. Achille Parfait Atchan Nwakiban from the University of Dschang, Cameroon, has been awarded for his lecture on "Antioxidant and Anti-Inflammatory activities of Cameroon nutritional spice extracts in human gastric epithelial cells". The award was granted with the opportunity to present his work to the plenary during the main congress on Wednesday 04 September 2019.

All in all, both organizers as well as the participants considered the event as a great success which will be continued in the future!

Not a member of the African Research Network yet? Visit our website (<https://www.ga-online.org/african-research-network>) and fill out the registration form to join us!

Dr. Cica Vissiennon (Universität Leipzig) on behalf of the GA-Working Group "African Research Network"



Mr. Achille Parfait Atchan Nwakiban (University of Dschang, Cameroon) receiving his award "Best Presentation of the African Research Workshop 2019" during the opening ceremony and during his award presentation on "Antioxidant and Anti-Inflammatory activities of Cameroon nutritional spice extracts in human gastric epithelial cells" in the plenary lecture hall of the main congress.



Group picture after the first African Research Workshop 2019 at the 67th annual congress of the GA in Innsbruck.

13th Young Researchers' Workshop 2019 – more submissions than ever

The 13th Young Researchers' Workshop (YRW) was held on September 1st, 2019 as a pre-symposium of the GA Annual Conference in Innsbruck, Austria. Bringing together young scientists, in particular PhD students, for the presentation and discussion of their work in a free and relaxed atmosphere is the overall goal of this meanwhile well-established and highly valued event. It intends to promote presentation skills and, most importantly, to foster scientific exchange and networking. The 2019 YRW was organized and chaired by Professor Anastasia Karioti from the University of Thessaloniki, Greece, and by Professor Robert Fürst from Goethe University Frankfurt, Germany. Co-organizers and co-chairs were Professor Alessandra Braca (University of Pisa, Italy) and Professor Jürg Gertsch (University of Bern, Switzerland).

In Innsbruck, the YRW concept was continued very successfully: This year, we had an all-time high number of submitted abstracts: 75! To give a maximum number of scientists the chance to present their research, the workshop chairs unanimously decided to increase the number of slots for an oral presentation by skipping the traditional impulse lecture. From the 75 submissions, 12 talks were selected in a strict peer-review process. About 90 registered participants gathered in one of the lecture halls of the CCB – Center for Chemistry and Biomedicine – at the University of Innsbruck to listen to the presentations. All talks were of great scientific quality and the discussions were quite lively. The YRW ended with a wrap-up session and with a short discussion on future perspectives. All participants highly appreciated the current format of the YRW.

Most importantly, also the awards were bestowed in this closing session. Due to the generous support of Professor Jürg Gertsch



Honoring of the YRW awardees during the opening ceremony of the GA congress in Innsbruck, Austria. From left to right: Robert Fürst, Simon Remy, Johannes-Paul Fladerer, Anastasia Karioti, Anna Rita Bilia.

(University of Bern, Switzerland) and the company Bionorica SE (Neumarkt, Germany), we were able to award 2 prizes for the best presentations. The “Discovery Award” by Jürg Gertsch (1.000 Euro) was bestowed to Johannes-Paul Fladerer (University of Graz, Austria) and the “Bionorica YRW Award” of 600 Euro was given to Simon Remy (University of Paris-Saclay, France). Moreover, both awardees had the exciting opportunity to present their results also during a special session of the main conference program in front of a much bigger audience, i.e. the whole congress audience. The proud winners were honored in the opening ceremony of the congress.

Thanks to the high scientific standard of each presented work, the very talented speakers and the pleasant audience, the YRW 2019 was of great success. The concept of this workshop has again proven to be of great importance not only for the congress but also for our scientific society. We are very much looking forward to continuing with this format!

Prof. Dr. Robert Fürst

On behalf of the YRW committee

GA Animal Healthcare and Veterinary Phytotherapy Network

Thanks to the kindness of Professor Hermann Stuppner, the local organizer of the GA-Congress 2019, and the GA Executive Council “**Animal Healthcare and Veterinary Phytotherapy**” was one of the main topics of the 67th Annual Meeting of GA in Innsbruck (Austria). In addition to the main Congress, the Swiss Medicinal Society for Phytotherapy (SMGPvet) in collaboration with the Research Institute of Organic Agriculture (FiBL) and the Veterinary Pharmacology Division of Warsaw University of Life Sciences (WULS) organized a one-day Pre-Congress Symposium on Sunday, 1st of September 2019. The event started with

two impressive Impulse Lectures on the use of plant secondary metabolites in farm animals feeding. The audience was enchanted by the lectures of Quendrim Zebeli from Austria and Fred Provenza from USA whose talks were titled “Phytochemicals in animal nutrition – their potential as functional feed” and “Let feed and food be our medicine – how plants phytochemical diversity enhances health”, respectively. The lectures were followed by three sessions focused on (1) Veterinary Phytopharmacology, (2) Clinical Research and (3) Animal Self Medication and Ethnoveterinary Medicine; each consisting of a key lecture, an in-



vited and a contributed short lecture. In total, there were 11 inspiring presentations of high quality comprising preventive and therapeutic approaches of phytochemical rich plants or extracts in cattle, sheep, goat, pig, horse, monkey, dog and chicken. The Pre-Congress gathered about 75 interested participants from 25 countries, all over the world.



Practitioners, scientists and industry in the field of 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 had an unique chance to exchange experience,

initiate new or re-new already established collaborations.

Moreover, the 67th Annual Meeting of GA was the first GA Congress to host two plenary lectures focused on the effects of medicinal plants on domestic and wild animals.

Mike Huffman (Japan) gave an insight into animals self-medication and Paul Reddell (Australia) & Giovanni Appendino¹ (Italy) reported clinical efficacy of an anticancer diterpenoid Tigilanol Tigliate in dogs.

Eventually, the veterinary contribution to the Congress included an oral session of five short lectures and a poster session where about 20 posters on animal healthcare and veterinary phytotherapy were presented.

Besides, a social event getting-together all enthusiasts of veterinary phytotherapy and related topics took place in the tavern “Goldenes Dachl” in Innsbruck’s Old Town.

Many thanks to All of You for joining us in Innsbruck!

The next chance to present our issue will be hopefully the next GA-Congress in San Francisco, USA, 25th–30th July 2020...

...and, thanks to Werner Knöss, the local organizer of the GA-Congress 2021, it seems highly propable that we will have our next Pre-Congress-Symposium on Medicinal Plants and Natural Products in Animal Healthcare and Veterinary Medicine on Sunday 05. September 2021 in Bonn, Germany.

Marta Mendel

GA Pre-Conference Workshop on economic adulteration of botanical ingredients

As part of the annual meeting of the Society for Medicinal Plant and Natural Products Research (GA), the ABC-AHP-NCNPR Botanical Adulterants Prevention Program (BAPP) organized a pre-conference workshop entitled “Economic Adulteration of Botanical Ingredients: What Do We Know, and How Can We Solve it” on September 1, 2019 in Innsbruck, Austria. Co-organized by botanical extract manufacturer Euromed, SA (Mollet de Vallès, Spain), and botanical industry consulting firm Hylobates Consulting (Rome, Italy), approximately 60 participants from 23 countries registered for the workshop. Financial supporters included Euromed, Hylobates Consulting, Extrasynthese SA (Lyon, France), and BotaniCert (Grasse, France). GA has formerly endorsed the antifraud educational efforts of BAPP.

The workshop goal was to raise awareness of the global adulteration problem, to discuss issues of botanical ingredient adulteration at a more science-oriented event, and to provide a forum in which botanical quality control experts from academia, NGO’s, industry, and government could discuss remedies for the current situation. Twelve experts from the EU and United States made



presentations and/or participated in a panel discussion.

Mark Blumenthal, founder and executive director of the American Botanical Council, Austin, TX, USA started by emphasizing that botanical ingredient adulteration was a global problem since ingredients for food supplements and herbal medicines are sourced around the globe, and fraudulent suppliers and manufacturers can be found in many countries. He explained which of the top-selling botanical ingredients in the US are intentionally adulterated (as opposed to accidental misidentification), and

what materials are used as undeclared substitutes.

Prof. Dr. Anna Rita Bilia, associate professor of applied pharmaceutical technology at the University of Florence, Italy, gave an overview of analytical methods to authenticate herbal ingredients, providing insight into which methods are fit-for-purpose for authenticating specific materials. Supply chain and quality control management from the perspective of an herbal ingredient supplier was explained in the talk by Anna Mulà, head of the quality unit at Euromed SA. Part of the presentation detailed the results from

an investigation into the quality of extracts from saw palmetto (*Serenoa repens*) berries.

Débora Frommenwiler, scientist at Camag AG (Muttentz, Switzerland), gave examples of large-scale HPTLC investigations into the authenticity of popular herbal ingredients, e.g., echinacea (*Echinacea* spp.) roots and aerial parts, St. John's wort (*Hypericum perforatum*) herb, and ginkgo (*Ginkgo biloba*) leaf bulk ingredients and finished products. The results suggested a clear difference in the number of high-quality products when samples were registered as herbal medicine or as traditional herbals compared to those categorized as food supplements.

Marinus Henricus (Rien) van Diesen, seconded national expert at Europol, the EU's law enforcement agency, explained that the strength of Europol lies in the supporting investigative and analytical capacities for law enforcement. He suggested having an area dedicated to food supplement fraud within Europol's Platform for Experts (EPE). On this collaborative web platform, academics, specialists, and law enforcement agents can share ideas, trends, new developments, and data with support from Europol.

Dr. Luca Bucchini, managing director of Hylobates Consulting, focused on the quality of turmeric (*Curcuma longa*) products associated with at least 21 cases of hepatitis in Italy in May and June 2019. Preliminary data suggest that at least 50% of the products contained synthetic curcumin without presence of any additional curcuminoids indicative of a turmeric extract. No regulatory action had been taken to date against manufacturers selling synthetic curcumin as turmeric extract.

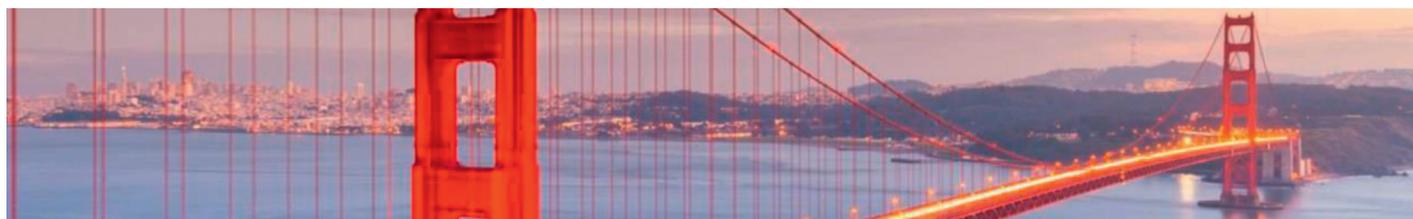
Adulteration of ingredients used in traditional Chinese medicine (TCM) was introduced by Prof. Dr. Rudolf Bauer, professor of pharmacognosy at the University of Graz, Austria. While he contended that large-scale investigations into the authenticity of TCM materials have shown a low percentage of adulteration, there are some issues with specific plant species, such as cordyceps (*Ophiocordyceps sinensis*) fruiting body or Asian ginseng (*Panax ginseng*) roots that have been the targets of economically motivated adulteration.

Participants in the panel discussion debated, among other topics, why botanical in-

redient adulteration is not more prominent with regulatory agencies in Europe, and how to improve the quality of the food supplement ingredients on the market. There was consensus that many food supplement manufacturing companies are producing high-quality food supplements, that there is an appropriate place in the market for both herbal medicines and food supplements, and that changes in regulations are unlikely to provide an incentive for fraudulent companies to improve their quality as long as these regulations are not adequately enforced. Some attendees pointed to the fact that products sold as herbal drugs are generally authentic, and that adulteration is mainly seen within the food supplement category. Changing the low threshold to enter the food supplement category was seen as a possible means to lower the number of adulterated products.

Dr. Stefan Gafner, American Botanical Council

Next Conferences



68th International Congress and Annual Meeting of GA and 10th Joint Natural Product Conference 2020 (Joint Meeting with ASP, AFERP, JSP, PSE and SIF) in San Francisco (USA), July 25–30, 2020. <http://icnpr2020.org/>

Dear GA-Members,

Next year's annual meeting will be a joint conference organized by the American Society of Pharmacognosy (ASP). This meeting is already established as ICNPR (International Conference of Natural Product Research) and will be held in July 25–30, 2020, in San Francisco, California, one of the most attractive cities of the United States. The ICNPR 2020 will include seven participating scientific organizations, including the main organizer ASP together with the AFERP (Association Francophone pour l'Enseignement et la Recherche en Pharmacognosie), the GA, the PSE (Phytochemical Society of Europe), the JSP (Japanese Society of Pharmacognosy), the KSP (Korean Society of Pharmacognosy), and the SIF (Italian

Society of Phytochemistry and the Sciences of Medicinal, Food, and Fragrant Plants). The conference will be mainly organized by Drs. Guy Carter, Roy Okuda, and Edward J. Kennelly.

At our last GA conference in Innsbruck, the ASP president Dr. Barry O'Keefe presented the main theme of the ICNPR 2020 "A Global Perspective on Natural Product Research". This will be covered in six main symposia focusing on (i) Next-Generation Natural Product-Derived Drugs, (ii) Climate Changes Impact on Natural Product Sciences, (iii) Cutting-Edge Technologies in Natural Products Research, (iv) Advances in Cannabis Research, (v) Modernization of Traditional Medicine Systems, and (vi) Natural Products Applications in Agriculture.

Further topical sessions are Marine, Plant, Microbial, Synthesis, Biosynthesis & Genomics. We are currently in discussion about how to develop these topics in more detail. Together with our partner societies AFERP and PSE, we recently aimed to bundle our interests for more topics of common interest for our societies, which we suggested to the organizers of the ICNPR. As a result, we are happy that the organizers agreed on a 7th symposium to add, entitled "Medicinal natural products – from bench to bedside".

For more information, e.g. on topics, confirmed speakers, registration and abstract deadline etc., please consult the ICNPR homepage: <http://icnpr2020.org/>.

As we were informed lately by the ASP president Dr. Barry O'Keefe, special hotel rates will be available for the attendees of this conference by begin of the New Year. Despite this special rates, it will for sure be a pricy conference. In the GA board, we are well aware of that and will make considerable funds available to support primarily young researchers if they are at least in the second year of GA membership (please be aware and apply as soon as announced). For those who decide not to cross the sea

and travel this distance, in 2021 the GA conference will be back again in Europe, namely in Bonn, Germany (more information on that will come later).

Looking forward to meeting many of you in San Francisco for an exciting joint meeting.

By means of this Newsletter and being aware of the tremendous effort it takes primarily from the local organizers I herewith send the best wishes over the ocean from

the GA to the ASP for a smooth, multicultural, interdisciplinary and truly successful joint conference. With this we hope to reach a "global perspective on natural product research".

Judith M. Rollinger (incoming GA president)

Department of Pharmacognosy, Faculty of Life Science, University of Vienna, Austria



20th International Congress of the International Society for Ethnopharmacology

27-29 APRIL 2020
CAPSIS HOTEL
THESSALONIKI, GREECE
www.ethnopharmacology2020.org



20th International Congress of the International Society of Ethnopharmacology, April 27–29, 2020, Thessaloniki, Greece

You are cordially invited to participate to the 20th International Congress of the International Society of Ethnopharmacology, April 27–29, 2020, Thessaloniki, Greece.

Topics

- Application of hyphenated techniques in quality assurance of ethnopharmacological sources

- Aromatic and medicinal plants in animal health: ethnopharmacological approach
- Aromatic and medicinal plants of the Mediterranean basin as food and dietary supplements
- Conservation and sustainable use of herbal resources
- Ethnobotanical approach to drug discovery: Theory, methodology and limitations

- Formulation of natural products and medicinal plants
- Greek ethnopharmacology
- Pharmacological and clinical studies of medicinal plants & natural products
- Traditional use of plants and herbal pharmacopoeias

www.ethnopharmacology.org

Announcement: African Research Workshop 2020 to take place during the 20th International Congress of the International Society of Ethnopharmacology in Thessaloniki, April 27, 2020!



We are excited to announce, that next year's African Research Workshop will be organized in collaboration with the International Society of Ethnopharmacology (ISE) and take place during their 20th International Congress. The ISE is longstanding scientific society promoting the scientific exploration of medicinal uses of plants and natural products in traditional societies. In this regard it shares a common interest with our Society especially in the context of Africa based research.

The African Research Workshop 2020 will take place in during the main congress as a parallel afternoon session on April 27, 2020, where researchers can present their research on medicinal plant and natural products research conducted in Africa. The

workshop is organized by the African Research Network of the GA and the local organizers of the Ethnopharmacology 2020 congress.

Aim of the African Research Workshop is to present and discuss natural products related research and to stimulate the dialogue between African scientists. An impulse lecture will be held at the beginning of the workshop by Dr. Bertrand Graz, Fondation Antenna, Switzerland who will give an impulse lecture on reverse pharmacology and traditional medicine. A following short lecture session with researchers working in the field of medicinal plant and natural products research will provide an overview about the diverse topics related to natural products research conducted in Africa. Dr. Emerson

F. Queiroz, University of Geneva, Switzerland will provide a state of the art lecture on "Isolation strategies of compounds of natural origin for the discovery of bioactive compounds".

All interested researchers are cordially invited to join the workshop. We particularly encourage our network members to join us in Thessaloniki and share their research! The workshop itself is free of charge, however registration to the congress via the registration portal of the congress is mandatory. Please submit your abstract via the general abstract submission system of the congress. For more information visit <https://ethnopharmacology2020.org>

Regulations and Assessment of Herbal Medicinal Products in Europa: Current Developments

Dr. Barbara Steinhoff
steinhoff@bah-bonn.de

Like all medicinal products, herbal medicinal products have to fulfil the requirements for quality, safety and efficacy as a pre-condition for marketing authorisation or registration, respectively. The complex European regulatory framework includes legal provisions, guidance documents of the European Medicines Agency (EMA) Committee on Herbal Medicinal Products (HMPC) and European Pharmacopoeia monographs as well as further specific rules issued by national health authorities. In the following, some recent developments from the past 12 months are presented and discussed.

European Pharmacopoeia

One of the most important projects of the past few years is the revision of the general monograph “Essential oils”. It will be published soon for public consultation together with a respective information chapter which explains in more detail the provisions of the monograph. Drafts which are open for public consultation by 31 December 2019 comprise e.g. modifications within the monographs on Eucalyptus oil, Purple Coneflower herb and root, respectively, Pale Coneflower root and Narrow-leaved Coneflower root as well as on Olive leaf. A completely revised monograph regarding the determination of elemental impurities is also open for comments. It describes two analytical procedures together with the respective validation criteria and permits the use of any procedure that meets these criteria.

Moreover, a frame for a determination method for pyrrolizidine alkaloid (PA) contaminations was developed by an expert group. A respective draft will be published soon in Pharmeuropa for consultation with interested parties.

Guidance documents of the HMPC

The documents of the Herbal Medicinal Products Committee (HMPC) at the EMA give guidance on specific requirements for quality, safety and efficacy of the products. European Union herbal monographs provide all necessary information on efficacy and safety of a specific herbal substance or preparation used in herbal medicinal products or traditional herbal medicinal products. Normally, the HMPC meets six times per year, however, currently due to the EMA’s move to Amsterdam no meetings of the subgroups e.g. the Monographs and List Working Party (MLWP) have taken place for several months and one of the HMPC meetings was cancelled. For this reason, only few documents could be finalised and published

or released for public consultation between January and September 2019.

Upon recommendation from the MLWP, the HMPC finally adopted by majority the following new and revised EU herbal monographs and supporting documents on

- *Curcumae longae rhizoma*
- *Fragariae folium*
- *Frangulae cortex*
- *Gentianae radix*
- *Malvae folium*
- *Malvae sylvestris flos*
- *Rusci aculeati rhizoma*
- *Sennae folium*
- *Sennae fructus*
- *Valerianae radix/Lupuli flos*

In 2019, the HMPC adopted after systematic review the draft revised documents for a 3-months public consultation until 15 September 2019

- EU herbal monograph on *Hippocastani semen*
- EU herbal monograph and list entry on *Menthae piperitae aetheroleum*

and until 15 January 2020 the EU herbal monographs on

- *Rhamni purshianae cortex*
- *Rhei radix*
- *Tanacetii parthenii herba*
- *Thymi aetheroleum*

It seems important to mention that the monograph on *Hippocastani semen* was substantially changed with regard to the definition of preparations eligible for a “well-established medicinal use”. In accordance with the new Ph.Eur. monograph which changed the assay method from photometry to High Performance Liquid Chromatography (HPLC), the HMPC monograph now replaced the definition of dry extracts (extraction solvent ethanol 40–80% V/V) from “standardised to contain 16–28% triterpene glycosides, calculated as aescin” by “standardised to contain 6.5–10% triterpene glycosides, calculated as protoaescigenin”. Moreover, three preparations for oral have been added under “traditional use” which so far only listed preparations for cutaneous application.

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). Interested parties are invited to comment on the respective draft monographs, list entries or public statements, respectively, during the consultation period. In order to support these comments, additional information on these preparations should be included, e.g. status of marketing authorization or registration of the products, approved indications,



posology and, if applicable, proofs of tradition. For the submission of comments on a particular draft a copy of the cited references must be attached, e.g. of journals or textbooks. Comments without copies of the supporting literature will not be accepted by the HMPC.

Moreover, the HMPC after submission of new scientific data agreed to start an unscheduled review of the monograph on *Zingiberis rhizome*. A decision, whether to start the revision of the monograph is still pending. A new assessment towards development of a monograph started for *Andrographidis paniculatae folium* after review of available data. The HMPC recently discussed the assessment and possibilities for monographs on *Calendulae herba*, *Herniariae herba*, *Saccharomyces cerevisiae* and *Verbenae citriodora folium* as well as the need to revise monographs after review of newly available data on *Arctii radix*, *Orthosiphonis folium*, *Taraxaci folium*, *Taraxaci radix cum herba*, *Quercus cortex* and *Solidaginis virgaureae herba*. Drafts of monograph revisions were discussed for *Hyperici herba*, *Millefolii herba* and *Trigonellae foenugraeci semen*. The HMPC decided after systematic review no revision was required for the monographs on *Hamamelidis cortex*, *Hamamelidis folium* and *Hamamelidis folium et cortex aut ramunculi destillatum*. After a call for data and review of data the HMPC agreed to start the assessment towards monograph establishment for *Centellae asiaticae herba*. The draft Public Statement on herbal medicinal products containing estragole is still under discussion in the HMPC. The existing document published in 2014 proposes a maximum daily intake of 0.5 mg per day.

The current HMPC work list available as follows:
<https://www.ema.europa.eu/en/human-regulatory/herbal-products/procedures-monograph-list-entry-establishment>

In particular, an overview on proposals for assessment and the status of HMPC assessment work can be found in the following documents:

- Inventory of herbal substances for assessment – proposals for assessment (EMA/HMPC/494079/2007)
- Overview of assessment work (Priority list) (EMA/HMPC/278067/2006)



PA contamination by weeds

A potential contamination of medicinal plant material with PA-containing weeds, e.g. *Senecio* species, has been discussed since 2013. In May 2016, the HMPC issued a Public Statement recommending a transitional limit of 1.0 µg PA daily for three years and taking into consideration that the pro-

blem of contamination cannot be resolved immediately. After that period, a daily limit of 0.35 µg PA would apply.

Besides the adoption of a “Code of Practice” which was elaborated together with herb growers and which proposes measures along the entire process chain from cultivation/collection up to the release of the finished product, data collections were established. E.g. the German herbal industry compiled results of testing herbal drugs and herbal extracts from almost 50 companies with annual evaluations. From this data the herbal industry concluded that for many herbal drugs it is not yet possible to meet the limit of 1.0 µg PA/day and that a general reduction to 0.35 µg PA/day by 31 May 2019 was not realistic. In June 2017, the European Food Safety Authority (EFSA) published a new exposure assessment including new occurrence data including an update of the characterisation of the carcinogenic risks of PA. Against this background and the activities of the Ph.Eur. to establish a general method for testing PA, the HMPC in January 2019 agreed to extend the transitional period for products with levels up to 1.0 µg PA/day for a further 2 years, i.e. until 31 May 2021.

In addition to the individual measures and activities undertaken during all relevant process steps, a lot of research projects have been initiated which might contribute to the

solution of the extremely complex PA issue. 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.).
- Preparation of “weed characteristics” (“Unkrautsteckbriefe”) by FAH, for use in cultivation and collection, describing the species *Crotalaria*, *Echium*, *Heliotropium*, *Myosotis*, *Senecio*.
- 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.
- *In vitro* testing of hepatotoxicity and genotoxicity of 10 selected alkaloids was performed at the University of Kaiserslautern/Germany with the objective to allow a better comparability of the individual alkaloids.

Links to references can be provided by the author.

Status of information: 6 November 2019

Dr. Barbara Steinhoff, Bonn, Germany

Wolfgang-Kubelka-Award 2019 to Prof. Dr. Andreas Hensel

The **Wolfgang-Kubelka-Award** of the Austrian Society of Phytotherapy is announced every third year for scientific work with a highly relevant and innovative impact on natural products and phytotherapy. The 2019 award was given to Prof. Dr. Andreas Hensel, Institute of Pharmaceutical Biology and Phytochemistry, University of Münster, Germany. The prize is awarded with 3.000 € and honours the phytochemical and functional work for development of natural products from plants, directed against specific

virulence factors of pathogenic bacteria. The award was handed over within a scientific symposium at University of Vienna, Austria at November 13th 2019. At this event, Prof. Hensel gave his award lecture and impressed the audience about the potency of natural products to combat urinary tract infections and the outstanding phytotherapeutic research, which is going on in his group.

Cordial congratulations from the GA!



ABC's Norman R. Farnsworth Excellence in Botanical Research Award to Prof. Dr. Otto Sticher

Otto Sticher, professor emeritus of pharmacognosy at the Swiss Federal Institute of Technology in Zürich, Switzerland (ETH Zürich), GA honorary member and award-winner of Egon-Stahl in Gold of GA was bestowed of the prestigious **ABC's Norman R. Farnsworth Excellence in Botanical Research Award** at the 14th Annual ABC Botanical Celebration and Awards Ceremony on March 6, 2018, in Anaheim, California.

For more than fifty years, Prof. Sticher has been an outstanding personality with exceptional scientific achievements in the fields of ethnobotany and ethnopharmacology, natural products drug discovery, and analytical chemistry. His pioneering work on the chemistry of plant compounds known as iridoids, has also made extraordinary contributions to the development of analytical methods for quality control of herbal medi-

cines (fingerprint of ginsenosides in Ginseng and flavonoids in Ginkgo) laid the foundation of his international reputation.

The Society for Medicinal Plant and Natural Product Research congratulates Prof. Sticher for this further impressive honour.

Prof. Anna Rita Bilia, GA President

ASP Varro Tyler prize to Prof. Dr. Rudi Bauer

Former GA president Prof. Dr. Dr. h.c. Rudolf Bauer, professor of pharmacognosy and head of the Institute of Pharmaceutical Sciences at University of Graz, Austria, received the 2019 **ASP Varro Tyler prize**. The prize was handed over by Prof. Dr. John H. Cardellina II, Foundation Chair and

former ASP president of the American Society of Pharmacognosy, and former ASP president Dr. Cindy Angerhofer, during the 2019 ASP Annual Meeting in Madison, WI. The award lecture was entitled "The Echinacea Story: A Scientific Life Dedicated to a North American Medicinal Plant."



Celebration of 70th birthday of Prof. Dr. Wolfgang Blaschek

This year during the annual congress the 67th International Congress and Annual Meeting we celebrated a special anniversary, the 70th birthday of Prof. Dr. Wolfgang Blaschek, former GA President.

He studied Agricultural Biology at the University of Hohenheim, and in 1978 he obtained the PhD. He gained the habilitation in Pharmaceutical Biology at the University of Regensburg, on 1986, and from 1991 to 2014 he was full Professor and Head of the Department of Pharmaceutical Biology and Director at the Institute of Pharmacy, University of Kiel.

His research focused on diversified aspects, he was a specialist of polysaccharides and proteoglycans, from plants, algae and cyanobacteria but he also promoted a modern

rational phytotherapy to stimulate acceptance of herbal medicinal products. He is author of more than 200 publications in Scientific Journals and editor of diverse books considered milestones: the Teedrogen the most known book on pharmacognosy and the Hagers, the most famous for phytotherapy.

Member of diverse Scientific Committees and Societies he had many important functions in GA, member of the Board of Directors, Vice-President, and President of GA.

I have always appreciated his personality traits, his competence, his moderateness and determination at the same time, never excessive but extremely balance, a perfect gentleman.

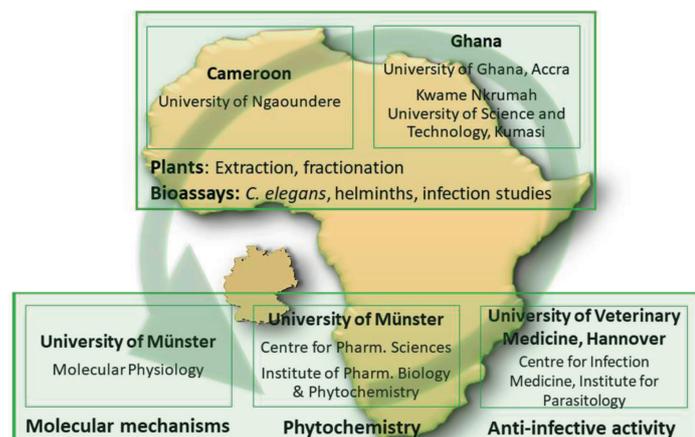


Happy birthday and many happy returns of the day together with your nice wife Heidi from GA family!

Prof. Dr. Anna Rita Bilia, GA President

Hot Topic Projects

German Research Council (DFG) funds African-German Research Infectiology Network: "New insights into molecular mechanisms of anthelmintic proanthocyanidins"



The German Research Council (Deutsche Forschungsgemeinschaft, DFG), the highest governmental institution in Germany for support of basic research, founds a three year cooperation project between Germany, Cameroon and Ghana in the area of infectiology. Main topics are the molecular mechanisms on the mode of action of oligomeric proanthocyanidins against nematodes.

It is known from literature (for review see Spiegler et al 2017 Natural Product Reports. 34, 627–643) that proanthocyanidins exert moderate nemtotoxic activity, however, it still remains unclear, what the molecular and cellular targets of the parasites are, leading to the death of the nematodes.

The project is run in a cooperation among the **University of Münster** (Institute of Pharmaceutical Biology and Phytochemistry, Prof. Andreas Hensel, Dr. Verena Spiegler), University of Münster (Institute of Animal Physiology, Prof. Eva Liebau), **Veterinary University of Hannover** (Prof. Christina Strube), the **University of Ghana**

in **Accra**, Ghana (Dr. Emelia Opong Bekoe), **Kwame Nkrumah University of Science and Technology in Kumasi**, Ghana (Prof. Christian Agyare) and the **University of Ngaoundéré**, Cameroon (Prof. Dieudonne Ndjonga, Kamerun). The experiments will thus be performed in a really interdisciplinary way, using *in vitro*, *in vivo*, *ex*

vivo investigations and animal infection studies. Coordinator of the project is GA member **Dr. Verena Spiegler**; also both principal investigators from Ghana as well as Prof. Hensel, the spokesman of the project are GA members. This project has in part emerged from the GA African Research Network.

Conservation of European Biodiversity through Exploitation of Traditional Herbal Knowledge for the Development of Innovative Products

EthnoHERBS is the acronym of a research **European project** which aims to apply systematic ethnobotanical surveys and cutting edge technologies in the field of Natural Product Chemistry in order to fully and efficiently exploit the traditional knowledge and the therapeutic potential of medicinal and aromatic plants of the Balkan Peninsula.

The consortium consists of seven academic and eight SMEs partners, which under the coordination of **Dr. Nektarios Aligiannis**, Associate Professor at the Department of Pharmacognosy and Natural Products Chemistry (Faculty of Pharmacy, University of Athens), will join forces and exchange know-how through an extended secondments scheme to advance Research & Innovation:

Academic partners: National and Kapodistrian University of Athens (GREECE), University of Belgrade (SERBIA), Bulgarian Academy of Sciences (BULGARIA), Università Degli Studi Di Firenze (ITALY), Institut Dr. Josif Pancic (SERBIA), Universidade Do Minho (PORTUGAL), Benaki Phytopathological Institute (GREECE)

Non-academic partners: Zurko Research (SPAIN), Indena SPA (ITALY), Apivita (GREECE), Novamechanics Limited (CYPRUS), Associacao Universidade Empresa Para Desenvolvimento Tecminho (PORTUGAL), Venus Roses Lab Solutions (BUL-

GARIA), EURO HERBS Doo (SERBIA), Galen-N (BULGARIA).

The duration of the project is four years and has a **total budget of 2.447.200 €**.

The scientific concept of **EthnoHERBS** involves the **Conservation of European Biodiversity through Exploitation of Traditional Herbal Knowledge for the Development of Innovative Products**

The cornerstone of 'EthnoHERBS' project is the exploitation of traditional knowledge, the investigation of plant biodiversity and the application of eco-friendly technologies for the efficient extraction and purification of bioactive ingredients, as well as their complete chemical characterization and biological evaluation of their effects on skin disorders. Optimization of production processes as well as formulation using emerging technologies will lead to the development of novel final products. The organic cultivation of selected plants will ensure the conservation of biodiversity and the sustainability of the project.

In more details, information related to the use of herbs for the treatment of skin disorders will be collected and a selection of these herbs will be chemically analyzed. For the fast and efficient identification of bioactive components chemometrics and heterocovariance methodologies will be used as well as application of metabolomics



and dereplication approaches and other improved techniques will be used to isolate, purify, and structurally characterize the active constituents, which will be further investigated with the aim to be exploited commercially. A broad spectrum of bioassays will be incorporated for the evaluation of antioxidant, antimicrobial, anti-inflammatory, anti-aging, skin whitening and wound healing properties of all derived extracts and products.

Using the experience of the academic partners in ethnobotany, phytochemistry and biology, as well as the practical experience of the SMEs in commercialization of plant derived products and development of innovative final products, transfer of scientific knowledge, best practices and know-how, training courses and workshops will take place. Overall, the implementation of the **'EthnoHERBS' project aspires to develop a successful and sustainable international and intersectoral collaboration model that will contribute to the most effective conservation and exploitation of natural resources and the development of innovative products.**

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Dr. Nikolas Fokialakis

Mistletoe Symposium 2019, supported by GA

The 7th Mistletoe Symposium (7 to 9th November 2019) took place in Nonnweiler-Otzenhausen, Germany. The symposium had been financially supported by GA. It was organized by Dr. Rainer Scheer (Carl Gustav Carus-Institut) and supported by several organisations, including the International Society for Medicinal Plant and Natural Product Research. It attracted more than

100 participants. The recent achievements were presented in more than 60 contributions, either as lectures or on posters, reporting the state-of-the-art of mistletoe research in biology and pharmacology, as well as in preclinical and clinical research. For example, the metabolomes of three subspecies of *Viscum album ssp. album* collected from their respective host trees were



analyzed and compared. Furthermore, it was reported that energy metabolism in *V. album* follows unique routes, which may contribute to the extraordinary biochemical properties of this species. The clinical part had its main focus on bronchial and breast cancer, with a spotlight on psychooncological aspects. A special focus was put on checkpoint inhibitors and immunological aspects were also dealt with in a more general way. Due to the direct cytotoxic effects of mistletoe ingredients, such as the mistletoe lectins and viscotoxins, a direct tumor-related application seems reasonable. Hence,

cases of intratumoral, intravenous, intrapleural or intraperitoneal application of mistletoe extracts were reported, mainly with a focus on safety. It was suggested that these treatments may provide sustained local tumor control. Besides the numerous clinical reports, including case studies, a novel aspect of complementary mistletoe therapy was discussed, namely its possible interaction with biologicals such as monoclonal antibodies. The symposium not only provided an overview but also gave new impulses and a boost of motivation for further research. The mistletoe symposium still is a

fascinating forum for common discourse mingling biological, pharmaceutical and clinical expertise to generate synergism and a driving force for further studies and approaches in mistletoe research and clinical application.

Abstracts of all contributions are published in the Phytomedicine Supplement S1, now available online: <https://www.sciencedirect.com/journal/phytomedicine/vol/18/suppl/S1>

Prof. Dr. Wolfgang Kreis, Erlangen, Germany

Scientists' Warning on Climate Change and its Impact on Medicinal Plants

Scientists from all continents including Professor Michael Heinrich have highlighted the impact climate change has on medicinal plants, their quality and the trade in medicines derived from them.

They highlight the need for actions including conservation and local cultivation of valued plants, sustainability training for harvesters and certification of commercial material, preservation of traditional knowledge, and programs to monitor raw material quality, in addition to, of course, efforts to mitigate climate change (see Applequist et al. [2019] *Planta Medica*)

This warning focuses on the impact climate change already has had and will have on the supply and use of medicinal plants (as well as mushrooms). With the vast majority of the world's population relying on direct access to traditional and local medicines as their primary resource for medical treatment, and with medicinal plants being an important element of self-care in all countries of the global North, environmental challenges caused by climate change will directly impact on human health.

The authors highlight that 'plant populations may be threatened by changing temperature and precipitation regimes, disruption of commensal relationships, and increases in pests and pathogens, combined with anthropogenic habitat fragmentation that impedes migration'. As highlighted specifically by Michael Heinrich's group, too, unsustainable harvesting of medicinal species results in additional pressures pushing many populations to extinction.

Plants respond to increased environmental stresses not only with declines in biomass production but with changes in chemical content, potentially affecting quality or even safety of medicinal products. This calls for a concerted action and research which can be translated into direct measures to mitigate such changes.

The initiative is led by Dr. Wendy Applequist, and in addition to the core team of authors, has also been endorsed by a group of leading experts representing major societies and journals in the field.

This commentary is based on the Second Warning to Humanity on Climate Change (Ripple et al. 2017; including 15,364 scientist signatories from 184 countries; *BioScience* 67: 1026–1028) presented up-to-date evidence for the continuing unsustainable loss of major environmental resources on which humanity depends, and made broad-scale proposals for steps humanity could take to avoid environmental collapse, to call attention to the fact that around the world, human populations' access to medicinal plants is likely to be threatened by climate change, in addition to the perennial threats of direct anthropogenic habitat loss and overharvesting.

Contact:

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Further information:

Scientists' Warning on Climate Change and Medicinal Plants – <https://www.thieme-connect.com/products/ejournals/pdf/10.1055/a-1041-340...>

Recent thesis (2019) on Medicinal Plant Research



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

Dr. rer. nat. thesis (2019) Pectins and pectin-like polysaccharides with anti-adhesive properties against *Helicobacter pylori*. By: Maren Gottesmann. Promotor: Prof. Dr. Andreas Hensel, Institute of Pharmaceutical Biology and Phytochemistry, University of Münster, Germany.

Dr. rer. nat. thesis (2019) Phytochemische Untersuchungen an *Armoracia rusticana* G. Gaertn., B. Mey. & Scherb. By: Elena Jimenez Negro. Promotor: Prof. Dr. Andreas Hensel, Institute of Pharmaceutical Biology and Phytochemistry, University of Münster, Germany.

Dr. rer. nat. thesis (2019) Phytochemische Untersuchungen und *in vitro* Wirkung hydro-alkoholischer Extrakte aus *Tropaeolum majus* L. – Tragen die Begleitstoffe zur Wirkung bei? By: Pia Vollmer Promotor: Prof. Dr. Andreas Hensel, Institute of Pharmaceutical Biology and Phytochemistry, University of Münster, Germany.

Dr. rer. nat. thesis (2019) Natural products of traditionally used plants with anthelmintic activity – Isolation, characterization and investigations on the mode of action. By: Susanne Lehmann. Promotor: Prof. Dr. Andreas Hensel, Institute of Pharmaceutical Biology and Phytochemistry, University of Münster, Germany.

Dr. rer. nat. thesis (2019) Qualitative and Quantitative Structure-Activity Relationships on 2-phenyl-2,3-dihydrobenzofurans as Leishmanicidal Agents. By: Freddy Alexander Bernal. Promotor: Prof. Dr. T. J. Schmidt, Institute of Pharmaceutical Biology and Phytochemistry, University of Münster, Germany.

Ph.D. thesis (2019) Influence of myxobacterial compounds on the interaction of endothelial cells with cancer cells or leukocytes. By: Betty Luong. Promotor: Prof. Dr. Robert Fürst, Institute of Pharmaceutical Biology, Goethe University Frankfurt, Germany.

Ph.D. thesis (2019) Transcriptomic analysis of *Radula marginata* TAYLOR for identification of key genes in the biosynthesis of the cannabinoids-like compound. By: Tajammul Hussain; Supervisor: Prof. Dr. Dr. Oliver Kayser, Department of Technical Biochem-

istry, Faculty of Biochemical Engineering, Technical University Dortmund, Germany.

Ph.D. thesis (2019) Establishment and development of methods for genetic modifications in plants and their effect on the metabolism. By: Julia Schachtsiek. Promotor: Prof. Dr. Dr. h.c. O. Kayser, Laboratory of Technical Biochemistry, Department of Biochemical and Chemical Engineering, TU Dortmund University, Germany.

Ph.D. thesis (2019) Ethnobotany, phytochemistry and DNA metabarcoding studies on Indian traditional medicine. By: G. S. Seethapathy. Promoter Dr. H. Wangensteen, School of Pharmacy, University Oslo, Norway.

Ph.D. thesis (2019) Phytochemical and pharmacological investigations of *Sphaeranthus africanus*. By: Huyen Tran Thi; Supervisor: Univ.-Prof. Dr.Dr.h.c. Rudolf Bauer, University of Graz, Institute of Pharmaceutical Sciences, Austria.

M.Sc. thesis (2019) Rationale Suche nach Naturstoffen mit antitrypanosomaler Aktivität. In silico und in vitro-Identifikation von Inhibitoren des Folatstoffwechsels. By: Katharina Possart. Prof. Dr. T. J. Schmidt, Institute of Pharmaceutical Biology and Phytochemistry, University of Münster, Germany.

M.Sc. thesis (2019) Bioactive substances in *Ficus platyphylla*. By: Stanislava Stevanovic. Promoter Dr. H. Wangensteen, School of Pharmacy, University Oslo, Norway.

Diploma thesis (2019) Naturstoffe und ihre Auswirkung auf die Cholesterinhomöostase im Caco-2-Modell. By: Meryem Senyer. Promotor: Prof. Dr. Verena M. Dirsch, Department of Pharmacognosy, University of Vienna, Austria.

Diploma thesis (2019) Ausgewählte Naturstoffe und ihr Potenzial die iNOS-abhängige NO-Produktion und die ROR γ -Aktivität zu beeinflussen. By: Amro Ahmed. Promotor: Prof. Dr. Verena M. Dirsch, Department of Pharmacognosy, University of Vienna, Austria.

Diploma thesis (2019) Aufklärung des Wirkmechanismus von Tylophorin auf den Zell-

zyklus glatter Gefäßmuskelzellen. By: Ines Feldler. Promotor: Prof. Dr. Verena M. Dirsch, Department of Pharmacognosy, University of Vienna, Austria.

Master thesis (2019) The role of GATA6 in the molecular phenotypes of PDAC. By: Vivien-Sandra Ionasz. Promotor: Prof. Dr. Verena M. Dirsch, Department of Pharmacognosy, University of Vienna, Austria.

Diploma thesis (2019) Isolierung von Xanthonen aus den unterirdischen Teilen von *Metaxya rostrata*. By: Bernadette-Theresia Oláh; Promotor: Prof. L. Krenn, Department of Pharmacognosy, University of Vienna, Austria.

Diploma thesis (2019) Isolierung neuer Xanthone aus *Metaxya rostrata*. By: Stefanie Rindler; Promotor: Prof. L. Krenn, Department of Pharmacognosy, University of Vienna, Austria.

Diploma thesis (2019) Phytochemische Untersuchung von Zubereitungen aus *Psidium galapageium* Hook. f. By: Lisa Krupicka; Promotor: Prof. L. Krenn, Department of Pharmacognosy, University of Vienna, Austria.

Diploma thesis (2019) Generation of AMP¹-activated protein kinase pharmacophores and virtual screening. By Andreas Wasilewicz. Supervisors: Prof. J. M. Rollinger, University of Vienna, Austria.

Diploma thesis (2019) Phenotypic screening of selected extracts extending the lifespan of *Caenorhabditis elegans*. By Kevin Mészáros. Supervisors: Prof. J. M. Rollinger, University of Vienna, Austria.

Diploma thesis (2019) Unravelling the lifespan increasing potential of P. s. in a phenotypic *Caenorhabditis elegans* lifespan assay. By Anna Thrakl. Supervisors: Prof. J. M. Rollinger, University of Vienna, Austria.

Diploma thesis (2019) Identifizierung von chinesischen Pflanzendrogen und Granulaten mittels Hochleistungs-dünnschichtchromatographie. By: Hans Schönfelder; Supervisor: Univ.-Prof. Dr.Dr.h.c. Rudolf Bauer, University of Graz, Institute of Pharmaceutical Sciences, Austria.