



Leopoldina

news

Deutsche Akademie der Naturforscher Leopoldina –
Nationale Akademie der Wissenschaften

Halle (Saale), 10 June 2011

02/2011

Topping-out ceremony for new headquarters

Refurbishment work on the distinguished building on the Jägerberg is
due to be completed by the end of this year.



The weather was sunny as President Jörg Hacker gave a speech to welcome over 200 guests from the spheres of science, politics and society at the topping-out ceremony for the Leopoldina's new main building in Halle.

Photo: Markus Scholz

Work on the Leopoldina's new main building in Halle is progressing at an impressive pace. The German National Academy of Sciences celebrated the topping-out ceremony on 18 May, which was attended by numerous representatives from the spheres of politics, science and society. Welcome addresses were given by Cornelia Quennet-Thielen, State Secretary at the Federal Ministry of Education and Research; Dr. Andreas Scheuer, Parliamentary State Secretary at the Fe-

deral Ministry of Transport, Building and Urban Development; and Marco Tullner, State Secretary at the Ministry of Science and Economy for the State of Saxony-Anhalt.

The extensive refurbishment of the building is scheduled to be completed by the end of the year. The project has been granted funding of €15.8 million, which the Federal Ministry of Transport, Building and Urban Development is providing

▶ *Continued on page 2*

Dear members

and friends of the Leopoldina,

The Leopoldina is dedicated to communicating the findings of its work to the general public. This issue contains articles



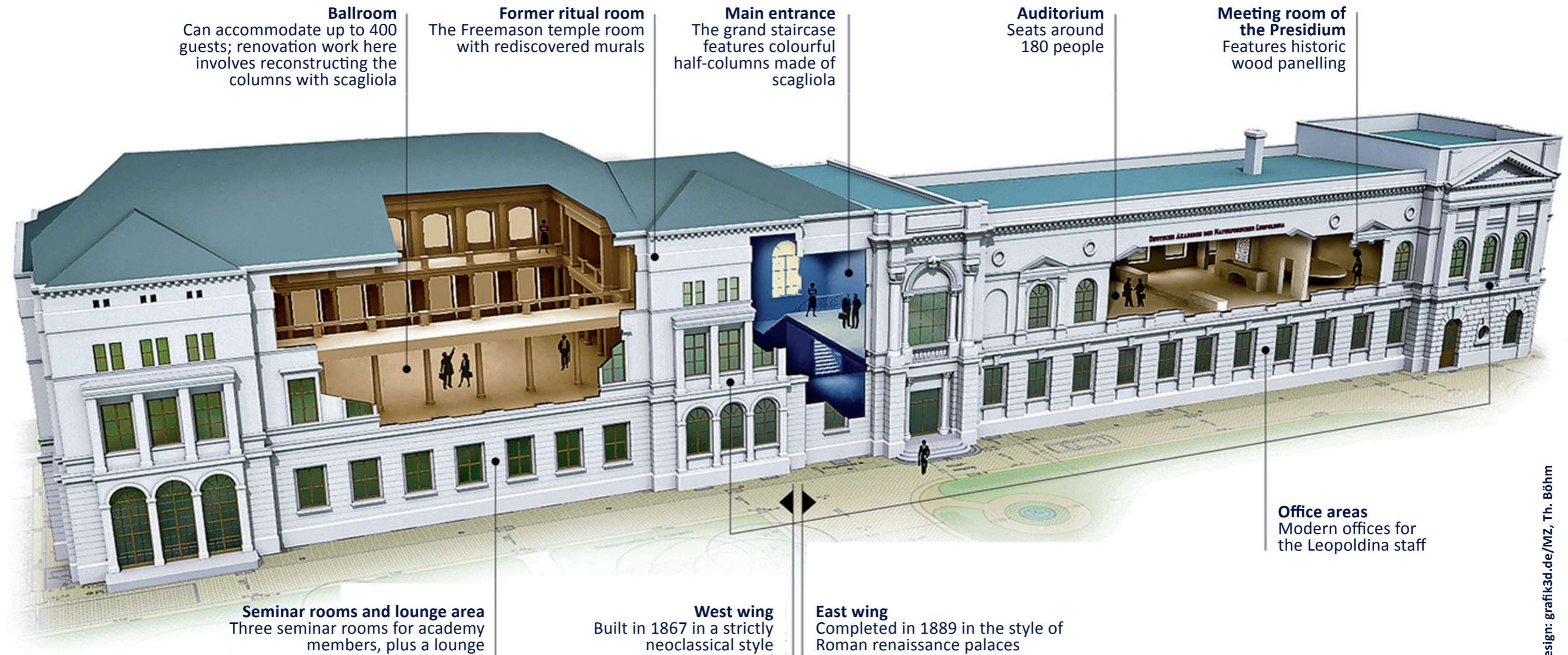
on several events where we discussed our position on pre-implantation diagnosis and on predictive genetic diagnosis. The topic attracted a great deal of interest and

sparked animated discussions. We will soon be continuing our work in making science and research publicly accessible and encouraging public debate at a new location. We celebrated the topping-out ceremony for the Leopoldina's new headquarters in Halle on 18 May. From next year on the Leopoldina will be welcoming guests in the new main building. We are already in the process of planning a whole series of events that the public is invited to attend, including Leopoldina Lectures in which leading scientists will present their work. Some of the activities will take place as part of the German-Russian Year of Science 2011/12, which was launched at the end of May and to which the Leopoldina is particularly committed. You can find out more about the German-Russian Year of Science and about numerous other events in the current issue of "Leopoldina News".

Kind regards,

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The new main building of the German National Academy of Sciences Leopoldina in Halle



Design: grafik3d.de/MZ, Th. Böhm

from the Federal Government's second economic stimulus package. Earlier, the state of Saxony-Anhalt helped to purchase the building by contributing nearly €1 million in funds, also from the second economic stimulus package.

At the topping-out ceremony Prof. Dr. Jörg Hacker ML, President of the Leopoldina, emphasized that the new headquarters would be an international centre for

science and social dialogue: "Once the renovation is completed, the Leopoldina will have an impressive main building in the centre of Halle. In addition to offering space for our steadily growing team, it will also provide room for scientific symposiums, meetings and public events."

In her speech, Cornelia Quennet-Thielen, State Secretary at the Federal Ministry of Education and Research, said:

"The new location will provide the Leopoldina with a setting befitting its role as a national academy. We are using resources from the economic stimulus programme to create a place of academic, political and social dialogue with a high international profile." Dr. Andreas Scheuer, Parliamentary State Secretary at the Federal Ministry of Transport, Building and Urban Development, said: "I am delighted that the

Leopoldina will soon have headquarters that reflect its significance and will bolster Halle's reputation as a centre of culture and science. By renovating the building, we are also supporting and increasing public awareness of our architectural heritage. This is something we consider particularly important in a city like Halle, which has so many buildings of architectural and historical value." (mab)

3D views

This image gives an idea of what the Leopoldina's new headquarters will look like when renovations are completed at the end of the year. The building will feature a ballroom for around 400 people, an auditorium that can seat around 180, and seminar rooms for events, symposia and lectures. The office spaces will accommodate the President, the Secretary General and Administration and Technical Services, the Departments of Policy Advice, the Department of International Relations, and the Department of Press and Public Relations.

News

Recommendations to the G8 Summit

The national science academies of the G8+ states presented two statements to the participating governments in the run-up to the G8 Summit of Heads of State and Government in Deauville, France.



Group photo of the representatives of the national science academies of the G8 states and other participating academies at their working meeting in Paris in spring 2011.

Photo: Académie des sciences

Along with the national science academies of the other G8+ states, the Leopoldina prepared two statements in the run-up to the G8 Summit of Heads of State and Government this spring. The recommendations contained in the statements were presented to the participating governments for the negotiations in Deauville, France on 26 and 27 May. In their statement on "Education for a Science-Based Global Development", the academies urged governments to target investment to establish an infrastructure for the globalization of knowledge in science and technology. A further statement on "Water and Health" urgently recommended

improving access to clean drinking water and sanitation for the world's population to protect people against serious disease and epidemics.

Every year since the G8 Summit of Heads of State and Government in Gleneagles, Scotland in 2005, the national academies of the G8 states – Canada, France, Germany, Italy, Japan, Russia, the United Kingdom and the US – have prepared science-based statements on global issues relevant to society, with the aim of supporting governments in their negotiations at the annual G8 summits. The statements for this year were prepared at a conference of the representati-

ves of the science academies in Paris on 24 and 25 March. Alongside the science academies of the G8 countries, the academies of South Africa, Brazil, India, Mexico and Senegal also participated in the conference. In this group of academies of science, Germany is always represented by the Leopoldina - German National Academy of Sciences. (mab)

► The original statements in English and Leopoldina's translations of the texts into German are available at the following link under Politics: www.leopoldina.org

Volker ter Meulen was honoured for his service to the Leopoldina

The city of Halle bestowed its Cup of Honour on Prof. Dr. Volker ter Meulen ML in recognition of his dedication and commitment during the time he served as Leopoldina President from 2003 to 2010, which contributed substantially to raising Halle's profile as the seat of Germany's National Academy of Sciences, both nationally and internationally. In his laudation, Leopoldina Vice President Prof. Dr. Gunnar Berg ML described Professor ter Meulen as an indefatigable and indispensable champion of the Academy's interests who succeeded in "consolidating the Leopoldina's position so that it could not be disregarded in the decision to found a German Academy of Sciences". (mab)

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The Mayor of Halle, Dagmar Szabados, presented the Cup of Honour. Photo: Scholz

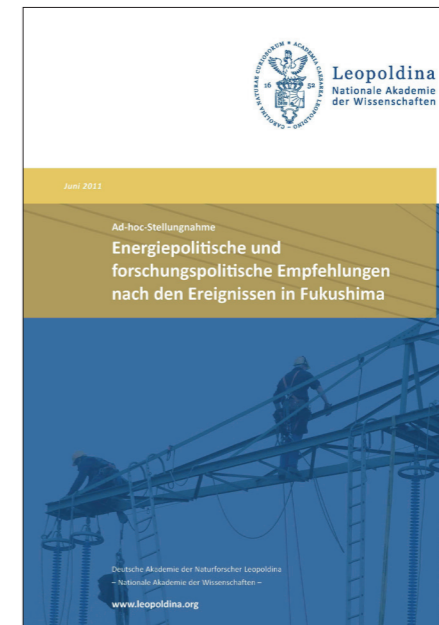
Leopoldina submits recommendations for energy and research

Germany has been discussing the future of energy supply and issues of energy research for a long time now. Recent events in Fukushima have made these matters more relevant than ever and have sparked heated debates both in politics and society.

On 22 March 2011, Federal Chancellor Merkel appointed an Ethics Commission on a Safe Energy Supply. The purpose of the commission is to make responsible decisions on restructuring energy supply on the basis of comprehensive information and thus ensure sustainable development for Germany. On 30 May 2011 the commission submitted its main ideas and their practical consequences in a 48-page final report, entitled "Deutschlands Energie-wende – Ein Gemeinschaftswerk für die Zukunft" („Germany's Energy Transition: A Collective Endeavour for the Future"). The goal is to initiate the changes – based on broad social consensus – necessary to secure a sustainable energy supply. The commission recommends complete nuclear phase-out within a decade and describes the measures Germany will have to adopt to achieve this. Prof. Dr. Jörg Hacker ML, President of the Leopoldina, is among the 17 experts from different areas of society appointed to the ethics commission.

The report incorporated the Leopoldina statement "Energiepolitische und forschungspolitische Empfehlungen nach den Ereignissen in Fukushima" ("Energy- and research-policy recommendations following the events in Fukushima"). In response to the request issued on 21 March 2011 by Prof. Dr. Annette Schavan, the German Federal Minister of Education and Research, the Leopoldina set up a working group which compiled an ad-hoc statement in April/May 2011 under the leadership of Prof. Dr. Ferdi Schüth ML. The statement is based on the energy research programme that was presented in autumn 2009 and published by the Leopoldina in collaboration with the German Academy of Science and Engineering, and the Berlin-Brandenburg Academy of Sciences and Humanities (for the Union of the German Academies of Sciences and Humanities).

The Leopoldina statement focuses on energy research and contains twelve declarations that mainly address research-policy issues. It holds that from a techni-



Title page of the Leopoldina statement

cal and scientific perspective it is possible to phase out nuclear power within about ten years. The authors sketch out the framework conditions that Germany must comply with to achieve this. One of the conditions involves setting up a long-term, independent body to monitor the restructuring process. The statement also says that accelerating nuclear phase-out will not affect the country's long-term energy-research goals. The authors consider it important for energy research to address a broad spectrum of topics over the long term. Research must also, they say, present society with additional options by covering everything from basic research to highly application-oriented work. The statement considers a number of measures in the electricity sector – particularly those designed to increase efficiency – to be important in the short term. It also highlights the international dimension of energy policy, since many plans in this area are made on a Europe-wide level.

The key declarations of the Academy's 2009 energy research concept continue to apply, according to the statement. This, it says, holds true from a technical and scientific perspective as well as from a social-

sciences perspective. The statement considers the following areas to be of particular importance in future energy research: developing intelligent control systems, accelerating advances in storage technologies, and investigating fundamental processes on a molecular level.

The Leopoldina statement was prepared, reviewed and approved in a multi-stage process, and was submitted to Federal Minister Schavan on 7 June. The German Federal Government has begun making the necessary legal amendments and has issued a draft of the Renewable Energy Act. The Bundestag is set to vote on the draft as early as the end of June 2011.

► The statement's recommendations and the 2009 energy research programme are available at www.leopoldina.org (in German). The ethic commission's report is available at www.bundesregierung.de

Members of the Leopoldina core working group:

- Prof. Dr. Ferdi Schüth ML, chair
- Prof. Dr. Frank Behrendt
- Prof. Dr. Ortwin Renn
- Prof. Dr. Robert Schlögl ML
- Prof. Dr. Eberhard Umbach
- Prof. Dr. Hermann-Josef Wagner ML

Members of the ethics commission:

- Prof. Dr. Matthias Kleiner ML, chair
- Prof. Dr. Klaus Töpfer, chair
- Prof. Dr. Ulrich Beck
- Dr. Klaus von Dohnanyi
- Bischof Dr. Ulrich Fischer
- Alois Glück
- Prof. Dr. Jörg Hacker ML
- Dr. Jürgen Hambrecht
- Dr. Volker Hauff
- Walter Hirche
- Prof. Dr. Reinhard Hüttl
- Prof. Dr. Weyma Lübbe
- Kardinal Dr. Reinhard Marx
- Prof. Dr. Lucia Reisch
- Prof. Dr. Ortwin Renn
- Prof. Dr. Miranda Schreurs
- Michael Vassiliadis

International Issues

The Leopoldina is actively supporting the German-Russian Year of Science

Germany and Russia have steadily expanded the scope of their collaboration in science and research over the past two decades. To consolidate these ties, the Federal Minister of Education and Research, Prof. Dr. Annette Schavan, and her Russian counterpart, Andrei Fursenko, recently inaugurated the "German-Russian Year of Education, Science and Innovation 2011/2012". In accordance with the motto "Partnership of Ideas", leading science and research organisations, universities and companies in Germany and Russia are holding joint events, conferences, symposia and workshops on important issues of the future. The Leopoldina is among the organisations actively involved in the bilateral year of science, which was launched in an official ceremony in Moscow on 23 May 2011.

The involvement of the Leopoldina in the German-Russian Year of Science:

Joint Conference on Infectious Diseases

The international "Joint Conference on Infectious Diseases" will be held in No-

vosibirsk in June 2011 in cooperation with the Koch-Mechnikov Forum and the Russian Academy of Medical Sciences. In addition to enabling German and Russian scientists to exchange information and ideas on basic research in infection biology, the conference specifically aims to interest young scientists in becoming partners in future long-term bilateral projects in infection research. In a "Meet the Professor" session, young scientists will have the opportunity to meet and discuss with top researchers. The event also aims to draw attention to academic collaboration between the two countries in the spirit of scientific cooperation.

Leopoldina Lectures

A series of lectures has been scheduled featuring talks to be held in Moscow, Kaliningrad, Berlin and Halle. In Kaliningrad, Prof. Dr. Ottfried Höffe ML will speak on Immanuel Kant, and Prof. Dr. Dieter Bimberg ML will give a lecture on nanophysics in Moscow. Further events are currently being planned, with lectures focusing on the general themes of physics, nanosciences and the Enlightenment.

Promotion of junior scientists

The German National Academy of Sciences Leopoldina will also work with the Russian National Academy to promote collaboration between outstanding young German and Russian researchers at the academy level.

"Berlin meets Moscow"

As topics of major importance for both Russia and Germany, health and the life sciences are a special focus of the German-Russian Year of Science 2011. As part of the World Health Summit 2011, the Leopoldina is organizing the symposium "Berlin meets Moscow" in the Representation of the State of Saxony-Anhalt in Berlin on 24 October. Participants in the symposium will examine strategies, share experiences and explore synergies in the fields of the health sciences, healthcare and the healthcare industry.

► *Further information on the Year of Science is available at: www.deutschrussisches-wissenschaftsjahr.de*

Marina Koch-Krumrei heads Department of International Relations

Internationally experienced lawyer Dr. Marina Koch-Krumrei has joined the team of department heads at the Leopoldina. Since taking up her position as Head of the Department of International Relations on 1 April this year, she has been developing concepts and approaches to advance the Leopoldina's work within the network of internationally active academies and international committees. She gained many years of experience in this area at the German Research

Foundation (DFG). Born in 1959, Marina Koch-Krumrei studied Law at LMU Munich and passed both German state law examinations. She went on to receive a doctorate for her dissertation on the copyright protection of academic works in Germany and France at the Max Planck Institute for Foreign and International Patent, Copyright and Competition Law in Munich. After a stay abroad in Columbia, Koch-Krumrei began working for the German Research Foundation (DFG) in

1991. She lived and worked in Hong Kong and Moscow from 1995 to 1999 before going on to head the DFG's Berlin office. She held this position until leaving for Washington to set up the DFG's liaison office there in 2003, which she headed until 2006. When she returned to Germany, she worked as Head of the Berlin DFG office before accepting her current position as department head at the German National Academy of Sciences Leopoldina. (mab)

Workshop on transgenic plants concludes the successful German-Brazilian Year of Science

The importance of transgenic agricultural plants for the world's food supply and for the production of biomass was the topic of a workshop in Hanover on 4 and 5 April 2011, which marked the official end of the German-Brazilian Year of Science, Technology and Innovation. The bilateral workshop was organized by the Leopoldina in collaboration with the German Research Foundation (DFG) and the Brazilian Federal Agency for the Support and Evaluation of Graduate Education (CAPES).

During the two-day event, representatives of the Federal Ministry of Education and Research (BMBF), the Brazilian National Council for Scientific and Technological Development (CNPq), the DFG, the Leopoldina and CAPES met with leading German and Brazilian scientists in this field. All official representatives emphasized the long history of German-Brazilian cooperation and underlined the importance of transgenic plants – a term that includes both genetically engineered plants and plants produced using genetically modified organisms – for the food industry, and increasingly, in the cultivation of energy crops, as well. Glaucius Oliva, President of Brazil's National Science Council, stressed that "producing food and supplying energy" were among "the biggest challenges facing us in the future".

The cultivation and export of crops is a major pillar of the Brazilian economy, and the country is increasingly turning



Prof. Dr. Jutta Schnitzer-Ungefug, General Secretary of the Leopoldina, talked about the importance of international relations.

Photo: Markus Scholz

to biotechnological methods to meet its production needs. Although research in this field is more strictly regulated in Europe, plant biotechnology is a major focus of science in Germany as well.

Workshop participants exchanged detailed information on the current state of research, discussing issues relating to basic research – such as how networks of genes can regulate internal cell processes and the effects of high temperatures on barley seed vessels – as well as issues relating to the direct application of biotechnological methods, e.g. in the cultivation of crops such as sugar beets, sugarcane and citrus fruit. Discussions also focused on the opportunities and challenges involved in biotechnology research on increasing crop yields, pest control and po-

tential medical applications.

There was consensus among workshop participants that the bilateral Year of Science had given fresh impetus to the long-standing, successful cooperation between German and Brazilian scientists working in the field of plant biotechnology. They agreed to formulate future topics and a joint strategy for further bilateral projects.

The BMBF's German-Brazilian Year of Science 2010/11 was conceived with the aim of raising the profile of the scientific cooperation between the two countries and providing new momentum for their collaboration in the fields of science and technology. (hst)

EASAC presents report on infectious diseases

"Infectious diseases create 10% of the burden of disease in Europe. They continue to represent a major and serious challenge and we remain vulnerable to future global threats. To tackle this challenge, Europe needs to create new effective partnerships for health between science, industry and policy-makers." These words were spoken by Prof. Dr. Volker ter Meulen ML, chairman of the Biosciences Steering Panel of the European Acade-

mies Science Advisory Council (EASAC), on the occasion of the publication of the EASAC report "European Public Health and Innovation Policy for Infectious Disease: The View from EASAC" on World Health Day on 7 April of this year.

The report provides an overview of the scope of action available to EU policy-making institutions to counter the growing threat posed by the spread of infectious diseases. The report includes

recommendations on the following issues: the rise of antibiotic resistance; the emergence of new zoonoses (infectious diseases that can be transmitted from animals to humans); the resurgence of infectious diseases once thought to be under control, such as tuberculosis; and the threat of bioterrorism. (mab)

► *For further information and for the full report see: www.easac.eu*

Conference Reports

New and old tropical infectious diseases

Joint conference of the Leopoldina and the Ghana Academy of Arts and Sciences in Kumasi on tropical medicine and the challenges of the future / by Prof. Dr. Bernhard Fleischer ML

At a conference jointly held by Leopoldina and the Ghana Academy of Arts and Sciences, scientists from Germany and Ghana convened to discuss the latest research findings and new approaches to combating major infectious diseases in the tropics. The conference also received support from the German Research Foundation DFG and was held in Kumasi, the second-largest city in Ghana and home of the renowned Kwame Nkrumah University of Science and Technology, on 21 and 22 March. Those attending included members of the Executive Council of the Ghana Academy of Arts and Sciences; the former Leopoldina President Prof. Dr. Volker ter Meulen ML and the Secretary General of the Leopoldina, Prof. Dr. Jutta Schnitzer-Ungewag. The conference was organized by the Bernhard Nocht Institute for Tropical Medicine (BNI) in Hamburg and the Kumasi Centre for Collaborative Research (KCCR), the joint research institute of Kwame Nkrumah University and the BNI.

Infectious diseases are still the major cause of mortality and morbidity in the tropics, and particularly in Sub-Saharan Africa. Children are especially vulnerable, and both acute and undetected chronic infections can severely if not irreversibly stunt their development (Stephan Ehrhardt, Hamburg). In his introduction, the Chief Director of the Ghanaian Ministry of Health (Sylvester Anemana, Accra/Ghana) emphasized the importance of research, but added that the ministry has no means of funding research projects and only very limited resources for implementing control measures.

Although significant progress has been made in combating malaria, it remains one of the world's most devastating infectious diseases. Approximately 3.3 billion people – half of the world's population – live in regions where malaria is endemic. Each year there are 250 mil-

lion cases of malaria worldwide, and the disease kills almost one million people annually, virtually all of them infants and small children. Malaria is also one of the greatest problems facing the healthcare system in Ghana (Ed Browne, Kumasi/Ghana), where it accounts for 30 to 40 percent of all out-patient treatments and is responsible for 61 percent of all hospitalisations of children under five.

The complex life cycle of the plasmodium parasite, involving liver and blood stages in the human host and sexual reproduction in the mosquito, offers several different targets for vaccines. Since clinical immunity to malaria has been well-documented in adults living in malaria endemic areas, immunisation with antigens (i.e. molecules derived from the parasite) in the blood phase offers a promising approach. Benjamin Mordmüller (Tübingen) reported on the vaccine GMZ2, which is currently undergoing clinical trials in Gabon. Vaccines targeting the liver phase tested in trials with mice have been shown to offer complete protection; however, an active malaria inhibited the response to immunisation (Thomas Jacobs, Hamburg). Vaccines targeting the liver stage are currently being tested in several large-scale projects. Eleven centres in seven African countries, including the KCCR, are currently conducting trials of the RTS,S vaccine involving almost 16,000 children in total, which are being funded by Glaxo-SmithKline and the Malaria Vaccine Initiative (Tsiri Agbenyega, Kumasi). The results so far – 35 percent fewer cases of malaria among children who received the vaccine – indicate that this strategy is successful.

Our understanding of the pathophysiology of severe malaria remains incomplete. We need to clearly define various clinical manifestations of the disease, such as severe malaria with and without CNS involvement and isolated severe

anaemia. Rolf Horstmann (Hamburg) reported that different forms of malaria are associated with different gene variants among patients. Interventions currently applied to control malaria include providing fast and effective treatment, using mosquito nets and indoor residual spraying of insecticides. The field of epidemiology also provides valuable insights that can translate into promising approaches for malaria control (Jürgen May, Hamburg). Julius Fobil (Accra) reported on relationships between types of land use and the incidence of malaria.

Another global health problem affecting Africa more than any other continent is tuberculosis, with nine million cases per year. Particular reasons for concern are growing drug resistance (Ellis Owusu-Dabo, Kumasi) and the increasing number of coinfections with HIV, which are estimated at one million per year (Yaw Adu-Sarkodie, Kumasi). Immunological research has identified new prognostic biomarkers, e.g. presence of certain particular multifunctional T cells, which enable a distinction to be made between latent and active infection (Marc Jacobsen, Hamburg).

Buruli ulcer is another serious infectious disease that is on the rise in many parts of Africa. It causes necrotising lesions to develop in the skin and occasionally in adjacent bone that, if left untreated, can lead to deformities, in some cases necessitating amputation. Although the genome of the pathogen causing Buruli ulcer, *Mycobacterium ulcerans*, has been sequenced, scientists know almost nothing about its natural reservoir and how it is transmitted (Edwin Ampadu, Accra). Richard Phillips (Kumasi) reported on a new oral antibiotic treatment with rifampicin and clarithromycin, a significant improvement over previous treatment with injections of the ototoxic antibiotic streptomycin, which frequently required hospitalisation

on for several weeks. Thomas Junghans (Heidelberg) introduced a new approach to treatment that takes advantage of the microbe's sensitivity to heat: if hot packs are applied to the affected areas, even extensive skin lesions can heal within several weeks.

Bacterial meningitis is a major health problem in Sub-Saharan Africa, with the northern zones of the countries south of the Sahara – the region known as the “Meningitis Belt” – carrying the heaviest disease burden. In this region, severe meningitis epidemics have occurred roughly every eight to twelve years over the past century. Ali Sié (Nouna/Burkina Faso) reported that newly introduced virulent clones of *Neisseria meningitidis* colonize the throat of individuals living in the region, resulting in epidemics in the dry season, when mucous membranes dry out. The situation in Sub-Saharan Africa differs from that in Europe, where the population is largely colonised by non-virulent meningococci, which results in partial protection. Research on the molecular epidemiology of the bacteria present in the population has allowed

scientists to predict epidemics.

Parasitic worms affect around one-third of all people on the globe; infections usually last for years or even decades and frequently cause inflammations and malnutrition. Moreover, the worms interact with the host's immune system to ensure their survival and thus compromise vaccines against other pathogens (Minka Breloer, Hamburg). Typical examples are infections with filarial nematodes; so far no medical treatments have been successful in killing these parasites, which are responsible for river blindness (onchocerciasis) and elephantiasis (lymphatic filariasis). Achim Hoerauf (Bonn) reported on a strategy against filariae that he had developed while at the BNI, which targets rickettsia-like endosymbionts harboured by filariae known as Wolbachia. Eliminating these bacteria with standard antibiotics causes the filariae to die off – within one week when a combination of several antibiotics is used, as shown in trials recently conducted by Hoerauf. Alexander Debrah (Kumasi) reported that Wolbachia are pathogenetically responsible for the symptoms of

lymphatic filariasis, partly through overproduction of the blood vessel stimulating cytokine VEGF. Eliminating Wolbachia therefore leads to improvement even of established symptoms.

As the SARS epidemic proved, new viruses can emerge from the tropics at any time. Christian Drosten (Bonn) demonstrated that bats, of which some species live in colonies numbering up to hundreds of thousands of individuals, are important reservoir hosts of emerging viruses. Drosten's research in Ghana, Gabon, Brazil and Europe indicates that many known viruses that infect humans, such as the human coronaviruses and the viruses that cause mumps and hepatitis, emerged from bats. This also applies to virtually all the new epidemic viruses that have surfaced in recent years, including the SARS, Nipah and Hendra viruses, as well as the Ebola and Marburg viruses. Given the incredible diversity of viruses harboured by bats, it is very likely that epidemics caused by new viruses will remain a threat in the future.

Complex systems and foreseeable risks

A new series of symposia hosted by the Leopoldina Classes was launched in March

In 2011, Leopoldina has established the new Class Symposia series. Class I, which includes Mathematics, Natural and Engineering Sciences, launched the series on 15 March with the symposium organized by Prof. Dr. Wolf Dieter Blümel ML entitled “Zukunftsfragen – Zur Stabilität komplexer Systeme und zur Bewältigung vorhersehbarer Risiken (Questions of the future – on the stability of complex systems and managing foreseeable risks)”.

More than 60 participants discussed a wide range of topics from climate disasters of the past, through airplane designs of the future, to researching security conflicts. The interdisciplinary nature of the event encouraged participants to engage in animated discussions above and beyond their own fields, which revealed

some new and unexpected interconnections. The botanists present, for example, were very interested in the statistical analysis of star, landslide and tree patterns presented by Prof. Dr. Dietrich Stoyan ML. They hope that application of his methods will reveal insights into possible patterns of wheat plants in fields. Precise analysis of individual plants could lead to a better understanding of resource availability and competition.

In the evening, Prof. Dr. Herbert Palme ML from the Senckenberg Research Institute in Frankfurt addressed an overcrowded lecture hall. His lecture on “Einschläge großer Meteorite auf die Erde“ (“The impacts of large meteorites on Earth”) covered intensively researched impacts such as the Barringer Crater in Arizona, as well as mysterious phenomena such as the Tunguska event in Siberia for which the

re is still no clear explanation to this day. He closed the lecture with the reassuring news that in all probability there will not be a large meteorite impact on Earth in the next 100 years.

In the Class symposia, Academy members, who are all leading scientists in their respective fields, present their research work on a wide range of topics. The symposia are targeted at scientists and students as well as members of the public interested in science. It is also a new forum of exchange between Leopoldina and regional scientific institutes. The Class II symposium (Biology and Life Sciences) “From molecules to functions” took place on 24 May in Halle. A report on this symposium will be included in the next issue of “Leopoldina news”. (ca)

Inside the Leopoldina

Senators and Spokespersons of the Leopoldina after the elections 2010/2011

Section 1 – Mathematics

Spokesperson and Senator:

Prof. Dr. Gisbert Wüstholtz, Zurich

Vice-Senator:

Prof. Dr. Wolfgang Hackbusch, Leipzig

Section 2 – Informatics

Spokesperson and Senator:

Prof. Dr. Thomas Lengauer, Saarbrücken

Vice-Senator:

Prof. Dr. Manfred Broy, Garching

Section 3 – Physics

Subsection 3.1 – Experimental Physics:

Spokesperson and Senator:

Prof. Dr. Paul Leiderer, Konstanz

Subsection 3.2 – Theoretical Physics:

Spokesperson and Vice-Senator:

N.N.

Subsection 3.3 – Astrophysics/Astronomy

Spokesperson:

Prof. Dr. Thomas Henning, Heidelberg

Section 4 – Chemistry

Subsection 4.1 – Inorganic Chemistry

Spokesperson and Vice-Senator:

Prof. Dr. Bernt Krebs, Münster

Subsection 4.2 – Physical Chemistry

Spokesperson:

Prof. Dr. Martin Quack, Zurich

Subsection 4.3 – Organic Chemistry

Spokesperson and Senator:

Prof. Dr. Manfred T. Reetz, Mülheim/Ruhr

Section 5 – Earth Sciences

Subsection 5.1 – Geography

Spokesperson and Senator:

Prof. Dr. Wolf Dieter Blümel, Stuttgart

Subsection 5.2 – Geology/Mineralogy/Crystallography

Spokesperson:

Prof. Dr. Wolfgang Franke, Frankfurt

Subsection 5.3 – Geophysics/Meteorology

Spokesperson and Vice-Senator:

Prof. Dr. Karl-Heinz Glaßmeier, Braunschweig

Section 6 – Agricultural and Nutritional Sciences

Spokesperson and Senator:

Prof. Dr. Klaus Eder, Gießen

Vice-Senator:

Prof. Dr. Bertram Brenig, Göttingen

Section 7 – Ecological Sciences

(rests due to restructuring)

Section 8 – Organismic and Evolutionary Biology

Subsection 8.1 – Zoology

Obmann und Stellv. Senator:

Prof. Dr. Horst Bleckmann, Bonn

Subsection 8.2 – Botany

Obmann und Senator:

Prof. Dr. Eberhard Schäfer, Freiburg (Br.)

Section 9 – Genetics/Molecular Biology and Cell Biology

Subsection 9.1 – Genetics/Molecular Biology

Spokesperson and Vice-Senator:

Prof. Dr. Lothar Willmitzer, Potsdam

Subsection 9.2 – Cell Biology

Spokesperson and Senator:

Prof. Dr. Widmar Tanner, Regensburg

Section 10 – Biochemistry and Biophysics

Subsection 10.1 – Biochemistry

Spokesperson and Senator:

Prof. Dr. Alfred Wittinghofer, Dortmund

Subsection 10.2 – Biophysics

Spokesperson and Vice-Senator:

Prof. Dr. Franz-Xaver Schmid, Bayreuth

Section 11 – Anatomy and Anthropology

Spokesperson and Senator:

Prof. Dr. Detlev Drenckhahn, Würzburg

Vice-Senator:

Prof. Dr. Bernd Herrmann, Göttingen

Section 12 – Pathology and Forensic Medicine

Subsection 12.1 – Pathology

Spokesperson and Senator:

Prof. Dr. Hans Konrad Müller-Hermelink, Würzburg

Subsection 12.2 – Forensic Medicine

Spokesperson an Vice-Senator:

Prof. Dr. Wolfgang Eisenmenger, Munich

Section 13 – Microbiology and Immunology

Subsection 13.1 – Microbiology

Spokesperson and Senator:

Prof. Dr. Michael Hecker, Greifswald

Subsection 13.2 – Immunology

Spokesperson an Vice-Senator:

Prof. Dr. Hermann Wagner, Munich

Section 14 – Human Genetics and Molecular Medicine

Spokesperson and Senator:

Prof. Dr. Claus R. Bartram, Heidelberg

Vice-Senator:

Prof. Dr. Oliver Brüstle, Bonn

Section 15 – Physiology and Pharmacology/Toxicology

Subsection 15.1 – Physiology

Obfrau und Stellv. Senatorin:

Prof. Dr. Irene Schulz-Hofer, Konstanz

Subsection 15.2 – Pharmacology/Toxicology

Spokesperson and Senator:

Prof. Dr. Franz Hofmann, Munich

Section 16 – Internal Medicine and Dermatology

Subsection 16.1 – Internal Medicine

Spokesperson and Vice-Senator:

Prof. Dr. Joachim R. Kalden, Erlangen

Subsection 16.2 – Dermatology

Spokesperson and Senator:

Prof. Dr. Thomas Krieg, Cologne

Section 17 – Surgery, Orthopaedics, Anaesthesiology

Subsection 17.1 – Surgery

Spokesperson and Senator:

Prof. Dr. J. Rüdiger Siewert, Heidelberg

Subsection 17.2 – Orthopaedics

Spokesperson:

Prof. Dr. Dieter Kohn, Homburg (Saar)

Subsection 17.3 – Anaesthesiology

Spokesperson and Vice-Senator:

Prof. Dr. Jochen Schulte am Esch, Hamburg

Section 18 – Gynaecology and Paediatrics

Subsection 18.1 – Gynaecology

Spokesperson and Senator:

Prof. Dr. Walter Jonat, Kiel

Subsection 18.2 – Paediatrics

Spokesperson and Vice-Senator:

Prof. Dr. Matthias Brandis, Freiburg (Br.)

Section 19 – Neurosciences

Subsection 19.1 – Neurology

Spokesperson and Senator:

Prof. Dr. Michael Frotscher, Freiburg (Br.)

Subsection 19.2 – Psychiatry

Spokesperson and Vice-Senator:

Prof. Dr. Peter Falkai, Göttingen

Section 20 – Ophthalmology, Oto-Rhino-Laryngology and Stomatology

Subsection 20.1 – Ophthalmology

Spokesperson and Vice-Senator:

Prof. Dr. Rudolf Guthoff, Rostock

Subsection 20.2 - Oto-Rhino-Laryngology

Spokesperson:

Prof. Dr. Barbara Wollenberg, Lübeck

Subsection 20.3 – Stomatology

Spokesperson and Senator:

Prof. Dr. Gottfried Schmalz, Regensburg

Section 21 – Radiology

Spokesperson and Senator:

Prof. Dr. Karl-Jürgen Wolf, Berlin

Vice-Senator:

Prof. Dr. Wolfram H. Knapp, Hanover

Section 22 – Veterinary Medicine

Spokesperson and Senator:

Prof. Dr. Hartwig Bostedt, Gießen

Vice-Senator:

Prof. Dr. Holger Martens, Berlin

Section 23 – History of Science and Medicine

Spokesperson and Senator:

Prof. Dr. Alfons Labisch, Düsseldorf

Vice-Senator:

Prof. Dr. Christoph Meinel, Regensburg

Section 24 – Epistemology

Spokesperson and Senator:

Prof. Dr. Gereon Wolters, Konstanz

Vice-Senator:

Prof. Dr. Martin Carrier, Bielefeld

Section 25 – Economics and Empirical Social Sciences

Spokesperson and Senator:
Prof. Dr. Andreas Diekmann, Zurich
Vice-Senator:
Prof. Dr. Regina Riphahn, Nuremberg

Section 26 – Psychology and Cognitive Sciences

Spokesperson and Senator:
Prof. Dr. Onur Güntürkün, Bochum
Vice-Senator:
Prof. Dr. Klaus Fiedler, Heidelberg

Section 27 – Engineering Sciences

Spokesperson and Senator:
Prof. Dr. Peter Gumbsch, Freiburg (Br.)
Vice-Senator:
Prof. Dr. Ellen Ivers-Tiffée, Karlsruhe

Section 28 – Cultural Sciences

Spokesperson and Senator:
Prof. Dr. Otfried Höffe, Tübingen
Vice-Senator:
Prof. Dr. Jürgen Baumert, Berlin

Austria

Adjunct und Senator:
Prof. Dr. Wolfgang Baumjohann, Graz

Switzerland

Adjunct und Senator:
Prof. Dr. Rüdiger Wehner, Zurich
Vice-Senator:
Prof. Dr. Martin Schwab, Zurich

(jb)

Leopoldina's Annual Assembly: "What is life?", 23 to 25 September 2011

"What is life?" is one of the oldest questions ever asked in human history. Initially a domain of the philosophers of the Ancient World, the issue is now increasingly coming into the focus of natural science. In the 1940s physicists such as Erwin Schrödinger asked this question while studying the problem of where hereditary factors come from: Genes.

Since the breakthrough in functional genome research, today scientists can describe and understand molecular life processes with a complexity which would have been totally unthinkable just twenty

years ago. The Leopoldina would like to treat and discuss this fundamental issue at its 2011 Annual Assembly.

This includes issues such as the creation of artificial life using methods from synthetic biology; the question of what is specific to human life; the issue of stem cells and their application in basic research and practical medicine, other concepts from modern medicine (genomics, individualised medicine, etc.) used to maintain life, and the problem of how to differentiate between organisms and computer systems which are able to

learn. Questions about the development of life, with reference to evolutionary theory, will also play a role at the Annual Assembly.

► *This year's Annual Assembly takes place at DORMERO Kongress- und Kulturzentrum, Franckestraße 1, 06110 Halle (Saale), Germany, from 23 September to 25 September 2011.*

► The complete programme (pdf) can be downloaded at: www.leopoldina.org

Events 2011

June

13 to 15 June

2.00 p.m.

JOINT CONFERENCE:

„INFECTIOUS DISEASES“ - JOINT CONFERENCE OF THE RUSSIAN ACADEMY OF MEDICAL SCIENCES, THE KOCH-METSCHNIKOW-FORUM AND THE LEOPOLDINA
Hotel Sibir, Lenin Street 21, 630004 Novosibirsk, Russia

20 to 22 June

9.00 a.m.

FOURTH WEISSENBURG SYMPOSIUM:

„EPIGENETICS AND THE CONTROL OF GENE EXPRESSION“
Kulturzentrum Karmeliterkirche, Luitpoldstraße 9-11, 91781 Weißenburg, Germany
► Scientific organization:
Walter Doerfler ML (Erlangen/Germany), Bernhard Fleckenstein ML (Erlangen/Germany), Ulf Pettersson (Uppsala/Sweden)

24 to 26 June

9.00 a.m.

5TH INTERNATIONAL CONFERENCE:

„CGMP GENERATORS, EFFECTORS, AND THERAPEUTIC IMPLICATIONS“
Martin-Luther-University Halle-Wittenberg, Wolfgang-Langenbeck-Straße 4, 06120 Halle (Saale), Germany
► Scientific organization:
Franz Hofmann ML (Munich/Germany), Reinhard Neubert (Halle/Germany)

July

1 July

6.00 p.m.

LEOPOLDINA-NACHT 2011/LEOPOLDINA NIGHT 2011:

LONG NIGHT OF SCIENCES
Leopoldina, garden entrance, August-Bebel-Straße 50 a, 06108 Halle (Saale)

4 to 6 July

10.00 a.m.

LEOPOLDINA SYMPOSIUM:

„GROWTH AND DEFENCE IN PLANTS: RESOURCE ALLOCATION AT MULTIPLE SCALES“
Bildungszentrum Kardinal-Döpfner-Haus, Domberg 27, 85354 Freising, Germany
► Scientific organization:
Ulrich Lüttge ML (Darmstadt/Germany), Rainer Matyssek (Freising/Germany), Heinz Rennenberg ML (Freiburg/Br., Germany)

5 July

4.30 p.m.

SEMINAR ON THE HISTORY OF SCIENCE:

PROF. DR. RAINER ENSKAT: „ROUSSEAU UND DIE WISSENSCHAFTEN. EINE FALLERÖRTERUNG ZU GRENZFRAGEN ZWISCHEN PHILOSOPHIE UND WISSENSCHAFTSGESCHICHTE“
Leopoldina, Emil-Abderhalden-Straße 36, 06108 Halle (Saale), Germany

18 to 21 July

8.30 a.m.

LEOPOLDINA SYMPOSIUM:

„FLOW SENSING IN AIR AND WATER“
Poppelsdorfer Schloss, Meckenheimer Allee 171, 53115 Bonn, Germany
► Scientific organization:
Horst Bleckmann ML (Bonn/Germany)

24 to 26 July

1.00 p.m.

LEOPOLDINA SYMPOSIUM:

„REGENERATIVE MEDICINE“
Eberhard-Karls-Universität Tübingen Hearing Research Center, Elfriede-Aulhorn-Strasse 5, 72076 Tübingen, Germany
► Scientific organization:
Hans-Peter Zenner ML (Tübingen/Germany), Johannes Schubert ML (Halle/Germany) und Gernot Duncker ML (Halle/Germany)

August

26 to 28 August

8.00 a.m.

LEOPOLDINA SYMPOSIUM:

„DIABETES MELLITUS AND DIABETIC RETINOPATHY IN CHINA AND GERMANY. PREVALENCE, RISK FACTORS, DIAGNOSIS AND THERAPY: LESSONS FOR THE FUTURE?“
The Sino-German Center for Research Promotion in Beijing of Deutsche Forschungsgemeinschaft, Beijing, China
► Scientific organization:
Prof. Dr. Jost Jonas ML (Heidelberg/Germany)

September

10 to 11 September

9.00 a.m.

LEOPOLDINA SYMPOSIUM:

„THE LEGACY OF SIR JOHN ECCLES“
Nordrhein-Westfälische Akademie der Wissenschaften und der Künste, Palmenstrasse 16, 40217 Düsseldorf, Germany
► Scientific organization:
Alfons Labisch ML (Düsseldorf/Germany)

16 to 18 September

6.00 p.m.

LEOPOLDINA SYMPOSIUM:

„PREVENTION AND INTERVENTION: FROM MOLECULAR BIOLOGY TO CLINICAL PERSPECTIVES“
Martin-Luther-University Halle-Wittenberg, Löwengebäude, Universitätsplatz 1, 06108 Halle (Saale), Germany
► Scientific organization:
Prof. Dr. Rolf Edgar Silber (Halle/Germany), Prof. Dr. Andreas Simm (Halle/Germany), Prof. Dr. Ursula Werdan (Halle/Germany)

18 to 21 September**9.00 a.m.****LEOPOLDINA SYMPOSIUM:**

„TRANSLATIONAL RESEARCH IN NEURO-PSYCHIATRIC DISORDERS“

SYMPOSIUM OF THE LEOPOLDINA AND THE ISRAEL ACADEMY OF SCIENCES AND HUMANITIES

Würzburg, Germany

Scientific organization:

Michael Frotscher ML (Freiburg/Br./Germany) und Peter Riederer ML (Würzburg/Germany)

22 September**3.00 p.m.****LEOPOLDINA SYMPOSIUM:**

„WAS IST LEBEN?“

Halle (Saale), Germany

Scientific organization:

Prof. Dr. Gereon Wolters ML (Konstanz/Germany)

23 to 25 September**9.00 a.m.****LEOPOLDINA'S 2011 ANNUAL ASSEMBLY:**

„WAS IST LEBEN?/WHAT IS LIFE?“

DORMERO Kongress- und Kulturzentrum, Franckestraße 1, 06110 Halle (Saale), Germany

Scientific organization:

Jörg Hacker ML, (Halle,Berlin/Germany), Michael Hecker ML (Greifswald/Germany)

24 to 27 September**9.00 a.m.****IV. IAP WATER MEETING****Machern, Germany**

Scientific organization:

Peter Fritz ML (Leipzig/Germany)

October**4 October****4.30 p.m.****SEMINAR ON THE HISTORY OF SCIENCE:**

PD DR. FLORIAN STEGER: „MEDIZINISCHER ALLTAG IN DER RÖMISCHEN KAISERZEIT“

Leopoldina, Emil-Abderhalden-Straße 36, 06108 Halle (Saale), Germany**November****7 November****3.00 p.m.****EASAC ANNIVERSARY:**

10TH ANNIVERSARY CELEBRATION OF THE EUROPEAN ACADEMIES SCIENCE ADVISORY COUNCIL (EASAC), PUBLICATION OF THE EASAC REPORT ON CONCENTRATED SOLAR POWER

Palais des Académies, Rue Ducale 1, 1000 Brüssel, Belgium**8 November****4.30 p.m.****SEMINAR ON THE HISTORY OF SCIENCE:**

PROF. DR. WOLFGANG ECKART: „EIN DEUTSCHER HUNGER: ERNÄHRUNGSKRISSEN, ERNÄHRUNGSPHYSIOLOGIE UND ERNÄHRUNGSPOLITIK IM KONTEXT DES KRIEGES 1914-1918“

Leopoldina, Emil-Abderhalden-Straße 36, 06108 Halle (Saale), Germany**25 to 26 November****10.00 a.m.****SYMPOSIUM:**

„INNOVATIVE THERAPIEN IN DER PALLIATIVMEDIZIN“ SYMPOSIUM OF THE PAUL MARTINI STIFTUNG AND THE LEOPOLDINA

Kaiserin-Friedrich-Stiftung, Robert-Koch-Platz 7, 10115 Berlin, Germany

Scientific organization: Prof. Dr.

Gian Domenico Borasio (Lausanne/Switzerland), Prof. Dr. Monika Führer (München/Germany), Prof. Dr. Peter C. Scriba ML (München/Germany)

25 November**10.30 a.m.****LEOPOLDINA SYMPOSIUM:**

„SEPSIS 2011 - A TRANSLATIONAL APPROACH“

Max-Planck-Institut für molekulare Biomedizin, Röntgen-Straße 20, 48149 Münster, Germany

Scientific organization: Dietmar Vest-

weber ML (Münster/Germany), Hugo Karel Van Aken ML (Münster/Germany)

December**6 December****4.30 p.m.****SEMINAR ON THE HISTORY OF SCIENCE:**

DR. JUTTA ECKLE: „GOETHE ZWISCHEN PLUS UND MINUS“

Leopoldina, Emil-Abderhalden-Straße 36, 06108 Halle (Saale), Germany**13 Dezember****4.30 p.m.****CHRISTMAS LECTURE:**

PROF. DR. HANS JOACHIM MEYER: „VOM SINN WISSENSCHAFTLICHER MEHRSPRACHIGKEIT“

Leopoldina, New Main Building, Lecture Hall, Jägerberg/Moritzburggring 10, 06108 Halle (Saale), Germany

People

Deceased members**Prof. Dr. Horst Cotta ML**

15 July 1928 – 28 March 2011 Munich

Surgery, Orthopaedics, Anaesthesiology Section

Cotta was admitted as a Member of the Leopoldina in 1976 for his distinguished work and research especially into the ultrastructure of the layers and upper surface of articular capsules and articular cartilage. His work and numerous publications cover the whole field of orthopaedics.

Prof. Dr. Hartmut Hoffmann-Berling ML

7 April 1920 – 15 March 2011 Heidelberg

Genetics/Molecular Biology and Cell Biology Section

Hoffmann-Berling was admitted as a Member of the Leopoldina in 1969 for his work in the field of cell research, in particular for the sensational findings of his investigations on individual cell-motility.

Prof. Dr. Fritz Peter Schäfer ML

15 January 1931 – 25 April 2011 Hanover

Chemistry Section

Schäfer was admitted as a Member of the Leopoldina in 1992 for his work in the field of photochemistry, especially his invention of the dye laser and the development of an X-ray laser.

Prof. Dr. Wolfgang Trautwein ML

8 January 1922 – 7 April 2011 Homburg

Physiology and Pharmacology/Toxicology Section

Trautwein was appointed a Member of the Leopoldina in 1985. He made important contributions to understanding the effects of acetylcholine on the heart muscle and worked intensively on the problems of the spread of excitation in hearts. He recognised that progress in the electrophysiology of the heart would only be possible with micro-electrodes and was the first to introduce this technology in Germany.

Prof. Dr. Emanuel Vogel ML

2 December 1927 – 31 March 2011 Ettlingen, Chemistry Section

Vogel was admitted as a Member of the Leopoldina in 1983 for his work in the field of Organic Chemistry, which produced internationally acclaimed results. Through his experimental studies he substantially increased scientific knowledge on aromaticity.

Newly elected members of the Academy**Jörg Bendix**, Marburg/Germany, Professor of Physical Geography, Climate Geography and Environmental Modelling at the Faculty of Geography, Philipps-Universität Marburg (Earth Sciences Section)**Kurt Binder**, Mainz/Germany, Professor of Theoretical Physics at the Institute of Physics, Johannes Gutenberg University Mainz (Physics Section)**Immanuel Felix Bloch**, Garching/Germany, Professor of Experimental Physics and Scientific Director of the Max Planck Institute for Quantum Optics, Garching (Physics Section)**Holger Braunschweig**, Würzburg/Germany, Professor of Inorganic Chemistry at the Institute for Inorganic Chemistry, University of Würzburg (Chemistry Section)**Johannes Buchmann**, Darmstadt/Germany, Professor of Computer Science and Mathematics at the Department of Computer Science of the Technische Universität Darmstadt (Informatics Section)**Anthony K. Cheetham**, Cambridge/UK, Professor of Materials Science and Metallurgy at the Department of Materials Science and Metallurgy, University of Cambridge, UK (Chemistry Section)**Christoph Clauser**, Aachen/Germany, Professor of Applied Geophysics and Geothermal Energy at the E.ON Energy Research Center, RWTH Aachen University (Earth Sciences Section)**Gerhard Erker**, Münster/Germany, Professor of Chemistry and Director of the Institute of Organic Chemistry, University of Münster (Chemistry Section)**Markus Gross**, Zürich/Switzerland, Professor of Computer Science at the Department of Computer Science, ETH Zürich, Switzerland (Informatics Section)**Michael Hagner**, Zürich/Switzerland, Chair for Science Studies at ETH Zürich (History of Science and Medicine Section)**Günther Gustav Hasinger**, Garching/Germany, Professor of Astrophysics and Scientific Director at the Max Planck Institute for Plasma Physics Garching (Physics Section)**Rolf-Dieter Heuer**, Geneva/Switzerland, Professor of Physics at the Universität Hamburg and Director-General of the European Organisation for Nuclear Research (CERN) Geneva, Switzerland (Physics Section)**Dieter Hoffmann**, Berlin/Germany, Professor of the History of Science at the Humboldt-Universität in Berlin and research scholar at the Max Planck Institute for the History of Science (History of Science and Medicine Section)**Manfred M. Kappes**, Karlsruhe/Germany, Professor of Physical Chemistry and Director of the Institute of Physical Chemistry at the Karlsruhe Institute of Technology (Chemistry Section)**Liqu Meng**, Munich/Germany, Professor of Cartography at the Institute for Photogrammetry and Cartography at the

Technische Universität München and Vice-President of the Technische Universität München (Earth Sciences Section)

William H. Miller, Berkeley/USA, Professor of Chemistry at the Department of Chemistry, University of California, Berkeley, USA (Chemistry Section)

Andreas Pfaltz, Basel/Switzerland, Professor of Chemistry at the Department of Chemistry, University of Basel, Switzerland (Chemistry Section)

Robert Schlögl, Berlin/Germany, Professor of Inorganic Chemistry and Director at the Fritz Haber Institute of the Max Planck Society, Berlin (Chemistry Section)

Tamar Seideman, Evanston/USA, Professor of Chemistry and Physics at the Department of Chemistry, Northwestern University, Evanston, USA (Chemistry Section)

Cynthia Volkert, Göttingen/Germany, Professor of Experimental Physics at the Institute for Material Physics, University of Göttingen (Engineering Sciences Section)

Wendelin Werner, Orsay/France, Professor of Mathematics, Paris-Sud University (Mathematics Section)

Roland Zengerle, Freiburg/Germany, Professor of MEMS Applications at the Institute for Microsystem Technology, University of Freiburg (Engineering Sciences Section)



Leopoldina
Nationale Akademie
der Wissenschaften

Deutsche Akademie der Naturforscher Leopoldina – Nationale Akademie der Wissenschaften e.V.

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Abbreviations

ML = Member of the Leopoldina