

Parasitology Research Monographs 2

Heinz Mehlhorn *Editor*

# Progress in Parasitology

 Springer

# Parasitology Research Monographs

Volume 2

*Series Editor:*

Heinz Mehlhorn  
Department of Zoomorphology  
Cell Biology and Parasitology  
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Editor

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*Editor*

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ISSN 2192-3671 e-ISSN 2192-368X  
ISBN 978-3-642-21395-3 e-ISBN 978-3-642-21396-0  
DOI 10.1007/978-3-642-21396-0  
Springer Heidelberg Dordrecht London New York

Library of Congress Control Number: 2011935051

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# Preface or Why Parasitology Research

Parasitology is an **interdisciplinary science** combining the activities of biologists, human physicians, pharmacists and veterinarians in the fight against parasites introducing diseases in humans and animals. Since its early beginnings in the middle of the eighteenth century parasitologists have acted together in international campaigns, although nationalists in many countries wanted “*to cook their own soup*”. These common efforts were based on the convincing insights that agents of diseases will not stop at the border of a country as was shown by the pandemics that “*knocked at the European doors*” at regular intervals killing millions of human beings and/or their live stock animals. Thus, bad experiences with flea-transmitted plague disease, mosquito-transmitted malaria, or with faecally transmitted cholera forced the international scientific community into close cooperations in spite of the intensions of many local politicians. Through these efforts research over the last 150 years has revealed knowledge on the life cycles of the most important parasites, the discovery of their pathogenicity and physiology as well as deep insights into the pathways of transmission. On the basis of this knowledge and the development of very skilful methods of investigation the industry was able to produce potent products that allowed a quick and efficient diagnosis as well as the initiation of a powerful control. Without these success stories it would not have been possible to keep (rather) healthy and to nourish so many of the seven billion human inhabitants on earth. However, drug resistance, bad environmental conditions, wars and over-crowded towns always give parasites a new chance. Thus, the struggle for life affects both parasites and hosts – up to now there has been no winner!

Therefore it is required that parasites stay within the **focus of research**, since globalization and its effects – even those of low grade –and global warming may bring new dangers for the world community of humans. This makes it necessary that all disciplines of biological, veterinarian and human medical parasitology remain strong. The pandemics of several emerging diseases recently have proven that we “*all live on very thin ice*” or “*on an already rumbling volcano*”.

This book, published soon after the occasion of the 50th anniversary of the German Society of Parasitology presents factual accounts of important parasites and reviews recent knowledge and needs. Especially in medicinal entomology and acarology many gaps have to be filled in order to withstand parasites, which have been successful for millions of years while the “newcomer” *Homo sapiens* has been around for less than 200,000 years.

Düsseldorf  
June 2011

Heinz Mehlhorn

# Acknowledgements

The quick and attractive publication of so much data is not possible without the help of many persons. At first I wish to thank all contributors for their in-time delivery of the manuscripts. Then the text design was thoroughly unified by Mrs. Inge Schaefer and by Mrs. Susanne Walter before Mrs. Isabelle Mehlhorn and Mr. Bernd Prümm helped to organize the text and the micrograph arrangements.

Heinz Mehlhorn (editor)  
Düsseldorf, April 2011





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# Chapter 1

## 50 Years German Society of Parasitology (DGP) (1961–2010)

Johannes Eckert

**Abstract.** The German Society of Parasitology (Deutsche Gesellschaft für Parasitologie; DGP) was founded in 1960 following an initiative of Professor Dr. Karl Enigk (Hannover, Germany) by a group of leading parasitologists. During the 50 years of its existence the number of DGP-members has increased from originally 12 to approximately 500 by the end of 2010. This society has regularly held bi-annual meetings and numerous symposia, in 1974 it organized the 3rd International Conference of Parasitology in Munich, and it has initiated several multicentric research programs supported by the German Research Foundation (DFG) or other funding organizations. These programs were of great significance for promoting basic parasitological research, training of young researchers and establishing some new research groups. Generally, the performance of the DGP is positive but modern problem-oriented research requires better promotion as indicated by the lack of specialists in certain fields, such as arachno-entomology, ecology, epidemiology and helminthology. In addition to DGP other societies are dealing with parasites, too. Therefore, an analysis of the current situation of the DGP with evaluation of their aims and options for cooperation with other societies is recommended. In this retrospective article a few proposals are presented which could be helpful for the further development of DGP.

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## 1.1 Introduction

The 50th anniversary of the foundation of the German Society of Parasitology (Deutsche Gesellschaft für Parasitologie, DGP), which was celebrated in 2010, was a happy event on which I congratulated the society and its members expressing my best wishes and thanks to everyone who helped to realize the collective aims during many years. The anniversary furthermore offered a good opportunity to take a brief look at the society's development and to try to derive suggestions for the present from an evaluation of the past. Political development as well as the development of the parasitological societies in West- and East Germany temporarily took place on separate paths which luckily fused to a common one in 1990. First, there will be a report on the development of the DGP in the West, then Prof. Hiepe (Berlin) will outline the development of the parasitological society in the East until the merging of both societies in 1990.

I appreciate the honour of being asked to be a speaker on this day of celebration of the 50th anniversary of the DGP and I'd like to thank for the invitation. First I have to point out that even though I was witness to the foundation of the DGP and although I was a Committee Member of the Steering Board for 6 years in the period between 1970 and 1978, I do not regard myself as an intimate expert of the societies' history. I can therefore be rather categorized as an external observer, who has tried to freshen up some memories by looking at the records of the DGP with the friendly assistance of Prof. Dr. Brigitte Frank (Stuttgart).

The first 15 years after the end of the Second World War were darkened on one side by the consequences of the war and characterized on the other side by the development of Germany into a new democratic society with faith and hope for a better future. In this situation academics in both parts of Germany tried to provide research with new impulses and to become included again into the international academic society. This was also the case in the field of parasitology.

Back then, parasitology in Germany and in other European countries had to face big problems because parasitic diseases played a major role both for humans and animals, since for example endo- and ectoparasites in animal stocks caused massive economic losses. Effective and well-tolerated antiparasitic agents for the control of these parasitoses were lacking. In the years around 1961 a new era of broad-spectrum anthelmintics began with the launch of thiabendazole, followed by very successful industry research activities resulting in the development of highly effective antiparasitics that are available today (Campbell and Rew 1986). Although the existing parasitological research institutes took up their activities right after the end of the war, many of these institutions did not have sufficient staff and were only sparsely equipped with instruments and materials. Many of the research methods and accessories that are available today like computers or the internet weren't available at these times (for further information see Enigk 1986).

In view of the major and visible importance of parasitic diseases of animals and humans there was a great motivation for promoting parasitological research at this time. This motivation also found its expression in the foundation of the DGP.

## 1.2 Foundation of the DGP

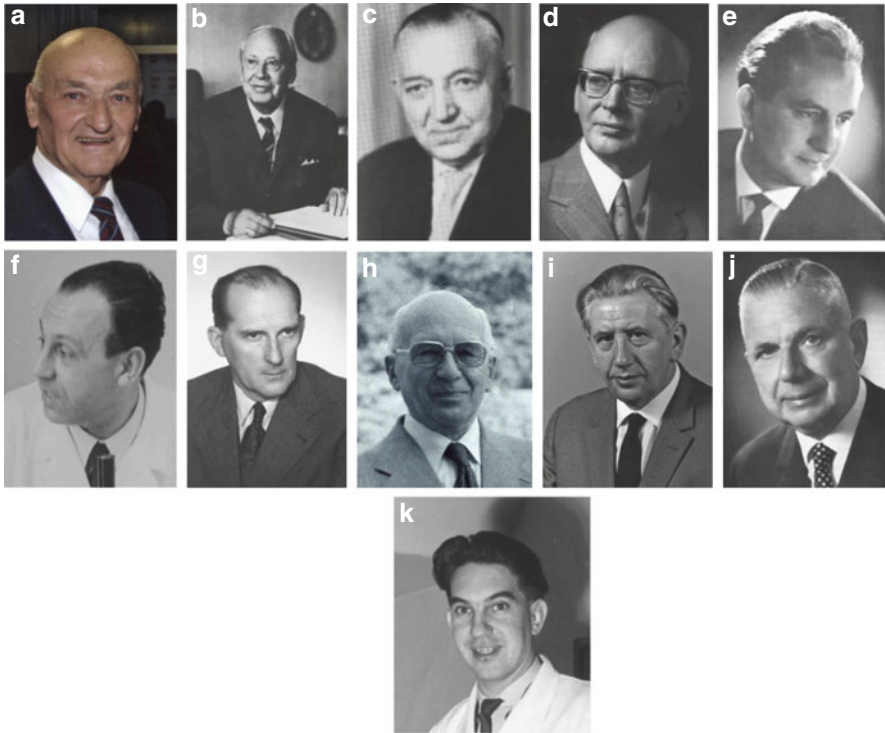
On September 26, 1960, leading parasitologists held a memorable meeting in the Institute of Parasitology at the University of Veterinary Medicine Hannover (TiHo) (“Westfalenhof”, Bünteweg 17) on the initiative of Prof. Dr. Karl Enigk, director of this institute. These parasitologists were Josef Boch (Berlin), Albert Erhardt (Brackwede), Georg Lämmler (Frankfurt-Hoechst); Rudolf Lehmensick (Bonn), Hans Liebmann (Munich), Otto Mattes (Marburg), Gerhard Piekarski (Bonn), Werner Reichmuth (Berlin), Curt E.W. Sprehn (Celle), Fritz Steiniger (Hannover) and Albert Westphal (Hamburg). The young assistant Dr. Dieter Düwel acted as a secretary at this meeting. Later – from 1967 to 1990 – he was DGP’s secretary and had a major influence on the development of the society, (Fig. 1.1).

At this meeting, a proposal for the foundation of a “Society of Parasitology” was unanimously accepted (DGP 1960). Karl Enigk commented this step as follows: “The increasing relevance of parasitology requires an organization so that this area gains attention at official and private authorities” (DGP 1960). The foundation of a parasitological society was supported by other prominent parasitologists who couldn’t take part in the meeting, such as Alfred Borchert (Berlin), Fritz Peuss (Berlin), Hans-Jürgen Stammer (Erlangen), Hans Werner (Berlin) and Rudolf Wetzel (Giessen) (DGP 1960).

During this meeting Albert Westphal of the Institute of Tropical Medicine in Hamburg suggested the foundation of a “Society for Parasitology and Tropical Medicine”. This suggestion was declined for different reasons, some of which seem strange from a present-day perspective. According to the record one reason was the opinion that the term “Tropical Medicine” has to be considered as a remnant from colonial times and that the field of parasitology is wide stretching “from the tropics to the arctic”. At this time it was hardly foreseeable that Tropical Medicine was about to blossom soon reaching enormous importance in our times of globalization. It is striking that the German Society for Tropical Medicine, which had existed since 1907, was not mentioned in the record.

At that time the creation of an own publication organ for the new society was not considered necessary. The “Journal of Tropical Medicine and Parasitology” had already existed since 1949/1950 and the “Zeitschrift für Parasitenkunde”, which was later renamed “Parasitology Research” and which was the organ of the DGP from 1962 to 1986, existed since 1928 (being today one of the oldest parasitological journals in the world). Since 1981 this journal appears under Prof. Heinz Mehlhorn’s (Düsseldorf) editorial care and is distributed as print and online versions worldwide by Springer Publishers (Heidelberg, Berlin, New York).

At the meeting on September 26, 1960, the participants agreed that the word “German” should not be added to the society’s naming “because of potential economic consequences” and “political concerns”, although it was secured in the record that the distinction should be expressed so comprehensively “that all German-speaking parasitologists feel addressed” (DGP 1960). Here one should remember that although Germany had been divided into two States – the Federal



**Fig. 1.1** Some of the DGP founders. **(a)** Josef Boch (\*1916, †2007) (Origin: K. Pfister, Inst. Vergl. Tropenmed. u. Parasitol, Munich). **(b)** Alfred Borchert (\*1886, †1976) (Origin: Th. Hiepe, Berlin). **(c)** Curt E.W. Sprehn (\*1892, †1976) (Origin: Enigk, Hannover, 1986). **(d)** Karl Enigk (\*1906, †1997) (Origin: J. Eckert, Zürich). **(e)** Georg Lämmler (\*1925, †1981) (Origin: Enigk 1986). **(f)** Hans Liebmann (\*1910, †1971) (Origin: K. Pfister, Inst. Vergl. Tropenmed. u. Parasitol, Munich). **(g)** Otto Mattes (\*1897, †1975) (Origin: Archiv der Phillips-Universität Marburg, Hessisches Staatsarchiv Marburg). **(h)** Gerhard Piekarski (\*1910, †1992) (Origin: H. Seitz, Inst. Med. Parasitology, Bonn). **(i)** Albert Westphal (\*1909, †1987) (Origin: Bernhardt-Nocht-Institut für Tropenmedizin, Hamburg). **(j)** Rudolf Wetzel (\*1895, †1983) (Origin: Enigk 1986). **(k)** Dieter Düwel (\*1928) (Origin: J. Eckert, Zürich)

Republic (Bundesrepublik) and the GDR (German Democratic Republic) - since 1949, in 1960 it was not yet separated by the “Wall”, which was built on the 13th August 1961 (and luckily fell in 1989).

As early as on January 9, 1961, another meeting was held in the Institute of Parasitology at the University for Veterinary Medicine Hannover (TiHo) where a draft constitution was discussed (DGP 1961a). At this meeting there was a change of opinion and nine participants of the meeting voted for the term “German Society of Parasitology”. They decided upon a constitution and elected the first Steering Board which consisted of the following persons: Prof. Dr. K. Enigk, Hannover (1. chairman), Prof. Dr. Dr. R. Lehmensick, Bonn (vice-chairman), Dr. G. Lämmler, Frankfurt (Main) (secretary and treasurer), Prof. Dr. G. Piekarski, Bonn (vice secretary),

Prof. Dr. F. Weyer, Hamburg (1. committee member), Prof. Dr. O. Mattes, Marburg (2. committee member) and Dr. H. Werner, Berlin (3. committee member).

On April 25, 1961 the “German Society of Parasitology” with its place of residence in Frankfurt (Main) was enrolled into the register of German Associations and Societies and therefore was administratively established.

### **1.3 Objectives of the DGP**

The intentions and tasks of the DGP are described in § 2 of the constitution from January 9, 1961 as follows: “The society aims at joining together of all scientifically interested parasitologists with the objective to promote progress in all areas of parasitology through professional cooperation, exchange of experience between home and abroad and promotion of junior scientists. To accomplish these tasks the society will hold scientific conferences and symposia. Their ambitions solely serve non-profit purposes” (DGP 1961b). As appears on the DGP’s homepage, the society also conducts public relations to bring the importance of parasitoses and the work of parasitologists to light in the media and to the notice of research promoters. The society supports initiatives of their members which aim at better framework conditions for the scientific and practical work of parasitologists (DGP 2006a).

Special emphasis has to be placed on the fact that 50 years ago the DGP was founded as an interdisciplinary society, where researchers from the fields of biology, human medicine, veterinary medicine and other areas and subdisciplines work together. The DGP has therefore given itself a structure which also matches the contemporary requirements of interdisciplinary, national and international cooperations and which is essential for parasitology with its diverse research topics.

### **1.4 Development and Activities of the DGP**

Looking at the development of the DGP retrospectively, the question arises if and how the objectives that were formulated in the constitution could be achieved. A number of selected indicators provide information in this regard.

#### ***1.4.1 Membership Figures***

The fact of the 50 years’ existence of the DGP can alone be regarded as an indication for DGP’s successful development. Another evidence is provided by the membership figures, which developed from only 12 members on September 26, 1960 to about 500 at the end of 2010. According to the updates of February 2010, the members of the DGP consisted of the following groups: 63% biologists, 24%

veterinarians, 10% physicians and 3% scientists with other occupations; the percentage of women came to 34% (DGP 2010).

Scientists honored by the DGP by awarding Honorary Membership or the Leuckart Medal are listed in the Annex (Tables A1 and A2). Further information can be found in Mehlhorn et al. (2010).

### 1.4.2 Scientific Conferences

Further indicators of the DGP's activities are the conferences (held in 2-year-turns) (Table 1.1) and numerous symposia. A special event was the organization of the 3rd International Conference of Parasitology) ICOPA III in Munich 1974) (Table 1.1, Figs. 1.2 and 1.3).

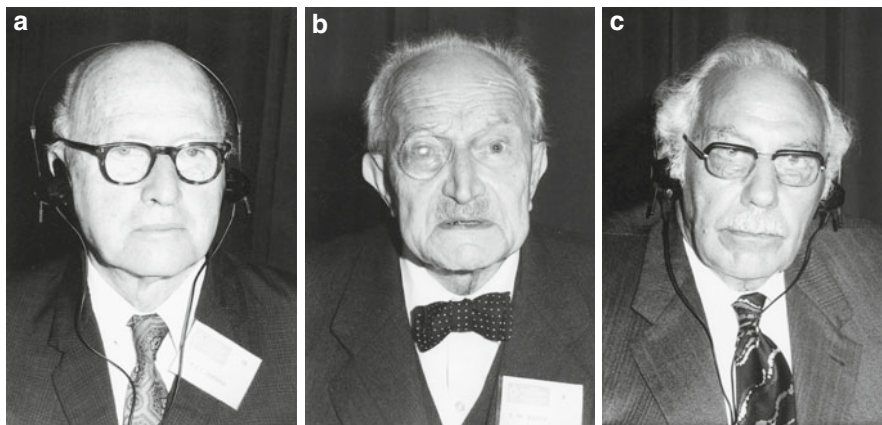
Since many years, the basic structures and themes of scientific conferences have been discussed in the DGP. This has to do with the fact that in the course of years the research areas had been subject to change and that the society provides a roof for different subdisciplines of research, namely parasitology of medical and of biological disciplines (phytoparasitology is not considered here).

**Table 1.1** Meetings of the DGP 1962–2010 (held in 2-year-turns)

Year	No.	Date	Town
1962	01	29.-31.03.	Hamburg
1964	02	18.-20.03.	Munich
1966	03	18.-30.04.	Berlin
1968	03	04.-06.04.	Bonn
1970	05	09.-11.04.	Tübingen
1972	06	10.-12.04.	Hannover
1974		25.-31.08.	ICOPA III Munich
1976	07	31.03.-01.04.	Berchtesgaden
1978	08	15.-18.03.	Freiburg/Brsg.
1980	09	26.-29.03.	Giessen
1982	10	30.03.-02.04.	Stuttgart-Hohenheim
1984	11	10.-13.04.	Bad Harzburg
1986	12	23.-25.04.	Vienna/Austria
1988	13	23.-25.03.	Neuchâtel/Switzerland
1990	14	03.-06.04.	Marburg
1992	15	30.03.-03.04.	Berlin
1994	16	21.-25.03.	Bochum
1996	17	17.-29.03.	Munich
1998	18	24.-28.03.	Dresden
2000	19	28.03.-01.04.	Stuttgart-Hohenheim
2002	20	20.-23.03.	Travemünde
2004	21	17.-20.03.	Würzburg
2006	22	22.-25.02.	Vienna/Austria
2008	23	05.-07.03.	Hamburg
2010	24	16.-20.03.	Düsseldorf



**Fig. 1.2** ICOPA III in Munich, Germany, 25.-31.08.1974. (a) President of Congress Prof. Dr. J.-G. Baer (Switzerland). (b) Prof. Dr. G. Piekarski (Germany) delivering a welcome address. (c) Participants at the opening ceremony in historical surroundings (Origin: DGP and J. Eckert, Zürich)



**Fig. 1.3** Prominent scientists having attended at ICOPA III in Munich, 1974 (Origin DGP): (a) P.C.C. Garnham (UK) (\*1901, †1994) (Leuckart-medal 1974). (b) R.Ph. Dollfus (F) (†1976) (Leuckart-medal 1974). (c) J.-G. Baer (CH), (\*1902, †1975) (Congress President)

**Medical and veterinary parasitology** are concerned with parasites causing diseases (parasitoses) and their function as vectors of agents of diseases. The scientific objectives of these subdisciplines are inevitably problem-oriented and among

other aspects deal with pathogenesis, diagnosis, treatment, control and prevention of parasitoses of humans and animals.

In veterinary faculties, parasitology is represented by independent institutes. In the curriculum of veterinary medicine parasitology has its fixed place and is an examination subject for all students. In the winter semester 2008/2009 8,021 students were registered at the veterinary faculties in Germany (StB 2009). A significant percentage of the 34,000 (2006: 34,259) veterinarians registered in Germany is confronted with parasitological problems.

According to the subject catalogue of 2009 (IMPP 2009) parasitological questions concerning different disease patterns were taken into account in the second part of the final examination of **medical students** in approximately 30 German faculties for human medicine. This subject catalogue concerns about 79,000 students of human medicine (StB 2009). Regrettably, independent institutes of medical parasitology and/or tropical medicine with adequate research facilities exist only at a few faculties, for example in Hamburg, Berlin, Tübingen, Munich and Bonn.

With respect to **parasitology of biological orientation** there exists another situation. This area is represented by relatively few research institutes and departments in the area of biology. There are only a few and mostly small research groups which are in general integrated in the institutes of different subject areas. They are often very specialized and concerned with a broad range of basic parasitological questions, including aspects of genetics, biochemistry, immunology, molecular biology, physiology etc. Since it has been detected that parasites are excellent models for the exploration of basic principles of eukaryotic biology, some groups were able to line up in this field of research and to achieve international reputation. The teaching subjects in biological parasitology are not as distinct as in veterinary or medical parasitology.

It is evident that the main objectives of the mentioned subdisciplines of parasitology differ but it is wrong to draw a strict separation line between basic and problem-oriented research like some research promoters do. The development of the last years has clearly shown how closely intertwined both areas are and how important the mutual exchange of ideas and knowledge is.

Already Rudolf Leuckart<sup>1</sup> (1822–1898) whose head-relief decorates the Leuckart-medal (see Annex Table A1) that is granted by the DGP, wrote in the introduction to his famous book “The Parasites of Man and the Diseases Caused by Them” the following: “While wording the present work I had in mind the interests

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<sup>1</sup>Karl-Georg Friedrich LEUCKART was Professor for Zoology in Giessen (Germany) and later Professor for Zoology and Comparative Anatomy in Leipzig. He was scientifically mainly a helminthologist opening deep insights in his field. His “cassical” book was written for “Naturforscher und Aerzte” (natural scientists and physicians) and was the starting point of parasitology as a separate, but interdisciplinary field of fundamental and applied research. Thus, he was chosen as name giver of the Leuckart medal of the DGP honoring outstanding parasitologists (see Annex, Table A1).

of the medical practitioner as well as the ones of the zoologist. Both are not as far apart as might seem at first glance” (Leuckart 1863). He then carries on: “Without a complete knowledge of the parasites’ structure and life it is almost impossible to recognize the nature and the range of diseases they cause and to find the medicine that protects us against the attacks of the evil guests”.

From my point of view, the fascination of parasitology lies in the fact that it is a border area between biology and medicine. It is open for researchers from different disciplines and provides a wide field of research opportunities, from basic research to problem solving. With this in mind, the conferences of DGP ought to aim for a good balance between the mentioned functional areas and the different methodical orientations.

As an example of a successful DGP conference the 1998 meeting in Dresden is mentioned here (Table 1.1) (DGP 1998). The program (designed by Prof. Dr. Rolf Entzeroth, Dr. Frank R. Mattig and Andreas Freud) was included in a clear and well-structured time frame, which in my opinion represents a good pattern for further conferences. At this conference 138 lectures (in plenary or parallel sessions) and 150 posters were presented. Furthermore, presentations in the fields of so-called “classical”<sup>2</sup> and “modern”<sup>3</sup> parasitology were well balanced. Some other conferences, for example those held in Stuttgart-Hohenheim and Vienna (Table 1.1) has a similar structure and quality as the meeting in Dresden (DGP 2000, 2006b).

In my opinion the conferences of the DGP should continue to serve as a forum for the interdisciplinary exchange of information within the wide field of parasitology and thereby including all subdisciplines. The value of such conferences increases if all participants try to speak a language that is also intelligible for nonspecialists, use as few abbreviations as possible, relinquish the extensive description of methodical details and concentrate on the presentation and discussion of results.

### ***1.4.3 Promotion of Parasitology at Universities***

Shortly after the foundation of the DGP, approximately between May and July 1962, the first chairman of the DGP, Prof. Karl Enigk, sent letters on behalf of the society to the directors of many medical and zoological university institutes as well as to some museums (Berlin, Hamburg, Kiel, Münster, Düsseldorf, Giessen, Marburg, Mainz, Frankfurt, Saarbrücken, Heidelberg, Freiburg, Stuttgart-Hohenheim, Tübingen, Würzburg, Munich) (DGP 1962a, b). In these letters he referred to the deficient representation of medical and zoological parasitology and emphatically called for the promotion these disciplines at West German universities. The basic tenor in the written replies was predominantly affirmation

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<sup>2</sup>“Classical” parasitology: morphology, biology, ecology, epidemiology, diagnostics, therapy, control etc.

<sup>3</sup>“Modern” parasitology: biochemistry, molecular biology, genetics, cell biology, immunology etc.



for the situation analysis and the claims but contingent on indications of lacking resources. In the report of the board of the DGP from October 25, 1962 is a note to this: “The responses show that over and above the institutions which already exist in the Federal Republic there is large interest at some universities in the establishment of parasitology divisions or institutes. But since the establishment of the above-mentioned divisions or institutes lies within the competence area of the tenured professors and is basically dependent on their ambition and endeavours, there are no further steps planned on the part of the DGP” (DGP 1962c). With the persistence characteristic to him, Enigk referred repeatedly to the situation of parasitology at other occasions and thereby considerably contributed to a general sensitization for this topic.

#### ***1.4.4 Research Programs***

Of particular importance for the development of parasitology in Germany were and still are the endeavours of the DGP to obtain research funds from the German Research Foundation (Deutsche Forschungsgemeinschaft, DFG) and other institutions.

#### ***1.4.5 Priority Program “Physiological Parasitology”***

In December 1961, K. Enigk mentioned in a letter to H.-J. Stammer, who at this time was the director of the Zoological Institute of the University of Erlangen, that he had opened negotiations with the DFG about a Parasitology Priority Program (DGP 1961c). After a resolution in favour of a priority program had been launched on March 30, 1962 at a general meeting of the DGP in Munich, Enigk made an application concerning this matter to the DFG on April 11. The application succeeded in 1964 and was entitled “Physiological Parasitology”. According to the DFG “research projects in which analytical investigations on the physiological interrelations between parasites and their animal hosts have priority should be supported. Research on life cycles and ultrastructure should only serve as a precondition for the work and should not be the main topic of the project”. The DGP assumed that the DFG would support 20–25 projects for 3 years each with 25,000–65,000 DM (about € 12,500–32,500) per year. No reliable information on the dimensions of the actual sponsorship for parasitology by the DFG could be gained upon a recent request (DFG 2009). One can deduce from a number of letters (documents of the DGP) that the sponsorship from September 1, 1964 was granted until 1970. The available funds back then may seem decent from today’s standards, but they constituted a valuable start up for some working groups. The author of this report was also a profiteer of this program being supported for investigations on physiology and in vitro cultivation of trichostrongylid larvae (Eckert 1967).

**Fig. 1.4** Theodor von Brand (\*1899, †1978)  
(Origin: J. Eckert, Zurich)



The results of this priority program were presented during a symposium, which took place from October 15 to 17, 1970 at the Bayer Convention Centre in Grosse Ledder close to Wermelskirchen/Germany. The realization of this priority program is also owed to the advice by Prof. Dr. Theodor von Brand from the National Institutes of Health in Bethesda/USA, who had to leave Germany during the Nazi period but still did not give up his affinity to German research and his home country (Fig. 1.4). He took part in the symposium in Grosse Ledder and observed the development of the priority program with great interest.

#### ***1.4.6 Symposium “Immune Reactions to Parasites”***

Another step forward in research promotion was connected with the organization of an International Symposium on “Immune Reactions to Parasites”. This symposium took place from October 6 to 9, 1981 in Mainz on the initiative of Prof. Dr. M. Lindauer, Würzburg. It was a combined meeting of the “Academy of Science and Literature Mainz” and the DGP (DGP 1981). According to Prof. Dr. M. Rommel “movement entered the scene” after this symposium (Rommel 2002). On the initiative of the DGP the BMFT (Bundesministerium für Forschung und Technologie; Federal Ministry of Research and Technology) granted 12 scholarships for training of young scientists abroad. A couple of the BMFT scholars were later able to establish parasitology working groups in Max Planck Institutes or in Federal Research Centres (Rommel 2002).

### ***1.4.7 Priority Program “Molecular and Immunological Mechanisms of Host-Parasite Interactions”***

Shortly after that, Prof. Dr. Werner Frank (Stuttgart) (Fig. 1.5), who then was the first chairman of the DGP, proposed a new priority program with the title “Molecular and immunological mechanisms of host-parasite interactions” to the DFG, which started on July 1, 1988 (DFG 1989). This program included 35 subprojects with the total sum of 5.73 million Deutsche Mark ( $\approx$  € 2.86 million) (DFG 2009). The results of this program are published in scientific journals and a summary is documented by 20 authors in the book “Immunological and Molecular Parasitology”, edited by Röllinghoff and Rommel (1994).

### ***1.4.8 Recent DFG – Programs and Other Possibilities for Research – and Promotion of Junior Scientists***

Also today the DGP is putting effort into achieving a new priority program that should be financed by the DFG. Apart from that, the DFG opened up new possibilities for parasitology, for example programs for supporting junior scientists collaborative research groups and graduate schools (DFG 2008). Support measurements were also offered by other institutions (e.g. Federal Ministry for Education and Research, foundations, industry).



**Fig. 1.5** Werner Frank (\*1926, †1991) (Origin: Verh. Dtsch. Zool. Ges. 84, 529, 1991)

It should be mentioned that the annual report of the DFG of 2008 listed 238 projects of individual and junior promotion in the area of “Medical microbiology, parasitology, mycology, hygiene and molecular infectiology” (area 204–03). Fifty-one (21.4%) of them belonged to parasitology. Eighty-four percent of the latter were concerned with protozoa, 14% with helminths and 2% with general parasitology, while arachno-entomological projects were missing (DFG 2008). The majority of the studied parasites were important for tropical countries, European parasites were represented by only 18%. Today, there are many possibilities for promoting junior scientists, but their employment for longer terms is difficult because of the lack of adequate positions.

#### **1.4.9 “Memorandum Parasitology”**

The “Memorandum Parasitology” which was published by the DFG and prepared by 15 experts from parasitology, microbiology and immunology under the aegis of Prof. Dr. P. Klein (Mainz) contributed to the approval of the priority program “Molecular and immunological mechanisms of host–parasite interactions” (DFG 1989).

In 1988 this Memorandum has listed in the Federal Republic 19 sites with 44 units (working groups, divisions, institutes), which investigated parasitological questions. The laboratories of industry and the German Armed Forces (Bundeswehr) were not taken into account during this examination (DFG 1989). Concerning parasitology in the biological departments it is noted that there were many “without institutional continuity perspectives”. This meant a serious demotivation for young scientists (DFG 1989). Moreover, it was recorded that “classical parasitology”<sup>4</sup> had a satisfying performance level but still only a few areas were supported by the DFG. It was pointed out that this research is for the most part related to practice and was “directly financed by industry” (DFG 1989). To this day, the situation concerning support by the DFG does not seem to have changed much, which is probably one of the reasons why well-provided working groups and junior scientists are lacking in some areas of problem-oriented parasitology. Concerning “modern parasitology”,<sup>5</sup> the Memorandum stated an unsatisfactory level of performance, which fortunately – also through the support of the DFG – improved impressively in the subsequent decades.

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<sup>4</sup>“Classical” parasitology: morphology, biology, ecology, epidemiology, diagnostics, therapy, combat etc.

<sup>5</sup>“Modern” parasitology: biochemistry, molecular biology, genetics, cell biology, immunology etc.

The Memorandum contained the following recommendations concerning the further development of parasitology (shortened representation):

- Creation of interfaculty college centres by centralization and expansion of existing units.
- Establishment of research groups at universities.
- Expansion or establishment of several supraregional main institutes, each with medical, veterinary medical and/or biological orientation.
- Establishment of programs for promotion of projects and of junior scientists.

These recommendations had a particularly positive effect on the projects and on promotion of junior scientists. In the sense of the Memorandum and because of a relevant situation analysis it would in my opinion be important for the DGP to develop new activities and to support specifically developments which already started.

Such activities should include the creation of research networks (Dupouy-Camet et al. 2009). As a recent example I would like to mention the “MALSIG Consortium”, an international association founded in 2009, which is dedicated to exploring the signal mechanism in the life cycle of malaria parasites (Doerig et al. 2009). In this context, one should mention as well: various COST<sup>6</sup>-actions at European level, to which members of the DGP made significant contributions (COST 89 1994; COST 820 1998; COST 857; Dupouy-Camet et al. 2009) as well as the working groups that have been established in the DGP (Ichthyoparasitology, Ecology, Drug design and development etc.) and the working group “Medical arachno-entomology”, a collaborative project of the DGP and the DgaaE<sup>7</sup> (Fig. 1.6).

## 1.5 Other Activities of the DGP

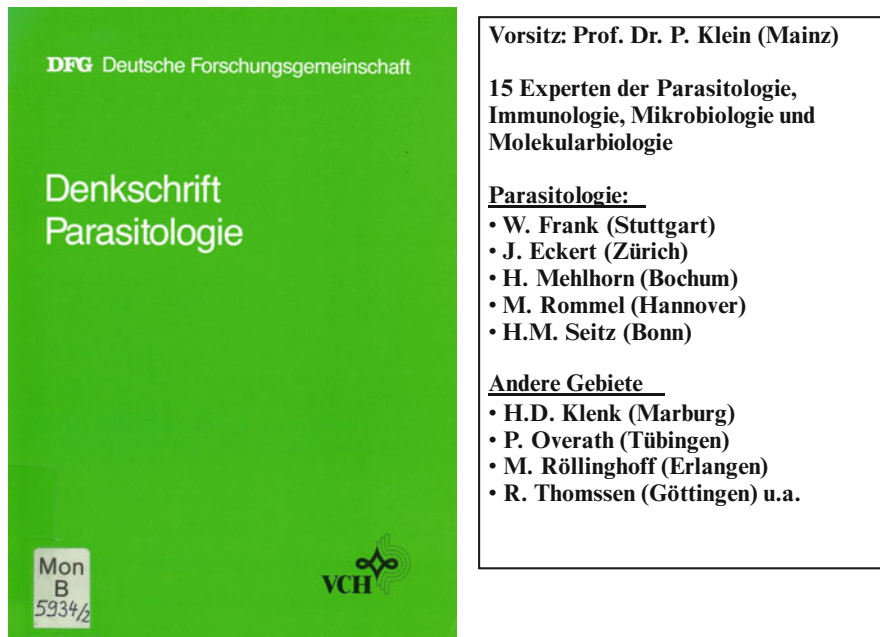
### 1.5.1 Parasitological Expert (*Fachparasitologe*)

In a board meeting on April 3, 1968, Dr. Dieter Düwel suggested the awarding of a title “Fachparasitologe” (Expert Parasitologist) by the DGP because such a title might be helpful for younger colleagues when they apply for certain positions, also for positions abroad (DGP 1968). After the members had been informed of the conditions for the acquisition of the title in a newsletter in 1970, the title was introduced (DGP 1970); in 1971, the first applications concerning this matter were submitted to the DGP (DGP 1971).

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<sup>6</sup>COST: European Cooperation in the field of Scientific and Technical Research.

<sup>7</sup>DgaaE: Deutsche Gesellschaft für Allgemeine und Angewandte Entomologie (German Society for General and Applied Entomology).



**Fig. 1.6** Memorandum on the future of parasitology

### 1.5.2 *PID*

From October 1963 to December 1989 the DGP published a “Parasitological Information Service” (PID; Parasitologischer Informationsdienst) in 25 volumes and 433 issues. Its aim was to inform experts and the public about important parasitological research results and problems. The messages in the PID attracted remarkable interest (DGP 1973). As editor of the PID served Prof. K. Janitschke, Berlin. He was awarded with Honorary Membership by the DGP in recognition of his achievements. One part of the aims of the PID was transferred to “DGP up to date” ([www.dgparasitologie.de](http://www.dgparasitologie.de)), but an expansion of public relations should be taken into consideration.

## 1.6 The DGP and Other Related Societies

With regard to the future orientation and development of the DGP, its standing in relation to other related societies, which are mainly or partially concerned with parasitological questions, is of considerable interest. Two of them were founded as late as 2004 and 2009, respectively. An increasing diversification of the spectrum