

Professor Hans-Dieter Görtz (1945–2019). In memory of my close friend and colleague



Hans-Dieter Görtz. Pisa, Italy, November 2018

Unfortunately, the year 2019 began with sad news. On January 7, the well-known ciliatologist, one of the initiators of international cooperation in the study of bacterial symbiosis in ciliates and the best expert in the field, Professor Hans-Dieter Görtz, suddenly passed away in Münster (Germany). It happened on his way home, when he was riding a bike – the usual means of transport in the city. He was nearly there, when he suddenly fell dead, apparently, as a result of heart attack.

The death of any person is a tragedy, and every person is irreplaceable. Especially it is true if it is a person, who was close to you. This is the case of Hans-Dieter. His personality was wonderful; he was a good scientist and a nice friend, indeed. For me (and I guess, for many others) all these qualities are

fully associated with Prof. Görtz. I have known him for almost 30 years. We worked together on a number of projects and have published around 20 articles and abstracts of joint presentations (1992–2014). But first of all we became good friends since our first meeting in Münster in June 1990, when I lived in his extremely hospitable home for a couple of weeks. At that time it was very difficult to do science in Russia, and even just to live there. When I wrote to Hans-Dieter in 1989 and offered him to work together, he immediately responded positively. In many ways, this helped me to remain in science, and my family – to pull through during those difficult years in Russia.

As it is known, the fate of a man is whimsical. There is no doubt that Prof. Görtz in any case would have become a good scientist, but the fact that he became a protistologist was indeed a matter of chance. Let me briefly introduce the readers to the main landmarks of biography of my friend.

His father, Hans Görtz, grew up in Duisburg and, fortunately, survived as a soldier in the terrible mess of the Second World War. When he returned to Germany from the Eastern front after injury, he married and settled close to Münster. After the war he studied law and worked as an administrative clerk. Hans Görtz was the first one in his family who did not work as a craftsman. Hans-Dieter's mother – Hedwig Görtz, nee Giese, was born in Münster. By contrast, she belonged to local family with a long business tradition – her father and the family of her mother had been in business since centuries ago. In LWL-Museum of Münster one can see an oil painting (made by J. Chr. Rincklake around 1800) – a portrait of the great-grandparents of Hans-Dieter's grandmother. The amazing thing is genetics – there was a certain resemblance to the progenitors in the face of Hans-Dieter (he looked more like his mother contrary to his brother Franz, who resembles their father).

H.-D. Görtz was born on 22.07.1945 in a small town near Münster — Erpen, which is currently known as Dissen at the Teutoburger Wald. He was the eldest of 6 children and had 4 sisters and one brother.

Hans-Dieter started his higher education in 1966; he studied biology, chemistry and physics at the University of Münster, the capital of North Rhine-Westphalia, where the family had already moved to. Much later, Prof. Görtz recalled: “*After the “Erstes Staatsexamen” (first state examination) in Münster I studied the origin of vitellogenic protein in Formica polyctena under the supervision of Prof. Karl-Heinz Bier. The research area of Karl-Heinz Bier was developmental biology, cytogenesis, and evolutionary biology <...>. The biology of the ants, the exciting questions concerning the evolution of insect colonies with their cooperative and “altruistic” behavior fascinated me ever since. In addition, I could work as a student assistant in the “embryo class” of Prof. Bier and his assistant <...>. From this, I have learned a lot: mostly about the embryogenesis of sea urchins, chicken, drosophila, but also about the oogenesis of locusta and other insects, multiple nucleoli, lampbrush (and polytene) chromosomes, also about interesting methods such as autoradiography, and many other things*”¹.

Obviously, as a beginner in science, he had a deep and diverse interest in the phenomena of wildlife. This interest of a naturalist Hans-Dieter has kept throughout his life. His tutor, Prof. Bier suddenly passed away in summer 1969. He died in an accident. This tragic event was a turning point in the scientific fate of Hans-Dieter. In 1970 he completed his “State work” (Diploma) with a title “*Elektrophoretische Untersuchungen zum interindividuellen Protein- Stoffwechsel bei Formica polyctena (Hymenoptera) unter besonderer Berücksichtigung der Dotterproteine*” (Electrophoretic studies on the interindividual protein metabolism in *Formica polyctena* (Hymenoptera) under special consideration of yolk proteins). Later H.-D. Görtz partly dedicated the book “*Formen des Zusammenlebens: Symbiose, Parasitismus und andere Vergesellschaftungen von Tieren*”. Wiss. Verlagsbh., 1988 (Forms of living together: symbiosis, parasitism and other animal associations) to his “first love” in biology.

The successor of Karl-Heinz Bier as a professor at the University of Münster was Klaus Heckmann, who later became a distinguished protistologist, cell

and molecular biologist, geneticist and evolutionary biologist, the former PhD student and the follower of the famous German protozoologist Prof. Karl G. Grell at the Tübingen University. Heckmann got the professor’s position in Münster in January 1970 and became a director of the Zoological Institute of the Münster University as well. The topic that Heckmann first explored after moving to his new position in Münster was endosymbiosis! He first characterized bacterial endosymbionts in the freshwater ciliate species *Euplotes aediculatus*. This circumstance opened for H.-D. Görtz the possibility (and necessity) of changing his research area to protists, and he took the advantage of this opportunity to the full.

Hans-Dieter later recalled that time: “*He further developed the chair, with the (sometimes quite critical) support of the former assistants of Bier <...>. Leading this large team of excellent scientists with strong personalities, mostly in a cooperative way, was a great and continual challenge for Klaus Heckmann. For the students at the time, also the PhD students and other young scientists working in this group, this was a wonderful environment <...>. The large number of students also was the reason that I had to take on teaching duties immediately when Klaus Heckmann started his position. I invested much more time into teaching than was formally required <...>. Under Klaus Heckmann guidance my first task was to develop an axenic medium for *Euplotes minuta*. I did not manage to achieve this for half a year, but I learned a lot about ciliates and about handling them during that time. I was intrigued by the different imaging methods of light microscopy. The topic of my PhD thesis then turned out to be *Euplotes*, its cell structure, its fine structure and morphogenesis. My PhD thesis was first published in an abridged form at the University of Münster, later I have published some parts in individual publications. Klaus Heckmann always offered his advice, but did not join the writing of the articles, and did not want to be listed as a coauthor in these papers. Later on, we had joint publications arising from common projects. After completing the PhD, I obtained a position as assistant of Klaus Heckmann*”.

H.-D. Görtz got his PhD degree (Dr. rer. nat.) at the University of Münster in 1975. The title of the study was “*Untersuchungen zur Feinstruktur von Euplotes minuta Yocum (Ciliata, Hypotrichida) unter besonderer Berücksichtigung von Cortexstrukturen*” (Investigations of the fine structure of *Euplotes minuta* Yocum (Ciliata, Hypotrichida) with special consideration of cortex structures).

¹ Herein after translation of H.-D. Görtz’s recollections in English made by U. Görtz.

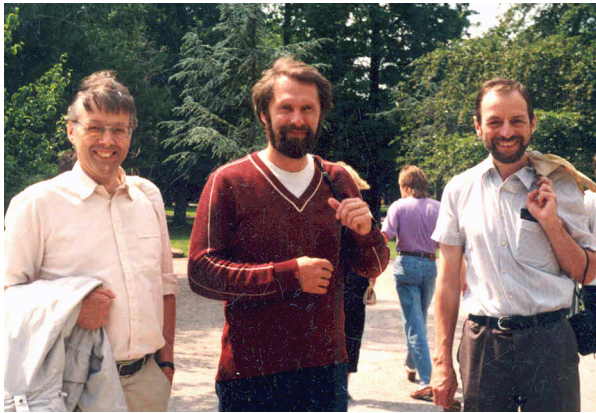


Fig. 2. K. Heckmann, S.I. Fokin and H.-D. Görtz. Münster, Germany, June 1990.

In the beginning of 1970s, after a long break, the studies of infectious bacterial symbionts (the genus *Holospora*) in the ciliate *Paramecium caudatum* were resumed in Russia (St. Petersburg, at that time – Leningrad). Two species of the microorganisms – *H. undulata* and *H. obtusa* were redescribed from the city suburbs (Ossipov and Ivakhnyuk, 1972; Ossipov et al., 1975). Several years later in Münster H.-D. Görtz and J. Dieckmann found and redescribed the third “classical” holospora – *H. elegans* (Görtz and Dieckmann, 1980). It is necessary to mention that Jozef Dieckmann was a very helpful partner for studying ciliate’ symbionts. He was not educated in biology and worked privately, but was very much enthusiastic about sampling ciliates and using light microscopy; and, apparently, he manifested “lucky hands” as a collector of different “curiosities” in ciliated protists². Step by step they succeeded to collect paramecia infected with all three main *Holospora* species just in Münster University’s huge park and in some places nearby. These findings started the *Holospora* research at Münster University. Very soon via cooperation with Dr. Masahiro Fujishima, a member of Yamaguchi University (Japan), who spent at that time one year at Münster University using A. Humboldt grant, the *Holospora* investigations had spread to Japan as well (Fujishima and Görtz, 1983; Görtz and Fujishima, 1983).

In 1983, H.-D. Görtz made habilitation in Zoology already in the field of symbiontology – “Die Zellkerne von *Paramecium caudatum* bei Infektion mit

² In 1989, a few years before the end of his short life (he committed suicide), Jozef Dieckmann was awarded the I. and W. Foissner’s prize (Ilse und Wilhelm Foissner Stiftung) for his research on ciliates.



Fig. 3. H.-D. Görtz and S.I. Fokin. Toledo, Spain, August 1991.

Bakterien der Gattung *Holospora*: Interphase, Ablauf der Kernteilung und Verteilung der Bakterien” (The nuclei of *Paramecium caudatum* when infected with bacteria of the genus *Holospora*: interphase, sequence of nuclear division and distribution of the bacteria), and since 1985 he worked as Associate Professor at the University of Münster.

As early as in 1985, we got acquainted by exchanging letters and reprints of our articles. It was a starting point for true international cooperation in ciliate’ symbionts and, definitely, the role of Hans-Dieter in this cooperation cannot be overestimated.

In 1993, the centre of *Holospora* investigations in Germany shifted to the Biological Institute of Stuttgart University, where Hans-Dieter got a position of full professor, having won the competition with many participants.

Since the beginning of the 1990s, the *Paramecium–Holospora* system became an important model object and a subject of international scientific cooperation in many aspects: the diversity of symbionts, adaptations and interactions between partners in the symbiotic systems, ecological and evolutionary importance of the symbiosis, mechanisms of infection, recognition by host, and many others. Step by step, by using a multidisciplinary set of approaches and methods such as light microscopy, transmission electron microscopy, and scanning electron microscopy, microsurgical transplantation, UV microirradiation, biochemistry, immunocytochemistry, genetics, and molecular biology, it became possible to get more and more information about different aspects of this amazing natural phenomenon.

The second half of the 1980s, and especially the 1990s and the beginning of the 2000s was the time of



Fig. 4. H.-D. Görtz with wife and parents in the German Alps, Germany, 1996.

the most intensive scientific activity of Hans-Dieter and his colleagues in the field of symbiontology (Görtz, 1983, 1986, 1987, 1988, 1996, 1998, 2008, 2010, 2014; Görtz and Wiemann, 1989; Fujishima et al., 1990, 1991, 1997; Heckmann and Görtz, 1991; Fokin and Skovorodkin, 1991a, 1991b, 1997; Fokin, 1993; 2004a; Ossipov et al., 1993; Fokin et al., 1996, 2003b, 2005, 2006; Skoblo et al., 1996; Görtz and Brigge, 1998; Görtz et al., 1990, 1993, 2009; Skovorodkin et al., 2001; Görtz and Michel, 2003; Nakamura et al., 2004; Görtz and Schmidt, 2005; Iwatani et al., 2005; Lang et al., 2005; Sabaneyeva et al., 2005, 2007; Schrallhammer et al., 2006; Fema et al., 2008; Görtz and Fokin, 2009; Fokin and Görtz, 2009; Schrallhammer and Schweikert, 2009, and many others). A number of his students have got the PhD degrees working together with Prof. Görtz on cell biology, biochemistry and molecular biology of holosporas. How active Prof. Görtz was at that time could be illustrated by the fact that simultaneously with the first book he also completed another one – *Paramecium*. Görtz H.-D. (ed.) Springer, 1988 – the first edition (after Wichterman's monograph, 1986), which considered this model protistological object at the current level of investigations. Few years later he became the chair of the Biological Institute at the University of Stuttgart, teaching there a lot and also serving as managing Editor of the *European Journal of Protistology* (1995–1999). Serious administrative duties of Hans-Dieter in Stuttgart lasted until 2005:



Fig. 5. From the left: H.-D. Görtz, H. Dora, M. Hori and S.I. Fokin. Yamaguchi, Japan, September, 1997

he was elected the Dean of the Faculty of Geo- and Biosciences and then – Coordinator and Advisor of the German University in Cairo for Biotechnology and Pharmacy.

I do not set myself the task of reviewing the entire scientific heritage of my friend. Fortunately, almost all of what he had done was published. Everyone can find and read his papers and decide by oneself how significant is the contribution of Prof. Görtz to the field of science, to which he had been faithfully devoted for almost 40 years.

In the 1990s and in the beginning of this century, the research on *Holospira* profited from the funding of international cooperation between scientists of the Russian, German and Japanese groups. Over time, the Canadian, Italian, and French research groups also joined this cooperation. In this process, as I have already mentioned, Prof. H.-D. Görtz played a particularly important role. In 1994, the international cooperation on the topic was formerly established through the annual meetings: 1995 (Stuttgart, Germany), 1996 (St. Petersburg, Russia), and 1997 (Yamaguchi, Japan). After that, in 2003 in St. Petersburg another international seminar on the study of *Holospira* was held, with scientists from Canada, France, Germany, Japan, and Russia; new projects on *Holospira* research were stimulated.

In addition to working together in Münster (1990–1992) and later on in Stuttgart (1993–2003), we also met with Hans-Dieter many times at various international protistological conferences: in Germany, Austria, Holland, Denmark, Spain, France, Italy, the USA, and Japan. It was a wonderful and helpful time to meet and get to know many famous protistologists, such as J.R. and L.B.



Fig. 6. Family of H.-D. Görtz. The first row – Anne and Ulrich; the second row – Dietrich, Lotte, Monika, Hans-Dieter. Gätringen, Baden-Württemberg, Germany, March, 1997.

Preers, K. Grell, J. Corliss, K.W. Jeon, G.H. Beale, K. Hiwatashi, M. Müller, J. Lom, A. Miyake, K. Heckmann, M.A. Sleight, D.J. Patterson, D. Ammermann, W. Foissner, D. Lynn, K. Hausmann... Hans-Dieter personally introduced me to some of them. New scientific and friendly human relations were established during those meetings. Also we have visited a number of interesting natural places. I clearly remember our joint walks in the vicinity of Woods Hole Marine Biological Station (Massachusetts, USA), where Hans-Dieter tried to search for local birds – one of his permanent hobbies. Generally, Hans-Dieter loved walking in natural environment, quite often combining such activity with collecting water samples

Five times my colleague and friend visited Russia (1992, 1994, 1996, 2003, 2007), twice (1994 and 2003) we made joint excursions to the White Sea. These trips obviously provided Hans-Dieter with a number of special impressions – in the West of Europe it is rather difficult to find such virgin natural places like in Russia, where you can walk for hours through the wild forest or along the seashore without meeting a single person (bears may be more frequent there!). During his first visit to St. Petersburg, a friend of mine and I took Prof. Görtz to the countryside by train for a picnic, about 30 kilometers away from the city. To make the way to our place at the lake shore shorter, we walked directly through the forest and accidentally found ourselves in a “military zone” deep inside the forest and were stopped by the soldiers. Later, Hans-Dieter told me that at a certain moment he had clearly

imagined himself in a Russian prison as a foreigner caught without documents in the location of the military unit. Fortunately, we were quickly let go further without any complications, and our barbecue on the lake shore was a great fun.

As a final event of his professorship at the Stuttgart University, in 2012 Hans-Dieter published “Biologie für Ingenieure” (Biology for engineers), which he co-authored with F. Brümmer and M. Siemann-Herzberg, and participated in organization of an international conference dedicated to *Paramecium* biology (August 2012). That year Prof. Görtz retired and returned from Stuttgart back to Münster. There, he had an opportunity to continue some work on ciliates in the laboratory of Evolutionary Cell Biology at the local University. He was always open to talking on various topics, and not focused only on science. For some years, Hans-Dieter Görtz was one of the initiators of the “Science Pub”. For example, the last time when we met with my friend in Pisa 2 months before his sudden death, he asked me about modern Russian writers. It was always pleasant to talk with him on various topics, and even to be silent together with him. When my mother turned 90 years old (in 2013) I received a congratulatory letter from Hans-Dieter with the following sentence: “*I feel a great luck that Sergei is my friend – and the family of my friend a little bit is also my family.*” I can say the same thing for Hans-Dieter and his family!

Prof. Hans-Dieter Görtz, the prominent member of the symbiosis community and the driver of international collaboration and interdisciplinary



Fig. 7. Part of participants of “*Paramecium* biology” international conference in Stuttgart, August 2012. There are scientists from Germany, Italy, France, Russia, Canada, Brazil and India.

researches in the field; the man with broad interests and knowledge in protistology, cell biology, parasitology and evolutionary biology; the author of three books, a number of chapters in different microbiological and protistological editions, and close to 80 articles; the former Vice-President and the President of German Society of Protozoology (1999–2004) and the Honorary member of the society (2016) is no longer with us. However, the trace that Hans-Dieter left behind by his life is deep and extremely positive. Like long time ago (1827) the famous Russian poet V.A. Zhukovsky wrote – “Do not speak with longing; they are nowhere, but thankfully: they were here!”

Prof. H.-D. Görtz is survived by his wife Monika and by their four children. Ulrich, the elder son, is now a professor of mathematics in Essen; Anne, the elder daughter, studied biology and later became a midwife. Today she takes care of her big family and works as a midwife. Lotte, the younger daughter, studied social science and pedagogy and works in an educational institute for adults. Dietrich, the younger son, became a sculptor and lives in Italy. Hans-Dieter could see ten of his grandchildren.

The commemorative page for Prof. Hans-Dieter Görtz was created on 10.01.2019 (www.gedenkseiten.de/hans-dieter-goertz) by Dr. Renate Radek and so far (by 08.05.2019) it has been visited already 2,014 times. Hans-Dieter for sure is remembered



Fig. 8. H.-D. Görtz M. Fujishima and F. Catania. On the North Sea coast during sampling. Germany, August, 2013.

and will be remembered by all sorts of people, who had the good fortune to know this beautiful person. This is the way life works – death comes in the end. But why the nice people often pass away so prematurely?!

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Fig. 9. Monika and Hans-Dieter Görtz. Again in Münster. Germany, August, 2013.

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Sergei I. Fokin. Department of Biology. Protistology-Zoology Unit. University of Pisa, 56126 Pisa, Italy; Department of Invertebrate Zoology, St. Petersburg State University, 199034 St. Petersburg, Russia; St. Petersburg Branch of the S.I. Vavilov Institute of History of Science and Technology Russian Academy of Sciences, 199034 St. Petersburg, Russia.