In memoriam Wolfram Dunger 1929–2019

The Dunger era at the State Museum of Natural History Görlitz

On January 24, 2019, Prof. Dr. Wolfram Dunger, long-standing director (1959-1995) of the State (today: Senckenberg) Museum of Natural History, passed away. Sixty years of scientific work in the fields of soil zoology, taxonomy, ecology and museology brought him wide national and international recognition.

The name Dunger is inextricably linked to the development of the State Museum of Natural History Görlitz: initially only a small provincial museum on the easternmost border of the GDR, it represents today a museum conducting active research as well as a union of research and teaching, and an international centre of excellence for soil zoology comprising seven departments, all headed by specialists whose research findings have gained global attention and renown. It was Dunger's scientific career that set the course for this.

Around 1950, soil zoology as a topic of research was launched almost simultaneously in three European countries with textbooks by M. S. Ghilarov, H. Franz, W. Kühnelt and C. Delamare-Debouteville. Thus influenced, Dunger began engaging in this emerging science right from the beginning of his studies in Leipzig. At the time, the doctrine was that humic acids can only develop in the guts of animals, and that therefore soil fertility can be measured directly according to the number of Collembola contained in the respective soil. This misleading hypothesis (and its rebuttal) determined Dunger's future focus of research. He graduated and received his doctorate from Leipzig with studies on litter decomposition, reviewed by

Prof. Kühnelt from Vienna. During his time as assistant at the Zoological Institute Leipzig, Dunger established a concept for soil zoology research that he could, however, not implement at this institute: As a non-member of the SED party (Socialist Unity Party of Germany) he was expelled from the university, albeit in 1959 – after a short term as scientific editor at the Bibliographical Institute Leipzig – confirmed as Director of the Staatliches Museum für Naturkunde – Forschungsstelle – Görlitz, by the GDR Ministry of Higher and Technical Education. The direct subordination of the museum under the authority of this ministry had already taken place in 1953 under Dunger's predecessor Dr Traugott Schulze, but was later repeatedly questioned. Dunger counteracted the planned incorporation into the mere group of municipal museums in a wise and prudent way and repeatedly ensured the affiliation to the ministry with the vital possibilities of influence resulting from this for the subsequent 50 years.

The initially sparse budget of the museum and a staff of merely 14 people, including only one trained biologist and a teacher, limited the research possibilities at first. But Dunger made every effort to continue his soil zoological research also in Görlitz, and to establish it permanently and successfully, redirected funds from his research contract at the University Leipzig to Görlitz.

Following up on his research on reclaimed opencast mining areas near Leipzig, Dunger from 1960 on as a first long-term research project chose the soil biological development on similar mining dumps of the Upper Lusatia mining region. With the results of these studies he habilitated in 1968 in Dresden, and this was the starting point for a long-term study that accompanied him throughout the more than 50 years of his life as a researcher. For this, a fundamental advancement of the museum's performance was necessary at first, i. e. the staff of research assistants, the collections, the technical equipment and the cooperation with suitable partners. For Dunger, as a non-member of the SED, all of this depended on the possibility to stay in contact with the decision-making bodies. Essential for this was his appointment to the advisory board of the State Science Museums of the GDR at the Ministry of Higher and Technical Education from 1966-1989. Thus, on a purely objective basis, new jobs could be created, and custodian departments for soil fauna ('Apterygota'/Collembola, Myriapoda, Oribatida, Gamasina) including comprehensive research collections for each department be established. A systematic research concept also integrated the museum's remaining fields of research (Mycology, Botany, Malacology/slugs, Entomology/Formicidae, Mammalogy/small mammals). In 1994, a first geologist was employed. From 1959 until his retirement, Dunger increased the number of permanent employees from 15 to 40, and among those the number of researchers from 2 to 15; the number of museum buildings extended from 2 to 4. Young researchers were given the opportunity to obtain their PhD, which was by no means typical at a museum. Dunger guided his young colleagues through their career also proving to be a tactful leader, not only concerning the choice of research subject for their dissertation. Subtly guiding he gave his PhD students the freedom to design and execute their research subjects, but also stepped in to correct and help at crucial points with his professional and personal competence.

Endeavouring to earn more recognition for their field of study, the GDR soil zoologists had joined together in a working group under the leadership of Dunger already at the beginning of the 1960s, later integrated into the Biological Society of the GDR. This working group held several meetings at the Görlitz museum, often welcoming guests from the Soviet Union, Poland, Hungary and the ČSSR. Written exchange with colleagues from non-socialist foreign countries, however, was severely restricted by the GDR government. With the publication of the journal "Pedobiologia" since 1961 by Eckehard von Törne, and with major participation of Dunger, GDR soil zoologists now also got the opportunity to articulate on

an international level and to circumvent the import ban by lecturing on current literature. In 1964, Dunger co-established the "International Symposia on the Entomofauna in Central Europe" (SIEEC), an essential link between scientists of East and West during the Cold War era. The collaboration of Central European museums opened up new work perspectives.

From all of these initiatives resulted an important, but, until then, most unusual contact for a museum: the representation of the GDR in the working group "Soil Zoology" of the Warsaw Pact states. This working group was headed by the Scientific Secretary of the Soviet Union Academy of Sciences, Prof. M. S. Ghilarov, a first-rate researcher, soil zoologist and Dunger's longtime friend. He supported the efforts to gain more attention and funding for the field soil biology or soil zoology in the GDR, not least by appealing to the president of the GDR Academy of Agricultural Sciences "to promote the development of the State Museum of Natural History Görlitz to become the central research institute for fundamentals of Soil Zoology".

Soil zoologist and soil ecologist

In 1960, Dunger launched the so-called "Halden-Projekt" (opencast mining dump project) as a large and unique long-term field experiment. Following up on his studies on such dumps of the Central German Lignite Mining Region south of Leipzig, he chose newly heaped dump areas of the opencast mine Berzdorf near Görlitz to continuously study their succession. During the 1990s this research again gained high relevance due to the closing of opencast mines and the necessary refurbishment and ecological shaping of post-mining landscapes. The Görlitz soil zoologists therefore intensified their investigations into a complex of dumps of the opencast mining area Berzdorf, focusing on the immigration and colonisation of soil fauna as well as the development of populations in interaction with the local conditions. Altogether 18 researchers worked on a total of 12 major soil taxon groups as well as on plant sociology and soil science. The distribution of the respective species revealed patterns which can be attributed to site parameters and are suited to find answers on questions relating to local ecological conditions.

Figure 2: During the 13th International Congress of Entomology in 1968 in Moscow. Photograph: B. Klausnitzer.

These studies provided findings on soil zoological site diagnostics, on practical effects of melioration and recultivation measures on soil life, and on the successive immigration, colonisation and development of soil fauna. On the basis of long-term studies on the development of biomasses of lumbricids and microarthropods and their potential for the decomposition of litter, Dunger was able to develop reference series for the assessment of the biological soil quality. More than 40 publications resulted from this opencast mining dump research.

When funding for the opencast mining dump project ended in 1970, the museum took part in a GDR cooperative project of the ecosystem research "Leutratal", which was in time and content conducted simultaneously to the West German "Solling Projekt" and united five research centres under the direction of the Academy of Agricultural Sciences (Halle/Saale) from 1972 to 1975. The nature reserve Leutratal near Jena/Thuringia was investigated along a south-facing slope with a spatial succession of ecologically graded habitats. This project provided the opportunity to explore a broad spectrum of the meso- and macrofauna from the same location and yielded results on quantitative and qualitative faunistics, production biology, using soil fauna for bioindication and on the historical and geographical development of the species inventory – including descriptions of new (Collembola) species.

Along with the minimum necessary continuation of long-term follow-up studies on the soil fauna of the Berzdorf opencast mining dumps, investigations on pollution issues "right on the own doorstep" were launched, a topic of high importance in the 1970s in East and Central Germany as well as in Czechoslovakia and Poland. These studies on the impact of decades of ash and SO_2 immissions from the power plants in Hirschfelde and Turów (Poland) on the development of the soil fauna in the Neiße valley near Ostritz/Görlitz were the starting point for a long series of research projects on the sensitivity of soil fauna, lasting well into the 1990s. The objective was a differentiated evaluation of biodindication as an indicator of anthropogenic changes in terrestrial ecosystems. By focusing on this research topic early on, Dunger once more demonstrated not only his sense for issues of ecological interest but also for popular and therefore fundable research topics.

Figure 3: Investigating a sample series. Photograph: Senckenberg Museum of Natural History Görlitz.

Dunger also initiated a variety of smaller research initiatives. From 1990 to 1992, the Department of Soil Zoology took part in the cooperative project "Structure, use and pollution of anthropogenic severely changed ecosystems in the metropolitan area Leipzig-Halle-Bitterfeld" ("Urbanprojekt Leipzig") under his leadership. The area Leipzig-Halle-Bitterfeld was particularly affected by the negative impact of an excessive concentration of industrial sites, population and infrastructure facilities and was therefore in the focus of these investigations. One of the main objectives of this project was the detection of general modes of action of toxic materials (e.g. heavy metals) and possible after-effects within the ecosystem. The task was to find bioindicators for facilitating a quick evaluation of environmental conditions by means of a secured reaction. For this, extensive laboratory cultures with different groups of soil fauna were set up to examine their reaction to defined pollutants on the basis of life cycle, reproduction, mortality, behavioural changes etc.

From 1998 to 2002, Dunger conducted research on the effects of long-term, environmentally friendly agriculture on diseases, pests, weeds and selected soil fauna bioindicators ("Glaubitz-Projekt"). Its aim was to examine, by use of bioindicators, to what extent the cultivation measures would meet the requirements of an environmentally friendly agriculture, and to evaluate possible ecotoxicological effects of the applied herbicides and insecticides. Furthermore, effects of cultivation methods and grown crops should be examined by using selected soil fauna biodindicators, and evaluation criteria for the applied cultivation methods should be determined.

Dunger as taxonomist

Besides his great "ecology projects", since the beginning of his work as a researcher Dunger pursued diverse taxonomic and ecological projects, initially based on studies of local faunas of Central European uplands. His particular focus was on the Collembola, of which 35 descriptions new to science bear witness. New geographical aspects across the borders of Central Europe opened up with his work on the Kaszab Collembola collection (Museum of Natural History Budapest) from Mongolia.

Figure 4: For decades, Dunger conducted research on the local faunas (Collembola, Myriapoda) of Central European uplands; here, on a field trip to Hrubý Jeseník (Altvatergebirge, CZ) 2011. Photograph: K. Voigtländer.

This became the starting point of the realisation that a European taxonomy on Collembola without including the whole Eurasian fauna must remain fragmentary. Building on this, Dunger developed new definitions of Collembola communities and also campaigned for an up-to-date overview of the state of knowledge about Collembola taxonomy which he continued with the help of the "Summary supplements to the Collembola fauna in Central Europe" as successor to H. Gisin from 1967 on. He initiated a project on taxonomy of critical genera of Collembola which at first reviewed taxonomic knowledge of Tullbergiinae and critical genera of Isotomidae, and, as a second step, the ecologically significant genus *Mesaphorura* which consists almost entirely of apomictic morphospecies. By examination of species-typical features in field populations, combined with ecological, morphological and biochemical methods, a specific taxonomy of the genus *Mesaphorura* could be scientifically confirmed. From the 1990s on Dunger finally began publishing a large-scale critical overview on the current knowledge of taxonomy, systematics, ecology, distribution and applied ecology of all Palaearctic Collembola species so far described. These "Synopses on Palaearctic Collembola", written by top experts and known worldwide as "Dunger's blue books", represent a comprehensive overview of this important soil organism group, including current identification keys.

This ambitious project "Synopses on Palaearctic Collembola", which Prof. Dunger consistently and single-mindedly worked on to realise, even at age 80, so far only in half is available in print. It will be continued and finished by his peers and former colleagues.

Conferences/Symposia

National and international conferences are always highlights in research and museum life. For the Görlitz museum this tradition began in 1961 with the "Symposien über die naturwissenschaftliche Forschung in der Oberlausitz" (Symposia on scientific research in Upper Lusatia) which took place every three years and always included soil zoology issues.

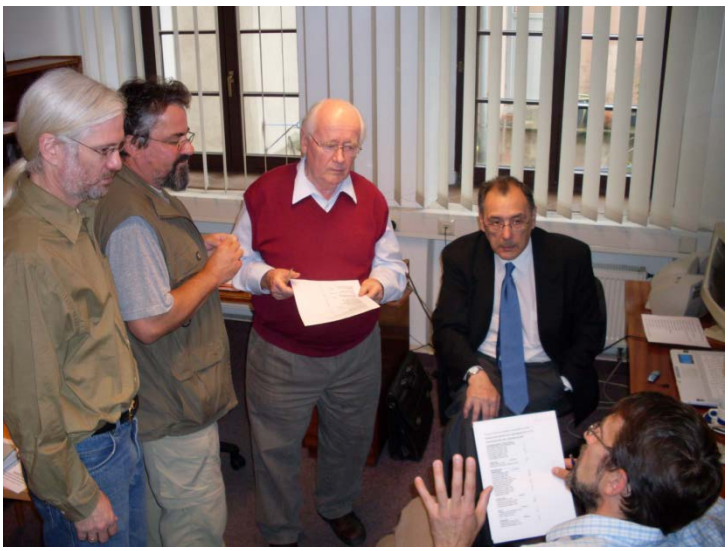

Figure 5: Editorial meeting on the „Synopses on Palaearctic Collembola", November, 4th, 2006 in Görlitz. Left to right: D. J. Russell, J. Schulz, W. Dunger, R. Jordana, M. Potapov. Photograph: Senckenberg Museum of Natural History Görlitz.

The organisation of an international symposium on his very own research subject was a long-cherished wish of Dunger, not the least in order to give more weight to the museum in Görlitz as a centre of excellence on soil zoology. This became possible in 1995 with the international workshop "Importance, situation and development of systematics in soil zoology". Focus of this symposium, which was attended by 73 soil zoologists from five nations, was on fundamental problems of taxonomy, especially the applicability of classical morphological methods on the soil fauna, which is often poor in morphological characters, in combination with new molecular and biochemical, but also ecological methods of systematics. The second conference complex was directly related to problems of applied soil ecology and the preparation of taxonomic knowledge for use by ecologists. For Dunger, this conference was probably the most important and also his last - it was his farewell from the official research and museum life.

Research and collection – Dunger's collection concept

The collection concept of the Görlitz museum developed by Dunger was a reflection of his scientific way of thinking. It was a matter of course for him not only to provide a permanent evidence for taxonomic findings, but also to make the results of ecological and systematic fundamental research available for subsequent verification. For Dunger, the three fields – ecology, taxonomy and collection – could not be separated from each other, which once again distinguished him as a far-sighted biologist. It corresponds to his special scientific signature that he did bring together these fields fruitful and with great success not at a university research institute, but at a natural history museum.

From 1960 Dunger developed the basis for a system of complex sampling still in use today, combining information on sampling in the field, sorting in the laboratory and extraction methods for soil arthropods and other groups. After fixation and identification of the most important soil animal groups, the material is forwarded to specialized scientific researchers. Each sample is given a logbook number that keeps each object from this sample linked from extraction through scientific processing up to storage in the collection and subsequent publications. These logbook numbers are recorded and maintained as "Dunger Numbers" (DNR)

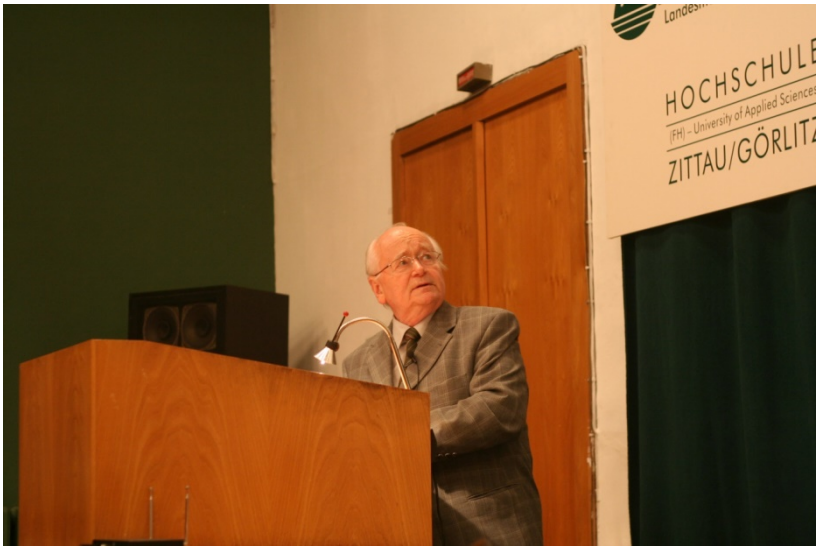

Figure 6: For Dunger, conveying scientific findings in lectures and publications was always an essential task; here on the 17th Annual Symposium of the Naturforschende Gesellschaft der Oberlausitz, March 17th, 2007 in Görlitz. Photograph: O. Tietz.

and are thus a permanent symbol in his honour. All site-related and other parameters are linked to this number, as well as all processed taxon groups, enabling community ecological research.

This principle of relational sample and accompanying data collection formed the basis for the development of the ecological and taxonomic database "Edaphobase" and its evaluation tools.

In addition to the species collections, extensive literature collections were established under Dunger's direction. The basis for all scientific work is its ongoing recording and processing, for which a staff member was appointed early on. Especially Dunger's preferred groups Collembola and Myriapoda benefited from this. In addition to the "author indexes" with bibliographical data, the important "species indexes" were also created which enable to query for each species, linked by a number, the reference in which it was mentioned as well as additional information. These data, too, have been made available in digital form via Edaphobase.

Teaching and knowledge transfer

Teaching activities had always been very important to Dunger, however, an application for professorship at the University of Leipzig was rejected in GDR times. Therefore, his teaching focus between 1960 and 1990 was on the further training of teachers in the districts of Dresden, Leipzig and Karl-Marx-Stadt (Chemnitz). In the course system "Fundamentals of Production Biology and its Applications" biology teachers were made familiar with issues of biomass and energy turnover in ecosystems, the role and performance of soil organisms in these processes, and so on.

It was not until 1980 that Dunger received the Facultas Docendi and was appointed as honorary lecturer for Systematic Zoology by the Humboldt University of Berlin in 1981. In 1989 he finally returned to the University of Leipzig as honorary professor for Ecology and Special Zoology, where he taught students about soil zoology and special zoology of soil arthropods and vertebrates in lectures and practical courses.

Dunger also contributed important books to soil zoology. For the "Lehrbuch der Speziellen Zoologie" (est. by A. Kaestner), Dunger revised the chapters on Antennata, Diplopoda, Chilopoda, Pauropoda and Symphyla as well as on "Apterygota" (Protura, Collembola, Diplura, Archaeognatha and Zygentoma). For the university textbook "Ökologie", edited by H.-J. Müller, he wrote the section on the pedosphere. In collaboration with H.-J. Fiedler Dunger created the textbook "Methoden der Bodenbiologie", which was published in two editions in 1989 and 1997. Unfortunately a planned English-reprint could not take place after the political change in Germany due to publishing house disputes. For R. Bährmann's (est. H.-J. Müller) "Bestimmung wirbelloser Tiere", the determination plates from "Tiere im Boden" are used in a revised form.

Dunger's publication list comprises 230 original articles, reviews, book contributions and monographs, published by B. Klausnitzer in "Berichte der Naturforschenden Gesellschaft der Oberlausitz" in honour of his 80th birthday in 2010.

One of Dunger's central concerns always was to bring the subject of soil and its inhabitants closer to an interested public. A work written in a generally understandable manner is "Unbekanntes Leben im Boden", but most of all it was his popular-science book from the Brehm series "Tiere im Boden", which spread throughout Europe in four editions and inspired many students and colleagues in this field. A former student and later colleague wrote: "In 1992 I met Wolfram Dunger personally for the first time as part of a practical course in soil zoology for Leipzig students. His book "Tiere im Boden" had led me here

from Hesse with the desire to meet the author, who for me was the personified soil zoologist. From his book I thought I could read that he really knew all these animal groups he wrote about from his own intensive experience and in all available details and understood their interaction in the soil more precisely than anyone else".

Dunger as Museologist

A natural history museum has first and foremost the task of preserving the natural treasures - a task that Dunger attached greatest value to. An equally important task lies in the education and environmental education of people, for whose fulfilment Dunger has achieved a great deal. A large number of exhibitions were created according to his concept and under his direction, but he also played a decisive role in the design and execution of them with a high degree of didactic skill. Dunger's main goal here was a comprehensive exhibition on soil life. While there were special exhibitions on that subject from time to time, for example the last one in 1991, "Forschung im Museum", it was not until 1992 that he succeeded to fulfil his dream with the conception and development of the travelling exhibition "Leben im Boden" (in collaboration with Karin Voigtländer), which was opened in September 1995 as part of the international workshop "Importance, situation and development of systematics in soil zoology" in Görlitz, and subsequently was presented in German and international museums throughout Europe.

In view of the diversity of the museum's activities, Dunger naturally also published on museum educational topics, the task of "his" museum in preservation, education and research.

Figure 7: Dunger teaching students at the exhibition facility on opencast mining dump recultivation developed by him near Berzdorf/Upper Lusatia in 2004. Photograph: O. Larink.

Dunger and the Naturforschende Gesellschaft der Oberlausitz (Society of Natural Sciences in Upper Lusatia)

Dunger was very attached to his home region, Upper Lusatia and its natural history research. This had a long tradition in the Naturforschende Gesellschaft zu Görlitz (founded in 1811), but after the Second World War the society was no longer allowed to continue its activities neither by the Soviet military administration nor in the GDR. Dunger saw himself as having the specialist responsibility of continuing regional research and, for this purpose, since 1961 organised the regular "Symposia on Scientific Research in Upper Lusatia" at the museum. Its results were published in the "Abhandlungen und Berichte des Naturkundemuseums Görlitz", which were, carefully considered, linked in volume count to the former society's journal. For many years Dunger sought to revive the old society. On his initiative, the Naturforschende Gesellschaft der Oberlausitz was founded in 1990 as successor, and Dunger held the position of chairman and honorary chairman, respectively. The Society now was able to hold its "own" annual conferences again, the results of which could be published in its "own" journal, the "Berichte der Naturforschenden Gesellschaft". Dunger took over the publication until 2010 with his own expertise and meticulousness, but also in his sensitive dealing with often "unconventional" civil scientists. The Naturforschende Gesellschaft der Oberlausitz is "his child", whose path he accompanied as honorary chairman until his death.

Dunger as publisher

Throughout his life, Dunger was active as an editor and member of the editorial committees of several national and international scientific journals and periodicals. In addition to the "Berichte der Naturforschenden Gesellschaft der Oberlausitz" (see above), the "Pedobiologia", which was founded in 1961 as the voice of German (GDR) soil zoologists, the "Revue d'écologie et de biologie du sol", the "Beiträge zur Entomologie" as well as the "Cottbuser Schriften zu Bodenschutz und Rekultivierung" deserve special mention.

One of the most important tasks of his editorial activity was the continuation of the "Abhandlungen und Berichte des Naturkundemuseums Görlitz" (see above), which was published as the museum's journal since 1954. Thus, the scope of the journal changed significantly. Since then it did not only contain scientific contributions on natural history research in Upper Lusatia, but increasingly also scientific articles from the museum's research that are not regionally bound. Thus a large number of soil zoological works, not least from Dunger's pen, influenced the "Abhandlungen".

To give the journal more visibility, it has been continued since 2009 as "Soil Organisms" with a focus on ecological soil biology on an organismic basis by Prof. W. Xylander as editor, the current director of the now Senckenberg Museum für Naturkunde Görlitz. Dunger has been involved with this journal with his expertise to the end as a member of the Editorial Board.

Like no other, Dunger understood how to master the not always easy and often ungrateful work as editor with tact, knowledge of human nature and tolerance, combined with the necessary "professional harshness". Without his personal commitment, his struggle for every scientifically valuable article, neither the "Berichte der Naturforschenden Gesellschaft" in its present, internationally renowned form nor the museum's "Soil Organisms" would exist.

Dunger and Myriapodology

At the beginning of his life as a researcher, Dunger acquired knowledge of a wide variety of soil organism groups, most notably of Myriapoda and Collembola. To investigate these two diverse and ecologically important groups in parallel on his own, with equal priority and high quality, in the long run was not possible. He opted for the Collembola and assigned Myriapoda to the newly appointed K. Steinmetzger (later Voigtländer) with the foundation of the collection department "Soil Macrofauna" in 1979. A large number of individual myriapodological publications, but also the constant inclusion of Myriapoda in his "general" work show that he never lost interest in this animal group. Thus, he continued to be a professional companion and tutor of the curator until his death.

Dunger was one of the first members of the "Centre International de Myriapodologie" (CIM), founded in Paris in 1968, and was in close written contact with many of its members. For political reasons, he was not allowed to participate in congresses or perform other personal activities within the society; it was not earlier than 1989 that he was permitted for the first time and under great difficulties to attend the 7th International Congress of Myriapodology in Vittorio Veneto. With the lecture "Succession of Myriapoda in primary colonization of reclaimed land" (Dunger & Voigtländer), he remained faithful to his special topic, the opencast mining dump research. Many new scientific contacts and friendships made this conference unforgettable for him.

With great interest, Dunger followed the activities of the British Myriapod Group (later: British Myriapod and Isopod Group) and their successful initiatives in building up a large network of professional and amateur myriapodologist researchers. Their activities cover the fields of ecofaunistics, zoogeography, systematics, taxonomy and other topics, which is reflected in the publication of their own journal until today. He also had the idea of setting up a working group for Germany based on the British model. To a relatively small extent this later succeeded with the foundation of the Working Group of German-speaking Myriapodologists and the publication of their journal "Schubartiana". Dunger also played a decisive advisory role and followed the work of the group and the journal with interest until the end of his life.

Long before the "Red Lists of threatened species of animals and plants" became the focus of political attention, Dunger recognised and called for special protection of soil animals. This greatly inspired the start of the project "Red Lists" in the section Myriapoda, which led to the Saxony-Anhalt red lists for Diplopods and Chilopods developed in 2004 (continued in 2019) as well as the nationwide Red Lists (2016) for these animal groups.

Wolfram Dunger was able to gain soil zoological insights on the basis of a broad knowledge of various animal groups, extensive decades of field work and precise knowledge of the literature, which led to a new understanding of life in the soil. With his long breath that he used to push forward more than 50 years of long-term studies on the development of soils and their species spectra, he set standards that can hardly ever be surpassed in today's fast-moving world. What it meant to carry out such research under the difficulties of the GDR period can hardly be understood 30 years after the fall of the Inner German Border. His former employees and colleagues admired his enthusiasm and competence as well as his strategic talent as a manager. His visionary work, his specialist knowledge and his outstanding personality have made the Görlitz Research Museum what it is today.

Dr. Karin Voigtländer & Dr. Ulrich Burkhardt

Overview of Wolfram Dunger's biographical data

Born October 9th 1929 in Zittau

1940–1948: Humanistic secondary school (with a short break during the war) 1948–1953: Biology and soil science studies at the University Leipzig

1953–1958: Research assistant, later curator with teaching and research assignment at the Zoological Institute and Museum of the Karl Marx University Leipzig

1957: Doctorate (zoology, soil ecology) at the same institute

1958–1959: Scientific editor at the Bibliographical Institute Leipzig

1959–1995: Director of the State Museum of Natural History Görlitz

1966–1991: Chairman of the working group on soil zoology (Biological Society of the GDR)

1966–1989: Member of the advisory board of the State Science Museums at the Ministry of Higher and Technical Education of the GDR

1968: Habilitation at the Zoological Institute of the Technical University Dresden

1968–1994: Founding member of the Standing International Organizing committee of the International Entomofaunistic Symposia in Central Europe

1981: Honorary lecturer (Systematic Zoology) at the Humboldt University Berlin

1989: Resumption of lectures (Soil zoology) at the University of Leipzig

1990–1996: Honorary professorship for the temporary assumption of the chair of Systematic Zoology at the University Leipzig with teaching and examination duties

1990–2006: (Founding) Chairman of the „Naturforschende Gesellschaft der Oberlausitz"

1995: Official end of service in September 1995

2006–2019: Honorary Chairman of the "Naturforschende Gesellschaft der Oberlausitz"

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