

Professor Ludwik Frey – a researcher and popularizer

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In 2012, Professor Ludwik Frey celebrates two respectable anniversaries. The first one is connected with his 70th birthday, while the second, with the 45th anniversary of scientific career.

Prof. Frey is a born and bred native of Kraków. In Kraków, he obtained his formal education and, afterwards, for his whole professional life has been working in the same scientific and research institution, i.e., in the Władysław Szafer Institute of Botany of Polish Academy of Sciences.

Prof. Frey completed his secondary education at the Jan Sobieski High School II, where, in 1960, he received his high school diploma. In the same year, he started biological studies at the Faculty of Biology and Earth Sciences of the Jagiellonian University, from which he graduated in 1965. He specialized in an experimental botany and carried out his master thesis on the embryology of *Alisma lanceolatum* in the Department of Plant Anatomy and Cytology, under the supervision of prof. Eugenia Pogan – a continuator of the scientific school of cytology and embryology funded by prof. Maria Skalińska.

In 1967, Prof. Frey started his work career at the Institute of Botany of PAS, initially as a technical research assistant, and, since 1969, as a research associate. Possibly, around this time, he developed interest in grasses, inspired by prof. Adam Jasiewicz, the head of the Department of Vascular Plant Systematics of this time, who encouraged the then young adept of botanical sciences to investigate the differentiation within the genus *Molinia*. Already in 1974, he obtained his PhD degree, based on the thesis “Taxonomical analysis of the genus *Molinia* Schrank in Poland”, conducted under the supervision of prof. Adam Jasiewicz. Since then, grasses have become a main object of his scientific and research activity. Still before the completion of the doctoral procedure, i.e., in the years 1971-73, the first publications presenting results of his karyological studies in grasses came out. The subsequent doctoral

dissertation presented some interesting novelties. Based on his critical studies, he demonstrated that there are two *Molinia* species (*Molinia caerulea* and *M. arundinacea*) in the area of Poland. Furthermore, he described a new for science infraspecific taxon – *Molinia caerulea* subsp. *hispanica*, for the first time showed the chromosome number for the Polish populations of *M. arundinacea* ($2n=90$) and delineated the European distribution range for this species. Thus, it is worth of noting that each of these achievements was presented in the national and international publications. His persistent karyological studies, which were continued for almost 20 years, yielded a considerable outcome.

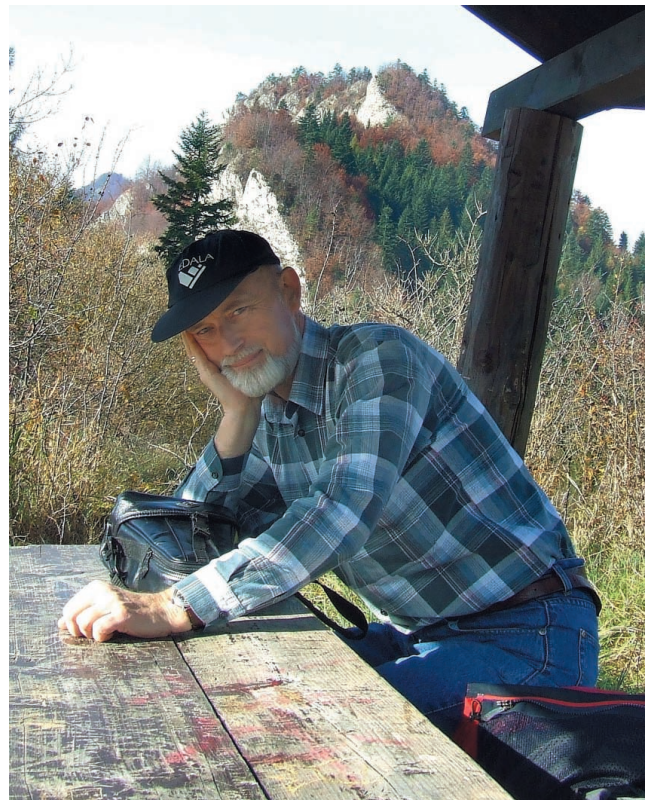


Fig. 1. Professor Ludwik Frey (photograph by W. Frey)

The chromosome numbers for 150 angiosperm species, not only Polish but also from the Balkan region, were established. As a result of thorough analyses, the karyograms of several species of the genus *Trisetum* (*T. alpestre*, *T. fuscum*, *T. flavescens* and *T. sibiricum*) were prepared.

Prof. Frey got his habilitation degree in 1993, based on the monothematic cycle of four works, published in “Fragmenta Floristica et Geobotanica” in the years 1991-1993, under a collective title: Taxonomy, karyology and distribution of selected genera of tribe *Aveneae* (Poaceae) in Poland: I. *Avenula*, II. *Trisetum*, III. *Koeleria*, IV. *Conclusions*”. In 2005, he achieved the highest level of scientific career – the title of professor of biological sciences. The whole procedure was conducted by his parent institution – the W. Szafer Institute of Botany of PAS.

The studies conducted by Prof. Frey thus far have substantially deepened our knowledge of grasses, particularly in relation to the species occurring in Poland. This increase in knowledge is very solid and reliable, which results both from his high competences and personal predispositions. All his original works are distinguished by a great scrupulosity, while the new results are always subject to the multifaceted critical evaluation. As befits a responsible researcher, his original chorological data have been based on a thorough revision analysis, carried out, in accordance with standards, on the whole available material. The high level of expertise in connection with the personal attributes allowed him not only to describe new taxa and make new nomenclatural combinations but also to formulate proposals for the reduction of infraspecific taxa, e.g. within *Deschampsia caespitosa*, or for the transfer of *D. flexuosa* to the genus *Avenella*. These proposals had always been preceded by thorough, inquisitive studies and based on justified arguments, which is not often a common practice. Such works are always the result of very laborious and time consuming herbarium queries and are not achievable without a genuine passion for research.

The scientific output of Prof. Frey comprises also works that call into question the existing chorological opinions, e.g., he recognizes that *Deschampsia setacea* is an extinct species in Poland, while *Avenula alpina* was incorrectly recognized. He also rectifies the distribution range of *Avena strigosa*, along with the description of intraspecific variability and detailed analysis of distribution dynamics of this species in Europe. The particularly valuable results were presented in two publications on the taxonomic issues related to the *Agropyron-Elymus* complex. It is worth of noting that in these works, he competently combined both classical and experimental methods. The obtained in this way results were supported by the objective

statistical analyses. This approach led to the revision of many widespread taxonomic treatments. The discussed works gained wide recognition among botanists, which was confirmed by their nomination for a prestigious award by the Botanical Committee of PAS.

Prof. Frey has a very rich scientific outcome, which comprises almost 350 titles, not counting numerous publications online. For majority of them, he is a sole author. However, many publications presenting, what is worth of noting, novel results are the effect of teamwork effort. This groups includes over 10 esteemed works prepared in cooperation with prof. Marta Mizianty. All of them were related to grasses. The other co-authorship publications were prepared in cooperation with the botanists from the parent institution and also from the several institutions from all over Poland.

A list of species that were studied in multiple aspects by Prof. Frey is really impressive. In an alphabetical order, it comprises the representatives of following genera: *Agropyron*, *Agrostis*, *Aira*, *Avena*, *Avenella*, *Avenula*, *Beckmannia*, *Bothriochloa*, *Calamagrostis*, *Cenchrus*, *Deschampsia*, *Festuca*, *Glyceria*, *Holcus*, *Hordelymus*, *Koeleria*, *Leersia*, *Leymus*, *Lolium*, *Molinia*, *Phleum*, *Scolochloa*, *Trisetum*, *Ventenata* and *Vulpia*. A chronological survey of this list reveals that only in the beginning of his scientific career, some years had not resulted in a publication. Until 1990, he regularly published one or two works each year. Afterwards, the number of publications significantly increased, even up to more than ten per year.

In the scientific output of Prof. Frey, worth of notice are also works dealing with the withdrawal and extinction threat to the elements of native flora, i.e. always topical issues of nature protection, and with the widely understood popularization of knowledge about nature. Among others, he prepared entries, as a sole author or co-author, on five species of grasses (*Agrostis alpina*, *Avenula planiculmis*, *Deschampsia setacea*, *Elymus farctus* and *Trisetum sibiricum*) and the psammophilous species of *Linaria odora* (known only from the sea coast localities) for the subsequent editions of the Polish Red Data Book of Plants. Furthermore, he contributed entries on two grass species to the regional Red Data Book of the Polish Carpathians.

A special field of activity of Prof. Frey are popular science works, which popularize scientific issues in society. The first signs of inclinations for this difficult activity appeared already in his early publications, published by the local publishing house “Gotek”. Afterwards, these inclinations developed further, which resulted in the publication of numerous articles intro-

ducing readers to the secrets of various plant species (“Z doliny Grajcarek” [From the Grajcarek valley]). A similar role played book reviews, particularly these published in the well known and valued periodicals (e.g. *Wszechświat*). However, particularly interesting are his popular science books. Two of them, (“Opowieści o roślinach Pienin” [“Stories about the Pieniny Mts”], “Atlas roślin pienińskich. Kwiaty św. Kingi [“Atlas of plants of the Pieniny Mts. Flowers of St. Kinga”]), through interesting plant species descriptions, praise his beloved Pieniny Mts. Already the titles of individual chapters are very intriguing and mysterious, e.g. “Ślicznotka z długimi rzęsami” [“A beauty with long lashes”], “Orzechowe perły leśnej menady” [“Nut pearls of forest bacchante”], “Złocisty i pachnący” [“Golden and aromatic”], “Czarna dama” [“Black lady”], “Dar z nieba” [“A gift from heaven”]. These books are addressed to a large group of readers, enabling them to acquire substantial knowledge and identify various elements of this region’s flora. Other works by Prof. Frey are aimed at people searching for deeper, more advanced knowledge, related to more symbolic and philosophical issues (“Człowiek – władca czy rządca przyrody?” [“Man – a ruler or manager of nature?”], “Symbolika traw w poezji i religii” [“Symbolism of grasses in poetry and religion”]), published in the book “Symbolika człowieka” [“Symbolism of man”]. A particularly interesting is his book about the great Carl Linnaeus. Already the subtitle “Książę botaników, Profesor Profesorów” [“The Prince of Botanists, Professor of Professors”] sounds very inviting. The book in a very

competent and accessible way describes the life history of a man, who two and half centuries ago caused a revolution in biology.

Prof. Frey has also significant achievements in the organization of science. Together with prof. Marta Mizianty, he initiated and, afterwards, consistently realized cyclic conferences devoted to the biology of grasses, which have been always attracting a great interest. Each of these conferences resulted in a post-conference publication. Prof. Frey has consistently undertaken a difficult task of editing and publishing the subsequent volumes. He was also an editor of many other books. Just in the years 2000-2011, he edited over ten monographs (sic!). The scale of his activity in this area is really respectable.

The discussed achievements, do not exhaust the full spectrum of his educational activity. Prof. Frey has also made numerous reviews of doctoral and habilitation theses and for the granting of scientific title procedures. In addition, he participated in the evaluation of works for publication, specialist consultations and taxonomic revisions of national and international herbarium collections of grasses. He is a member of editorial boards of several journals, and a chief editor of *Fragmenta Floristica et Geobotanica*, series *Polonica*, since the beginning of this series.

The whole output of Prof. Ludwik Frey emphasizes his extraordinary diligence and versatility, thus, on the occasion of his anniversaries, he fully deserves the most sincere congratulations and wishes of further successes. All the best dear Professor!

Chronological list of selected publications by Professor Ludwik Frey

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- FREY L. 1970. Chromosome numbers in the genus *Scabiosa* L. II. *Fragm. Flor. Geobot.* 16: 391-394.
- FREY L. 1971. Chromosome numbers of several species of flowering plants in Poland. *Fragm. Flor. Geobot.* 17: 251-256.
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- FREY L. 1973. Karyological differentiation in the genus *Molinia* Schrank in Poland. *Fragm. Flor. Geobot.* 19: 389-396.
- FREY L. 1975. Taxonomical studies on the genus *Molinia* in Poland. *Fragm. Flor. Geobot.* 21: 21-50.
- FREY L. 1975. *Molinia caerulea* (L.) Moench ssp. *hispanica*, a new subspecies. *Fragm. Flor. Geobot.* 21: 463-465.
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- FREY L. 1992. Taxonomy, karyology and distribution of selected genera of tribe *Aveneae* (*Poaceae*) in Poland. II. *Trisetum*. *Fragm. Flor. Geobot.* 35: 101-137.
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- FREY L. 1993. Taxonomy, karyology and distribution of selected genera of tribe *Aveneae* (*Poaceae*) in Poland. IV. Conclusions. *Fragm. Flor. Geobot. Suppl.* 2: 279-288.
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