

**Dr. Maria Bombówna  
1922–2000**



Maria Bombówna was born in Cracow on 13 December 1922 to Jan Bomba – headmaster of elementary schools in the Rzeszów area, a combatant of the Polish-Russian war 1918–1921 and major of the Polish Army between the Wars – and Celina née Chruściel. After leaving primary school in Jawornik Polski, the former Rzeszów District, in 1935, until the outbreak of World War II she attended a four-level school for girls in Rzeszów. During the German occupation she completed the first form of a secret secondary school course, and after the war the second form. In 1945, having obtained her School Certificate in Rzeszów, she began university studies in biology at the Philosophy Department of the Jagiellonian University in Cracow. She graduated as a master of science in 1950 at the newly formed Mathematics and Natural History Department of the same university. During her studies she became interested in water chemistry, and specialized in this subject under the leadership of a well-known scientist, professor Tadeusz Lityński. She carried out practical studies under his guidance in his Laboratory of Agricultural Chemistry at the Department of Agriculture of the Jagiellonian University. Subsequently, for two years she worked in the Agricultural Chemical Station IUNG, located in this laboratory (Stacja Chemiczno Rolnicza IUNG). At that time she was recognized as a very capable and skilled worker.

In 1953 Maria Bombówna started to work in the recently being organized Laboratory of Fish Pond Biology of the Polish Academy of Sciences in Cracow, which in the following years was developed and named the Laboratory of Freshwater Biology. Its founder and director was for many years a prominent phycologist and hydrobiologist – Professor Karol Starmach. Her research interests broadened with the development of the Laboratory of Freshwater Biology, where for a long time she was head of the hydrochemical laboratory. In this position she was very energetic and efficient in applying new methods of hydrobiological research, both her own and collective (*inter alia* in collaboration with Professor Stanislaw Wróbel). Her initial investigation concerned the chemical composition of pond water, with special respect to daily changes in temperature, reaction, and concentration of dissolved oxygen in water.

Especially valuable was her study in the Goczałkowice Reservoir during the first years after its filling. The thesis "Sedimentation of suspension in the dam reservoir in Goczałkowice" enabled her to obtain the PhD degree of natural sciences at the Department of Biology and Earth Sciences of the Jagiellonian University in 1960. It is noteworthy that on the basis of that study it was possible to assess the amount of mineral particles introduced into the Goczałkowice Reservoir during the high freshet in 1958. As a result of sedimentation of such an amount of suspension, the whole area of the reservoir bottom, amounting to 3200 ha, was covered with a 1-cm layer of sediment. As classical already today can be regarded her research on the chemical composition and pollution of the water of Carpathian rivers. At present, the most often cited works are those concerning the Rivers Raba, Skawa, and Dunajec. The results of the studies on this subject were summarized by her in a monograph of "The Upper Vistula basin" by Dynowska and Maciejewski (1991).

The papers devoted to the primary production in the River Raba should be ranked among her successes on an international scale. These investigations were carried out within the International Biological Programme. Studies of similar importance in Her output were those on the chemical composition of waters of the Tatra Mts, both streams and lakes (the Morskie Oko, Czarny Staw, Toporowe Stawki, and lakes in the valley of the Dolina Pięciu Stawów Polskich). These rather difficult research projects were carried out on her own and evidenced her passion for scientific work. A review of the main fields of her activity shows that her studies in fact concerned environmental hydrochemistry, i.e. the effect of the chemistry of water on assemblages of aquatic organisms, mainly microflora. This resulted in close collaboration with hydrobiologists and phycologists. Throughout her scientific activity she published over fifty papers besides numerous expert reports from the sphere of hydrochemistry of surface waters, which were prepared for many institutions.

Dr. Maria Bombówna was well-known to be helpful, especially to younger colleagues. She was eager to advise scientists from other institutes. Her contribution to scientific meetings and discussions always generated great interest and were sincerely appreciated. The fact that she was fluent in three foreign languages, i.e. German, English, French, and some Russian, was very useful in her research collaboration. She took part in the activity of scientific societies, mainly of the Polish Hydrobiological Society. Being for many years a member of the Board of the Cracow Branch of this Society (since its establishment in 1953, she temporarily performed the duty of treasurer. It should be stressed that from the very moment of establishing the trade union "Solidarność" (Solidarity) she joined this organization without hesitation and with true patriotic enthusiasm.

Owing to deteriorating health Dr. Maria Bombówna – a permanent lecturer from 1965, retired in 1982, below the usual age. Despite this she continued her research, working gratuitously at the Institute of Freshwater Biology. Four years after a serious illness in 1994 she was forced to move from Cracow to Rzeszów, where in her family home she was looked after carefully by her relatives. She never married and had a family of her own because her heart remained faithful to one of those hero-soldiers who fell on the battlefield of Monte Cassino. Dr. Maria Bombówna passed away on 5 September 2000 after a short period of hospitalization, and was laid to rest in a family tomb at the Pobitno Cemetery in Rzeszów.

Throughout her long and productive scientific work our Institute became a second home to her. She will live in our memory for ever.

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#### Publications by Maria Bombówna\*

- 1956 Die während einer Jahrzeit und binnen 24 Stunden vorgehenden Veränderungen pH, der Alkalität und des in Fischteichwasser aufgelösten Sauerstoffes. *Biul. Zakł. Biol. Stawów PAN*, 3, 11–130 [in Polish with German and Russian summaries].
- 1957 Bildung von Bodensedimentieren in Fischteichen. *Biul. Zakł. Biol. Stawów*, 4, 111–126 [in Polish with German and Russian summaries].
- 1958 [Bombówna M. and Wróbel S.] Z badań nad składem chemicznym planktonu zbiornika w Goczałkowicach [Selected results of investigation on the chemical composition of plankton of the Goczałkowice Reservoir]. *IV Zjazd Hydrobiol. Pol. w Krakowie (streszcz. ref.)*, 33–34 [in Polish].
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- 1961 Osadzanie się zawiesin w zbiorniku zaporowym w Goczałkowicach [Sedimentation of suspension in the Goczałkowice Reservoir]. *V Zjazd Hydrobiol. Pol. w Gdańsku (streszcz. ref.)*, 101–102 [in Polish].
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\* Expertises, critical reviews, occasional texts, etc., and most popular articles have not been taken into account.

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- Hydrochemical characteristics of the Wielka Puszcza stream. *Acta Hydrobiol.*, 7, Suppl. 1, 1-7.
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- [Starmach K. and Bombówna M.] Recherches hydrobiologiques dans le réservoir artificiel de Goczałkowice. In: Arrignon J. *Mission en Pologne à l'occasion du XVI Congr. Intern. Limnol.*, 79-83.
- 1966 [Bombówna M., Krzeczowska Ł. and Klimczyk M.] Chemical factors, phyto- and zooplankton of differently fertilized fry and fingerling carp ponds. In: *Selected articles from Acta Hydrobiologica*, Warsaw, 47-87.
- [Bombówna M. and Wróbel S.] Chemical investigations on the river Vistula between the mouth of the Przemsza and Cracow. *Acta Hydrobiol.*, 8, Suppl. 1, 321-343 [in Polish with English summary].
- 1968 Hydrochemical characteristics of the Białka Tatrzńska stream *Acta Hydrobiol.*, 10, 27-37 [in Polish with English summary].
- [Bombówna M. and Wróbel S.] The chemical composition of the water of the Wisłok in the region Krosno and its pollution with heavy metals (Cu, Cr, Ni). *Acta Hydrobiol.*, 10, 439-452 [in Polish with English summary].
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