

A TRIBUTE TO PROFESSOR RYSZARD GRADZIŃSKI (1929–2014)



This volume is dedicated to the memory of Professor Ryszard Gradziński, an extremely colourful individual and an eminent sedimentologist. The papers, written by two of his former doctoral students and others, cover some of the main areas, where Professor Gradziński worked. They include the focus of his first scientific activities, the karst and caves of his beloved Kraków Upland and the Upper Silesia Coal Basin, where he carried out sedimentological studies of coal-bearing strata.

Professor Ryszard Gradziński, known to many of us as “the Professor”, “Ryszard”, or more familiarly “Bryś”. He was our colleague, friend, mentor, doctoral thesis supervisor, reviewer of theses and publications. He passed away on the final day of 2014, one of the most brilliant Polish sedimentologists; speleologist; versatile expert on the geology of both the Kraków region and the Upper Silesia Coal Basin; explorer of deserts, caves and polar regions; researcher, working at the Jagiellonian University and the Polish Academy of Sciences; a Member of the Polish Academy of Sciences (PAN) and a Member of the Polish Academy of Arts and Sciences (PAU).

He was born on 15 August 1929 in Kraków. Both of his parents were medical doctors. His father Adam (1902–1944) was a neurologist, and Michalina (1896–1978), his mother, was a neurologist and a well known pediatrician in Kraków. After World War 2, he attended the VI H. Sienkiewicz National Junior and Senior High School. In 1947, he gained a secondary school certificate and in 1951 finished studies in the Faculty of Mathematics and Natural Sciences of the Jagiellonian University, obtaining a master’s degree in geology. In 1950, while still a student, he began work as a Junior Assistant in the Department of Geology at the Jagiellonian University, headed by Professor Marian Książkiewicz. He

continued to work in the same department. The department was included in the structure of the Academy of Mining and Metallurgy (AGH) between 1951 and 1957, as a result of a decision by the Minister of Higher Education, which closed the Geology, Mineralogy and Palaeontology departments of the Jagiellonian University and attached them to the AGH (now AGH University of Science and Technology). In 1952, he was appointed Assistant and in 1953, Senior Assistant. He obtained a doctoral degree in 1962 and a habilitation in 1968, both at the Jagiellonian University.

From 1970 to 2004, Ryszard Gradziński worked in the Department (later Institute) of Geological Sciences of the Polish Academy of Sciences. In 1977, he received the title of Associate Professor, and in 1987 became a Full Professor. In 1989, he became a Corresponding Member of the Polish Academy of Sciences; on 17 November 1990; he was elected an Active Member of the Polish Academy of Arts and Sciences; and in May 1998, was made an Ordinary Member of the Polish Academy of Sciences. He was buried on 9 January 2015 at the Rakowice Cemetery in Kraków.

Ryszard Gradziński worked mainly on the geological processes related to continental and shallow marine settings, with a special emphasis on the origin of the deposits, especially siliciclastics. His research pushed forward our limits of understanding of the sedimentology of aeolian, fluvial and mixed fluvio-marine deposits. Ryszard Gradziński was the author and co-author of over 150 scientific publications, including one of the first modern handbooks of sedimentology (co-authored by Aleksandra Kostecka, Andrzej Radomski and Rafał Unrug, 1976) and its Russian edition (1980) as well as a modified and supplemented version of it (1986). The complete list of Ryszard Gradziński’s publications is included at the end of this volume.



Ryszard Gradziński, ascending to the entrance of Miętusia Cave (Polish Tatra Mts.), 1950s

Ryszard Gradziński began his scientific activities with studies of the conditions of karst development and the origin of cave deposits, which were an outgrowth of his youthful passion for caving. His first scientific publication (1950) was about the origin and development of caves. His doctoral thesis (1962) also was on karst geology. It dealt with the development of the karst of the Kraków region with a special emphasis on palaeokarst. A modified version of it was published in *Rocznik Polskiego Towarzystwa Geologicznego* (*Annales de la Société géologique de Pologne*, since 1980 published as *Annales Societatis Geologorum Poloniae*), in 1962. He studied the origin of some speleothems, namely moonmilk in the Tatra caves (with A. Radomski, 1957) and cave coralloids (with R. Unrug, 1960). Ryszard Gradziński carried out investigations not only in Polish karstic areas (the Kraków Upland, Tatra Mountains and Holy Cross Mountains), but also in Cuba and Mexico. The joint research with A. Radomski explained the origin of the tropical karst in Cuba (1963, 1965 and 1967) and also included the discovery of a new kind of cave pisoid (1967).

The publication of the results of the Polish-Mongolian Palaeontological Expeditions to the Gobi Desert, in which he participated in 1964, 1965 and 1970, brought Ryszard Gradziński his greatest international recognition. He reconstructed the sedimentary environments of deposits that contained the skeletons of reptiles and primitive mammals in the western part of the Gobi Desert. One of the papers, entitled "Sedimentation of dinosaur-bearing Upper Cretaceous deposits of the Nemegt Basin, Gobi Desert, Mongolia", published in 1970, was his habilitation thesis. It was one of his most cited papers and was selected by him as one of the most important papers that he ever wrote. Another paper (1974, with Tomasz Jerzykiewicz) interpreted the Barun Goyot Fm. as being aeolian in origin and included a record of fossil dunes, interdune depressions and ephemeral streams. His work on the Mongolian vertebrate-bearing Cretaceous deposits was summarized in a paper co-authored by Zofia Kielan-Jaworowska and Teresa Maryańska (1977).

Ryszard Gradziński is recognised as an eminent expert on ancient, aeolian environments. He (with Jerzy Gagol and Andrzej Ślaczka, 1979) recognized fossil dune and interdune deposits in the Triassic of the Holy Cross Mountains. This paper also is regarded as one of Ryszard Gradziński's



A group photo of an exploration team in Zimna Cave (Polish Tatra Mts.), 1952. Ryszard Gradziński is the first on the left in the lower row

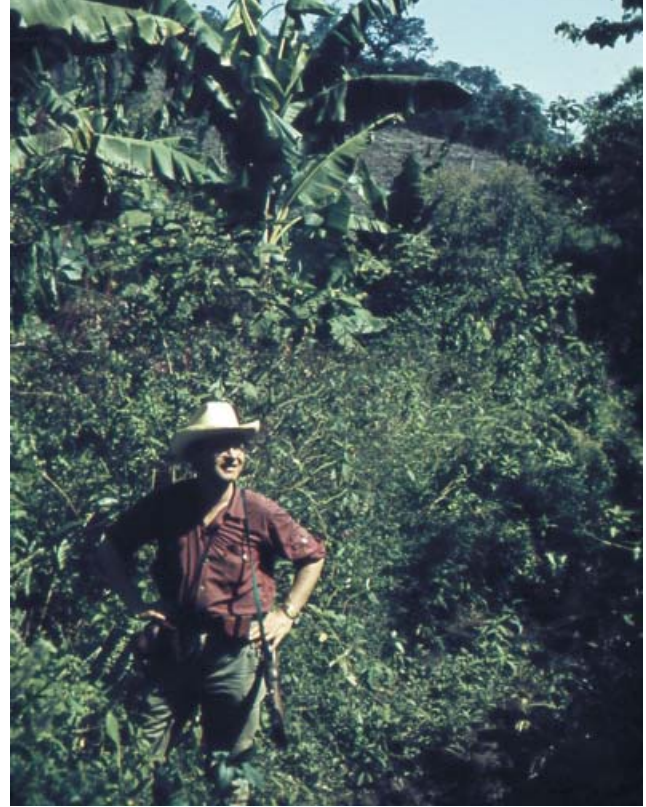
most valuable publications. He extended his work on these deposits by interpreting deep blowout depressions (1992) and by describing trace fossils from the interdune areas (1993 and 1994, with Alfred Uchman).

During an early stage in his research, Ryszard Gradziński began sedimentological studies of the poorly understood coal-bearing succession of the Upper Silesia Coal Basin. He published several papers, mainly as team efforts, on the transport directions of the sediments (1961, with A. Radomski and Rafał Unrug; 1980), the depositional environments of the Mudstone Series (1985, with Marek Doktor), the Kraków Sandstone Series (1995, with M. Doktor and Tadeusz Słomka), the Paralic Series (2000, with M. Doktor), the sedimentary history of the entire coal-bearing succession (1982; 2005, with Artur Kędzior, M. Doktor; 2007, A. Kędzior, M. Doktor and Dariusz Gmur) and addressing more specific problems, such as peat compaction (1984, with M. Doktor), buried upright stems (1976, with Bolesław Brzyski and Roma Krzanowska; 1995, with M. Doktor), accumulations of drifted logs (1982, with M. Doktor and B. Brzyski) and the numbering of the coal seams (1994).

After his participation in the V Antarctic Expedition of the Polish Academy of Sciences (1980–1981) to King George Island, he published a paper (1987, with Szczepan Porębski) about the sedimentological characteristics of the Polonez Cove Formation, in which the authors described Oligocene moraines and glacio-marine deposits. A separate paper (also with S. Porębski, 1990) was devoted to a lava-fed, Gilbert-type delta in this formation.



Ryszard Gradziński, during geological fieldwork in the Gobi Desert (Mongolia), 1960s



Ryszard Gradziński, in the Mexican jungle during a caving expedition in 1970

Ryszard Gradziński not only worked on ancient depositional environments, but was also a leader of two team studies, focused on a modern Gilbert-type lake delta (1979) and anastomosing river systems. The paper, entitled “Vegetation-controlled modern anastomosing system of the upper Narew River (NE Poland) and its sediments” (2003), is another of the most valuable publications by Ryszard Gradziński.

In spite of these diverse research activities, carried out all over the world, the Kraków Upland remained his favourite study area. As he noted, he earned his first extra money doing geological mapping there at the beginning of the 1950s. R. Gradziński devoted to this area one of his most popular publications “The Geological Guidebook of the Kraków Area” (1960, 1972), which is an inspiration for generations of future geologists, geographers and hobbyists. He published several papers on the Kraków area. He recognized fossil caliche deposits, developed on Mesozoic rocks in the city of Kraków (1962 and 1995 with Michał Gradziński and Mariusz Paszkowski). He published the “Geological Map of the Kraków Region” (see the digital edition, available online at <http://www.ing.pan.pl/muzeum/5mapage.htm>). He was also an author of the scenario for the permanent exhibition “Geology of the Krakow Region” in the Geological Museum of the Institute of Geological Sciences Kraków Research Centre, which was opened in 1994. On his initiative, two geological reserves, “Bonarka” and “Zimny Dół”, were established in the Kraków region.

Ryszard Gradziński also published popular books, titled “W jaskiniach Kuby” (“In the Caves of Cuba”, 1967), “Przyroda” (“Nature”, 1994, with Michał Gradziński and

Stefan Michalik), and „Narew – rzeka anastomozująca” (“The Narew – an Anastomosing River”, 2001).

In the years 1970–1975 and 1992–1993, he was the Head of the Kraków Branch (currently Kraków Research Centre) of the Institute of Geological Sciences Polish Academy of Sciences, and in 1999–2003, the Chairman of the Scientific Board of the Institute. For many years, he was a member of the scientific boards of several scientific institutions in Poland, namely the Institute of Geological Sciences of the Jagiellonian University, the Museum of the Earth of the Polish Academy of Sciences (also as a Chair), the Polish Geological Institute, the Archive of Science of the Polish



Ryszard Gradziński, sitting on a whale bone, King George Island (Antarctica), 1981



The last visit to the Tatra Mts., September 2014

Academy of Sciences (PAN) and the Polish Academy of Arts and Sciences (PAU) in Kraków, as well as the Ojców National Park and the Tatra National Park. He was an active member on many scientific commissions and committees of the Polish Academy of Sciences and also he chaired the National Committee for Cooperation with the International Union of Geological Sciences (IUGS) and with the International Geological Correlation Programme (IGCP, later named the International Geoscience Programme) of the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the IUGS. On several occasions, he was a Member of the Central Committee on Scientific Titles and Degrees. In 1991–1997, he was also a Member of the Scientific Research Committee and a Member of the Commission for Basic Research, and in 1991–1993, the first Chairman of the PO2 Division of the Academy of Sciences for Biological, Earth and Medical Sciences.

Since 1955, Ryszard Gradziński several times was elected a Member of the Board of the Polish Geological Society. He was a Vice-President of the society between 1978 and 1980. In the years 1985–1991, he acted as the Editor-in-Chief of the *Annales Societatis Geologorum Poloniae*, the scientific journal of the society. He was one of the founders of the Speleological Section of the Polish Copernicus Society of Naturalists (1964). He was President of the section between 1968 and 1981.

The establishment of joint (the Institute of Geological Sciences Polish Academy of Sciences and the Institute of Geological Sciences of the Jagiellonian University) doctoral studies was an initiative of Ryszard Gradziński, who became its first Head. He supervised 8 doctoral theses.

Ryszard Gradziński was an active caver. He was a founding member of the Klub Grotolazów (Polish for the Cavers' Club) in 1950, the first Polish caving organization, and also an Editor of "Grotolaz" ("Caver"), the first Polish magazine devoted to caving, published from 1950 to 1955. In the second half of the twentieth century, Ryszard Gradziński participated in exploratory expeditions to the largest and deepest caves in the Tatra Mountains, as well as to the caves in Slovakia, Hungary, Bulgaria, France and Mexico. At the turn of 1961–1962, he took part in a three-month expedition to Cuba, during which Polish cavers discovered approximately 21 km of cave passages. In the years 1961–



After a ceremony commemorating the 50th anniversary of Ryszard Gradziński's doctoral defense, courtyard of the Collegium Maius of the Jagiellonian University, Kraków, September 6, 2014; Ryszard Gradziński is accompanied by his former doctoral students, Joachim Szulc (on the left, graduated in 1984) and Tadeusz Peryt (on the right, graduated in 1976)

1965, he was President of the Caving Commission of the Polish High Mountain Club.

Ryszard Gradziński was a talented photographer. He probably inherited this gift from his father. He took a lot of photographs during his numerous scientific and caving trips. He was one of the pioneers of caving photography in Poland. Many of his photographs, for example, those taken in Mongolia and Cuba, were used as illustrations in both scientific and travel literature.

Ryszard Gradziński was awarded the Knight's Cross of the Order of the Rebirth of Poland (1987) and the Gold Medal of Merit for Polish Geology (1981). In 1964, he was awarded the Ludwik Zejszner Prize of the Polish Geological Society. He received the Teamwork Award, First Class, of the Ministry of Higher Education (1978 and 1987) and the Individual Award of the Scientific Secretary of the Polish Academy of Sciences (1984). In 2003, he was honoured with the Polish Mountaineering Association "Medal of the 100th Anniversary of Polish Mountaineering", awarded to "people who are particularly deserving in this sport". He was an Honorary Member of the Polish Mountaineering Association (1983), the Polish Geological Society (1986), the Polish Copernicus Society of Naturalists (2001), the Speleoclub Nicolaus (2005), and the Slovak Speleological Society (2006). The fossil sporomorph *Endoculeospora gradzinskii* Turnau and fossil bivalve *Pholadidea gradzinskii* Hryniewicz et Gaździcki were named in honour of Ryszard Gradziński.

We will hold him in memory as a distinguished researcher, friendly supervisor and insightful reviewer. He was a born storyteller with an extraordinary memory, who shared with us brilliant anecdotes from the history of "scientific" life, social life not only from Kraków. We will miss his tales, memories and rational discourses.

Artur Kędzior