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ALFRED JAHN

Outstanding Geomorphologist and Polar Researcher Sixty Years of Scientific Activity

Professor Alfred Jahn was born on April 22, 1915, in Lvov. He studied geography at the Faculty of Mathematics and Natural Sciences of the Lvov University in the years 1933-1937. Having completed his studies, he joined a Polish scientific expedition to Greenland. In 1937 he was appointed assistant in the Chair of Geography. In 1939 he obtained a Ph.D. degree. Throughout the German occupation, he worked in Lvov as a lab assistant in a bacteriological institute. He devoted each spare moment to scientific work and managed to prepare several studies which were published when the war had ended. In May 1945 he came to Lublin, where he got the job of an adjunct at the newly created Maria Curie-Skłodowska University. He worked there from 1945 to 1949, during which time he prepared a post-doctoral dissertation and was promoted to the position of a docent after he had obtained a post-doctoral degree at the Poznań University in 1946. In 1949 he moved to the Wrocław University, where he was granted the title of professor extraordinary at the age of 34, and professor ordinary in 1958. The period Professor Jahn spent at the Wrocław University is the one of his most outstanding scientific achievements, acclaimed both at home and abroad.

Professor Jahn engaged in scientific activity in 1936, when he was only 21. As a third-year student of geography and geology at the Lvov University, he decided on the topic of his master's thesis, which he wrote under the tutorship of his future master, Prof. Dr August Zierhoffer, who investigated the northern escarpment of Podolia (the Ukraine). This remained the object of his geomorphological and geological research, not only during the period he was engaged on the thesis, but also in the next few years. The results were collected in his first individual publications that appeared in the years 1936-1937 and 1946. They concerned the origin of landforms of the western section of the northern Podolia escarpment, and presented a geomorphological map of this extensive landform situated between the Kocurowski and Pohorylecki streams. Another work he published at that time, with A. Malicki as co-author, dealt with the origin of gravels occurring in the area of the northern Podolia escarpment and the southern Bug region.

This first experience of the important and difficult geomorphological problem of the northern Podolia escarpment was a very important influence on the research orientation of the young scientist. It would later evolve into a geomorphological-palaeogeographical direction and develop fully during studies conducted on the Lublin Upland. Its reflection would also appear in 1989 when Professor Jahn made an overview in *Czasopismo Geograficzne (Geographical Journal)* of the state of research on the still pertinent and unsolved problem of the origin of the northern Podolia escarpment.

Another equally consequential event in Professor Jahn's life was his participation in the 1937 Greenland Expedition. The research in the Arfersiorfik fiord region covered the problems of glacioisostatic uplift as well as sorted and unsorted polygons, and soon led to an integrated periglacial and polar direction of studies that had produced magnificent results and that has been present in Professor Jahn's papers to this day.

The first steps in science that he made in the framework of the Lvov geographical school were cut short by the outbreak of the Second World War. After it, employed as an adjunct at the Maria Curie-Skłodowska University, Professor Jahn undertook systematic studies of the relief and Pleistocene deposits of the Lublin Upland. The geomorphological and palaeogeographical research involved in them was based on a completely new basis, namely a joint study of landforms and deposits on an unprecedented scale. He started with investigations of the stratigraphy of Quaternary deposits and the Bug valley morphology, karst phenomena and Cretaceous rafts, later to be followed by systematic geological and geomorphological mapping combined with lithostratigraphic studies of key sections of preglacial and Pleistocene deposits, containing a record of sedimentary and geomorphological events in the Lublin region. These studies gave rise to new conceptions based on the fundamental methodological assumption of dynamic geomorphology and significant for the development of theory in the geomorphology and palaeogeography of the Quaternary, such as the origin of loess or the glacial-interglacial cycle of erosion and accumulation. But most outstanding is the concept of the geomorphological development of the Lublin Upland, expressed in an excellent synthesis, unique in the Polish geographical literature, combining its relief, tectonics and deposits in a single whole.

The distinctive features of Professor Jahn's scientific activity, even at its earliest stage, have been: 1) a careful preparation for the research problems to be tackled, and 2) the overlapping of topics resulting from the appearance of new research direction in a rapidly developing scientific apparatus.

The first feature manifested itself early in a series of theoretical studies, overviews and works popularising observation results, published alongside original works. Outstanding among them is the excellent study of cryoturbations of the present-day and Pleistocene periglacial zones which won Professor Jahn a state award in 1952. The other feature, thematic overlap, is

clearly apparent in the way the periglacial-polar direction in his research ties in with the geomorphological-palaeogeographical one. It derives from his great scientific activity. New impulses and rapidly expanding observations and material are too much to cope with in a short time. Works dealing with earlier problems are published when research into new fields is well advanced. As the Greenland experience turns into a fine, mature dissertation on the structure and temperature of west Greenland soils, the first results of the Lublin geomorphological-palaeogeographical studies appear in print.

This feature was also to be strongly pronounced after Professor Jahn had moved from Lublin to Wrocław in 1949. While the mentioned Lublin Upland synthesis was acquiring shape, the first results of the new, Sudety Mts research were published, concerning the theory of slope development, glacial landforms and deposits, or the stratigraphy of the Lower Silesian Pleistocene depositional



Alfred JAHN, Spitsbergen 1958

Photo by A. Jahn

series. Professor Jahn's interests extended to the periglacial environment of mountains as reflected in the periglacial microrelief of the Tatra Mountains and Babia Góra Mt., and most importantly, to the new polar research in Spitsbergen launched in 1958 under the International Geophysical Year.

Of the three periods of Professor Jahn's scientific activity: the Lvov, Lublin and Wrocław ones, the last - the longest - has been the most fruitful. It has produced an abundance or high-ranking publications and brought their author international recognition.

When we look at Professor Jahn's scientific output from the perspective of sixty years, we can clearly distinguish three domains in which his results have become permanent values of geomorphology, Quaternary palaeogeography and polar research. These are:

1) periglacial studies embracing:

— the research on present-day and Pleistocene cryoturbation phenomena; it started a new stage of periglacial studies in Poland, later carried out simultaneously with those of Professor Dylík's Łódź school,

— the conception of the origin of European loess and its climatic justification,

— quantitative and comparative studies of present-day permafrost features, their Pleistocene equivalents, and slope processes, and

— a synthesis of selected periglacial phenomena and processes published in Polish and, in a supplemented and enlarged version, in English (*Problems of the Periglacial Zone*);

2) regional geomorphological-palaeogeographical studies and Quaternary stratigraphic research, with the most prominent issues of:

— the relief and Quaternary of the Lublin Upland,

— the Tertiary and Quaternary evolution of the Sudety Mts relief, and

— the Quaternary of the Sudety Mts and their foreland;

3) the theory of development of subaerial planation surfaces and present-day geomorphic processes under various climates, with such notable achievements as:

— the theory of the denudational slope balance,

— the slope concept of tor origin,

— the development of the concept of the glacial-interglacial erosion-accumulation cycle in river valleys, and

— the working out of original research procedures and techniques, as well as carrying out long series of measurements (up to 30 years) of present-day morphogenetic processes in Spitsbergen and in Poland (the Sudety and the Tatra Mts).

There are also well-known and highly appreciated monographs by Professor Jahn on Greenland, Alaska, the Arctic, ice and glaciations. His whole published output is in excess of three hundred titles. They are a measure of his great research activity and evidence of his broad horizons, originality, and perfection

of his scientific apparatus. All this makes them some of the most often quoted achievements of Polish physical geography in international literature, not only because of their scientific significance, but also owing to their extensive geographical coverage ranging from Poland through Greenland, Spitsbergen, Alaska and northern Canada to northern Scandinavia and Siberia. Professor Jahn has published almost a half of his works in foreign languages (mainly English) in the best international journals and occasional publications, in such countries as Belgium, Czechoslovakia, Canada, Germany, Romania, Sweden, the USA, Hungary and the USSR. That is why they could quickly join the international circulation, making a name for himself and Polish geography.

Professor Jahn's great talent and hard work, the originality of his conceptions, his patience in research, and excellent documentation have made his works still discussed and cited in the literature, even those coming from the early stage of his creative life. It is enough to open *Geocryology*, a synthesis by A.L. Washburn (1979), to find nineteen publications of his quoted, including those first works on the structure and temperature of west Greenland soils (Jahn 1946, 1948). We could also count references to his studies of periglacial processes in a quantitative approach (e.g. to *Quantitative analysis of some periglacial processes in Spitsbergen*, 1961). We could look into a recent synthesis edited by M. Clark, *Advances in Periglacial Geomorphology* (1988), to see how often the authors of the particular chapters: K. Priesnitz — *Cryoplanation*, H.M. French — *Active Layer Processes*, W. de Gans — *Pingo Scars and Their Identification*, A.G. Lewkowicz — *Slope Processes*, and finally J. Karte — *A Periglacial Overview*, refer to the opinions and facts supplied by Professor Jahn. There is no monograph or synthesis concerning periglacial phenomena and issues that would leave Professor Jahn's name out.

The best testimony to the scientific validity and permanence of ideas formulated by Professor Jahn in the domain of the theory of geomorphology, I believe, is the recognition by R.J. Chorley, S.A. Schumm and D.E. Sugden (*Geomorphology*, 1984) of the denudational slope balance as the most realistic concept in the assessment of the development and classification of slopes, if data on slope erosion and deposition over time are available.

Professor Jahn's works and concepts are the ones of enduring value. Future biographers, analysts and historians of geomorphology, Quaternary palaeogeography and polar research will discover original concepts, ideas or interpretations of phenomena in his writings. So do his contemporaries but, lacking the proper distance, and sometimes the capacity for sufficiently deep reflection, they do not discover all that is valuable in them, because it is not always fully comprehensible as yet.

In Professor Jahn's life, scientific and teaching activity has been linked inextricably with his deep involvement in the organisation of science and social work. During the years at the Wrocław University he has turned out to be not only an eminent scholar, but also a very talented organiser of academic life, highly esteemed and recognised by the whole academic community. It was only

natural that he was entrusted with the function of President of the University in the years 1962-1968, and that between 1958 and 1968 he was director of its Institute of Geography.

On Professor Jahn's initiative, a Polar Club was established in the early 1970s. It was created as an organisation of Polish researches, members of expeditions and people engaged in various forms of cooperation in the cognition of the polar world. A mass rather than an élite organisation, the Polar Club has become a social structure playing an important role in the development of Polish polar thought.

In recognition of his scientific output and organisational activity, Professor Jahn has often been given functions in a variety of scientific bodies, both at home and abroad. As a full member of the Polish Academy of Sciences, he was member of its Praesidium, he is member of the Academy's Committee of Geographical Sciences and the Committee for Quaternary Research, as well as honorary chairman of the Committee on Polar Research. He took active part in the work of several Commissions of the International Geographical Union (Slope Development, Field Experiment in Geomorphology), the International Permafrost Association and the Scientific Committee on Antarctic Research. At home, he has won recognition as chairman of the Board of the Polish Geographical Society and long-time scientific editor of *Czasopismo Geograficzne*.

The outstanding scientific, educational and organisational achievements of Professor Jahn as well as his contribution to social work, have won him many medals, awards, honours and titles. It is impossible to list them all. Let me therefore mention the most important ones, and among them those that gave Professor Jahn the greatest pleasure: Commander's Cross of the Poland's Restitution Order, the Gold Cross of Merit, a Medal of the National Education Commission, Medals of Wrocław, Jagiellonian, Silesian and Liège Universities, a Medal of the Natural Science Faculty of Brno University, a Medal of the Polish Geographical Society, the Nicholas Copernicus Medal of the Polish Academy of Sciences, the Albrecht Penck Medal of DEUQUA, membership of the Deutsche Akademie der Naturforscher — Leopoldina, and the *doctor honoris causa* title from Wrocław, Maria Curie-Skłodowska and Adam Mickiewicz Universities.

The work is not finished yet. Professor Jahn is still active in science, publishes research papers, attends symposia and is the scientific editor of *Czasopismo Geograficzne*. We wish him to retain all the strength in his toil for the good of Polish Geography, and we want to express our respect and esteem for his scientific achievements.

Stefan KOZARSKI

Department of Geomorphology
Quaternary Research Institute
Adam Mickiewicz University
Wieniawskiego 17/19
61-713 Poznań, POLAND