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JAN DYLIK – A LEADING PERIGLACIAL RESEARCHER AND AN INTERNATIONALIST

INTRODUCTORY REMARKS

During the fateful and dangerous years in Poland beginning with the start of Solidarity in 1980, concern was strong and intense in Sweden, especially among the many friends of Poland. Expression of this anxiety took several forms: in official statements, articles in newspapers and journals, aid of many different kinds, etc. In circles connected to the Swedish Academy of Sciences plans arose to publish a book about the Polish situation, written by people with knowledge of Poland. In this connection I was asked to make a contribution in the form of a small paper giving some of my own experiences. I found the proposal challenging and urgent and decided to accept. My intention then became to give some facts and observations on a general level, especially from the arena of the sciences, but also to be more specific by introducing a leading scientist, JAN DYLIK, professor of geography in Łódź.

In June 1973 I had received the sad news from the University of Łódź that JAN DYLIK suddenly had died. In my letter to his wife, Dr ANNA DYLIKOWA, I expressed my sympathy with the bereaved family and described Jan as one of my closest friends. The reason for my choice of JAN as a representative of Polish scientists was largely because he had played such an important role, both in his own country and internationally, as an inspirer of a wealth of initiatives.

My paper was delivered at the end of 1981, but the proposed book never was published, for various reasons, including the rapidly changing political situation in Poland. What I wrote at that time may still have some actuality, both as a portrait of JAN DYLIK and as a documentation of some important events in the history of Polish science in some of which Jan was deeply engaged. The following text is my paper from 1981 with no other changes than the translation to English. The present paper then ends with a reference to my own work in the Swedish high mountains over many

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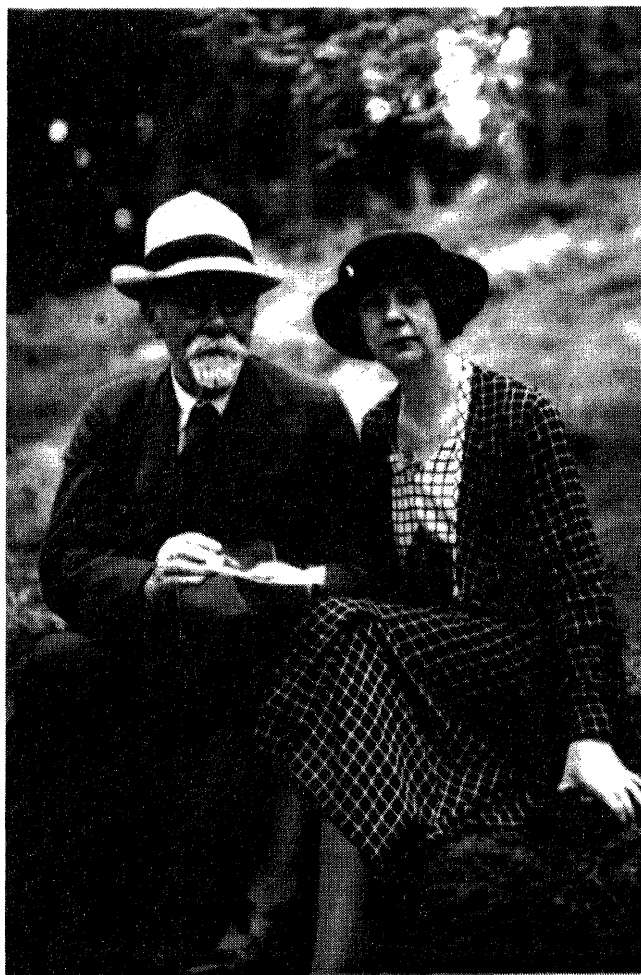
years. This concluding part, for obvious reasons, deals only with periglacial features. My interest in such phenomena was highly stimulated by the continuous contacts with JAN DYLIK from 1960 to 1973. I still feel strongly my debt of gratitude to him.

GLIMPSES OF POLISH SCIENCE AND POLISH-SWEDISH COOPERATION
IN THE FIELD OF SCIENCE IN MEMORY OF JAN DYLIK, POLISH PATRIOT
AND WORLD CITIZEN (A PAPER WRITTEN IN 1981)

At the world congress in geography in Stockholm in 1960 JAN DYLIK, professor at the University of Łódź, was a prominent and highly esteemed participant. He had established himself as a leading scientist in the field of periglacial features, i.e. processes, landforms and structures caused by the conditions around inland ice sheets. In that field Poland had a long and fine tradition. Even the term "periglacial" was introduced by a Polish scientist, W. ŁOZIŃSKI, JAN DYLIK's own position in the periglacial research field is emphasized by his early role as secretary of the Periglacial Commission of the International Geographical Union, and then, between 1956 and 1972, as its inspiring chairman after HANS WILSON AHLMANN. In 1954, together with some coworkers including his wife, ANNA DYLIKOWA, he founded the "Biuletyn Peryglacjalny". This journal quickly became a forum for periglacial researchers from all over the world. Of vital importance for its successful development was not least the deep sympathy for the founder of the journal.

In international connections and especially in the contacts between earth scientists from the East and the West JAN DYLIK was one of the central figures, because of his broad knowledge and experience, his passionate engagement, his vitality, his intellectual mobility, his ability in languages and his playful charm. However, his attainment of such high status was not easy.

JAN DYLIK carried through his university studies in the 1920s and 30s with great success. They included a stay with GERARD DE GEER, the famous Quaternary geologist at the University of Stockholm, Polar explorer and founder of the so-called clay varve chronology. This was the starting point of his close contacts with Swedish science and scientists. The invasion of Poland by the Germans in 1939 drastically changed everything for the DYLIK's, as well as for all Poles. They had to leave their small flat in Łódź, head over heels, able to take only a few things with them; other belongings were buried. Guests in the DYLIK home long afterwards could observe the corroded table silver, a testimony to its wartime deposition in the earth. JAN spent a substantial part of the war in Warszawa, under circumstances of permanent mortal danger. As with so



Pl. I. GERARD DE GEER with his wife EBBA HULT DE GEER.
Photo taken by JAN DYLIK in 1934. (Given to G. HOPPE by JAN DYLIK in 1971)

many Polish intellectuals, he took part in the higher education of young Poles, strictly forbidden by the German occupiers.

Visitors to Poland in the first decades after the war were enormously impressed by the rapid restoration of the remnants of the national, religious and cultural monuments: examples are the old market place in central Warszawa, with beautiful buildings all around, as well as palaces and cathedrals everywhere in the country. Equally remarkable was the almost immediate resurrection of the universities and academies and, at the same time, the initiation of research and education. For the most part this occurred by the country's own efforts, and many achievements were made despite poor resources.

In research fields close to my own the reborn Polish science passed an important test in 1961 as host for the INQUA congress, a gathering of Quaternary scientists from many countries: geologists and geographers, botanists and zoologists, archaeologists and anthropologists. The headquarters of the congress were in Warszawa, but symposia took place in several of the university cities and the country was criss-crossed by a great number of field trips, all carried through in an excellent manner. The deep engagement of the Polish hosts, grey-headed professors as well as young students, was easily observed. The congress participants were given a great number of books and papers, for which JAN DYLIK had the main responsibility; the field trip localities were extremely well prepared. The excursion participants were invited to visit exposures, of many m depth and enormous length, where strata, structures and the influence of frost action were demonstrated most convincingly.

My first personal contact with JAN DYLIK was during the geographical congress in 1960, when he was an invited guest on my geomorphological excursion in northern Lapland. After that I happened to be together with him in many different milieux and always under very stimulating circumstances. To give some examples: during the INQUA congress in 1961; with the Periglacial Commission in Austria in the flowering spring of 1964, with visits to key localities for Ice Age problems; during a boat trip of 2000 km on the Lena river and its tributary, the Aldan, in the autumn of 1969, with the aim of studying the permafrost in those earlier hermetically closed North Siberian areas (JAN had played a decisive role for the realization of this project.) – But above all we met in our own countries. At places such as Josefow and Walewice near Łódź with marvellous traces of the frost climate of the Ice Ages, and in the Tarfala valley in northern Swedish Lapland with its glaciers, its glacial morphology and periglacial features. Of course we also met in Warszawa, Łódź and Stockholm. Of special importance for Swedish-Polish scientific relations was JAN's last visit to Stockholm in 1972 and a follow-up meeting in Warszawa the same year. To understand this some words ought to be given about the role of the academies of sciences in the cooperation between East and West.

In the East European countries, the USSR as well as Poland and the others, the academies of sciences have central positions, with many of the leading and best equipped research institutes. Especially worth mentioning is their relative independence: they are sometimes said to form a state within the State. In the strictly regulated exchange of scientists with western countries they play a key role. In a way which seems strange, even unbelievable in the relations between the countries in the West, agreements of cooperation regulate the contacts between East and West. The Swedish Academy of Sciences, whose relations with the East is economically sup-

ported by the State, has such agreements with all East European academies of sciences except Albania.

An agreement of understanding between the Polish and the Swedish Academies of Sciences had been discussed for some time, but no real substance was achieved until 1972, in connection with the annual 24th of April celebration of the Swedish Society of Anthropology and Geography. This is the so-called Vega Day of the Society, to commemorate A. E. NORDESKIÖLD's return to Stockholm with his ship "Vega" after the successful voyage through the Northeast Passage and around Eurasia, 1878–1880. I was then able to bring together Professor CARL GUSTAF BERNHARD, then President of the Swedish Academy of Sciences, KVA, with JAN DYLIK, corresponding member of Polska Akademia Nauk, PAN, who happened to be in Stockholm at that time. An agreement between KVA and PAN was discussed. This led to a visit to Poland and PAN shortly thereafter by a delegation from KVA. JAN DYLIK was a member of the PAN delegation. The negotiations went on easily, totally without the rigidity and formality so typical of conversations with other East European academies. An agreement was quickly reached, to the full satisfaction of the two delegations. Our Polish hosts then had arranged a journey to Kraków and the PAN branch there. The tour included several elements of great interest. We were invited to the solemn succession ceremony of Vice Chancellor (Rector) of the Jagellonian University. MIECZYŚLAW KLIMASZEWSKI, a well known professor of physical geography, was resigning from that important position after an 8-year period. During that time, in 1964, the university had celebrated its 6th centenary. Taking advantage of such a unique possibility KLIMASZEWSKI, in his valedictory speech in 1972, spoke about the significance of the freedom of science and how important it was that scientific books and journals from the western countries were accessible at Polish universities. The KVA delegation also was invited to visit the concentration camp at Oświęcim (Auschwitz), one of the most atrocious monuments to human evil. Just before our departure from Poland JAN and ANNA DYLIKOWA invited us to dinner at one of the intimate restaurants in the Old Market of Warszawa. This was my last farewell to JAN. One year later his heart suddenly ceased working.

At one of my first meetings with JAN DYLIK he stated: "Poland has the lowest living standard of the East European countries. But we have the greatest freedom and this is worth more". However, there were some signs, especially after the crisis of Czechoslovakia in 1968, that freedom was successively reduced, which also affected the universities. One signal among many was that increasingly the positions of vice chancellors, faculty deans, etc, were filled by persons with party connections.

In November 1980 a delegation from KVA visited Poland to arrange a renewal of the agreement with PAN. As usual the negotiations did not cause any problems and were very pleasant. But it was easy to see that the winds of change were sweeping over the country. The enthusiasm connected with Solidarity and its success had permeated also throughout the academic world, easily understood because many of the ideas and inspiration originated there. After permission to have free elections at the universities an exchange was undertaken in many of the leading posts. However, an undertone of fear was unmistakable in many quarters. How hard could the bow be drawn without breaking? Now we know the answer!

The scientific cooperation between Poland and Sweden also had used other channels than those between the science academies. Many universities in Eastern Europe have been keen to establish agreements with other universities, preferably in the West, where much more was to be gained. Poland was no exception, and the cooperation has been especially easy and flexible. Since the middle part of the 1960s the universities in Krakow and Uppsala, both the oldest in their respective countries, have such agreements, with their specific content defined by two powerful vice chancellors, MIECZYŚŁAW KLIMASZEWSKI and TORGNY SEGERSTEDT. A few years later the universities of Warszawa and Stockholm, the capitals, established similar well-functioning agreements.

To continue with examples of scientific cooperation. The Institute of Geodesy and Cartography in Warszawa has responsibility for the development of remote sensing in Poland; i.e., the techniques necessary to map the surface of Earth, make inventories of natural resources and monitor their changes, including air and water quality. The development of the Warszawa institute to some extent has diverged from that in the other East European countries, where remote sensing mainly is based on USSR, East German, and Bulgarian techniques. Instead, the Warszawa institute has acquired advanced American equipment and some scientists have received their education in the USA and Canada. I think it is characteristic of Poland's position between East and West, that a recent land use map of the country is based on information both from USSR and USA satellites. Swedish groups of remote sensing and cartography have had a fruitful exchange of ideas and experience with their Polish colleagues

The Baltic Sea for obvious reasons is an object of cooperation between the states around it, with hydrology and pollution problems in the foreground. In this work Poland and Sweden have been especially active and have had leading roles. Perhaps more surprising are the contacts and exchange of ideas in Polar research. Not only Sweden but also Poland has a long tradition in this field. The Polish activity has been especially strong in Svalbard, with a field research station at Hornsund in southern Spitsbergen as the main base. Also Polish geoscientists have brought home important results from Iceland, Greenland and Antarctica. Unfortunately at

a high price, with the loss of two promising representatives of the younger generation, BARANOWSKI and JEWTUCHOWICZ.

The list of cooperation areas between Poland and Sweden in the earth sciences – often with the academies as catalysts – could easily be extended. The relatively free travel between the two countries appears rather unique in East–West relations. This conclusion gives us reason to consider the Helsinki agreement of 1975 and especially the so-called Scientific Forum in Hamburg in 1980.

During the preparatory work for the European Security Conference, which led to the Helsinki agreement on human rights, the West German minister of foreign affairs, WALTER SCHELL, proposed a conference with the aim of broadening and improving the scientific cooperation between East and West. This idea of making use of Science as a tool to bring about peace and détente must have been close at hand: in its whole nature. Science is international. Contacts between its representatives used to be – or at least should be – characterized by efforts to widen the limits of knowledge, not attempts to gain prestige. Under the cover of common aims, mutual reliance develops at the same time that possible disbelief disappears. Often, perhaps normally, personal friendships result.

The plan of WALTER SCHELL finally was achieved through a Scientific Forum in Hamburg in February/March, 1980. After much discussion a final document was accepted with the following important statement:

It is furthermore considered necessary to state that respect for human rights and fundamental freedoms by all States represents one of the foundations for a significant improvement in their mutual relations, and in international scientific co-operation at all levels.

The real sense of the last words, “at all levels” is “also on an individual level”. In some quarters this was difficult to digest, but finally they were accepted.

Perhaps more than any other of the East European countries Poland ANhad achieved the goals given above to a great extent before the Hamburg conference. We sincerely hope that the events during recent years may not mean any long break in this attitude. Through its geographical position, through its scientific and cultural traditions, and through its openness Poland has had and should have an important role as both mediator and catalyst in East–West contacts. This was something that JAN DYLIK so clearly saw the necessity of, and worked for in such an engaged and successful way.

JAN DYLIK – INSPIRER OF SWEDISH PERIGLACIAL RESEARCH

When my paper of 1981 was written a dark period in Poland’s history – and there have been many such – had just started. It stopped with the col-

lapse of the communist regimes in Eastern Europe at the end of that decade.

A new era of fruitful development then began in most sectors of economic and cultural life in Poland with few counterparts in the East. One main reason, most probably, is the self-reliance and integrity of the Polish people, who have survived many hard years. I also have noted these characteristics in the scientific sector. JAN DYLIK was a typical exponent for such endeavours, as he inspired research internationally, especially in his own field of periglacial geomorphology. His influence also reached Sweden. Let me illustrate this by reference to my own field.

My work in geomorphology began in the middle part of the 1940s and was then devoted primarily to the field of glacial geomorphology. This was a typical choice for a young geoscientist living in a country which had been covered by an ice sheet only 13000 to 8000 years ago. The research was made very much easier through the successive arrival of air photos covering my study area in northern Sweden. My experience soon appeared to be of practical use. In the same area as "mine", the Swedish Water Power Board in the 50s and early 60s had far-reaching plans to exploit the larger rivers. This work was hampered by the lack of geological maps, and I was therefore asked to demonstrate how to produce maps of the surficial deposits with the aid of air photos and, of importance, in a rather short time! This project developed in a few years to a mapped area of about 10 000 sq. km. In a similar way I was asked by the newly created (1967) Swedish Environment Protection Board to investigate and evaluate areas of potential scientific geomorphological interest in the widest sense.

In the 1950s and 60s geomorphological mapping became a popular branch of geomorphology, for both scientific and physical planning reasons. Numerous geomorphological mapping conferences took place, manuals appeared, etc. Many countries were involved in these efforts, Poland being among the most active, and some Swedish groups were also involved. Much of my own earlier work in northern Sweden could be classified as geomorphological mapping. Aware of the possibilities that the air photos gave, I widened the mapping objectives to include not only glacial-morphological landforms but also other features, especially those of periglacial origin. The influence of my friend JAN DYLIK's work is thus very clear for me.

In 1969 the National Environment Protection Board accepted my proposal to undertake a geomorphological mapping project of the Swedish mountain chain at the scale of 1:250 000 and also to pay for it. Pressure from many kinds of activity could be foreseen there. It should be added that some years later the Board initiated a similar project of vegetational mapping, at a scale of 1:100 000; this also was carried out through the Department of Physical Geography, Stockholm University.

The geomorphological mapping of the Swedish mountain chain started in 1969 and was completed with the publication of a concluding book in 1983. (GUNNAR HOPPE: *Fjällens terrängformer*, Statens Naturvårdsverk, Solna) The total work included 25 maps (1:250 000), each one accompanied by a detailed description and an evaluation of its significance, mainly from a scientific point of view. Together the maps cover an area of 70 000 sq km. (The total area of the mountains accounts for about 106 500 sq km. However, some parts, especially those of lower elevation, were not mapped for a variety of reasons). Five scientists carried this project to a successful completion.

The geomorphological maps show many landforms of different size and origin: faults, glacial (including glacialfluvial), periglacial and postglacial features, karst, biogenic and anthropogenic features.

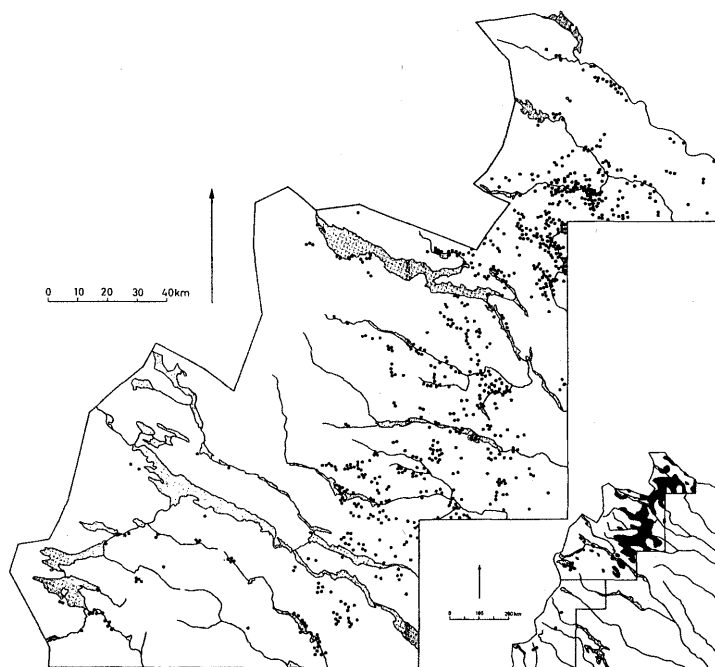


Fig. 1. Palsa bogs in northern Sweden

Many of the landforms can be described as periglacial, as they were and still are, formed under circumstances that can be described as

periglacial. It must be added that some of them also appear in other environments. To these landforms belong, for instance, dune fields, slope features of several types, such as talus, avalanche boulder tongues, mud flows, slides, gullies, solifluction lobes and stone streams. Typical periglacial features are those formed by frost action in horizontal terrain, typified by patterned ground. Palsas in the peat bogs, described from northernmost Sweden and studied in the early part of the 20th century, are also caused by frost action.

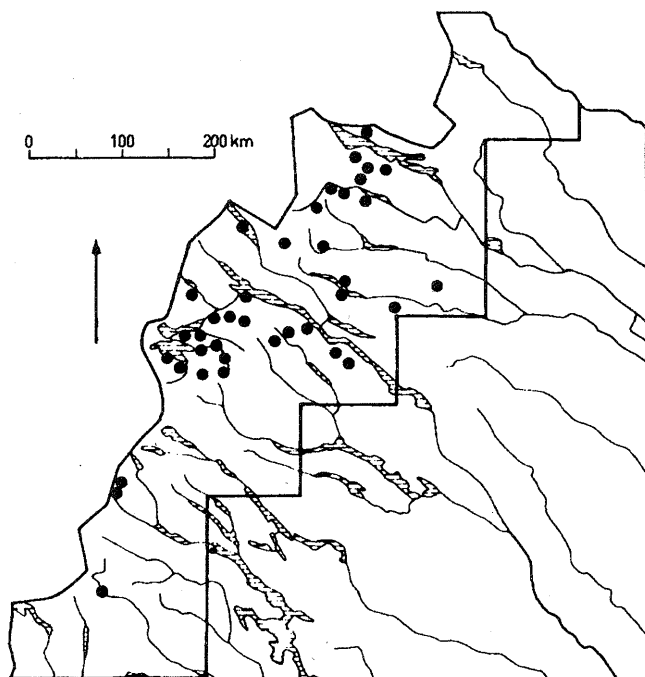


Fig. 2. Tundra polygons in northern Sweden

The appearance of periglacial features in the Swedish mountain chain is exemplified in this paper by two small-scale maps from my summary report. The first one demonstrates the very characteristic distribution of palsa bogs; it must be added, however, that some palsa bogs also appear outside of the mapped area. The other one shows the scattered localities of tundra polygons, first described from our mountains by ANDERS RAPP. Every time I look at these maps I remember the man who more than anyone else was responsible for my interest in the fascinating field of periglacial geomorphology: JAN DYLIK.