

REVIEWS

University geographical expedition Spitsbergen 1985

Based on an agreement about friendly cooperation between J. E. Purkyně University, Brno, and B. Bierut University, Wrocław, versatile cooperation has been developed in recent years in geographical sciences. The Department of Geography, Faculty of Science, J. E. Purkyně University, has been carrying out longterm cooperation with the Instytut Geograficzny (Geographical Institute) both in the field of education and in the research and scientific activities. There have been regular exchanges of specialists organized as stays, an exchange of students of the two countries has taken place, and there has also been reciprocal participation of students at students' scientific and technical activities. In the scientific and research activities, besides the traditional exchange of publications, cooperation has been concentrated at solving common research topics, organizing Czech-Polish conferences (such as that in 1983 in Brno entitled "Microclimate and Mesoclimate of Town Agglomerations", and one held in 1986 in Wrocław, entitled "Local Climates") and preparing common publications. The culmination of the hitherto cooperation was a common university geographical expedition to the Spitsbergen in whose research the Polish institute has a tradition of long standing.

The above geographical expedition took place between 13 July and 22 September, 1985. Since 1970 it has been the 11th expedition organized by the Wrocław University into the region of the Spitsbergen. The following members were working in the nine-member team headed by a distinguished Polish geomorphologist and the honorary member of the Polish Committee of Polar Studies, Prof. Dr. hab. Alfred Jahn:

Asst. Prof. RNDr. Rudolf Brázdil, CSc. — climatology

Asst. Prof. Dr. Tadeusz Chodak — pedology

Dr. Jan Klementowski — geomorphology

Asst. Prof. RNDr. Milan Konečný, CSc. — geomorphology and cartography

RNDr. Pavel Prošek, CSc. — climatology

Dr. Jacek Piasecki — climatology

Dr. Anna Szczepankiewicz-Szmyrka — climatology

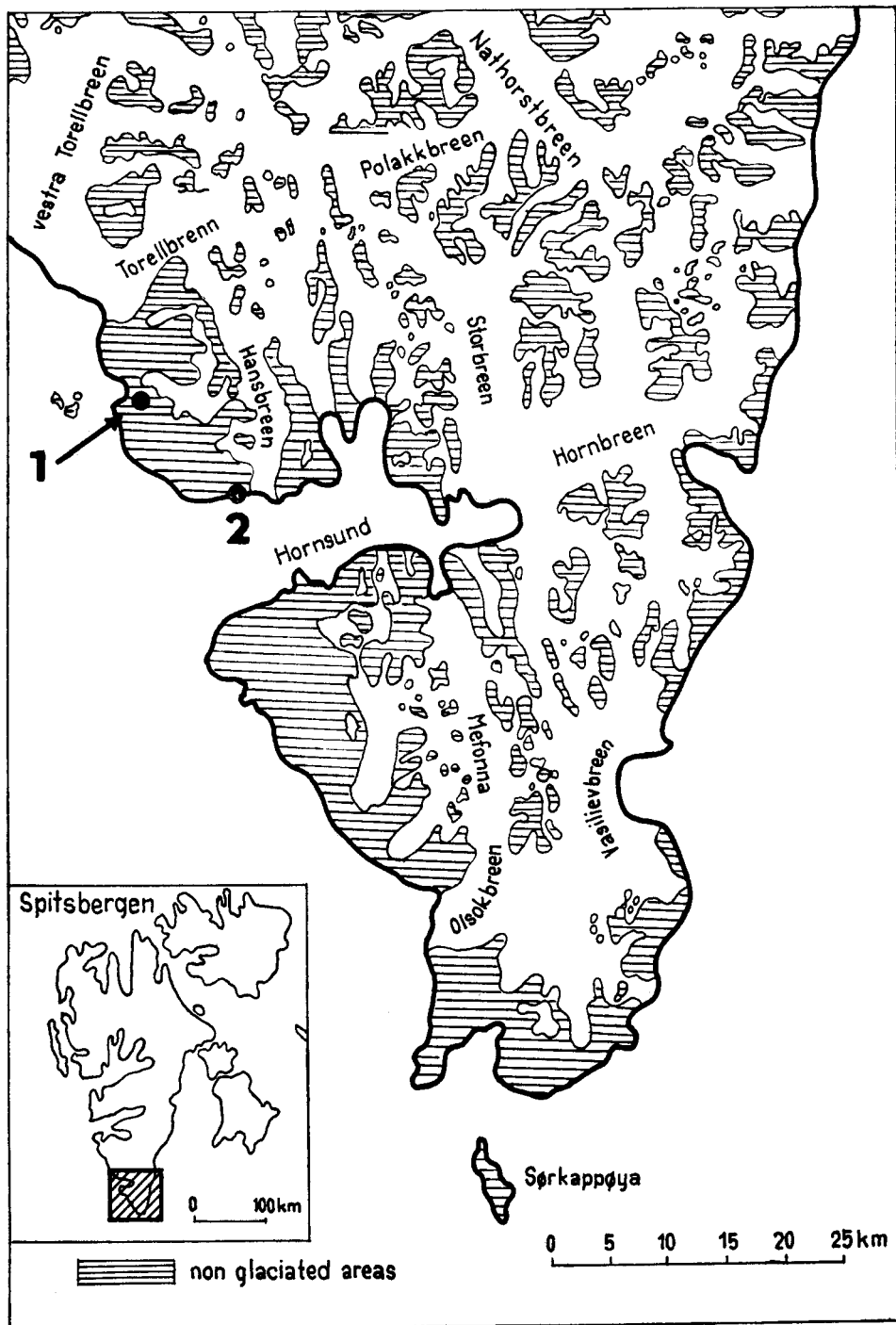
Jan Szymański — technical assistant.

The patronage over the Czechoslovak part of the expedition was taken by the Rector of Brno University, Prof. PhDr. Bedřich Čerešňák, CSc., whose interest and support significantly assisted in the preparation and a successful course of the expedition.

The main objective of research of the expedition was the study of problems of permafrost and natural complexes in the region of the bay Isbjörnhamna in the fjord Hornsund and in the bay Nottinghambukta (Fig. 1) (in the space of the Werenskiöld Glacier and its surroundings). The research activity concentrated on the following programs:

1. Seasonal changes in the active layer of permafrost

The group working at the base of the Polish Academy of Sciences (PAN) at Hornsund dealt with the study of depth and dynamics of variation of the upper limit of permafrost by means of boreholes. At the base of the Wrocław University seasonal changes in the active layer of permafrost were studied in relation of changes in the energetic balance of the active surface. At two different localities, a tundra and a lateral moraine of the Werenskiöld Glacier either its individual components were measured or meteorological parameters making their calculation possible (Fig. 2). The measurements were carried out in main and secondary synoptical terms. Changes in temperature of the active layer of permafrost were evaluated on the basis of measurements with electrical thermistor thermometers in the depths of 0, 5, 10, 15, 20, 50, 100, 150 and 200 cm. The measurements thus started were continued up to June 1986 by a group of PAN wintering there.



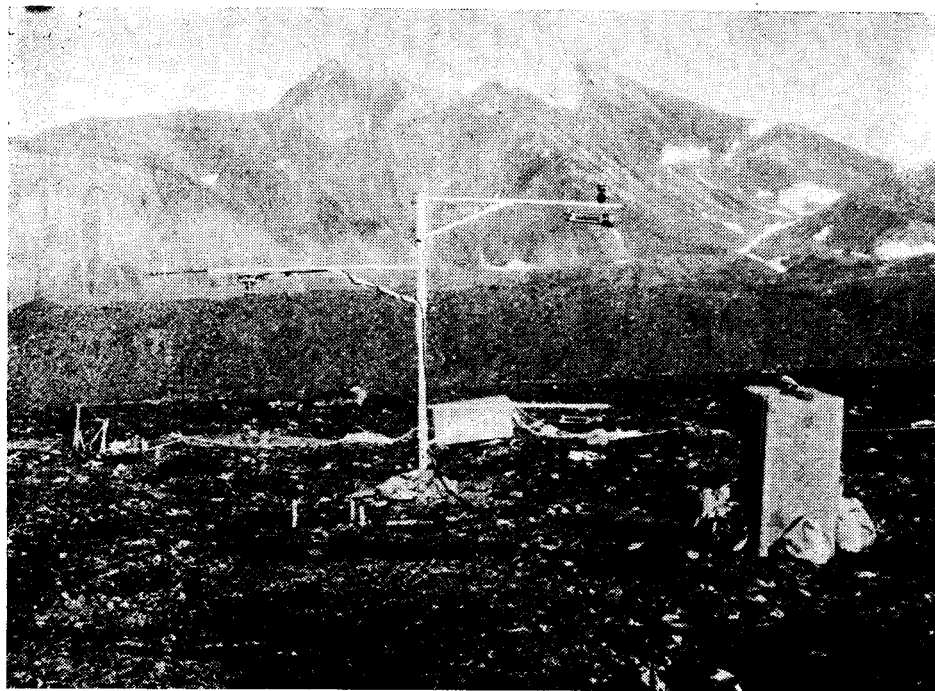


Fig. 2. Locality tundra — a stand with apparatus for measuring the components of the energetic balance

2. Meteorological conditions at the time of expedition

At the basic meteorological station on the moraine of the Werenskiöld Glacier (Fig. 3) standard measurements of air temperature and humidity, evaporation, atmospheric precipitation, wind direction and speed were carried out in main synoptical terms, as well as observation of clouds and cloudiness and meteorological phenomena. These measurements linked up with the observations of preceding expeditions, constituting a basis for evaluating meteorological situations for further research programmes.

3. Topoclimatical conditions of the area

For studying the topoclimatical differentiation of the area studied altogether 6 topoclimatical stations were set up—one in the central part of the Werenskiöld Glacier (Fig. 4), another in front of its snout on an outwash plain, then four in the Brattegg valley (out of which two in slope positions). The stations were equipped with thermohygrographs, control reading was carried out by means of the Assman psychrometer. The distribution of the stations was so selected to make it possible to study processes of transformation, with respect to the streaming in the given area, of air masses in a relatively rugged terrain (relative height of terrain in the given area is about 600 m).



Fig. 1. A schematic representation of the region of the expedition's activity (1 — scientific base of the Wrocław University, 2 — scientific base of the Polish Academy of Sciences)

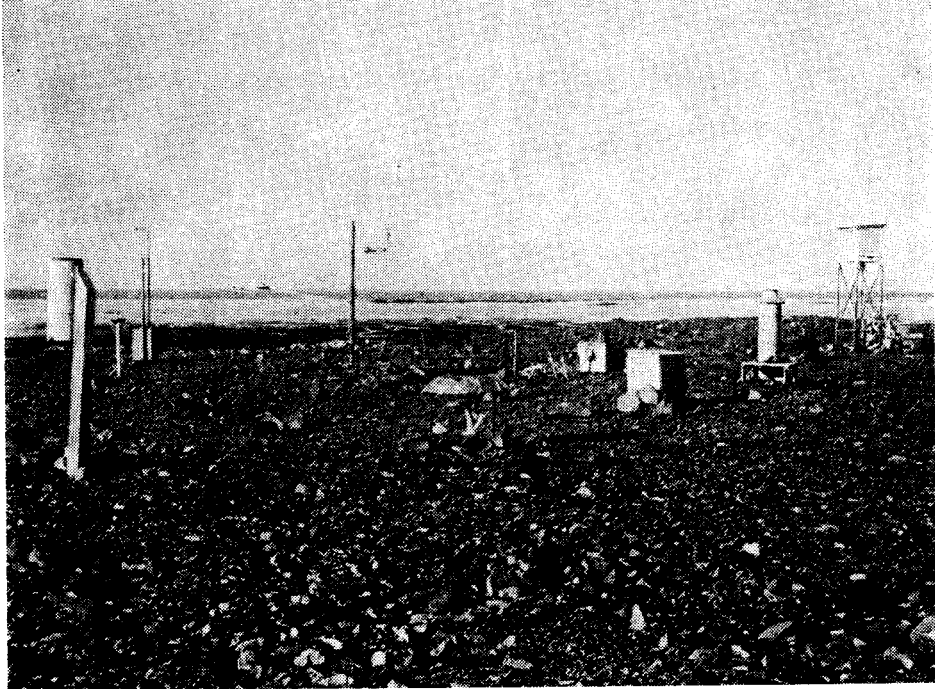


Fig. 3. An overall view on the basic meteorological station at the lateral moraine of the Werenskiöld Glacier



Fig. 4. The operation of the thermohygrograph at the topoclimatic station in the central part of the Werenskiöld Glacier



Fig. 5. The operation of the limnigraph at the Brattegg River

4. Changes in the discharge rates of the glacier and the nonglacier rivers

The objective of the project was the study of seasonal and diurnal changes in the discharge rates of the glacier river (of Werenskiold Glacier) and a small river Brattegg drawing its water from snow fields. To register the changes in water levels four float limnigraphs were used, installed in the lower reaches of the glacier river and in the lower, middle (lake Myrk) and upper reaches of the stream of the river Brattegg (Fig. 5). The corresponding values of discharge rates were determined on the basis of correlation dependences between discharge rates and water levels.

5. A comprehensive influence of the selected snow field on the surrounding environment

The effects of the selected snow field at the foot of Gulliksenfjellet Mountain on the processes of weathering, on the vegetation cover and on microclimatic conditions (Fig. 6) were studied. In the selected profiles soil temperatures were measured at the depth of 5 cm, as well as temperatures and humidities of air, including temperature extremes, at the height of 50 cm above the active surface. Measurements of snow densities in different layers during the summer season were performed and areal changes of the snow field were registered.

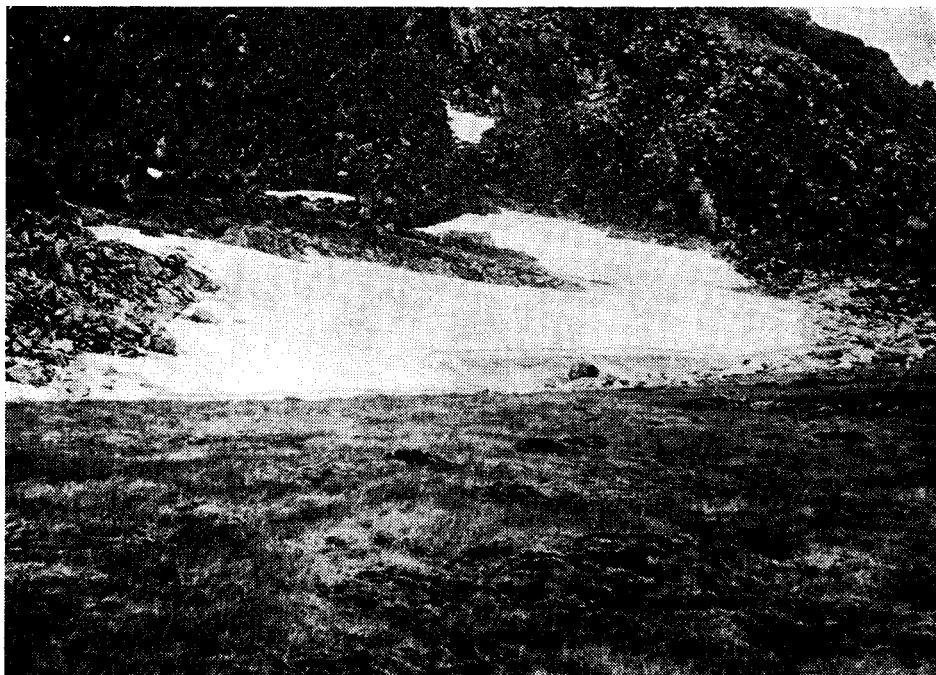


Fig. 6. An overall view of the studied snow field at the foot of Gulliksenfjellet Mountain

6. Geomorphological mapping

Geomorphological mapping was carried out in the valley of the Brattegg River. At the same time, special attention was paid to the effect of the snow fields on the formation of the relief.

Besides the proper research and scientific activity the expedition members had the opportunity of getting acquainted with the life and the research and scientific activity at the base of the Polish Academy of Sciences in the Hornsund fjord. Before leaving from the Spitsbergen, expedition members spent a week in the Soviet mining village of Barentsburg, which is the centre of the Soviet research of the Spitsbergen and a starting point of a number of scientific expeditions from socialist countries.

During the activity of the expedition important scientific information was obtained concerning the problems of present glacial and periglacial processes, contributing to the solution of the international scientific project of studying permafrost (International Permafrost Program). With success working methods used in the region of topoclimatic research in the CSSR were applied in different climatic conditions. In the course of the expedition rich documenting material was obtained. The results of the expedition will be published in a summary form in an independent volume.

R. Brázdil, M. Konečný and P. Prošek



Doz. RNDr. Rostislav Netopil, CSc. — 65 Jahre alt

Inmitten der fleißigen Arbeit des Hochschullehrers erlebte unser führender Hydrologe und physischer Geograph Doz. RNDr. Rostislav Netopil, CSc., am 3. Februar 1987 das Alter von 65 Jahren. Gebürtig aus Ladná bei Břeclav hatte er von klein auf die Möglichkeit, die Natur kennenzulernen und mit ihr zu arbeiten, was wesentlich seinen Charakter und seine Interessen bestimmte. Seine Liebe zur Natur zeigte sich schon während des Studiums am Gymnasium in Břeclav und später in Hodonín, wo er im Jahre 1941 in der Okkupationszeit das Abitur ablegte. Das Hochschulstudium konnte er erst nach der Befreiung unseres Landes im Jahre 1945 in Brno aufnehmen, wo er an der naturwissenschaftlichen und philosophischen Fakultät Geographie und Geschichte studierte. Er konzentrierte sich vor allem auf Geographie, wo er bald seine ersten Erfolge erreichte. Seit dem Jahre 1946 bekleidete er die Funktion der wissenschaftlichen Hilfskraft in der Abteilung für physische Geographie, und zwei Jahre danach wurde er hier Assistent. Geographie und der naturwissenschaftlichen Fakultät in Brno blieb er treu bis zur Zeit.

Am Ende des Jahres 1950 wurde ihm der Dokortitel der Naturwissenschaften erteilt, im Jahre 1957 erwarb er die Würde des Kandidaten der geographischen Wissenschaften und im Jahre 1963 wurde er nach der Habilitation zum Dozenten der physischen Geographie am Lehrstuhl für Geographie der naturwissenschaftlichen Fakultät der Brünner Universität ernannt. In den Jahren 1966—1969 bekleidete er die Funktion des Prodekans der naturwissenschaftlichen Fakultät.

Als Hochschullehrer widmete Doz. Netopil immer große Aufmerksamkeit dem pädagogisch-erzieherischen Prozeß und der Arbeit mit den Studenten. Seine großen Kenntnisse in physischer Geographie zeigten sich nicht nur im Unterricht der spezialisierten hydrologischen Disziplinen, sondern auch im Unterricht der physischen Geographie der UdSSR, ČSSR und der Welt. Seine Schüler erinnern sich nicht nur an gut vorbereitete Vorlesungen und Terrainübungen, sondern sie kennen Doz. Netopil als anspruchsvollen Examinator bei den Staats- und Doktorprüfungen. Bedeutend ist sein Anteil an der Bildung der Lehrbücher und Skripta. Von den Lehrbüchern sind vor allem zu erwähnen: Hydrologie der Festländer (Academia 1972), Physische Geographie I (SPN, 1984 — s. Rezension in Scripta Fac. Sci. Nat. Univ. Purk. Brun., Geographia 8, 1986) und Lehrbücher Geographie Europas und Geographie der UdSSR, die zur Ausgabe vorbereitet werden, und in denen Doz. Netopil gerade physisch-geographische Verhältnisse bearbeitete.

In wissenschaftlicher und Publikationstätigkeit konzentrierte sich Doz. Netopil immer vor allem auf physische Geographie, anfangs vor allem auf Geomorphologie, in der er auch seine Doktorarbeit vorlegte, um den Dokortitel der Naturwissenschaften zu erwerben („Bisherige Ergebnisse der geomorphologischen Forschung des Oslava-Flußgebietes“). Seit der Hälfte der 50er Jahre spezialisierte er sich vor allem auf die Lösung der hydrologischen Problematik, wenn er auch nicht einmal die Geomorphologie unterlassen hat, er nützte sie eher zur Erklärung einiger hydrologischer Phänomene und Gesetzmäßigkeiten aus. In Hydrologie konzentrierte er sich in der ersten Periode vor allem auf die Forschung des Regimes des Grundwassers in Mähren. Er orientierte sich auf das Suchen der passenden Forschungsmethoden, die die Ausnutzung des reichen beobachteten Materials ermöglichen würden, und deren Ergebnisse in der Praxis benutzungsfähig wären.