

terms of weather and climate by the aid of a computer. The two most important factors in the determination of the glacier's annual water budget were found to be the number of degree-days above 0°C. and the annual accumulation of snow. Clear-cut correlations could not be established with other factors, such as length of the ablation season, number of summer storms, mean

monthly temperatures, or cloud cover. The results clearly indicate that much research must still be done before we understand the relations between the regimen of a glacier and the weather in a satisfactory manner.

This small book by Professor Marcus should definitely be studied by everyone interested in this subject.

LAWRENCE E. NIELSEN

Obituary

Lauge Koch (1892-1964)

LAUGE KOCH, renowned leader of 24 Danish government expeditions to Greenland spanning almost half a century, was born July 5, 1892 and died June 5, 1964 in Copenhagen. He gained his Mag. Scient. (cartography) in 1920 from the University of Copenhagen and his Ph.D. in geology in 1929.

Dr. Koch's unique series of explorations began in 1913 in West Greenland. During 1916 and 1917 he accompanied Knud Rasmussen on the Second Thule Expedition to Northwest Greenland. From 1920 to 1923 Lauge Koch was leader of the remarkable Bicentenary Jubilee Expedition (to commemorate Hans Egede's arrival in Greenland) when he performed, together with three Eskimos, the strenuous 200-day sledge journey along the north coast of Greenland, which resulted in the Atlas of North Greenland (24 maps at the scale 1:300,000).

The systematic geological investigation of North and East Greenland conducted by Dr. Koch between 1926 and 1958 has been lauded as "one of the most concentrated efforts towards co-ordinated regional geology of a significant segment of the earth's surface which the geological science has experienced, and one made in the face of exceptionally unfavourable geographic and climatic conditions" (G. O. Raasch, 1961, p. 147, Foreword to the "Proceedings" of the First International Symposium on Arctic Geology). In that period of 32 years 1291 persons from many countries, mainly Scandinavia, Switzerland, and Britain, took part in his expeditions, the largest parties consisting of more than 100 men. A total of 1208 "man-summings" and 126 "man-winters" were spent under Dr. Koch's supervision in Northeast Greenland — that harsh but beautiful stretch of land between the Inland Ice and the pack ice, in the latitude 70°N. to 83°N. Although Dr. Koch himself was primarily interested in geology, he encouraged work in a variety of other fields: an almost complete coverage of medium-scale topographical maps was produced, many geographical and biological investigations were carried out, and studies were made in glaciology, hydrology, meteorology and archaeology. "Such continuity of leadership . . . is without parallel in the history of polar expeditions" (J. W. Cowie, 1959, *Polar Record*, Vol. 9, p. 547).

In the early days when travelling was by dog-team, Lauge Koch was a master of this art and gained the admiration of his Eskimo companions whose language he thoroughly understood and spoke. He kept abreast of the times,

however, and became a pioneer of arctic aviation when, as early as 1932 and 1933, he equipped his two expedition ships with sea planes. Then in 1938 he successfully completed an air reconnaissance of Northeast Greenland on two daring flights with a Dornier aircraft operating from Spitzbergen. His post-war expeditions were characterized by the extensive use of Norseman, Catalina, and DC-4 aircraft and later, in 1955 and 1956, of helicopters. In 1953 I was one of a two-man party which he landed in North Greenland, to make the first geological traverse of the mountains of northern Peary Land starting from Friggs Fiord and reaching Kap Morris Jesup, $83^{\circ} 39'N$., the northernmost point of land in the world. Here we found the cairn Lauge Koch had erected in 1923 and from it retrieved his report.



Photo: F. Müller

Lauge Koch on the return flight from Friggs Fjord to Station Nord, North Greenland, August 12, 1953.

In the Catalina, which came to collect us, he read his own historic document as we flew over the desolate plains of southern Peary Land where Mylius-Erichsen and his companions had perished, and where he himself, 30 years previously, was forced to eat his exhausted dogs. This big, quiet man who spoke so slowly and made every so often a bear-like noise, had, with his indomitable will, been a great leader through two eras of polar history. Like the polar bears he did not bother about his enemies, he would just weave amusing stories about them.

The results from Koch's expeditions published by the participants in the *Meddelelser om Grønland* are an invaluable collection of some 240 papers totalling 22,000 pages. His own observations and investigations, mainly on the geology and

the ice conditions of Northeast Greenland are the substance of some 14 major publications.

For his leadership and his scientific merits Lauge Koch was awarded numerous honours. He received 12 medals from various countries, the last one being the highly regarded Danish Rink Medal, and many other distinctions including being made an Officer of the Legion of Honour. In 1960 the University of Basle (Switzerland) honoured Lauge Koch with a Dr. h.c. and in 1963 McGill University (Canada) awarded him an Honorary Doctor of Science.

With the death of Lauge Koch the Arctic has lost one of its most colourful personalities. Those who had the good fortune to work with him and to listen to his stories will never forget the towering strength, the stimulation and the refreshing humour of this great man, who had already during his own lifetime become a legendary figure.

Fritz Müller

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