

# Helps to Knowing North Dakota

By

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**W**HEN the writer came to North Dakota from the State of Wisconsin some twenty-five years ago he found it necessary to get acquainted rapidly with a vast geographical area. He found that he must know the soils, the geology and the climate of the State if he was to understand its agricultural possibilities. He found the literature on soils and geology widely scattered hence he proceeded to compile a classified Bibliography of the Geology of North Dakota, covering all years up to and including 1926. The material was issued in mimeographed form in a small edition and has long since been exhausted.

## **A New Bibliography of the Geology and Natural Resources of North Dakota**

As an ex-officio member of the Board of Directors of the North Dakota Research Foundation he was happy to encourage Director Alex C. Burr, Jr. and his able assistant, Miss Chrissie E. Budge, in the collection, compilation, and brief description of the extensive Bibliography of the Geology and Natural Resources of North Dakota 1814-1944 issued as Bulletin No. 1 of the North Dakota Research Foundation.

The Bibliography contains 995 entries arranged alphabetically by authors. Each entry is accompanied by a brief description of the nature of its contents. The bulletin also contains an author's index, a most comprehensive subject index, a particularly valuable journal-finding index, and list of scientific journals and reports with a key as to their availability in the libraries of the North Dakota Agricultural College at Fargo, the University of North Dakota library at Grand Forks, the North Dakota State Historical Society and the State Library Commission at Bismarck, the University of Minnesota Library at Minneapolis, Minnesota, the James J. Hill Reference Library at St. Paul, Minnesota and the John Crerar Library, Chicago, Illinois.

## **A New Report on, "The Climate and Weather of North Dakota"**

When a stranger comes to North Dakota he seeks reliable information about the weather and climate of the State. The new Bibliography of Geology and Natural Resources of North Dakota contains some information on the climate of the State but the subject is not completely covered. Fortunately there has recently appeared a new bulletin (published in 1946—hence since the coverage period 1814-1944 of the Bibliography of Geology and Natural Resources) which reviews the weather record of North Dakota for the past years. This new bulletin "Climate and Weather in North Dakota" has been prepared by Frank J. Bavendick, Meteorologist of the U. S. Weather Bureau Office at

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Bismarck. It is published with the cooperation of the North Dakota State Water Conservation Commission and is offered for sale by that Commission at \$1.00 per copy.

One is disappointed to find that the precipitation data published for some thirty-two observing stations records the observations for the period 1931 to 1945 only. It is only fair to state that at the head of the list appears the following note, "Published reports before 1931 will be sent on request from the Weather Bureau, Bismarck." It is to be regretted that the long-time records for each station were not brought up-to-date. A fifty-four year average precipitation for the eastern, middle, and western division of the State is provided. Several stations have much longer records than fifty-four years, including the Bismarck station, but these are not included. It is to be hoped that an early official publication of the U. S. Weather Bureau will bring all North Dakota weather data up-to-date in an inclusive manner.

The most valuable part of this new bulletin is that part of the bulletin which presents a series of maps. Here you will find maps showing 15, 16, 17, 18, 19, 20, 21, and 22 inch isopleths (lines of equal precipitation) for the period 1899 to 1942 inclusive, the 10 inch, 12 inch, 14 inch, and 16 inch isopleth for April to September inclusive, and maps showing the percentage of years in which there is less than 16 inches of precipitation by 20, 30,

40, 50, and 60% lines (See pages 50-51 of the bulletin.) Isotherm maps for average January temperature and average July temperature are provided.

A map on page 35 shows the average number of days without killing frost. Two maps bearing the same label, "Average dates of last killing frost in spring" appear on page 34, the upper one is clearly a reproduction of another map by Mr. Bavendick which appeared at the top of page 1051 of "Climate and Man"—the 1938 Yearbook of the U. S. D. A. The map at the bottom of page 34 appears to be a revision of the Yearbook's map of average dates of last killing frost, and it is evident that through an error, the map for the last date of "killing frost in the fall" has been omitted for it should bear September dates similar to those in Bavendick's map at the bottom of page 1051 in the U. S. D. A. Yearbook.

This new report stresses the unusual and the unfavorable, reciting at considerable length brief historical statements by years of the occurrence and area of occurrence of blizzards, drought, dust storms, high winds, tornadoes, floods, etc.

This report on climate and weather does not pretend to discuss the practical measures required to meet the hazards of the unusual except for a bit of a warning about blizzards. This reviewer is therefore appending his own statement suggesting what science and common sense says we can do about unusual weather.

**Unusual Weather and What We Can Do About It in North Dakota**

<b>The Unusual in Weather</b>	<b>What We Can Do About It</b>
Blizzards	Heed weather warnings. Keep off the highways in blizzardy weather. Carry a shovel in your car. Dress warmly with warm foot gear at hand for winter travel. Provide windbreaks for livestock.
Drought	Practice moisture conservation. Increase absorption. Decrease run-off. Contour farm. Summer-fallow. Inter-till. Irrigate.
Dust Storms	See above. Lay down more land to grass. Plant windbreaks. Avoid pulverizing tillage.
Floods	Construct dams and levees. Conserve the little waters up stream. Improve drainage on flat lands.
Frost	Insulate buildings. Grow cold resisting crops.
Hail	Insure to cover possible damage.
Fires (a secondary result of drought)	Plow fire guards around buildings and haystacks. Be careful with matches, cigarettes, etc.
Deep Snow	Provide properly placed feed reserves for livestock. Heed weather warnings.
Tornadoes	Insure in tornado insurance if in a hazardous area. Heed weather warnings.
Wind	Provide more shelter belts. Build and anchor buildings more strongly. Keep roofs well fastened.

The weatherwise will find many more ways of coping with the unusual in the weather, and of cooperating with the usual in the weather.

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