

A Science Service Feature

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? WHY THE WEATHER ?

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"CLIMATE THROUGH THE AGES."

The wide variations in the climates of the earth during geological time have always been difficult to explain. In the coal era, a dense tropical forest flourished in Pennsylvania; the same region later marked the southern boundary of a continental glacier. In middle latitudes the mean annual temperature has probably varied as much as 30 degrees Fahrenheit.

In his recent book, "Climate through the ages", C.E.P. Brooks, an English meteorologist, explains one possible cause of such changes. Variations in the size of the land areas in high latitudes will cause a variation of several degrees in the average temperatures - the more land the colder. But a change of a few degrees may indirectly be responsible for a far larger change of temperature, through the effects of ice. If the freezing point of sea water was slightly lower, so that the polar seas were not frozen, the temperature at the North Pole in January would probably be about 26 degrees Fahrenheit. This is called the "non-glacial temperature". But the freezing point of sea water is 27 degrees, so that the sea is frozen under present conditions, and the ice once established lowers the temperature very much further and extends the zone of freezing. A rise in the "non-glacial temperature" from 26 to 28 degrees Fahrenheit should be sufficient to cause the gradual disappearance of ice in the Arctic. It is probable that the Arctic was free of ice from 500 to 1000 A.D., making possible the Norse explorations and colonization of Greenland.

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