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FORESTS AND GLACIERS OF SOUTHERN ALASKA

(Abstract of Public Lecture)

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The evidence of vegetational changes in eastern America associated with the Pleistocene glaciation being very fragmentary and unsatisfactory, it is necessary, in order to obtain a clear conception of what happened here, to investigate similar processes as they go on today in regions where glaciers still exist. Southern Alaska provides outstanding opportunities for such studies, and particularly Glacier Bay, where the ice margin has been receding with phenomenal rapidity for the last two centuries. On the foreland east of the mouth of the bay there are moraines and outwash associated with the last advance of the ice, which show all stages of invasion by vegetation from the earliest pioneers to forest more than a hundred years old. Conditions here closely approximate those in Minnesota during the waning phase of the last Wisconsin glaciation.

The invasion of newly bared areas is accomplished through three stages: pioneer herbs and creeping shrubs, willow-alder thicket, and spruce-hemlock forest. Similar vegetation cycles have run their course in previous periods of shrinking ice, and the remains of these, buried beneath gravel deposits, are open to study. New areas of interglacial forest, providing a wealth of materials, were discovered during the summer of 1935.

In the region of Prince William Sound, there has been no history of rapid recession in recent time comparable to that seen at Glacier Bay. In most cases, the ice fronts are today as far forward as they have been for the last half-thousand years, at least. In front of the Columbia Glacier, only a few hundred feet from the present ice edge, a diminutive but aged hemlock was found which had 420 growth rings. In several places the ice has advanced within the past few years, or is today advancing, into mature forest or alpine meadow of very great age. The reason for this striking difference in glacial behavior in places comparatively close together is still an unsolved problem.