SCIENCE

VOL. 79 FRIDAY, MAY 11, 1934 No. 2054

SCIENCE: A Weekly Journal devoted to the Advancement of Science, edited by J. MCKEEN CATTELL and published every Friday by

THE SCIENCE PRESS

New York City: Grand Central Terminal
Lancaster, Pa. Garrison, N. Y.
Annual Subscription, $6.00 Single Copies, 15 Cts.

SCIENCE is the official organ of the American Association for the Advancement of Science. Information regarding membership in the Association may be secured from the office of the permanent secretary, in the Smithsonian Institution Building, Washington, D. C.

THE GLACIERS OF MOUNTAIN AND CONTINENT[1]

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GLACIERS are found to-day in practically all latitudes, but are found larger and more amply nourished as one recedes from the equator, and also as one approaches those coasts of the continents where moisture-laden winds advance from the sea athwart lofty mountain ranges. Within the torrid zone the glaciers retreat into the higher portions of very lofty mountains. Of altogether exceptional development are the low-latitude glaciers of the Himalayan region in Southern Asia, due to the extreme altitude, in combination with the heavy precipitation brought in by the monsoon winds from the heated Indian Ocean.

All glaciers are fed by moisture in the form of snow, or in some cases of rime, which becomes compacted into ice under its own weight and through recrystallization. They are always of fresh-water ice, in which respect they are in contrast with sea-ice and floe-ice, which are formed by the freezing of the surface layers of the sea. Glaciers, moreover, are land *born,* as they are quite generally land *borne,* though with important exceptions within the high latitudes.

Living in a world of glaciers, it has been natural for us to apply Lyell's phrase, "the present is the key to the past," and to assume that glaciers have been characteristic of all past geological ages as well as of the present; but the evidence from both geology and paleontology is that for the greater part of geological time there have apparently been no glaciers, and the climate from the equator to at least near the poles

[1] Introductory portion of the address of the retiring vice-president of the Section of Geology and Geography, American Association for the Advancement of Science, delivered at Cambridge, Massachusetts, on December 27, 1933. The full paper is to appear in the *Zeitschrift fuer Gletscherkunde.*