REVIEWS

MARIO BERTONE. Inventario de los glaciares existentes en la vertiente Argentina entre los paralelos 47° 30′ y 51° S. *Instituto Nacional del Hielo Continental Patagónico, Publicación* No. 3, 1960, 103 p., illus., map.

IN this special paper an effort is made to list pertinent geographical information with respect to location of 356 significant glaciers on the Argentine flanks of the Patagonian Andes between the parallels 47° 30′ and 51° 00′ S. In addition brief reference is made to the morphological classification of each glacier, its total surface area and the approximate elevation limits of the upper *névés* as well as the terminus. Brief notation is also made of the current regime of the terminal zone, being cited either as "in advance, in retreat or stationary". Also in some cases a few observations are added to provide information of special or unique significance—i.e. usually concerning unusual morphological characteristics or abnormal regime conditions.

This publication succeeds in accomplishing what the title connotes, by simply listing in inventory fashion the major glaciers in this remote cordilleran region. The emphasis is on those glaciers east of the water divide in the Laguna del Desierto, Lago San Martin, Lago Viedma and Lago Argentino districts. The small amount of additional information under the sub-heading "observations" is too sporadic. But what information is given is often tantalizing and points out the need for a more comprehensive and detailed gazetteer of existing glaciers in this fascinating region.

The special interest of the supplemental observations is illustrated by comments on the main outlet of the southern ice field, the Moreno Glacier, which terminates in an active berg-discharging ice front in Lago Argentino. The author's report reveals that significant changes have taken place since the investigations of R. L. Nichols and the writer in 1949.* Then we reported that the Moreno Glacier in the 1940's was generally in a forward position with minor oscillations, and that on one occasion in that decade its advance had created an ice-dammed lake, Lago Rico, which inundated many miles of grazing land south of Lago Argentino. Now the report is that this terminus has retreated to an equilibrium condition, and that in the upper reaches of the glacier a grand depression has developed, giving the impression that the still vigorous terminal section will eventually separate completely from its ice source. Of course with such information one cannot but wish for further details. This also brings up the desirability of regime estimates, where possible, concerning the total glacier rather than its terminus alone.

Much of the *névé* region of the glaciers, dealt with in this report, was only fifteen years ago marked "*inexplorado*" on existing maps. It is therefore gratifying to see this fine inventory of glaciers now available. This publication serves as a useful example, perhaps to be followed in the other great glacierized cordillera, such as south coastal Alaska, the Himalaya, and even in the glacial regions of the North Atlantic rim or New Zealand. Undoubtedly the greatest value of such an inventory with its cursory set of facts, is in regions where there are large areas where little but reconnaissance glaciology has been accomplished. This is why it is particularly appropriate to the Andes of Argentine Patagonia. For the same reason we look forward to a similar inventory of glaciers along the south Chilean coast, and perhaps in Graham Land as well.

MAYNARD M. MILLER

B. J. MASON. *Clouds, rain and rainmaking*. Cambridge, University Press, 1962. 149 p., illus. 22*s*. 6*d*.

THIS neat, admirably written and beautifully produced little book is based on a series of sixteen lectures given to physics students at Imperial College by Professor Mason, from his

* See *Journal of Glaciology*, Vol. 2, No. 11, 1952, p. 41–50. *Ed.*