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FLUCTUATIONS OF THE ITALIAN GLACIERS, 1950

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THE results of the annual glacier measurements of the Comitato Glaciologico Italiano for 1950 will be published in the *Bolletino Italiano Glaciologico* for 1951, but the following advance information may be useful for those interested.

The retreat continues apace; dark rocks are uncovered and the ice surface is becoming increasingly obscured by moraines. Apart from the aesthetic effect and the replacement of ice by rock for climbers the economic aspect of this retreat is serious. Thousands of streams are reduced or dried up and the large reserves of water held in the ice are shrinking. It is calculated that during the last thirty years the extent of the glaciers of the Alps has been lessened by 10 per cent and their thickness by an average of 25-30 m., representing a loss of 75 km.³.

The two chief factors influencing retreat are, of course, precipitation and temperature. The winter of 1949-50 was more snowy than the previous winter. At the Cignana Observatory in Valtournanche (2100 m.) there was an average of 89.1 cm. as compared with 29 cm. the winter before. On the other hand, the average summer temperature was 9.2° C. as against 8.4° C. in the previous year. Of 95 glaciers observed in 1950, 90 were retreating, 3 were stationary, 1 was perhaps advancing and 1 uncertain.*

If, however, one examines the individual data † there appears to be a certain slowing down of the retreat in the Maritime Alps. These mountains are particularly snowy, being a part of the humid Atlantic area subject to south-west winds. The retreat is also slowing down in the glaciers in the east where the summers are, on the whole, less warm than in central and western regions.

The winter of 1950-51 was characterized by heavy snowfalls, which prompts the question whether the retreat has really been arrested. One must wait to give a reply until the summer temperatures for 1951 are known. Clearly, however, many years must elapse before our glaciers can advance again.

* Cf. the 1949 report: *Journal of Glaciology*, Vol. 1, No. 8, 1950, p. 421.

† The list of individual glacier fluctuations is in the possession of the Society and may be consulted by any member interested.—Ed.