The flow of the long glaciers is typically a regular, streaming movement, as has been described by us elsewhere.[2] The flow of the short glaciers is much more akin to the *Block-Schollen* flow which we have also described. The chief characteristic of this form of motion is the rapid increase of speed in a narrow marginal zone and the uniform speed in a wide central band, so that the glacier moves forward as a single homogeneous block. But it must be noted that in those ice streams in which this form of flow has been recognized a speed of one metre and more a day has been the rule. The speed at the tongues of these short Jostedalsbreen glaciers (12–16 cm./day) is doubtless not fast enough to cause this form of flow, but it is reasonable to assume that it develops in the 1000 m. high ice falls and that the short flat tongues are not long enough for streaming flow to become re-established.

It should also be noted that the large glaciers like Tungsbergdalsbreen and Nigardsbreen have large accumulation areas whose beds seem to merge into their lower valleys smoothly without considerable sharp downward change of gradient. Even the medium-sized glaciers like Austerdalsbreen and Böjumsbreen possess accumulation areas, but in these cases the flat firn basin changes into a steep ice fall. Conspicuously different are some smaller glaciers which lie as "glacier caps" on slightly domed eminences from which they flow off into very small tongues.

Contrary to previous belief the rock bed of Jostedalsbreen consists mainly of a series of isolated firn basins flowing outwards and is not a domed plateau with ice flowing off evenly in all directions. The surface of the ice in the firn area reflects this structure of the bed very clearly.

The thickness of ice of Tungsbergdalsbreen can be calculated by the Lagally formula to be about 320 m. deep at the place where the speed was measured (inclination 7°) and 310 m. in the middle profile of Nigardsbreen (13°). These data are not sufficient to enable us to calculate the ice economy, since the measurements were made too far below the firn line. Between the points measured to the firn line and above the active ablation is the determining point and data are not yet available for its calculation.

It would be of the greatest interest to repeat the flow measurements because the glaciers have melted considerably since 1937. As a result the flow will have slackened considerably. It is highly desirable that such new speed measurements should be made close to the firn line and in some glaciers, for instance Tunsbergdalsbreen, this would be easy. They would provide a valuable basis for calculating the ice economy.

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2. See, for instance: Finsterwalder, R. Some comments on glacier flow. *Journal of Glaciology*, Vol. 1, No. 7, p. 383. Finsterwalder, R., *and* Pillewizer, W. Photogrammetric studies of glaciers in high Asia. *The Himalayan Journal*, Vol. 2, 1939, p. 107–13.

GLACIER FLUCTUATION IN THE SWISS ALPS, 1950*

GLACIER recession continued at an increased rate during 1950, the figures for 1949 and 1950 being:

	Advance	*Stationary*	*Retreat*
1949	5%	2%	93%
1950	4%	0%	96%

A detailed report on the fluctuation of European glaciers (French, Swiss, Italian, Austrian, Scandinavian with Iceland) from 1935 to 1946 appears in *The Transactions of the International Association of Hydrology* (I.U.G.G.), Oslo, Vol. 2, 1948, p. 233–61.

* Advance report of the 1950 glacier measurements of the Commission Helvétique des Glaciers communicated by Dr. P-L. Mercanton.