

REVIEWS

J. K. SEDGWICK and W. E. S. HENOCH. *Peyto Glacier*. Ottawa, Environment Canada. Inland Waters Directorate. Water Resources Branch. Glaciology Division, 1975. Cover-title, [ii], 30 p., map.

THIS extremely interesting venture in cartography is the first map made in the style of the Swiss maps of the Alps which has been produced entirely by a team of Canadian specialists. Several government departments have contributed to the work including the Department of the Environment, the Department of Energy, Mines and Resources and the Department of Indian Affairs and Northern Development. The final cartography has been completed by the Inland Waters Directorate of the Department of the Environment. A great deal of the information contained on the map has been gathered by the Glaciology Division of the Inland Waters Directorate during their programme which was set up as a contribution to the International Hydrological Decade. It seems clear that this information is of the highest quality and the cartographers have used the most accurate data available.

The map is drawn to a scale of 1 : 10 000 and covers in great detail an area of approximately 54 km². Contours are every 10 m except in the regions of bedrock where the interval is only 100 m. Although the primary object of this map is, presumably, to give glaciological information, it does also depict the geomorphology of the region. The marginal information is good and precise and easy to memorize so that it is not necessary to make constant references to the key when studying the map. The only criticism that can be made of the margin—and this is a small one—is that nowhere is the blue stipple indicated and it would, perhaps, have been more correct to make the white box denoting “Perennial snow” shade from an area of blue stipple to pure white.

The first impression the user gains of the map is good. It appears clean, clear and uncluttered. The cartographers have very sensibly not tried to depict what might be termed extraneous detail, such as state boundaries, but have concentrated on the main function of the map in denoting the glaciological phenomena and the geomorphological detail. The use of colour is artistic and restrained, at the same time giving the user a mental picture of the terrain—rock or ice, land with vegetation cover or land covered with scree. The detail given concerning the ice surface, the moraines and the drainage pattern is excellent.

It is in the relief effect that the map can be mainly criticized. It will only be an experienced cartographer (or map user) who will be able to discern easily the gradations of high and low ground without continual reference to the contour values. It should be remembered that the convention in relief depiction is for the north-west facing slopes to be light and the south-east facing ones to be in shadow, i.e. the light source is in the top left. It is a fact which is often not fully appreciated and to depart from this convention causes peculiar optical illusions often resulting in a complete reversal, the high ground appearing as valleys and the valleys as ridges. On this map the relief effect is disturbed by the symbol used for bedrock, which is of equal density on all sides of a mountain, the moraine and scree symbols, which are not easily distinguishable, and the blue stipple on the icefields and glaciers which appears in many areas to be quite indiscriminate. For example, the south-west corner of the map is particularly difficult to interpret from this aspect.

It would be much better if the bedrock symbol could have been made slightly lighter in density on the north-west facing slopes, and, conversely, the moraine symbol a darker tone on the south-east facing slopes. If one compares this map with any of the Swiss maps of areas in the Alps, or with the Mount McKinley map sheet, the deficiencies of the three-dimensional effect can be appreciated. These can be rectified by paying greater attention to the weights of the symbols and the distribution of the blue stipple.

The typography is very good, both the choice of type face, weight and size of letters. The names show up well against the background symbols and the use of colour means that the nomenclature does not detract from, or intrude into, the general impression of the map. In some areas the contour numbers are somewhat sparse and extra ones would cut down the search time. Whilst realizing that it is standard cartographic practice to position a contour number with the bottom of the number on the lower side, it does mean that far too many numbers on the map are completely upside down and this is an added reason for increasing their density.

The dot symbol for the spot elevations might be improved if it were slightly larger thus making it more readily distinguishable from the "scree" and "rock" symbols. The use of red for the stations and huts is good. It is a pity though that it was felt necessary to adhere strictly to the network of grid squares in regular units so that the Bow Hut location has to break into the map margin. The thicker line used for the 100 m contour is clearly discernible on the blue and beige but, oddly enough, not obvious on the black contours. A greater variation of line thickness between the black contours would improve this.

The accompanying booklet is excellent and with its pictures and sketch-maps greatly adds to the value of the map for specialists in other fields and non-academics. There are so many references in the booklet that its value would be enhanced if the grid references to the points on the map were given so that their locations could be accurately determined. Not all map users will find it easy to pick out the "young cirque" referred to at the bottom of p. 10 for example. Again the reviewer has not been able to find, either on the area map in the booklet or on the main map, the name "Viewpoint". Is it "Lookout" on the area map? Nor does the name "Mistaya" occur anywhere except on the area map as "Mistaya Mountain". It would be much clearer if the main map, or sketch-maps, showed all places mentioned, or alternatively, only places named are mentioned in the booklet.

The only omission to the reviewer's mind is that the main map would be of greater use to the layman if the trails were plotted on it. The booklet is written in some detail, giving a comprehensive survey of the area, and must "whet the appetite" of many users. If their interest leads them to explore the area, or indeed if specialists other than glaciologists, wish to visit the area then the positions of the trails would be of great value.

The real test of this map, however, is whether or not it fulfils its function. If, as one believes, that function is to illustrate the glaciological phenomena and geomorphological detail of the area of the Peyto Glacier, then it succeeds admirably. The cartographic team is to be congratulated on the production and it is hoped that they will be allowed to complete other tasks and put the experience they have gained whilst producing the Peyto Glacier map to further use.

S. HEWITT

CLIFFORD EMBLETON and CUCHLAINE A. M. KING. *Periglacial geomorphology*. [*Glacial and periglacial geomorphology*. Second edition. Vol. 2.] London, Edward Arnold, 1975. [x], 203 p. £8.95 (cloth), £4.50 (paper).

Periglacial geomorphology is an extensively rewritten section of the book *Glacial and periglacial geomorphology* published by Embleton and King in 1968. The original book length of 608 p. has been increased by 22% to 776 p. *Glacial and periglacial geomorphology* found a place on many students' and researchers' shelves when first published. It was the only book to cover (in the English language) the periglacial environment; whereas, the processes and landform side of glacial geomorphology served as a major supplement to and updating of Flint's 1957 text. The book was thus timely and served a real need.