

FOREWORD

By FRANÇOIS E. MATTES

THE founding of the *Journal of Glaciology* may well be said to mark a new epoch in the history of glacial science. That it is destined to play an important, indeed, vital rôle in the future advancement of that science there can be not the slightest doubt. The new journal, moreover, makes its appearance at a time when glaciology in all its diverse phases is becoming increasingly useful in the affairs of mankind. The civilized world, having resumed its peaceful pursuits, is turning its attention to the polar and circumpolar regions—not with the thought, as heretofore, of launching an occasional daring expedition, but with the intention of making practical and continuing use of them. The Arctic, assuredly, will soon be one of the cross-roads of aerial travel. Already meteorological stations are being established at far northern points as a vanguard. And the Antarctic, though less accessible and more forbidding, is being invaded from several sides at once. Never before, it follows, has there been more insistent demand for factual information on the physical conditions that prevail in those formerly shunned areas, north and south, or on the practical problems that must be met there, on the land, on the sea and in the air. Never before has man found himself more dependent upon the specialized knowledge of the glaciologist than he is to-day in his ambitious endeavour to push the frontiers of civilization out towards the Poles.

But glaciologists are equally needed in other parts of the earth—wherever mountains bear snow and ice. Until they have mastered the mechanics of glacier motion and the entire attendant complex of physical phenomena, the often contradictory evidences of erosion and deposition by glaciers of different types will remain enigmatic to the geomorphologist. On the practical side, more needs to be done to safeguard lives and property from the recurrent menace of avalanches and of ice debacles in rivers. And the snow surveys, which in some regions have proved so useful in the forecasting of water supplies for irrigation in arid lowlands and for industrial and municipal uses, deserve to be introduced in many other countries.

The utilization of run-off from glaciers in the European Alps led, half a century ago, to the systematic repetitive measuring of the variations in size of glaciers as the result of changing climatic trends. The practice has spread to other continents, but it needs to be integrated into a world-wide system. Such measurements, if carried out in concert by many nations in both hemispheres, will in time yield results that, correlated with meteorological records, will throw invaluable light upon the climatic controls under which glaciers grow and again decline. Concrete data of this kind will dispose of much theorizing and ultimately will make comprehensible the physical conditions that repeatedly in past geologic periods have caused ice sheets to spread over large parts of the earth and that permit two such ice sheets to persist at the present time. This long-time programme clearly will serve not glaciology alone but all those branches of science that are concerned, directly or indirectly, with the presence and the effects of snow and ice upon the earth to-day and in past times.

It follows from all this that the British Glaciological Society, which had the wisdom and enterprise to launch the new *Journal of Glaciology*, thereby has provided an effective organ for mutual information and interchange of thought to scientists working in a number of interrelated and interdependent fields of research—glaciology, meteorology, climatology, physical geography, geology, pedology, hydrology, oceanography, archaeology, ecology and palaeontology. That being true, there is every reason to believe that the *Journal of Glaciology* is starting upon a highly useful and successful career.

THE SOCIETY AND THE JOURNAL

As a result of the advent of the *Journal of Glaciology* and a certain amount of publicity the Society has grown considerably. In November the number of members was 128; members and subscribers to the Journal now total about 360. It is not our purpose to rest at this figure. The size and scope of the Journal depend upon the size of its circulation, from which it follows that this must be further increased. Members will help the Society and increase its usefulness to themselves by making its existence known to any of their friends and colleagues who are likely to be genuinely interested in its work. Particulars and a prospectus will be found on the last page of this issue.

The reception given to the first number of the *Journal of Glaciology* has been gratifying. Several dozens of letters have been received and it is clear that it fills a real want. Appreciations have been sent from Switzerland, the United States of America, Canada, Sweden, Norway, France, Belgium, Poland, Czechoslovakia, Eire and several other countries.

It is satisfactory to the Committee and to the Editorial Committee that the *Journal of Glaciology* has been launched and appreciated.

GLACIER RESEARCH

THE GLACIER PHYSICS COMMITTEE

GLACIOLOGY has now reached a stage when mere observation in the field is no longer an adequate method of attack for the problems which are still unsolved. Experimental research on the fundamental physical and mechanical properties of ice is urgently required before a quantitative theory of glacier flow, based upon modern concepts of plasticity in crystalline solids, can be formulated. For testing such theories in the field, novel methods of research will be needed for measuring flow rates and stresses in the interior of glaciers at considerable depths.

It is clear that the development of research on lines such as these will only be possible with the co-operation of experts in several fields. With this purpose in view a Glacier Physics Committee has been formed on the initiative of Dr. M. F. Perutz and under the chairmanship of Mr. G. Seligman. The following have agreed to serve on it:

- Dr. F. P. Bowden (Friction of solids).
- Dr. E. C. Bullard, F.R.S. (Geophysics).
- Mr. Vaughan Lewis (Geomorphology).