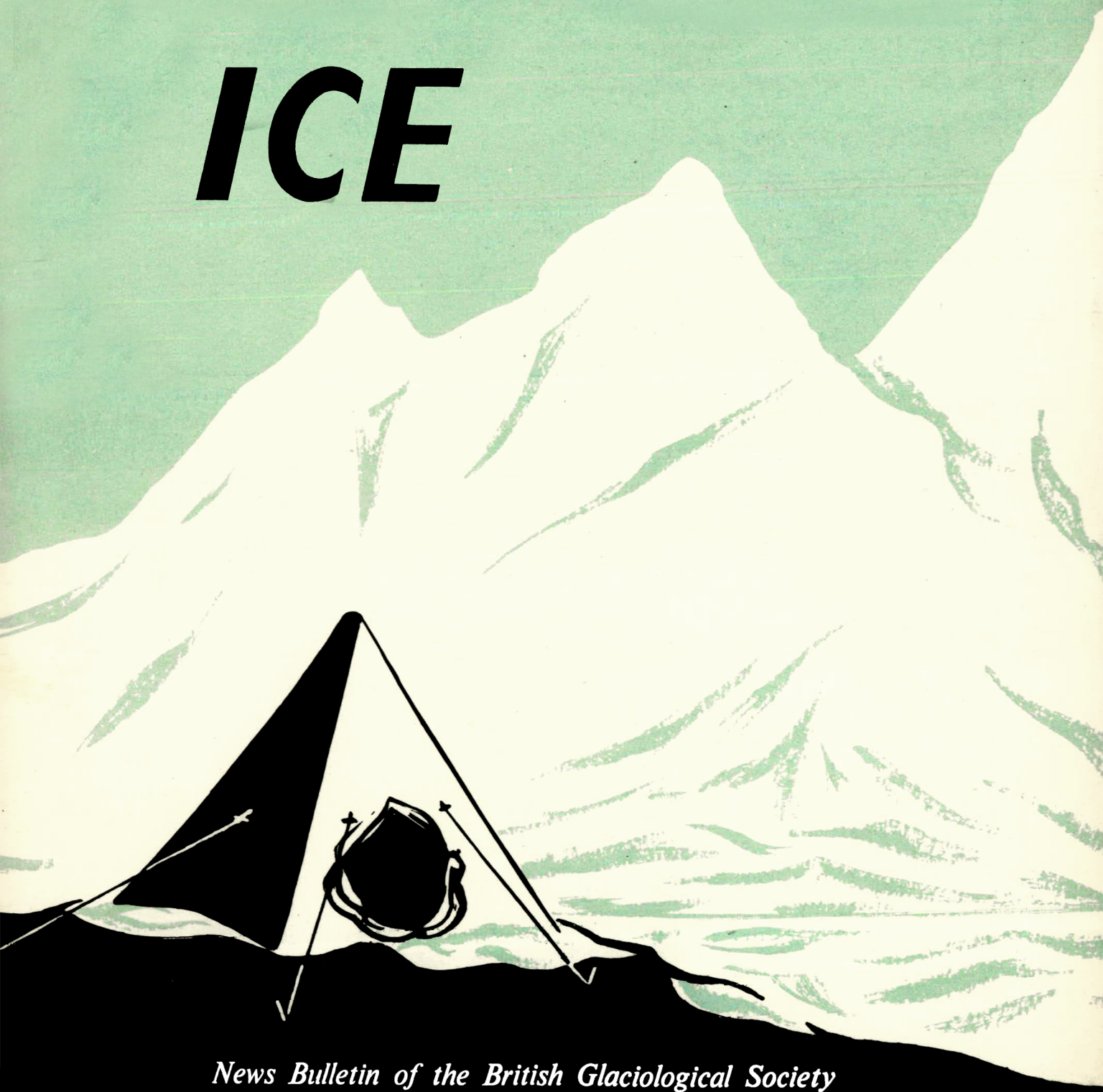


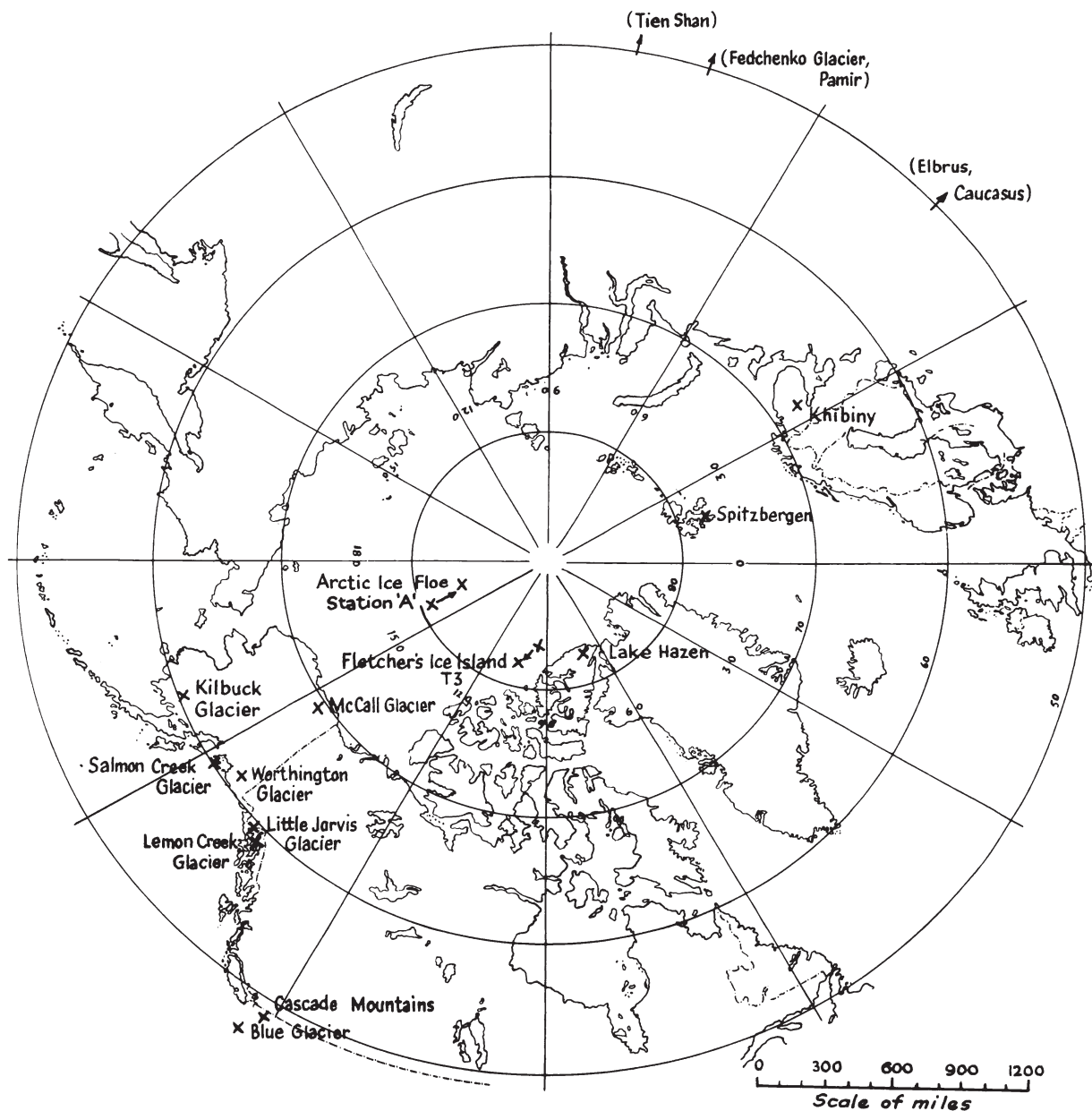
NUMBER 4

JULY 1959

ICE



News Bulletin of the British Glaciological Society



I.G.Y. Glaciological Reports from stations in the northern part of the Northern Hemisphere received in World Data Centre C, Glaciology (Cambridge) up to 30 June 1959. Full references will be found in the I.G.Y. lists in this issue of Ice and in numbers 2 and 3.

ICE

News Bulletin of The British Glaciological Society

Number 4

July 1959

MEMBERSHIP DUES FOR 1959. The Secretary wishes to remind all members who do not pay their annual dues by Banker's Order, that the 1959 subscriptions should have been paid by now. We regret that we shall not be able to send the 1960 Journals to members who have not paid their 1959 dues by 31 December.

NUMBER 4 OF THE JOURNAL OF GLACIOLOGY. This number has been reprinted, and is available at a price of £1 to members and £1.5s.0d. to subscribing libraries and institutions. Orders may be placed with the Secretary. If sufficient orders are forthcoming, we may be able to reprint other rare numbers in Volume 1.

International Geophysical Year

Reports received in World Data Centre C, Glaciology.

The Society has received reports during the period January - June 1959 from the following places:-

STATION	PROGRAMME	POSITION	PERIOD
Spitzbergen (Poland)	Glaciological observations	77° N 15° 28' E	1957
Charcot, Antarctica (France)	Seismic profile	69° 22' S 139° 01' E	1957-1958
Mt. Blanc, France (France)	Aerial photograph	49° 52' N 5° 02' E	31 August 1958
Syowa, Antarctica (Japan)	Geomorphology	69° S 39° 35' E	1956-1957
Lake Hazen (Canada)	Meteorological and climatic observations	81° 49' N 71° 18' W	May-August 1957, May-August 1958
Mawson, Antarctica (Australia)	Ice thickness (gravity and seismology)	67° 35' S 62° 54' E	1957
Blue Glacier, Wash. (U. S. A.)	Mass and energy balance	47° 41' N 123° 46' W	September 1957 - August 1958
" " "	Daily records of mass and energy balance programme	"	"
" " "	Glacier dynamics	"	August 1958
Blue Glacier, Greenland and Antarctica (U. S. A.)	Oxygen isotopes of Antarctic snow and ice		July 1957 - July 1958

"Little Jarvis" Glacier, Alaska Range (U. S. A.)	Glacier mapping and photogrammetry	59° 24' N 136° 25' W	August 1958
"Kilbuck" Glacier, Alaska Range (U. S. A.)	Glacier mapping and photogrammetry	60° 07' N 159° 15' W	August 1958
"Salmon Creek" Glacier, Alaska Range (U. S. A.)	Glacier mapping and photogrammetry	60° 10' N 149° 15' W	August 1958
"Worthington" Glacier, Alaska Range (U. S. A.)	Glacier mapping and photogrammetry	61° 10' N 145° 45' W	August 1958
"Ellsworth", Antarctica (U. S. A.)	Gravity and magnetic measurements on traverse		1957-1958
" "	"	Gravity meter determina- tion of Weddell Sea tide	June-July 1957
" "	"	Seismic studies on Filcher Ice Shelf	1957-1958
" "	"	Seismic studies at snow pit at "Ellsworth"	77° 42' S 41° 07' W June-July 1957
"Little America", Antarctica (U. S. A.)	Seismic refraction studies on Ross Ice Shelf		1957-1958
"Byrd", Antarctica (U. S. A.)	Gravity and magnetic studies on traverses		1957-1958
" "	"	Seismic programme on traverses	1957-1958
" "	"	Problem of elevation control on traverses	1957-1958
Antarctica (U. S. S. R.)	Information bulletins of Soviet Antarctic Expedition		1957-1958
Tien Shan (U. S. S. R.)	Glaciological observations		1957-1958
Fedchenko Glacier, Pamir (U. S. S. R.)	Glaciological observations	38° 45' N 72° 15' E	1957-
Elbrus, Caucasus (U. S. S. R.)	Glaciological observations	42° 30' N 43° 30' E	1957-
Khibiny, Kola Pen. (U. S. S. R.)	Glaciological observations	approx. (67° 40' N 33° 30' E)	1957
North Atlantic (U. S. S. R.)	Conference on interaction of hydrosphere and atmosphere		1958
Northern Hemisphere (U. S. A.)	Atlas of mountain glaciers of Northern Hemisphere		

Field Work

SOVIET WORK IN THE ANTARCTIC

Soviet activities in the first half of the 1958-1959 field season were outlined in the last issue of "Ice". After the setting up of the station "Polyus Nedostupnosti" at the Pole of Inaccessibility, the tractor train returned to "Mirnyy" on 18 January, having covered 4,300 km. in 87 days. The other long journey of the season was of 3,000 km., made by the party which carried 30 tons of stores to "Vostok".

The relief ships arrived on 30 December and 21 January. The new party (the fourth in the series) comprises 100 winterers led by A. G. Dralkin, with B. A. Savel'yev in charge of the glaciological group and V. Kh. Buynitskiy of sea ice and hydrological studies.

Stations "Sovetskaya", "Pionerskaya", and "Komsomol'skaya" were closed, but may be reopened later. "Polyus Nedostupnosti" was closed within a fortnight of being set up, recording instruments having been left there. "Oasis" was formally handed over to Poland, and was occupied by a Polish party of eight under W. Krzemiński between 22 and 30 January. It was named "Professor B. Dobrowolski". A new station "Lazarev" was established on the ice shelf in Dronning Maud Land at lat. 69° 58' S., long. 12° 55' E. The party of six under Yu. A. Kruchinin started its programme of observations on 10 March. Thus three Soviet stations will be occupied during the winter of 1959: "Mirnyy", "Vostok" and "Lazarev".

Operations in the 1959-60 season are planned to include a journey along the route "Vostok" - South Pole - "Polyus Nedostupnosti", and thence either to "Mirnyy" or "Lazarev". The tractor train which will do this comprises three new 34-ton "Khar'kovchanka" vehicles, which are supercharged and able to sleep eight, pulling 125 tons of stores between them. This left "Mirnyy" on 9 February, and on 26 February reached "Komsomol'skaya" where the vehicles were left for the winter. All personnel were flown back to "Mirnyy".

The full results of glaciological work done during the 1958-59 season are of course not yet available, but preliminary assessment of seismic shooting done along the route of the main overland journey to "Polyus Nedostupnosti" by O. Sorokhtin and V. Koptev provides the following picture. The ice between "Pionerskaya" (lat. 69° 44' S., long. 95° 30' E.) and "Komsomol'skaya" (lat. 74° 05' S., long. 97° 29' E.) rests on a plateau which at no place is higher than 250 m. above sea level, and which has an average height of 70 m. 60 km. inland from "Pionerskaya" and 435 km. from the coast, there starts a deep depression 130 km. wide, the underlying rock reaching depths of 800-1,000 m. below sea level. The greatest measured thickness of the ice above this depression is 3,770 m. Between "Komsomol'skaya" and "Sovetskaya" (lat. 78° 24' S., long. 87° 35' E.) the relief of the rock is also much broken, and reaches as high as 1,000 m. above sea level. Between "Sovetskaya" and "Polyus Nedostupnosti" (lat. 82° 06' S., long. 55° E.) the rock floor is everywhere above sea level. 300 km. from "Sovetskaya" the highest point of the journey was reached - 4,000 m. above sea level - and the ice thickness dropped to 1,000 m. At "Polyus Nedostupnosti" itself the figures were 3,710 m. above sea level and 2,900 m. thickness of ice.

Besides the seismic work, ice temperatures were measured in boreholes by Kh. Zakiyev. In this way a profile of annual mean air temperatures between "Mirnyy" and "Polyus Nedostupnosti" was obtained. The value for "Polyus Nedostupnosti" was -58.5°C.

SOVIET I. G. Y. WORK IN THE NORTHERN HEMISPHERE

A list was published in "Ice", No. 2, of the Soviet glaciological stations due to operate during the I. G. Y. Reports have not been published on the work of all of them, but some information, relating chiefly to the summer of 1957, is summarised below.

Bukhta Tikhaya in Zemlya Frantsa-Iosifa. An expedition led by V. L. Sukhodrovskiy started work on Lednik G. Sedova in August 1957, with the intention of remaining for two years. A laboratory was excavated under the hut, 10 m. deep in the ice of the glacier.

Khibiny in Murmanskaya Oblast'. A party from Moscow State University under K. M. Gromov investigated the formation and decay of snow cover, the distribution of snow patches, the humidity and temperature of the soil in summer, and nivation. The party discovered the first glacier to be found in this area; it measures 300 m. by 80 m.

El'brus in the Caucasus. G.K. Tushinskiy of Moscow State University led a party of 35. An "ice base" was established at 3,680 m. and it was intended that continuous observations should be maintained here. The whole glaciated area round the peak was surveyed and was found to have diminished by 13.8 km² since 1887. Other subjects investigated were the relation between glaciation and lava, the thermal and material balance of the ice, and contemporary geomorphological processes, including avalanche action and permafrost features.

Lednik Fedchenko in the Pamirs. An expedition was led by V.A. Bugayev, who left in the autumn of 1957 for the Antarctic and was succeeded by M.A. Petrosyants. The two proposed stations were established and manned for the winter of 1957-58: one on the glacier itself, in the firn zone at 4,900 m., and the other on the terminal moraine at 3,000 m.

Arctic Research - North Pole 6 station is drifting towards the entrance to the Greenland Sea, which will be reached in September if direction and speed of drift remain unchanged. Unusual temperature and atmospheric circulation conditions were recorded at this station and at North Pole 7 station in the year 1958-1959. The average annual temperature at North Pole 7 was lower than during the last five years; air temperature was more than 3°C. below normal. Both stations recorded the lowest air pressure at the end of the winter instead of the maximum which is usual at this time of the year. This minimum pressure coincided with the great solar disturbance observed by U.S. astronomers last February.

The stations on the shores of the Central Arctic are staffed mainly by graduates of the Leningrad Arctic Institute. Building work is going on at some of the stations.

Kazakhstan - A method of using smokescreens to prevent dangerous run off from glaciers during the melting of ice caps has been successfully tried out. The new method has been recommended by geographer Semen Kavetskiy, assistant director of the Kasakh Hydro-meteorology Research Institute, to protect Alma Ata from destructive mud and rock streams. The smoke, artificially spread over glaciers when the sun is at its zenith during the hottest period of the year, is produced from ordinary smoke boxes.

AMERICAN GEOGRAPHICAL SOCIETY EXPEDITION TO CHILE

The American Geographical Society sent an expedition to southern Chile for two months' study of glaciers in the vicinity of Laguna de San Rafael. Dr Calvin J. Heusser was in charge of the project, the purpose of which was to determine the nature and duration of successive phases of climate and vegetation since the glaciers of the last Ice Age receded. The Laguna de San Rafael was selected because it contains the northernmost glaciers in South America reaching to sea-level and also because its climate, vegetation and physical features resemble those of south-eastern Alaska, where the Society has conducted similar studies since 1948. A comparative chronology of climatic variations in the northern and southern hemispheres may thus be attempted.

NEW ZEALAND GEOLOGICAL SURVEY

The Survey has started a glaciological programme of work under I. C. McKellar, assisted by A. J. Heine. Studies of movement, accumulation and ablation will be continued on the Tasman Glacier, and a new programme has been started on the glaciers of Mount Ruapehu in the North Island.

VICTORIA UNIVERSITY OF WELLINGTON ANTARCTIC EXPEDITION

This small independent University expedition to the Wright Valley area of South Victoria Land, Ross Dependency, arose from the successful work carried on in the neighbouring areas in the 1957-58 summer by members of the New Zealand support party of the Trans-Antarctic Expedition. Dr C. B. Bull was the leader of the Victoria University's expedition, and the other members were R. E. Barwick, B. C. McKelvey and P. N. Webb. The area, which lies between latitudes 77° S. and 77° 45' S., and longitudes 160° E. and 163° E., consists of continental rocks at an elevation of 6,000 feet, transected by two major east-west valley systems, the Wright Valley in the south and the Victoria Valley system to the north. On the west it is bounded by the inland ice and on the east it is separated from McMurdo Sound by the 10 mile wide Wilson Piedmont Glacier.

The expedition spent 52 days in the area and worked on survey, glaciology, gravity survey, biology, geology and meteorology. Studies in glacial geomorphology revealed that two stages of retreat of the main valley glacier can be separated. At the beginning of the most recent stage, glaciers extended from the plateau for a distance of about 10 miles westward down the valley, and from the Wilson Piedmont Glacier for a distance of 7 miles eastwards towards the Plateau, leaving the central 14 miles of the valley free of ice. The ice free valley floor is highest at its coastal extremity where it attains an elevation of 1,050 feet decreasing to 250 feet 25 miles up valley on the bottom of Lake Vanda. Thereafter it rises in glacial steps to a height of 2,500 feet at the ice front of the Wright Glacier. The valley floor comprises large areas of river sorted moraine heaved into frost polygons. During summer months the lowering of the permafrost level allows greatly accelerated wind action on the valley floor with the formation of large areas of sand dunes strewn with ventifacts. Glacial melt streams converge to form a large river which meanders westwards to Lake Vanda. It is estimated that during the summer melt period at least 90% of this water is derived from the Piedmont Glacier alone. Lake Vanda has a depth of 250 feet. Thick ice covers the lake throughout all seasons except for marginal belts of free water and short leads which developed in January. Eight pronounced shorelines up to 160 feet above the present lake level were recorded on the northern shores of Lake Vanda. The highest of these corresponds to a maximum lake length of 7 miles, in contrast to the present length of $4\frac{1}{2}$ miles. Owing to shortage of time, no attempts were made to measure movement or régime of local glaciers.

International Meeting

SPECIAL COMMITTEE ON ANTARCTIC RESEARCH

The third meeting of SCAR was held in Canberra, Australia, in March. The Committee, which was set up to continue cooperative Antarctic research beyond the I. G. Y., discussed the programme to complete an accurate map of Antarctica, communications between Antarctica and the rest of the world, and coordination of biological research. The committee welcomed the Australian Government's action in creating an international weather analysis centre in Melbourne. The centre will compile circumpolar weather charts and carry out various analyses.

Future International Meetings

U. G. G. I. (INTERNATIONAL UNION FOR GEODESY AND GEOPHYSICS) INTERNATIONAL ASSEMBLY, HELSINKI, JULY 1960.

The Commission for Snow and Ice of the Association for Hydrology will be meeting at Helsinki. It was decided at Toronto that again there should be no set questions for discussion, in view of the rapid development of glaciological studies. British members of this Society who are active in glaciological research and who contemplate submitting papers at Helsinki should communicate in the first instance with the British National Correspondent, Professor Gordon Manley, Bedford College, Regent's Park, London N. W. 1.

COURSE FOR MOUNTAIN AND POLAR RESEARCH 1959

The course will be held under the leadership of Professors Kinzl and Finsterwalder from 23-30 August at Obergurgl, Austria. The course consists of instructions in photogrammetry on the glaciers, morphological and geographical researches around the glaciers, and a study of "block flow". The instruction is aimed to help research on glaciers and in polar regions, and also deals with problems raised at the Chamonix Symposium in 1958. The numbers of participants is limited. As the course is conducted with the support of the German and Austrian Alpine Clubs, the participants should become members of these bodies. The charge is DM 40, and the charges for rooms can be obtained on application in the first place to the Secretary of the British Glaciological Society.

INTERNATIONAL SYMPOSIUM ON THE GEOLOGY OF THE ARCTIC

The Symposium will be held in Calgary, Alberta, Canada, under the auspices of the Alberta Society of Petroleum Geologists, from 11 - 13 January, 1960. It is hoped to arrange sessions on glacial geology and glaciology, permafrost, oceanography, sea ice, climate and weather. Further information may be obtained from the Secretary of the British Glaciological Society.

Members' News

Dr T. E. Armstrong has been elected a Fellow of the Arctic Institute of North America.
Prof. G. E. Blackman has been elected a Fellow of the Royal Society.
A. P. Crary has been appointed Chief Scientist of the newly established U.S. Antarctic research programme within the National Science Foundation.
Prof. F. Debenham was awarded an honorary doctorate at Sydney University.
Dr Earl G. Droessler of the National Science Foundation was awarded an honorary doctorate by Loras College. He recently became Program Director for Atmospheric Science in the National Science Foundation, a newly established position.
Sir Vivian Fuchs was awarded an honorary doctorate by Cambridge University.
Dr H. J. Harrington has left his post in New Zealand and has taken up a post at the University of New England, Armidale, N.S.W. Australia. I. C. McKellar has agreed to act as correspondent for New Zealand in his stead.
Prof. L. Hawkes of Bedford College has been elected as a Councillor of the Royal Society.
Dr Calvin J. Heusser, of the American Geographical Society's staff, has recently completed a project, sponsored by the Office of Naval Research, to reconstruct the late Pleistocene environment of the North Pacific coast by means of pollen analysis.
Prof. H. Hoinkes gave a lecture in Zürich in February on "Research in the Antarctic during the I. G. Y. "
Prof. S. E. Hollingworth has been awarded the Murchison Medal of the Geological Society for his contributions to stratigraphy, glaciology and geomorphology of N. W. England and the Midlands.
K. Kusunoki is working on Fletcher's Ice Island T-3, for the Arctic Institute of North America.
R. F. Legget writes: "I was particularly interested in the reproduction on page 290 of the October issue of the Journal of the snapshot of Professor Mercanton and Dr Church since this is clearly taken from the print of one of my photographs which I took in Oslo. I have the negative and so will be glad to supply copies to members who might like to have direct prints of this interesting snapshot".
Dr J. F. Nye has been appointed Visiting Professor at the California Institute of Technology, and will be in the U.S.A. until the end of 1959.
Sir Raymond Priestley has been awarded the Founder's Medal of the Royal Geographical Society.
Gerald Seligman, President of the British Glaciological Society and Editor of the Journal of Glaciology, has been awarded the Victoria Medal of the Royal Geographical Society for contributions to glaciological research. Mr Seligman has been made an honorary member of the Appalachian Mountain Club, Boston, Mass., U.S.A.
Dr Paul A. Siple was awarded an honorary doctorate at Boston University.
Dr P. J. Stephenson is working for U. N. E. S. C. O. in Lahore, Pakistan. He is helping to set up a Department of Geology at the University of the Panjab.
Dr A. L. Washburn has been appointed a governor of the board of the Arctic Institute of North America, and has been elected to the Council of the American Geographical Society.

British National Committee on Antarctic Research. The following members of the Society are on this Committee: Sir Raymond Priestley (Chairman), Dr G. de Q. Robin (Secretary), Sir Vivian Fuchs, Mr Gerald Seligman, Prof. F. W. Shotton and Sir James Wordie. Sir Raymond Priestley, Dr G. de Q. Robin and Prof. F. Debenham represented the Committee at the third meeting of S. C. A. R. in Canberra, March 1959.

S. C. A. R. glaciological programme. This programme was given strong support by the British National Committee. In particular, the value of examining the ice from deep pits and bore holes for estimating the age of the lowest ice was stressed.

The American Journal of Science announces the establishment of a Radiocarbon Supplement to be devoted to publication of radiocarbon date lists from laboratories in various parts of the world. Professors Richard Foster Flint and Edward S. Deevey are the editors. The office is the same as that of the American Journal of Science - Box 1905A, Yale Station, New Haven, Conn., U.S.A. Volume 1 of the Supplement was published in May 1959, and one volume will appear each year. The price of volume 1 is \$2.50.

Reviews

THE CLIMATE OF BRITISH COLUMBIA AND THE YUKON TERRITORY. W.G.KENDREW and D.KERR, ix,222 p., plates, illus., 25 cm.
THE CLIMATE OF CENTRAL CANADA. W.G.KENDREW and B.W.CURRIE, ix, 194 p., illus., 25 cm.

These two works, published in Ottawa in 1955 by Edward Cloutier, Queen's Printer and Controller of stationery, have been condensed from more detailed reports. They give full accounts of every aspect of the varying climates of the different regions. The sections on topography, and its resulting influence on local climate, and the details of snowfalls will be of particular interest. There is a brief reference to permafrost in the colder regions, with a map.

The volumes can be obtained on application to the Supervisor of Government Publications, Department of Public Printing & Stationery, Ottawa, the price being \$1.00 per volume. (Presented by the Publishers)

ZEITSCHRIFT FÜR GLETSCHERKUNDE UND GLAZIALGEOLOGIE. Ed. R. von KLEBELSBERG. Innsbruck, Universitäts-Verlag Wagner, Bd.4, Ht. 1-2, 1958, 168 p., 21 text figures, 17 plates, and 1 map inset., 24 cm.

This publication is of the usual high standard. There is a preponderance of pure glaciological papers, but there are also several geomorphological, and glacial geological contributions.

An important feature is that at the end of some articles, instead of the bare translation of the German abstract into English, there is a much extended English summary of page length or more.

GEOGRAPHISCHE FORSCHUNGEN, SCHLERN-SCHRIFTEN, No.190, Innsbruck. Ed. R. von Klebelsberg, assisted by H. Paschinger. 325 p., 23 plates, 28 maps, 64 illus., 24 cm. Price 185 schillings.

This large work, in honour of the 60th birthday of Professor Hans Kinzl, contains among its more purely geographical articles, several important papers on glaciological subjects to which reference will be made in due course in the glaciological literature section of the Journal of Glaciology. It includes a congratulatory preface by Professor H. Paschinger to Professor Kinzl, and an article by the Editor on Professor Kinzl's career and the many services he has rendered to science. This very considerable work is supported by subventions from several public bodies and the Austrian Alpine Club. (Presented by Professor H. Paschinger)

ATLANTE POLARE. Silvio Zavatti, Bergamo. Poligrafiche Bolis, 1958. 19 plates, 34 cm. £3.15.0d.

The very clearly drawn maps make this a valuable book for general reference. In addition to the general map of the Arctic, full page maps are devoted to Greenland, Svalbard, the whole of the Russian possessions in the Arctic and Sub-Arctic. There are also large scale maps of the Russian islands in the Arctic Ocean.

In addition to a general map of the Antarctic (showing the tracks of explorers from Weddell in 1820 to Fuchs in 1958) there are four double page maps of Antarctica showing elevations of the ice above sea level, and a very large number of soundings of ocean depths around the Continent. Other maps show the more important of the Antarctic Islands, and the Chilean and Argentine claims. (Presented by the Publishers)

DIE ALPEN IN SCHNEE UND EIS. Ed. HEINZ MÜLLER-BRUNKE. Text by W. Pause. Augsburg, Adam Kraft-Verlag, 1958. 45 p., 129 plates, 28 cm. Linen DM 26.80, Half leather DM 30.80.

These full-page reproductions are superb. Most have been taken in the German and Austrian Alps, but there are also some from Switzerland and Italy.

The text includes warnings useful to those not familiar with the mountains - avalanches, cornices. It also gives notes on the various regions covered by the photographs, and descriptions of the actual terrain shown by them. The captions of the photographs are in

German, with translations in English. As they are winter photographs they naturally do not show the glaciers very clearly, but as a popular work of art this book is outstanding, and should be of special appeal to the mountaineer and ski-mountaineer. (Presented by the Publisher)

GEOLOGY OF THE GREAT LAKES. JACK L. HOUGH. Urbana, Ill., University of Illinois Press. 1958. 313 p., 75 illus., 24 cm. \$8.50.

The author is Professor of Geology at the University of Illinois. The work gives a description of the physical characteristics of the lakes, the processes operating in them, the geological history of the district and the events which led to the development of the lakes. Following the pre-glacial history of the region a chapter is devoted to its glacial history and the various stages of the Pleistocene glaciation. This alone should make the book worth reading by glaciologists. The later technical part of the work is now published for the first time and is certain to be of interest to geologists and others. The book is well presented, the illustrations are excellent. The bibliography occupies 11 1/4 pages. (Presented by the Publishers)

POLAR ATMOSPHERE SYMPOSIUM. Part I. Meteorology Section. Ed. R. C. Sutcliffe. London, New York, Paris, Los Angeles, Pergamon Press, 1958. 341 p., illus., maps, 25 cm. 70s.

Part I of this work in 3 volumes has been compiled under the editorship of Dr R. C. Sutcliffe, F. R. S. It records the Symposium on Polar Atmosphere held at Oslo in July 1956, beginning with an opening address by the Chairman, F. Wattendorf, and a welcoming speech by the late H. U. Sverdrup. Although the emphasis is throughout on meteorology, there are several other chapters of value to glaciologists and other non-meteorologists operating in Polar regions.

There are several chapters on Arctic climate and weather; other chapters deal with "whiteout", with visibility and with sea ice reconnaissance and forecasting. These and many more of the purely meteorological will interest laymen and scientists alike. The volumes are well presented and printed and have numerous diagrams. (Presented by the Publishers)

VENTURE TO THE ARCTIC. Ed. R. A. Hamilton. Harmondsworth, Middlesex, Penguin Books, 1958, 282 p., illus., maps, 18 cm. 5/-.

This is a description of the whole of the scientific work of the British North Greenland Expedition 1952-54 set out in the simplest form and combined with some narrative. Much of the glaciological work has appeared in the Journal of Glaciology, but this more popular account dealing, as it does, with other disciplines and giving the background of the Expedition will, in spite of its rather late appearance, make interesting reading, not only for scientists but for many others interested in exploration. It also has the virtue of its low price.

The following extract has been taken from a review of the Journal of Glaciology which appeared in the NEW ZEALAND ALPINE JOURNAL, Vol. 17, No. 45, 1958, p. 480-81:-

In Britain there are no glaciers and precious little semi-permanent snow and ice, so of course it is natural that a Glaciological Society should be formed there. A journal that is a monument to the enthusiasm and internationalism of its honorary editor, Gerald Seligman, has been published by the Society since 1945, and has now run to 22 numbers that are an unusual mixture of geography and physics, a mixture that is inherent in the subject. The geographic content is mainly of interest to mountaineers because of numerous photographs of glacierised* alpine regions of which descriptions are not encountered in ordinary reading. The physical papers are too mathematical for the average reader; he will prefer to wait for a populariser who can do for the world of solid water what Rachel Carson and others have done for the world of liquid water. Indeed a successful populariser would do a great service not only to the field of mountain sports, but also to a thousand or two full-time workers in the field of glaciology. The world output of meaty papers on the subject is now so great, and is written in so many languages in addition to Russian and English, that merely to list the authors and titles takes 4 to 9 pages of 6-point type in each six-monthly issue of the Journal of Glaciology, under the following headings: general glaciology, glaciological instruments and methods, physics of ice; land ice, glaciers, ice shelves, icebergs, sea, river and lake ice; glacial geology, frost action on rocks and soil, frozen ground, permafrost; meteorological and climatological glaciology, and snow.

* "Glacierised" means glacier-covered, whereas "glaciated" now means formerly glacier-covered.

Other Books Received

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|---|--|
| Donor | IGY Glaciological Report Series, No. 1. Issued by IGY World Data Center A. Glaciology. New York, American Geographical Society 1958. 27 cm. (Preliminary report of work done on glaciers in N. America and Antarctica; reports of 14 groups) |
| | 25 Jahre hochalpine Forschungsstation Jungfrauojoch, 1931-1956. Experientia Supplementum VI. Birkhäuser Verlag, Basle, Stuttgart, 1957. 86 p., illus., 24 cm. |
| Purchased | T. W. CHAUNDY and others. The Printing of Mathematics. London, Oxford University Press 1957. 109 p., 12 cm. 15s. 0d. |
| DET NORSKE
METEOROLOGISKE
INSTITUTT | Lufttemperaturer i Norge 1861-1955. Middelveier. Maps, 288 p., 29 cm. 20.00 KR. |
| " | Lufttemperaturer i Norge 1861 - 1955. Maneds og Arsmiddelttemperaturer - Maksimums og Minimumstemperaturer. 366 p., 29 cm. 25.00 KR. |
| U.S. ARMY CORPS
OF ENGINEERS | RYDER, Theodore. Compilation and Study of Ice Thicknesses in the Northern Hemisphere 1952-1953. New York, American Geographical Society. 28 cm. |
| " | Final Report on Development of Ice Mechanics Test Kit for Hydrographic Office, U. S. Navy. Prepared by Soils, Foundation and Frost Effects Laboratory, Boston. 1950. 27 cm. |
| " | Depth of Snow Cover in the Northern Hemisphere. Prepared by Arctic Construction and Frost Effects Laboratory, Boston. 1954. 35 cm. 47 p. |
| " | Development of Power Ice Coring Rig. Prepared by Arctic Construction and Frost Effects Laboratory, Boston, 1954. 36 p. 37 cm. |
| PAL'GOV, N. N. | Voprosy Geografii Kazakhstana. Alma Ata, Vyp. 3, 1959. 221 p., illus. |
| Purchased | ARMSTRONG, T. The Russians in the Arctic. London, Methuen & Co. Ltd., 182 p., illus., 21 cm. 22/6d. |
| BUTZER, K. W. | Quaternary Stratigraphy and Climate in the Near East. Bonn, Bonner Geographische Abhandlungen, Heft 24. 158 p., plates, illus., 23 cm., DM 11.20. |

The Society's Library

Works received for the Society's Library since November 1958.

We thank the following authors or donors of papers and pamphlets and regret that it is impossible to acknowledge them individually. The glaciological works with their complete references will be listed in "Glaciological Literature" at the end of the Journal of Glaciology and found in the Society's collection of glaciological papers.

- | | |
|------------------------------|------------------------------------|
| Bauer, A. (3 papers) | Lorenzo, J. L. |
| Butzer, K. W. (3 papers) | Markov, K. K. |
| Field, W. O. | Meier, M. F. |
| Finsterwalder, R. (3 papers) | Nye, J. F. |
| Flint, R. F. | Nusser, F. |
| Fortsch, O. (3 papers) | Paschinger, H. (6 papers) |
| Fristrup, B. (3 papers) | Péguy, C. H. (9 papers) |
| Goedecke, E. (3 papers) | Pewe, T. L. (2 papers) |
| Gold, L. W. | de Quervain, M. |
| Hoffman, W. von | Renaud, A. (3 papers) |
| Kick, W. | Sharp, R. P. (4 papers) |
| Kobayashi, T. | Steinemann, S. |
| Kosiba, A. | Swithinbank, C. W. M. |
| Kuhn, W. | Tabata, T. (3 papers) |
| Kusunoki, K. | Tallis, J. H. |
| Lliboutry, L. (9 papers) | Washburn, A. L. |
| | Wordie, Sir James (several papers) |

Arctic Institute Greenland Expedition 1958
 Agricultural College of Norway
 Air Force Cambridge Research Center
 American Meteorological Society
 Association Internationale d'Hydrologie Scientifique (3 items)
 Chicago Mountaineering Club
 Defence Research Board of Canada (3 items)
 Department of Mines & Technical Surveys, Canada.
 Division of Building Research, Canada.
 Expéditions Polaires Françaises (9 items)
 Falkland Islands Dependencies Meteorological Service
 Geography Dept., Makerere College, University College of East Africa.
 Hydrographic Central Bureau, Vienna.
 International Conciliation
 Meteorological Office
 National Research Council of Canada (3 items)
 Physikalisch-Meteorologisches Observatorium, Davos.
 S. I. P. R. E. (10 items)
 Société Hydrotechnique de France (Sundry items)
 The Royal Society
 Tokyo University of Fisheries
 U. S. Army Attaché (2 items)
 U. S. Geological Survey - Department of the Interior
 U. S. Navy Hydrographic Department
 U. S. Navy Task Force 43

The Society is also very grateful for all the valuable publications sent in exchange for the Journal of Glaciology.

President's Report

(SPRING 1958 - SPRING 1959)

(delivered at the Annual General Meeting, 23 April 1959)

The best pointer to the progress of the Society is the circulation of its Journal which goes to all members and subscribing libraries and institutions.

The figures to date are as follows:

Members	433	
Subscribers	421	
Free & Exchange	58	
TOTAL	<u>912</u>	as against 876 this time last year

In 1957 the members numbered 394 and have thus increased by 39: the subscribers number 5 less.

It should be explained that the list of subscribers (libraries and institutions) published in March 1959 do not show the several multiple orders for the Journal from certain subscribers - for example, one subscriber in China is supplied with 28 copies.

The Journals sent out as "Free and exchange" must be considered to be bread cast upon the waters, for in return for them we receive various works for our library; in many cases, too, they serve as useful publicity.

It will be seen from these figures that we have not suffered from raising our subscription rates. As you will hear presently from the Honorary Treasurer, our financial position is now stronger. There is a surplus for 1958 which we shall devote conservatively and carefully to some important purposes which have been in abeyance for lack of funds. I take this opportunity of thanking Dr Bertram for his help as Treasurer.

The Symposium on the Physics of the Movement of Ice, held at Chamonix last September, brought us in quite a number of new members. I make no apology for saying again this year, that I hope that those members who hear, or read, this report, will do what they can to bring into the Society as many of their colleagues or acquaintances as are likely to be interested in our work.

The two issues of the Journal of Glaciology produced in 1958 contained 70 and 100 pages respectively, the latter figure being the highest we have yet been able to publish. The first issue of the present year was longer still (112 pages). The International Geophysical Year has brought us in much material and more is expected, because some research workers are still in the field. We are grateful for a special grant from the Royal Society to help with the publication of this material.

At one time we were only able to accept comparatively short papers, but I would like to repeat what I said last year, namely that we can now accept longer articles, and indeed we have already published some, and will be publishing more.

With the greater size of the Journal, editing has become rather a heavy task, especially as it is by no means the only work that at present falls to the lot of the Honorary Editor. We are therefore trying an experiment to lighten this load. Dr J.M.Glen, as Honorary Assistant Editor, has been of the very greatest help to the Editor, but the latter feels that he cannot transfer any more work to Dr Glen than he has at present. So it was decided to invite Dr R.J.Adie as an extra assistant. I am glad to say Dr Adie has agreed to help.

While speaking of the Journal I must also say how grateful we are to Miss D.M.Johnson for her assistance in many ways, particularly in checking the references in articles.

One last word about the Journal - in deference to wishes expressed by the French, we are endeavouring to provide translations of the abstracts in both French and German.

Referring to the Society's library, steps are being taken to store back numbers of various journals in some other place than at Biddenden, where they will, we hope, be more readily available to members in Great Britain and Ireland on loan. Current issues of these journals and all books will remain for the present at Biddenden, but can be borrowed from there. As soon as possible we hope to publish complete lists of the contents of the library, both books and Journals, for circulation to members.

During 1958 ten meetings of the Society for the reading of papers were held - three each in Cambridge and Birmingham, and two each in Oxford and London.

The Glaciological Research Sub-Committee, under the guidance of Dr Glen, has been active during the past year. A full report of its work was published in the March issue of the Journal of Glaciology. The Sub-Committee is always interested in hearing from members (or indeed others) who are planning glaciological research, or who have done research work and want to let others know their results.

Last year I referred to the World Data Centre of the I.G.Y. for Glaciology, which has been entrusted to our Society; the other two being in the U.S.A., and the U.S.S.R. respectively.

The work at our centre is now increasing considerably, and will employ one person for half the week; it will be undertaken by our Secretary under the direction of Professor G. Manley and Dr G.de Q.Robin. We acknowledge a Grant from the Royal Society in furtherance of this work.

I also wish to acknowledge the debt we owe to Dr Robin as Director of the Scott Polar Research Institute, for the many facilities given us. These are not confined to the housing in the Institute of our secretariat, which itself is of vital value to the Society. In addition, we receive much friendly help in many different ways from Dr Robin and members of his staff.

Finally, I want to thank all those whom I have not mentioned by name, who have helped the Society in many different ways, and particularly those, including our Secretary, who give me continued and willing help in my several tasks.

SUMMARY OF THE HON. TREASURER'S REPORT.

On the 1958 workings there was a surplus of £190. This resulted mainly from the increased income derived from the raised subscription rate, and also from the increased sales of Journals and the Index to Volume 2 of the Journal. The higher income made it unnecessary for us to apply for a Grant-in-Aid from the Royal Society. It has been possible as a result of this improved financial position to print larger Journals - a policy we hope to continue in 1959 and of which we are sure our members approve.

We received grants from the Nuffield Foundation, to increase the circulation of the Journal, and from the Royal Society, for the running of the I.G.Y. World Data Centre in glaciology.

New Members

New members of the Society since 1 January 1959 are:

- Andrews, J. T., McGill Sub-Arctic Research Laboratory, Schefferville, P.Q., Canada.
Case, James B., Division of Geodetic Sciences, 164 W. 19th Avenue, Columbus 10, Ohio,
U.S.A.
- Davis, Thomas C., Jr., 85 Stewart Road, Short Hills, N.J., U.S.A.
Fordham, Derek, 22 Maclean Road, Honor Oak Park, London S. E. 23.
- Grant, Miss Gladys, Cangallo 315, Buenos Aires, Argentina.
Kingery, Professor W. D., Massachusetts Institute of Technology, Cambridge 39, Mass.,
U.S.A.
- Landauer, Dr J. K., University of California, Radiation Laboratory, Livermore, Calif.,
U.S.A.
- Larsson, Peter, Department of Geography, McGill University, 539 Pine Avenue W., Mon-
treal, P. Q., Canada.
- Muir, Donald E., 774 Independence, Denver 15, Col., U.S.A.
Mundy, R. H., 15 The Drive, Hounslow, Totton, Hants.
Paschinger, Professor Dr H., Geographisches Institut der Universität, Graz, Universitäts-
platz 2/II, Austria.
- Paterson, W. S. B., 1572 Summerhill Avenue, Montreal 25, P. Q., Canada.
Reid, John R., Jr., Department of Geology, Mount Union College, Alliance, Ohio, U.S.A.
Roberts, J., Lea Hurst, 1 Owen Street, Accrington, Lancs.
Shreve, Ronald L., Department of Geology and Institute of Geophysics, University of Calif-
ornia, Los Angeles 24, Calif., U.S.A.
- Shvestov, P. F., Director, Obruchev Institute for the Study of Frozen Soil, Bolshoi Cheras-
skii Perenlok 20/10, Moscow, U.S.S.R.
- Taylor, Lawrence D., 875 Wedgewood Drive, Apt. 7, Columbus 4, Ohio, U.S.A.
Tuck, John, Jr., Scott Polar Research Institute, Lensfield Road, Cambridge.
Ware, A. B., Withyhurst, Uppingham, Rutland.

BRITISH GLACIOLOGICAL SOCIETY
c/o Scott Polar Research Institute, Lensfield Road, Cambridge

President and Honorary Editor of the Journal of Glaciology G. SELIGMAN

Secretary: MRS. H. RICHARDSON

DETAILS OF MEMBERSHIP

Membership is open to all who have scientific, practical or general interest in any aspect of snow and ice study. Forms for enrolment can be obtained from the Secretary. No proposer or seconder is required. Annual subscription rates are as follows:

Private members—	Sterling:	£2 0s. 0d.
	U.S. dollars:	\$6.00
Junior members (under 23)	Sterling:	15s.
	U.S. dollars:	\$2.40
Institutions, libraries—	Sterling:	£2 10s. 0d.
	U.S. dollars:	\$7.30

(The dollar rates include Bank conversion charges)

Further details may be found in the *Journal of Glaciology*,
published in March and October.

I C E

Editor: MRS. H. RICHARDSON

This news bulletin is issued free to all members and subscribers of the British Glaciological Society, and is published in January and July. Contributions should be sent to Mrs. H. Richardson, c/o Scott Polar Research Institute, Lensfield Road, Cambridge, to arrive not later than the 15 November and 15 May.

