

GLACIOLOGICAL LITERATURE

THIS selected list of glaciological literature has been prepared by J. W. Glen with the assistance of T. H. Ellison, W. B. Harland, Miss D. M. Johnson, and the Staff of the Scott Polar Research Institute. Its field is the scientific study of snow and ice and of their effects on the earth; for the literature on polar expeditions, and also on the "applied" aspects of glaciology, such as snow-ploughs, readers should consult the bibliographies in each issue of the *Polar Record*. For Russian material the system of transliteration used is that agreed by the U.S. Board on Geographic Names and the Permanent Committee on Geographical Names for British Official Use in 1947. Readers can greatly assist by sending reprints of their publications to the Society, or by informing Dr. Glen of publications of glaciological interest.

GENERAL GLACIOLOGY

- [GLACIOLOGY: PERIODICALS.] *Materialy Glyatsiologicheskikh Issledovaniy. Khronika. Obsuzhdeniya* [Material of Glaciological Studies. News. Discussions] (Moscow, Akademiya Nauk SSSR, Institut Geografii [Academy of Sciences of the U.S.S.R., Institute of Geography]), Vyp. 1, 1961, 179 p. [New series of duplicated reports containing short reports of Soviet glaciological work, bibliographies, translations of Western papers, and news and notes.]
- KOTLYAKOV, V. M. Annotirovannyi spisok sovetskoy literatury po glyatsiologii (1956–1960 gg.) [Annotated list of Soviet literature on glaciology (1956–60)]. *Materialy Glyatsiologicheskikh Issledovaniy. Khronika. Obsuzhdeniya* [Material of Glaciological Studies. News. Discussions], Vyp. 3, 1961, p. 41–133. [661 entries arranged broadly by subject, and with subject and author indexes. Includes Soviet Antarctic work.]
- NANGERONI, G. Note ed osservazioni sull'isola Spitsberg Occidentale. *Rivista Geografica Italiana*, Vol. 67, No. 4, 1960, p. 373–92. [General description of land and sea ice and periglacial features in Vestspitsbergen.]
- SELIGMAN, G. Glaciology today. *Revue Canadienne de Géographie*, Vol. 13, Nos. 3–4, 1959, p. 209. [Reply to C. Laverdière's criticism, *ibid.*, Vol. 13, Nos. 1–2, 1959, of editorial in *Journal of Glaciology*, Vol. 3, No. 25, 1959, p. 337.]

GLACIOLOGICAL INSTRUMENTS AND METHODS

- ARNOLD, K. C. An investigation into methods of accelerating the melting of ice and snow by artificial dusting. (In Raasch, G. O., ed. *Geology of the Arctic. Proceedings of the first International Symposium on Arctic Geology*. Toronto, University of Toronto Press, 1961, Vol. 2, p. 989–1013.) [Various materials and densities spread onto snow, sea ice and lake ice.]
- GROSVAL'D, M. G. Nablyudeniya s pomoshch'yu kriokinegrafa za kolebaniyami skorosti deformatsii v sdvigovoy polose lednike [Observations with a cryokinegraph of variations in speed of deformation in the dislocation zone of a glacier]. *Materialy Glyatsiologicheskikh Issledovaniy. Khronika. Obsuzhdeniya* [Material of Glaciological Studies. News. Discussions], Vyp. 3, 1961, p. 135–41. [Instrument for direct recording of glacier flow near ice margin.]
- KELLER, G. V., and FRISCHKNECHT, F. C. Induction and galvanic resistivity studies on the Athabasca Glacier, Alberta, Canada. (In Raasch, G. O., ed. *Geology of the Arctic. Proceedings of the first International Symposium on Arctic Geology*. Toronto, University of Toronto Press, 1961, Vol. 2, p. 809–32.) [Method for measuring ice thickness.]
- KOJIMA, K. Thin section of snow cut by a heated wire. *Contributions from the Institute of Low Temperature Science*, No. 16, 1960, p. 47–59. [Apparatus for preparing microscope samples.]

PHYSICS OF ICE

- KUROIWA, D. A study of ice sintering. *Tellus*, Vol. 13, Nr. 2, 1961, p. 252–59. [Adhesion of ice at temperatures below 0° C. from point of view of sintering.]
- SMITH, A. U. *Biological effects of freezing and supercooling*. London, Edward Arnold, [c1961]. xi, 462 p. (Monographs of the Physiological Society, No. 9.)
- SUGAWARA, K. Chemistry of ice, snow and other water substances in Antarctica. *Antarctic Record* (Tokyo), No. 11, 1961, p. 116–20. [Analysis of samples collected near Syowa Base, Dronning Maud Land. In English with Japanese abstract.]
- WALZ, E., and MAGUN, S. Die mechanische Relaxation in Eis-NH₄F-Mischkristallen. *Zeitschrift für Physik*, Bd. 157, Ht. 2, 1959, p. 266–74. [Measurement of damping at various temperatures.]

LAND ICE. GLACIERS. ICE SHELVES

- AMBACH, W. Die Bedeutung des aufgefrorenen Eises (superimposed ice) für den Massen- und Energiehaushalt eines Gletschers. *Zeitschrift für Gletscherkunde und Glazialgeologie*, Bd. 4, Ht. 3, 1961, p. 169–89. [Detailed study of heat balance at surface of an Alpine glacier including refreezing of melt water and heat conduction through the ice.]
- ANDERSON, V. Geographic features observed on the Marie Byrd Land traverse, 1957–1958. *I.G.Y. Glaciological Report* (New York), No. 4, 1961, p. 143–49. [Includes list of locations and elevations of peaks in the Sentinel Mountains.]
- BERGER, H. Beitrag zur Hochgebirgsforschung. Bericht über den Gletscherkurs 1959 in Obergurgl, Tirol. *Mitteilungen der Österreichischen Geographischen Gesellschaft*, Bd. 102, Ht. 1, 1960, p. 87–93. [Account of present and some past work on alpine research at Obergurgl and elsewhere with photographs showing marked retreat of the Gurgler Ferner.]
- BESCHEL, R. E. Dating rock surfaces by lichen growth and its application to glaciology and physiography (lichenometry). (In Raasch, G. O., ed. *Geology of the Arctic. Proceedings of the first International Symposium on Arctic Geology*. Toronto, University of Toronto Press, 1961, Vol. 2, p. 1044–62.)

- BROCKAMP, B. Beobachtungen an einer Druckzone auf dem Pasterzengletscher. *Zeitschrift für Gletscherkunde und Glazialgeologie*, Bd. 4, Ht. 3, 1961, p. 234-36. [Observation of the growth of a mound on a glacier.]
- FRISTRUP, B. Danish glaciological investigations in Greenland. (*In Raasch, G. O., ed. Geology of the Arctic. Proceedings of the first International Symposium on Arctic Geology*. Toronto, University of Toronto Press, 1961, Vol. 2, p. 735-46.) [General account of Danish I.G.Y. programme on four glaciers in Greenland.]
- GROSVAL'D, M. G., and KRENKE, A. N. Issledovaniya sovremennogo oledenedeniya Zemli Frantsa Iosifa [Investigation of the present ice cover of Zemlya Frantsa Iosifa]. *Izvestiya Akademii Nauk SSSR. Seriya Geograficheskaya* [*News of the Academy of Sciences of the U.S.S.R. Geographical Series*], 1961, No. 2, p. 26-36. [Soviet I.G.Y. studies.]
- HATTERSLEY-SMITH, G. The ice cover of northern Ellesmere Island. *Annals of the New York Academy of Sciences*, Vol. 95, No. 1, 1961, p. 282-89. [Canadian I.G.Y. studies.]
- HATTERSLEY-SMITH, G. Some glaciological studies in the Lake Hazen region of northern Ellesmere Island. (*In Raasch, G. O., ed. Geology of the Arctic. Proceedings of the first International Symposium on Arctic Geology*. Toronto, University of Toronto Press, 1961, Vol. 2, p. 791-808.) [Canadian I.G.Y. mass balance studies on Gilman Glacier and neighbourhood.]
- [ITALY: GLACIERS.] *Catato del ghiacciai italiani, Anno Geofisico 1957-1958. Vol. 2. Ghiacciai del Piemonte*. Torino, Consiglio Nazionale delle Ricerche, Comitato Glaciologico Italiano, 1961. 324 p. [List of glaciers with notes, maps and photographs.]
- KAPITSA, A. P. Dinamika i morfologiya lednikovogo pokrova tsentral'nogo sektora vostochnoy Antarktidi [Dynamics and morphology of the ice cover of the central sector of eastern Antarctica]. *Trudy Sovetskoy Antarkticheskoy Ekspeditsii* [*Transactions of the Soviet Antarctic Expedition*], Tom 18, 1961, 93 p. [Character of land ice in coastal regions between long. 80° and 105° E.]
- KOTLYAKOV, V. M. Skhema intensivnosti pitaniya lednikovogo pokrova Antarktidi [Rate of accumulation of the Antarctic Ice Cap]. *Informatsionnyy Byulleten' Sovetskoy Antarkticheskoy Ekspeditsii* [*Information Bulletin of the Soviet Antarctic Expedition*], No. 25, 1961, p. 19-22. [Map showing accumulation over Antarctica and discussion.]
- LLIBOUTRY, L., and VIVET, R. Épaisseurs de glace et débit solide de la Vallée Blanche supérieure (Massif du Mont-Blanc). *Comptes Rendus Hebdomadaires des Séances de l'Académie des Sciences* (Paris), Tom. 252, No. 15, 1961, p. 2274-76. [Depth 175 m. including 30 m. of névé and snow; annual run-off 270 cm. water equivalent; glacier in equilibrium.]
- LOEWE, F. Weiteres über den Firnstoss. *Zeitschrift für Gletscherkunde und Glazialgeologie*, Bd. 4, Ht. 3, 1961, p. 227-28. [Discussion of origin of firn tremors experienced in the Antarctic.]
- MEIER, M. F. Mass budget of South Cascade Glacier, 1957-60. *U.S. Geological Survey. Professional Paper 424-B*, 1961, p. B-206-B-11. [Detailed study of mass budgets.]
- MEIER, M. F., and TANGBORN, W. V. Distinctive characteristics of glacier runoff. *U.S. Geological Survey. Professional Paper 424-B*, 1961, p. B-14-B-16. [Comparison of run-off data from two glacier basins and three others.]
- NOBLES, L. H. Surface features of the ice-cap margin, northwestern Greenland. (*In Raasch, G. O., ed. Geology of the Arctic. Proceedings of the first International Symposium on Arctic Geology*. Toronto, University of Toronto Press, 1961, Vol. 2, p. 752-67.) [Description of surface features and discussion of their causes.]
- WEBER, J. R. Comparison of gravitational and seismic depth determinations on the Gilman Glacier and adjoining ice-cap in northern Ellesmere Island. (*In Raasch, G. O., ed. Geology of the Arctic. Proceedings of the first International Symposium on Arctic Geology*. Toronto, University of Toronto Press, 1961, Vol. 2, p. 781-90.) [Good agreement.]
- ZOTIKOV, I. A. Izmereniye geotermicheskogo potoka tepla v Antarktide [Measurement of geothermal heat flow in Antarctica]. *Informatsionnyy Byulleten' Sovetskoy Antarkticheskoy Ekspeditsii* [*Information Bulletin of the Soviet Antarctic Expedition*], No. 29, 1961, p. 30-32. [Temperature gradient in 86 m. pit at Mirnyy.]

ICEBERGS, SEA, RIVER AND LAKE ICE

- CHIKOVSKIY, S. S. O vliyaniy temperatury morskogo l'da na yego prochnost' [Influence of temperature of sea ice on its strength]. *Problemy Arktiki i Antarktiki* [*Problems of the Arctic and Antarctic*], 1961, Vyp. 8, p. 93-96. [Results of field and laboratory experiments on sea ice.]
- GUDKOVICH, Z. M. Ob osnovnykh zakonomernostyakh dreyfa l'dov v tsentral'nom polyarnom basseyne [Main principles of ice drift in the central polar basin]. *Materialy Konferentsii po probleme "Vsaimodeystviye atmosfery i gidrosfery v severnoy chasti Atlanticheskogo Okeana"* [*Materials of the Conference on the problem "Interaction of atmosphere and hydrosphere in the northern part of the Atlantic Ocean"*], Vyp. 3-4, 1961, p. 75-88.
- MARKHAM, W. E. Forecasting sea ice conditions. (*In Raasch, G. O., ed. Geology of the Arctic. Proceedings of the first International Symposium on Arctic Geology*. Toronto, University of Toronto Press, 1961, Vol. 2, p. 1112-18.) [Discussion of ice types, ice movement and current methods of observing and forecasting.]
- PLOUFF, D., and others. Geophysical studies on IGY drifting station Bravo, T-3, 1958 to 1959, by D. Plouff, G. V. Keller, F. C. Frischnecht and R. R. Wahl. (*In Raasch, G. O., ed. Geology of the Arctic. Proceedings of the first International Symposium on Arctic Geology*. Toronto, University of Toronto Press, 1961, Vol. 1, p. 709-16.) [Includes measurements of the thickness of the ice island.]
- SMITH, D. D. Sequential development of surface morphology on Fletcher's Ice Island, T-3. (*In Raasch, G. O., ed. Geology of the Arctic. Proceedings of the first International Symposium on Arctic Geology*. Toronto, University of Toronto Press, 1961, Vol. 2, p. 896-914.) [Study of variations of surface morphology and their structural control.]

GLACIAL GEOLOGY

- AUGHENBAUGH, N. B. Preliminary report on the geology of the Dufek Massif. *I.G.Y. Glaciological Report* (New York), No. 4, 1961, p. 155-93. [Part of northern group of Pensacola Mountains, bordering Filchner Ice Shelf. Includes physiography, petrography, structural geology, mineralization, glacial geology and glaciology.]

- BELLAIR, P. Bilan thermique et conditions de genèse des inlandsis. *Comptes Rendus Hebdomadaires des Séances de l'Académie des Sciences (Paris)*, Tom. 251, No. 19, 1960, p. 2061-63. [Discussion of relation between Antarctic Ice Sheet and the ocean; theory of formation of the ice sheet.]
- CAREY, S. W., and AHMAD, N. Glacial marine sedimentation. (In Raasch, G. O., ed. *Geology of the Arctic. Proceedings of the first International Symposium on Arctic Geology*. Toronto, University of Toronto Press, 1961, Vol. 2, p. 865-94.) [Difference between sedimentation from temperate and polar glaciers when they float above sea-water.]
- HOLMES, G. W., and LEWIS, C. R. Glacial geology of the Mount Chamberlin area, Brooks Range, Alaska. (In Raasch, G. O., ed. *Geology of the Arctic. Proceedings of the first International Symposium on Arctic Geology*. Toronto, University of Toronto Press, 1961, Vol. 2, p. 848-64.) [Sequence of glaciations in this area.]
- KRINSLEY, D. B. Late Pleistocene glaciation in northeast Greenland. (In Raasch, G. O., ed. *Geology of the Arctic. Proceedings of the first International Symposium on Arctic Geology*. Toronto, University of Toronto Press, 1961, Vol. 2, p. 747-51.) [Evidence from moraines.]
- MILLER, M. M. A distribution study of abandoned cirques in the Alaska-Canada Boundary Range. (In Raasch, G. O., ed. *Geology of the Arctic. Proceedings of the first International Symposium on Arctic Geology*. Toronto, University of Toronto Press, 1961, Vol. 2, p. 833-47.) [Analysis of elevations leading to interpretation in terms of past névé lines.]
- NICHOLS, R. L. Coastal geomorphology, McMurdo Sound, Antarctica: preliminary report. *I.G.Y. Glaciological Report* (New York), No. 4, 1961, p. 51-101. [Raised beaches described between lat. 77° 00' S. and 77° 38' S., and long. 162° E. and 164° E.]
- OESCHGER, H., and RÖTHLISBERGER, H. Datierung eines ehemaligen Standes des Aletschgletschers durch Radioaktivitätsmessung an Holzproben und Bemerkungen zu Holzfunden an weiteren Gletschern. *Zeitschrift für Gletscherkunde und Glazialgeologie*, Bd. 4, Ht. 3, 1961, p. 191-205. [Radiocarbon dating of wood found in area recently abandoned by Grosser Aletschgletscher.]
- SESSONS, J. B. Some aspects of glacial drainage channels in Britain. Part 2. *Scottish Geographical Magazine*, Vol. 77, No. 1, 1961, p. 15-36.
- STALKER, A. M. Surficial geology of the Red Deer-Stettler map-area, Alberta. *Canada. Geological Survey. Memoir* 306, 1960, [xi], 140 p. [Glacial geology of area near western limits of Laurentide ice sheets of Pleistocene epoch.]

FROST ACTION ON ROCKS AND SOIL. FROZEN GROUND. PERMAFROST

- COOK, F. A. Periglacial phenomena in Canada. (In Raasch, G. O., ed. *Geology of the Arctic. Proceedings of the first International Symposium on Arctic Geology*. Toronto, University of Toronto Press, 1961, Vol. 2, p. 768-80.) [General review of work emphasizing gaps in knowledge.]
- CZEPPE, Z. Annual course and the morphological effect of the vertical frost movements of soil at Hornsund, Vestspitsbergen. *Bulletin de l'Académie Polonaise des Sciences. Série des Sciences Géologiques et Géographiques*, Vol. 8, No. 2, 1960, p. 145-48. [Field studies in 1957-58 during Polish I.G.Y. expedition to Spitsbergen.]
- DAVIES, W. E. Surface features of permafrost in arid areas. (In Raasch, G. O., ed. *Geology of the Arctic. Proceedings of the first International Symposium on Arctic Geology*. Toronto, University of Toronto Press, 1961, Vol. 2, p. 981-87.) [Studies in north Greenland show great differences from wetter areas.]
- FITZPATRICK, E. A. Geomorphic notes from West Spitsbergen. *Biuletyn Peryglacjalny (Łódź)*, No. 7, 1960, p. 49-54, 159-64. [Study of geomorphology shows many frost formations but few morainic features.]
- LEGGET, R. F., and others. Permafrost investigations in Canada, by R. F. Legget, H. B. Dickens and R. J. E. Brown. (In Raasch, G. O., ed. *Geology of the Arctic. Proceedings of the first International Symposium on Arctic Geology*. Toronto, University of Toronto Press, 1961, Vol. 2, p. 956-69.) [Permafrost mapping and discussion of climatic and other factors determining presence of permafrost.]
- RAPP, A. Recent development of mountain slopes in Kärkevagge and surroundings, northern Scandinavia. *Geografiska Annaler*, Årg. 42, Ht. 2-3, 1960, p. 65-200. [Detailed study of processes occurring in this area.]
- ROMANOVSKY, N. N. Vencering frost structures. *Biuletyn Peryglacjalny (Łódź)*, No. 7, 1960, p. 5-17, 125-36. [Description of these structures caused by subsequent filling by stratified material of depression resulting from the melting of polygonal ice veins.]
- TYUTYUNOV, I. A. *Vvedeniye v teoriyu formirovaniya merzlykh porod* [Introduction to the theory of the formation of frozen ground]. Moscow, Izdatel'stvo Akademii Nauk SSSR [Publishing House of the Academy of Sciences of the U.S.S.R.], 1961. 108 p. [Processes of weathering and of frost action on soils and rocks.]

SNOW

- MORITA, Y., and others. An experimental observation of the evaporation from snow surface, by Y. Morita, N. Murakoshi and E. Nishibori. *Antarctic Record* (Tokyo), No. 11, 1961, p. 103-09. [Measurements in the Antarctic; correlation with humidity and wind velocity.]
- SIMOONS, F. J. Snow in Ethiopia; a review of the evidence. *Geographical Review*, Vol. 50, No. 3, 1960, p. 402-11. [Description of snowfalls; permanent snow line would be some 200 m. higher than the highest elevation in the country.]
- WEIGEL, W. Die Messung der Schneedecke auf dem Brocken. *Zeitschrift für Meteorologie*, Bd. 14, Ht. 7-9, 1960, p. 191-95. [Method used in area where drifting and build-up of ice layers make conventional methods difficult.]
- YOSIDA, Z. The first stage in the change of snow into glacier ice. *Antarctic Record* (Tokyo), No. 11, 1961, p. 12-16. [Laboratory observations.]