

## 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.

**In this list, to avoid repetition, the references to papers in two volumes of the proceedings of a recent conference have been abbreviated. The full references to both publications are given in the section CONFERENCES below.**

### CONFERENCES

[UNION GÉODÉSIQUE ET GÉOPHYSIQUE INTERNATIONALE.] *Union Géodésique et Géophysique Internationale. Association Internationale d'Hydrologie Scientifique. Assemblée générale de Helsinki, 25-7-6-8 1960. Colloque sur la glaciologie antarctique.* Gentbrugge, Association Internationale d'Hydrologie Scientifique, 1961. 162 p. Bel. fr. 150. (Publication No. 55 de l'Association Internationale d'Hydrologie Scientifique.) [For details of some of papers presented, see elsewhere in this list.]

[UNION GÉODÉSIQUE ET GÉOPHYSIQUE INTERNATIONALE.] *Union Géodésique et Géophysique Internationale. Association Internationale d'Hydrologie Scientifique. Assemblée générale de Helsinki, 25-7-6-8 1960. Commission des Neiges et Glaces.* Gentbrugge, Association Internationale d'Hydrologie Scientifique, 1961. 588 p. Bel. fr. 350. (Publication No. 54 de l'Association Internationale d'Hydrologie Scientifique.) [For details of some of papers presented, see elsewhere in this list.]

### GENERAL GLACIOLOGY

- AVSYUK, G. A. Investigations glaciologiques, exécutées sur le territoire d'U.R.S.S. sous le programme de l'Année Géophysique Internationale (AGI) en 1957-1959. *Union Géodésique . . . Helsinki, 1960. Commission des Neiges et Glaces*, 1961, p. 207-15. [Survey of glaciological work done during I.G.Y. in Soviet Union.]
- FIELD, W. O. Antarctic glaciology. (*In Science in Antarctica*. Part 2. Washington, D.C., National Academy of Sciences, 1961, p. 36-56. (National Academy of Sciences—National Research Council Report 878.)) [Past research; lines of future work by United States.]
- HAEFELI, R. Zur Entwicklung der Schnee- und Gletscherforschung. *Wasser- und Energiewirtschaft*, No. 8-10, 1960, p. 215-24. [History of study of glaciers and prospect into the future.]
- HOINKES, H. C. Die Antarktis und die geophysikalische Erforschung der Erde. *Naturwissenschaften*, Bd. 48, Ht. 9, 1961, p. 354-74. [Discussion of I.G.Y. results in Antarctica.]
- LOEWE, F. Fortschritte in der physikalisch-geographischen Kenntnis der Antarktis. *Erdkunde*, Bd. 15, Ht. 2, 1961, p. 81-92. [Review of present geographical, glaciological and meteorological knowledge of Antarctica.]
- WATSON, K., and others. On the possible presence of ice on the moon, by K. Watson, B. Murray and H. Brown. *Journal of Geophysical Research*, Vol. 66, No. 5, 1961, p. 1598-1600.

### GLACIOLOGICAL INSTRUMENTS AND METHODS

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- BAZANOV, L. D. Opyt kolonkovogo bureniya na lednikakh zemli Frantsa-Iosifa [Attempt at core drilling of glaciers in Zemlya Frantsa-Iosifa]. *Issledovaniya Lednikov i Lednikovyykh Rayonov [Study of Glaciers and Glacial Regions]*, Vyp. 1, 1961, p. 109-14. [Technique used for boring down to 82m., 1958-59.]
- BLACHUT, T. J. The use of aerial photogrammetry in the study of mountain glaciers. *Union Géodésique . . . Helsinki, 1960. Commission des Neiges et Glaces*, 1961, p. 484-91. [Techniques for producing maps of greatest glaciological value.]
- BOROVINSKIY, B. A. On the question of the researches of the glaciers by the methods of the electrical prospect. *Union Géodésique . . . Helsinki, 1960. Commission des Neiges et Glaces*, 1961, p. 492-99. [Discussion of electrical methods for determining glacier depths and internal structure.]
- HOFMANN, W. Tellurometer measurements on the Greenland Ice Cap during the International Glaciological Greenland Expedition (EGIG) summer 1959. *Union Géodésique . . . Helsinki, 1960. Commission des Neiges et Glaces*, 1961, p. 469-73. [Very accurate measurement of distances between markers across Greenland.]
- LIST, R. Design and operation of the Swiss hail tunnel. *American Geophysical Union. Geophysical Monograph* No. 5, 1960, p. 310-16. [Wind tunnel designed to study hail formation.]
- RADOK, U., and others. On the calorimetric determination of snow quality, [by] U. Radok, S. K. Stephens and K. L. Sutherland. *Union Géodésique . . . Helsinki, 1960. Commission des Neiges et Glaces*, 1961, p. 132-35. [Method for determining free water content.]
- WARD, W. H. Experiences with electro-thermal ice drills on Austerdalsbre, 1956-59. *Union Géodésique . . . Helsinki, 1960. Commission des Neiges et Glaces*, 1961, p. 532-42. [Technique of drilling bore holes.]

## PHYSICS OF ICE

- BARTENEV, G. M., and TSEPKOV, L. P. K voprosu o prirode masshtabnogo effekta u l'da [On the nature of the size effect in ice]. *Zavodskaya Laboratoriya* [*Industrial Laboratory*], Tom 26, No. 3, 1960, p. 330-31. [Discussion of effects determining the variation of bending strength with size of specimen. English translation in *Industrial Laboratory*, Vol. 26, No. 3, 1960, p. 352-54.]
- BEAUMONT, R. H., and others. Transitions between different forms of ice, by R. H. Beaumont, H. Chihara and J. A. Morrison. *Journal of Chemical Physics*, Vol. 34, No. 4, 1961, p. 1456-57. [X-ray study of transition from vitreous to cubic and from cubic to hexagonal structure.]
- BRYANT, G. W., and MASON, B. J. Etch pits and dislocations in ice crystals. *Philosophical Magazine*, Ser. 8, Vol. 5, No. 60, 1960, p. 1221-27. [Experimental observations of etch pits suggest that they mark dislocations.]
- BUTKOVICH, T. R. Mechanical properties of ice. *Colorado School of Mines Quarterly*, Vol. 54, No. 3, 1959, p. 349-60. [Review of subject.]
- CARTE, A. E. Air bubbles in ice. *Proceedings of the Physical Society* (London), Vol. 77, No. 495, 1961, p. 757-68. [Study of formation of air bubbles on freezing of water containing dissolved air.]
- CHIDAMBARAM, R. A bent hydrogen bond model for the structure of ice-I. *Acta Crystallographica*, Vol. 14, No. 5, 1961, p. 467-68. [Suggestion for structure of ice.]
- KAHANE, A. Température de Debye de la glace. *Comptes Rendus Hebdomadaires des Séances de l'Académie des Sciences*, Tom. 252, No. 5, 1961, p. 678-80. [Discussion of discrepancy between observed and calculated Debye temperature.]
- KHRUSHCHOV, M. M., and BERKOVICH, YE. S. *Izucheniye tverdosti l'da* [Study of the hardness of ice]. Moscow, Izdatel'stvo Akademii Nauk SSSR [Publishing House of the Academy of Sciences of the U.S.S.R.], 1960. 50 p. [Summary of studies by authors and other workers on this subject.]
- KINGERY, W. D. Ice alloys. *Science*, Vol. 134, No. 3473, 1961, p. 164-68. [Strength of ice with various added materials.]
- KUME, K., and HOSHINO, R. Proton magnetic resonance of single ice crystal. *Journal of the Physical Society of Japan*, Vol. 16, No. 2, 1961, p. 290-92. [Experimental results consistent with Pauling's model for ice structure.]
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- LATHAM, J., and MASON, B. J. Electric charge transfer associated with temperature gradients in ice. *Proceedings of the Royal Society*, Ser. A, Vol. 260, No. 1303, 1961, p. 523-36. [Measurements of potential developed in ice by thermal gradient.]
- MUGURUMA, J. Spiral etch-pits of ice crystals. *Nature*, Vol. 190, No. 4770, 1961, p. 37-38. [Observation and interpretation.]
- ONSAGER, L., and DUPUIS, M. The electrical properties of ice. (*In Rendiconti della Scuola Internazionale di Fisica "Enrico Fermi". Corso 10. Varenna, 15-27 Giugno 1959.* Bologna, Nicola Zanichelle, 1960, p. 294-315.) [Survey of theoretical implications of the electrical properties of ice.]
- SCHMIDT, K. H. Untersuchung von Eiskristallen mit dem Elektronenmikroskop. *Experimentelle Technik der Physik*, Bd. 8, Ht. 1, 1960, p. 9-13. [Replica technique.]
- SERIKOV, M. I. Mekhanicheskiye svoystva morskogo antarkticheskogo l'da [Mechanical properties of Antarctic sea ice]. *Informatsionnyy Byulleten' Sovetskoy Antarkticheskoy Ekspeditsii* [*Information Bulletin of the Soviet Antarctic Expedition*], No. 25, 1961, p. 23-27. [Tensile and compressive strength.]
- SUGAWARA, K. Chemistry of ice, snow and other water substances in Antarctica. *Union Géodésique . . . Helsinki, 1960. Colloque sur la glaciologie antarctique*, 1961, p. 49-55. [Measurements of impurities in surface pools, snow and pack ice.]
- VOYTKOVSKIY, K. F. *Mekhanicheskiye svoystva l'da* [Mechanical properties of ice]. Moscow, Izdatel'stvo Akademii Nauk SSSR [Publishing House of the Academy of Sciences of the U.S.S.R.], 1960. 100 p. [Structure, physical properties, deformation, elastic properties, creep, yield strength.]

## LAND ICE. GLACIERS. ICE SHELVES

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- BAUER, A. Influence de la dynamique des fleuves de glace sur celle de l'Indlandsis du Groenland. *Union Géodésique . . . Helsinki, 1960. Commission des Neiges et Glaces*, 1961, p. 578-84. [Importance of ice streams in the balance of the Greenland Ice Sheet.]
- BAUER, A. Nouvelle estimation du volume de la glace de l'indlandsis antarctique. *Union Géodésique . . . Helsinki, 1960. Colloque sur la glaciologie antarctique*, 1961, p. 19-23. [Estimates Antarctic Ice Sheet at  $3 \times 10^7$  km<sup>3</sup>.]
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- BENTLEY, C. R. Antarctic traverse seismology program. (*In Science in Antarctica*. Part 2. Washington, D.C.: National Academy of Sciences, 1961, p. 87-92. (National Academy of Sciences—National Research Council Report 878.)) [Work by United States.]
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- BROCKAMP, B. Zur Erfassung des Aggregatzustandes von Moränen und Gletschern. *Polarforschung, Jahrg. 29, Bd. 4, Ht. 1/2, 1959* [pub. 1961], p. 119-25. [Methods for determining whether a glacier has frozen or unfrozen moraine beneath it.]
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- CHEKASOV, P. A. Dinamika lednikov basseyna reki Baskan Dzhungarskogo Alatau v 1956-1957 godakh [Dynamics of glaciers of the basin of the river Baskan, Dzhungarskiy Alatau, 1956-57]. *Voprosy Geografii Kazakhstana* [Questions of the Geography of Kazakhstan], Vyp. 8, 1961, p. 75-97.
- CHEKASOV, P. A. Principal features of the glaciers of the northern slopes of the Dzhungar Alatau mountains. *Union Géodésique . . . Helsinki, 1960. Commission des Neiges et Glaces, 1961, p. 233-42.* [General description of these glaciers in Kazakh S.S.R. and of their regime.]
- CRARY, A. P. Glaciological regime at Little America Station, Antarctica. *Journal of Geophysical Research, Vol. 66, No. 3, 1961, p. 871-78.* [Factors affecting changes to Ross Ice Shelf, 1957-58.]
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- CRARY, A. P., and VAN DER HOEVEN, F. G. Sub-ice topography of Antarctica, long. 160° W. to 130° E. *Union Géodésique . . . Helsinki, 1960. Colloque sur la glaciologie antarctique, 1961, p. 125-31.*
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- DZHORDZHIO, V. A., and others. The Fedtchenko Glacier and climate [by] V. A. Dzhordzhio, A. B. Kazanskiy, V. N. Kolesnikova, V. K. Nozdryukhin [and] M. A. Petrosyants. *Union Géodésique . . . Helsinki, 1960. Commission des Neiges et Glaces, 1961, p. 440-48.* [Radiation regime and thermal balance at the surface of Lednik Fedchenko.]
- FINSTERWALDER, R. Neue Ergebnisse der Eishaushaltmessung an Gletschern. *Mitteilungen der Geographische Gesellschaft in München, Bd. 45, 1960, p. 147-52.* [Effect of climatic influences on glacier regime.]
- FINSTERWALDER, R. On the measurement of glacier fluctuations. *Union Géodésique . . . Helsinki, 1960. Commission des Neiges et Glaces, 1961, p. 325-34.* [Discussion of recent measurements of change in glacier surface height and suggestions for co-ordinated programme.]
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- GLEN, J. W. Measurement of the strain of a glacier snout. *Union Géodésique . . . Helsinki, 1960. Commission des Neiges et Glaces, 1961, p. 562-67.* [Detailed surface velocity measurements on the snout of Austerdalsbreen, Norway.]
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- HATTERSLEY-SMITH, G. Some remarks on glaciers and climate in northern Ellesmere Island. *Geografiska Annaler, Arg. 42, Ht. 1, 1960, p. 45-48.* [Influence of climate and Arctic Ocean ice on ice shelves.]
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- HIGASHI, A., and HASHIMOTO, S. Mendenhōru hyōka no chosa [Surveys of Mendenhall Glacier]. *Shizen* [Nature], Vol. 16, No. 2, 1961, p. 24-32; No. 3, 1961, p. 42-52. [Description of surface features, measurements of velocity and studies of ice crystal growth.]
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