Journal of Glaciology, Vol. 18, No. 79, 1977

GLACIOLOGICAL LITERATURE

THIS is a selected list of glaciological literature on 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 *Recent Polar Literature* (supplement to 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 J. W. Glen of publications of glaciological interest. It should be noted that the Society does not necessarily hold copies of the items in this list, and also that the Society does not possess facilities for microfilming or photocopying.

General glaciology

CHIZHOV, O. P. Oledeneniye severnoy polyarnoy oblasti [Glaciation of the north polar area]. *Rezul'taty Issledovaniy po Mezhdunarodnym Geofizicheskim Proyektam* (Unnumbered series), 1976, 240 p. [Describes present-day land and sea glaciation in Soviet and non-Soviet areas, glacial geology, and causes and effects of glacio-climatic fluctuations during the Pleistocene. English summary, p. 213–14.]

FENWICK, J. K., *and* ANDERTON, P. W., *comp. Dry valleys, Antarctica, 1972–73.* Wellington, Ministry of Works and Development for the National Water and Soil Conservation Organisation, 1975. 37 p. (Hydrological Research: Annual Report No. 34.) [Describes hydrological and glaciological research programme carried out in this region of southern Victoria Land. Glaciological studies included mass balance and flow measurements and glacier margin studies.]

FINK, U., *and others.* Infrared spectra of the satellites of Saturn: identification of water ice on Iapetus, Rhea, Dione, and Tethys, [by] U. Fink, H. P. Larson, T. N. Gautier III and R. R. Treffers. *Astrophysical Journal*, Vol. 207, No. 1, Pt. 2, 1976, p. L63–L67. [All four show absorption bands. Extent of coverage and surface temperature discussed.]

HOPE, G. S., *and others, ed. The equatorial glaciers of New Guinea. Results of the 1971–1973 Australian Universities' Expeditions to Irian Jaya: survey, glaciology, meteorology, biology and palaeoenvironments. Edited by G. S. Hope, James A. Peterson, U. Radok, I. Allison.* Rotterdam, Balkema, 1976. xii, 244 p. [Contents include: I. Allison and James A. Peterson, "Ice areas on Mt. Jaya: their extent and recent history", p. 27–38; I. Allison, "Glacier regimes and dynamics", p. 39–59; E. Kol and Judy A. Peterson, "Cryobiology", p. 81–91; James A. Peterson, "The lakes", p. 93–112; G. S. Hope and James A. Peterson, "Palaeoenvironments", p. 173–205.]

KEENE, G., *and* PATRICK, J., *ed. Report of the Nottingham University Explorers Club Erdalsbreen Expedition 1975 north-west Jostedalsbreen, Norway.* [Nottingham], Nottingham University Explorers Club in conjunction with [Nottingham] Expeditions Co-ordinating Committee, 1976. [162] p. [Includes sections on geomorphology, p. 26–37, and glaciology, p. 38–69.]

KUNZI, K. F., *and others.* Snow and ice surfaces measured by the Nimbus 5 microwave spectrometer, [by] K. F. Kunzi, A. D. Fisher and D. H. Staelin, J. W. Waters. *Journal of Geophysical Research*, Vol. 81, No. 27, 1976, p. 4965–80. [Information about global distribution and character of various types of snow and ice is provided by 22.2 and 31.4 GHz channels of spectrometer on board satellite. Well-defined spectral signatures for snow, sea ice and land ice in Greenland and Antarctica.]

WHITE, G. F., *ed. Natural hazards; local, national, global.* New York, etc., Oxford University Press, 1974. xvi, 288 p. [Includes: R. M. Ward, "Decisions by Florida citrus growers and adjustments to freeze hazards", p. 137–46; R. H. Jackson, "Frost hazard to tree crops in the Wasatch Front: perception and adjustments", p. 146–51; F. C. F. Earney and B. A. Knowles, "Urban snow hazard: Marquette, Michigan", p. 167–74; G. Ramsli, "Avalanche problems in Norway", p. 175–80; H. Visvader and I. Burton, "Natural hazards and hazard policy in Canada and the United States", p. 219–31; I. P. Gerasimov and T. V. Zvonkova, "Natural hazards in the territory of the USSR: study, control, and warning", p. 243–51. The last two articles contain sections on avalanches, hail, snow and glacier surges.]

YOKOYAMA, K. Geomorphological and glaciological survey of the Minami-Yamato nunataks and the Kabuto nunatak, east Antarctica. *Nankyoku Shiryō: Antarctic Record*, [No.] 56, 1976, p. 14–19. [Presents results of survey of these nunataks, situated near the Yamato mountains, Dronning Maud Land, and observations on them and surrounding ice. Glacial striae and surface slope of ice sheet indicate direction of ice flow is north-westerly.]

Glaciological instruments and methods

BALANDIN, V. N., *and* DRABKIN, V. V. Metodika izmereniya dreyfa l'da s pomoshch'yu radiogeodezicheskoy sistemy [A technique for measuring ice drift with the aid of a radiogeodetic system]. *Vestnik Leningradskogo Universiteta*, 1975, No. 12, *Seriya Geologii i Geografii*, Vyp. 4, p. 141–44. [Describes technique, used for air survey. English summary, p. 143.]

BARENDREGT, R. W., *and others.* Differentiation of tills in the Pakowki–Pinhorn area of southeastern Alberta on the basis of their magnetic susceptibility. Project 650027, [by] R. W. Barendregt, A. M. Stalker and J. H. Foster. *Canada. Geological Survey. Paper* 76-1C, 1976, p. 189–90. [Method proved.]

BRYANT, R. S., *and others.* INDAPS, integrated navigation, data acquisition and processing system, by R. S. Bryant, C. Doekes and R. L. K. Tripe. *International Hydrographic Review*, Vol. 53, No. 2, 1976, p. 65–85. [Describes survey system deployed already in two vessels and in tracked vehicle operating on ice in the Canadian Arctic.]

DAVIS, J. L., *and others*. Impulse radar experiments on permafrost near Tuktoyaktuk, Northwest Territories, [by] J. L. Davis and W. J. Scott, R. M. Morey and A. P. Annan. *Canadian Journal of Earth Sciences*, Vol. 13, No. 11, 1976, p. 1584–90. [Detects ice–sand interfaces at depths of 30 m. Resolves ice lenses embedded in sand and separated by 3 m.]

ELIAS, R. W., *and others*. Improved techniques for studies of mass balances and fractionations among families of metals within terrestrial ecosystems, [by] R. W. Elias, T. K. Hinkley, Y. Hirao and C. C. Patterson. *Geochimica et Cosmochimica Acta*, Vol. 40, No. 6, 1976, p. 583–87. [Includes method of collecting a snow sample for trace element analysis that is representative of the entire accumulated snow-pack.]

FERRARI, R. L., *and others*. *The 1976 Cambridge–Reykjavik Universities Expedition to Vatnajokull, Iceland*, [*by*] *R. L. Ferrari, K. J. Miller, G. Owen*. Cambridge, University of Cambridge, Dept. of Engineering, 1976. 62 leaves. (Special Report 5.) [Mainly testing of radio-echo sounding equipment in preparation for 1977 expedition to study jökulhlaups.]

JOHANSEN, Ø. Thermal conductivity of soil and rock. *Frost i Jord*, No. 16, 1975, p. 13–21. [Describes new method of prediction and presents chart for prediction of thermal conductivity of frozen soils.]

JUDGE, A. S., *and others*. An application of hydraulic jet drilling techniques to mapping of sub-seabottom permafrost. Project 740102, [by] A. S. Judge, H. A. MacAulay and J. A. Hunter. *Canada. Geological Survey. Paper* 76-1C, 1976, p. 75–78. [Jet drilling technique provides simple method of drilling holes for thermal profiling to depths of 50 m beneath water depth of up to 20 m from platform of winter ice. Tested in Beaufort Sea.]

LOWRY, R. T., *and* BROCHU, C. J. *A system for the treatment of airborne laser profilometer data of ice*. Ottawa, Dept. of National Defence. Research and Development Branch. Defence Research Establishment Ottawa, 1975. vii, 53 p. (DREO Report No. 725.) [Sea ice. Outlines system used to reduce data to form suitable for manipulation and some of the analytical methods used to study data.]

MACHERET, YU. YA. Izmereniye tolshchiny lednikov [Measurement of the thickness of glaciers]. *Priroda*, 1976, No. 10, p. 90–91. [Outlines radio-echo methods used by Russians in Svalbard.]

MERRILL, K. M., *and others*. Infrared observations of ices and silicates in molecular clouds, [by] K. M. Merrill, R. W. Russell and B. T. Soifer. *Astrophysical Journal*, Vol. 207, No. 3, Pt. 1, 1976, p. 763–69. [All clouds show presence of ice but features do not fit predictions of Mie theory for pure ice.]

NAKATAO, T. Kanetsusuikei sekisetsumitsudokei no kairyō [Improved snow cover densimeter of heated plummet type]. *Seppyō*, Vol. 37, No. 4, 1975, p. 170–73. [Measurements may now be carried out quickly and in rain or snow up to 10°C. English summary, p. 173.]

SINHA, A. K. A field study for sea-ice thickness determination by electromagnetic means. Project 730004. *Canada. Geological Survey. Paper* 76-1C, 1976, p. 225–28. [Two portable double-dipole instruments were tested. Found that results were reliable for thicknesses up to 4 or 5 m in saline sea-water, but not for fresh sea-water.]

SPLETTSTOESSER, J. F., *ed. Ice-core drilling. Proceedings of a symposium, University of Nebraska, Lincoln, 28–30 August 1974*. Lincoln, London, University of Nebraska Press, [c1976]. x, 189 p. [Includes the following papers: I. G. Bird, "Thermal ice drilling: Australian developments and experience", p. 1–18; F. Gillet, D. Donnou and G. Ricou, "A new electrothermal drill for coring in ice", p. 19–27; B. L. Hansen, "Deep core drilling in the east Antarctic ice sheet: a prospectus", p. 29–36; W. D. Harrison and [W.] B. Kamb, "Drilling to observe subglacial conditions and sliding motion", p. 37–43; A. Higashi and H. Shoji, "Mechanical properties of Antarctic deep core ice", p. 45 (abstract only); R. L. Hooke, "University of Minnesota ice drill", p. 47–57; S. J. Johnsen, "Near-surface snow sampling devices", p. 59–61; Ye. S. Korotkevich and B. B. Kudryashov, "Ice sheet drilling by Soviet Antarctic expeditions", p. 63–70; C. C. Langway, Jr., "The polar ice-core storage facility at USA CRREL", p. 71–75; M. Mellor and P. V. Sellmann, "General considerations for drill system design", p. 77–111; W. S. B. Paterson, "Thermal core drilling in ice caps in Arctic Canada", p. 113–16; K. Philberth, "The thermal probe deep-drilling method by EGIG in 1968 at station Jarl-Joset, central Greenland", p. 117–31; J. H. Rand, "The USA CRREL shallow drill", p. 133–37; H. Rufli, B. Stauffer and H. Oeschger, "Lightweight 50-meter core drill for firn and ice", p. 139–53; Y. Suzuki, "Deep core drilling by Japanese Antarctic research expeditions", p. 155–66; P. L. Taylor, "Solid-nose and coring thermal drills for temperate ice", p. 167–77; P. Theodórsson, "Thermal and mechanical drilling in temperate ice in Icelandic glaciers", p. 179–89.]

VENIER, G. O., *and* CROSS, F. R. *An airborne linear-sweep FM radar system for measuring ice thickness*. Ottawa, Dept. of Communications. Communications Research Centre, 1975. iv, 28 p. (CRC Report No. 1269.) [Describes method designed for quick installation on helicopter and used for measuring fresh-water ice thickness.]

WIESNET, D. R., *and* MATSON, M. A possible forecasting technique for winter snow cover in the northern hemisphere and Eurasia. *Monthly Weather Review*, Vol. 104, No. 7, 1976, p. 828–35. [Scheme based on analysis of monthly mean charts compiled from weekly snow and ice charts. Offers reasonable method for 30, 60 and 90 d forecasts.]

YAHAGI, H. Denryōkeikei sekisan ondokei [Integrating thermometers with device of mercury coulometers]. *Teion-kagaku: Low Temperature Science*, Ser. A, [No.] 33, 1975, p. 215–26. [Describes two thermometers, with operational temperatures of −10 to 35°C and 0 to −20°C. English summary, p. 226.]

PHYSICS OF ICE

ATKINS, A. G., *and* MAI, Y. W. Effect of water and ice on strength and fracture toughness of intermittently bonded boron-epoxy composites. *Journal of Materials Science*, Vol. 11, No. 12, 1976, p. 2297–306. [Strength of uncoated composites disastrously affected. Explanation in terms of absorption on uncoated areas.]

BARTLEY, D. L. Ice crystal growth in water vapor at high saturation. *Journal of Chemical Physics*, Vol. 65, No. 5, 1976, p. 1876–82. [Theory of development of new layers on different crystal faces provides explanation for strongly anisotropic growth at high supersaturations.]

BONACCI, J. C., *and others*. The evaporation and condensation coefficient of water, ice, and carbon tetrachloride, by J. C. Bonacci, A. L. Myers, G. Nongbri and L. C. Eagleton. *Chemical Engineering Science*, Vol. 31, No. 8, 1976, p. 609–17. [High values found when evaporating or condensing times were very short. Low values under other conditions attributed to surface temperature errors.]

BOUTRON, P. De la glace amorphe à la cryobiologie. *Recherche*, Vol. 7, No. 68, 1976, p. 565–67. [Review of role of amorphous ice in cryobiology.]

CHAICHANAVONG, T. Dynamic properties of ice and frozen clay under cyclic triaxial loading conditions. *Dissertation Abstracts International*, B, Vol. 37, No. 2, 1976, p. 888-B–89-B. [Measurement of dynamic Young's modulus and damping ratio of polycrystalline ice and frozen clay. Abstract of Ph.D. thesis, Michigan State University, 1976. University Microfilms order no. 76-18604.]

CORRIN, M. L., *and* BARNES, R. *In-situ* silver iodide coated titanium dioxide as an ice nucleant. *Journal of Applied Meteorology*, Vol. 15, No. 4, 1976, p. 413–14. [Method of replacing up to 90% of AgI with TiO_2 without reducing ice nucleation efficiency.]

EPSTEIN, M., *and* CHO, D. H. Laminar film condensation on a vertical melting surface. *Journal of Heat Transfer*, Vol. 98, No. 1, 1976, p. 108–13. [Theoretical study. Includes as illustrative example condensation of a refrigerant vapour on melting ice.]

GILPIN, R. R. The influence of natural convection on dendritic ice growth. *Journal of Crystal Growth*, Vol. 36, No. 1, 1976, p. 101–08. [Study of dendritic growth in large vessel of supercooled water. Natural convection important for supercoolings <2 deg.]

GROSSMAN, G. Melting, freezing, and channeling phenomena in ice counterwashers. *A.I.Ch.E. Journal*, Vol. 22, No. 6, 1976, p. 1033–42. [These phenomena, due to temperature difference between wash water and ice, are modelled and analysed and scaling laws derived.]

HUANG, J. S. The effect of natural convection on ice crystal growth in salt solutions. *Dissertation Abstracts International*, B, Vol. 37, No. 4, 1976, p. 1793-B–94-B. [Study of *a*-axis linear growth rate of ice in three orientations and different fluid flow rates and coolings. Abstract of Ph.D. thesis, Syracuse University, 1975. University Microfilms order no. 76-18524.]

IWAI, K. Ice whiskers grown in silicone oil. *Journal of Crystal Growth*, Vol. 34, No. 2, 1976, p. 319–24. [Reproducible method of growing ice whiskers which are single crystals but curved.]

JOHARI, G. P., *and* JONES, S. J. Infrared polarisability of hexagonal ice. *Nature*, Vol. 263, No. 5579, 1976, p. 672–73. [Theory of pressure dependence of polarizability and of high-frequency dielectric permittivity leads to prediction of decrease with pressure.]

KAWABATA, K. Electron traps in irradiated crystalline ice. *Journal of Chemical Physics*, Vol. 65, No. 5, 1976, p. 2235–42. [Pulse radiolysis used to study traps and their annealing. Suggests traps are radiation-produced molecular vacancies.]

KRASTANOV, L., *and* LEVKOV, L. Crystallization of supercooled fog by means of powdered synthetic zeolites. *Doklady Bolgarskoy Akademii Nauk*, Tom. 29, No. 9, 1976, p. 1281–83. [Laboratory experiments.]

LEBEDEV, D. P., *and* LE QUE KI. Issledovaniye teplo- i massoobmena pri sublimatsii l'da metodom "teplovogo udara" [Heat and mass transfer during sublimation of ice studied by the method of "heat shock"]. *Inzhenerno-Fizicheskiy Zhurnal*, Tom 29, No. 5, 1975, p. 808–13. [Equations for temperature distribution and sublimation rate when radiant energy pulse is given to ice under vacuum. English summary, p. 813.]

LEVKOV, L. Über die Eisbildung in untergekühltem Nebel unter der Einwirkung von PbJ_2-aerosolen. *Doklady Bolgarskoy Akademii Nauk*, Tom. 29, No. 7, 1976, p. 975–77. [Study of ice nucleating ability of lead iodide in drops and in a supercooled fog.]

LIN, K. Y., *and* TANG, D. L. Residual entropy of two-dimensional ice on a Kagomé lattice. *Journal of Physics A*, Vol. 9, No. 7, 1976, p. 1101–07. [Calculation by series expansion.]

MORACHEVSKIY, V. G., *and* DUBROVICH, N. A. Molecular studies of the ice-forming capabilities of different surfaces. *Journal of the Atmospheric Sciences*, Vol. 33, No. 10, 1976, p. 1989–94. [Study of nucleation on salts of silver and lead and suggestions on surface modifications to stimulate ice-forming ability.]

PETIT, J.-R., *and* DUVAL, P. La luminescence de la glace; les effets de la deformation plastique. *Solid State Communications*, Vol. 19, No. 5, 1976, p. 475–77. [Thermoluminescence of polycrystalline ice irradiated by ultraviolet light at liquid nitrogen temperature. Effect of plastic deformation and annealing.]

REISCHEL, M. T. Influences of chemical environments on ice nucleation. *Dissertation Abstracts International*, B, Vol. 37, No. 5, 1976, p. 2327-B–28-B. [Drop-freezing experiments on effect of other chemical species in solution or in the vapour. Abstract of Ph.D. thesis, University of Wyoming, 1976. University Microfilms order no. 76-24732.]

ROMANOV, V. P., *and others*. Izmereniye elektrokineticheskikh potentsialov na granitse razdela led-rastvor elektrolita [Measurement of electrokinetic potentials at the ice–electrolyte solutions interface]. [By] V. P. Romanov, Ye. A. Nechayev, G. V. Zvonareva. *Kolloidnyy Zhurnal*, Tom 38, Vyp. 5, 1976, p. 1009–12. [Values of potential for 0.01*N* KCl, NaCl, NH_4Cl, $NaCH_3COO$, $BaCl_2$, $MgSO_4$ solutions determined by microelectrophoresis. English abstract, p. 1012.]

SHIRAISHI, H., *and others*. Electron spin resonance studies on hydrogen atoms formed in pure and acidic ices under electron irradiation. Motional narrowing and electron spin polarization effect, [by] H. Shiraishi, H. Kadoi, Y. Katsumura, Y. Tabata and K. Oshima. *Journal of Physical Chemistry*, Vol. 80, No. 21, 1976, p. 2400–07. [Observation of these effects, differences between pure and acidic ices, theoretical explanation.]

SIXOU, P., *and* DANSAS, P. Motion of guest molecules in clathrates. *Berichte des Bunsengesellschaft für Physikalische Chemie*, Bd. 80, Nr. 5, 1976, p. 364–89. [Calculations and comparison with data on ice clathrates among others.]

WU, RAY-SHING *and* CHENG, K. C. Maximum density effects on thermal instability induced by combined buoyancy and surface tension. *International Journal of Heat and Mass Transfer*, Vol. 19, No. 5, 1976, p. 559–65. [Theory of convection in water near the freezing point where density passes through maximum.]

LAND ICE. GLACIERS. ICE SHELVES

AMBACH, W. Zum Wärmehaushalt im Akkumulationsgebiet des grönländischen Inlandeises: Interpretation der thermischen Stabilität von kalten Schneeschichten. *Polarforschung*, Jahrg. 46, Nr. 1, 1976, p. 46–59. [Presents observations on heat balance of accumulation area of Greenland ice sheet, interpreting thermal stability of cold snow covers.]

ANDERTON, P. W., *comp.* *Tasman Glacier, 1971–73.* Wellington, Ministry of Works and Development for the National Water and Soil Conservation Organisation, 1975. 28 p. (Hydrological Research: Annual Report No. 33.) [Summarizes main results of glaciological studies.]

AVER'YANOV, V. G., *and* KLOKOV, V. D. Polozheniye glyatsiologicheskikh zon v rayone oazisa Molodezhnaya [Position of glaciological zones in the area of Molodezhnaya oasis]. *Trudy Sovetskoy Antarkticheskoy Ekspeditsii*, Tom 65, 1975, p. 153–57. [Structure of upper horizons of the ice sheet.]

BARRETT, P. J., *and others.* Dry Valley Drilling Project, 1975–1976: first core drilling in McMurdo Sound, [by] P. J. Barrett [and 7 others]. *Antarctic Journal of the United States*, Vol. 11, No. 2, 1976, p. 78–80. [Using annual sea ice as drill rig platform, hole was drilled to depth of 65 m to investigate history of east Antarctic ice sheet.]

CAMPBELL, I. B., *and* CLARIDGE, G. G. C. Occurrence of dirt cones in Antarctica. *New Zealand Journal of Geology and Geophysics*, Vol. 18, No. 2, 1975, p. 349–55. [Describes occurrences along length of Transantarctic Mountains and discusses mode of formation.]

CROOT, D. G., *and* ESCRITT, E. A. Scourge of surging glaciers. *Geographical Magazine*, Vol. 48, No. 6, 1976, p. 328–34. [Describes phenomenon of glacier surging with particular reference to occurrences in Iceland.]

GIGGENBACH, W. F. Geothermal ice caves on Mt Erebus, Ross Island, Antarctica. *New Zealand Journal of Geology and Geophysics*, Vol. 19, No. 3, 1976, p. 365–72. [Describes cave system, 400 m in length.]

HAAKENSEN, N., *and others.* Materialtransport i norska glaciärälvar 1973, av N. Haakensen, H. C. Olsen, G. Østrem. *Stockholms Universitet. Naturgeografiska Institutionen. Forskningsrapport* 20, 1975, 107 p. [Sediment transport studies in selected glacier streams in Norway in 1973. English summary, p. 90–103.]

HAEBERLI, W. Eistemperaturen in den Alpen. *Zeitschrift für Gletscherkunde und Glazialgeologie*, Bd. 11, Ht. 2, 1975 [pub. 1976], p. 203–20. [Presents temperature measurements made at various depths in Alpine glaciers and relates to factors such as local permafrost conditions, firn temperatures and heating by melt-water percolation.]

HAEBERLI, W., *and* RÖTHLISBERGER, H. Beobachtungen zum Mechanismus und zu den Auswirkungen von Kalbungen am Grubengletscher (Saastal, Schweiz). *Zeitschrift für Gletscherkunde und Glazialgeologie*, Bd. 11, Ht. 2, 1975 [pub. 1976], p. 221–28. [Discusses effects of calving of glacier into ice-dammed marginal lake, caused by undercutting of ice cliff by circulation of lake water.]

HASHOLT, B. Hydrology and transport of material in the Sermilik area 1972. *Geografisk Tidsskrift*, Bd. 75, 1975, p. 30–39. [Investigations on discharge from Mitdluagkat glacier, east Greenland.]

HUGHES, T. J. Is the west Antarctic ice sheet disintegrating? *ISCAP Bulletin* (University of Maine at Orono), No. 4, 1975, vi, 141 p. [Discusses role of ice streams.]

KRASS, M. S., *and* SHUMSKIY, P. A. Thermodynamisches Modell eines äusseren Eisschelfs. *Polarforschung*, Jahrg. 46, Nr. 1, 1976, p. 34–45. [Theory of deformation and temperature distribution in unrestricted ice shelves.]

MAE, S., *and others.* Thermal drilling and temperature measurements in Khumbu glacier, Nepal Himalayas, [by] S. Mae, H. Wushiki [i.e. Ushiki], Y. Ageta and K. Higuchi. *Seppyō*, Vol. 37, No. 4, 1975, p. 161–69. [Drilling to 20.3 m depth at 5 360 m a.s.l. in upper part of ablation area. Results suggest glacier might be classified as polar rather than temperate.]

MÄLZER, H., *and* SECKEL, H. Internationale Glaziologische Grönland-Expedition (EGIG). 3. Das geometrische Nivellement über das Inlandeis — Höhenänderungen zwischen 1959 und 1968 im Ost-West-Profil der EGIG. *Zeitschrift für Gletscherkunde und Glazialgeologie*, Bd. 11, Ht. 2, 1975 [pub. 1976], p. 245–52. [Presents further measurements from surveys on Greenland ice sheet.]

MÜLLER, F., *and others.* Firn und Eis der schweizer Alpen. Gletscherinventar. — Ergaenzungsband: Fotoliste. [By] F. Müller, T. Caflisch, G. Müller. *Eidgenössische Technische Hochschule Zürich. Geographisches Institut. Publikation* Nr. 57, 57a, 1976, iii, [223] p.–[96] p. [Presents detailed inventory of present status of permanent firn and ice masses in Switzerland in relation to distribution of water reserves. English summary, p. 167–69.]

ORHEIM, O. Bremalingar på Jan Mayen. *Norsk Polarinstitutt. Årbok*, 1974 (pub. 1976), p. 249–52. [Study of mass balance of Sørbreen on Jan Mayen in 1972–74.]

PORTNOV, V. G. Stroyeniye lednikovogo pokrova v rayone stantsii Vostok [Ice sheet structure in the Vostok area]. *Trudy Sovetskoy Antarkticheskoy Ekspeditsii*, Tom 65, 1975, p. 166–76. [Distinguishes two stages in metamorphosis of ice.]

RICKER, K. Tchaikazan Valley earth science notes. *Canadian Alpine Journal*, Vol. 59, 1976, p. 16–19. [Includes observations on retreat of Tchaikazan, Friendly, Miserable, Hourglass and Pathetic glaciers, Coast Mountains, British Columbia, Canada.]

RICKER, K., *and* TUPPER, B. Conception, birth and labour: Wedgemount Lake, northern Garibaldi Park. *Canadian Alpine Journal*, Vol. 59, 1976, p. 34–35. [Presents regular observations made since 1965 on "Wedgemount Glacier", Coast Mountains, British Columbia, Canada. In 1965, it was estimated to have retreated 1 km since 1927 and the lake had grown correspondingly.]

ROTNICKI, K. The theoretical basis for and a model of the origin of glaciotectonic deformations. *Quaestiones Geographicae* (Poznań), No. 3, 1976, p. 103–39. [Theoretical considerations concerning the causes and location of the formation of glaciotectonic deformations by inland ice in the substratum.]

SCHNEIDER, H. Die Karte des Kesselwandferners 1971 und die Grundlagen der Vermessungen. *Zeitschrift für Gletscherkunde und Glazialgeologie*, Bd. 11, Ht. 2, 1975 [pub. 1976], p. 229–44. [Presents map, scale 1 : 5 000, of Austrian glacier, based on 1971 survey (which is described in some detail), to be used as basis for mass

balance and movement studies. Also includes sketch-map, scale 1 : 25 000, of Kesselwand- and Hintereisferner between 1850 and 1971, showing several positions of tongue.]

Sevast'yanov, D. V. Sovremennoye i drevneye oledebiye khrebta Atbashi [Present-day and ancient glaciation of Khrebet Atbashi]. *Izvestiya Vsesoyuznogo Geograficheskogo Obshchestva*, Tom 108, Vyp. 6, 1976, p. 554–62. [Effect of interrelation of climate and relief on Tyan'-Shan' glaciers, Kirgiskaya S.S.R.]

Stober, M. Zur Bestimmung der Deformation des grönländischen Inlandeises bei Crête. *Polarforschung*, Jahrg. 46, Nr. 1, 1976, p. 60–61. [Corrected method for calculating strain-rates.]

Suslov, V. F., *ed.* Glyatsiologiya Sredney Azii (ledniki) [Glaciology of Central Asia (glaciers)]. *Sredneaziatskiy Regional'nyy Nauchno-Issledovatel'skiy Gidrometeorologicheskiy Institut. Trudy*, Vyp. 27(108), 1975, [132] p. [Fifteen articles on glacier regimes, melt-water flow, hydrochemistry of glaciers and methods of research.]

Tōkairin, A., *and* Wakahama, G. Iroiro na fūsoku-ka ni okeru kōri no shōka sokudo to zen hōshutsu netsu no sokutei [Measurement of the sublimation-evaporation rate of ice and the total heat loss from the ice surface under various wind speeds]. *Teion-kagaku: Low Temperature Science*, Ser. A, [Supplement to No.] 33, *Shiryō Shū: Data Report*, 1975, p. 7–16. [Describes apparatus and presents tables showing results of measurements.]

Vivian, R. Glaciers alpins et chronologie Holocène. *Bulletin de l'Association de Géographes Français*, 53e An., No. 433, 1976, p. 105–18. [Radiocarbon dating shows three major events during post-Würm period. Most recent advance took place between A.D. 1500 and 1850. Discussion, p. 115–18.]

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ERRATUM

Vol. 18, No. 78, p. 131. Fig. 2 as printed is a negative, so that areas which should have been dark are light. A replacement copy of the illustration is enclosed.