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.

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TIMASHEV, I. YE. Drevneye oledeneniye Severnogo Verkhoyan'ya [Ancient glaciation of northern Verkhoyansk area]. *Izvestiya Akademii Nauk SSSR. Seriya Geograficheskaya*, 1975, No. 6, p. 81–87. [Yakutskaya A.S.S.R.]

TROITSKIY, L. S. O vozraste morskikh terras i razmerakh pozdnegolotsenovykh lednikovykh stadiy na Novoy Zemle [On the age of the marine-built terraces and dimensions of the late Holocene glacial stages on Novaya Zemlya]. *Materialy Glyatsiologicheskikh Issledovaniy. Khronika. Obsuzhdeniya*, Vyp. 25, 1976, p. 194–96. [Presents figures for age determinations, and suggests late Holocene glaciation did not exceed that of present day. English summary, p. 196.]

VINNIK, A. B., *and others*. Novyye dannye po osnovnym morfometricheskim kharakteristikem Antarktidy [New data on morphometric characteristics of Antarctica]. [By] A. B. Vinnik, B. V. Dubrovskiy, Ya. P. Koblents, Ye. S. Korotkevich. *Informatsionnyy Byulleten' Sovetskoy Antarkticheskoy Ekspeditsii*, No. 93, 1976, p. 13–18.

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WEIDICK, A. Quaternary geology of the area between Frederikshåbs Isblink and Ameralik. *Gronlands Geologiske Undersøgelse. Rapport*, No. 70, 1975, 22 p. [Fluctuations in extent of ice sheet during Pleistocene in this west Greenland area.]

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ZAMORUYEV, V. V. Pozdnechetvertichnoye oledeneniye v dolinakh rek Vostochnaya Khandyga i Kobyuma (Yuzhnaya Verkhoyan'ye) [Late Quaternary glaciation in river valleys of the Vostochnaya Khanyga and Kobyuma (southern Verkhoyansk)]. *Izvestiya Vsesoyuznogo Geograficheskogo Obshchestva*, Tom 108, Vyp. 2, 1976, p. 154–59.

ZILLIACUS, H. L. De Geer-moräner och isrecessionen i södra Finlands östra delar. *Terra*, Vol. 88, No. 4, 1976, p. 176–84. [Recession of ice margin in eastern parts of southern Finland reconstructed from morphological analysis of end moraines. English summary, p. 176.]

FROST ACTION ON ROCKS AND SOIL. FROZEN GROUND. PERMAFROST

AGUIRRE-PENTE, J. Aperçu sur le problème de la congélation des sols. *Inter-Nord*, Nos. 13–14, 1974, p. 323–26. [Brief outline of problems and recent studies in permafrost research.]

ÅHMAN, R. Palsstrukturer och palsmorfologi i Nordnorge. *Svensk Geografisk Årsbok*, Årg. 51, 1975, p. 223–32. [Study of palsa structure and morphology in north Norway. English abstract, p. 223.]

Åhman, R. The structure and morphology of microgenic palsas in northern Norway. *Biuletyn Peryglacjalny*, No. 26, 1976, p. 25–31. [Describes various types of palsas observed by field investigations and air photography in this area of sporadic permafrost.]

Anderson, D. M. Department of the Army, Cold Regions Research and Engineering Laboratory. *Biuletyn Peryglacjalny*, No. 26, 1976, p. 148–52. [Describes research carried out at CRREL, with particular reference to periglacial phenomena.]

Charre, J.-P., *and* Lautridou, J.-P. Expériences de cryoclastie sur des grès et roches vertes. *Revue de Géographie Alpine*, Tom. 63, Fasc. 2, 1975, p. 253–61. [Freezing tests on sandstone and ophiolites from north-west Greece show that only serpentinite is subject to frost weathering. Seems that pore space and mechanical resistance are main factors determining liability to frost shattering.]

Clark, R. Further consideration of Falkland Islands periglacial landscapes. *Biuletyn Peryglacjalny*, No. 26, 1976, p. 167–74. [Discusses cold climate landscape development.]

Corte, A. Rock glaciers. *Biuletyn Peryglacjalny*, No. 26, 1976, p. 175–97. [Describes types of rock glaciers in the Argentine Andes, and discusses their development.]

Crampton, C. B. Patterned ground in the Maritimes, Canada. *Biuletyn Peryglacjalny*, No. 26, 1976, p. 199–204. [Polygon ground patterns probably originated during deglaciation at end of Pleistocene.]

Daniels, J. J., *and others*. Computer-assisted interpretation of electromagnetic soundings over a permafrost section, [by] J. J. Daniels, G. V. Keller and J. J. Jacobson. *Geophysics*, Vol. 41, No. 4, 1976, p. 752–65. [Procedure used to interpret two-loop electromagnetic soundings made along Arctic Slope of Alaska to determine permafrost thickness and character.]

Donnay, J., *and others*. Observations sur photos aériennes de structures périglaciaires en Ardenne centrale, [par] J. Donnay, P. Macar, A. Ozer et A. Pissart. *Biuletyn Peryglacjalny*, No. 26, 1976, p. 205–09. [Describes fossil periglacial phenomena observed by means of air photographs in Belgium.]

Ellenberg, L. Zur Solifluktionsgrenze in den Gebirgen Japans. *Erdkunde*, Bd. 31, Ht. 1, 1977, p. 16–24. [Divides Japan into four periglacial regions and compares with north-eastern Appalachians, U.S.A.]

Francou, B. Formes d'éboulis éléves en Briançonnais. *Revue de Géographie Alpine*, Tom. 65, Fasc. 1, 1977, p. 63–77. [Glacial and periglacial features (especially rock glaciers) at 2 600 to 3 000 m altitude in this part of the French Alps.]

French, H. M. *The periglacial environment*. London and New York, Longman, [©1976]. x, 309 p. [Textbook dealing with present-day and Pleistocene periglacial environments.]

French, H. M., *and* Dutkiewicz, L. Pingos and pingo-like forms, Banks Island, western Canadian Arctic. *Biuletyn Peryglacjalny*, No. 26, 1976, p. 211–22. [Describes pingo-like mounds near central Bernard River and pingo-like ridges, upper Sachs River.]

[Frozen ground.] Dix ans de recherches au Centre de Géomorphologie. *Centre National de la Recherche Scientifique. Centre de Géomorphologie de Caen. Bulletin* No. 21, 1976, 95 p. [Includes: A. Journaux and J. P. Coutard, "Les expériences sur l'action du gel dans les sols", p. 13–20; J. P. Lautridou, "Les expériences de cryoclastie", p. 21–28; L. Caniard, A. de Boissoudy and H. Bertouille, "Étude du comportement d'une structure routière soumise à des cycles de gel-dégel en simulation expérimentale à la station de gel de Caen", p. 63–72; H. Bertouille, "Études théoriques et propositions expérimentales", p. 73–77.]

Gangloff, P., *and* Cailleux, A. Indices possibles de pergélisol discontinu. *Biuletyn Peryglacjalny*, No. 26, 1976, p. 223–35. [Discusses identification of features indicating presence of discontinuous permafrost.]

Gold, L. W. National Research Council of Canada, Division of Building Research. *Biuletyn Peryglacjalny*, No. 26, 1976, p. 138–45. [Describes research carried out in the Geotechnical Section, which includes problems of permafrost.]

Goldthwait, R. P. Frost sorted patterned ground: a review. *Quaternary Research*, Vol. 6, No. 1, 1976, p. 27–35. [Describes and discusses characteristics and possible modes of formation.]

Goldthwait, R. P. Past climates on "the hill". Part 2. Permafrost fluctuations. *Mount Washington Observatory News Bulletin*, Vol. 17, No. 2, 1976, p. 38–41. [Discusses fossil periglacial features in relation to past climates of the Presidential Range, New Hampshire, U.S.A.]

Goździk, J. O szczelinowych strukturach pasowych w Polsce [Stripe fissure structures in Poland]. *Acta Geographica Lodziensia*, Nr. 37, 1976, p. 7–23. [Probably due to cracking of permafrost during Würm glaciation. English summary, p. 21–23.]

Gravis, G. F., *and* Lisun, A. M. Climatic changes and permafrost evolution in Mongolia: natural conditions and recent permafrost. *Inter-Nord*, Nos. 13–14, 1974, p. 73–85. [Past and present permafrost.]

Greenhouse, J. P., *and* Morgan, A. V. Resistivity mapping of fossil permafrost patterns in southwestern Ontario. *Canadian Journal of Earth Sciences*, Vol. 14, No. 2, 1977, p. 496–500. [Fossil ice-wedge polygons mapped at ground level using small-scale resistivity profiling.]

Heidmann, L. J., *and* Thorud, D. B. Controlling frost heaving of ponderosa pine seedlings in Arizona. *U.S. Dept. of Agriculture. Forest Service. Research Paper* RM-172, 1976, [ii], 12 p. [Describes frost heaving process. May be reduced by ploughing to lower soil bulk density and adding gypsum to lower freezing point of soil water.]

Heine, K. Blockgletscher- und Blockzungen-Generationen am Nevado de Toluca, Mexiko. *Die Erde*, Jahrg. 107, Ht. 4, 1976, p. 330–52. [Discusses rock glaciers and ice-cored moraines on this volcano in Mexico.]

Higashi, A. Ice Research Laboratory, Department of Applied Physics, Hokkaido University, Sapporo, Japan. *Biuletyn Peryglacjalny*, No. 26, 1976, p. 114–17. [Describes recent research on periglacial phenomena conducted in this laboratory.]

Jahn, A. Contemporaneous geomorphological processes in Longyeardalen, Vestspitsbergen (Svalbard). *Biuletyn Peryglacjalny*, No. 26, 1976, p. 253–68. [Study of action of slope wash, solifluction and mechanical weathering as affected by permafrost.]

Journaux, A. Alternances du ruissellement et de la solifluction dans les milieux periglaciaires: exemples canadiens

et expérimentations. *Biuletyn Peryglacjalny*, No. 26, 1976, p. 269–73. [Describes effects of rills and solifluction processes on periglacial environments, with examples from Canadian Arctic.]

Journaux, A. Centre National de la Recherche Scientifique, Centre de Géomorphologie à Caen. *Biuletyn Peryglacjalny*, No. 26, 1976, p. 128–33. [Describes recent research into periglacial processes carried out in this laboratory.]

Kolasińska, J. Zjawiska peryglacjalne w południowej strefie wieloletniej zmarzliny na przykładzie obszaru Zabajkala [Periglacial phenomena in the southern zone of permafrost illustrated by the example of Transbaykalia]. *Acta Geographica Lodziensia*, Nr. 37, 1976, p. 113–26. [Describes occurrence and development of fossil and present-day periglacial landforms in this area of extreme temperatures. English summary, p. 125–26.]

Krivonosov, B. M. Naledeobrazovaniye na yugo-vostoke zapadnoy Sibiri [On the formation of *Aufeis* in the south-east of Western Siberia]. *Materialy Glyatsiologicheskikh Issledovaniy. Khronika. Obsuzhdeniya*, Vyp. 25, 1976, p. 129–33. [Discusses causes and development. English summary, p. 133.]

Ladanyi, B. Université de Montréal, École Polytechnique, Centre d'Ingénierie Nordique. *Biuletyn Peryglacjalny*, No. 26, 1976, p. 153–58. [Research at the Centre is mainly into northern engineering with emphasis on frozen ground mechanics.]

Maarleveld, G. C. Periglacial phenomena and the mean annual temperature during the last glacial time in the Netherlands. *Biuletyn Peryglacjalny*, No. 26, 1976, p. 57–78. [Presents conclusions drawn by comparing fossil periglacial phenomena and former environmental data with present-day periglacial features.]

Mackay, J. R. Permafrost growth and subpermafrost pore water expulsion, Tuktoyaktuk Peninsula, District of Mackenzie. Project 680047. *Canada. Geological Survey. Paper* 77-1A, 1977, p. 323–26. [Presents results of field experiments on sub-permafrost pore water beneath pingos.]

Mackay, J. R. Probing for the bottom of the active layer. Project 680047. *Canada. Geological Survey. Paper* 77-1A, 1977, p. 327–28. [Can be located in icy and ice-bonded soils by "feel", but not in fine-grained soils free of ice lenses.]

Mackay, J. R. Pulsating pingos, Tuktoyaktuk Peninsula, N.W.T. *Canadian Journal of Earth Sciences*, Vol. 14, No. 2, 1977, p. 209–22. [Discusses growth patterns of two unusual pingos which pulsate with alternating periods of uplift and subsidence in response to rate of accumulation and loss of water beneath them.]

Mackay, J. R. The widths of ice wedges. Project 680047. *Canada. Geological Survey. Paper* 77-1A, 1977, p. 43–44. [Apparent width is about 50% greater than true width; apparent height is usually true.]

Meneghel, M. Alcune nisure su fenomeni di soliflusso osservati presso il passo Pordoi (Dolomiti). *Bollettino del Comitato Glaciologico Italiano*, Ser. 2, No. 24, 1976, p. 9–21. [Although solifluction near this pass seems to be active still, some mud tongues were probably formed in period when climate could have caused periglacial environment.]

Nekrasov, I. A. *Kriolitozona severo-vostoka i yuga Sibiri i zakonomernosti yeye razvitiya* [*The cryolithic zone of north-eastern and southern Siberia and regularities of its development*]. Yakutsk, Yakutskoye Knizhnoye Izdatel'stvo, 1976. 246 p. [Detailed description. English summary, p. 238–45.]

Nicholson, F. H. Patterned ground formation and description as suggested by low Arctic and subarctic examples. *Arctic and Alpine Research*, Vol. 8, No. 4, 1976, p. 329–42. [Develops modified system of field description following observations in eastern England, north-west Alaska and north Norway.]

Olhoeft, G. R. Electrical properties of natural clay permafrost. *Canadian Journal of Earth Sciences*, Vol. 14, No. 1, 1977, p. 16–24.

Osterkamp, T. E., *and* Harrison, W. D. Subsea permafrost: its implications for offshore resource development. *Northern Engineer*, Vol. 8, No. 1, 1976, p. 31–35. [Discusses results of drilling and sampling tests in Prudhoe Bay, Alaska.]

Pissart, A. Sols à buttes, cercles non triés et sols striés non triés de l'Ile de Banks (Canada, N.W.T.). Aspect en plan, en coupe et données génétiques. *Biuletyn Peryglacjalny*, No. 26, 1976, p. 275–85. [Presents results of study of frost hummocks, unsorted circles, and unsorted soil stripes on Banks Island.]

Pissart, A. Université de Liège. *Biuletyn Peryglacjalny*, No. 26, 1976, p. 118–27. [Describes research into periglacial processes carried out at this university in the Laboratoire de Géologie et Géographie Physique.]

Poppe, V. N., *and* Brown, R. J. E. Russian–English glossary of permafrost terms. *Canada. National Research Council. Associate Committee on Geotechnical Research. Technical Memorandum* No. 117, 1976, iii l., 25 leaves. [Russian terms given in Cyrillic script.]

Ratsek, V. I. Dinamika naledey Vostochnogo Pamira [Dynamics of icings of the eastern Pamir]. *Izvestiya Vsesoyuznogo Geograficheskogo Obshchestva*, Tom 108, Vyp. 4, 1976, p. 329–33. [Account of periodic observations of river-valley icings since 1886.]

Reger, R. D., *and* Péwé, T. L. Cryoplanation terraces: indicators of a permafrost environment. *Quaternary Research*, Vol. 6, No. 1, 1976, p. 99–109. [Discusses origin and development, based on extensive field work in northern hemisphere.]

Romanovskiy, N. N. The scheme of correlation of polygonal wedge structures. *Biuletyn Peryglacjalny*, No. 26, 1976, p. 287–94. [Study of ice wedges and their development.]

Scott, W. J., *and* Hunter, J. A. Applications of geophysical techniques in permafrost regions. *Canadian Journal of Earth Sciences*, Vol. 14, No. 1, 1977, p. 117–27. [Describes techniques used to map location of permafrost zones (including sub-sea bottom), measure thickness and identify ice-rich ground in Canadian Arctic.]

Seguin, M. K. Détermination de la géométrie et des propriétés physiques du pergélisol discontinu de la région de Schefferville. *Canadian Journal of Earth Sciences*, Vol. 14, No. 3, 1977, p. 431–43. [Permafrost studies at Schefferville, P.Q., Canada.]

Seppälä, M. Seasonal thawing of a palsa at Enontekiö, Finnish Lapland, in 1974. *Biuletyn Peryglacjalny*, No. 26, 1976, p. 17–24. [Presents results of study of speed of melting of active layer of single small palsa during thaw period. Greatest in June and July.]

Stäblein, G. Periglaziale Höhenstufen zwischen Subarktis und Äquator. Bericht über das geomorphologische Symposium der Akademie der Wissenschaften in Göttingen, 19. bis 23. September 1976. *Die Erde*, Jahrg. 108, Ht. 1–2, 1977, p. 151–53. [Brief outline of papers presented at this symposium on periglacial altitude zones from sub-Arctic to equatorial regions.]

Svensson, H. Fossila iskilspolygoner i nordvästra Skåne. *Svensk Geografisk Årsbok*, Årg. 51, 1975, p. 191–200. [Relict patterns of ice wedge polygons in north-western Skåne, Sweden. English abstract, p. 191.]

Svensson, H. Pingo problems in the Scandinavian countries. *Biuletyn Peryglacjalny*, No. 26, 1976, p. 33–40. [Observations on variants of permafrost mounds, in Norway, Sweden and Denmark.]

Takashi, T. Seiken Reiki, Ltd., Japan. *Biuletyn Peryglacjalny*, No. 26, 1976, p. 162–65. [Describes recent research into frozen soil carried out in this laboratory.]

Tufnell, L. Ploughing block movements on the Moor House reserve (England), 1965–75. *Biuletyn Peryglacjalny*, No. 26, 1976, p. 311–17. [Study of displacement by frost of these blocks.]

Vyalov, S. S., *and* Porkhayev, G. V., *ed.* Handbook for the design of bases and foundations of buildings and other structures on permafrost. Translated by V. Poppe. *Canada. National Research Council. Technical Translation* 1865, 1976, [288] p. [Translation of *Posobiye po proyektirovaniyu osnovaniy i fundamentov zdaniy i sooruzheniy na vechnomerzlykh gruntakh*. Moscow, Izdatel'stvo Literatury po Stroitel'stvu, 1969. Of interest to investigators of permafrost and building problems in northern Canada.]

Washburn, A. L. University of Washington, Quaternary Research Center, Periglacial Research Laboratory. *Biuletyn Peryglacjalny*, No. 26, 1976, p. 146–47. [Brief description of laboratory.]

White, S. E. Rock glaciers and block fields, review and new data. *Quaternary Research*, Vol. 6, No. 1, 1976, p. 77–97. [Describes characteristics and origins.]

Wood, J. L. Influence of repetitious freeze–thaw on structure and shear strength of Leda (Massena) clay. *Dissertation Abstracts International*, B, Vol. 37, No. 4, 1976, p. 1808-B. [Behaviour of clay studied by means of laboratory tests. Abstract of Ph.D. thesis, Clarkson College of Technology, 1976. University Microfilms order no. 76-22493.]

Yong, R. N. McGill University, Soil Mechanics Research Laboratory. *Biuletyn Peryglacjalny*, No. 26, 1976, p. 159–61. [Summarizes research projects.]

Meteorological and climatological glaciology

Allison, I., *and* Kruss, P. Estimation of recent climate change in Irian Jaya by numerical modeling of its tropical glaciers. *Arctic and Alpine Research*, Vol. 9, No. 1, 1977, p. 49–60. [Carstensz and Meren glaciers, Papua New Guinea.]

Atlas, D. The paradox of hail suppression. *Science*, Vol. 195, No. 4274, 1977, p. 139–45. [Although some projects for hail suppression by cloud seeding report success, others report failure or even increased hail. The reasons are discussed.]

Changnon, S. A., *jr.* On the status of hail suppression. *Bulletin of the American Meteorological Society*, Vol. 58, No. 1, 1977, p. 20–28. [Assessment of the future potential of hail suppression in United States.]

Grams, G., *and* Fiocco, G. Equilibrium temperatures of spherical ice particles in the upper atmosphere and implications for noctilucent cloud formation. *Journal of Geophysical Research*, Vol. 82, No. 6, 1977, p. 961–66. [Theoretical calculation of temperature of ice spheres gives a saturation vapour pressure that can sometimes exceed atmospheric pressure. This sets limits for existence of such clouds.]

Gzirishvili, T. G., *and* Kharchilava, J. F. O vozmozhnoy roli ozona v yavlenii l'doobrazonvaniya v oblakakh [On the possible role of ozone in the phenomenon of ice formation in clouds]. *Izvestiya Akademii Nauk SSSR. Fizika Atmosfery i Okeana*, Tom 13, No. 1, 1977, p. 100–02.

Hahn, D. G., *and* Shukla, J. An apparent relationship between Eurasian snow cover and Indian monsoon rainfall. *Journal of the Atmospheric Sciences*, Vol. 33, No. 12, 1976, p. 2461–62. [Inverse relation indicated.]

Harris, F. I. The effects of evaporation at the base of ice precipitation layers: theory and radar observations. *Journal of the Atmospheric Sciences*, Vol. 34, No. 4, 1977, p. 651–72. [Theoretical and Doppler radar study of precipitation and velocity structures.]

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Libby, L. M., *and* Pandolfi, L. J. Climate periods in tree, ice and tides. *Nature*, Vol. 266, No. 5601, 1977, p. 415–17. [Ten climate periods found in O and H isotope ratios of 1 800-year-old tree agree with periods from Greenland ice cores and computed tidal stresses.]

Mather, G. K., *and others.* An observed relationship between the height of the 45 dBZ contours in storm profiles and surface hail reports, [by] G. K. Mather and D. Treddenick, R. Parsons. *Journal of Applied Meteorology*, Vol. 15, No. 12, 1976, p. 1336–40. [Correlation observed which can be used for deciding whether to seed for hail suppression.]

Miller, G. H. Glacial and climatic history of northern Cumberland Peninsula, Baffin Island, Canada, during the last 10,000 years. *Dissertation Abstracts International*, B, Vol. 36, No. 5, 1975, p. 2121-B. [Abstract of Ph.D. thesis, University of Colorado, 1975. University Microfilms order no. 75-23623.]

Newman, M. J., *and* Talbot, R. J., *jr.* Solar neutrinos and solar accretion of interstellar matter. *Nature*, Vol. 263, No. 5569, 1976, p. 559–60. [This has implications for solar neutrino output and a drop in this could trigger the onset of glacial periods.]

Pal, S. R., *and* Carswell, A. I. The polarization characteristics of lidar scattering from snow and ice crystals in the atmosphere. *Journal of Applied Meteorology*, Vol. 16, No. 1, 1977, p. 70–80. [Measurements. Snow shows considerable variations.]

PATERSON, W. S. B., *and others*. An oxygen-isotope climatic record from the Devon Island ice cap, Arctic Canada, [by] W. S. B. Paterson [and 7 others]. *Nature*, Vol. 266, No. 5602, 1977, p. 508–11. [Two cores provide well-dated record for past 5 000 years. Ice more than 10 000 years old is compressed into few metres near glacier bed and so record is less detailed.]

SCHNELL, R. C., *and* DELANY, A. C. Airborne ice nuclei near an active volcano. *Nature*, Vol. 264, No. 5586, 1976, p. 535–36. [Upwind of St Augustine Island, Alaska, the effluent plume was not contributing significantly to background atmospheric ice nuclei.]

SUAREZ, M. J. An evaluation of the astronomical theory of the ice ages. *Dissertation Abstracts International*, B, Vol. 37, No. 9, 1977, p. 4371-B. [Model of the global energy balance developed and effect of perturbations of solar radiation analysed. Positive feedback due to high albedo of snow and sea ice incorporated. Orbital variations of last 150 000 years give fluctuations qualitatively similar to geologic record. Abstract of Ph.D. thesis, Princeton University, 1976. University Microfilms order no. 77-4800.]

TRESHNIKOV, A. F., *and* VOSKRESENSKIY, A. V. Klimat zony dreyfuyushchikh l'dov [Climate of the drifting ice zones]. *Voprosy Geografii*, Sbornik 101, 1976, p. 87–97. [Relationship between ice and climate. English summary, p. 172.]

VLIET-LANOË, B. VAN. Traces de ségrégation de glace en lentilles associées aux sols et phénomènes périglaciaires fossiles. *Biuletyn Peryglacjalny*, No. 26, 1976, p. 41–55. [Shows how microscopic studies of frozen ground, supported by field observations, permit reconstruction of palaeoclimatology.]

WEISS, R. R., *sr., and others*. Deduction of ice particle types in the vicinity of the melting layer from Doppler radar measurements, [by] R. R. Weiss, Sr., J. D. Locatelli and P. V. Hobbs. *Journal of Applied Meteorology*, Vol. 16, No. 3, 1977, p. 314–16. [Technique to identify graupel from ice crystals, and, under certain conditions, further detail.]

SNOW

ADAMS, W. P. Areal differentiation of snow cover in east central Ontario. *Water Resources Research*, Vol. 12, No. 6, 1976, p. 1226–34. [Studies variation of depth, mean density, and water equivalent among seven vegetation types in area where vegetation is dominant control of areal variation of snow cover.]

AKIF'YEVA, K. V., *and* LABUTINA, I. A. Deshifirovaniye snezhnikov vysokogor'ya pri sozdanii topograficheskikh kart [Interpretation of upland snow-patches when making topographical maps]. *Vestnik Moskovskogo Universiteta. Seriya 5. Geografiya*, 1976, No. 2, p. 64–69. [Interpretation and selection of snow-patches from air photographs for topographic mapping. English summary, p. 69.]

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