

## J. F. Nye -- Publications

(Author is J. F. Nye alone unless stated otherwise)

(Numbers in brackets are new, numbers without brackets are old. Please quote new numbers)

- (1) 1. 1945 "Notch brittleness and ductile fracture in metals". Ministry of Supply, A. R. D. Report. Also printed as Report No. 8 in Selected Government Research Reports, vol. 6 (1952). (E. Orowan, J. F. Nye and W. J. Cairns)
- (2) 2. 1947 "A dynamical model of a crystal structure". *Proc. Roy. Soc. A* **190**, 474-481. (Sir Lawrence Bragg and J. F. Nye)
- (3) 2a. 1947 German translation of the above. *Naturwiss.* **11**, 328-336.
- (4) 2b. 1948 "The flow of glaciers". *Nature*, **161**, 819. (Report of a meeting)
- (5) 3. 1948 "Photo-elastic investigation of internal stresses in silver chloride caused by plastic deformation". *Nature*, **161**, 367.
- (6) 4. 1948 "Glide bands in silver chloride". *Nature*, **162**, 299.
- (7) 5. 1949 "Mise en évidence des tensions internes et des dislocations dans les métaux par le comportement photo-élastique du chlorure d'argent". *Révue de Metallurgie*, **46**, 371-376.
- (8) 6. 1949 "Plastic deformation of silver chloride. I. Internal stresses and the glide mechanism". *Proc. Roy. Soc. A* **198**, 190-204.
- (9) 6a. 1949 Review of "Report of a Conference on Strength of solids, Bristol, 7-9 July 1947, Physical Society, London, 1948." *Research* 2-5, 234.
- (10) 7. 1950 "Plastic deformation of silver chloride. II. Photoelastic study of the internal stresses in glide packets". *Proc. Roy. Soc. A* **200**, 47-66.
- (11) 8. 1951 "The flow of glaciers as a problem in plasticity". *Proc. Roy. Soc. A* **207**, 554-572.
- (12) 8a. 1951 Discussion on "A metallurgical investigation of silver chloride" by R. D. Moeller, F. W. Schonfeld, C. R. Tipton, Jr. and J. T. Waber. *Trans. A. S. M.*, **43**, 66-68.
- (13) 9. 1952 "Extrusion flow". *J. Glaciol.* **2**, 51-53.
- (14) 10. 1952 "A method of calculating the thicknesses of the ice-sheets". *Nature*. **169**, 529.
- (15) 11. 1952 "Experiments on the compression of a block between rough plates". *J. Appl. Mech.* **19**, 337-347.
- (16) 11a. 1952 Above paper printed in Selected Government Research Reports, vol 6 (1952). Report No. 7.
- (17) 12. 1952 "A dynamical model of a crystal structure. IV. Grain boundaries". *Proc. Roy. Soc. A* **212**, 576-584. (W. M. Lomer and J. F. Nye)
- (18) 13. 1952 "The mechanics of glacier flow". *J. Glaciol.* **2**, 82-93.
- (19) 14. 1952 "A comparison between the theoretical and the measured long profile of the Unteraar Glacier". *J. Glaciol.* **2**, 103-107.
- (20) 15. 1953 "Some geometrical relations in dislocated crystals". *Acta Metallurgica*, **1**, 153-162.
- (21) 16. 1953 "The flow law of ice from measurements in glacier tunnels, laboratory experiments and the Jungfrauoch borehole experiment". *Proc Roy. Soc. A* **219**, 477-489.

- (22) 17. 1955 "Notes on crevasses". *J. Glaciol.* **2**, 512-514.
- (23) 18. 1957 "Photoelastic study of dislocation arrangements in crystals". *Phil. Mag. Ser. 8*, **2**, 772-776. (J. F. Nye, R. D. Spence and M. T. Sprackling)
- (24) 19. 1957 "The distribution of stress and velocity in glaciers and ice-sheets". *Proc. Roy. Soc. A* **239**, 113-133.
- (25) 20. 1957 "Glacier mechanics". *J. Glaciol.* **3**, 91-93.
- (26) 21. 1957 "Glaciological studies on Austerdalsbreen, Norway, 1955-57". Union Géodésique et Géophysique. Assemblée Générale de Toronto, **4**, 397-402.
- (27) 22. 1957 Book. *Physical properties of crystals: their representation by tensors and matrices*. Oxford: Clarendon Press, 322pp.
- (28) 23. 1958 "Surges in glaciers". *Nature*, **181**, 1450-1451.
- (29) 24. 1958 "A theory of wave formation in glaciers". International Union of Geodesy and Geophysics, International Association of Scientific Hydrology, Chamonix Symposium, 134-154.
- (30) 25. 1959 "The deformation of a glacier below an ice-fall". *J. Glaciol.* **3**, 386-408.
- (31) 26. 1959 "A method of determining the strain-rate tensor at the surface of a glacier". *J. Glaciol.* **3**, 409-419.
- (32) 27. 1959 "Surface topography of the Antarctic ice sheet". *Nature*, **184**, 786-787.
- (33) 28. 1959 "The motion of ice sheets and glaciers". *J. Glaciol.* **3**, 493-507.
- (34) 29. 1960 "The response of glaciers and ice-sheets to seasonal and climatic changes". *Proc. Roy. Soc. A* **256**, 559-584.
- (35) 30. 1960 Russian translation of book "Physical properties of crystals", Moscow.
- (36) 31. 1961 "The influence of climatic variations on glaciers". International Union of Geodesy and Geophysics, International Association of Scientific Hydrology, General Assembly of Helsinki, 397-404.
- (37) 32. 1961 "Propriétés physiques des cristaux". Translation of book, Dunod, Paris.
- (38) 33. 1962 "Implications of mass balance studies". *J. Glaciol.* **4**, 264-265.
- (39) 34. 1962 Polish translation of book "Physical properties of crystals". Panstwowe Wydawnictwo Naukowe.
- (40) 35. 1963 "Correction factor for accumulation measured by the thickness of the annual layers in an ice sheet". *J. Glaciol.* **4**, 785-788.
- (41) 36. 1963 "Theory of glacier variations". In *Ice and Snow: properties, processes and applications* (ed Kingery), 151-161. M. I. T. Press.
- (42) 37. 1963 "On the theory of the advance and retreat of glaciers". *Geophys. Journ. Roy. Astron. Soc.* **7**, 413-456.
- (43) 38. 1963 "The response of a glacier to changes in the rate of nourishment and wastage". *Proc. Roy. Soc. A* **275**, 87-112.
- (44) 39. 1962 "Report of the subcommittee on variations of existing glaciers to the International Commission of Snow and Ice". U.G.G.I., A.I.H.S., Commission of Snow and Ice, Publ. No. 58 (1962), Symposium of Obergurgl, pp. 306-309. (Also 1964)

- (45) 39a. 1964 Paper No. 2 reprinted in full in "The Feynman Lectures in Physics", Vol. 2.
- (46) 40. 1965 "Bubble model of crystal". Article in *Encyclopaedic Dictionary of Physics*.
- (47) 41. 1965 "Stability of a circular cylindrical hole in a glacier". *J. Glaciol.* **40**, 505-507.
- (48) 42. 1965 "The frequency response of glaciers". *J. Glaciol.* **41**, 567-587.
- (49) 43. 1965 "A numerical method of inferring the budget history of a glacier from its advance and retreat". *J. Glaciol.* **41**, 589-607.
- (50) 43a. 1965 "Theory of glacier variations; reply to Dr. Shumskiy's letter". *J. Glaciol.* **5**, No. 40, 517-521.
- (51) 43b. 1966 "Theory of glacier variations; reply to Dr. Shumskiy's letter". *J. Glaciol.* **6**, No. 45, 465.
- (52) 44. 1965 The flow of a glacier in a channel of rectangular, elliptical or parabolic cross-section". *J. Glaciol.* **47**, 695-715.
- (53) 45. 1967 "Plasticity solution for a glacier snout". *J. Glaciol.* **47**, 695-715.
- (54) 46. 1967 "Theory of regelation". *Phil. Mag.* **16**, 1249-1266.
- (55) 47. 1968 "Computations of the possible future behaviour of Berendon Glacier, Canada". *J. Glaciol.* **50**, 205-213. (N. Untersteiner and J. F. Nye)
- (56) 48. 1968 "Errors in the determination of ablation using stakes". *J. Glaciol.* **7**, 133. (Letter)
- (57) 49. 1967 "Glacial erosion". Commission of Snow and Ice. General Assembly of Bern, Sept-Oct 1967. (J. F. Nye and P. C. S. Martin)
- (58) 50. 1969 "The effect of longitudinal stress on the shear stress at the base of an ice sheet". *J. Glaciol.* **8**, No. 53, 207-213.
- (59) 51. 1969 "The advance and retreat of glaciers". *Weather*, **24**, 12, 501-512.
- (60) 52. 1969 "A calculation on the sliding of ice over a wavy surface using a Newtonian viscous approximation". *Proc. Roy. Soc. Lond. A* **315**, 445-467.
- (61) 52a. 1969 "Variations in existing glaciers: a guide to international practices for their measurement". UNESCO: Paris. (Also Spanish edition 1973) (Anonymous)
- (62) 53. 1970 "Glacier sliding without cavitation in a linear viscous approximation". *Proc. Roy. Soc. Lond. A* **315**, 381-403.
- (63) 53a. 1970 "Response to Dr. G. de Q. Robin's plea for fixed axes of reference in glacier mechanics". *J. Glaciol.* **9**, 285-286.
- (64) 54. 1971 "Causes and mechanics of glacier surges: discussion". *Canadian Journal of Earth Sciences*, **8**, 2, 306-307.
- (65) 55. 1972 "The effect of non-hydrostatic stress on intergranular water veins and lenses in ice". *J. Glaciol.* **11**, No. 61, 81-101.
- (66) 56. 1972 "On the theory of the advance and retreat of glaciers". *Geophys. Journ. Roy. Astron. Soc.* **7**, 431-456.
- (67) 57. 1972 "Proposal for measuring the movement of a large ice sheet by observing radio echoes". *J. Glaciol.* **11**, No. 63, 319-325. (J. F. Nye, R. G. Kyte and D. C. Threlfall)
- (68) 58. 1972 "Measuring the change in thickness of the Antarctic ice sheet". *Nature Physical Science*, **240**, 97, 7-9.

- (69) 59. 1973 "Hydrology of the intergranular veins in a temperate glacier". *Symposium on the hydrology of glaciers, Cambridge 1969*. AIHS and Glaciological Society, pp. 157-161. (J. F. Nye and F. C. Frank)
- (70) 60. 1973 "Water at the bed of a glacier". *Symposium on the hydrology of glaciers, Cambridge 1969*. AIHS and Glaciological Society, pp. 189-194.
- (71) 61. 1973 "The physical meaning of two-dimensional stresses in a floating ice cover". *AIDJEX (Arctic Ice Dynamics Joint Experiment) Bulletin* No. 21, pp. 1-8.
- (72) 62. 1973 "The meaning of two-dimensional strain-rate in a floating ice cover". *AIDJEX Bulletin* No. 21, pp. 9-17.
- (73) 63. 1973 "Is there any physical basis for assuming linear viscous behaviour for sea ice?". *AIDJEX Bulletin* No. 21, pp. 18-19.
- (74) 64. 1973 "A note on the power spectra of sea-ice profiles". *AIDJEX Bulletin* No. 21, pp. 20-21.
- (75) 65. 1973 "The motion of ice past obstacles". In *Physics and Chemistry of Ice*, Royal Society of Canada, Ottawa, pp. 387-395.
- (76) 66. 1974 "Dislocations in wave trains". *Proc. Roy. Soc. Lond. A* **336**, 165-190. (J. F. Nye and M. V. Berry)
- (77) 67. 1974 "Three notes on the theory of sea-ice movement". *AIDJEX Bulletin* No. 23, 37-44.
- (78) 68. 1974 "Russians at conferences". *Nature*, **249**, 8.
- (79) 69. 1974 "The use of satellite photographs to give the movement and deformation of sea ice". *AIDJEX Bulletin*, No. 27, 1-21. (J. F. Nye and D. R. Thomas)
- (80) 70. 1974 "Deducing thickness changes of an ice sheet from radio-echo and other measurements". *J. Glaciol.* **14**, No. 70, 49-56.
- (81) 71. 1975 "Discontinuities in the AIDJEX model". *AIDJEX Bulletin*, No. 28, 119-126.
- (82) 72. 1975 "Suggested procedure in observing ice displacement, strain and thickness distribution during AIDJEX main experiment". *AIDJEX Bulletin*, No. 28, 127-140.
- (83) 73. 1975 "A test of the ice thickness redistribution equations by measurements of ERTS pictures". *AIDJEX Bulletin*, No. 28, 141-150.
- (84) 74. 1975 "The use of ERTS photographs to measure the movement and deformation of sea ice". *J. Glaciol.* **15**, No. 73, 429-436.
- (85) 74a. 1975 "Report on the activities of the International Commission on Snow and Ice for the period 1971-75". *Bulletin of Hydrological Sciences*, **20**, (412), 425-427.
- (86) 74b. 1976 President's Report in Meeting of the International Commission on Snow and Ice 29 August 1975, in *Bulletin of Hydrological Sciences*, **21**, (26), 250-256.
- (87) 75. 1976 "The kinetic friction of ice". *Proc. Roy. Soc. Lond. A* **347**, 493-512.
- (88) 76. 1976 "Water flow in glaciers: jökulhlaups, tunnels and veins". *J. Glaciol.* **17**, 181-207.
- (89) 77. 1976 "Dislocations and catastrophes in the vector and tensor fields of sea ice". *AIDJEX Bulletin*, No. 33, 105-129.
- (90) 78. 1976 "A coordinate system for two-dimensional stress and strain-rate and its application to the deformation of sea ice". *AIDJEX Bulletin*, No. 33, 131-143.

- (91) 79. 1976 "President's Report to the International Commission of Snow and Ice". *Bulletin of the International Association of Hydrological Sciences*, 252-256.
- (92) 80. 1977 "Thickness change of the Greenland ice sheet: comments on the letter by B. Federer and H. von Sury". *J. Glaciol.* **18**, 159.
- (93) 81. 1977 "Fine structure in caustic junctions". *Nature*, **267**, 34-36. (M. V. Berry and J. Nye)
- (94) 82. 1977 "Remote sensing in glaciology and the physics of echoes". In *Remote Sensing of the Terrestrial Environment*, Butterworths, pp. 189-197.
- (95) 83. 1978 "Optical caustics in the near field from liquid drops". *Proc. Roy. Soc. Lond. A* **361**, 21-41.
- (96) 84. 1978 "The structure and evolution of flow fields and other vector fields". *J. Phys. A: Math. and Gen.*, **11**, 1455-1490. (A. S. Thorndike, C. R. Cooley and J. F. Nye)
- (97) 85. 1978 Review of *Catastrophe Theory and its Applications* by T. Poston and I. Stewart, in *Physics Bulletin*, **29**, 528.
- (98) 86. 1979 "Optical caustics from liquid drops under gravity: observations of the parabolic and symbolic umbilics". *Phil. Trans. Roy. Soc. Lond. A* **291**, 453-484.
- (99) 87. 1979 "The elliptic umbilic diffraction catastrophe". *Phil. Trans. Roy. Soc. Lond. A* **291**, 453-484. (M. V. Berry, J. F. Nye and F. J. Wright)
- (100) 88. 1979 "Optical caustics and diffraction catastrophes". In *Structural Stability in Physics*, edited by W. Güttinger and H. Eikemeier, Springer Verlag, 54-60.
- (101) 89. 1979 "Structural stability in evolving flow fields". In *Structural Stability in Physics*, edited by W. Güttinger and H. Eikemeier, Springer Verlag, 134-140.
- (102) 90. 1980 "Skating". *New Scientist*, **85**, 1033.
- (103) 91. 1980 "Skiing and scating". *New Scientist*, **85**, 676-677.
- (104) 92. 1980 "Events in evolving three-dimensional vector fields". *J. Phys. A: Math. and Gen.* **13**, 1-14. (J. F. Nye and A. S. Thorndike)
- (105) 93. 1981 "The use of catastrophe theory to analyse the stability and toppling of icebergs". *Annals of Glaciology*, **1**, 49-54. (J. F. Nye and J. R. Potter)
- (106) 94. 1981 "The motion and structure of dislocations in wavefronts". *Proc. Roy. Soc. Lond. A* **378**, 219-239.
- (107) 95. 1981 "Structure and events in flow fields". In *Physics of defects, Les Houches, Session XXV*, ed. R. Balian et al., North-Holland, 554-568.
- (108) 96. 1981 "Dislocations and disclinations in transverse electromagnetic waves". In *Physics of defects, Les Houches, Session XXV*, ed. R. Balian et al., North-Holland, 545-549.
- (109) 97. 1982 "Dislocations in diffraction patterns: continuous waves and pulses". *Phil. Trans. Roy. Soc. Lond. A*, **305**, 339-382 (F. J. Wright and J. F. Nye).
- (110) 98. 1983 "Polarization effects in the diffraction of electromagnetic waves. The role of disclinations". *Proc. Roy. Soc. Lond. A* **389**, 105-132.
- (111) 99. 1983 "Monstars on glaciers". *J. Glaciol.* **29**, No. 101, 70-77.
- (112) 100. 1983 "Lines of circular polarization in electromagnetic wavefields". *Proc. Roy. Soc. Lond. A* **389**, 279-290.

- (113) 101. 1983 "The classification of isotropic points in stress fields". *J. Struct. Mech.* **11**, 3, 371-381 (H. J. Hutchinson, J. F. Nye and P. S. Salmon).
- (114) 102. 1984 "The orientations and distortions of caustics in geometrical optics". *Optica Acta*, **31**, No. 1, 115-130 (J. F. Nye and J. H. Hannay).
- (115) 103. 1984 "Interfaces and falling drops in a Hele-Shaw cell". *Eur. J. Phys.* **5**, 73-80 (J. F. Nye, H. W. Lean and A. N. Wright).
- (116) 104. 1984 "Rainbow scattering from spheroidal drops—an explanation of the hyperbolic umbilic foci". *Nature* **312**, 531-532.
- (117) 105. 1985 "A photoelastic study of ice pressure in rock cracks". *Cold Regions Science and Technology*, **11**, 141-153 (G. P. Davidson and J. F. Nye).
- (118) 106. 1985 Book. *Physical properties of crystals: their representation by tensors and matrices*. Oxford. Soft cover edition with new material.
- (119) 107. 1985 "Caustics in seismology". *Geophys. J. Roy. Astro. Soc.* **83**, 477-485.
- (120) 108. 1986 "The catastrophe optics of liquid drop lenses". *Proc. Roy. Soc. Lond. A* **403**, 1-26.
- (121) 109. 1986 "The paths of dislocations in wave pulses: an experimental test". *J. Phys. A : Math and Gen.* **19**, 375-383 (K. W. Nicholls and J. F. Nye).
- (122) 110. 1986 "Isotropic points on glaciers". *J. Glaciol.*, **32**, No. 112, 363-366.
- (123) 111. 1987 "Catastrophe theory in geophysics". In *Irreversible Phenomena and Dynamical Systems Analysis in Geosciences*, C. Nicolis and G. Nicolis (eds.), D. Reidel Publishing Co., 31-40.
- (124) 112. 1987 "The wave structure of monochromatic electromagnetic radiation". *Proc. Roy. Soc. Lond. A* **409**, 21-36. (J. F. Nye and J. V. Hajnal)
- (125) 113. 1987 "Morphology of electromagnetic fields". *SERC Bulletin* **3**, No.7, Spring 1987, 11.
- (126) 114. 1987 "Use of diffraction gratings with curved lines to study the optical catastrophes  $D_6^+$  and  $D_6^-$ ". *Journal of Modern Optics*, **34**, No.3, 407-427. (J. F. Nye, D. R. Haws and R. A. Smith)
- (127) 115. 1987 "A new way of looking at microwave fields". *Microwave Journal*, May 1987, 355-362. (J. F. Nye and J. V. Hajnal)
- (128) 116. 1987 "Three-beam model for studying dislocations in wave pulses". *J. Phys. A: Math. Gen.* **20**, 4673-4696. (K. W. Nicholls and J. F. Nye)
- (129) 117. 1988 "Phase saddles and dislocations in two-dimensional waves such as the tides". *Proc. Roy. Soc. Lond. A* **417**, 7-20. (J. F. Nye, J. V. Hajnal and J. H. Hannay)
- (130) 118. 1989 "The geometry of water veins and nodes in polycrystalline ice". *Journal of Glaciology*, **35**, No.119, 17-22.
- (131) 119. 1989 Review of "Modern Crystallography IV. Physical Properties of Crystals" edited by L. A. Shuvalov. *Contemporary Physics*, **30**, No.3, 223-234.
- (132) 120. 1990 "Interpreting the field evidence of past ice sheets: structural stability and genericity". *Annals of Glaciology*, **14**, 208-210.
- (133) 121. 1990 "Structurally stable features of electromagnetic wavefields". In "Rainbows and Catastrophes", Proceedings of the Workshop on Rainbow Scattering, Cavtat, Yugoslavia,

August 14-16, 1989. Edited by N. Nešković Boris Kidrič Institute of Nuclear Sciences, Belgrade, Yugoslavia.

- (134) 122. 1990 "Measuring microwave fields directly with an optically modulated scatterer". *Measurement Science and Technology*, **1**, 703-709. (G. Hygate and J. F. Nye)
- (135) 123. 1990 Review of *Tensor Properties of Crystals* by D. R. Lovett. *Contemporary Physics*, **31**, 213.
- (136) 124. 1991 "Phase gradient and crystal-like geometry in electromagnetic and elastic wavefields". In "*Sir Charles Frank OBE, FRS: An eightieth birthday tribute*", Adam Hilger, IOP Publishing, Bristol, pp. 220-231.
- (137) 125. 1991 "Diffraction by a small unstopped lens". *Journal of Modern Optics*, **38**, No.4, 743-754.
- (138) 126. 1991 "Measuring the dihedral angle of water at a grain boundary in ice by an optical diffraction method". *J. Glaciol.* **37**, No. 125, 107-112. (M. E. R. Walford and J. F. Nye)
- (139) 127. 1991 "The topology of ice-sheet centres". *J. Glaciol.* **37**, No. 126, 220-227.
- (140) 128. 1991 "Thermal behaviour of glacier and laboratory ice". *J. Glaciol.* **37**, No. 127, 401-413.
- (141) 129. 1991 "Measuring a microwave field close to a conductor". *Measurement Science and Technology* **2**, 838-845 (J. F. Nye and G. Hygate).
- (142) 130. 1991 "The rotting of temperate ice". *Journal of Crystal Growth*, **113**, 465-476.
- (143) 131. 1993 "A topological approach to the strain-rate pattern of ice sheets". Proceedings of the meeting in honour of Professor Lliboutry, Grenoble, 23 November 1990. *J. Glaciol.* **39**, No. 131, 10-14.
- (144) 132. 1992 "Rainbows from ellipsoidal water drops". *Proc. Roy. Soc. Lond.* **A438**, 397-417.
- (145) 133. 1992 "Water veins and lenses in polycrystalline ice". In "*Physics and Chemistry of Ice*", Edited by N. Maeno and T. Hondoh, Hokkaido University Press, 1992, Sapporo, pp. 200-205.
- (146) 134. 1993 Review of *High Frequency and Pulse Scattering*, edited by Allan D. Pierce and R. N. Thurston (San Diego, U. S. A: Academic Press) in *Journal of Modern Optics*, **40**, No. 6, 1189-1192.
- (147) 135. 1993 "Antenna-probe interaction in the near field of a standard-gain horn antenna," *Sixth British Electromagnetic Measurements Conference*, National Physical Laboratory, Teddington, Middlesex, pp. 37/1-37/3 (W. Liang, G. Hygate and J. F. Nye).
- (148) 135a. 1993 "Catastrophe optics: light caustics in nature" In *Light and Color in the Open Air* (June 16-18, 1993, State College Pennsylvania U. S. A.) Optical Society of America, 1993, Technical Digest Series Volume 13, 2/WA1-1.
- (149) 136. 1994 Review of *Wave Phenomena. Caustics, Catastrophes and Wave Fields* by Yu. A. Kravtsov and Yu. I. Orlov in *Contemporary Physics*, **35**, No. 2, pp. 145-146.
- (150) 137. 1994 "Energy streamlines: a way of understanding how horns radiate backwards," *IEEE Transactions on Antennas and Propagation*, **42**, No. 9, 1250-1256. (J. F. Nye, G. Hygate and W. Liang)
- (151) 138. 1995 "Mapping a diffraction field close to an obstacle" *IEEE Transactions on Electromagnetic Compatibility*, **37**, No. 2, 288-292. (J. F. Nye, W. Liang and G. Hygate)
- (152) 139. 1995 "Diffraction by a black half-plane: theory and observation" *Proc. Roy. Soc. Lond. A* **449**, 515-535. (J. F. Nye, J. H. Hannay and W. Liang)
- (153) 140. 1995 "The field inside and near a pyramidal horn antenna: measurement and theory" *Joint URSI UK 12th National Radio Science Colloquium & QMW 1995 Antenna Symposium*,

Queen Mary and Westfield College, 11-13 July 1995, Session 16. (J. F. Nye and W. Liang)

- (154) 141. 1995 "Measurement of the field inside a microwave horn" *Seventh British Electromagnetic Measurements Conference*, The Winter Gardens, Malvern 6-9 November 1995, pp. 50-1 to 50-6. (R. J. Cook, D. F. Gibbs, W. Liang and J. F. Nye)
- (155) 142. 1996 "The sliding of glaciers". In *Physics of sliding friction*, NATO Advanced Science Institute Series, Trieste, June 1995 (edited by B. N. J. Persson and E. Tosatti), Kluwer Academic Publishers, pp. 293-298.
- (156) 143. 1996 "Theory and measurement of the field of a pyramidal horn" *IEEE Transactions on Antennas and Propagation*, **44**, No. 11, 1488-1498. (J. F. Nye and W. Liang)
- (157) 144. 1996 "Comments on Crystal Properties via Group Theory by A. S. Nowick, Cambridge University Press, 1995" *Acta Cryst. A*, **52**, 785.
- (158) 145. 1996 "Theory of the directional pattern of a pyramidal horn antenna" 1996 *QMW Antenna Symposium*, Queen Mary & Westfield College 16-17 April 1996. Digest 8/2.
- (159) 146. 1996 "W. H. Ward: a letter of appreciation" *Géotechnique*, **46**, No. 3, 1996, 581-582. (ISSN 0016-8505)
- (160) 147. 1996 "Dr W. H. Ward (1917-1996)" *Ice*, Nos. 111/112, pp. 29-30.
- (161) 148. 1996 "Water-ice interfaces in the veins and lenses of polycrystalline ice" *Bull. Amer. Phys. Soc.*, March 1996, **41**, No. 1, p. 54 (Abstract).
- (162) 149. 1997 "Line singularities in wave fields" *Phil. Trans. Roy. Soc. Lond. A* **355**, 2065-2069.
- (163) 150. 1997 "A probe for making near-field measurements with minimal disturbance: the optically modulated scatterer" *IEEE Transactions on Antennas and Propagation* **45**, No. 5, 772-780. (W. Liang, G. Hygate, J. F. Nye, D. G. Gentle and R. J. Cook)
- (164) 151. 1997 "Theory of the directional pattern of a pyramidal horn" *IEEE Transactions on Antennas and Propagation* **45**, No. 9, 1357-1365.
- (165) 152. 1997 "Superposition of the diffraction fields of apertures: an experimental test" *Proc. Roy. Soc. Lond. A* **453**, 1963-1974 (J. F. Nye and W. Liang).
- (166) 153. 1997 "The Cambridge Austerdalsbreen expeditions 1954-1963" *Annals of Glaciology* **24**, 1-5.
- (167) 154. 1997 "Comments on 'Temperate ice permeability, stability and percolation of internal meltwater' by L. Lliboutry" *J. Glaciol.* **43**, No. 144, 372 and 373 (two letters).
- (168) 155. 1997 "Measuring patch array antennas by an optically modulated scatterer" (W. Liang, M. J. Alexander, and J. F. Nye) *Conference on Precision Electromagnetic Measurements, Braunschweig, Germany, 17-20 June 1996*.
- (169) 156. 1998 "Near-field diffraction by two slits in a black screen" *Proc. Roy. Soc Lond* **A454**, 1635-1658. (J. F. Nye and W. Liang)
- (170) 157. 1998 "Unfolding of higher-order wave dislocations" *J. Opt Soc. Amer. A*, **15**, 1132-1138.
- (171) 158. 1998 "Lecture notes on water in ice: microscopic and geophysical scales" In *Ice physics and the natural environment (Conference at Maratea, Italy, September 1997)* ed. J. S. Wettlaufer, J. G. Dash and N. Untersteiner. pp. 273-279.
- (172) 159. 1998 "Measurement of near-field diffraction patterns by an optically modulated scatterer" *PIERS 1998 Progress in Electromagnetics Research Symposium, Nantes, France 13-17 July, Vol. 1, p. 562* (W. Liang and J. F. Nye)



- (173) 160. 1998 "A field mapping technique with minimum intrusiveness: the optically modulated scatterer" PIERS 1998 Progress in Electromagnetics Research Symposium, Nantes, France 13-17 July, Vol. 1, p. 563 (W. Liang and J. F. Nye)
- (174) 161. 1999 "Diffusion of isotopes in the annual layers of ice sheets" *J. Glaciol.* **44**, No. 148, pp. 467-468.
- (175) 162. 1999 Book. *Natural focusing and fine structure of light: caustics and wave dislocations*. Institute of Physics Publishing: Bristol and Philadelphia.
- (176) 163. 2000 "The instability of a South Polar Cap on Mars composed of carbon dioxide". *Icarus*, Mars Polar Science Special Issue, **144**, 449-455. (J. F. Nye, W. B. Durham, P. M. Schenk and J. M. Moore)
- (177) 164. 2000 "The state and future of Mars polar science and exploration" *Icarus*, Mars Polar Science Special Issue, **144**, 210-242. (S. T. Clifford and 52 others)
- (178) 165. 2000 "A flow model for the polar caps of Mars" *J. Glaciol.* **46**, No. 154, 438-444.
- (179) 166. 2000 "Sir (Frederick) Charles Frank, O. B. E." *Biographical Memoirs of Fellows of the Royal Society*, **46**, 177-196. (F. R. N. Nabarro and J. F. Nye)
- (180) 167. 2002 "Numerical solution for diffraction of an electromagnetic wave by slits in a perfectly conducting screen" *Proc. Roy. Soc. Lond. A* **458**, 401-427.
- (181) 168. 2001 "Elastic behaviour of Single Crystals: Anisotropy" *Encyclopedia of Materials: Science and Technology* Elsevier Science.
- (182) 169. 2003 "Spurious internal fields in scattering by a cylinder" *J. Phys. A*, **36**, (14), 4221-4237.
- (183) 170. 2003 "A simple method of spherical near-field scanning to measure the far fields of antennas or passive scatterers" *IEEE Trans. on Antennas and Propagation*, **51**, (No. 8), August, 2091-2098.
- (184) 171. 2003 "Evolution from a Fraunhofer to a Pearcey diffraction pattern" *J. Optics A: Pure Appl. Opt.* **5**, 495-502.
- (185) 172. 2003 "From Airy rings to the elliptic umbilic diffraction catastrophe" *J. Optics A: Pure Appl. Opt.* **5**, 503-510.
- (186) 173. 2004 "Local solutions for the interaction of wave dislocations" *J. Optics A: Pure Appl. Opt.* **6**, S251-254.
- (187) 174. 2004 "Fibonacci numerical integration on a sphere" *J. Phys. A*, **37**, 11591-11601. (J. H. Hannay and J. F. Nye)
- (188) 175. 2005 "The relation between the spherical aberration of a lens and the spun cusp diffraction catastrophe" *J. Optics A: Pure Appl. Opt.* **7**, 95-102.
- (189) 176. 2006 "Dislocation lines in the hyperbolic umbilic diffraction catastrophe" *Proc. R. Soc. A* **462**, 2299-2313.
- (190) 177. 2006 "Evolution of the hyperbolic umbilic diffraction pattern from Airy rings" *J. Optics A: Pure Appl. Opt.* **8**, 304-314.
- (191) 178. 2006 "John Michael Ziman" *Biogr. Mem. Fell. R. Soc.* **52**, 479-491 (Sir Michael Berry and John F. Nye).
- (192) 179. 2007 "Dislocation lines in the swallowtail diffraction catastrophe" *Proc. R. Soc. A* **463**, 343-355.

- (193) 180 2007 "The colour symmetry of phase patterns formed by the interference of plane waves" *J. Optics A: Pure Appl. Opt.* **9**, 678-681.
- (194) 181 2008 "Unfolding higher-order wave dislocation clusters and catastrophe theory" *J. Optics A: Pure Appl. Opt.* **10** (075010) (9pp).
- (195) 182 2009 "Diffraction in lips and beak-to-beak caustics" *J. Optics A: Pure Appl. Opt.* **11** 065708  
<http://dx.doi.org/10.1088/1464-4258/11/6/065708>
- (196) 183 2010 "Wave dislocations in the diffraction pattern of a higher-order catastrophe" *J. Optics* **12** 015702 [doi:10.1088/2040-8978/12/1/015702](https://doi.org/10.1088/2040-8978/12/1/015702) [doi:10.1088/2040-8978/12/1/015702](https://doi.org/10.1088/2040-8978/12/1/015702)
- (196) 184 2010 "Sense and sign in wave and crystal dislocations" *J. Optics* **13** 064007  
<http://dx.doi.org/10.1088/2040-8978/13/6/064007>
- (197) 185 2011 "Clusters of dislocations in a carrier wave" *J. Optics* **13**, No 7, 064005  
[doi:10.1088/2040-8978/13/6/064005](https://doi.org/10.1088/2040-8978/13/6/064005)
- (198) 186 2011 "Phase saddles in light beams" *J. Optics* **13**, No. 7, 075709.  
[doi:10.1088/20408978/13/7/075709](https://doi.org/10.1088/20408978/13/7/075709)
- (199) 187 2011 "Singlet-triplet reactions of optical vortices in Gaussian beams" *J. Opt.* **13**, No 12, 125702  
[doi:10.1088/2040-8978/13/12/125702](https://doi.org/10.1088/2040-8978/13/12/125702)
- (200) 188 2013 "Refraction of C-line vortices" *J. Optics*: **15** 014008 (9pp) (J H Hannay and J F Nye)
- (201) 189 2013 "A differentiated plane wave: its passage through a slab" *J. Optics*: **15** 044025 (8pp)  
<http://dx.doi.org/10.1088/2040-8978/15/4/044025> (J H Hannay and J F Nye)

#### Additions to previous pages

- ? 1990 "Huygens' Principle and Microwaves". In *Summaries of Poster Contributions to Conference on Huygens' Principle 1690-1990*, Nov 19-22, The Netherlands (J. F. Nye and G. Hygate)
- ? 1948 "Report on a Conference on Strength of Solids" *Research* 2-5, p.234 (book review).

### **Bristol-N.P.L. microwave measurement project**

#### **List of Reports**

(by J. F. Nye unless stated otherwise)

- No. 1 Nov 1987 "General theory for a modulated scatterer. Monostatic case".
- No. 2 Nov 1987 "Monostatic detection of scattered microwaves". (By G. Hygate)
- No. 3 Dec 1987 "Theory for a compound modulated scatterer".
- No. 4 May 1988 "Geometry of the scatterer: theory". (By G. Hygate)
- No. 5 July 1988 "Use of non-linearity to generate a third modulation, but with only two optic fibres".
- No. 6 July 1988 "Polarization structure near the focus of a dish antenna".
- No. 7 Dec 1988 "The near field and far field of antennas: theoretical relations for planning measurements".
- No. 8 Feb 1989 "Resolving the sign ambiguity in deducing the field from measurements of its square".

- No. 9 Oct 1989 "Optical modulation of the scatterer". (By G. Hygate)
- No. 10 May 1991 "Suggested procedure for measuring the electric field within a tapered cell".
- No. 11 July 1991 "Use of a switchable cube as a modulated scatterer".
- No. 12 July 1991 "Scattering by small loaded magnetic and electric dipoles". (By D. F. Gibbs)
- No. 13 July 1991 "A spinning dipole used as a modulated scatterer".
- No. 14 Dec 1991 "Correcting the results from the modulated scatterer for interaction with the horn under test".
- No. 15 Jan 1992 "Scheme to measure both the complex scattering length of a linear probe and its complex modulation".
- No. 16 Apr 1992 "Scattering by a dipole antenna loaded at its centre".
- No. 17 Apr 1992 "A systematic approach to improving the performance of the optically modulated microwave dipole scatterer". (By W. Liang)
- No. 18 May 1992 "Optimizing the probe: properties of a modulated dipole scatterer".
- No. 19 Sept 1992 "Correcting the results from modulated scatterers for the proximity effect: application to measurements on the axis of a horn".
- No. 20 Dec 1992 "Experiments on diffraction by a half-plane".
- No. 21 Feb 1993 "Diffraction by a black screen: scalar wave theory".
- No. 22 Apr 1993 "Diffraction by a black screen: a comparison of two vector wave theories". (By J. F. Nye and J. H. Hannay)
- No. 23 Apr 1993 "The electromagnetic field near the edges of a horn antenna or an open-ended waveguide".
- No. - July 1993 "Combining probe data in the presence of noise".
- No. 24 Sept 1993 "Physical approximations to a black screen". (By D. F. Gibbs).
- No. 25 Nov 1993 "The explanation of a spurious ripple in measurements made with the modulated scatterer and its correction".
- No. 26 Dec 1993 "Correction for interaction by using the spatial frequency spectrum of measurements along the axis of a horn".
- No. 26\* Oct 1994 "Correcting for interaction: error analysis".
- No. 27 Dec 1994 "A procedure for eliminating the interaction effect in near-field scanning".
- No. 28 Jan 1995 "Measurements on axis inside a horn antenna and the use of a 5 mm probe".
- No. 29 Feb 1995 "Measurements of gain on axis by a modulated scatterer".
- No. 30 Mar 1995 "Measurements inside a long horn: implications for the oscillation of gain with frequency".
- No. 31 July 1996 "Errors from sampling and truncation in planar near-field scanning".
- No. 32 Nov 1996 "Minimising the truncation error in planar near-field scanning".

- No. 33 Dec 1997 "Measurements with an optically modulated scatterer of reflection from a dielectric sheet".
- No. 34 Mar1998 "Modes within dielectric sheets of vaying thickness".
- No. 35 Mar 1998 "Modelling experimental data on a ferrite sheet".
- No. 36 Jan 1999 "The behaviour of an optically modulated scatterer placed in a homogeneous dielectric medium".
- No. 37 Jan 1999 "Plane wave decomposition of dipole radiation".
- No. 38 Feb 1999 "Near-field diffraction by a slit or strip".
- No. 39 Aug 2000 "Far field diffraction by a modified strip".
- No. 40 Dec 2000 "Theory of a circular near-field scanner".  
(revised)
- No. 41 Dec 2000 "Exact solution for diffraction by a metal strip or by a slit in a metal screen".
- No. 42 Jan 2001 "Theory of a spherical near-field scanner".
- No. 43 Mar 2001 "Analysis of data from circular scans around a strip".
- No. 44 May 2001 "Theory of a circular near-field scanner; evanescent waves".
- No. 45 July 2001 "Analysis of second data set from circular scans around a strip".