

PUBLICATIONS

(a) BOOKS

"Advances in Research on the Strength and Fracture of Materials".
FRACTURE 1977

D.M.R. Taplin, Editor

Pergamon Press (New York and Oxford) 1977, six volumes, 4,096
pages, over 5,000 references.

1. "An Overview of Fracture", Volume 1, (834pp).
2. "Physical Metallurgy of Fracture", Volume 2a, (678pp).
3. "Fatigue", Volume 2b, (640pp).
4. "Analysis and Mechanics", Volume 3a, (522pp).
5. "Applications and Non-Metals", Volume 3b, (760pp).
6. "Fracture and Society", Volume 4, (350pp).

(b) REFEREED RESEARCH PAPERS AND REVIEW ARTICLES

1. "Production Defects in Titanium Sheet",
D.M.R. Taplin, Metal Industry, 10, 1963, 793.
2. "The Grain Shape Dependence of the Tensile Properties of Uranium",
D.M.R. Taplin and J.W. Martin, J. Nucl. Mat. 10, 1963, 134.
3. "The Relationship Between Grain Size and Intergranular Cavitation in
Aluminium-Manganese and Alpha-Brass",
D.M.R. Taplin and V.N. Whittaker, J. Inst. Met. 92, 1964, 426-428.
4. "The Influence of Annealing Temperature upon the Ductility and Fracture
of Uranium",
D.M.R. Taplin and J.W. Martin, J. Less-Common Metals, 6, 1964, 430.
5. "The Effect of Small Additions of Iron and Aluminium on the Tensile
Properties of Alpha-Uranium",
D.M.R. Taplin and J.W. Martin, J. Nucl. Mat., 12, 1964, 30.
6. "The Effect of Grain Size and Cold Work Upon the Tensile Behaviour of
Alpha-Uranium",
D.M.R. Taplin and J.W. Martin, J. Less-Common Metals, 7, 1964, 89-96.
7. "An Effect of Thermal Cycling on the Ductile/Brittle Transition of Alpha-
Uranium",
D.M.R. Taplin and J.W. Martin, J. Inst. Met., 93, 1965, 232.

8. "The Metallography of Fracture of Alpha-Uranium",
D.M.R. Taplin and J.W. Martin, Metallurgia, 71, 1965, 81.
9. "Some Observations on Transformations and Grain Refinement in Uranium",
D.M.R. Taplin and J.W. Martin, J. Brit. Nucl. Energy Soc., 4, 1965, 359.
10. "On the Relationship Between Creep Cavitation and Ductility",
D.M.R. Taplin, J. Aus. Inst. Met., 10, 1965, 336.
11. "On the Question of the Grain Size Dependence of Flow and Fracture in Alpha-Uranium",
D.M.R. Taplin, J. Nuclear Mat., 19, 1966, 208.
12. "Preliminary Observations on the Creep Fracture of Uranium",
D.M.R. Taplin, J. Brit. Nucl. Energy Soc., 5, 1966, 1953.
13. "A Study of the Mechanisms of Intergranular Cavitation by Shadowgraphic Electron Microscopy",
D.M.R. Taplin and L.J. Barker, Acta Met., 14, 1966, 1522-1530.
14. "The Tensile Properties and Fracture of Uranium between -200°C and $+900^{\circ}\text{C}$ ",
D.M.R. Taplin, J. Aus. Inst. Met., 12, 1967, 32-44.
15. "The Metallography of Intergranular Cavities",
D.M.R. Taplin, L.J. Barker, G.J. Cocks, A.L. Wingrove and R.C. Gifkins
"Fortschritte in der Metallographie", Radex Rundschau, 1967, 727-733.
16. "An Appraisal of Metallographic Techniques for Studying Cavities",
G.J. Cocks and D.M.R. Taplin. Metallurgia 85, 1967, 229-235.
17. "A Study of Intergranular Cavities in Iron by Electron Microscopy of Fracture Surfaces",
D.M.R. Taplin and A.L. Wingrove. Acta Metallurgica, 15, 1967, 1231-1235.
18. "A Note on Creep-Rupture Mechanisms in Adjusted Uranium",
D.M.R. Taplin and G.J. Cocks.
J. Nuclear Materials, 23, 1967, 254-258.
19. "The Morphology and Growth of Creep-Cavities in Alpha-Iron",
A.L. Wingrove and D.M.R. Taplin,
J. Materials Science, 4, 1969, 789-796.
20. "Electrical Resistance Studies of Intergranular Cavitation in Alpha-Brass",
I.J. Spark and D.M.R. Taplin, J. Austr. Met., 14, 1969, 298-305.
21. "An Effect of Grain Size Upon the Creep Ductility of Copper",
G.J. Cocks and D.M.R. Taplin,
Scripta Metallurgica, 3, 1969, 623-625.

22. "Further Remarks on the Relationship between Flow Stress and Grain Size During Creep",
G.L. Dunlop and D.M.R. Taplin,
Scripta Metallurgica, 3, 1969, 641-643.
23. "A Note on Grain Boundary Sliding and Cavitation in Iron",
A.L. Wingrove and D.M.R. Taplin,
Scripta Metallurgica, 3, 1969, 649-652.
24. "The Angular Distribution of Creep Cracks in Alpha Brass",
D.M.R. Taplin,
Philosophical Magazine, 20, 1969, 1079.
25. "The Study of a Cr-Mn-N Stainless Steel",
P. Ramo, V.V.P. Kutumbarao and D.M.R. Taplin,
Trans. Indian Institute of Metals, 8, 1970, 61-67.
26. "Superplastic Copper Alloys",
D.M.R. Taplin, G.L. Dunlop, S. Sagat, and R.H. Johnson,
Proceedings of II Inter-American Conference on Materials
Technology, 1, 1970, 253-266.
27. "Creep Ductility",
D.M.R. Taplin,
Metals Engineering Quarterly, 10, 1970, 31-35.
28. "The Influence of Polycrystal Grain Size on Creep Ductility",
R.G. Fleck, G.J. Cocks and D.M.R. Taplin,
Met. Trans. 1, 1970, 3415-3420.
29. "Anisotropic Ductility of a Superplastic Aluminium-Bronze",
G.L. Dunlop, J.D. Reid and D.M.R. Taplin,
Met. Trans. 2, 1971, 2308-2310.
30. "Textures and Anisotropic Flow of a Superplastic Aluminium Bronze",
G.L. Dunlop and D.M.R. Taplin,
J. Austr. Inst. Met., 16, 1971, 195-208.
31. "The Tensile Behaviour of a Superplastic Aluminium-Bronze",
G.L. Dunlop and D.M.R. Taplin,
J. Materials Science, 1972, 7, 84-92.
32. "Intergranular Fatigue Cavitation of Alpha-Iron at Elevated Temperature",
H.J. Westwood and D.M.R. Taplin,
Mat. Sci. & Eng., 1972, 9, 118-120.
33. "The Tensile Characteristics of a Binary Superplastic Aluminium Bronze",
D.M.R. Taplin and S. Sagat
Mat. Sci. & Engineering, 1972, 9, 53-55.

34. "Superplasticity in a Commercial Copper Dispersion Alloy",
R.G. Fleck and D.M.R. Taplin,
Canadian Metallurgical Quarterly, 11, 1972.
35. "A Metallographic Study of Superplasticity in an Aluminium-Bronze",
G.L. Dunlop and D.M.R. Taplin,
J. Mat. Sci. 7, 1972, 316-324.
36. "Superplasticity and Intergranular Cavitation in Alpha-Beta Brass",
S. Sagat, P.A. Blekinsop and D.M.R. Taplin,
J. Inst. Metals 1972, 100, 268-274.
37. "The Role of Grain Boundary Migration in High Temperature Fatigue",
H.J. Westwood and D.M.R. Taplin,
Metallurgical Transactions, 1972, 3, 1959-1965.
38. "Brittle Failure in Superductile Alpha-Beta Brass",
D.M.R. Taplin and S. Sagat,
Trans. C.S.M.E., 1, 1972, 53-55.
39. "Mechanical Behaviour of Polycrystals at Elevated Temperatures",
D.M.R. Taplin, P. Rama Rao and V. Kutumba Rao,
Proceedings at the Silver Jubilee Conference, I.I.M., 1, 1972, 1-40.
40. "The Newtonian Flow of Bronzes",
M.W.A. Bright and D.M.R. Taplin,
Proceedings IV International Congress on Rheology, 1972, IV, 187.
41. "Combined Creep-Fatigue Behaviour of Inconel Alloy X-750",
P.K. Venkiteswaran, D.C. Ferguson and D.M.R. Taplin,
Prod. Int. Conf. on High Temperature Creep and Fatigue, Storrs,
Connecticut, 1973, ASTM, S.T.P., 520, 462-472.
42. "Applications of Superplasticity in Commercial Alloys",
E. Shapiro, J.L. Duncan, D.M.R. Taplin and J. Crane,
Proc. Conf. on Applications of Solid Mechanics, Eaterloo, 1972,
SMD Study 7, p. 529-555.
43. "Service Failures and Fracture Mechanisms during High Temperature
Fatigue",
J. Liburdi, G.L. Cocks and D.M.R. Taplin,
Proc. Conf. ASM, Waterloo, 1972, SMD Study 7, p. 497-518.
44. "Cavitation at Grain and Phase Boundaries During Superplastic Flow of a
Cu-10% Al-4% Fe Alloy",
G.L. Dunlop, E. Shapiro, J. Crane and D.M.R. Taplin,
Metallurgical Transactions 1973, 4, 2039-2044.

45. "The Role of Precipitation Parameters upon the Creep Rupture Properties of Inconel Alloy X-750",
P.K. Venkiteswaran, M.W.A. Bright and D.M.R. Taplin,
Materials Science and Engineering, 1973, 11, 255-268.
46. "An Auger Spectroscopy Study of Intergranular Fracture in Iron",
R. Powell, H.J. Westwood, D.M.R. Taplin and H. Mykura, Metallurgical Transactions, 1973, 4, 2357-2361.
47. "The Role of Grain Boundary Migration During the Creep of Zinc and Zinc Solid Solutions",
V. Singh, D.M.R. Taplin and P. Rama Rao.
J. Materials Science 1973, 8, 373-381.
48. "The Influence of Grain Boundary Migration During the Fatigue of Copper and Copper Alloys at 490°C",
G.J. Cocks and D.M.R. Taplin,
Proceedings of ICF3, Munich, 1973, 5, 325-330.
49. "Grain Size Strengthening and Weakening",
R.G. Fleck and D.M.R. Taplin,
J. Materials Sci., 1973, 8, 1052-1055
50. "The Hot Fracture Story",
D.M.R. Taplin,
Proc. Int. Met. Conf. "Fifty Years of Metallurgy", B.H.U., India 1973, 5, 1-45.
51. "The Role of Solutes during Isothermal and Thermal Cycling Creep of Zine",
K.H. Roth, R.G. Fleck and D.M.R. Taplin,
Materials Science and Engineering, 1974, 16, 251-260.
52. "A New Automated Technique for Metallographic Polishing",
K.H. Roth and D.M.R. Taplin,
in "Metallography 1974", Plenum Press, Los Angeles, 1974. pp. 322-331.
53. "The Elevated Temperature Creep and Fatigue Behaviour of Copper Base Alloy, CDA 195",
E. Shapiro, J. Crane, G.J. Cocks and D.M.R. Taplin,
Proceedings Conference on Creep and Fatigue, 1974, STP 532 (ASME), 217, 1-7.
54. "The Creep Fracture of Inconel X-750 at 700°C",
P.K. Venkiteswaran and D.M.R. Taplin,
Met. Sci., 1974, 8, 97-106.
55. "The Relationship Between Cavitation and Superplasticity in a Copper Base Alloy",
R.G. Fleck, C.J. Beevers and D.M.R. Taplin,
J. Materials Sci., 1974, 9, 226-232.

56. "Creep Properties of Alpha Iron After Low Cycle Fatigue at 700°C",
H.J. Westwood and D.M.R. Taplin,
Met. Trans., 1974, 5, 1701-1704.
57. "Dislocation Networks in a Copper Alloy After Fatigue at Elevated Temperatures",
G.J. Cocks and D.M.R. Taplin,
Proc. Int. Conf. on Electron Microscopy, Canberra, August 1974,
Inst. of Physics, 1974, 1, 526-7.
58. "Grain Size Dependence of Flow and Fracture in a Cr-Mn-N Stainless Steel in the Temperature Range 25-1000°C",
V. Kutumba Rao, D.M.R. Taplin and P. Rama Rao,
Met. Trans. 1975, 6A, 77-86.
59. "The Hot Fracture of an Industrial Copper-Base Alloy",
R.G. Fleck, C.J. Beevers and D.M.R. Taplin,
Met. Sci., 1975, 9, 49-54.
60. "An Investigation of the Nucleation of Creep Cavities by IMV Electron Microscopy",
R.G. Fleck, D.M.R. Taplin and C.J. Beevers,
Acta Metallurgica, 1975, 23, 415.
61. "The Mechanical Behaviour of Rapidly Solidified Al-Al₂Cu and Al-Al₃Ni Eutectics at Elevated Temperatures",
M.W.A. Bright, D.M.R. Taplin and H.W. Kerr,
A.S.M.E. J. Eng. Matls. and Tech. 1975, 12, 1-9
62. "Grain Boundary Sliding in Alpha Iron During Monotonic and Cyclic Loading",
H.J. Westwood and D.M.R. Taplin,
J. Austr. Inst. Metals, 1975, 20, 141-150.
63. "An Investigation of the Creep Fracture of a Complex Turbine-Blade Alloy Under Fluctuating Stress",
D.M.R. Taplin and P.K. Venkiteswaran,
Met. Tech. 1976, 3, 303-309.
64. "The Influence of Cerium on the Mechanical Behaviour of Alpha-Beta Brass",
T. Chandra, J.J. Jonas and D.M.R. Taplin,
J. Matls. Sci., 1976, 11, 1843-1848.
65. "The Low-Cycle Fatigue Behaviour of OFHC Copper and a Copper Dispersion Alloy at Elevated Temperatures",
G.J. Cocks and D.M.R. Taplin,
J. Aust. Inst. Met., 1975, 20, 210-219.
66. "Bulge-Forming of Superplastic Copper Alloys",
G.J. Cocks, G. Rowbottom and D.M.R. Taplin,
Met. Tech., 1976, 3, 332-337.

67. "The Creep Fracture of HK40 Petrochemical Furnace Tube Steel",
R.J. Twigg and D.M.R. Taplin,
published by Centro Regional de Ayuda Tecnica for Southwest Res. Inst.,
IV Inter American Conference on Materials Technology, Venezuela, 1975,
107-118.
68. "On the Relationship Between Cavitation and Ductility in Microduplex
Brasses",
T. Chandra, J.J. Jonas and D.M.R. Taplin,
J. Aust. Inst. Met., 1975, 20, 220-225.
69. "The Stability of Plastic Flow in Strain- Rate Sensitive Materials",
S. Sagat and D.M.R. Taplin,
Metal Science, 1976, 10, 94-100.
70. "The Fracture of a Superplastic Ternary Brass",
S. Sagat and D.M.R. Taplin,
Acta Metallurgica, 1976, 24, 307-315.
71. "On the Crane Phenomenon in Superplastic Copper Alloys",
D.M.R. Taplin and T. Chandra,
J. Matls. Science, 1975, 10, 1642.
72. "The Accumulation of Damage During Creep Fracture",
B.F. Dyson and D.M.R. Taplin,
Conference on Grain Boundaries, 1976, Institution of Metallurgists,
E23-28.
73. "High Temperature Fatigue Cavitation of a Copper Alloy",
A.L.W. Collins, G.J. Cocks, and D.M.R. Taplin,
Met. Sci., 1977, 11, 87-90.
74. "On the Formation of the Diamond Grain Configuration during High Temp.
Creep & Fatigue",
V. Singh, P. Rama Rao, G.J. Cocks, and D.M.R. Taplin,
J. Materials Science, 1977, 12, 373-383.
75. "A Study of Cavitation in Superplastic Alloys",
D.M.R. Taplin and G.J. Cocks, (in press).
76. "On the Role of Temperature Fluctuations during Microstructural
Degradation of the Cd-Zn Eutectic",
N. Flanders, D.M.R. Taplin and H.W. Kerr,
J. Materials Science, 1976, 11, 2051-2056.
77. "Creep Fracture in a Petrochemical Furnace Tube Steel",
G.L. Dunlop, R.J. Twigg and D.M.R. Taplin,
Scan. J. Met. 1978

78. "Low Cycle Fatigue in CDA182 at 20-400°C",
A.L.W. Collins, V. Singh and D.M.R. Taplin,
Proceedings "Second International Conference of Materials", August 1976,
1, 427-433.
79. "The Prediction of Creep Fracture from Intergranular Damage",
C.J. Beevers, R.G. Fleck and D.M.R. Taplin,
Met. Sci., 1976, 10, 413.
80. "Time Dependent Fatigue of an Industrial High Conductivity Copper Alloy",
A.L.W. Collins, V. Singh, A. Plumtree and D.M.R. Taplin,
Met. Tech., 1977, 4, 469-474.
81. "Fatigue and Fracture Maps",
D.M.R. Taplin, A.L.W. Collins, C. Gandhi and M.F. Ashby,
Plenary Paper, International Conference on Fracture Mechanics, March 1977,
Lehigh University, Inst. of Fracture and Solid Mechanics.
Published in "New Frontiers of Fracture", Nordhoff, 1978, 30pp.
82. "Fatigue of a Strain-Rate Sensitive Aluminium Bronze",
C. Gandhi, P. Rama Rao and D.M.R. Taplin,
Met. Sci., 1977, 11.
- * 83. "The Prediction of Creep Fracture in Engineering Alloys",
D. McLean, B.F. Dyson and D.M.R. Taplin,
Fourth International Conference on Fracture, 1977, Plenary Paper 1,
325-362.
- * 84. "An Experimental Fracture Mechanism Map for Thoria-Dispersed Nickel",
C. Gandhi, D.M.R. Taplin and M.F. Ashby,
Fracture 1977 2a, 603-612.
- * 85. "Damage Accumulation in Low Cycle Fatigue",
A.L.W. Collins and D.M.R. Taplin,
Fracture 1977, 2b, 839-848.
86. An Overview of Fracture Mechanism Maps
C. Gandhi, D.M.R. Taplin and M.F. Ashby,
Acta Met. 1979 (in press).
- * 87. "A Study of Cavitation in Superplastic Aluminium Alloys",
D.M.R. Taplin and R.F. Smith,
Fracture 1977, 2a, 541-552.
88. "A Review of Flow and Fracture in Strain-Rate Sensitive Alloys",
T.G. Langdon and D.M.R. Taplin,
Solid Mechanics Archives, 1977, 2, 329-368 (Nordhoff International).
89. "A Review of High Temperature Fatigue",
A.L.W. Collins and D.M.R. Taplin,
Advances in Materials Research, 1978, 8, 235-268.

90. "An Experimental Fracture Map for Uranium",
A.L.W. Collins and D.M.R. Taplin,
J. Matls. Sci., 1978, 13, 2249-2256.
91. "Socio-Political Implications of Fracture",
D.M.R. Taplin,
Materials & Society, 1978,
92. "Emerging Frontiers of High Temperature Fracture",
D.M.R. Taplin, C. Gandhi and D. Sidey,
Trans Indian Inst. of Metals, 1978
93. "On the Rate Controlling Mechanisms in Flow",
J.J. Jonas, D.M.R. Taplin and T. Chandra,
Z. Metallkunde 1977, 8, 546-549.
94. "Fracture of Strain-Rate Sensitive Brasses",
T. Chandra, J.J. Jonas & D.M.R. Taplin,
J. Matls. Sci., 1978, 13, 2380-2384.
95. "Models of Hole Growth & Coalescence in
Strain Rate Sensitive Alloys",
R.A. Tait & D.M.R. Taplin,
Scripta Met (1979).
96. "Fracture Research in Canada,
D.J. Burns & D.M.R. Taplin,
Fracture Mechanics (ed. Perrone, Liebowitz,
Mulville & Pilkey) University of Virginia
Press pp 123-146.
97. "Fracture & Engineering Education",
D. Sidey, C.K. Knapper & D.M.R. Taplin,
Proceedings American Society of Engineering
Education, 1978 (Montreal).
98. "Mechanical Behaviour of Superplastic Alloys"
D.M.R. Taplin, G.L. Dunlop & T.G. Langdon,
Annual Reviews
99. "Residual Life Prediction",
D. Sidey, A.M. Abdel-Latif, H.J. Westwood &
D.M.R. Taplin, Canadian Metallurgical Quarterly,
March 1979, Proceedings Second Canadian
Fracture Conference.
100. "Fatigue Maps & the Wave Shape Phenomenon"
A.L.W. Collins, D. Sidey & D.M.R. Taplin
CMQ 1979 (ibid).
101. "Superplastic Aluminum Bronzes - the Role of Phase Proportions",
D.M.R. Taplin, M.W.A. Bright & G.L. Dunlop,
Canadian Metallurgical Quarterly (1979).

(c) OTHER PUBLICATIONS

1. "The Solidification of Ice",
Metallurgical Notebook, D.M.R. Taplin,
The Metallurgist, 3, 1965, 234.
2. "An Introductory Course in Experimental Physical Metallurgy",
D.M.R. Taplin. The Metallurgist, 4, 1966, 10.
3. "Deformation and Fracture: Some Demonstration Models",
D.M.R. Taplin and R.C. Gifkins. The Metallurgist, 4, 1966, 83.
4. Book Reviews, J. Austr. Inst. Metals.
 - (a) Fracture, C.J. Osborn, Butterworths, 10, 1965.
 - (b) Practical Experimental Metallurgy, D.E. Davies, Elsevier 11, 1966.
 - (c) The Theory of Transformations in Metals and Alloys,
J.W. Christian, Pergamon, 12, 1967.
5. "Comment on Cavity Growth Mechanisms in Creep",
D.M.R. Taplin and R.C. Gifkins. Acta Metallurgica, 15, 1967, 650.
6. "Some Experiments on the Mechanical Behaviour of Polymers and Glass",
D.M.R. Taplin and O. Delatycki,
Metals and Materials, 1, 1967, 12-14.
7. "Creep Cavitation",
R.C. Gifkins, H.J. Westwood and D.M.R. Taplin,
Mechanical Engineering Report,
Keynote Lecture Spring ASM/AIME Meeting 1970.
8. "The Influence of Constitution on Superplastic Flow",
M.W.A. Bright and D.M.R. Taplin,
Fall AIME/ASM Meeting - Proceedings of Copper Conference 1972, (10 pages)
- * 9. "The Teaching of Fracture at Universities",
C.K. Knapper and D.M.R. Taplin, in Fracture 1977: Advances in Research
on the Strength and Fracture of Materials (Vol. 4 - Fracture and Society,
ed. D.M.R. Taplin, Pergamon Press, 1977).
10. "Cyclic Stress Response of High Conductivity Copper Alloys - I",
D.M.R. Taplin, V. Singh and S. Sagat,
INCRA Report, November 1974, No. 228A.
11. "Cyclic Stress Response of High Conductivity Copper Alloys - II",
D.M.R. Taplin, V. Singh and A.L.W. Collins,
INCRA Report, February 1976, No. 228B.
12. "Cyclic Stress Response of Copper Chromium Alloys",
D.M.R. Taplin and A.L.W. Collins,
INCRA Report, December 1976, No. 228C.

13. "Cyclic Stress Response of Copper Alloys",
D.M.R. Taplin, D. Sidey and A.L.W. Collins,
INCRA Report January 1978, No. 228D.
14. "Electron Microscopy & Mechanical Behaviour of Cr-Mo Steels after
100,000 hrs in Service at 565°C",
A.M. Abdel-Latif, G.L. Dunlop & D.M.R. Taplin,
Report to Ontario Hydro, October 1978.
15. "Creep Crack Growth in Inconel X-750",
D.M.R. Taplin, A.L.W. Collins, D. Sidey & R.A. Tait,
Internal Mech Eng Report.