EDWARD THOMAS COPSON

Edward Thomas Copson was born on 21 August 1901 in Coventry, being the elder son of Thomas Charles Copson, a motor engineer and talented inventor, and Emily Copson (née Read). He was educated at King Henry VIII School, Coventry, where he held an Entrance Scholarship. In 1919 he was admitted to St John's College, Oxford, as the Sir Thomas White scholar. During his undergraduate career he was greatly influenced by Professor A. E. H. Love (who held the Sedleian chair of Natural Philosophy) and Professor G. H. Hardy (who became Savilian Professor of Geometry in 1919). He obtained First Class Honours in Mathematical Moderations in 1920 and in the Final School of Mathematics in 1922, graduating B.A. while still in his 21st year.

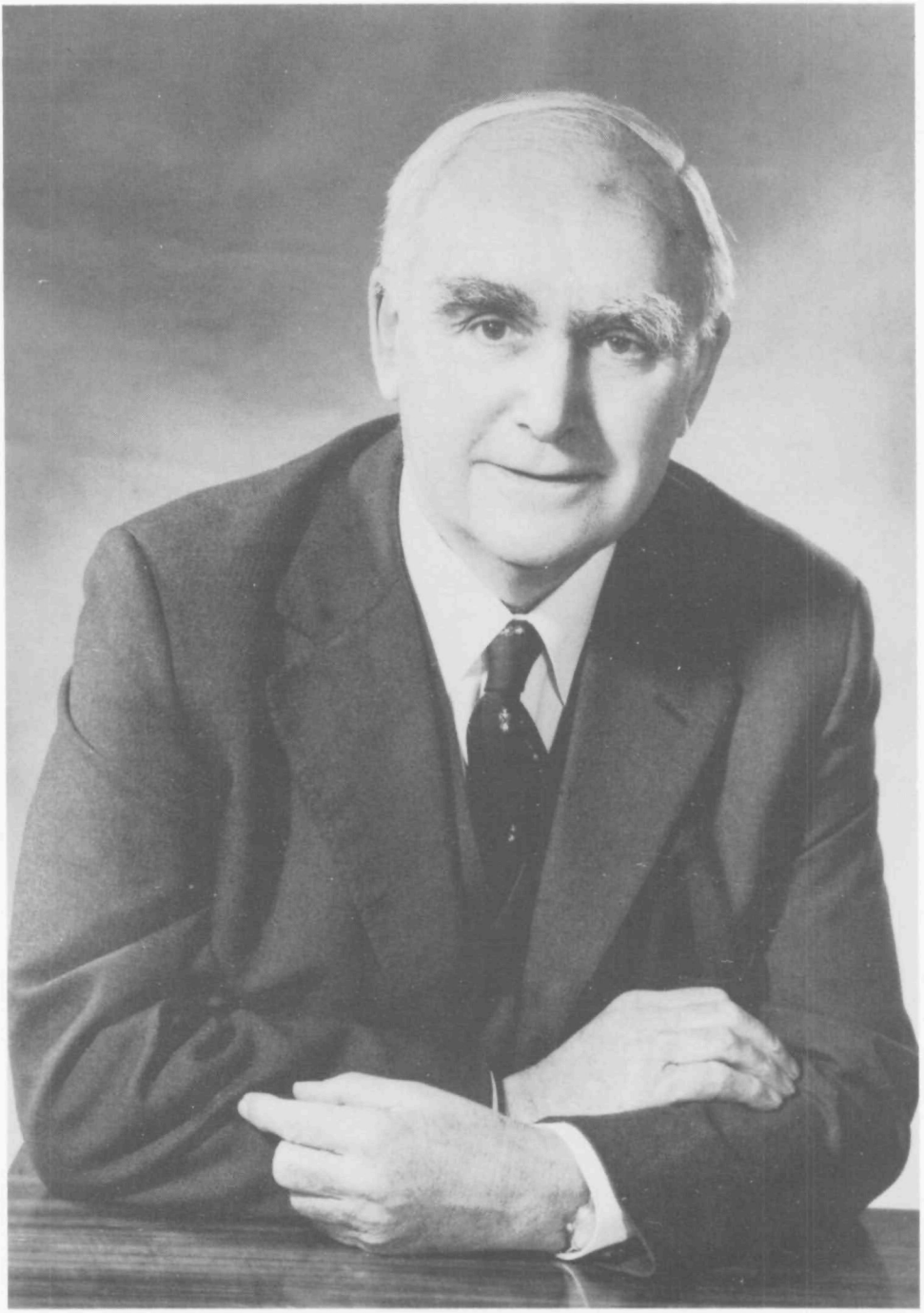
In that same year he was appointed to his first post as Lecturer in Mathematics at Edinburgh University. He used to take pleasure in recalling that he was interviewed for this position by Professor (later Sir) Edmund Whittaker, his future father-in-law, on the platform at Windermere station and offered the job on the return train journey. These were the days when Scottish university professors could make appointments without reference to higher authority. Copson remained in Edinburgh for eight years, taking his D.Sc. in 1928. In 1930 he left to join the Mathematics Department of the University of St Andrews as a Lecturer under Professor H. W. Turnbull. In 1934 he moved to the Royal Naval College, Greenwich, as Assistant Professor, but came back to Scotland a year later to succeed Professor B. M. Wilson as Professor of Mathematics at University College, Dundee. He remained there until 1950, when he returned to St Andrews as Turnbull's successor in the Regius Chair of Mathematics. Apart from a year's leave of absence in 1957–58 as Research Fellow at Harvard, he remained in St Andrews until his retirement in 1969. After he retired he continued to give occasional assistance in lecturing to students both in St Andrews and Dundee.

In July 1931 he married Beatrice Mary, the elder daughter of Sir Edmund Whittaker. It was a very happy marriage and she survives him with their two daughters, Anne and Cecily.

The titles of Copson's published papers reveal the influence of Hardy and Love and that his interests ranged from classical analysis through differential and integral equations to problems in theoretical physics. For his work in these fields he was elected a Fellow of the Royal Society of Edinburgh in 1924 and was awarded the Society's Keith Prize in 1941. He also served for several years on the Council of the Society, being Secretary of Ordinary Meetings from 1945–50 and Vice-President from 1950–53.

Copson became a member of the Edinburgh Mathematical Society in 1922 and served as its Secretary from 1924 to 1930. As Secretary and Editor of the *Proceedings* he took a full part in the discussions held at that time concerning publishing policy. He became President in 1930 and held that office for a second time in 1954–55. He was elected an Honorary Member of the Society in 1979. Throughout his career he continued to take a great interest in the affairs of the Society, whose members recall with gratitude the hospitality shown by him and his wife at meetings of the Society and its Colloquium in St Andrews. He became a member of the London Mathematical Society in 1923.

[BULL. LONDON MATH. SOC., 13 (1981), 564–567]



EDWARD THOMAS COPSON 1901–1980

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Copson gave unstinting service to the University of St Andrews both in Dundee and St Andrews. He was Dean of the Faculty of Science from 1950–53, served on the University Court and was the first Master of the United College from 1954–57. The honorary LL.D. of the University was conferred on him in 1971.

Of his fifteen years in Dundee Dr T. E. Faulkner states: "The department at that time had a family atmosphere, decisions were taken during morning coffee, there were few official meetings, no teaching aids, no secretarial assistance, classes were small but teachers knew their students personally. Every member of the small staff might be called upon to lecture in any branch of mathematics, and Copson with his wide interests in mathematics was admirably suited to such an environment. Copson was generous in the help and advice he gave to new members of staff yet they were free to develop their interests both in teaching and research. Under Copson's leadership it was a most happy and successful department."

When in 1950 Copson returned to St Andrews his admirable qualities were soon recognized. His colleague, Professor T. S. Blyth, has written: "He firmly believed in the old Scottish tradition of the Professor lecturing on a sizeable part of the first-year syllabus; he did so entirely without notes, relying solely on his pocket diary to mark how far he had gone each day. His collaboration and empathy with his colleague the late Professor D. E. Rutherford produced a highly successful department, as is testified by the fact that many of their junior colleagues and former students are now themselves the occupants of chairs. The Mathematical Institute stands today as a tribute to them both."

In addition to his research papers Copson published six books between 1935 and 1975. These display his great skill as an expositor. Particularly influential has been his book *The theory of functions of a complex variable*, which after 45 years is still recommended to undergraduates as a standard textbook on the subject. In the preface to his book *Complex analysis* (McGraw–Hill, 1953) Professor L. V. Ahlfors pays this tribute: "... it is with great regret that the author has omitted, for instance, the theory of elliptic functions. One of the main reasons is that it is hardly possible to improve on the beautiful treatment in E. T. Copson's book...".

The second edition of his book with B. B. Baker, *The mathematical theory of Huygens' Principle* (Clarendon Press, Oxford, 1950), was influential in bringing to the attention of a wider audience of applied mathematicians the work of Marcel Riesz, Lars Gårding and Copson himself on multiple integrals of fractional order and their use in the solution of hyperbolic partial differential equations.

In 1943, at the request of the Director of the Admiralty Computing Service, Copson wrote a short monograph on *The asymptotic expansion of a function defined by a definite integral or contour integral*, as one of a series of monographs, intended for use in Admiralty research establishments, on topics which appeared to be inadequately covered in easily accessible literature. It met a need at the time and was in such demand subsequently that Copson was persuaded to write a more extensive book *Asymptotic expansions* (Cambridge, 1965), which has continued to be of inestimable value to applied mathematicians.

Copson's research interests were not solely in those parts of mathematics studied by applied mathematicians and theoretical physicists. He was a good classical analyst and, in his later years, he returned to the study of inequalities on which he had worked in his youth. Four of his last five papers display his ingenuity in the use of classical analysis to obtain best possible results.

Copson continued to live in his house in Buchanan Gardens, St Andrews, after

his retirement, writing books and original papers and, with his wife, looking after their beautiful garden. His colleagues from further afield had hoped to renew their acquaintance with him at the St Andrews Colloquium in July 1980. But it was not to be; after a very short illness he died in hospital on 16 February 1980.

I am indebted to Mrs Copson, Professor W. N. Everitt and Professor I. N. Sneddon for help in preparing this notice.

List of publications

Books

1. *An introduction to the theory of functions of a complex variable* (Clarendon Press, 1935; second edition, 1944).
2. With Bevin B. Baker, *The mathematical theory of Huygens' principle* (Clarendon Press, 1939; second enlarged edition, 1950).
3. *The asymptotic expansions of functions defined by definite integrals or contour integrals* (The Admiralty, 1943; second edition, 1946).
4. *Asymptotic expansions* (Cambridge University Press, 1965).
5. *Metric spaces* (Cambridge University Press, 1968; revised edition, 1972).
6. *Partial differential equations* (Cambridge University Press, 1975).

Papers

1. "On a linear partial differential equation of hyperbolic type", *Proc. Edinburgh Math. Soc.* (1), 41 (1922–23), 76–81.
2. "The conservation theorems of a damped dynamical system", *Proc. Edinburgh Math. Soc.* (1), 42 (1923–24), 61–68.
3. "On self-adjoint partial differential equations of the second order", *Proc. Edinburgh Math. Soc.* (1), 43 (1924–25), 35–38.
4. "On Binet's inverse factorial series", *Proc. Edinburgh Math. Soc.* (1), 43 (1924–25), 103–105.
5. "Partial differential equations and the calculus of variations", *Proc. Roy. Soc. Edinburgh*, 46 (1925–26), 126–135.
6. "Note on Whittaker's solution of Laplace's equations", *Proc. Edinburgh Math. Soc.* (1), 44 (1925–26), 22–25.
7. "On the integral equations for the Lamé functions", *Proc. Edinburgh Math. Soc.* (2), 1 (1927), 62–64.
8. "Note on series of positive terms, I", *J. London Math. Soc.*, 2 (1927), 9–12.
9. "Note on series of positive terms, II", *J. London Math. Soc.*, 3 (1928), 49–51.
10. "On Fourier constants", *Proc. Roy. Soc. Edinburgh*, 48 (1928), 15–19.
11. "On Hardy's theory of m-functions", *Proc. Edinburgh Math. Soc.* (2), 1 (1928), 129–134.
12. "Electrostatics in a gravitational field", *Proc. Roy. Soc.* (A), 118 (1928), 184–194.
13. With W. L. Ferrar, "On the structure of sequences, I", *J. London Math. Soc.*, 4 (1929), 258–264.
14. With W. L. Ferrar, "On the structure of sequences, II", *J. London Math. Soc.*, 5 (1930), 21–27.
15. "On a generalisation of a theorem of Mercer", *Proc. Edinburgh Math. Soc.* (2), 2 (1930), 108–110.
16. "The definite integrals of interpolation theory", *Proc. Roy. Soc. Edinburgh*, 50 (1930), 220–224.
17. "The operational calculus and Kapteyn's integrals", *Proc. London Math. Soc.* (2), 33 (1931), 145–153.
18. "An approximate connected with $\exp(-x)$", *Proc. Edinburgh Math. Soc.* (2), 3 (1933), 201–206.
19. "On the Weber–Schafheitlin integral", *Quart. J. Math.*, 4 (1933), 135–139.
20. With W. L. Ferrar, "A series of cut Bessel functions", *Proc. Edinburgh Math. Soc.* (2), 5 (1938), 159–168.
21. With H. S. Ruse, "Harmonic Riemannian spaces", *Proc. Roy. Soc. Edinburgh* 60 (1940), 117–133.
22. "On an infinite integral", *Proc. Cambridge Phil. Soc.*, 37 (1940), 102–104.
23. "On an elementary solution of a partial differential equation of parabolic type", *Proc. Roy. Soc. Edinburgh* (A), 61 (1941), 37–53.
24. "On an elementary solution of partial differential equation of parabolic type, II", *Proc. Roy. Soc. Edinburgh* (A), 61 (1941), 54–59.
25. "Some applications of Marcel Riesz's integrals of fractional order", *Proc. Roy. Soc. Edinburgh* (A), 61 (1943), 260–272.
26. "On Whittaker's solution of Laplace's equation", *Proc. Roy. Soc. Edinburgh* (A), 62 (1944), 31–36.
27. "An integral formula for $Q_n(x)$", *Proc. Edinburgh Math. Soc.* (2), 7 (1945), 81–82.
28. "An integral equation occurring in the theory of diffraction", *Quart. J. Math.* (*Oxford Series*), 17 (1946), 19–34.

29. "An integral-equation method of solving plane diffraction problems", *Proc. Roy. Soc.* (A), 186 (1946), 100–118.
30. "On the problem of the electrified disc", *Proc. Edinburgh Math. Soc.* (2), 8 (1947), 14–19.
31. "On the Riesz–Riemann–Liouville integral", *Proc. Edinburgh Math. Soc.* (2), 8 (1947), 25–36.
32. "Plane diffraction problems", *Proc. Roy. Soc.* (A), 202 (1950), 277–284.
33. "On the expansion of a gas cloud into a vacuum", *Monthly Notices Roy. Astronom. Soc.*, 110 (1950), 238–246.
34. "The transport of discontinuities in an electromagnetic field", *Communications Pure and Applied Math.*, 4 (1951), 427–433.
35. "On sound waves of finite amplitude", *Proc. Roy. Soc.* (A), 216 (1953), 539–547.
36. "The reflexion of sound waves of finite amplitude by a rigid wall", *Proc. Roy. Soc.* (A), 222 (1954), 254–261.
37. "Some applications of Riesz's method", *Proc. Conference on Differential Equations* (University of Maryland, 1955), 107–113.
38. "On a regular Cauchy problem for the Euler–Poisson–Darboux equation", *Proc. Roy. Soc.* (A), 235 (1956), 560–572.
39. "Un théorème d'unicité pour l'équation des ondes à une dimension", *Comptes rendus*, 246 (1958), 2562–2564.
40. "On the Riemann–Green function", *Arch. Rat. Mech. Anal.*, 1 (1958), 324–348.
41. "On a singular boundary value problem for an equation of hyperbolic type", *Arch. Rat. Mech. Anal.*, 1 (1958), 349–356.
42. With A. Erdélyi, "On a partial differential-equation with two singular lines", *Arch. Rat. Mech. Anal.*, 2 (1958), 76–86.
43. "On certain dual integral equations", *Proc. Glasgow Math. Assoc.* 5 (1961), 21–24.
44. "On the asymptotic expansion of Airy's integral", *Proc. Glasgow Math. Assoc.* 6 (1963), 113–115.
45. With P. Keast, "On a boundary-value problem for the equation of heat", *J.I.M.A.* 2 (1966), 358–363.
46. "On Hadamard's elementary solution", *Proc. Roy. Soc. Edinburgh* (A), 69 (1970), 19–26.
47. "On a generalisation of monotonic sequences", *Proc. Edinburgh Math. Soc.* (2), 17 (1970), 159–164.
48. "Hadamard's elementary solution and Frobenius's method", *SIAM Review*, 13 (1971), 222–230.
49. "On some integral inequalities", *Proc. Roy. Soc. Edinburgh* 75A (1975–76), 157–164.
50. "On two integral inequalities", *Proc. Roy. Soc. Edinburgh* 77A (1977), 325–328.
51. "On two inequalities of Brodlie and Everitt, *Proc. Roy. Soc. Edinburgh* 77A (1977), 329–333.
52. "Electrostatics in a gravitational field", *Proc. Roy. Soc. Edinburgh* 80A (1978), 207–211.
53. "Two series inequalities", *Proc. Roy. Soc. Edinburgh* 83A (1979), 109–114.

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March 1981,
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