

THE ROYAL COMMISSION ON HISTORICAL MANUSCRIPTS

Report on correspondence and papers,
including biographical material,

of

SIR JOSEPH JOHN THOMSON, OM, FRS (1856-1940)

physicist

1876-1970

deposited in

the Library, Trinity College, Cambridge

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CONTEMPORARY SCIENTIFIC ARCHIVES CENTRE

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British National Committee for the History of Science, Medicine and Technology

Catalogue of the papers and correspondence of

SIR JOSEPH JOHN THOMSON, OM, FRS

(1856 - 1940)

Compiled by: Jeannine Alton

Julia Latham-Jackson

Deposited in the Library, Trinity College, Cambridge, 1980

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INTRODUCTION

J. J. Thomson was one of the foremost physicists of his day. His name is principally remembered for the discovery of the electron and for his work on gaseous discharges.

Thomson was born in Manchester and educated at Owen's College (later the University of Manchester); in 1875 at the age of nineteen he went with a scholarship to Trinity College, Cambridge, where he remained for the rest of his life. In 1894 he succeeded Rayleigh as Cavendish Professor of Experimental Physics, and his guidance of the Cavendish Laboratory for a generation (until 1919) established its international reputation as a research school. He was Master of Trinity from 1918 until his death in 1940.

In 1906 Thomson was awarded the Nobel Prize for Physics for his work on the electron; elected to the Fellowship of the Royal Society in 1884, he served as its President 1915-1920. He was knighted in 1908 and received the Order of Merit in 1912. Many accounts of his life and work have been written, several by his son, Sir George Thomson (see Section D).

Very little survives of drafts and correspondence relating to Thomson's scientific work in Sections B and C; other specimens of Thomson's notebooks, lecture notes and experimental material are held at the University Library, Cambridge (see A.3 for a note of this material). Various accounts of the discovery of the electron and of electron physics will be found in the collection of the papers of Sir George Thomson (CSAC no. 75/5/80) in the Library of Trinity College, Cambridge.

SECTION A PERSONAL MATERIAL AND CORRESPONDENCE (A.1-A.13)

- A.1 Certificate of election as Corresponding Member,
Academia Borussica, 1910.

List of Nobel Prize winners, 1901-06.
- A.2 Sylvanus Thompson Medal of the Röntgen Society, 1927.
- A.3 Photocopy of handlist of the notebooks of J.J. Thomson
held in the University Library, Cambridge.

This was sent to G.P. Thomson by P. Spitzer, an American
scholar working on a biography of J.J. Thomson, and bears
various notes by him.

Also included is a note by Spitzer (1970) listing several
publications by J.J. Thomson omitted from the Bibliography
by Lord Rayleigh.
- A.4-A.7 Personal correspondence.

In alphabetical order.
- | | | |
|-----|---|-------------|
| A.4 | Burton, E.F. | 1907. |
| | Hobson, E.W. | 1930 |
| | Nomination of G.P. Thomson for Royal
Society | |
| | Lamb, H. | 1930 |
| | M'Taggart, M.E. | n.d. (1925) |
| A.5 | Mornington, W.T. | 1932 |
| | Drawing of Thomson for National Portrait
Gallery | |
| | Parsons, C.A. | 1930 |
| | Rawlinson, J.F.P. | 1923 |
| | Soulsby, W. | 1920 |
| | <u>re</u> Hon. Degree at Cambridge | |
| A.6 | Threlfall, R. | 1930 |
| | Congratulations on election of G.P.
Thomson, 'your fine lad', to Royal Society | |
| | Ward, J.A. | 1906 |
| A.7 | Unidentified or first name signatures. Includes
card 1923, addressed to 'Dear Daddy', signed
'Vie R.B.' (perhaps Violet, twin sister of Rose Paget,
J.J. Thomson's wife, who was always known as 'Vie'). | |

Personal material and correspondence

- A.8-A.12 Correspondence, etc. re Trinity College, Cambridge.
Thomson was Master of the College 1918-40.
In alphabetical order.
- | | | |
|------|---|------------|
| A.8 | Balfour, A. J. | 1925 |
| | Churchill, W. S. | 1932 |
| | Declining invitation to give Clark Lectures. | |
| | C , J. | 1924 |
| | <u>re</u> School of Biochemistry at Cambridge. | |
| | Devonshire, 9th Duke | 1925, 1938 |
| A.9 | Eliot, T. S. | 1925 |
| | Accepting invitation to give Clark Lectures. | |
| | Fletcher, H. | 1931 |
| | Macnaghten, M. M. | 1926 |
| A.10 | Maurois, A. | 1927 |
| | Accepting invitation to give Clark Lectures. | |
| | Pym, T. W. | 1938 |
| | Scholfield, A. F. | n. d. |
| A.11 | Trevelyan, G. M. | n. d. |
| | 1 p. only of letter <u>re</u> portrait of his father,
left to Trinity. | |
| | Ullswater, J. W. L. | 1924 |
| | unidentified | 1931 |
| A.12 | Ms. notes by Thomson for a speech at 80th birthday
dinner for Frank Newall, written on double sheet
which also includes draft description of G. P. Thomson's
work on electron diffraction. | |

Personal material and correspondence

A.13

Film of J. J. Thomson at Bell Telephone Laboratories, 1923.

The film bears the caption 'Sir Joseph J. Thomson is welcomed by Bell Telephone Engineers and escorted through their laboratories at the Western Electric Co., New York, March 28 1923'. It is accompanied by a brief letter re the film to G.P. Thomson, 23 October 1962, from H.F. Wickham of Associated Electrical Industries Limited.

SECTION B

NOTES AND DRAFTS FOR PUBLICATIONS (B.1 -B.22)

All items are manuscript.

See also A.3 for mention of other notebooks held in University Library, Cambridge.

- B.1 'The Electrodeless Discharge', 23 pp.
(perhaps draft for the Guthrie Lecture, 1928)
- B.2 4 pp. draft for a paper or lecture on the electrodeless ring discharge.
- B.3 'The oscillations of an ionised gas and their connection with some phenomena associated with the initial stages of the electric discharge through gases'.
5 pp., heavily corrected, incomplete.
- B.4 'Appendix to Dalton lecture', 1 p. only. c.1931
- B.5 Pps. 6 & 7 of a paper on kinetic energy of electrons.
- B.6-B.20 'Conduction of electricity through gases'.
This was first published by J.J. Thomson in 1897. The 3rd edition was produced in collaboration with G.P. Thomson and published in 1928.
The material consists of fragments of varying length of J.J. Thomson's original manuscript, bearing his pagination. All bear later revisions, additions, notes to the printer, etc., some in J.J.'s hand but mainly by G.P.
- B.6 'Striated discharge', pps. 1-15, with ms. note 'p.387, Vol.II'.
- B.7 'The Ring Electrodeless Discharge', pp.1-2, with ms. note 'p.431, Vol.2'.
- B.8 'Effect of light on the ring discharge', pp.9-20, with ms. note 'p.438, Vol.II'.
- B.9 'Density of Electrons along the discharge', pp.16-35 (for c.p.460, Vol.II).
- B.10 Ms. draft, pps.20-28, with ms. note, 'p.574'.
- B.11 Ms. draft, pps.3-19, with ms. note 'follow on with pages 615-616'.

Notes and drafts for publications

- B.12 Folder labelled inside 'Mss 5. Thomson Discharge through Gas', pps.1-12.
- B.13 Unassigned draft, pps.11-20.
- B.14 Unassigned draft, pps.12-19.
- B.15 Shorter fragments, all with page numbers but not forming a sequence.
- B.16 Notebook containing loose pages of J.J.'s draft, with a note by G.P. 'Thermodynamics of complex ions to be transferred to mobility chap.'
- B.17 Unassigned draft, pp.2-7.
- B.18 Misc. pages, with a note by G.P. 'Not required'.
- B.19 Substantial draft, of loose pages strung together, some bearing dates of day and month (no years given).
On scattering.
- B.20 Folder labelled (by G.P.) 'Thomson's Gases', with sequence of pages, 92-98, by J.J.
- B.21 7 pp. draft for paper on electron; n.d. but refers to G.P. Thomson's experiments on electron waves, c.1928.
- B.22 Notebook, both ends used, and many notes and diagrams also on cover.
Miscellaneous contents, including several drafts for papers referring to G.P. Thomson's experiments (1926-28), de Broglie's theory, structure of the electron, electrodeless discharge, etc.

SECTION C SCIENTIFIC CORRESPONDENCE (C.1-C.3)

In alphabetical order.

- | | | |
|-----|--|------|
| C.1 | Conjoint Board of Scientific Societies. | 1920 |
| | Cards <u>re</u> committees to consider formation of an International Union in Radio-Telegraphy, and an International Union in Mathematics. | |
| | Deschamps, | 1924 |
| C.2 | Fisher, J.A. | 1915 |
| | <u>re</u> Thomson's memorandum and research on mines. | |
| C.3 | Haldane, R.B. | 1926 |
| | on Thomson's Kelvin lecture. | |
| | Kempner, A.J. | 1917 |
| | (letter to J. Kunz <u>re</u> protection against submarines, passed on to Thomson). | |

SECTION D ACCOUNTS AND BIOGRAPHIES OF THOMSON (D.1-D.37)

- D.1-D.11 'J.J. Thomson and the Cavendish Laboratory in his Day'
(British Men of Science, Nelson 1964)
- An account of Thomson and his work, by G.P. Thomson.
- D.1-D.5 Ms. draft.
- D.1 Preface, Chapters 1 and 2 (incomplete).
- D.2 Chapter 6.
- D.3 Chapters 7, 8, 9 (incomplete).
- D.4 Chapters 10, 11, 12, Appendix (incomplete).
- D.5 Lists of illustrations.
- D.6-D.9 Corrected typescript draft.
- D.6 Preface, Chapters 1-3.
- D.7 Chapters 4-6.
- D.8 Chapters 7-10.
- D.9 Chapter 11, Conclusion, Appendix, Index.
- D.10 Miscellaneous pages for re-typing and correction, with
re-cast and re-assigned chapter headings.
- D.11 Galley proof of book, with G.P. Thomson's list of
'Principal alterations and corrections'.
- D.12 Photocopies of photographs and correspondence, obtained
by G.P. Thomson.
- Includes letters 1918-20 addressed by Thomson to Keys,
on experiments with underwater explosions at Shandon
(Argyll).
- D.13-D.15 3 ringback notebooks of notes compiled by G.P. Thomson
for his biography or other writings about J.J. Thomson.
The notes are in pencil, blue and red ink or biro, and
include short narratives, diagrams, calculations, biblio-
graphical indications, etc. The notebooks are all headed
'J.J. Thomson' but are not dated.

Accounts and biographies of Thomson

- D.13 Notes on J.J. Thomson's papers (some in detail) and those of others, or on history of Cavendish Laboratory. Includes plan for 'Chapter IV'.
- D.14 Similar material. Both ends of book used. Includes notes for 'Unplaced possible additions' (on pumps - used as Appendix in book).
- D.15 Similar material. Both ends of book used. P.3 is headed 'J.J.T. continued'. Pps.1 & 2, headed 'Leckhampton', contain a draft proposal for Leckhampton House, the postgraduate campus of Corpus Christi College, Cambridge, officially established in 1961 during the Mastership of G.P. Thomson.
- D.16 Miscellaneous shorter notes on J.J. Thomson and his work, some on pages apparently torn from ringback notebooks.
10 bundles.
- D.17 Hardback notebook, originally used by G.P. Thomson for mathematical notes on Gamma Functions (c.1910-12) and continuing with drafts for biography.
Includes some loose pages of plans and notes.
- D.18 Correspondence with publishers (Nelson), 1962-64. Mainly re illustrations.
- D.19 Proof copies of illustrations.
Printed material consulted by G.P. Thomson.
- D.20-D.31 Other writings on J.J. Thomson, by G.P. Thomson.
Several of these were commissioned for the centenary of J.J. Thomson's birth in 1956; the material was often drawn upon for later accounts and there is considerable overlap in the content.
- D.20 'J.J. Thomson and the discovery of the Electron'.
Address given at International Conference on the Quantum Interactions of the Free Electron, held 23-25 April 1956 at University of Maryland, and published in Physics Today, August 1956, which bears a photograph of J.J. Thomson on the cover.
Offprint.
Drafts of the address can be found in the collection of G.P. Thomson's papers (CSAC no.75/5/80, item G.2) at Trinity College Library, Cambridge.

Accounts and biographies of Thomson

- D.21 4 pp. untitled biographical sketch of J. J. Thomson, n.d. but 1956.
- D.22 Talk at Trinity College, Cambridge, to Cambridge University Physics Society, November 1956.
Ms. notes.
8 pp. typescript and ms. draft.
Correspondence re arrangements.
- D.23 'Sir J. J. Thomson'.
Talk given to the Osler Club, 6 December 1956.
10 pp. typescript with ms. corrections and 2 pp. ms. additions.
- D.24 Another copy, 6 pp. only, with many corrections and deletions in Thomson's and in another hand, to reduce length to 1500 words.
- D.25 'J. J. Thomson'.
Corrected ms. and uncorrected proof of article published in New Scientist, December 1956.
Offprint of published version.
- D.26 'J. J. Thomson'.
Friday Evening Discourse at the Royal Institution, 7 December 1956.
14 pp. heavily corrected typescript, offprint of published version in Proc. Roy. Inst., 36.
- D.27 'The Centenary of J. J. Thomson'.
24 pp. typescript with ms. corrections, offprint of published version in Science, 14 December 1956.
Includes editorial correspondence.
- D.28 'J. J. Thomson'.
2 pp. ms. draft, with a note 'not used'.
- D.29 'J. J. T.'
2 pp. ms. notes.
- D.30 'J. J. T.'
Notes for talk at Farnborough, November 1957.

Accounts and biographies of Thomson

- D.31 'J. J. Thomson as we remember him'.
Article, mainly personal recollections, by George and Joan Thomson, Notes and Records of the Royal Society, December 1957.
Offprint.
- D.32 'J. J. Thomson'.
11 pp. typescript with ms. corrections (and second copies of pps.7-9 of another version).
Ms. bears annotations 'Intended for 'The New Scientist' December '56 but not used as it was too long', 'Given at Brunel College, Acton, February 26 1959', 'Also A.E.I. Aldermaston May 1962'.
Also included is an offprint from Bull.Inst.Phys., March 1959, containing the same lecture, with a note that it was delivered to the Birmingham Branch, January 1959.
- D.33 'J. J. Thomson'.
Ms. and corrected typescript versions of article for Encyclopaedia-Anthology of Nobel Prizewinners.
Includes editorial correspondence, March 1960
- D.34 Article for Collier's Encyclopaedia, typescript with ms. additions.
Includes editorial correspondence. June 1960
- D.35 Article for A Biographical Dictionary of Scientists, 1966.
Ms. and typescript versions.
- D.36 'Sir Joseph John Thomson'.
Article for Encyclopaedia Britannica.
3 ms. drafts, 1st heavily revised typescript, final version as sent and published.
Includes editorial correspondence. 1970-71
- D.37 Other published notes and articles on J. J. Thomson by D. Price, 1956, 1957.

SECTION E

PUBLISHED WORKS (E.1-E.6)

- E.1-E.4 'Pamphlets'. 4 Vols., bound; Vol.1 includes complete index.
- | | | |
|-----|-----|-----------|
| E.1 | I | 1876-1890 |
| E.2 | II | 1891-1905 |
| E.3 | III | 1906-1915 |
| E.4 | IV | 1916-1935 |
- E.5 Offprints of publications (to 1935).
1 box.
- E.6 Offprints of publications (miscellaneous).
Included here are a copy of the Memoir of Rutherford (Proc.Phys.Soc. 1938) to which Thomson contributed, a list of Thomson's publications dated June 1909, and photocopies of 3 articles contributed by Thomson to Watts' Dictionary of Chemistry, ed. M.M.P. Muir, 1888 (sent to G.P. Thomson by P. Spitzer, 1970).
1 box.

See A.3 for note by P. Spitzer listing other publications by Thomson.

INDEX OF CORRESPONDENTS

BALFOUR, Arthur James, Earl of	A.8
BURTON, Eli Franklin	A.4
CHURCHILL, Sir Winston Spencer	A.8
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DEVONSHIRE, Victor Christian William Cavendish, 9th Duke	A.8
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FISHER, John Arbuthnot, Baron Fisher	C.2
FLETCHER, Hanslip	A.9
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