

CONTEMPORARY SCIENTIFIC ARCHIVES CENTRE

Catalogue of the papers and correspondence of

EDWARD ARTHUR MILNE, FRS

(1896-1950)

Compiled by Jeannine Alton and Peter Harper

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E.A. Milne
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Title: Catalogue of the papers and correspondence of Edward Arthur Milne FRS
(1896-1950), mathematician and theoretical astrophysicist

Compiled by: Jeannine Alton and Peter Harper

Description level: Fonds

Date of material: 1916-1978

Extent of material: 11 boxes, ca 160 items

Deposited in: Department of Western Manuscripts, Bodleian Library, University of Oxford

Reference code: GB 161

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CSAC catalogue no. 102/6/84

The work of the Contemporary Scientific Archives Centre, and the production of this catalogue, are made possible by the support of the following societies and institutions:

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GENERAL INTRODUCTION

PROVENANCE

The collection has been assembled from several sources.

The personal letters at A.6 - A.20 and the note on Geoffrey Milne at A.21 are the gift of Mrs. M.K. Milne, widow of Geoffrey and sister-in-law of Arthur Milne.

The correspondence at D.58 - D.61 is the gift of Professor and Mrs. Theodore Dunham, friends with whom Milne's daughters stayed during the Second World War.

The photocopies of letters to H. Davenport at D.53A were made available by Mrs. Anne Davenport.

The remainder of the material was assembled and given by Mrs. Margaret (Meggie) Weston-Smith and Miranda Weston-Smith (daughter and grand-daughter), who were also responsible for obtaining the photocopied documents and transcripts at D.2 - D.50, D.51 - D.53, D.63 - D.68.

OUTLINE OF THE CAREER OF E.A. MILNE

Milne was a distinguished mathematician and one of the founders of modern theoretical astrophysics.

Educated at Hymers College, Hull, and Trinity College, Cambridge, he became Assistant Director of the Solar Physics Observatory, Cambridge (1920), Beyer Professor of Applied Mathematics at Manchester (1925-28) and the first holder of the Rouse Ball Professorship at Oxford (1928-50). Milne served in both World Wars, on ballistics and sound-ranging at the Anti-Aircraft Experimental Station at Portsmouth 1916-18 (holding an R.N.V.R. Commission), and for the Ministry of Supply at the Ordnance Board as a 'Key Scientist' for much of the Second World War (1939-44).

W.H. McCrea, in his memoir of Milne for the Royal Society, distinguishes three principal phases in Milne's work: atmospheric problems in astrophysics (1920-29), stellar structure (1929-35) and the discovery and development of kinematic relativity (from 1932). Other topics on which he wrote and lectured include thermodynamics,

statistical mechanics and pulsating stars.

An annual Milne lecture was founded under the auspices of Wadham College, Oxford, the first being given in 1978.

A fuller account of Milne's career can be found in the memoir by W.H. McCrea, Obituary Notices of Fellows of the Royal Society, 7, 1950-51, pp.421-443.

DESCRIPTION OF THE COLLECTION

Milne died suddenly, away from home, in 1950 at the relatively early age of fifty-four. He had been twice widowed and had three still young children. In these circumstances there were more urgent tasks than the care of his papers, and the present collection assembled after considerable lapse of time has many gaps. In particular, there is little record of Milne's overseas travel for research and conferences or of his committee and editorial work, while the surviving correspondence, interesting though it is, is clearly no more than a fraction of the original corpus.

The lecture notes and drafts in Sections B and C indicate the range of Milne's mathematical and astrophysical interests reasonably well, if not as fully as could be wished. Perhaps the main interest is to be found in the correspondence. The letters to his parents and brother in Section A are revealing of his personality as well as of his work as a young man in the First World War. The letters to Chandrasekhar in Section D, while mainly on technical subjects and especially Milne's growing belief in his theory of kinematic relativity also contain many insights into his family life, bereavements, and daily struggles. There is clearly to be seen in both these sequences of correspondence Milne's deep love for Trinity College, Cambridge, whose traditions and ceremonies he accepted wholeheartedly and took part in whenever he could.

LOCATIONS OF FURTHER MATERIAL

A little correspondence remains in family hands.

The manuscript of Milne's Edward Cadbury Lectures, 'Modern Cosmology and the Christian Idea of God', is held in the Library of Trinity College, Cambridge (Ref.: Add. Ms. a.228). The lectures were to have been given in the University of Birmingham in 1950 but Milne died in September of that year. The manuscript was edited by G.J. Whitrow and published in 1952.

Six letters by Milne to Sir Joseph Larmor written between 1930 and 1933 are held in the Royal Society, London.

A list of additional locations of letters by and to Milne can be found at D.1.

ACKNOWLEDGEMENTS

Professor D.G. Kendall, FRS, and Dr. J. Hendry gave helpful advice on the identification and description of some of Milne's notes and drafts.

Professor K. Hufbauer kindly made available his own reference list of locations of additional correspondence now included at D.1.

SECTION A BIOGRAPHICAL AND PERSONAL A.1 - A.21

A.1-A.4 OBITUARY NOTICES AND TRIBUTES

A.1 Obituary notice by G. J. Whitrow, n.d.

3pp. Photocopy.

A.2 Memoir by W.H. McCrea (Obituary Notices of Fellows of the Royal Society, 7, 1950-51).

Photocopy.

A.3 15pp. typescript draft obituary, by G. J. Whitrow, with ms. additions and notes by A.G. Walker, intended for a joint publication. With a ms. letter by Walker apologising for delay, February 1955.

Also includes 2pp. incomplete list of Milne's publications, paginated 14 and 15.

A.4 Letters from colleagues, sent to McCrea as author of Royal Society Obituary Notice, with information and reminiscences of Milne, 1950.

E.D. Adrian - on the incidence and effects of Milne's attack of epidemic encephalitis.

A.V. Hill - Milne's career in 1914-18 war, and return to Cambridge.

L. J. Mordell - Milne's family, and career at Manchester.

Ordnance Board - Milne's work for Board 1939-44.

F. J. M. Stratton.

A.5-A.21 PERSONAL AND FAMILY

A.5 'My philosophy'

5pp. ms. autobiographical notes by Milne, describing the principal phases of his career and those who had influenced him. The work is dated 25 August 1950 (Milne died on 21 September of that year).

Attached to the ms. is an additional short note, perhaps intended as a covering letter.

Biographical and personal

A.6-A.12 Milne's letters to his brother Geoffrey, 1916-17, 1930-40.

These are all autograph manuscript, usually dated and often voluminous. Occasionally only part of the letter survives and this is indicated in the entry. The letters include personal and mathematical material and their discursive style gives insight into Milne's personality.

Geoffrey Milne (1898-1942) was two years younger than Arthur. He was educated at Leeds University and served in the First World War with the King's Own Yorkshire Light Infantry and with the Royal Engineers Sound-ranging Section.

Afterwards he became an agricultural scientist with special interest in soil research, working in East Africa and elsewhere on tropical agriculture and soil conservation. A short account of his career, published in 1978 by Mrs. Kathleen Milne (widow), from which this information is drawn, is included at A.21.

A.6 1916

2 letters, one dated 20 May.

Includes some reference to the early part of Milne's work with A.V. Hill and R.H. Fowler at Anti-Aircraft Experimental Section, Munitions Inventions Department, though Milne writes that the information should be 'kept squat'.

A.7 1917

8, 24 May; 15 July; 26 August, addressed from H.M.S. Excellent, Portsmouth. Milne was commissioned as a Lieutenant R.N.V.R. in order to ensure against his being conscripted and perhaps transferred from his naval work. This is referred to (to be kept 'perfectly squat') in letters of 8 and 24 May. Letters of July and August describe 'stalling turns' and early experience of flying.

A.8 1917

21, 30 October; 11, 25 November; 6 December, all from H.M.S. Excellent.

Milne's letters of 30 October and 11 November discuss the problems of anti-aircraft defence, and the value of his department's research, in view of criticisms by the popular press.

Biographical and personal

A.9 1930

23 March; 5 August; 23 November, from Oxford.

Letter of 23 March is 2pp., lacking both beginning and end, and has a note 'To G.M. from E.A.M. 23 March 1930' in the hand of Mrs. K. Milne. Letter of 23 November is one sheet only.

Mainly concerned with Milne's work on stellar structure and his controversy with Eddington.

A.10 1931-32

25 January 1931; 10 August, 27 November 1932.

Letter of 10 August is last sheet only (numbered 15) of a letter, with a note 'To G.M. 10 August 1932' in the hand of Mrs. K. Milne.

Letter of 27 November is from Einstein Institute, Potsdam and lacks the lower half of the last page.

Mainly concerned with Milne's work on kinematic relativity. Letter of 27 November gives some account of the Potsdam Institute and scientists working there. Milne was in Germany on a fellowship from the Rockefeller Foundation.

Letter of 1931 refers to Geoffrey Milne's work at Amani, Tanganyika.

A.11 1934-36

13 May, 9 December 1934; 28 July 1935; 10 April 1936.

Letter of 13 May is incomplete (2pp. only); letter of 28 July is incomplete (2pp. only); letter of 10 April is 1p. only, lacks beginning and end and has a note 'From E.A.M. to G.M. 10th Ap. 1936' in the hand of Mrs. K. Milne.

Letter of 13 May describes controversial meetings of Royal Astronomical Society; letter of 28 July describes Milne's new ideas on 'structure of dynamics'; letter of 19 April refers to his papers on the inverse square law of gravitation (Proc. Roy. Soc. 160, 1937) of which Milne says 'I really think it would have interested old Newton.'

Biographical and personal

A.12 1939-40

4 September 1939; 3 July, 15 September, 30 October 1940.

Letter of 15 September is incomplete (3pp. only).

Mainly concerned with the outbreak of the Second World War, air-raids and the departure of Milne's two eldest children, Eleanor and Margaret, to America.

Letters of 4 September 1939 and 3 July 1940 are concerned with Beatrice Renwick whom Milne married as his second wife in June 1940 after her adventurous journey from New York through Italy and France during the German advance.

A.13 Letter to 'George' [Heseltine].

One letter only, 2 February 1917, from H.M.S. Excellent, on research and personnel at Portsmouth.

Heseltine was a pilot and apparently a family friend; see A.14 for references to various flying tests as part of his pilot's training.

A.14-A.19 Milne's letters to his parents, 1917-20.

Milne seems to have addressed his letters separately to his mother and father, more or less turn and turn about, though the content of the letters does not vary according to the named recipient. Several of the letters are accompanied by the original envelope bearing a ms. date; there is an empty envelope at A.19.

A.14 1917

2 March. Describes flight in 'Fighting Experimental' aircraft, and research under Fowler with his 'bristling manner'; also refers to George Heseltine (see A.13).

A.15 1918

9, 17, 28 March.

All addressed from H.M.S. Excellent though letter of 9 March refers to work at Orfordness. Letters also refer to air defence of London, Milne's father's illness, and the war on the Western Front where Geoffrey Milne was then stationed.

Biographical and personal

- A.16 1918
19 June (from Essex); 25 July (from Portsmouth).
- A.17 1918
11, 22 September, both from First Army Anti-Aircraft Defences, B.E.F. France. In pencil.
General reflections on conditions and the progress of the war.
- A.18 1919
12 October; 9, 23 November, all from Trinity College, Cambridge.
Letter of 12 October describes ceremonies of Milne's election as Fellow of Trinity, offer to him by H.F. Newall of post at Solar Physics Observatory, Cambridge personalities, research, etc.
Letters of 9 and 23 November describe customs and life at Trinity, mathematical meetings and research with Rutherford, etc.
- A.19 1920
25 January; 30 April.
Cambridge news, details of post at Solar Physics Observatory, teaching, lecturing, research, social occasions.
Enclosed here is an empty envelope addressed to Milne's father and postmarked 6 February 1920.
- A.20 Letter to Milne's father, 18 February 1920, from A.V. Hill, expressing his admiration of Milne and his work, and the hope that 'he will become one of the great scientists of the day'.
- A.21 'Geoffrey Milne 1898-1942'
Note on the career and publications of G. Milne, by Kathleen Milne, 1978. Offprint from Geographers: Bibliographical Studies, published by the International Geographical Union Commission on the History of Geographical Thought and the International Union of the History and Philosophy of Science.

SECTION B LECTURES AND PAPERS B.1 - B.10

B.1 is Milne's notes of lectures he attended in Cambridge in 1919; B.2-B.10 are his own lectures and papers.

B.1 Red notebook of lectures attended by Milne in Cambridge. In his letters home (see especially A.18) he writes that he attends lectures whenever his own work permits.

The book includes:

'Chapman. Kinetic Theory of Gases. May Term 1919' (with some corrections and additions in pencil).

'Darwin on Theory of Quanta. Cavendish Lab.'

'Debye. Degrees of freedom in elastic vibrations of a solid' (Perhaps a single visiting lecture by Debye.)

'Stratton on Series in Line-spectra'

'Darwin on Bohr's Theory'

'J. J. [Thomson] Positive Rays'
(Pages left blank.)

B.2 'The Physics of Stellar Atmosphere 1923'

Milne's original folder for a 'research course' of lectures intended to cover two terms. There is a bibliography, an outline of ten topics to be studied, examples and problems to be used, etc.

The pages are numbered, but not always in order, and there are several pages of additional material to be incorporated dated 1924, 1925, as well as many intercalated pages.

See also B.3.

Lectures and papers

- B.3 'Addendum to the paper "The temperature in the outer atmosphere of a star"'
- (Communicated by the Director of the Solar Physics Observatory, Cambridge.)
- 4pp. typescript draft, with a ms. note by Milne at head, 'July 1922. Never published. ?Not worth it'. The 'addendum' is to Milne's paper of the same title published in Mon. Not. R. Astr. Soc., 82, 1922.
- This item was originally tucked into the folder of lecture notes at B.2.
- B.4 'The relations of mathematics to science'
- Ms. draft for paper, probably for a Cambridge audience (perhaps Trinity College), n.d.
- 33pp. (with intercalated p.8a), and sequence paginated a-1 of Milne's translation of selected passages from Bergson.
- B.5, B.6 'Radiation Theory and Astrophysical Applications'
- 2 black spring-back binders, Volumes I and II for an extended course of lectures under the slightly different title 'Radiation Theory and its Applications in Astrophysics'.
- B.5 Volume I, pp.1-139, with a few intercalated pages and additional notes in pencil.
- B.6 Volume II, pp.140-269, with a title page headed 'Second Term'. Some references dated 1922. Inserted between pp.225 and 226 is a 5pp. ms. paper by Milne 'Note on the evolution of the stars'. Addendum pp.187a, 187b is dated February 1923.
- B.7 Black spring-back notebook 'Lecture Notes on Thermodynamics'
- Ms. notes for a course of lectures described as 'Schedule B', pp.1-102a.
- There is an index (perhaps added later, on different format paper) of topics, some described as 'very important', 'important and very difficult', etc. The index goes up to p.128 but the last pages are no longer in the folder. See C.3.

Lectures and papers

- B.8 'The aims of mathematical physics'. 1929.
(Milne's Inaugural Lecture, Oxford.)

Offprint of published text. Uncut.
- B.9 'The White Dwarf Stars'

Essay submitted for the Johnson Memorial Prize, 1931.

96pp., mainly ms. draft and diagrams; some typed pages.

In his covering letter Milne ('The Candidate') requests the return of the text and diagrams 'as they constitute original work of which I have no copy'.

The ms. is in the folder as received, which bears a variety of dates and descriptions.
- B.10 'The white dwarf stars'

(The Halley Lecture, given May 1932 and published that year by the Clarendon Press.)

50pp. typescript with ms. corrections and additions, in black spring-back folder.

SECTION C NOTES AND DRAFTS C.1 - C.58

INTRODUCTION TO SECTION C

| | |
|-------------|-----------------------------|
| C.1 - C.27 | THERMODYNAMICS |
| C.28 - C.51 | STATISTICAL MECHANICS |
| C.52 - C.57 | RELATIVITY |
| C.58 | MILNE'S STATISTICAL PROBLEM |

These are undated sequences for lectures and papers, some belonging to the Cambridge period and probably contemporary with the material at B.5 - B.7 (see especially C.3) but with later additions and updatings.

The material was received grouped under the three main headings of thermodynamics, statistical mechanics and relativity and these have been retained, though it is clear from Milne's descriptive titles for some of his notes that they no longer necessarily correspond to their original state. Item C.58 is a later analysis of a statistical problem posed by Milne.

Some sequences of notes are paginated by Milne, others were clipped together and have been retained in Milne's order. Sometimes he used the backs of examination scripts or class exercises for his notes, but much of the material is written on the cream-laid large quarto paper used for the 1920s lectures. Additional pages and later work are usually on smaller format paper.

Notes and drafts

C.1-C.27 THERMODYNAMICS

Various sequences of notes and narratives, undated, the majority probably from the 1920s when Milne was working on atmospheric problems in astrophysics. The material was mainly intended for lectures and class problems but also in part for Milne's article 'Thermodynamics of the Stars' published as part of the Handbuch der Astrophysik (Berlin, 1930), or for other published work. Milne continued to lecture and publish on stellar thermodynamics throughout the 1930s, revising and updating his material accordingly. All the sequences, and the titles or opening phrases below, are Milne's.

- C.1 'Pure Thermodynamics'
5pp. Bibliography and introductory remarks for a course of lectures (latest quoted date 1933).
- C.2 Extensive sequence of notes and narratives, with pencil additions and revisions, paginated 1-54 with a later intercalated sequence at p.53.
- C.3 Extensive sequence of notes and narratives, paginated 92, 92.1 headed 'to be published sometime', and with a pencil note 'N.B. This is rather a swagger proof ...' and 108a-128 some also headed 'Publish sometime', 'replaced ...', etc. It seems likely that these are the pages missing from B.7.
- C.4 'On the Second Law of Thermodynamics. By E.A. Milne' 7pp.
- C.5 Three sequences of notes and examples on 'simple substance'.
- C.6 Sequence paginated '61.1' - '64.4' and 2pp. related, referring to work of Gibb.
- C.7 Three sequences on 'Equilibrium of Heterogeneous Substances', paginated 1-3, 35-38, 63-64.

Notes and drafts

- C.8 'The rôle of friction in thermodynamics'
- C.9 'Properties of Thermodynamic Functions'
- C.10 'Electrolytic Cell ...'
- C.11 'Porous Plug Experiment, pp.1-5, 1a, 2a.'
- C.12 'Brief account of the classical thermodynamics', variously paginated (later addition).
'Clausius', 1p.
- C.13 'A mathematical treatment of chemical equilibrium', 23pp.
- C.14 'Conditions of equilibrium ...'
- C.15 'The Phase Rule'
- C.16 'Complex of two phases in equilibrium'
- C.17 'Semi-permeable membranes'
- C.18 'Partial potential of a perfect gas', with a ms. note 'Second Term' (early work).
- C.19 'Mixture of perfect gases', pp.1-4 with ms. revisions and intercalated pages.
- C.20 Three sequences of notes, and solutions to problems, on osmotic pressure.
- C.21 Two sequences of notes on vapour pressure (early work).

Notes and drafts

- C.22 Three sequences of notes on vapour pressure (later work).
- C.23 'Freezing point of a solution'
- C.24 'Thermodynamic Equilibrium in an External Field of Force'
- C.25 'Dissociated Equilibrium in gaseous mixtures', pp.1-66.
- C.26 'The Nernst Theorem and its Applications', pp.1-14.

C.23-C.26 are all on same format paper, show similar features of handwriting, and may have been written at the same time.

- C.27 Miscellaneous problems and solutions in thermodynamics, one headed 'Special hard question. Original'.

Notes and drafts

C.28-C.51 STATISTICAL MECHANICS

All this material was received crammed into Milne's original folder inscribed 'Notes on Statistical Mechanics'. It consists mainly of notes for courses of lectures at various dates, probably all at Oxford; C.28 is early (c.1928), much of C.29 et seq are later (c.1937). There are also analytical notes on earlier theories, presented here alphabetically for convenience, with Milne's comments or re-workings, and some longer narratives for lectures or publications.

C.28 Bibliography and introductory note on 'Fundamentals of the New Statistics'.

C.29 'Introductory Lecture', pp.1-9, preceded by 2pp. note on 'My difficulties in beginning and preparing the course', and 1p. Bibliography, heavily annotated, with outline of course. Latest date quoted 1936; most of the authors listed are those whose work is discussed in the ms. notes and drafts.

Probably given at Mathematical Institute, Oxford, 1937.

C.30 'Classical statistical mechanics for ideal gas'.

Draft for lecture or paper, 26pp.

C.31 Unpaginated (13pp.) sequence of notes on 'classical' and 'new' statistics, with ms. note at head 'Important Ms.'.

C.32 Two sequences of notes on Boltzmann's hypothesis, 5pp. and 8pp.

C.33, C.34 Einstein-Bose statistics.

C.33 Two sequences of notes (perhaps earlier work).

C.34 Three sequences of notes (perhaps later).

Notes and drafts

- C.35 Fermi-Dirac statistics.
Three sequences of notes.
Also included here is an offprint of Milne's paper 'The dissociation formula according to the Fermi-Dirac statistics' (Mon. Not. R. Astr. Soc., 90, 1930).
- C.36 Notes on R.H. Fowler's theories.
- C.37-C.42 Extensive notes on the work of J. Willard Gibb.
- C.37 'Notes on Gibb' Statistical Mechanics', paginated 1-62, with several intercalated pages.
- C.38 'Notes from Gibb'
- C.39 'Criticism of Gibb'
- C.40 'Notes from Haas' comments on Gibb', paginated 1-36 + 4 un-numbered pages.
- C.41 'Notes from Lorentz' with a note 'To be inserted after notes on Haas', paginated 1-12.
- C.42 'Brillouin's account of the passage to Gibb', paginated 1-8.
- C.43 'Notes from Pannekoek', paginated 1-22.
- C.44 Three sequences of notes on Planck, and comparison of his work with Einstein-Bose statistics, 4pp., 11pp., 7pp.
- C.45 Notes on J. Woltjer, 4pp.
- C.46 Two sequences of notes on 'Dissociative Equilibrium', 7pp. (perhaps early work), 3pp. (perhaps later).
- C.47 Five sequences of notes on 'relativistic' and 'non-relativistic' mechanics.

Notes and drafts

- C.48 'Vapour pressure equation derivation', 4pp. (perhaps early work).
- C.49 'Entropy formula' (perhaps early work).
- C.50 'Motion of systems and ensembles ...' (perhaps early work).
- C.51 Two sequences of untitled notes.

Notes and drafts

C.52-C.57 RELATIVITY

None of the material is dated, though W.H. McCrea (Obituary Notices ... 1950-51, p.435) describes Milne's work on 'kinematic relativity' as "his predominant scientific interest from 1932 onwards". C.52 is a draft for a paper apparently intended for publication; C.53-C.57 are sequences of notes and problems, probably for lectures.

- C.52 'On Inertial Frames. By E.A. Milne'
14pp. ms.; latest references quoted are Milne's and McCrea's, 1934, 1935.
- C.53 'Example in relativity', 3pp.
- C.54 'Example in special relativity', 3pp.
- C.55 'Lorentz transformations', 3pp.
- C.56 'Material Energy-tensor', 5pp., annotated and revised.
- C.57 'Easy example ...', 3pp.
- C.58 MILNE'S STATISTICAL PROBLEM
'On a statistical problem by E.A. Milne'
Photocopy of draft article by D.R. Cox and Agnes M. Herzberg, published in Proc. Roy. Soc. A, 331, 1972.

Correspondence

The transcripts should always be checked against Milne's original as preserved in the photocopies.

The communications are frequent and often voluminous. The content is primarily research problems and publications or visits and lectures, generally somewhat formally expressed and dry in tone. From about 1939, with the heavy pressure on Milne of war-work, life in London, the care of his family, the loss of his second wife, brother and several old colleagues, he became less reserved and spoke more freely of his circumstances. The simple family life of the Milnes, and their joyful pleasure in the gifts (usually food) sent by Chandrasekhar, are touching, especially in contrast with the wholly abstract problems of Milne's professional life.

Most of Milne's letters are signed 'E.A. Milne'; later he relaxed to 'E. Arthur Milne' or occasionally 'Arthur Milne', and addressed his letters to 'My dear Chandrasekhar' or 'Dear Chandra' and his Christmas letters 'Dear Chandra and Lalitha'.

D.51-D.53 is a separate sequence (transcripts only) of personal correspondence, principally of letters to Chandrasekhar from Margaret and Eleanor Milne, 1933-76.

- D.2 1929
- One item only, comment (unfavourable) on a paper by Milne.
Not signed.
- Photocopy and transcripts.
- D.3 1930
- One letter only, 2 November.
- Photocopy and transcript.

Correspondence

- D.4 1931 (1)
7, 13, 16, 29 January
12, 16, 17, 22, 27, 28 February
3, 7 March
Photocopies.
- D.5 Transcripts.
- D.6 1931 (2)
13 April
Undated letter addressed from Manchester. The typescript of this letter has a ms. note 'Between 5.5.31. and 13.4.31' (where the letter now rests), but letter of 17 June mentions that Milne is 'off to Manchester tomorrow'.
5, 7 May
11 (2 letters), 17, 26, 27, 30 June
Photocopies.
- D.7 Transcripts. Lacks the first letter of 11 June.
- D.8 1931 (3)
16, 18, 19, 29 (followed by 1p. undated 'Notes by E.A.M.'),
30 October
5, 14, 18, 19, 24 November
9 December
Photocopies.
- D.9 Transcripts; letter of 19 October differs considerably from the photocopy and it is likely that two or more originals have been conflated.

Correspondence

- D.10 1932 (1)
2, 24, 29, 30 January
13, 24, 26 February. Letter of 13 February is to R.H. Fowler about arrangements for Chandrasekhar to work with Milne in Oxford. Letter of 26 February contains first mention of Milne's visit to Potsdam later in the year and the suggestion that Chandrasekhar might go too (he did not).
Photocopies.
- D.11 Transcripts.
- D.12 1932 (2)
6, 9 (2 letters), 17, 18 March
19 June
Photocopies.
- D.13 Transcripts.
- D.14 1932 (3)
These letters are all addressed from Potsdam.
1 (2 letters), 7 October
3 November
Photocopies.
- D.15 Transcripts.
-

Correspondence

- D.16 1933 (1)
10, 18 January (includes Milne's proposal of Chandrasekhar as Fellow, Royal Astronomical Society.
25 March
3 (from Chandrasekhar), 16 May
Photocopies.
- D.17 Transcripts.
- D.18 1933 (2)
7, 17 June
25 July (long letter on research problem on Cepheid stars which Milne hoped Chandrasekhar would tackle during a proposed visit, to work in Oxford).
5, 8, 19 August
10 (on Chandrasekhar's election to Fellowship at Trinity College, Cambridge), 12, 16 October.
15 November
20 December
Photocopies.
- D.19 Transcripts.
- D.20 1934
16, 23 February
5, 10 March
27 September (long letter, mainly on Milne's theories of cosmology)
11, 19 October

Continued

Correspondence

- D.20 Cont'd. n.d. ('Tuesday')
12, 25 December
Photocopies.
- D.21 Transcripts. Includes transcript of an additional letter of
16 October not included at D.20.
- D.22 1935
24 February
13 June
11, 14 October
16 November
Photocopies.
- D.23 Transcripts. Includes transcript of an additional letter, 30 June,
not included at D.22.
- D.24 1936
25, 26 (from Chandrasekhar), 27 April
15, 20, 31 May
2, 14 November
13 December
Some of these letters include a little more personal material than
usual. Letter of 31 May refers to Milne's shyness, and to his
love of Trinity College, Cambridge; letters of November and
December to Chandrasekhar's marriage, and move to Chicago.
Photocopies.
- D.25 Transcripts.

Correspondence

- D.26 1937
- 7 January
- 20 April
- 23 May
- 26 December
- Photocopies.
- D.27 Transcripts.
- D.28 1938
- 5 November
- 26 December
- Both letters refer to the death of Milne's first wife, Margaret ('Margot').
- Photocopies and transcripts.
- D.29 1939
- 25 January
- 18 February
- 30 March
- 29 May
- 25, 28 June
- 3 July
- 13 October
- Several of these letters refer to the threat of war and Milne's engagement in war work. Letter of 13 October recalls his service in the First World War 'doing the same type of work, with partly the same colleagues'.
- Photocopies.

Correspondence

D.30 Transcripts.

D.31 1940

15 January

8 July (refers to Milne's second marriage to Beatrice Renwick after her 'thrilling and difficult journey' to reach Britain, and the departure of Eleanor and Margaret Milne to Canada and U.S.)

15 September

27 November (includes description of the installation of Trevelyan as Master of Trinity).

Photocopies.

D.32 Transcripts.

D.33 1941

28 February

14 August

4 November

30 December

Includes reflections on war-work, conditions of life, Milne's Royal Medal, etc.

Photocopies.

D.34 Transcripts.

D.35 1942

One letter only, 30 December

Photocopy and transcript.

Correspondence

- D.36 1943
6 July
3 November
Photocopies and transcripts.
- D.37 1944
20 January
15 March (Chandrasekhar's election to Fellowship of the Royal Society; death of Newall)
8 May
2 September (flying-bomb damage to Milne's London house and the family's return to Oxford; death of R.H. Fowler).
Photocopies.
- D.38 Transcripts.
- D.39 1945
15 April
27 June
10 October
Mainly concerned with the illness, and death in August, of Milne's second wife Beatrice; also the return from America of Eleanor and Margaret.
Photocopies.
- D.40 Transcripts.
- D.41 1946
22 February
8 June (2 copies)
29 December
Photocopies.

Correspondence

- D.42 Transcripts.
- D.43 1947
2 (from Chandrasekhar), 19 June (describes quatercentenary celebrations at Trinity).
15, 28 (from Chandrasekhar) July
6, 18 (from Chandrasekhar) August
16 September
7 (from Chandrasekhar), 28 November (includes a rare reference to the 'unfortunate palsy', i.e. tremor, resulting from Milne's attack in 1923 of epidemic encephalitis whose late after-effects began to afflict him more perceptibly from 1945.
Photocopies.
- D.44 Transcripts.
- D.45 1948
5 January (dated 1947 in error)
20 March
27 April (from Chandrasekhar)
3 May
10 (from Chandrasekhar), 20 August
18 December
Photocopies.
- D.46 Transcripts.

Correspondence

- D.47 1949
- 15 March (from Chandrasekhar)
- 18, 19 July (2 letters on 19 July). Includes material re a paper by C. Prasad.
- 1, 2 (from Chandrasekhar) September
- 29 October
- 13 (from Chandrasekhar), 14, 23, 26 December
- Photocopies.
- D.48 Transcripts.
- D.49 1950
- 14 January
- 25 February
- 11 September (envelope only)
- n.d. letter from Margaret (Meggie) Milne about her father's death (on 20 September).
- 14 October (from Chandrasekhar to W.H. McCrea with recollections of Milne and extracts from some of the letters).
- Photocopies.
- D.50 Transcripts.
- D.51 Transcripts of letters to Chandrasekhar, 1933-38.
- Includes letters from Margot Milne, two letters from Milne (8 September 1935, 10 August 1936), and a note and press-cutting on the death of Margot Milne 1938.
- D.52 Transcripts, 1940-45.
- Mainly letters from Meggie and Eleanor Milne but includes letter from M. Dunham.

Correspondence

D.53 Transcripts, 1950-56, 1975, 1976.

Letters exchanged between Meggie and Eleanor Milne and Chandrasekhar, re meetings, personal news, etc.

D.53A Davenport, H. 1926-27, 1945

These are photocopies of letters from Milne to Davenport, made available by Mrs. A. Davenport in 1984, and with some transcriptions by her of illegible and technical terms.

Letters of 1926-27 refer to the award to Davenport of a scholarship at Trinity College, and his work for the Cambridge Tripos after his graduation from Manchester University where he had been a pupil of Milne, C. Walmsley and L. J. Mordell.

Letter of 1945 refers to work of contemporary mathematicians.

D.54-D.57 Dingle, H. various dates 1930-51

Mainly scientific correspondence from Milne on his theories of stellar interiors and his controversy with Eddington. Dingle was Secretary of the Royal Astronomical Society 1929-32 and many of the letters re meetings and publications are written to him in that capacity.

D.54 1930

6 letters, July-December. Letter of 1 August refers to Milne's re-casting of his Bakerian Lecture in response to criticisms from Eddington (Obituary Notices, p.431).

D.55 1931

5 letters, June-September.

Correspondence

D.60 Photocopies of the letters, some with typed transcripts. Attached to copy of Milne's letter of 1 January 1941 is a copy of a letter from D.R. Pye to A.V. Hill about Dunham's wish to join the R.A.F. to help the British war effort.

Also enclosed are some of the original censored war-time envelopes.

D.61 Letter from Dunham to R.A. Lyttelton and N. Hetherington explaining his family's connection with Milne and the origin of the letters, 1 December 1979.

Also included here are two copies of a list and summary of the letters.

D.62 Eliezer, C.J. 1943

Milne's papers on Rational Electrodynamics.

D.63-D.68 Hill, A.V. 1918-50, 1955

Photocopies of correspondence and papers made from the original documents held in Churchill College, Cambridge. Mainly from Milne.

D.63 1918 (from Hill), 1919-21 (includes letters from Milne's father to Hill thanking him for his help with Milne's career, and letter from Milne on his father's death).

D.64 1926-29 (marriage, research, move to Oxford).

D.65 1934-35

D.66 1938-46 (mainly war-work).

D.67 1950 (one letter only, 10 June, describing visit to Whale Island and recollections of service in First World War).

Miscellaneous pages of calculations by Milne and Hill

Correspondence, 1950-51, between Hill and W.H. McCrea with recollections of Milne.

Letter 1955 from Meggie Weston-Smith (née Milne).

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