

Catalogue of the papers and correspondence of

**Albert Ernest Kempton**

(1911 - 2000)

by Simon Coleman and Peter Harper

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## GENERAL INTRODUCTION

### PROVENANCE

The papers were received for cataloguing from Christ's College Cambridge on 8 November 2000.

### OUTLINE OF THE CAREER OF ALBERT ERNEST KEMPTON

Albert Ernest Kempton, the last of Ernest Rutherford's research students at the Cavendish Laboratory, Cambridge, was born on 26th December 1911. After taking a First in Part 2 Physics at Cambridge in 1933, he joined the research on deuterons as a member of M.L.E. Oliphant's team. In 1938 he joined the 'cyclotron team', working with W.B. Lewis.

During World War II Kempton worked on the development of radar, particularly for coastal defence. In 1945 he returned to the Cavendish as a lecturer and remained there for the rest of his professional career. As a distinguished Fellow of Christ's College, he was deeply involved in the College's affairs and remained on the Council for thirty-five years. Kempton died on 17 April 2000.

### DESCRIPTION OF THE COLLECTION

The papers date from c.1930 to c.2000.

Section A, Biographical, chiefly consists of undergraduate notebooks and files. There are also drafts etc of speeches commemorating Kempton's career, one by Sir Brian Pippard.

Section B, Research, includes a notebook relating to Kempton's postgraduate thesis and a printed version of the same. There is also material relating to a series of lectures by Erwin Schroedinger at the School of Theoretical Physics, Institute of Advanced Studies, Dublin, 1944, and Los Alamos Report 24: 'Lecture Series on Nuclear Physics', undated (lecturers include F. Bloch, E. Segrè, E. Teller and V.F. Weisskopf).

Section C, Teaching, presents a substantial body of material covering much of the period which Kempton spent teaching at the Cavendish Laboratory, Cambridge. Notebooks and papers date from 1956 to the 1970s.

## Biographical

<b>A.1-A.24</b>	<b>BIOGRAPHICAL</b>	<b>c.1930- c.2000</b>
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A.1-A.22 Undergraduate notebooks

A.23-A.24 Tributes

<b>A.1-A.22</b>	<b>UNDERGRADUATE NOTEBOOKS AND FILES</b>	<b>1931-1932</b>
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Most notebooks are inscribed 'Trinity', with the name of an academic term and the name of a topic and, sometimes, the lecturer's name, inside the front covers. These names are reproduced as titles in the following descriptions.

Loose notes are found intercalated in places.

A.1	'Lent 1931: Electrodynamics, Dr J.D. Cockroft'.	1931
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A.2	'Lent 1931: Electricity'.	1931
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A.3	'Michaelmas 1931: The Constitution of Matter'.	1931
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A.4	'Michaelmas 1931: Electric Oscillations & Waves'.	1931
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A.5	'Michaelmas 1931: Electric Oscillations & Waves'.	1931
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A.6	'Michaelmas 1931: Practical Physics'.	1931
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Included are graphs of experimental results.

A.7	'Michaelmas 1931: Light'.	1931
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### Biographical

A.8	'Lent 1932: X rays and Thermionics, Mr Stead'.	1932
A.9	'Michaelmas 1932: Quantum Theory of Spectra, Mr Wilson, Emm[anuel]'.	1932
A.10	'Michaelmas 1932: The Kinetic Theory of Gases, R.H. Fowler'.	1932
A.11	'Ionisation and Radioactivity'.	c. 1930-1933
A.12	Untitled notebook.  Heading on first page is 'Wave Motion'.	c.1930-1933
A.13-A.20	Contents of an untitled file.  The notes are on thermodynamics and other topics.  Paginated 1-111, though disarranged.  8 folders.	c. 1930-1933
A.21-A.22	Contents of an unmarked file.  Notes on various topics.  2 folders.	c. 1930-1933
<b>A.23-A.24</b>	<b>TRIBUTES</b>	<b>c.2000</b>
A.23	Speech by Sir Brian Pippard giving an account of Kempton's career.  Photocopy of 2pp manuscript draft.  The occasion of the speech is unknown.	c. 2000



**Biographical**

A.24

Tribute to Kempton delivered by the Master of Christ's  
College, Cambridge.

c. 2000

2pp typescript entitled 'The Master's Address'.

## Research

<b>B.1-B.5</b>	<b>RESEARCH</b>	<b>c.1930-1944</b>
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B.1	Notebook entitled 'Provisional Survey & Notes for Fellowship Thesis'.	c.[1930]-1935
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Manuscript notes.

From front: The above title is followed by the heading 'The Constitution of the Light Nuclei' and the date '22 May 1935'. Further headings include the following: 'Mutation Properties of a Nucleus', 'Spontaneous Disint.[egration]', 'Nuclear Symmetry - Spins etc'. Paginated 1-77.

From back: Notes on various topics, probably for undergraduate work.

B.2	'Some Experiments on the Artificial Transmutation of the Light Elements', by Kempton.	[?1936]
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The work is described as a 'dissertation' in the preface and appears to be the finished version of the 'Fellowship Thesis' in B.1. Inscribed 'Trinity College' on title page.

Kempton writes 'All the experimental work of the first three chapters, with one exception, was done in collaboration with Dr Oliphant and Lord Rutherford'.

201pp. The work is organised in four chapters with appendices and bibliography.

Printed and bound.

B.3	Notebook entitled 'Cavendish Laboratory, Cambridge'.	1937
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Notes on experimental work carried out by Kempton at the Cavendish Laboratory. Included are graphs and many pages of intercalated notes. A number of pages and graphs are inscribed with dates, all 1937.

B.4	' "Statistical Thermodynamics', Course of seminar lectures delivered in January-March 1944 at the School of Theoretical Physics, by Erwin Schroedinger.'	1944
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136pp copy of a typescript of the lectures, so entitled.

## Research

B.5

'LA [Los Alamos] Report 24: Lecture Series on Nuclear Physics'.

nd

The report is organised into the following series of lectures, with the names of the lecturers also given:

First series: 'Terminology'; lecturer: E.M. McMillan.  
Second series: 'Radioactivity'; lecturers: E. Segrè, E. Teller, F. Bloch. Third series: 'Neutron Physics'; lecturer: J.H. Williams. Fourth series: 'Two Body Problem'; lecturer: C.L. Critchfield. Fifth series: 'The Statistical Theory of Nuclear Reactions'; lecturer: V.F. Weisskopf. Sixth series: 'Diffusion Theory'; lecturer: R.F. Christy.

**Teaching**

**C.1-C.90                      TEACHING                      1956-c.1978**

C.1-C.11      Notebooks  
C.12-C.90      Teaching files

**C.1-C.11                      NOTEBOOKS                      1957-c.1970**

The notes are mostly copied from publications and relate to Kempton's teaching at the Cavendish Laboratory. Some can be dated by inscriptions found on some of the pages.

C.1                      1957.  
  
C.2                      1958.  
  
C.3                      1958.  
  
C.4                      1960.  
  
C.5                      1963.  
  
C.6-C.11              c. 1957-c.1970.  
  
6 notebooks.

**C.12-C.90                      TEACHING FILES                      1956-c.1978**

Manuscript and typescript papers used for teaching, contents of original files.

### Teaching

Some of the manuscript notes are not in Kempton's hand.

C.12-C.13	'Practical Courses for Part II Physics'.  72pp typescript so entitled. Inscribed 'July 1956' on title page.  2 folders.	1956
C.14-C.15	Teaching papers.  Contents of a file.  2 folders.	1962-1969
C.16-C.17	Teaching papers.  Contents of a file.  2 folders.	c. 1967
C.18-C.20	Teaching papers.  Contents of a file.  3 folders.	1973
C.21-C.23	Teaching papers.  Contents of a file.  3 folders.	c. 1973
C.24-C.27	Teaching papers.  Contents of a file.  4 folders.	c. 1974
C.28	Teaching papers.  Contents of a file.	c. 1974

**Teaching**

C.29-C.32	'Hewish 1977 (& 1976)'. Contents of a file so inscribed. 4 folders.	c. 1977
C.33-C.35	'New Lectures for 1977-1978'. Contents of a file so inscribed. 3 folders.	1977
C.36-C.40	Teaching papers. Contents of a file. 5 folders.	c. 1978
C.41-C.42	Teaching papers. Contents of a file. 2 folders.	c. 1978
C.43-C.44	Teaching papers. Contents of a file so inscribed. 2 folders.	c. 1978
C.45-C.50	Teaching papers. Contents of a file. 6 folders.	c. 1978
C.51-C.54	'Howie'. Contents of a file so inscribed.	c. 1978

**Teaching**

4 folders.

C.55	Teaching material. Contents of a folder.	c. 1978
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C.56-C.57	Teaching material. Contents of a file. 2 folders.	c. 1978
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C.58-C.60	Teaching papers. Contents of a file. 3 folders.	c. 1978
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C.61-C.64	Teaching papers. Contents of a file. 4 folders.	c. 1978
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C.65-C.70	Teaching papers. Contents of a file. 6 folders.	c. 1978
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C.71-C.73	Teaching papers. Contents of a file. 3 folders.	c. 1978
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C.74-C.75	'Lectures Misc'. Contents of a file so inscribed. 2 folders.	[?1970s]
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### Teaching

C.76-C.78	'Riley'.  Contents of a file so inscribed.  3 folders.	[?1970s]
C.79-C.84	Teaching papers.  Contents of a file.  6 folders.	[?1970s]
C.85-C.89	Teaching papers.  Contents of a file.  5 folders.	[?1970s]
C.90	3 lectures on nuclear physics given on 7, 10 and 11 September 1945.  5pp photocopy of typescript abstracts of the lectures.  The titles of the lectures are not given. Topics (indicated by headings) include 'Passage of Radiation through Matter', 'Nuclear transformations' and the 'Modern Theory of the Nucleus'.	1945