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#### GENERAL INTRODUCTION

The collection was received in March 1988 via Mr R T Lewis, University of Bath, nephew of W B Lewis.

Wilfrid Bennett Lewis was born 24 June 1908 at Castle Carrock in Cumbria. He was educated at Haileybury College before entering Gonville and Caius College Cambridge in 1927 to read for the Natural Sciences Tripos, studying Physics, Chemistry and Mathematics for Part I and specialising in Physics for Part II. Lewis received his BA (Hons) in 1930.

Following graduation Lewis began research on radioactivity at the Cavendish Laboratory. He was awarded his PhD in 1934 for work on the analysis of alpha-particle groups, and the same year was elected a Research Fellow of Gonville and Caius College. Lewis was appointed University Demonstrator in Physics 1935 and University Lecturer 1937.

On the outbreak of war Lewis, since July 1939 a Senior Scientific Officer with the Air Ministry Establishment (later to become the Telecommunications Research Establishment (TRE), Malvern), began work on improvements in radar. He was appointed Principal Scientific Officer 1940, Superintendent of TRE 1943 and Chief Superintendent 1945.

In September 1946 Lewis resigned to take up the Directorship of the Division of Atomic Energy of the National Research Council of Canada. He was appointed Vice-President of Research and Development of Atomic Energy of Canada Limited in 1952 and Senior Vice-President 1963. On his retirement in 1973 he took up a chair as Distinguished Professor of Science at Queen's University, Ontario. Lewis died in 1987.

Among the many honours accorded to Lewis in recognition of his scientific achievement were the Fellowship of the Royal Society 1945 (awarded the Society's Royal Medal in 1972), CBE 1946, the Fellowship of the Royal Society of Canada 1952 and the 1967 Atoms for Peace Award.

For a full account of the life and work of Lewis see Sir Bernard Lovell and D G Hurst 'Wilfrid Bennett Lewis 1908-1987', Biographical Memoirs of Fellows of the Royal Society, 34, 1988.

The collection consists of the twenty-three notebooks Lewis left in the care of his brother Mr J A Lewis when he emigrated to Canada in 1946. The notebooks contain chiefly lecture notes and practical work for Lewis's undergraduate degree courses at Cambridge 1927-30. Notebook 1 contains physics notes which predate his university career and notebook 22 contains postgraduate work. Lectures by G F C Searle are identified in notebooks 11 and 12.

#### LOCATION OF OTHER MATERIAL

The material assembled by Sir Bernard Lovell for the Royal Society memoir of Lewis will be deposited with the remainder of Sir Bernard's papers in the John Rylands University Library of Manchester.

#### ACKNOWLEDGEMENTS

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Peter Harper  
Timothy E Powell  
Bath 1989

- 1, 2 Two same format blue hardback notebooks with Lewis's name and topic on the front cover.
- 1 'Mechanics and General Physics Theoretical'.  
Includes notes on 'Properties of Matter' dated '1926<sub>3</sub>'. Loose notes are enclosed at the rear of book. For continuation of work in this book see notebook 3.
- 2 'Electricity and Magnetism I'.  
For continuation of work in this volume see notebook 11.
- 3 - 8 Six same format green hardback notebooks with black tape on spine. 4, 6, 7 and 8 are labelled with the topic on the spine and 5 has the topic inscribed on the first page. 4, 5 and 8 are inscribed with Lewis's name and college inside front cover.
- 3 Unlabelled notebook used for continuation of work in notebook 1.  
Includes notes on radiation, sound and light. Loose notes are enclosed at rear of book.
- 4 'Physics II'  
Notes begin with infrared and ultraviolet and include dynamics and radiation. Loose notes are enclosed at rear of book.
- 5 'Harder Mechanics'  
Loose notes are enclosed at front of book.
- 6 'Chemistry'  
Notes begin with aldehydes.

- 7            '[Ca]lculus'
- Some of the work is marked with ticks dated '7/12/27',  
'16/12/27', '29/12/27' and '4/1/28'.
- 8            'Solid Geometry'
- Notes on solid geometry, optics, hydrostatics etc.  
Enclosed at rear of book is complimentary blotter with  
calendar for Easter Term 1928.
- 9 - 15       Seven 'Cantab Series' light blue hardback notebooks  
with black tape on the spine. The topics are inscribed  
on the front cover and Lewis's name and college on the  
flyleaf.
- 9            'Physics. Constitution of Matter. Induction and  
Electrical Oscillations and Radio-Telegraphy. Electricity  
and Magnetism'.
- Includes reference to 'Proc Roy Soc 1929' on first line  
of first page and 'Extracts from Notes by Dr [ C D ] Ellis'.  
Both ends of the notebook are used.
- 10           'Physics. Ionisation and Radioactivity'.
- 11           'Electricity and Magnetism'
- Used for continuation of work in notebook 2. Includes  
'Dr [ G F C ] Searle's Lectures'. Loose notes are enclosed  
at rear of book.
- 12           'Electricity'
- Includes 'Dr Searle's Lectures (continued)'. Loose notes  
are enclosed at rear of book.
- 13           'Inorganic and Physical Chemistry'
- Loose notes are enclosed in book.

- 14 'Chemistry Practical Analysis'.  
Both ends of notebook used. Loose note is enclosed at rear of book.
- 15 'Physical Chemistry'.  
Dated on flyleaf '1929<sub>1</sub>'. Includes entry dated '13th March 1929. Professor Goldschmidt on Crystal Structure and Molecular Constitution'. Loose note is enclosed at rear of book.
- 16 Hardback notebook used for mathematics notes; analytical geometry, solid geometry etc.  
Both ends of notebook used. Loose notes are enclosed at front and rear of book.
- 17 Green hardback notebook used for chemistry notes.  
Loose notes are enclosed at front and rear of book.
- 18 Hardback notebook with red tape on spine. Lewis's name and college are inscribed inside front cover and the topic 'Practical Physical Chemistry' on first page.
- 19 Booklet containing 30 experiments for 'Advanced Class'. Contents list + 45pp (duplicated).  
Loose notes are enclosed at rear of booklet. See notebooks 20 and 21 for Lewis's Part II practical work.
- 20 Red hardback notebook with 'Physics Book' imprinted on front cover. Lewis's name and college are inscribed on the flyleaf with date and topic 'Experiments 52 to 60 Dr Ellis' Lab May Term 1929. 60 to End Part II Lab'.  
Loose items are enclosed in book.

- 21 Blue hardback notebook with black tape on spine. Lewis's name and college are inscribed on flyleaf with the date and topic '1929<sub>3</sub> - Part II Lab (continued)'.
- 22 Black hardback loose-leaf lecture notebook used for postgraduate work.  
First page is headed 'Electrical Discharge Through Gases. Langmuir, Scott Lectures, 1931 Lent Term'. Loose notes are enclosed at front of book.
- 23 Notes on theory of errors, atomic spectra, isotopes.  
The notes on isotopes are very probably Lewis's notes on F W Aston's lectures on the topic (information from Sir Brian Pippard, January 1989).