

THE ROYAL COMMISSION ON HISTORICAL MANUSCRIPTS

Report on the correspondence and papers

of

SIR EDWARD PENLEY ABRAHAM

(1913-1999)

biochemist

in

Bodleian Library, Oxford

VOLUME I

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Catalogue of the papers and correspondence of

Sir Edward Penley Abraham FRS

(1913 - 1999)

VOLUME I

General introduction

Section A: Biographical

Section B: University of Oxford

Section C: Research and development

Section D: Publications

by Simon Coleman, Peter Harper and Caroline
Thibeaud

NCUACS catalogue no. 103/2/02

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FRS (1913-1999), biochemist

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GENERAL INTRODUCTION

PROVENANCE

The papers were received from the Sir William Dunn School of Pathology, University of Oxford, with additional biographical material from Mrs T. Mayes, Sir Edward Abraham's niece, in summer 2000.

OUTLINE OF THE CAREER OF EDWARD PENLEY ABRAHAM

Edward Penley Abraham was born at Southampton on 10 June 1913 and educated there at the King Edward VI School. He won an exhibition to Queen's College Oxford, taking a First in chemistry and acquiring a particular interest in organic chemistry. At the Dyson Perrins Laboratory in Oxford he undertook research on peptides and studied for a D.Phil. under Robert Robinson. His work included an important contribution to the study of lysozyme which was also being investigated by Howard Florey and Ernst Chain at the Sir William Dunn School of Pathology. After taking his doctorate in 1938 Abraham was able to develop his increasing interest in biochemistry at the Biokemiska Institut, Stockholm, which he attended as a Rockefeller Travelling Fellow. He returned to England the following year and in January 1940 took up a post at the Sir William Dunn School of Pathology at Florey's invitation.

During their investigations of naturally occurring antibiotic substances, Florey and Chain had turned their attention to penicillin in 1938. After experiments on mice in the summer of 1940 yielded encouraging results, Abraham joined the work on the purification and chemistry of penicillin. In the course of this research he and Chain observed that the antibiotic was destroyed by an enzyme produced in a strain of E-coli. The discovery of this enzyme, named penicillinase, proved to be of great importance to future studies of micro-organisms and antibiotic resistance. Following the first successful clinical trial of penicillin on humans in February 1941, Abraham played a significant role in the elucidation of its chemical structure and in 1943, with Chain, proposed the novel beta-lactam (henceforth written B-lactam) structure with a fused two ring system. This theory was strongly opposed by Abraham's former supervisor, Robinson, who favoured an alternative structure. The issue was settled in 1945 when X-ray crystallographic study by Dorothy Hodgkin and Barbara Low confirmed the B-lactam structure.

Although the astonishing clinical impact of penicillin would overshadow all subsequent breakthroughs in antibiotics, the discovery of Cephalosporin C by Abraham and Guy Newton led to the appearance of a new group of B-lactam antibiotics of equal importance to medicine and of greater commercial value. A culture of the *cephalosporium* fungus, whose antibiotic properties were first discovered in

Sardinia by Giuseppe Brötzu in 1945, reached the Sir William Dunn School of Pathology in September 1948. After initial experiments by N.G. Heatley, the production of culture fluids was turned over to the Medical Research Council's Antibiotics Research Station at Clevedon in July 1949. Abraham and his colleagues succeeded in isolating a number of antibiotic substances from the culture fluids, the one producing the results originally observed by Brötzu given the name 'Cephalosporin N'. The discovery of Cephalosporin C, a substance detected in minute quantities in partially purified Cephalosporin N in September 1953, was epoch making. It was active against certain bacteria unaffected by penicillin, while being resistant to penicillinase and of very low toxicity. Cephalosporin N was shown to be a new form of penicillin and was re-named 'Penicillin N'.

Despite the combined efforts of Oxford, Clevedon and the Glaxo Group there proved to be many difficulties with the production of Cephalosporin C by fermentation and it took until 1959 for Abraham and Newton to determine its chemical structure. Later that year they showed that subtle mutations of the Cephalosporin C molecule could lead to the production of more potent antibiotics which would still be resistant to penicillinase. Work aimed at producing higher yields of the nucleus of the molecule (7-aminocephalosporanic acid or 7-ACA) continued during the early 1960s, with Glaxo and other pharmaceutical laboratories licensed by the National Research Development Corporation (NRDC) collaborating with the Dunn School. The successful outcome of this painstaking work enabled studies of semi-synthetic cephalosporins to proceed, with the drugs cephalothin and cephaloridine being introduced into medicine in 1964. The NRDC's worldwide patenting and licensing scheme covering the cephalosporins eventually yielded huge royalties, for many years the chief source of income for the corporation. Abraham diverted the greater part of his royalty income into two trusts, the E.P. Abraham Research Fund and the E.P.A. Cephalosporin Fund, which he set up to support medical, biological and chemical research, especially at Oxford.

After 1964 Abraham continued to conduct research on B-lactam antibiotics, including the biosynthesis and enzyme inactivation of penicillins and cephalosporins, while also investigating other antibiotics such as bacilylsin. He maintained a strong interest in antibiotics research abroad, and travelled extensively to visit research laboratories and give lectures such as the Rennebohm Lecture at the University of Wisconsin (1966-1967) and the Squibb Lecture at Rutgers University (1972).

Abraham was elected a Fellow of the Royal Society in 1958 and became Professor of Chemical Pathology in 1964. In addition to his knighthood in 1980, his outstanding contributions in the antibiotics field brought him numerous awards, including the Royal Medal of the Royal Society (1973), a CBE (1973), the Mullard Prize of the Royal Society (1980) and several honorary degrees. Abraham also contributed to academic life in Oxford as a Fellow of Lincoln College from 1948 to 1980 (an Honorary Fellow from 1980) and as an Honorary Fellow of a number of other colleges.

A man of exceptional modesty, Abraham was affectionately regarded by his colleagues at all levels. He remained on good terms with both Florey and Chain after their acrimonious breach and later wrote well-received articles on both scientists for *Biographical Memoirs of Fellows of the Royal Society*.

He married Absbjörg Harung, a Norwegian, in 1939 and they had a son. Abraham died on 8 May 1999.

DESCRIPTION OF THE COLLECTION

The papers cover the period 1925 to 2000. The following paragraphs are intended to provide a summary of the collection, by section, and to draw attention to items of particular interest. Further explanatory notes and cross-references are found, where appropriate in the individual sections in the catalogue.

Section A, Biographical, includes a variety of material reflecting many aspects of Abraham's personal and professional life. A number of his school notebooks survive, along with eighteen undergraduate notebooks. There are letters of congratulation on his election to the Fellowship of the Royal Society, 1958, and on his receipt of the Royal Medal of the Royal Society in 1973, and correspondence and papers relating to other honours and awards. Included also are correspondence concerning the history of antibiotics (mostly 1990s), correspondence and papers relating to his support of various charities and appeals later in his life, appointments diaries (1963-1992) and a sequence of personal correspondence, 1974-1998.

Section B, University of Oxford, is short. The material includes correspondence and papers relating to the business of Lincoln College (1960-1996), of which Abraham was a Fellow, and building work and administration at the Sir William Dunn School of Pathology (1954-1994). Other papers, chiefly concerning social and fundraising events, reflect his associations with other Oxford colleges and organisations, sometimes through donations by the Abraham Trusts.

Section C, Research, presents extensive and diverse material spanning some sixty years of Abraham's biochemical research. There are notebooks, correspondence, publications and other papers, chiefly relating to research on cephalosporins and related substances by Abraham's team and other organisations. There are a few of his notebooks dating from his period at the Dyson Perrins Laboratory and his early years at the Sir William Dunn School of Pathology; one survives from his year in Stockholm (1938/1939) as a Rockefeller Travelling Fellow. The early Dunn School notebooks include details of experiments on penicillin from 1940. There is significant coverage of the collaborative research with the Antibiotics Research Station of the Medical Research Council on the

cephalosporium culture fluids in the 1950s, the work that led to the isolation of Cephalosporin C and the determination of its chemical structure. A large body of correspondence and papers relates to the involvement, through to the 1990s, of the National Research Development Corporation in the ongoing research on the cephalosporin antibiotics and their commercial exploitation, the participation of licensed pharmaceutical companies such as Squibb, and legal cases concerning cephalosporin patents in which Abraham provided expert opinion. Experimental work by Abraham's team on a range of antibiotics and related compounds, including Cephalosporin C, Bacilysin and B-lactamases, is documented by a large group of laboratory notebooks dating from 1946 to 1983. They are mostly the work of Abraham's research assistants, though a few are in his hand. A small body of correspondence and papers relates to research on bacilysin from 1957 and there is also some scientific correspondence of a more general nature.

Section D, Publications, comprises Abraham's drafts of scientific papers, book reviews and other articles by Abraham, dating from 1956 to 1998, and editorial correspondence. Of particular interest are the drafts and correspondence relating to his *Biographical Memoirs of Fellows of the Royal Society* for Howard Florey (1971) and Ernst Chain (1983). The correspondence highlights the sensitive issues Abraham had to negotiate in the preparation and drafting of the Memoirs. There are also drafts of other obituaries he wrote for Florey and Chain.

Section E, Lectures and broadcasts, principally comprises drafts and correspondence relating to public lectures given by Abraham from ca 1960 to 1993. Most lectures are on the origin and development of B-lactam antibiotics; one given at the National Portrait Gallery in 1993 surveys the discoveries of Sir Alexander Fleming. A small amount of lecture material used by Abraham for teaching is included. The papers relating to broadcasts is slight, chiefly concerning Abraham's contributions to various television and radio programmes on penicillin, the cephalosporins and the work of Howard Florey, dating from 1962 to 1991.

Section F, Visits and conferences, covers the period 1955 to 1995. The material chiefly covers Abraham's participation in symposia and conferences on chemotherapy, antibiotics and, in some cases, specifically B-lactam antibiotics. On longer stays abroad he sometimes combined attendance at symposia with lectures at universities and visits to pharmaceutical laboratories. Among the visits and conferences for which significant documentation survives are the International Congresses of Chemotherapy held in Vienna, 1967 and 1983; the Interscience Conferences on Antimicrobial Agents and Chemotherapy held in Chicago, 1967 and 1981; and a visit to India in January 1985 which included the Asian Congress of Pharmacology in New Delhi. Included are drafts of papers given by Abraham at symposia.

Section G, Societies and organisations, presents material covering Abraham's involvement in many British scientific organisations, including the Biochemical Society, the Chemical Society, the Society

for General Microbiology and the Royal Society. Overseas organisations are represented by the American Academy for Arts and Sciences and the Australian National University (John Curtin School of Medical Research). Much of the correspondence in this section is general in nature, though there is material relating to lectures and addresses given by Abraham, such as the 5th L.P. Garrod Lecture for the British Society for Antimicrobial Chemotherapy in 1986.

Section H, Correspondence, principally consists of scientific correspondence, 1944-1998, arranged by individual or country. The correspondents include some colleagues of Abraham, such as Norman Heatley, Henry Harris and Guy Newton, research assistants and workers in Abraham's laboratory and scientists in other institutions. The correspondence arranged by country reflects Abraham's strong interest in antibiotics research overseas and documents visits to many countries for participation in conferences and meetings. There is also a short sequence of material concerning references and recommendations.

Section J, Non-text material, largely consists of photographs of Abraham, with a few of colleagues such as Guy Newton, dating from 1930-1995. Included are school photographs, portraits from Abraham's early career and several showing him with colleagues and fellow scientists taken at conferences or functions. There are also a few lecture slides and videotapes, one recording an event at the Sir William Dunn School of Pathology, at which Abraham spoke, celebrating the 50th anniversary of the published paper on the therapeutic application of penicillin.

There is also an index of correspondents.

S. Coleman
Bath 2002

SECTION A	BIOGRAPHICAL	A.1-A.115
	A.1-A.10	AUTOBIOGRAPHICAL AND BIOGRAPHICAL
	A.11-A.40	CAREER, HONOURS AND AWARDS
	A.41-A.66	SCHOOL AND UNDERGRADUATE NOTEBOOKS
	A.67-A.96	DIARIES
	A.97, A.98	E.P. ABRAHAM TRUSTS
	A.99-A.101	CHARITIES AND APPEALS
	A.102, A.103	HISTORY OF SCIENCE
	A.104, A.105	ARCHIVES AND BOOKS
	A.106-A.114	PERSONAL CORRESPONDENCE
	A.115	LIST OF PUBLICATIONS

Biographical

- A.1-A.10 BIOGRAPHICAL AND AUTOBIOGRAPHICAL 1957-1998**
- A.1 'Personal records' prepared for Royal Society, latest bibliographical reference, 1957.
- Abraham was elected to the Fellowship of the Royal Society in 1958. See A.20-A.22.
- A.2 Autobiographical account for *McGraw-Hill Modern Scientists and Engineers*, 1980.
- A.3 'Sir Edward Abraham and the cephalosporin and penicillin stories', NRDC [National Research Development Corporation] publication, 1980 or later.
- The article was written by J.C. Cain, Managing Director, NRDC.
- A.4 'Biography' for Central Office of Information, 1981.
- 'New antibiotic from another happy accident'. 'Portrait' of Abraham, *Oxford Times*, 13 December 1985.
- A.5 'Edward Abraham: A major figure in antibiotics', *The Biochemist*, 1990.
- A.6 'Description' of Abraham's career at Oxford for the University's External Relations Office, 1991.
- Brief biographical details for meeting of Oxford University's Chancellor's Court of Benefactors, 1998.
- A.7 'Chance favours the prepared mind. A tribute to the work of Sir Edward Abraham and his distinguished colleagues at the Sir William Dunn School of Pathology'. 5 December 1991.
- See also A.13.
- A.8 'Sir Edward Abraham: An Eightieth Birthday Tribute', *Lincoln College Record*, 1993.

Biographical

- A.9, A.10 Entries for biographical directories, 1971-1997.
2 folders.
- A.11-A.40 CAREER, HONOURS AND AWARDS 1925-1999**
- A.11, A.12 King Edward VI School, Southampton
Abraham attended the school, 1925-1932. He was subsequently a major benefactor.
- A.11 Swimming certificates, 1925-1926
- A.12 Oxford & Cambridge Schools Examination Board Certificate, 1929.
- A.13-A.16 Correspondence with Chairman of Governors, Headmaster and others, 1991-1998.
4 folders.
- A.17 The Queen's College, Oxford.
Abraham was an Exhibitioner of the College, 1932-1936 where he read the Honour School of Chemistry.
Correspondence and papers, 1931-1934.
Letter of 20 November 1931 from the College informs Abraham of his election to an Exhibition.
- A.18 Rockefeller Travelling Fellowship, University of Stockholm, 1939.
Abraham worked at the Biokemiska Institut Stockholm as a Rockefeller Travelling Fellow, 1938-1939.
One letter only from the head of the institute, H. von Euler, 18 September 1939.

Biographical

- A.19 Nuffield (Penicillin) Research Fellowship, Lincoln College, Oxford, 1948.

Abraham was a Fellow of Lincoln College, Oxford 1948-1980, Honorary Fellow from 1980. See also A.32.

Typescript note from the Rector on the terms of the Fellowship.
- A.20-A.22 Election to the Fellowship of the Royal Society, 1958.

Letters of congratulation, 1958.

In alphabetical order. Unindexed.
- A.20 A-J.
- A.21 K-Z.
- A.22 Unidentified and first names only.
- A.23 Rennebohm Lecturer of the University of Wisconsin School of Pharmacy, 1966-1967.

Certificate only.

Honorary membership American Pharmaceutical Association Academy of Pharmaceutical Sciences, 1967.

Certificate only.
- A.24, A.25 Appointed Commander of the Order of the British Empire (C.B.E.), 1973.

Official notification and letters of congratulations, 1972-1973. Unindexed.
- A.24 Notification and letters A-H.
- A.25 Letters J-Z.

Unidentified and first names only.

Biographical

- A.26 Honorary Fellowship, Queen's College, Oxford, 1973.

Letters from the Provost and others *re* election to the Honorary Fellowship, 1973.
- A.27-A.29 Award of Royal Medal of the Royal Society, 1973
- A.27 Correspondence with the Royal Society, 1973-1974.
- A.28, A.29 Letters of congratulation, 1973.

In alphabetical order. Unindexed.
- A.28 A-M.
- A.29 N-W.

Unidentified first names only.
- A.30 Knighthood, 1980.

Newspaper-cutting only.
- A.31 Honorary degree, University of Exeter, 1980.

Correspondence *re* arrangements, manuscript notes of speech by Abraham.
- A.32 Dinner in Abraham's honour at Lincoln College, Oxford, 1980.

Photocopy of manuscript notes for Abraham's speech.
- A.33 Mullard Award of the Royal Society, 1980.

Correspondence with the Royal Society, 1980-1981.

Biographical

- A.34 Correspondence *re* proposed nominations of Abraham for Nobel Prize, 1981, 1983 and 1997.
- A.35 Honorary Fellowships of Oxford Colleges, 1983, 1986.
- Honorary Fellowship, St Peter's College, Oxford, 1983.
- Letter of congratulations only
- Honorary Fellowship, Keble College, Oxford, 1986
- Invitation declined by Abraham: 'But some time ago I began to feel embarrassed by the number of my Honorary Fellowships and decided that I should not allow the list to grow if the possibility of its doing so were to arise'.
- A.36 Honorary degree, Oxford University, 1984.
- Letters of congratulation; brief correspondence *re* arrangements, 1983-1984.
- A.37 Honorary degree, University of Strathclyde, 1989.
- Correspondence *re* arrangements, 1988-1989.
- A.38 Honorary degree, Harvard University, 1997.
- Correspondence and papers, 1996-1997.
- A.39 Opening of the Oxford University Pathology Support Building, 1997.
- Abraham officially opened the building to which he had 'contributed so generously', 10 October 1997.
- A.40 Funeral and memorial service. 1999.
- Includes memorial address by H. Harris as published in Oxford Magazine, Nough Week, Hilary Term, 2000.
- Draft of obituary by L.D. Sabbath.

Biographical

A.41-A.66	SCHOOL AND UNDERGRADUATE NOTEBOOKS	1928-1936
A.41-A.48	King Edward VI School, Southampton, notebooks.	
A.41	Notebook with label 'King Edward's School, Southampton' on front cover with pupil's name 'E. Abraham', the subject 'Physics' and the date 'Oct. 1928'. Used for experimental work. A list of experiments is on the first lined page at the front.	
A.42	Notebook with label 'King Edward's School, Southampton' on front cover with pupil's name 'E. Abraham' and the subject 'Physics'. N.d. Used for experimental work.	
A.43	Notebook with label 'King Edward's School, Southampton' on front cover with pupil's name 'E. Abraham' and the subject 'Physics. Heat & light sound'. N.d. Used for experimental work.	
A.44	Notebook with label 'King Edward's School, Southampton' on front cover with pupil's name 'E. Abraham' and the subject 'Physics [rest of label torn but probably indicated that the particular areas of the subject covered were magnetism and electricity]'. N.d. Used for experimental work.	
A.45	Notebook with label 'King Edward VI. School, Southampton' on front cover with pupil's name 'E.P. Abraham' and the subject 'Physics'. N.d. Used for notes on the 'Properties of Matter'.	
A.46	'Notebook with label 'King Edward VI. School, Southampton' on front cover with pupil's name 'E.P. Abraham' and the subject 'Physics'. N.d. Used for notes on 'The Properties of Matter'.	

Biographical

- A.47 'Notebook with label 'King Edward VI. School, Southampton' on front cover with pupil's name 'E.P. Abraham' and the subject 'Physics II'. N.d.
- Used for notes on magnetism and electricity.
- A.48 'Notebook with label 'King Edward VI. School, Southampton' on front cover with pupil's name 'E.P. Abraham'.
- Used for essays. The first essay on pragmatism is dated at the end 'Essay Club Winter Term 1930'.
- A.49-A.66 Undergraduate notebooks, The Queen's College, Oxford.
- A.49 King Edward VI. School, Southampton notebook with school label on front cover obscured with new blank label inscribed 'The Phase Rule'. 'E.P. Abraham' inscribed inside front cover. N.d.
- Used for undergraduate notes.
- A.50 Notebook with 'E.P. Abraham Queen's College Oxford' inscribed inside front cover.
- Used for ? essays on chemistry. 'The composition of water and the relative atomic weights of oxygen and hydrogen' is dated 'Nov. 1st 1932'.
- A.51 Notebook with 'E.P. Abraham The Queen's College Oxford' inscribed inside front cover.
- Used for chemistry notes. First page headed 'The methods for the determination of vapour density'. Latest date in the text 1933 (in note on the hydrogen isotope).
- A.52 Notebook with 'E.P. Abraham The Queen's College [Oxford] 1934' inscribed inside front cover.
- Used from the front for notes on 'Isomerism'.
- A.53 Notebook with 'E.P. Abraham The Queen's College Oxford 1934' inscribed inside front cover.
- Used from the front for notes on 'The kinetic theory of gases'.

Biographical

- A.54 Notebook with 'E.P. Abraham 1934' inscribed on the front cover.
Used from the front for notes on 'The lesser known elements' and from the back for notes on 'Inorganic compounds'.
- A.55 Notebook with 'E.P. Abraham 1934' inscribed on the front cover.
Used from the front for notes on 'Corrosion, Passivity and the Protection of Metals'.
- A.56 Notebook with 'E.P. Abraham The Queen's College [Oxford]' inscribed inside front cover.
Used for notes on 'Oxidation and Reduction in Organic Chemistry' from the front and on 'Mechanism of Reactions' from the back. Latest bibliographical reference 1934.
- A.57 Notebook with 'E.P. Abraham The Queen's [College Oxford]' inscribed inside front cover.
Used from the front for notes on 'Acids and bases (continued)'. Latest date in notes 1934.
- A.58 Notebook with 'E.P. Abraham' inscribed inside front cover.
Used for notes on 'Rubber', 'Ketenes', 'The basic properties of oxygen', etc. Latest bibliographical reference 1935.
- A.59 Notebook with 'E.P. Abraham The Queen's College [Oxford]' inscribed inside front cover.
Used from the front for notes on 'Relativity', 'The Alkaloids', 'Structure and Synthesis', 'Carbohydrates' etc. Latest bibliographical reference 1936.
- A.60 Notebook with 'Essays E.P. Abraham The Queen's [College Oxford]' inscribed inside front cover.
There are essays on 'Fermentation', 'The Constitution of Alcohol and Ether', 'Aldehydes', 'Nitrification', 'The fixation of Nitrogen', etc. Latest bibliographical reference 1932.

Biographical

- A.61 Notebook with 'E.P. Abraham The Queen's College [Oxford]' inscribed inside front cover.
- First page headed 'Essays'. However, contents may be summary notes of contents of earlier notebooks perhaps prepared for revision purposes. See A.50 for example. Latest bibliographical reference 1934.
- A.62 Notebook with 'E.P. Abraham 1934' inscribed inside front cover.
- Used for notes *re* practical work. First page headed 'Quantitative Analysis'.
- A.63 Notebook with 'E.P. Abraham The Queen's College Oxford 1934' inscribed inside front cover.
- Used for notes *re* practical work. First page headed 'Organic Preparations etc.'
- A.64 Notebook with 'E.P. Abraham The Queen's College [Oxford]' inscribed inside front cover. N.d.
- Used for notes *re* practical work. First page headed 'Points in Physical Chemistry'.
- A.65 Notebook with 'E.P. Abraham The Queen's [College Oxford]' inscribed inside front cover. N.d.
- Used from both ends for notes *re* practical work. First page at front headed 'Potassium iodate'. First page at back headed 'Gas Manipulation'.
- A.66 Notebook with 'E.P. Abraham The Queen's [College Oxford]' inscribed inside front cover. N.d.
- Used for notes *re* practical work. First page headed 'Tetrahydrocarbazole'.

Biographical

A.67-A.96

DIARIES

1963-1992

Appointments diaries. The sequence lacks a diary for 1970. There are two diaries for 1978.

A.67 1963.

A.68 1964.

A.69 1965.

A.70 1966.

A.71 1967.

A.72 1968.

A.73 1969

A.74 1971.

A.75 1972.

A.76 1973.

A.77 1974.

A.78 1975.

Biographical

A.79	1976.
A.80	1977.
A.81	1978.
A.82	1978.
A.83	1979.
A.84	1980.
A.85	1981.
A.86	1982.
A.87	1983.
A.88	1984.
A.89	1985.
A.90	1986.
A.91	1987.
A.92	1988.

Biographical

A.93 1989.

A.94 1990.

A.95 1991.

A.96 1992.

A.97, A.98 E.P. ABRAHAM TRUSTS 1979, 1989

Abraham established a number of charitable trusts with funds arising from the development of the cephalosporin antibiotics.

A.97 Letter from E.P. Abraham *re* cephalosporin funds in reply to an enquiry from G.Wilkinson, February 1979.

A.98 Letter from Kidsons chartered accountants, 20 February 1989, enclosing photocopies of Deed of Trust in respect of the E.P. Abraham Research Fund, 17 March 1967, Trust Deed in respect of the Guy Newton Research Fund, 17 March 1967, and Deed of Trust in respect of the E.P.A. Cephalosporin Fund, 18 May 1970.

A.99-A.101 CHARITIES AND APPEALS 1975-1997

Correspondence and papers *re* charities and appeals supported by Abraham, 1975-1997.

3 folders.

Biographical

A.102, A.103	HISTORY OF SCIENCE	1976, 1994-1998
	Correspondence with historians and others <i>re</i> the history of antibiotics, biographies of scientists etc., 1976,1994-1998.	
	2 folders.	
A.104, A.105	ARCHIVES AND BOOKS	1986-2000
	Correspondence and papers <i>re</i> arrangements made for Abraham's archives and books and <i>re</i> related matters, 1986-2000.	
A.104	1986-1989.	
A.105	1997-2000.	
	2000 item is a list of the books transferred from Abraham's home to Lincoln College, Oxford.	
A.106-A.114	PERSONAL CORRESPONDENCE	1974-1998
A.106-A.108	A chronological sequence of correspondence, 1974-1998. Includes replies to Abraham's letters of congratulation.	
A.106	1974-1976.	
A.107	1979-1993.	
A.108	1995-1998, n.d.	

Biographical

A.109-A.114 Correspondence and papers with B.L. Parry and others, 1973-1977 and n.d.
6 folders.

A.115 PUBLICATIONS LIST

Typescript chronological list of Abraham's publications.

SECTION B

UNIVERSITY OF OXFORD

B.1-B.92

B.1-B.37

WILLIAM DUNN SCHOOL OF PATHOLOGY

B.38-B.61

LINCOLN COLLEGE

B.62-B.92

OTHER COLLEGES AND UNIVERSITY ORGANISATIONS

University of Oxford

- | | | |
|------------------|--|------------------|
| B.1-B.37 | WILLIAM DUNN SCHOOL OF PATHOLOGY | 1954-1994 |
| B.1-B.19 | Invoices etc for equipment and supplies purchased by the William Dunn School, 1954.

19 folders. | |
| B.20-B.35 | Correspondence and papers <i>re</i> the building of a major extension to the School, 1964-1975, 1980.

Contents of 2 files inscribed 'Pathology - New Building'.

16 folders. | |
| B.36 | Minutes of Departmental Committee Meetings etc, 1992-1994. | |
| B.37 | Miscellaneous correspondence and papers, 1992-1994. | |
| B.38-B.61 | LINCOLN COLLEGE | 1960-1996 |
| | Abraham was a Fellow of Lincoln College, 1948-1980, and a member of the College's Finance Committee.

See A.19 and A.32 for further material relating to Lincoln College. | |
| B.38 | Various committee papers and other papers <i>re</i> general College business, 1960-1965, n.d. | |
| B.39-B.47 | 'Lincoln College Appeal'. Contents of a file so inscribed.

The college organised an appeal in 1972 for the conversion of a church into a new library and later sought funds for other projects.

Correspondence etc, 1972-1993.

9 folders. | |

University of Oxford

- B.48-B.57** Correspondence and papers *re* general business and activities of the college, 1974-1996, with a few papers 1962-1964.
- Included are invitations to functions and papers relating to college and committee meetings (Abraham was a member of the Finance Committee). Included in B.53 is a 2pp manuscript draft of a speech by Abraham, [?after 1980].
- 10 folders.
- B.58** Letter from National Research Development Corporation, with related papers, 1979.
- Found with papers in B.48-B.54.
- B.59-B.61** Copies of papers concerning applications for Junior Research Fellowships at Lincoln College, including accounts of research projects or proposed research, 1975.
- 3 folders.
- B.62-B.92** **OTHER COLLEGES AND UNIVERSITY ORGANISATIONS** **1958-1998, n.d.**
- Arranged alphabetically. Miscellaneous correspondence is at B.91, B.92.
- B.62** **Ashmolean Club** **1990-1998**
- Abraham was a Supernumerary Member.
- Correspondence, mostly notices for meetings.
- B.63, B.64** **Green College** **1993-1998**
- Abraham was on the College Advisory Council.
- Correspondence and papers *re* Advisory Council meetings and various events and functions.
- 2 folders.

University of Oxford

B.65 **Keble College** **1992-1996**

Correspondence etc *re* appointments of EPA Junior Research Fellows.

B.66 **Lady Margaret Hall** **1978-1997**

Abraham was elected an Honorary Fellow of the college in 1978.

Correspondence etc *re* Abraham's election to an Honorary Fellowship, invitations to functions, grants to the college by EPA trusts and other matters, 1978, 1992-1997.

B.67, B.68 **Linacre College** **1983-1996**

Abraham was an Honorary Fellow of the college. The EPA Cephalosporin Fund made a donation towards a new residential building at the college.

Correspondence etc *re* invitations to functions and general business.

2 folders.

B.69-B.71 **Natural Sciences Club** **1969-1988**

Abraham was a member.

Papers and correspondence *re* meetings, functions and general business.

3 folders.

B.72 **Pembroke College** **1988-1995**

Abraham was a Friend of Pembroke. One or both of the Abraham Trusts donated money to the college.

Correspondence etc *re* invitations to functions and general business.

University of Oxford

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|-------------------|---|-------------------|
| B.73, B.74 | The Queen's College | 1977-1996 |
| | Abraham was an Honorary Fellow.
Correspondence <i>re</i> functions and general business.
2 folders. | |
| B.75 | St Cross College | 1983-1990 |
| | One or more of the Abraham trusts appears to have been a benefactor of the college.
Correspondence etc <i>re</i> invitations to functions and other business. | |
| B.76 | St Hilda's College | 1984-1994 |
| | Both Abraham trusts were benefactors of the college.
Correspondence etc mostly <i>re</i> funding of academic posts and functions, 1984-1994. | |
| B.77 | St Hugh's College / St Anne's College | 1995, 1997 |
| | At least one of the Abraham trusts was a benefactor of St Hugh's College.
Correspondence, mostly <i>re</i> invitations to functions. | |
| B.78, B.79 | St Peter's College | 1987-1997 |
| | Abraham was an Honorary Fellow. The EPA Cephalosporin Fund made a donation to the college to help endow an existing Biological Sciences Fellowship.
Correspondence etc <i>re</i> functions and general business.
2 folders. | |

University of Oxford

- B.80-B.88** **University Registry and other offices** **1958-1998, n.d.**
- B.80-B.85 Contents of file inscribed 'University Offices'.

Correspondence etc with the Registrar and other offices and individuals within the University, 1958-1998, n.d.

Topics covered include funding for the Sir William Dunn School of Pathology, Abraham's receipt of an honorary Doctor of Science degree from the University in June 1983, and various events and functions, 1958-1998.

6 folders.
- B.86, B.87 Contents of a file inscribed 'University Registry'.

Correspondence *re* fundraising, events and general matters, 1977-1988.

2 folders.
- B.88 Contents of a file entitled 'Safety'.

Papers and correspondence, mostly with the University of Oxford Safety Office, *re* safety procedures associated with work with micro-organisms, 1989-1992.
- B.89, B.90** **Wolfson College** **1982-1995**
- Abraham was an Honorary Fellow of the college and a Patron of its Appeal. The EPA Cephalosporin Fund made a donation to the college.

Correspondence, mostly *re* fundraising and functions.

2 folders.
- B.91, B.92** **Miscellaneous correspondence** **1993-1997**
- Correspondence with various Oxford colleges, including Linacre College, and individuals *re* fundraising, donations by the EPA Cephalosporin Fund and other matters.

This material was found in one original file.

2 folders.

SECTION C

RESEARCH AND DEVELOPMENT

C.1-C.1114

This section documents a variety of research by Abraham and his colleagues at the Sir William Dunn School of Pathology and by a number of other organisations. The greater part of the material relates to the work on Cephalosporin C and related compounds and the development of marketable cephalosporin antibiotics, though research on penicillin (from 1940), bacilysin and other antibiotics is also covered.

Papers relating to the cephalosporins is dispersed through most of the sub-sections listed below. The correspondence covering the stages of the collaborative research from the late 1940s to the introduction of the first cephalosporin drug in 1964 is chiefly found in the sub-sections 'Medical Research Council', 'National Research Development Corporation' and 'Other Organisations'.

C.1-C.206	EARLY RESEARCH AND RESEARCH ON PENICILLIN
C.207-286	LABORATORY NOTEBOOKS AND PAPERS
C.287-C.357	MEDICAL RESEARCH COUNCIL
C.358-C.605	NATIONAL RESEARCH DEVELOPMENT CORPORATION (NRDC) (BRITISH TECHNOLOGY GROUP (BTG))
C.606-C.963	OTHER ORGANISATIONS
C.964-C.989	SCIENTIFIC CORRESPONDENCE
C.990-C.1016	BACILYSIN RESEARCH
C.1017-C.1037	LEGAL CASES
C.1038-C.1067	'CEPHALOSPORIN C HISTORY'
C.1068-C.1114	MISCELLANEOUS PAPERS

Research and development

C.1-C.206 **EARLY RESEARCH AND RESEARCH ON** **1935-*ca* 1949**
PENICILLIN

- C.1-C.4 Dyson Perrins Laboratory notebooks
- C.5 Rockefeller Travelling Fellowship (Stockholm)
- C.6-C.14 Early William Dunn School of Pathology notebooks
- C.15-C.206 Penicillin reports

C.1-C.4 **Dyson Perrins Laboratory notebooks** **1935-1938**

Abraham worked at the Laboratory from 1936-1938, researching on peptides.

Hardback notebooks containing manuscript notes by Abraham mostly relating to experiments, including tables and graphs of experimental results. All are inscribed 'Dyson Perrins Laboratory' except C.4 which probably belongs in this set, being of very similar physical appearance to C.1-C.3 and dated 1938.

Records of particular experiments are often dated.

- C.1 Mostly *re* experiments involving Undecylenic acid, October 1935-*ca* June 1936.
- C.2 From front notes on various experiments; from back notes on experiments involving lysozyme. Undated.
- C.3 Abstracts from papers on various experiments with references at end, undated.
- C.4 General notes on various compounds and reactions. Inscribed '1938' inside front cover.

Research and development

- C.5** **Rockefeller Foundation Travelling Fellowship (Stockholm)** **1938-ca 1949**
- Notebook inscribed inside front cover 'Biokemiska Institutet...Stockholm' (crossed out) and 'Sir William Dunn School of Pathology'.
- The notes cover Abraham's period in Stockholm as a Rockefeller Foundation travelling fellow, 1938, 1939.
- Re* experiments involving various enzymes, October 1938-August 1939. Paginated 1-150 (pages 1-147 used), with further notes at back.
- See also A.18.
-
- C.6-C.14** **Early Sir William Dunn School of Pathology notebooks** **1940-ca 1949**
- The notebooks vary considerably in physical appearance. Some include loose pages of notes.
-
- C.6** *Re* experiments involving various substances, including enzymes and intestinal mucosa, and early experiments on penicillin (June-ca October 1940). January-October 1940.
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- C.7** *Re* various experiments on penicillin and its purification, November 1940-ca August 1942.
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- C.8** *Re* various experiments on penicillin and related compounds (including penicillanimine), and experiments unrelated to penicillin, August 1942-ca November 1947.
- This notebook appears to be a continuation of C.7.
-
- C.9** Notebook with heading 'Penicillin Analyses' on first page.
- From front: brief notes relating to experimental results on various compounds, May 1941-ca 1943; from back: similar notes on compounds, including cephalosporins, ca October 1949.

Research and development

- C.10 From front: notes on 'Penicillin Purifications', September 1941-*ca* February 1943 (some later notes may not relate to the heading); from back: notes *re* experiments on penicillin and related compounds, *ca* November 1941-*ca* July 1942; notes following heading 'Penicillin: Mode of Action etc... 10.1.45', January-April 1945; notes following heading 'Proactinomycin', April-September 1945; 1 further page of notes, January [?1946].
- C.11 Notebook inscribed 'Spiraca and Arctium' on cover. Partly in Abraham's hand, partly in another's hand.

Notes on various experiments, July 1944-*ca* May 1945.
- C.12 Notebook inscribed 'Abstracts' inside cover.

Notes on various compounds, *ca* 1945-*ca* 1949.
- C.13 General notes headed 'Use of moulds in primitive medicine', *ca* 1945-*ca* 1949.

Included at back is a letter to Abraham *re* arrangements for his lecture on 'Penicillin Chemistry', Oslo, 9 April 1946.
- C.14 Notebook (cover missing) entitled 'Penicillin Abstracts'.

Notes on penicillin and on various other compounds and processes, *ca* 1948-*ca* 1950.
- C.15-C.206 Penicillin reports 1944-1946**
- Copies of reports (many are entitled 'Progress Reports') by various organisations in the UK and the USA detailing the progress of chemical research on penicillin, with related papers and correspondence.
- There are a number of different series of reports; these sequences have been maintained or reconstructed where identification was possible.

Research and development

- C.15-C.146 Committee for Penicillin Synthesis (CPS) reports, 1944-1946.
- Copies of typescript reports by various organisations, including the Sir William Dunn School of Pathology, ICI Ltd (Dyestuffs Division), Imperial College London, Merck & Co. Inc., Glaxo and the Squibb Institute of Medical Research. The reports are in a numbered sequence, 'CPS 1-698'. A few are missing.
- Mostly progress reports and studies on particular processes involving penicillin and related compounds. A few reports contain manuscript annotations by Abraham.
- C.15, C.16 3 copies of the index to the series.
- 2 copies include manuscript annotations.
- 2 folders.
- C.17-C.26 Reports: nos CPS 1-106, January-June 1944 (a few dated 1943).
- 10 folders.
- C.27-C.37 Reports: nos CPS 107-207, January-June 1944 (a few dated 1943).
- 11 folders.
- C.38-C.56 Reports: nos CPS 208-299, March-October 1944 (mostly June-October).
- 19 folders.
- C.57-C.77 Reports: nos CPS 300-399, September 1944-February 1945.
- 21 folders.
- C.78-C.99 Reports: nos CPS 400-502, December 1944-May 1945 (with a few possibly earlier).
- 22 folders.
- C.100-C.121 Reports: nos CPS 503-599, April-August 1945 (with a few earlier).
- 22 folders.

Research and development

- C.122-C.146 Reports nos CPS 600-698, July 1945-May 1946.

25 folders.
- C.147 Papers relating to meetings of the Committee for Penicillin Research,
November 1944-September 1945.

With a few other papers found with this material.
- C.148-C.168 Copies of reports by various organisations, including Glaxo Laboratories Ltd,
Boots Pure Drug Co. Ltd and Imperial College of Science and Technology,
1941-1945.

Many reports are inscribed 'Professor Sir R[obert]. Robinson'.
- C.148-C.161 Incomplete series of reports numbered PEN.1 - PEN.150, January 1941-July
1945. The series was found unevenly distributed in 2 parts, one group of
reports being tied together with a label, 'Dr Abraham'. The larger group is
referred to below as the 'main part of the series'.

Some later reports are stamped 'property of the Therapeutic Research
Corporation of Great Britain Ltd'.
- C.148-C.157 Main part of the series.

10 folders.
- C.158-C.161 Reports labelled 'Dr Abraham'.

4 folders.
- C.162-C.168 Incomplete series of reports numbered PEN.X. 1 - PEN.X. 54, July 1942-
March 1945.

Some reports are stamped 'property of the Therapeutic Research
Corporation of Great Britain'. This series appears to be related to that in
C.148-C.161, the reports being very similar in structure and content.

7 folders.

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- C.169-C.177 Incomplete series of reports (copies), numbered PEN.C. 3 - PEN.C. 107, May 1943-September 1945.
- Reports are mostly by official bodies, such as the National Research Council and include conference reports.
- See C.202-C.206 for further reports from this series.
- 9 folders.
- C.178-C.183 Copies of reports entitled 'Ministry of Supply, Penicillin Production Control...Technical Papers Received from USA', 1942-1945.
- The material includes various different series of reports which were found in a mostly disarranged state. Sequences have been re-constructed where identification was possible.
- Included at C.179 is a carbon copy of a typescript by Ernst Chain entitled 'Brief account of the circumstances which led to the discovery of the chemotherapeutic properties of penicillin at the Sir William Dunn School of Pathology, Oxford'.
- 6 folders.
- C.184, C.185 Typescript papers, mostly minutes etc, *re* the business of the General Penicillin Committee, 1942-1944.
- With a few related reports found with this material.
- 2 folders.
- C.186 Correspondence between Sir Robert Robinson and the Therapeutic Research Corporation of Great Britain, October 1942-December 1943; papers *re* meetings on penicillin research, 1942-1943.
- Contents of a file.
- C.186-C.201 Miscellaneous reports and other papers, with brief correspondence, 1942-1945.
- The material is mostly typescript, with manuscript papers in an unidentified hand. At C.197 is a letter (1943) from Sir Robert Robinson to Ernst Chain.
- There was no indication of any original organisation of these papers and no attempt at re-arrangement has been made.
- 16 folders.

Research and development

- C.202-C.206 Contents of a file inscribed 'Penicillin History..Pen Reports..Oxford University'. Copies of typescript reports, 1942-1944.
- Most of the reports are from the 'PEN.C' series (see C.169-C.177) and appear to fill some gaps in the numbered sequence. Included at C.205 is brief correspondence between Sir Robert Robinson and Sir Edward Mellanby, 1943.
- 5 folders.
- C.207-C.286 **LABORATORY NOTEBOOKS AND PAPERS** **1946-1983, n.d.**
- Binders and notebooks containing manuscript notes etc by Abraham and his research assistants at the Sir William Dunn School of Pathology. The material principally documents experiments relating to the development of the cephalosporins and other antibiotics and includes tables of results, graphs, and photographs. The notes are chiefly by research assistants, though many of the binders and notebooks contain notes in more than one hand.
- Arranged chronologically, though material has been kept together where identified as the work, or chiefly the work, of a particular individual.
- 'Cephalosporin' is abbreviated to 'Ceph' on the dividers found in the binders.
- C.207 Notebook, January 1946-July 1948. Notes in an unidentified hand.
- Mostly *re* experiments involving B. Subtilis and ayfivin; a few other notes from back *re* experiments on an antibiotic produced by Staphaur[?eus].
- Paginated 1-185.
- C.208 Notebook, July-December 1948. Notes in same hand as C.207.
- Mostly *re* experiments involving ayfivin, continued from C.207; a few other notes from back; 1 loose page of notes at front dated June 1946.
- Paginated 186-230, of which 186-220 have been used.
- C.209 Large binder, December 1948-November 1953. Notes mostly in Abraham's hand; the remainder in an unidentified hand.
- Separated into sections by dividers labelled as follows: 'Alvein' (one page dated February 1949); 'Bacilysin' ([ca April]-May 1949); 'Ayfivin' (December 1948-November 1953); 'Pu[?m]ulin' (February 1951); /...

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- /... 'Ageritin' (December 1952); 'Nisin' (June 1950-January 1952); 'Micrococcin' (October [?1951]-January 1952); 'Techniques' (pages dated September 1949, February-March 1950).
- C.210 Large binder, June 1949-February 1957. Notes partly in Abraham's hand and partly in an unidentified hand.
- Separated into sections by dividers labelled as follows: 'Cephalosporin' (June-October 1949); 'Cephalosporin N' (November 1949-June 1954); 'Methionine C.14' (June-August 1954); 'Synnematin B' (October 1954); 'Bacitracin' (1955, 1956); 'Ceph N / C14' (September 1955); 'Ceph P' (December 1949-1952, 1957); 'Nonin' (February 1957).
- C.211 Notebook inscribed 'Margaret Ann Keren Pill', June 1949-March 1950.
- Re* experiments on various compounds including ayfavin, penicillin and cephalosporins, with index and further notes from back.
- Paginated 1-159.
- C.212 Notebook inscribed 'Ann Pill', 1950-1951.
- Mostly *re* experiments on Cephalosporin N, with index from opposite end.
- Paginated 1-156. Included at the front is a loose set of notes paginated 1-29, with a few unpaginated pages.
- C.212A Notebook in the hand of Ann Pill, undated.
- Headed 'Methods and preparations' on first page. Brief notes, probably for reference purposes.
- C.213 Large binder, 1951-1962. Notes mostly in Abraham's hand; the remainder in an unidentified hand.
- Separated into sections by dividers labelled as follows: 'Ceph C' (July 1954-February 1961); 'Desacetyl Ceph C' (February 1960-March 1961); 'Ceph C_c' (January 1958-July 1960); '[¹⁻¹⁴C] Ceph C Acetate' (June 1959-October 1961); 'Rydon Smith Comp[ound] (Cephalosporidine)' (May 1961-March 1962); 'Penicillinase on C, C_A & C_C' (January 1958); 'Penicillinase' (January 1960-*ca* February 1962); 'Ceph C Nuchar Expts' (January-February 1958); 'C_A pyridine production' (January 1958-March 1960); 'C_A Nicotinamide' (February-June 1958); 'C_A Sulphapyridine Sulphathiazole' (June-July 1958); 'C_A Glyoxaline' (December 1961); 'Ceph C conc HCl' (June 1958-December 1959);
- /...

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- 'Mixed crystalline acid from Ceph C spots 1+2+3' (October-November 1958); 'Separated cryst. acids 1, 2 & 3' (November 1958-November 1961); 'Ceph C performic oxidation product' (November 1958-March 1959); 'Benzoyl Ceph C' (March 1959); 'Thiazole acylation etc' (October 1958-April 1959); 'Ceph C Nucleus' (July-September 1959); 'Secretin' (October 1955-October 1957); 'Pancreozymin' (March-April 1959); 'Ceph C structural considerations' (March-April 1959); 'Techniques' (one page dated May 1962); 'Polyacetylene Dr [?Landor]' (February-March 1962); Unlabelled (possibly a continuation of 'Techniques'), includes 2 graphs dated January 1951, and 1962.
- C.214 Paperback notebook inscribed 'M. Read' on cover, *ca* May-*ca* October 1953.
- Contains experimental data (details of the nature of experiments are not given) and general notes on chemistry and human anatomy.
- C.215 Notebook inscribed 'M.L. Read' on cover, July 1954-September 1955.
- Re* experiments involving various compounds including penicillinase, synnematin and Cephalosporins C and N.
- C.216 Notebook inscribed 'M.L. Read' on cover, October 1955-October 1956.
- Re* experiments involving various compounds including penicillinase and Cephalosporins C and N.
- C.217 Notebook inscribed 'Mary L. Read' on cover, October 1956-January 1958.
- Re* experiments involving various compounds including secretin, Cephalosporin C, bacitracin and penicillinase.
- C.218 Notebook inscribed 'Mary L. Read' on cover, January 1958-December 1958.
- Mostly *re* experiments involving Cephalosporin C.
- C.219 Notebook in the hand of Mary L. Read, December 1958-March 1960.
- Mostly *re* experiments involving Cephalosporin C.
- C.220 Notebook inscribed 'M. Loveridge' inside cover (in the same hand as C.214-C.219), March 1960-November 1961.
- Mostly *re* experiments involving Cephalosporin C.

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- C.221 Notebook inscribed 'M. Loveridge' inside cover (in the same hand as C.214-C.220), November 1961-February 1962.
Mostly *re* Cephalosporins C and G.
- C.222 Large binder, June 1955-February 1958. Notes in unidentified hand.
Mostly *re* experiments involving penicillin and Cephalosporins C and N.
- C.223 Large binder labelled 'Ceph C D[?]s 1961', October 1960-July 1962. Notes in unidentified hand.

At beginning: notes *re* experiments involving various compounds including α -aminoadipic acid and Cephalosporin C, October 1960-January 1961. Then separated into sections by dividers labelled as follows: 'Run 8 [^{1-14}C] - valine (January 1961-March 1962); 'Run 13 [^{1-14}C] - acetate 24hr' (February-April 1961); 'Run 16 [^{1-14}C] acetate 24 hrs' (May-July 1961); '[^{1-14}C] - acetate 48 hrs' (June 1961); 'Compound P [?] Run 17 48 hr Ac' (October, November 1961); '[^{2-14}C] - α Aad Run 18' (July 1961); '[^{3-14}C] - cystine Run 19' (September 1961-May 1962); '[^{2-14}C] α Aad R.24' (November 1961-July 1962); 'Run 28 α - oxo - glutarate 5 ^{14}C ' (April-December 1961); 'Media and washed mycelium expts' (October 1961-February 1962); 'Synthesis of Δ α - aminoadipic acid' (March-May 1961); 'Synthetic [?]wash] Cephalosporidine etc' (March-July 1962); 'Radioactivity standards and backgrounds' (April 1961-February 1962).
- C.224 Notebook inscribed M.L.R. Sharp, September 1961-April 1962.

Re experiments on various compounds including acetic acid, carboxylic acids and Cephalosporin C.
- C.225 Large binder inscribed 'M.L.R. Sharp' on spine, March 1962-December 1963.

Separated into sections by dividers labelled as follows: 'D, L Valine uptake' (December 1963); 'Benzyl penicillin prepn' (November, December 1963); 'Est. of cpds [?]compounds] 1&2 from ceph C' (March-May 1962); ' α - Aad -' (April-May 1962); 'Penicillaminic acid' (May 1962); 'Lysine . Arginine' (May-June 1962); 'Cephalosporidine synthesis spectra etc' (April-September 1962); 'Imidazole 1-acetic acid spectra' (May-June 1962, with a few pages dated October 1960); 'Dimethoxybenzoyl 7ACA' (September 1960, June 1962); 'DMB₂ 7ACA' (June-October 1962); '7ACA' (July 1962); 'Hydrolysed mycelium experiments' (July-September 1962); 'L - saccharopine' (September 1962); 'p-nitro-phenolchloracetate' (October 1962-November 1963); 'Acetyl methionine' (December 1962); 'Hog acylase I' (December 1962); 'N-chloroacetic DL- α -NH[?]' (December 1962-Dec 1963, with one page dated April 1960); ' γ -OH valine, γ -OH valine lactone' (April 1963); /...

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- /...
- 'Rotation of a.a. (α -Aad) ex fermentation + "peptides" [?] (glutathione, saccharopine)' (April-July 1963); 'Uptake of D & L α Aad by washed [? susp]' (July-October 1963); 'Ceph N degradaⁿ products (maps)' (February-April 1963); 'Ceph C est. by elution' (February, March 1963); 'Disintegrated cells homogeniser' (October, November 1963); 'N-ethyl [?morpheline] [?] buffer' (January 1963); 'Ceph C stand[ard]' (November 1962); 'Addⁿ of C¹⁴ cystine to anaerobic resuspension' (November 1963); 'C¹⁴ NaOAc' (October, November 1960, October 1962); 'Instruments Hilger' (May-October 1962); 'Instruments N. Chicago counter' (May 1962-June 1963); 'X-press Expt. 2 [?] (Miriam)' (November 1963); 'Background IDL counter' (April, May 1962); 'M.Wts [Molecular Weights]' (undated).
- C.226 Notebook in unidentified hand, May-August 1963.

Mostly re 'Pyo Enzyme Experiment' and 'X-Press Experiment'.
- C.227 Large binder inscribed 'JMT' on spine, October 1963-August 1965.

Separated into sections by dividers labelled as follows: 'Uptake after sonication' (November, December 1964); 'Cell-free system. sonicator' (January 1964); 'Demaine's and Aida's buffers' (January 1964-August 1965); 'p-Fluorophenylalanine' (May, June 1965); 'Glaxo extract - SH measurement' (May 1965); 'Measurement of SH DTNB' (March-May 1965); 'N-chloracetate α - Aad acid' (September-December 1964); ' Δ expts sonication' (October 1964-January 1965); 'Model expts α - keto adip[ic]' (January 1965); 'Pimafucin' (November, December 1964); 'Assays Ceph C and Ceph N' (September 1964); 'X-Press' (July-October 1964); 'Isolation D-valine from Cephalosporium' (May 1964); 'X-Press 3 experiment' (January 1964); 'Cell-free system homogeniser' (February 1964); 'Disintegration of mycelium' (homogeniser) (October, November 1963); 'Nessler's solution' (June-September 1964); 'Nessler's model experiment' (September 1964); 'Conway vessels' (July 1964); 'Optical configuration D and L Alanine D and L Tyrosine' (April, May 1964); ' α -Amino-adipic acid' (June 1964); '70% ECOH extractions MSE homogeniser' (February 1964); '[¹⁴C Benzyl penicillin potassium salt' (January 1964); 'Bacilysin - chromatogram (Mrs Lomakina)' (January 1964-March 1965); 'Bacilysin' (February-July 1964); 'Dowex column alanine & tyrosine' (June 1964); 'Ceph C absorption measured (Hilger)' (October 1963-July 1964); 'Assay For Prof. Jones (D.P.)' (October 1963); 'Production curve of Ceph N & Ceph C' (November 1963); 'Nuclear Chicago plateau' (November 1963); 'Calibration of Warburg manometers' (April 1964); 'Colony counts sonicator' (January-April 1965).
- C.228 Large binder inscribed 'GFN Peptides' and 'Takano-san' on cover and 'G.F. Newton' inside cover. The label 'Paul' appears on the spine. October 1964-December 1968.

Separated into sections by dividers labelled as follows: '2 ϕ BWA 1' (January 1967); '2 ϕ BWA 2' (January 1967-November 1968); 'PBG2/3[?] G/C5, G.10 col' (July [?]1967); 'PBG2/3 G10 GC3 G10 G/C4 G10' (June, July 1967);
- /...

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- /... 'PBG2&3 Ac [?Els] G10' (January-September 1967); 'PB G1' (January 1969); 'PBG2' (undated); 'PBG3' (undated); 'PBG4' (one page dated March 1968); 'TCB+PB G25-70% PYR' (February-April 1968); 'GCB+PB Separation of GSO₃H & Taurine on G10 - HOAc' (March, April 1968); 'TCB+PB 2φBWA[?]' (April 1968); 'TCB+PB2φBWA POOL P₃' (May-August 1968); 'POOL P₂ 2φBWA 2' (May 1968); 'POOL P₁ 2φBWA3' (May-June 1968); 'Analysis of pools from 2φBWA col[?]' (June 1968); 'P₂ middle ex. 2φBWA 2 [?] 2φBWA 4' (June 1968); 'TCB+PB Pool "GSO₂H" 2φBWA 5' (October 1964-December 1968).
- C.229-C.232 Loose pages of notes, originally from a binder, 1964-1965. Contents of a file inscribed 'Joan Roscoe'.
- Separated into sections by dividers labelled 'A-H'. Included among numerous topics and experiments are the following: Section A: Contents [index to sections A-G only]; B: 'Medium of H.J.O. Rogers, record of *B. subtilis* A14 culture' (January-June 1965); C: 'Test run on Rogers' medium, investigation of inocula' (September, October 1964); D: 'Bacilysin production [etc]' (October-December 1964); E: 'Expt. To see if [?chloramphenicol] can be extracted [etc]' (December 1964-January 1965); F: 'Treatment of bacilysin sample & freeze-drying, preparation of large quantities of acetone extract' (February-May 1965); G: 'Expt. To follow glucose utilization & bacilysin pro[?dn], further attempts to establish the identity of the radioactive & postulated bacilysin spot' (April-July 1965); 'Shikimic acid' (July, August 1965); H: 'Comparison of zones given by Cephalosporin C and bacilysin 208' (August 1965).
- Paginated 1-275.
- 4 folders.
- C.233 Notebook inscribed 'LDS [Leon D. Sabath] Rabbit Expts' on cover, February 1965-January 1966.
- Re* the study of penicillin antibodies in rabbits.
- C.234 Large binder, January 1965-April 1972, with one page dated 1964.
- 2 pages in the index (see below) headed 'Bronwen Loder'.
- Separated into sections by dividers labelled as follows: 'Index'; 'GA, GC, CV' (January 1968-July 1969); 'L-C-D-V' (July 1969-September 1969); 'L-C-L-Y' (June-September 1969); 'C-L-V Cu precipitate' (July-September 1969); 'Trityl cpds [?compounds]' (January-March 1965); 'S-benzyl cysteine' (February-December 1965, February 1969); 'Hydrazide - AC' (March-December 1965); 'Mycelium expts AC-ACV' (May 1965-January 1966); 'Mycelium expts GC' (April 1968-November 1969); 'HS-' (May 1965-January 1966, November 1968-February 1970); 'Sonication expts' (November 1965); 'Enzymes' (June 1965, March-June 1968); /...

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- /...
- 'Actinonin' (January-November 1965, one page dated October 1964); 'Actinonin M. Jago' (June 1962); 'Misc' (September 1965, February 1969-June 1970); 'Atta Rhozities gargylophera' (January 1971-April 1972); 'DMB' (October 1970-September 1971). Loose material at front.
- C.235
- Large binder labelled 'P.B.[Bronwen] Loder' on spine, 1968-1972.
- Separated into sections by dividers labelled as follows: Unlabelled pages at beginning *re* experiments involving Park nucleotides, Cephalosporin N and other compounds (October 1969-June 1971); 'Ceph N' (September 1969-May 1970); 'Methods' (January 1968-September 1969, November 1971); 'ACV' (November 1971-July 1972); '¹⁴C-D-Val + α KIV' (November 1971); 'Resolution of α Aad' (February-May 1972); 'Hydroxamic acids' (June-October 1970); 'Glu.Gly Glu.Ala Cy SO₃H.Gly' (January 1969-February 1972); 'Photoplasts' (May-December 1971); 'Cuprous mercaptides' (September 1969-July 1972); 'CFS Ceph. Sp' (May 1970-March 1972); 'CFS Penicillium' (May 1969-June 1972); 'Ceph sp. Sonicates' (May 1970-July 1970); 'P4 Complex' (June 1970-January 1971); '7-ACA' (February 1968-July 1972, one page dated November 1965); 'PS and slow spot' (November 1970-February 1971); 'Glaxo copper precipitate' (June 1969-July 1970); 'Cuprous mercaptides' (August-December 1970); 'Esters' (March 1969-August 1970); 'Model mixture a[?]mino acids' (March, April 1969); 'ORD' (March-September 1969); 'Amino acid markers' (September-November 1969); 'Phenylacetyl Ceph C & pen[icillin] N' (March-June 1970); 'Ceph October uptake expts' (October 1969-December 1971).
- C.236
- Large binder labelled 'T.J.B.' on spine, 1965-1982. Notes in Abraham's hand.
- Separated into sections by dividers labelled as follows: 'P. chrysogenum SC 6140'; 'Ceph C standards' (November 1975); 'Steptomycetes' (January 1972, July 1974-October 1975); 'B.subtilis 6633 Rapid assay' (March 1972); 'Pen[icillin]ase Pseudomonas' (October 1972-October 1974); 'Pen[icillin]ase B. cereus 569 H' (July 1968, March-June 1974); 'D-amino acid oxidase - Aspergillus' (February 1968-February 1959, July 1973); 'Q176 / C21 P. chrysogenum' (January 1968-May 1973, June 1979); 'E.coli penicillin acylase' (February-March 1974, January 1982); 'Ceph CW 19' (July 1973-October 1974); 'Acremonium' (January-February 1973); 'Cephalosporium C91' (November 1965-November 1971).
- Paginated in part from back 1-128.
- C.237
- Large binder labelled 'J. Walker Bacilysin. Production expts. Early purification expts' on spine. 1966-1969.
- Separated into sections by dividers labelled as follows: 'Protease' (February, March 1967); 'NMR' (September 1968-March 1969); 'Bacilysin hydrolysis' (October, November 1968); 'Mass spectra' (May-November 1968); 'Crystallization' (September, October 1968);

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- /...
- 'Terreic acid' (October 1968); 'I.R. spectrum bacilysin' (September 1968); 'Bacilysin detection' (March 1969); 'O.R.D.' [no notes]; 'LAP' (February 1969); 'Action on fungi & yeasts' (June 1966-April 1969); 'Bioautography bacilysin lactone [?]' (May 1969); 'cbz bacilysin' (March, April 1969); 'Effect of bacilysin on *B. subtilis*' (June 1969); 'Production of bacilysin by Warburg' (March 1966); 'N-acetylglucosamine bacillin' (January 1966-January 1969); 'Phenylacetyl bacilysin' (May 1969); '*B. subtilis* mutants' (December 1966-July 1969); '*B. subtilis* extracellular supernatant' (June, July 1969); 'A14 intracellular' (August, September 1969); 'Bacillin N-acetylglucosamine' (December 1968-June 1969); 'Agar AB' (December 1966-April 1969).
- C.238
- Large binder labelled 'J.E. Walker Bacilysin. Sephadex A25. Large scale purificatⁿ. Compounds P1, P2, P3. Tyrosine. CrCl₂ redⁿ. 1968, 1969.
- Separated into topics by dividers labelled as follows: 'Purification (cont)' (January-December 1968); 'P1, P2, P3' (September 1968-October 1969); 'p-nitrophenol TFA' (June 1968); 't-BOC Ala.Ala-' (November 1968); 'CrCl₂ reduction' (September, October 1968).
- C.239, C.240
- 'Amino acid analyses – bacilysin J.E. Walker', contents of a file so inscribed.
- Chromatogram graphs from experiments by J.E. Walker, with a few accompanying data sheets, 1968, 1969.
- 2 folders.
- C.241
- Large binder labelled 'Sylvia Main Book I' on spine, 1966-1968, with a few notes dated 1965.
- Separated into sections by dividers labelled as follows: 'Fungal luciferin' (January-February 1966); 'Mycelium expts' (January 1966-May 1968); 'Glaxo compounds' (January 1966-February 1967); 'Glaxo ceparin [appears as 'ceporin' in the notes]' (May-July 1967); '7ACA' (July 1967); '7ACA tosylate' (February, March 1968); 'ACV and GSH' (January 1966-May 1967); 'Ethylene imine' (January, February 1968); 'Assays' (February 1966-November 1967); 'Polyamino styrene resin' (June-July 1966); 'N-phenylmaleimide [?]' (July-December 1966); 'Whatman ion exchange cellulose Amino Ethyl AE11' (August 1966); 'Anion exchange cellulose cellex PAB' (September 1966); 'B-Lactamase' (May 1966-April 1968); 'Actinomycin D' (June 1966); 'Spectra of tyrosine & tryptophan' (July 1966); 'Desacetoxy cephaloglycin & cephaloglycin' (January, February 1967); 'Miscellaneous' (March 1967-December 1968, with a few pages December 1965); 'Safety' (undated).
- Loose notes at front.

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- C.242 Large binder labelled 'Sylvia Main Book II' on spine, 1967, 1968.
- Separated into sections by dividers labelled as follows: 'Index'; '7ACA' (June 1967-April 1968); 'Ceph C + ENH₂ cap:' (February-May 1967); 'Ceph C + cysteine' (April, May 1967); 'Ceph C + α & β - ala' (July-October 1967); 'Ceph C + Lys[sine] & polylys' (July-September 1967); 'Ceph C + NH₃' (July-October 1967); 'Reactions with B-lactamase' (February-October 1967); '3-methyl Ceph C' (August, September 1967); 'Deacetyl Ceph C' (October 1967); 'Ceph C + heavy metals' (October, November 1967); 'Ceph C + NaBH₄' (September-November 1967); 'Misc' (February-November 1967).
- C.243-C.250 Loose pages of notes, originally from a binder, 1968-1970. Contents of a box labelled 'Jeremy and Anne'.
- Separated into sections by dividers labelled as follows: 'Antibodies to B-lactamase' (October 1968-[?November] 1970); 'Antibodies to C & G' (October 1968-July 1969); 'Antibodies to dc + [?dyl] c' (June-September 1969); ' ϕ assay' (December 1968-March 1970); 'Antibodies to rabbit RBC' (November 1968-April 1970); 'Animal log' (May-September 1969); 'Reaction pen G etc ERBC BGG' (November 1968-May 1970); 'B-lactam conjugates' (October 1968-June 1970); 'Haemagglutinate of pools v.s. various cells' (October 1969-June 1970); 'Hapten inhibition' (September 1969-April 1970); 'Purification of antibodies' (August-October 1969); 'Ouchterlony' (September, October 1969); 'Quant. ppts' (September-December 1969); '7ACA Δ^2 [?] Δ^2 ' (October 1969-May 1970).
- 8 folders.
- C.251-C.268 Notes etc (1 original binder, the remainder loose pages from binders), 1978-1983.
- Numerous references indicate that this material was the work of Dr J.S. Jayatilake. The notes are all in the same hand.
- The loose notes in C.251-C.267 were found together.
- C.251-C.254 Loose notes, October 1978-November 1980. Contents of a file inscribed 'Synthesis of ISON and conversion of ISON [arrow] Pen[icillin] N by an [?epimerase]'.
- Paginated 1-78.
- 4 folders.

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- C.255-C.264 Loose notes, 1979, 1980. These notes appear to be a continuation of the material in C.251-C.254.
- Separated into sections by dividers labelled as follows: Labelled 6-APA' (October, November 1979); 'Penicillinic acid sulfone (hot and cold)' (January-[ca June] 1979); '(LLD) ACV' (March 1979-May 1980); '(LLD) ABV' (ca April 1980); '(LLD) ASV' (March-September 1980); '(LLD) GCV' (September 1979); '(DLD) ACV' (July, August 1980); '(LLD) CCV' (September 1979-September 1980); '(LLD) ACB' (March-December 1980); '(LD) - [?Decanboxy] ACV (UCV)' (September, October 1980); '(LD) Adipyl CV' (November 1980); 'Adipyl-L-cystein dipept.' (January 1981); '(LD) CV-dipeptide' (April [?1980]).
- Paginated 78-161 (some material is unpaginated).
- 10 folders.
- C.265-C.267 Loose notes, October 1982-February 1983. Contents of a file inscribed 'Synthesis of "cold" & "hot" ACG Attempted labelling expts'.
- In the same hand as C.251-C.264.
- 3 folders.
- C.268 Large binder labelled 'GSJ 4 Penicillin chrysogenum. Prepⁿ of extract & experiments'. 1981, 1982.
- Separated into sections by dividers labelled as follows: 'P. Chrysogenum ext. G25/S/N & G25[?]N' (April 1981); 'P. Chry: G25 NS/N CV dipep Activ[ity] / Inhi[bition]' (March, April 1981); 'P. Chryso: Assay of ASO-50, 50-65, 65-80, 80+' (April, May 1981); 'P. Chryso: protein fraction DEAE seph[?] A50' (May 1981); 'P. Chrysogenum Dyno mill II / DEAE - [?sol]' (May 1981); 'R.1221 P/C harvest[?]' (May 1981); 'Gel-electro phoresis' ([?May or June 1981]); 'P/C R1221/1 Dyno mill large scale' (June 1981); 'P. Chrysogenum Dyno mill small scale' (June 1981); 'P/C Dyno mill 0-80% DEAE-seph R1221/2' (June 1981); 'Dyno-mill R1221/3' (June, July 1981); 'Dyno-mill R1221/4' (July 1981); 'P/C R1221/2 DEAE/AS/0.5[?]0.2' (July 1981); 'G100 calibration' (July 1981); 'P/C R1221/5 DEAE/AS G100' (July 1981); 'ACV activity' (July, August 1981); 'ACV activity 1,2&3% ACV [?]' (August 1981); 'R1221/6 extract G100 / mol wt.' (August 1981); 'Effect of catalase triton x-100 G100 extract' (August 1981); 'ACV [?dimer] / [?] P. Chrys & acrem.' (August 1981); 'Km ACV - IN [?Isopenicillin N] in P.C.' (August 1981); 'G100 column' (September 1981); 'P_i value' (September 1981); 'Km - Deter[mination]' (September 1981); 'ACV [?dimer] activit / also with C. acremonium' (September 1981); 'R1223 / harvest time antibiotics production' (September 1981); 'Effect of co-factors' (October 1981); '1. Effect of α -ketoglu[tinate] 2. DEAE in MOPS' (October 1981); 'Dyno mill R1225/1' (October 1981); 'Stability in various buffers' (October 1981) 'R1225/2 Extract prep¹:- 'TRIS' 7 & 8' (December 1981); 'Activity Bacilysin samples' (December 1981); 'R1225/3 dyno mill' (December 1981); 'R1225/4' (December 1981); 'R1225/5' (January 1982); /...

Research and development

- /... 'R1225/6' (February 1982); 'R1225/7' (March 1982); 'Prep – Gel expts' (March 1982) ; 'Harvest of P₂ in "old" & "new" media Dyno mill extracts' (April 1982); 'Use of chromatofocussing phenylsepharase columns' (April 1982); 'P₂ in "old" – large scale Dyno mill' (April 1982); 'Chromatofocussing 2nd expt' (May 1982); 'Use of phenylsepharase at 35% AS concⁿ' (May 1982); '1. Harvest of P₂ in old media in fermentor 2. P₂ / new / shake flasks' (May 1982); P₂ (350g) – Dyno mill extract' (May-July 1982).
- C.269-C.282 Loose notes, originally from a binder, 1979.
- Separated into sections by dividers labelled as follows: Untitled notes at front (September 1979); 'Dialysis in Fe etc [?1h]' (September 1979); 'Dialysis 68 [?1h]' (August, September 1979); 'Ph 66' (August 1979); 'Co-factors 64 65' (August 1979); '50,000g 61' (July 1979); '20,000g 50,000g 60' (July 1979); '+ - DTT 20,000g 59' (June, July 1979); 'GSJ – ACV 20,000g 58' (June, July 1979); 'diff[erential] assay 55' (June 1979); 'ACV: time' (April 1979); 'ACV / PL concⁿ' (February-May 1979); A[encircled C]V + ACV 76' (October 1979); 'A[encircled C]V' (October 1979); 'A[encircled C]V, ACV 75' (October 1979); 'ACV / CP' (May 1979); 'JEB / ACV / ³H' ³H / ¹⁴C ACV ex JEB' (July-September 1979); ³H – isopen N' (February-April 1979); 'N purifⁿ' (June-July 1979); '1153 N – C [?]' (January-July 1979); 'C91 / ³H αaad' (February, March 1979); 'dialysis DTT 1h asc 72' (September 1979).
- 14 folders.
- C.283 Binder inscribed 'Henry Chmara Amidotransfer' on cover, 1979 (with a few notes dated 1978 near back).
- Topics covered include 'Purification of amidotransferase from E-coli ESS 22-31' (October 1979); 'Action of Bacilysin in vivo inhibition of amidotransferase' (August 1979); 'Purification of amidotransferase from C[?oryne]bacterium 168' (July 1979); 'Purification of amidotransferase from Sup. 105000g' (May 1979); 'Purification of amidotransferase from E-coli MRE 600' (March 1979); 'Purification of a new part of E. coli MRE 600 and some aspects of interaction with bacilysin and anticapsin' (February 1979).
- Loose notes at back.
- C.284 Notebook inscribed 'C.P. Pang Analytical PAGE Isopenicillin N syn[?]thetase', June 1982-November 1983.
- Title on first page is 'Gel electrophoresis'. This topic appears to cover all the notes in the book.

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C.285 Notebook in Abraham's hand.

From front: notes *re* visits to universities and institutions in the USA and *re* various chemical processes. From back: notes on atomic physics, isotopes and various biochemical processes. References to published sources indicate a possible date *ca* 1948.

C.286 Manuscript numerical data, possibly relating to experiments, n.d.

Found loose in unmarked file.

C.287-C.357

MEDICAL RESEARCH COUNCIL

1949-1987

In July 1949 the MRC's Antibiotics Research Station at Clevedon began to produce culture fluids from the *cephalosporium* fungus for study by the Sir William Dunn School of Pathology. In early 1952 Abraham's colleague Guy Newton was sent to Clevedon to help speed up the supply of Cephalosporin N. The improved supply enabled Abraham's team to isolate almost pure Cephalosporin N. In 1957, following Glaxo's difficulties in producing sufficient quantities of Cephalosporin C for the Dunn School's requirements, Clevedon workers discovered a mutant strain of the fungus which gave significantly higher yields.

Abraham served on the Scientific Steering Committee to oversee the work of the Antibiotics Research Station, Clevedon.

The majority of the papers relate to the work of the Antibiotics Research Station and its collaboration with the Sir William Dunn School of Pathology.

See C.1042-C.1048 for further correspondence *re* the work at Clevedon.

C.287-C.292

Correspondence between Abraham and C.W. Hale of the Antibiotics Research Station, *re* research on cephalosporin, October 1949-December 1952.

Included are copies of typescript reports by scientists at the Antibiotics Research Station and the Sir William Dunn School of Pathology.

6 folders.

Research and development

- C.293-C.308 Contents of a file inscribed 'EPA corresp. Clevedon – Oxford – NRDC'.

Correspondence, mostly carbon copies of letters from Abraham to B.K. Kelly and G.W. Hale at Clevedon; included also is correspondence between Abraham, the National Research Development Corporation and Glaxo Laboratories Ltd. 1949-1961.
- C.293-C.296 1949-1954.

4 folders.
- C.297-C.300 1955-1958.

4 folders.
- C.301-C.307 1959-1961.

7 folders.
- C.308 Letters by Guy Newton to Abraham, ca [March- May] 1952.
- C.309-C.317 Drafts of papers co-authored by Abraham, with related material.

Publication details given where known.
- C.309 1p copy of typescript abstract of a paper entitled 'Properties of some derivatives of cephalosporin C and heterocyclic tertiary bases', by C.W. Hale, Abraham and G.G.F. Newton, *Supplement to International Abstracts of Biological Sciences* (IV International Congress of Biochemistry, Vienna, September 1958); letter from Hale, 1958.
- C.310 'The Influence of Methionine on the Biosynthesis of Cephalosporin N', by C.W. Hale, Abraham and G.G.F. Newton.

18pp copy of typescript draft with manuscript revisions; 2 letters *re* the content and possible publication of the paper, December 1958.

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- C.311 'The Cephalosporin C Nucleus (7-Aminocephalosporanic acid)', by G.G.F. Newton and Abraham. Probably published under this title followed by the additional words 'and some of its derivatives', by Bronwen Loder, G.G.F. Newton and Abraham, in *Biochemical Journal* **79**, 1961.
- 13pp copy of typescript, with draft figures etc, with the first of the above titles and authors.
- C.312 'Formation of the cephalosporin C nucleus (7-ACA) by enzymic hydrolysis of an N-acyl derivative of 7-ACA' by G.G.F. Newton and Abraham.
- 5pp copy of typescript draft with manuscript revisions.
- C.313 Copies of typescript appendices, possibly to the papers in C.309 and C.310.
- 2pp copy entitled 'Appendix 1. "Incorporation of 1-¹⁴C Acetate into Cephalosporin C" ', by C.W. Hale, G.A. Miller, Abraham and G.G.F. Newton (possibly part of the paper published under this title, with the name P.W. Trown added to the authors, in *Biochemical Journal* **84**, 1962).
- 6pp copy entitled 'Appendix 2. "Cephalosporin C_C" ', by G.G.F. Newton and Abraham.
- 5pp copy, with manuscript revisions, entitled ' Appendix 3. "Cephalosporin C_A (pyridine)" ', by Abraham, G.G.F. Newton and C.W. Hale.
- C.314 'The Separation of Cephalosporin N and Cephalosporin C', by G.G.F. Newton and Abraham.
- 8pp copy of typescript draft with manuscript corrections.
- C.315, C.316 Copies of 5 typescripts detailing various experiments, mostly *re* Cephalosporin C, with manuscript revisions and annotations.
- Found with the draft in C.314; one typescript is inscribed 'separation paper'.
- 2 folders.
- C.317 Typescript report by C.W. Hale, December 1956; data and photographic prints (some mounted onto cards).
- Found with the material in C.314-C.316.

SECTION D

PUBLICATIONS

D.1-D.288

D.1-D.270 DRAFTS

D.271-D.288 EDITORIAL CORRESPONDENCE

Publications

- | D.1-D.275 | DRAFTS | 1956-1998, n.d. |
|-----------|---|-----------------|
| | Arranged chronologically. | |
| | Undated drafts are at D.253-D.270. | |
| D.1 | 'Some Chemical and Biological Properties of New Antibiotics of the Penicillin Group', co-authored with G.G.F. Newton, <i>Chemical Science and Industry USSR I</i> , 1956. | |
| | 40pp photocopy of a typescript, with manuscript corrections and additions; 1p manuscript notes by another. | |
| D.2-D.10 | Articles and book reviews by Abraham for <i>Endeavour</i> , contents of a file. | |
| D.2, D.3 | 'The Antibiotics in Microbiology', <i>Endeavour</i> 18 , October 1959. | |
| | Correspondence <i>re</i> publication with corrected proofs of article. | |
| | 2 folders. | |
| D.4 | Review: <i>Recent Progress in Microbiology</i> , edited by G. Tunevall, Oxford 1959. | |
| | Correspondence <i>re</i> publication; 1p photocopy of typescript draft of review and cutting of printed version. | |
| D.5 | Review: 'Antibiotics in Medicine', <i>British Medical Bulletin</i> 1960 16 , No.1. | |
| | Letter with 1p photocopy of typescript of review. | |
| D.6 | Correspondence <i>re</i> publication of an article 'New Penicillins, Cephalosporin C and Penicillinase', with G.G.F. Newton, <i>Endeavour</i> 20 , 1961. | |
| D.7 | <i>The Molecular Basis of Antibiotic Action</i> , by E.F. Gale <i>et al</i> , Chichester 1972. | |
| | Letters <i>re</i> review request with 1p photocopy of printed version of review. | |

Publications

- D.8 Review: *Fifty Years of Antimicrobials: Past Perspectives and Future Trends*, edited by P.A. Hunter *et al.*, The Society for General Microbiology, 1995.
- Correspondence *re* publication; 1p manuscript and 1p typescript drafts of review, with corrected version.
- D.9 Correspondence *re* unidentified article by Abraham *re* Cephalosporin C, February-December 1960; letter requesting review of a book, 1955.
- D.10 Correspondence with *Endeavour* *re* orders for binding cases, 1958-1968.
- D.11 'Antibiotics', *Enciclopedia Medica Italiana*, 1959 or later.
- Correspondence *re* publication, 1959; 26pp copy of typescript draft (with bibliography) with manuscript corrections.
- D.12 'The Chemistry and Classification of Antibiotics', with G.G.F. Newton, *British Medical Bulletin* **16**, 1960.
- 20pp copy of typescript draft (with tables and references) with manuscript corrections and additions.
- D.13 'Derivatives of Cephalosporin C formed with certain Heterocyclic Tertiary Bases', with C.W. Hale and G.G.F. Newton, *Biochemical Journal* **79**, 1961.
- Letter *re* preparation, 1960; 15pp copy of typescript draft (with references etc) with manuscript corrections; 3 typescript pages of other drafts and figures, probably related to the article.
- D.14 'New Penicillins, Cephalosporin C and Penicillinase, with G.G.F. Newton, *Endeavour* **20**, 1961.
- 17pp copy of typescript draft (with references and figures) with manuscript corrections and additions.
- D.15, D.16 'The Cephalosporins: history and scientific background', *Medical News* **48**, 1963.
- D.15 Correspondence *re* publication; 7pp copy of typescript draft, with manuscript revisions, etc and copy of revised version with figure.

Publications

- D.16 Copy of published version of the article, with extensive manuscript revisions and copy of revised version with figure etc, n.d.
- D.17 'Production of a Cephalosporinase by *Pseudomonas pyocyanea*', with M.Jago and A. Migliacci, *Nature* **199**, 1963.

4pp copy of typescript draft with manuscript corrections; proof with manuscript corrections; reprint; copy of typescript, with figures, describing experimental results, probably related to the article.
- D.18-D.20 Reviews for *Nature*, contents of a file.
- D.18 Joint review article by Abraham covering a number of publications on antimicrobial agents and chemotherapy (mostly published in 1963), including *Antimicrobial Agents and Chemotherapy – 1962. Proceedings of the Second Interscience Conference on Antimicrobial Agents and Chemotherapy, Chicago, Illinois, October 31-November 2 1962*, American Society for Microbiology 1963.

Correspondence *re* review requests; 8pp photocopy of review article; corrected proof.
- D.19 *Antimicrobial Agents and Chemotherapy – 1963. Proceedings of the Third Interscience Conference on Antimicrobial Agents and Chemotherapy, Washington DC, October 18-30 1963*, American Society for Microbiology 1963.

Correspondence *re* publication; 3pp typescript draft of review with manuscript corrections and copy of later typescript draft; corrected proof.
- D.20 *Antimicrobial Agents and Chemotherapy – 1964. Proceedings of the Fourth Interscience Conference on Antimicrobial Agents and Chemotherapy, New York, October 26-28 1964*, American Society for Microbiology, [?1965].

4pp copy of typescript draft of review; proof; copy of typescript probably relating to one of the reviews in D.18-D.20.
- D.21 Obituary for Professor Donald Devereux Woods, *British Medical Journal* **2**, 1964.

2pp copy of typescript obituary and cutting from off-print.

Publications

- D.22 'The Cephalosporin Story', *New Scientist* **24**, No. 217, 1964.
6pp copy of typescript draft, with manuscript corrections, and figures; letter *re* publication.
- D.23 'The Chemistry of New Antibiotics', *The American Journal of Medicine* **39**, 1965.
21pp copy of typescript draft (with references and figures) with manuscript corrections; letter *re* publication.
- D.24-D.26 'Enzymic Behaviour of the Cephalosporins', with L.D. Sabath, *Enzymologia* **29** (memorial volume to Professor H. von Euler), 1965.
- D.24 Correspondence *re* an article which Abraham contributed to a 1963 volume dedicated to von Euler on the occasion of his 90th birthday (apparently later published in the *Biochemical Journal*), October-November 1962.
- D.25, D.26 Correspondence *re* publication of 'Enzymic Behaviour of the Cephalosporins', with 1p copy of typescript 'summary' of the article and copy of typescript of article for the 1963 volume (see D.24). 1965, 1966.
2 folders.
- D.27 'The Cephalosporins', with G.G.F. Newton, *Advances in Chemotherapy* **2**, 1965.
Proof with manuscript corrections and revisions; correspondence *re* publication.
See C.562, C.563 for a draft of this paper.
- D.28 Review for *Nature* (published in 1965): *Advances in Drug Research*, London 1964.
Letters *re* publication; 2pp copy of typescript of review and proof.
- D.29, D.30 'Experiments relating to the Biosynthesis of Bacilysin', with J. Roscoe, *Biochemical Journal* **99**, 1966.

Publications

- D.29 21pp copy of typescript draft (with references and figures) with manuscript revisions.
- D.30 Later copy of typescript draft with manuscript corrections.
- D.31 Review for *British Medical Journal: Biochemical Studies of Antimicrobial Drugs*, Cambridge University Press 1966.

Correspondence *re* publication and 2pp copy of typescript of review with manuscript corrections.
- D.32 'The Cephalosporin C Group', *Chemical Society Quarterly Reviews* **21**, No. 2, 1967.

Proof with manuscript corrections.

See C.567 for typescript [?draft] of paper.
- D.33-D.114 Articles and radio broadcasts by Abraham on Howard Florey arising from the latter's death in February 1968, with related material.
- D.33 Appreciation of Florey in obituary notice by various writers, *The Lancet*, 2 March 1968.

Letter of thanks; 1p of typescript message of appreciation; off-print.
- D.34 Appreciation of Florey in obituary notice by various writers, *British Medical Journal*, 2 March 1968.

1p copy of typescript message of appreciation with manuscript corrections; photocopy of off-print; letter of thanks.
- D.35 Obituaries for *Oxford Magazine*, 31 May 1968, and [?Lincoln College Magazine].

Abraham's obituary for [?Lincoln College Magazine] was a revised version of the one he wrote for *Oxford Magazine*.

Correspondence *re* obituary for *Oxford Magazine*, with corrected proof and copy of re-print with manuscript revisions; 2 copies of typescript drafts (8pp and 9pp) of obituary for [?Lincoln College Magazine] with manuscript corrections.

Publications

- D.36 'Lord Florey', *Chemistry in Britain* **4**, No.9, May 1968.

Letters *re* 3pp typescript draft with manuscript corrections; 2pp copy typescript.
- D.37 2pp manuscript draft, with revisions, of obituary; copy of typescript corrected version; off-print. Publication unknown. [?1968].
- D.38 1p untitled typescript draft of obituary with manuscript corrections by Abraham and another, [?1968]. Publication unknown.
- D.39 Short account of Florey's life, Sunday Times Magazine, 1969.

Correspondence *re* publication, May 1969; 1p copy of typescript draft, with manuscript corrections, of short account of Florey's life inscribed 'Sunday Times April 1969'.
- D.40-D.89 'Howard Walter Florey, Baron Florey of Adelaide and Marston 1898-1968', *Biographical Memoirs of Fellows of the Royal Society* **17**, November 1971.

In March 1968 Abraham was asked to write the Memoir for which he undertook a great deal of research into Florey's life in Australia and at Oxford. Despite having to negotiate some sensitive issues, he produced an article considered by most to be authoritative and very interesting.
- D.40-D.57 Correspondence and papers *re* Abraham's preparation of the memoir, 1968-1971.

Correspondents include individuals and organisations with access to documentary records, former colleagues of Florey and his family and acquaintances.
- D.40-D.47 1968, 1969.

8 folders.
- D.48-D.57 1970-October 1971.

10 folders.

Publications

- D.58-D.64 Correspondence arising from publication of the memoir, mostly letters of thanks from fellow scientists in receipt of copies, with congratulations and comments, September 1971-1972, 1974.
- 7 folders.
- D.65 Copy of off-print of memoir.
- D.66-D.89 Correspondence and papers used by Abraham as background for preparation of the memoir.
- D.66-D.69 Correspondence between Florey and the Medical Research Council *re* grants and assistance provided by the latter for research on penicillin, 1939-1946.
- 4 folders.
- D.70, D.71 Carbon copies of extracts of letters by Florey, Lady (Ethel) Florey and Norman Heatley to John F. Fulton and Lucia Fulton, 1940-1945. Paginated 1-66.
- Contents of a file.
- 2 folders.
- D.72 Photocopies of letters by Florey to John F. Fulton, 1947-1954.
- Contents of a file.
- D.73 Photocopies of correspondence relating to Florey's fact-finding tour to Australia and New Zealand in 1944 to visit medical establishments and photocopy of his report of the tour, 1945.
- D.74 Letters to Abraham from Florey, with related material, 1953-1968.
- D.75 Miscellaneous correspondence of Florey, mostly photocopies, with related papers, 1945-1968.

Publications

- D.76 Correspondence *re* Florey's life, 1957-1969.
- D.77-D.89 Miscellaneous printed and typescript material, manuscript notes by Abraham and correspondence relating to Florey's life.

Photographs in D.79.
- D.90, D.91 Article on Florey in *A Biographical Dictionary of Scientists*, London 1974.
- D.90 8pp manuscript draft and 2 typescript drafts, all with manuscript revisions.
- D.91 Correspondence *re* publication with further copy of typescript draft, 1972; copy of proof with manuscript corrections.
- D.92 Review for *Nature* **282**, No. 5735 (Autumn Books Supplement, November 1979) entitled 'Florey's creative power': *Howard Florey: The Making of a Great Scientist*, by Gwyn Macfarlane, Oxford University Press 1979.

Correspondence *re* publication and letter arising; 11pp copy of typescript of review and proof with manuscript corrections; re-print.
- D.93 Revised notice for Florey in *Dictionary of National Biography 1986-1990*, Oxford 1996.

Copy of proof with manuscript revisions.
- D.94-D.99 Other obituaries and articles on Florey written before his death, 1950-1968.
- D.94 2pp typescript biographical notes on Florey for unknown publication, inscribed '1950' on first page.
- D.95 'The New Provost of Queen's', *Oxford* (published by the Oxford Society), 1962. A short article on Florey following his election to the Provostship of Queen's College.

Correspondence *re* publication; 2pp typescript draft; proof with manuscript corrections.

Publications

- D.96 Short article on Florey for 'News and Views', *Nature*, probably published in 1963.

Copy of letter enclosing 1p typescript of article.
- D.97 Two 12pp typescript drafts with manuscript revisions and inserts, entitled 'Stock obituary notice for *The Times* – 5 yearly revision', ca 1955-ca 1965; off-print of published obituary in *The Times*, 1968.
- D.98 'H.W. Florey – Nobel Prize for Medicine and Physiology 1945', 1968.

19pp copy of typescript obituary so entitled, probably written by Abraham.
- D.99 Correspondence *re* declined invitation to write obituary, 1968.
- D.100-D.102 Broadcasts on Florey by, or with a contribution by, Abraham.
- D.100 B.B.C. radio broadcast: 'Obituary on Lord Florey', by Abraham, recorded 1 March 1965.

Correspondence *re* script, with contract; 2pp typescript draft script with manuscript corrections, inscribed 'Oxford studio'.
- D.101 'Portrait of Lord Florey', B.B.C. Radio Four, 28 March 1969.

Abraham contributed an interview to the programme. The other speakers were Dr C.M. Fletcher, Dr Sanders, John Prestwich and Norman Heatley.

Correspondence *re* preparations; contract; 4pp photocopy of typescript script, with manuscript corrections, inscribed 'corrections put in by M[argaret] Florey'; photocopied scripts of other speakers on the programme; contract; 1p manuscript draft of a script, found with the other material in this folder and possibly related to it.
- D.102 Correspondence *re* plans for a possible archival film featuring Florey, Abraham and / or Norman Heatley, 1966, 1967.
- D.103 Miscellaneous correspondence etc with members of Florey's family, *re* obituaries of Florey by Abraham and *re* other matters connected with his death, 1966-1969.

Publications

- D.104, D.105 Miscellaneous correspondence and papers, mostly *re* publications (by individuals other than Abraham) and broadcasts on Florey and the history of penicillin, 1968-1989.
- Included is a transcript, entitled 'HWF on penicillin', of part of an autobiographical tape recording by Florey, with manuscript corrections by Abraham. An inscription by Abraham on the first page states that the recording was made towards the end of Florey's life.
- Found with the material in D.33-D.103.
- 2 folders.
- D.106-D.113 Correspondence and papers *re* fundraising for a memorial stone to Florey in Westminster Abbey (unveiled 2 November 1981) and preparations for the unveiling ceremony, with correspondence arising. 1980-1983. A few photographs are included.
- Included at D.113 is brief correspondence *re* Abraham's preparation of his Royal Society Biographical Memoir of Florey, 1968.
- 8 folders.
- D.114 Obituary of Mary Ethel Hayter Florey, Lady Florey, by Abraham, *British Medical Journal*, 1966 or 1967.
- 2pp copy of typescript obituary and letter *re* publication, October 1966.
- D.115 'Behaviour of alpha-Aminoadipoyl and Glutamylcysteines in the Presence of Intact and Disrupted Mycelium of a *Cephalosporium* sp.', with P. Bronwen Loder and G.G.F. Newton, *Biochemical Journal* **112**, 1969.
- This paper appears to have incorporated another paper, 'Synthesis and Some Properties of alpha-Aminoadipoyl and Glutamy Cysteines', with P. Bronwen Loder, which was initially written separately.
- Letter *re* submission of the 2 original papers; typescript drafts, with manuscript revisions, of the 2 papers.
- D.116 Copy of typescript draft of combined paper with manuscript corrections; figures.

Publications

- D.117 'Some Properties of Two Cell-bound Beta-lactamases from *Bacillus cereus* 569/H', with S. Kuwabara, *Biochemical Journal* **115**, 1969.
2 copies of typescript drafts with manuscript revisions; correspondence *re* publication.
- D.118 'Biosynthesis of Peptides containing alpha-Aminoadipic Acid and Cysteine in Extracts of a *Cephalosporium* sp.', with P. B. Loder, *Biochemical Journal* **123**, 1971.
First page of typescript of article; letter *re* submission of the paper.
- D.118A 'Specificities of Haemagglutinating Antibodies Evoked by Members of the Cephalosporin C Family and Benzylpenicillin', with J.M.T. Hamilton-Miller, *Biochemical Journal* **123**, 1971.
Proof with manuscript corrections.
- D.119 Review for unknown publication: *Yeast Mould and Plant Protoplasts*, edited by J.R. Villanueva *et al.*, New York 1973.
2pp typescript draft with manuscript corrections; proof.
- D.120 Draft paper with the draft title 'On the (role / involvement) of microbial penicillin- and cephalosporin- acylases and / in the biosynthesis (mechanism) of Beta-lactam antibiotics'. The authors were originally given as Abraham and E.J. Vandamme, though Abraham's name has been crossed out. Inscribed 'summer '73 Oxford Univ'.
Copy of 37pp manuscript (hand other than Abraham's) and typescript draft, with manuscript revisions by Abraham.
- D.121-D.123 Articles contributed by Abraham to *Methods in Enzymology*, Vol. **30**, New York 1974.
- D.121 'Acetyl Esterase, a Citrus Enzyme', with P.A. Fawcett.
Correspondence *re* preparation of paper; 7pp typescript draft with extensive manuscript revisions; later typescript draft and revised (or final) version.

Publications

- D.122 'δ-(α-Aminoadipyl)cysteinylvaline Synthetase', with P.A. Fawcett.
6pp typescript and proof with manuscript corrections.
- D.123 Correspondence *re* publication, with a few miscellaneous papers.
- D.124 'Biosynthesis and Enzymic Hydrolysis of Penicillins and Cephalosporins',
University of Tokyo Press 1974.

Paper resulting from an E.R. Squibb Lecture.

35pp copy of typescript with references and figures.
- D.125 'Synthesis of Tritium-labelled Isopenicillin N, Penicillin N and 6-
Aminopenicillanic Acid', with J.J. Usher and P. B. Loder, *Biochemical
Journal* **151**, 1975.

Letter *re* publication of this paper and the one described in D.126; first page
of copy of typescript article; proofs with manuscript corrections.
- D.126 'Behaviour of Tritium-labelled Isopenicillin N and 6-Aminopenicillanic Acid as
Potential Penicillin Precursors in an Extract of *Penicillium chrysogenum*, with
P. A. Fawcett and J.J. Usher, *Biochemical Journal* **153**, 1975.

First page of copy of typescript article; proof with manuscript corrections.
- D.126A 'Biosynthesis of Penicillins and Cephalosporins', with P. A. Fawcett,
Biosynthesis IV: The Chemical Society Specialist Periodical Reports.

34pp copy of typescript of paper with references, figures etc; proof with
manuscript corrections.
- D.127 'Synthesis of δ-(α-Aminoadipyl) cysteinylvaline and its Role in Penicillin
Biosynthesis', with P. A. Fawcett, J. J. Usher, J. A Huddleston, R. C.
Bleaney, J. J. Nesbitt, *Biochemical Journal* **157**, 1976.

Correspondence *re* publication; 32pp copy of typescript draft with manuscript
corrections.

Publications

- D.128 Review for *The Times Literary Supplement* entitled 'Bad news for bacteria', 17 December 1976: *Penicillin in Perspective*, by David Wilson, London 1976.
- Correspondence *re* publication; typescript draft with extensive manuscript revisions and 6pp corrected version; copy of proof; off-print.
- D.129 Review for *The Times Literary Supplement* entitled 'The Molecular Key', 12 August 1977: *New Worlds in Chemistry*, London 1976.
- Correspondence *re* publication; 4pp copy of typescript of review; off-print.
- D.130 'The Stereochemistry of B-lactam Formation in Cephalosporin Biosynthesis', with J. A. Huddleston *et al.*, *Biochemical Journal* **169**, 1978.
- 11pp copy of typescript draft with manuscript revisions.
- D.131-D.177 Articles by Abraham on Ernst Boris Chain arising from the latter's death in August 1979.
- Included at D.172-D.177 are papers relating to a symposium held on the occasion of Chain's 70th birthday.
- See D.228-D.230 for material relating to Abraham's notice for Chain in the *Dictionary of National Biography*.
- D.131 Obituary for the *Biochemical Society Bulletin* Vol.1, no.5, 1979.
- Correspondence *re* publication and 4pp copy of typescript of obituary; off-print and copy of re-print.
- D.132 Correspondence *re* obituary by Abraham for *The International Journal of Environmental Studies*, September-October 1979.
- D.133 2 copies of typescript obituaries probably by Abraham, one with annotations by him, for unknown publications.
- D.134 Article on Chain in *A Biographical Dictionary of Scientists*, London 1982.
- Correspondence etc *re* publication and 3pp copy of typescript of the article.

Publications

- D.135-D.170 'Ernst Boris Chain', *Biographical Memoirs of Fellows of the Royal Society*, **29**, 1983.
- D.135-D.141 Correspondence etc *re* preparation and drafting of the memoir, 1979-July 1983.
- Included are a few letters *re* Abraham's assistance to others compiling publications on related topics and *re* other matters such as arrangements for the cataloguing of Chain's papers; and 3 photographs at D.141, including one of Chain in later years (inscribed '1976' on back).
- 7 folders.
- D.142-D.159 Drafts of the Memoir.
- D.142-D.145 Extensive and detailed manuscript notes on Chain's life and career extracted from cited correspondence and other documentary sources.
- 4 folders.
- D.146-D.148 Early manuscript draft, apparently incomplete, with extensive revisions.
- (paginated 1-98, with gaps).
- 3 folders.
- D.149-D.152 Typescript draft inscribed '1st Draft' with manuscript revisions.
- Paginated 1-60.
- 4 folders.
- D.153-D.158 Copy of later typescript draft, with bibliography etc, probably the draft circulated to various individuals for comment.
- At D.158 is a page of typescript suggested alterations to the text inscribed 'Trevor Williams', with manuscript annotations by Abraham.
- D.159 A few typescript and manuscript pages from draft (or drafts), different to those described in D.146-D.158; drafts of figures; a few miscellaneous manuscript notes.

Publications

- D.160 Re-print of the Memoir.
- D.161-D.163 Correspondence arising from publication of the Memoir, mostly letters of thanks from members of the scientific community and friends in receipt of a copy, with congratulations and comments, 1983, 1984, with a few letters 1985-1988.
- Included are a few letters *re* Abraham's assistance to others compiling publications on related topics.
- 3 folders.
- D.164-D.170 Typescript and printed background material and correspondence, used in the preparation of the Memoir.
- D.164 Correspondence between Abraham and Chain mostly in connection with the former's preparation of the Royal Society *Biographical Memoir* of Florey, 1969.
- Included is a copy of a funding application made by the Sir William Dunn School to the Rockefeller Foundation in 1939 which is the subject of the correspondence.
- D.165 Copies of correspondence of Chain, 1969-1976.
- Letters by Chain to Sir Bernard Katz in which Chain complains of lack of recognition in Britain, 1969.
- Correspondence with Government ministers and leading scientists *re* issues in biochemical and general scientific research, 1971-1976.
- Correspondence *re* controversies at Imperial College London, 1974, 1977.
- Correspondence with Sir Robert Robinson, mostly *re* the history of penicillin, March-May 1974.
- D.166 Correspondence, mostly between Abraham and Sir Robert Robinson, concerning claims made by Chain about his role in the development of penicillin, April 1974-January 1975; 2 unrelated letters by Abraham and Chain (copy), 1969, 1979 (found with the other material in this file).

Publications

- D.167-D.170 Miscellaneous typescript and printed material (some photocopies) and manuscript notes by Abraham relating to Chain's career and the development of penicillin.
- 4 folders.
- D.171 Stock obituary of Chain for *The Times*.
- Correspondence *re* offer to write obituary and acceptance, and *re* drafting, November 1972-January 1973, and 4pp typescript draft of notice with manuscript revisions; copy of revised (or final) typescript version.
- D.172-D.177 'Biologically Active Substances – exploration and exploitation', a symposium to mark Chain's 70th birthday held at the Royal Society, 15, 16 June 1976.
- The papers relating to this event, at which Abraham gave a paper, were found with the material in D.135-D.170.
- D.172, D.173 Correspondence *re* arrangements, with programme etc, and a few letters arising, 1975, 1976.
- 2 folders.
- D.174-D.177 'The Biosynthesis of B-lactam Antibiotics', Abraham's paper.
- D.174 14pp manuscript draft with revisions; 2 typescript drafts, one incomplete, with manuscript revisions; copy of 2pp typescript outline.
- D.175 Copy of typescript corrected version.
- D.176, D.177 Publication of Abraham's paper in *Biologically Active Substances – Exploration and Exploitation*, edited by D.A. Hems, Wiley 1977.
- Correspondence *re* publication, 1976, 1977, and proof of Abraham's paper with manuscript corrections.
- 2 folders.

Publications

- D.178 'Transport and Metabolism of Bacilysin and Other Peptides by Suspensions of *Staphylococcus aureus*, with D. Perry, *Journal of General Microbiology* **115**, 1979.

Proof with manuscript corrections.
- D.179 'Incorporation of ^3H from δ -(L- α -Amino[4,5- ^3H]adipyl)-L-cysteinyl-D-[4,4- ^3H]valine into Isopenicillin N', with Joseph O'Sullivan, Roger C. Bleaney and J. A. Huddleston, *Biochemical Journal* **184**, 1979.

Proof with manuscript corrections.
- D.180 Review for *Endeavour*, [?1979]: 'Antibiotics: isolation, separation and purification', *Journal of Chromatography Library* Vol. **15**, edited by M.J. Weinstein and G.H. Wagman, [?1978].

Correspondence *re* publication; 2pp typescript of review with manuscript corrections.
- D.181 'A Spectroscopic Study of Metal Ion and Ligand Binding to B-Lactamase II', with G. S. Baldwin, Alphonse Galdes, H. A. O. Hill and S. G. Waley, *Journal of Inorganic Biochemistry* **13**, no.3, 1980.

17pp copy of typescript draft (with reference, figures etc) with manuscript corrections.
- D.182 'Penicillin Biosynthesis: Conversion of Deuterated δ -(L- α -Aminoadipyl) - L - Cysteinyl - D - Valine to Isopenicillin N by a Cell-free Extract of *Cephalosporium acremonium*', with J. E. Baldwin *et al*, *Chemical Communications* 1981.

5pp copy of typescript draft.
- D.183-D.189 'The B-lactam Antibiotics', *Scientific American* **244**, No.6, 1981.
- D.183 Correspondence *re* publication, February-May 1981.

Included a few letters, 1979, concerning other matters.
- D.184 Correspondence arising, July-October 1981.

Publications

- D.185 28pp typescript draft with manuscript revisions entitled 'Penicillins, Cephalosporins and Their Successors'. Included are a few manuscript notes.
- This appears to be an early draft of 'The B-lactam Antibiotics'.
- D.186 Revised version of the draft in D.185 (with the same title).
- D.187, D.188 Draft drawings and photographic prints for illustrations, some with annotations on back, others mounted on to annotated cards; manuscript notes and drafts for captions; typescript drafts of captions, with manuscript revisions.
- 2 folders.
- D.189 Off-print.
- D.190 'Conversion of Isopenicillin N into Penicillin N in Cell-free Extracts of *Cephalosporium acremonium*, with G.S. Jayatilake and J.A. Huddleston, *Biochemical Journal* **194** (part 2), 1981.
- Copy of 12pp typescript draft with manuscript corrections.
- D.191-D.195 'Biosynthesis of B-Lactam Antibiotics', with J. O'Sullivan, in *Antibiotics IV: Biosynthesis*, ed. by J.W. Corcoran, Berlin 1981.
- D.191 Correspondence *re* publication, 1978-1980.
- D.192-D.194 30pp typescript draft (with references, figures etc) with manuscript revisions.
- 3 folders.
- D.195 Proof with manuscript corrections.

Publications

- D.196 'Biosynthesis of Penicillins and Cephalosporins in Cell-free Systems', with J. O'Sullivan and J.A. Huddleston, *Philosophical Transactions of the Royal Society*, 1980 or 1981.

6pp copy of typescript with biographical note on Abraham.
- D.197-D.208 'Isolation and Properties of an Inducible and a Constitutive B-Lactamase from *Pseudomonas aeruginosa*, with M. Berks and K. Redhead, *Journal of General Microbiology*, 1982.

Various drafts and other material *re* the preparation and publication of this paper. Contents of 4 files.
- D.197-D.201 Contents of a file.
- D.197 Correspondence *re* preparation and publication of the paper, 1978-1981.
- D.198-D.201 Typescript and manuscript drafts and reports, one headed with manuscript corrections.

4 folders.
- D.202 Typescript draft of report headed 'Paper II' with manuscript corrections.

Contents of a file.
- D.203-D.205 Contents of a file.
- D.203, D.204 Typescript drafts, some incomplete, with manuscript corrections, and figures.

2 folders.
- D.205 Figures with manuscript annotations, photographic prints and manuscript notes.
- D.206-D.208 Contents of a file.
- D.206 Typescript draft with manuscript revisions.

Publications

- D.207 Later typescript drafts (submitted for publication) and brief correspondence *re* publication, 1981.
- D.208 Proof.
- D.209 'Inhibition of Glucosamine Synthetase by Bacilysin and Anticapsin', by H. Chmara, *Journal of General Microbiology*, [?1984]. A paper was revised by Abraham prior to publication.

Found with the material in D.197-D.208.

Letter *re* publication, 1984; copy of typescript draft, with manuscript revisions by Abraham, and figures.
- D.210 'Stoichiometry of Oxygen Consumption in the Biosynthesis of Isopenicillin N from a Tripeptide', with R. L. White *et al*, *Biochemical Journal* **203**, 1982.

Correspondence *re* publication; 8pp copy of typescript of article; correspondence *re* publication of a later paper in the *Biochemical Journal*, 1984.
- D.211 Copy of typescript of a paper entitled 'Penicillin Biosynthesis: Oxygen Stoichiometry of Isopenicillin N Synthesis in a Cell-free System', with R. L. White *et al*, on which is inscribed the same publication reference as for the paper described in D.210. The texts of the articles are different; the authors are the same.
- D.212 'Penicillin Biosynthesis. Dual Pathways from a Modified Substrate', with R. M. Adlington *et al*, *Journal of Chemical Studies: 'Chemical Communications'*, 1983.

5pp copy of typescript of paper; 3pp manuscript notes found with typescript.
- D.213 'Conversion of $^{17}\text{O}/^{18}\text{O}$ Labelled δ -(L- α -Aminoadipyl)-L-cysteinyl-D-valine to $^{17}\text{O}/^{18}\text{O}$ Labelled Isopenicillin N in a Cell-free Extract of *Cephalosporium acremonium*, with R. M. Adlington *et al*, *Tetrahedron* **39**, 1983.

8pp copy of typescript of paper, with figures.

Publications

- D.214, D.215 'Stereochemistry of the Incorporation of the Methyl Groups of 'Chiral Methyl Valine' into Methylene Groups in Cephalosporin C', with C.-P. Pang *et al*, *Journal of Chemical Studies: 'Chemical Communications'*, 1983.
- D.214 Letter *re* preparation; 23pp photocopy of typescript draft with manuscript revisions.
- D.215 Copy of typescript draft with revisions (later than those in D.214).
- D.216-D.220 'History of B-lactam Antibiotics', a chapter in *Handbook of Experimental Pharmacology*, Vol. **67/1: Antibiotics Containing the Beta-Lactam Structure**, Part 1, edited by A.L. Demain and N.A. Solomon, Berlin 1983.
- D.216 Correspondence etc, mostly *re* preparation and publication, 1979-1984.
- D.217 34pp copy of typescript draft of Abraham's chapter, with letter.
- D.218, B.219 Copy of typescript draft with manuscript revisions.
Stamped '23 Nov. 1982' on first page.
2 folders.
- D.220 Proof and off-print.
- D.221, D.222 'Purification of Isopenicillin N Synthetase', with C.-P. Pang *et al*, *Biochemical Journal* **222**, 1984.
- D.221 20pp copy of typescript, with figures, and correspondence *re* publication; manuscript notes (hand other than Abraham's).
- D.222 Proofs with manuscript corrections.

Publications

- D.223 'Stereochemistry of the Incorporation of Valine Methyl Groups into Methylene Groups in Cephalosporin C', C.-P. Pang *et al.*, *Biochemical Journal* **222**, 1984.
Correspondence *re* publication; proof with manuscript corrections.
- D.224 Review article entitled 'Benefactors' Benefactor' for *The Times Literary Supplement*, 27 January 1984: *The Legacy of Alfred Nobel: The Story Behind the Nobel Prizes*, by Ragnar Sohlman, London 1983.
Correspondence *re* publication; 7pp copy of typescript draft of review; proof; off-print.
- D.225, D.226 Review entitled 'The Shooter and the Shot': *Alexander Fleming: The Man and the Myth*, by Gwyn Macfarlane, London 1984. The review was published in a special supplement by *Nature*, 'Spring Books', April 1984.
- D.225 Copy of 9pp typescript 'first draft' with manuscript revisions; copy of revised draft and copy of off-print; correspondence *re* publication.
- D.226 Letter to Abraham from Max Perutz, December 1985, enclosing a copy of his review of Macfarlane's book, entitled 'Lucky Alec', for comment.
On Perutz's typescript are minor manuscript annotations by Abraham.
- D.227 Review for *FEBS Letters*, [?May] 1984: *The Target of Penicillin. The Murein Sacculus of Bacterial Cell Walls. Architecture and Growth*, edited by R. Hakenbeck *et al.*, Berlin 1983.
Correspondence *re* publication and 2pp copy of typescript of review.
- D.228-D.234 Contents of file inscribed 'Oxford University Press'.
- D.228-D.230 Notice for Ernst Chain in *Dictionary of National Biography 1971-1980*, Oxford 1986.
For the main body of papers relating to Abraham's articles on Chain see D.131-D.177.
- D.228 Correspondence mostly *re* the invitation to contribute and publication, including press copy of the article, 1985, 1986.

Publications

- D.229 6pp manuscript draft with revisions; 9pp typescript draft with manuscript revisions.
- D.230 Copy of revised typescript draft with further manuscript revisions; copy of version sent to publishers.
- D.231, D.232 Notice for Sir Harry Jephcott in *Dictionary of National Biography 1971-1980*, Oxford 1986.
- D.231 Correspondence *re* preparation and publication, December 1984-1985, and 1 letter arising, 1989.
- D.232 7pp typescript draft with manuscript corrections; copy of typescript inscribed 'Edited version'; background material.
- D.233, D.234 Correspondence with Oxford University Press *re* Abraham's involvement in various publications, 1979-1991.
- D.233 Correspondence *re* proposed book on penicillin by Abraham, 1979, 1980.

No definite plans for the book emerge from this correspondence.
- D.234 Miscellaneous correspondence etc, 1985-1991.

Relates to Abraham's advisory role in various publications including the *History of the University of Oxford*, Oxford 1992.
- D.235-D.240 Chapter for proposed book *The Cephalosporin Antibiotics*.

The title of Abraham's chapter was 'Cephalosporins 1945-1985'. The publishers, Adis Press Ltd (New Zealand), eventually abandoned publication of the book. The material was published instead in a special supplement to Adis Press's international supplement *Drugs*, 1987.
- D.235-D.237 Correspondence etc *re* proposed publication and proof of the chapter (at D.237), 1984-1986.

3 folders.

Publications

- D.238 34pp copy of typescript draft of the chapter, with references etc.
- D.239, D.240 Correspondence *re* publication of Abraham's original chapter in the supplement *Drugs*, and proof with manuscript corrections, 1987.
2 folders.
- D.241 'Purification and Initial Characterization of an Enzyme with Deacetoxycephalosporin C Synthetase and Hydroxylase Activities', with J. E. Baldwin *et al.*, *Biochemical Journal* **245**, 1987.
Typescript draft with manuscript revisions; 31pp copy of typescript revised version and figures.
- D.242-D.245 'Factors Affecting the Isopenicillin N Synthetase Reaction', with D. Perry and J.E. Baldwin, *Biochemical Journal* **255**, 1988.
- D.242 Correspondence *re* preparation and publication, 1987, 1988.
- D.243 Typescript and manuscript draft of the article, with extensive manuscript revisions.
- D.244 2 typescript drafts with manuscript revisions, one including manuscript drafts of figures.
- D.245 17pp copy of typescript inscribed 'copy for press', with figures etc.
- D.246 'Acyl Coenzyme A: 6-aminopenicillinanic Acid Acyltransferase from *Penicillium chrysogenum* and *Aspergillus nidulans*', with P.A Whiteman *et al.*, *FEBS Letters* **262**, 1990.
Typescript draft with manuscript revisions and inserts; 6pp typescript revised version inscribed 'Final copy revised', with figures.

Publications

- D.247-D.250 'Selective Reminiscences of B-lactam Antibiotics. Early Research on Penicillin and Cephalosporins', for 'Roots' column, *BioEssays: Advances in Molecular, Cellular and Developmental Biology*, Vol. **12**, No.12, December 1990.
- The 'Roots' column presented first-hand accounts of key discoveries or breakthroughs in the biological sciences.
- D.247 Correspondence *re* publication with 18pp copy of amended [?final] typescript of article.
- D.248 17pp manuscript draft of article with revisions and 1p manuscript notes; typescript draft with manuscript revisions.
- D.249 Copy of revised typescript version.
- D.250 Off-print.
- D.251, D.252 Review for *Nature*, published 1990: *Miracle Cure. The Story of Antibiotics*, by Milton Wainwright, Blackwell 1990.
- D.251 6pp typescript draft with extensive manuscript revisions; copy of revised version.
- D.252 Brief correspondence etc *re* publication and proof with manuscript corrections.
- D.253-D.270 Undated publications.
- D.253 'Possible Intermediates in the Biosynthesis of Cephalosporin', with G.G.F. Newton.
- Copy of 11pp typescript draft so entitled, with manuscript corrections.
- D.254 'The Cephalosporins'.
- Copy of 8pp typescript draft with manuscript revisions.

Publications

- D.255 'Enzymes Involved in the Biosynthesis of Cephalosporin C.'
Copy of 7pp typescript draft, so entitled, with manuscript corrections.
- D.256 'Biosynthesis of Penicillins and Cephalosporins', with G.G.F. Newton.
Copy of 40pp typescript draft, with manuscript corrections, and index of subjects.
- D.257, D.258 'B-Lactamases and their Rôle in Resistance to B-Lactam Antibiotics'.
58pp copy of typescript draft so entitled, with figures.
2 folders.
- D.259-D.265 Untitled manuscript and typescript draft of a book on antibiotics, with extensive manuscript revisions, n.d.
The draft is divided into sections or chapters on particular antibiotics.
7 folders.
- D.266-D.270 Miscellaneous material relating to unidentified publications, or possible publications, by Abraham, n.d.
The material mostly consists of parts of manuscript and typescript drafts and notes.
5 folders.
- D.271-D.288 EDITORIAL CORRESPONDENCE 1948-1998**
- Correspondence and papers *re* refereeing of papers intended for publication, general editorial business and publications by Abraham.
Shorter correspondence is at D.284-D.288.

Publications

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|--|--|------------------|
| D.271-D.274 | <i>The Biochemical Journal</i> | 1949-1988 |
| <p>Abraham served on the Editorial Board, ca 1955-1960.</p> <p>Included is correspondence re publication of papers by Abraham in the Journal found with the editorial correspondence.</p> <p>4 folders.</p> | | |
| D.275, D.276 | Elsevier Publishing Company | 1960-1964 |
| <p>Correspondence, including re-print, mostly with Elsevier Publishing Company, re <i>Comprehensive Biochemistry</i>, edited by Marcel Florkin and Elmer H. Stotz, Elsevier 1962.</p> <p>Abraham wrote a chapter for Volume 2.</p> <p>2 folders.</p> | | |
| D.277-D.281 | <i>The Journal of Antibiotics</i> | 1988-1998 |
| <p>Abraham was an Emeritus Member.</p> <p>Mostly re the business of the Editorial Board.</p> <p>5 folders.</p> | | |
| D.282 | Pharmacological Reviews | 1960-1962 |
| <p>Correspondence re review by Abraham of a book <i>The Cephalosporins</i> for <i>Pharmacological Reviews</i> 14, 1962.</p> | | |
| D.283 | Sherry F. Queener | 1983-1987 |
| <p>Correspondence etc mostly with Sherry F. Queener re <i>Beta-Lactam Antibiotics for Clinical Use</i>, edited by Queener <i>et al.</i>, New York 1986.</p> <p>Abraham contributed a chapter to the book.</p> | | |

Publications

D.284-D.288

Shorter correspondence

1948-1998

Arranged chronologically.

5 folders.

THE ROYAL COMMISSION ON HISTORICAL MANUSCRIPTS

Report on the correspondence and papers

of

SIR EDWARD PENLEY ABRAHAM

(1913-1999)

biochemist

in

Bodleian Library, Oxford

VOLUME II

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Catalogue of the papers and correspondence of

Sir Edward Penley Abraham FRS

(1913 - 1999)

VOLUME II

Section E: Lectures and broadcasts

Section F: Visits and conferences

Section G: Societies and organisations

Section H: Correspondence

Index of correspondents

by Simon Coleman, Peter Harper and Caroline
Thibeaud

NCUACS catalogue no. 103/2/02

SECTION E

LECTURES AND BROADCASTS

E.1-E.63

E.1-E.52 LECTURES

E.53-E.63 BROADCASTS

Lectures and broadcasts

E.1-E.52 LECTURES 1942-1993, n.d.

E.1-E.22 Lectures associated with teaching

E.23-E.52 Public lectures

For further papers relating to lectures see Section F.

E.1-E.22 Lectures associated with teaching 1942-1973, n.d.

E.1-E.21 Lectures on pathology given by Abraham at the University of Oxford.

E.1, E.2 Copies of lecture or course handouts for students, 1942-1951, n.d.
2 folders.

E.3-E.8 Contents of 2 files inscribed 'Lectures – School of Pathology'.
Lectures by Abraham to students at the Oxford University Department of Pharmacology from 1957 or earlier.

E.3-E.5 Manuscript and typescript notes and drafts for various lectures, *ca* 1957-*ca* 1971, n.d.
Most sets of notes have titles. At E.3 are a page inscribed '1957' and three sets of notes which appear to relate to a card containing a list of lecture titles dated 1962. A few photographs are included at E.4.
3 folders.

E.6 Letters (invitations and acceptance) *re* proposed lectures by Abraham in early 1970 and early 1971.

E.7 Typescript entitled 'Haemostasis and Thrombosis', inscribed 'Pathology 1971 New Class Sheets'.

Lectures and broadcasts

- E.8 Re-prints of various lectures and papers by Abraham, 1958-1966, n.d.
Found with the material in E.3-E.5 and apparently unrelated to it.
- E.9-E.20 'Lectures on General Pathology', contents of hard-back binder.
Copies of typescripts of lectures, most, or all, by Abraham, many with manuscript revisions. First page (list of contents) inscribed as above. A number of the lecture titles correspond to those of some pages of notes and drafts in E.3-E.5. Some of the texts include inserted pages of manuscript notes.
Most of the material shows continuous pagination (with gaps) and division into chapters, indicating that many or all the lectures formed part of a publication.
12 folders.
- E.21 Hardback notebook containing notes for various lectures, n.d.
Inscribed 'E.P Abraham Sir William Dunn School of Pathology Oxford' inside cover.
- E.22 University of Bath seminars, 1970-1973.
Abraham spoke at seminars for staff and research students.
Correspondence *re* arrangements for 3 seminar talks in 1970, 1972 and 1973.
- E.23-E.52 Public lectures ca 1960-1993, n.d.**
Arranged chronologically, though some miscellaneous material at E.37-E.45 has not been incorporated into the chronological sequence. Material relating to undated lectures is at E.46-E.51. Invitations declined are at E.52.
- E.23-E.25 First 'ONR' Lecture (banquet speech) by Abraham at the Annual Meeting of the Society for Industrial Microbiology, Northwestern University, Evanston, Illinois, USA, 19-24 August 1973.
The title of the speech was 'Some Aspects of the Development of the Penicillins and Cephalosporins'.

Lectures and broadcasts

- E.23 Correspondence *re* arrangements and arising, May-February 1974.
- E.24 29pp typescript draft of lecture with manuscript revisions; 22pp copy of typescript of the lecture.

The lecture was published in *Developments in Industrial Microbiology* Volume 15.
- E.25 Copy of Society of Industrial Microbiology Newsletter, July 1973, containing programme etc for the Annual Meeting 1973 and a short biography of Abraham; a few miscellaneous papers found with the material relating to the 'ONR Lecture'.
- E.26-E.28 Lecture by Abraham given at the Technische Universität Berlin, Germany, 4 June 1982.

The lecture was within the framework of the University's research branch 'Structure, Function and Biosynthesis of Peptides and Proteins'.
- E.26 Correspondence etc *re* arrangements and arising, March-June 1982.
- E.27 18pp typescript draft of lecture, with manuscript corrections, headed 'Berlin'; 2pp of typescript and manuscript notes.
- E.28 Other correspondence arising from Abraham's association with the Technische Universität, January-November 1982.
- E.29, E.30 Squibb lecture, University of Nottingham, 12 May 1983.
- E.29 Correspondence *re* arrangements and arising, July 1982-May 1983.
- E.30 'The Cephalosporins – origins and future'.

2pp incomplete manuscript draft of Abraham's lecture so entitled, with revisions; 1p manuscript draft entitled 'Slides' and typescript pages for use as slides.

Lectures and broadcasts

- E.31-E.33 Lecture by Abraham given at the Technische Universität Berlin, Germany, 24 June 1983.
- The lecture was in the framework of the University's research branch 'Structure, Function and Biosynthesis of Peptides and Proteins'.
- E.31 Correspondence etc *re* arrangements and arising, March-November 1983.
- E.32 20pp typescript draft with manuscript revisions; 15pp typescript revised version with manuscript annotations and 1p manuscript list of slides.
- E.33 19pp manuscript notes with copies of figures, probably related to the drafts described in E.32.
- E.34 Talk given to the Southampton Medical Society, (arranged for) 2 October 1991.
- The lecture was on the origins and developments of penicillins and cephalosporins.
- Correspondence *re* invitation and arrangements, February-July 1991.
- E.35, E.36 Lecture given at the National Portrait Gallery: 'Alexander Fleming and his Remarkable Discoveries', 31 March 1993.
- E.35 Correspondence *re* arrangements and arising, October 1992-April 1993.
- Included is correspondence etc (found with the above correspondence) *re* a proposed Fleming Museum in St Mary's Hospital, October 1992-February 1993.
- E.36 12pp incomplete manuscript draft with revisions; incomplete typescript draft with manuscript revisions; revised typescript draft with prints and photocopied material used as slides.
- E.37-E.45 Contents of a file entitled 'Miscellaneous lectures'.

Lectures and broadcasts

- E.37 20pp typescript draft, with manuscript revisions, entitled 'Mode of Action of Antibiotics'; 9pp typescript draft, with manuscript revisions, headed 'Canberra'; 19pp copy of a typescript entitled 'The Impact of Antibiotics on Medicine'; revised version of the latter, probably for publication.
- From a file inscribed 'Lectures – Australia'. The lectures were probably given at the International Symposium on the Chemistry of Natural Products, Australia, 15-25 August 1960 (see F.2).
- E.38 'Some Aspects of Resistance to Antibiotics', given at a seminar on infectious disease organised by the Oxford Regional Committee for Postgraduate Medical Education and Training, 16 February 1971.
- Correspondence *re* arrangements, August-November 1970; 6pp manuscript notes for lecture; 17pp typescript draft of lecture, with manuscript revisions, and 4 typescript pages (probably used for slides).
- E.39 3pp incomplete typescript draft, with manuscript revisions, headed 'Orthopaedic Centre March 1st 1975' and 3pp manuscript notes for the remainder of the lecture.
- E.40 'Beta-Lactam Antibiotics: A Brief Modern History', lecture given at the 9th International Congress of Chemotherapy, Royal Albert Hall, London, 13-19 July 1975.
- 12pp copy of typescript of the lecture; programme etc.
- E.41 25pp typescript of lecture entitled 'The Cephalosporins', inscribed 'History of Science April 1976', with 1p manuscript list of slides; 3pp typescript notes for the lecture with manuscript annotations.
- E.42 21pp copy of typescript of lecture entitled 'Cephalosporin', inscribed '50th Anniversary April 1977, with 2pp typescript of speech introducing Abraham.
- E.43 7pp typescript draft with manuscript revisions entitled 'Some British Contributions to Antibiotics and Progress in Chemotherapy', n.d.
- E.44 Miscellaneous manuscript and typescript notes and lists of slides etc, with 2 photographs, for unidentified lectures, n.d.

Lectures and broadcasts

- E.54 4pp copy of transcription (probably incomplete) of monologue by Abraham on Howard Florey and the development of penicillin from a radio programme, 17 December 1968.
- E.55 Correspondence *re* Abraham's assistance in research for a BBC Open University chemistry programme, June 1977.
- E.56 'Antibiotics – a Failing Weapon?', BBC World Service, 21 September 1977.
Abraham spoke about Brötzu's discovery of cephalosporium.
10pp typescript of programme script and copy of contract.
- E.57 Correspondence *re* a proposed BBC radio programme on the discovery penicillin. October 1979.
- E.58 'Breakthrough' No.4: Howard Florey, broadcast in 1983.
A film in a documentary series on great medical figures. Abraham made a brief (non-speaking) appearance in the film and assisted in checking the script and in filming at the Sir William Dunn School of Pathology.
Brief correspondence *re* preparation and arising and draft script with manuscript revisions and annotations by Abraham, August-December 1982.
- E.59 *Horizon* documentary about penicillin: 'The Mould, the Myth and the Microbe', 27 January 1986.
Letters *re* Abraham's contribution to the programme, 1985, 1986.
- E.60 Letters in connection with an interview Abraham gave to Radio Oxford, n.d.
- E.61, E.62 'The Cephalosporins', an educational film apparently made by E.R. Squibb & Sons Ltd to increase understanding of the cephalosporin group of antibiotics.
Abraham assisted in the making of the film and contributed a historical introduction to it.

Lectures and broadcasts

- E.61 Correspondence *re* preparations and arising, with 2 typescript draft scripts of Abraham's introduction and amended version. November 1974-January 1975.
- E.62 2pp typescript draft script of preamble (introducing Abraham); 14pp copy of typescript programme script with manuscript revisions by Abraham.
- E.63 Brief correspondence *re* arrangements for an interview which Abraham agreed to give to Fulcrum Productions Ltd, April, May 1991.

SECTION F

VISITS AND CONFERENCES

F.1-F.89

The material covers the period 1955-1995 and is arranged chronologically. Papers relating to undated and unidentified visits are at F.88, F.89.

See Section H for substantial further material relating to visits and conferences.

Visits and conferences

- F.1 3ème Congrès International de Biochimie, Brussels, Belgium, 1-6 August 1955.
- Abraham, with I.M. Lockhart gave a lecture 'Hydrogenolysis of bacitracin' and, with Guy Newton, 'Antibacterial peptides related to penicillin'.
- Copy of printed 'Résumés des Communications' (abstracts of the lectures).
- F.2 International Symposium on the Chemistry of Natural Products, Melbourne, Canberra and Sydney, Australia, 15-25 August 1960.
- The symposium was organised by the Australian Academy of Science and held under the auspices of the International Union of Pure and Applied Chemistry (IUPAC). Abraham, with Guy Newton, gave a lecture 'Degradation of cephalosporin C'.
- Copy of Symposium Handbook interleaved with pages of rough manuscript notes, some in Abraham's hand; copy of book of Abstracts of Papers, on 2pp of which (including inside back cover) are manuscript notes by Abraham; 2 loose pages of manuscript notes.
- See E.37, H.335-H.340 for related material.
- F.3 Conference (Gordon research Conference) on Medicinal Chemistry, Colby Junior College, New London, New Hampshire, USA, 30 July-3 August 1962.
- Abraham gave a lecture 'Biochemical and Microbiological Studies on Derivatives of 7-Amino-cephalosporanic Acid'.
- Programme with manuscript notes by Abraham on a number of pages; letter arising, July 1962.
- See also H.451, H.452.
- F.4 Cephaloridine Conference, New College Oxford, 13-16 March 1967.
- The conference was arranged jointly by the Fellowship of Postgraduate Medicine and Glaxo Laboratories Ltd. Abraham chaired one session for which he gave a short introductory speech.
- Letter *re* arrangements, with programmes; 1p copy of typescript of Abraham's speech entitled 'Cephaloridine – Historical Remarks'; 1p copy of typescript of Guy Newton's speech from the same session.

Visits and conferences

- F.5-F.10 Visit to the USA, April 1967.
- Abraham was invited to give lectures at the University of Wisconsin (one of a series of Rennebohm Lectures) and at a 'Penicillins and Cephalosporins' symposium held during the annual meeting of the American Academy of Pharmaceutical Sciences in Las Vegas.
- The papers described below were the contents of a single file.
- F.5, F.6 Rennebohm Lecture by Abraham, University of Wisconsin, 6 April 1967.
- The title of the lecture was 'Penicillins and Cephalosporins – their chemistry in relation to biological activity'.
- F.5 Correspondence *re* arrangements for Abraham's visit to the USA and for his lecture at the University of Wisconsin, December 1966-March 1967; programme for Rennebohm Lectures.
- F.6 39pp copy of typescript of lecture, with corrections and additions, and 1p manuscript figures.
- F.7, F.8 'Penicillins and Cephalosporins' symposium, Las Vegas, 9-14 April 1967.
- The title of Abraham's lecture was 'Penicillins and Cephalosporins – their chemistry in relation to biological properties'.
- F.7 Correspondence etc *re* invitation and arrangements, December 1965-March 1967.
- F.8 3pp typescript draft, with manuscript corrections, of abstract of Abraham's lecture.
- F.9 Correspondence arising from the two lectures and from the visit to the USA in general, November 1966-September 1967.
- F.10 Miscellaneous material found with the papers described in F.2-F.6, apparently unrelated to the USA visit: correspondence, mostly with organisations in the USA, August 1966-April 1967; 2pp manuscript notes probably for a lecture (or lectures), one page entitled 'Chicago'.

Visits and conferences

- F.11-F.15 5th International Congress of Chemotherapy, Vienna, 26 June-1 July 1967.

Abraham delivered a lecture 'Synthesis and Semisynthesis of Some Antibiotics'.
- F.11 Correspondence *re* arrangements, with conference programme, October 1966-June 1967.
- F.12, F.13 Correspondence arising, May 1967-April 1968.

2 folders.
- F.14 16pp manuscript draft of lecture, with corrections; 13pp corrected typescript version with manuscript annotations.
- F.15 Manuscript notes and typescript lists of 'technical terms', found with, and probably relating to, the drafts in F.14; programme from the Fifth Interscience Conference on Antimicrobial Agents and Chemotherapy and IVth International Congress of Chemotherapy, 1965, attended by Abraham; programme and other printed material, annotated by Abraham, from the Sixth Interscience Conference on Antimicrobial Agents and Chemotherapy 1966 which he does not appear to have attended.

This material was found with the papers in F.11-F.14.
- F.16-F.21 Visit to the USA, October 1967.

Abraham delivered lectures at the annual meeting of the Infectious Diseases Society of America and at the Seventh Interscience Conference on Antimicrobial Agents and Chemotherapy, both in Chicago.
- F.16-F.18 Annual meeting of the Infectious Diseases Society of America, 23 and 24 October 1967.

A provisional title for Abraham's lecture is given as 'Penicillinases and Cephalosporinases' in the preliminary programme at F.16.
- F.16 Correspondence etc *re* arrangements for the USA trip and for Abraham's participation at the meeting, with preliminary programme, May-October 1967.

Visits and conferences

- F.17 Correspondence arising, November 1967-January 1968.
- F.18 19pp typescript draft of lecture, headed 'Chicago', with manuscript corrections and revisions.
- F.19-F.21 Seventh Interscience Conference on Antimicrobial Agents and Chemotherapy, Chicago, 25-27 October 1967.

Abraham, with Guy Newton and S. Kuwabara, lectured on 'Preliminary observations on the formation and spontaneous breakdown of "Cephalosporoic acids" and their derivatives'.
- F.19 Correspondence *re* arrangements, with programme etc, May 1967.
- F.20 Correspondence arising, 1967.

Included is a letter, 1969, found with the material relating to this conference.
- F.21 Printed booklet of abstracts of the papers presented at the conference.
- F.22-F.25 Gregynog Natural Products Symposia, 1969-1975.

The purpose of the symposia, held in Gregynog Hall, Wales, was to facilitate communication between research workers in industry and academic institutions. In 1971 the event was re-named 'European Symposium on Bio-Organic Chemistry'.

Abraham participated in the 1973 and 1975 symposia.

The papers described in these folders were the contents of an original file inscribed 'Gregynog'.
- F.22, F.23 Invitation to the 1970 Gregynog Symposium.

Abraham agreed to participate in the event and partly prepared a lecture, but found he was unable to attend due to a mix-up in his diary.
- F.22 Correspondence *re* arrangements etc, with preliminary programme, July 1969-April 1970.

Included are a re-print of a paper co-authored by Abraham and a typescript bibliography, found with the correspondence in this folder.

Visits and conferences

- F.23 'Biosynthesis of Some Peptide Antibiotics'.
35pp typescript draft of Abraham's intended lecture so entitled, with manuscript corrections, and accompanying figures, tables etc.
- F.24 European Symposium on Bio-Organic Chemistry: 'Microbiological Chemistry', 18-21 May 1973.
Abraham delivered a lecture on 'Aspects of the Biosynthesis of Penicillin and Cephalosporin'.
Correspondence *re* arrangements, with programme etc, October 1972-April 1973.
- F.25 European Symposium on Bio-Organic Chemistry: 'Biosynthesis and Biotransformation', 16-19 May 1975.
Abraham chaired one of the lecture sessions.
Correspondence *re* arrangements and arising, with programme etc, December 1974-June 1975.
- F.26-F.31 8th [Italian] National Congress of Chemotherapy held by the Società Italiana di Chemioterapia (Italian Society of Chemotherapy), Sardinia, 8-[?9 or 10] May 1970.
Abraham was invited to give the opening lecture in a session on cephalosporins.
- F.26 Correspondence *re* arrangements, with programme, December 1969-April 1970.
- F.27 Correspondence arising, May-July 1970.
- F.28-F.31 'Reflections on the Development of the Cephalosporins', Abraham's lecture, published (after editing) in *Giornale Italiano di Chemioterapia*.
- F.28 12pp typescript draft, with corrections and revisions; copy of typescript of the lecture in Italian.
- F.29 19pp typescript of the lecture with manuscript editing (for publication).

Visits and conferences

- F.30 Copy of typescript of edited version with related photographs of chemical structures; copy of enclosing letter by Abraham, May 1970.
- F.31 Copy of galley proof with enclosing letter to Abraham, 1971.
- F.32 Symposium on Antibiotics, Quebec, Canada, 1-3 March 1971.

Organised by The Medicinal Chemistry Division of the Chemical Institute of Canada.

Programme listing Abraham as a lecturer on 'Penicillins and Cephalosporins'.

See H.351, H.352 for further papers concerning the symposium.
- F.33-F.36 FEBS Special Meeting on Industrial Aspects of Biochemistry, Dublin, 15-19 April 1973.

Abraham delivered a lecture at the symposium on 'Biological Syntheses'.
- F.33 Correspondence *re* arrangements and arising, with programme etc, August 1972-July 1973.
- F.34-F.36 'Studies on the Biosynthesis of Penicillins and Cephalosporins'.

Abraham's lecture, subsequently published in a 'volume' on the Symposium.
- F.34 2pp copy of typescript abstract of lecture with copy of enclosing letter by Abraham, January 1973; published volume of abstracts of lectures given at the conference.
- F.35 11pp incomplete typescript draft of lecture, with manuscript corrections; draft figures (for ?slides) and manuscript bibliography.
- F.36 20pp typescript draft, with manuscript corrections and revisions, entitled 'Penicillins, Cephalosporins and the Biosynthesis of Peptide Antibiotics by Fungi', by Abraham and Patricia Fawcett.

This appears to be a draft of the published version of the lecture with which Abraham required the help of a colleague due to lack of time.

Visits and conferences

- F.37 Penicillinase Workshop, University of Newcastle upon Tyne, 16-18 April 1975.
- Abraham introduced and chaired a panel discussion.
- Correspondence *re* arrangements, with programme, March 1975.
- On the back of one letter (12 March) are rough manuscript notes by Abraham relating to topics and other speakers.
- F.38-F.41 5th FEMS Symposium, Basel, Switzerland, 14-16 September 1977.
- Abraham gave a lecture on 'Developments in the Chemistry and Biochemistry of Beta-lactam Antibiotics'.
- F.38, F.39 Correspondence *re* arrangements and arising, with programme etc, February-August 1977.
- 2 folders.
- F.40 28pp copy of typescript of Abraham's lecture with manuscript corrections and revisions; copies of bibliography and figures (for ?slides).
- The lecture was published in a book (*Antibiotics and Other Secondary Metabolites*) containing the contributions made at the symposium.
- F.41 Correspondence *re* publication of lecture with corrected proof, 2pp manuscript notes and copies of figures (for ?slides). March-May 1978.
- F.42 'Future Prospects and Past Problems in Antimicrobial Therapy: the Role of Cefoxitin', Harvard Club of Boston, USA, 24 and 25 May 1978.
- Programme listing Abraham as an invited speaker.
- See H.465 for further papers *re* this conference.
- F.43, F.44 Table Rondes Roussel Uclaf: 'Mode of Action of Beta-Lactams', Paris, 6 and 7 December 1979.
- Organised by the Roussel Uclaf Group. Abraham participated as a moderator.

Visits and conferences

- F.43 Correspondence *re* arrangements, with list of participants etc, December 1978-November 1979.
- F.44 Correspondence with individuals at Division Scientifique Roussel Uclaf and Roussel Laboratories *re* various matters, one letter arising from the above conference, October 1979-July 1980.
- Found with the material in F.43.
- F.45-F.51 International Symposium on B-lactam Antibiotics: 'Mode of Action, New Developments and Future Prospects', New York University Post-Graduate Medical School, 29 September-2 October 1980.
- 'Launching the Antibiotic Era: Personal Accounts of the Discovery and Use of the First Antibiotics', a symposium held at the Rockefeller University, New York, on 23 October 1989.
- The papers relating to these two symposia were originally the contents of a file inscribed 'Rockefeller University / New York'.
- F.45-F.47 International Symposium on B-lactam Antibiotics, 1980.
- Abraham gave a lecture entitled 'Discovery, Chemistry and Antibacterial Properties of Cephalosporins'.
- F.45 Correspondence *re* arrangements, with programme etc, February-September 1980.
- F.46 1p manuscript notes for lecture; 13pp typescript of lecture with manuscript revisions (probably for publication).
- F.47 15pp copy of typescript of ?published version of lecture.
- F.48-F.51 Symposium 'Launching the Antibiotic Era', 1989.
- The symposium was held to celebrate the 50th anniversary of the discovery of Gramicidin by René Dubos. Abraham gave a lecture entitled 'Oxford, Howard Florey and World War II'. Abraham's lecture and the contributions by other speakers appeared in a subsequent Rockefeller University Press publication *Launching the Antibiotic Era*, New York 1990.

Visits and conferences

- F.48 Correspondence *re* arrangements, with programme, March-October 1989.
- F.49 1p manuscript notes for lecture; 12pp typescript draft of lecture with manuscript corrections; 15pp typescript of expanded version; off-print of the published lecture.
- F.50 Correspondence, mostly *re* publication, 1989-January 1991.
- F.51 Copy of Rockefeller University Newsletter including note about the symposium and some of the participants (including Abraham); copies of printed literature providing general background to the symposium.
- F.52, F.53 21st Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC), Chicago, USA, 4-6 November 1981.

The subject of the conference was biosynthesis of B-lactam antibiotics. Abraham gave a lecture probably entitled 'Enzymes Involved in the Biosynthesis of Cephalosporin C'.
- F.52 Correspondence etc *re* arrangements and arising, April-October 1981.
- F.53 7pp typescript of lecture, with manuscript corrections, entitled as above and inscribed 'Written from memory after the Chicago meeting' on front page; 8pp typescript of the same with extensive manuscript revisions (probably for publication), the original title being altered to 'An Outline Biosynthesis of Beta-Lactam Antibiotics'.
- F.53A First ASEAN Workshop on 'Fermentation Technology applied to the utilization of food waste materials', Kuala Lumpur 22-24 February 1982.

6pp typescript copies of 2 lectures given by Abraham entitled 'B-lactam Antibiotics – an Outline' and 'Biosynthesis of B-lactam Antibiotics – an Outline'.

See H.424-H.426 for related material.

Visits and conferences

- F.54-F.57 13th International Congress of Chemotherapy, Vienna, 28 August-2 September 1983.
- At the conference Abraham was presented with the Hamao Umezawa Award for Chemotherapy by the International Society of Chemotherapy and gave an Award Lecture entitled 'Aspects of the Biosynthesis of Beta-Lactam Antibiotics'.
- F.54 Correspondence *re* arrangements, February-August 1983.
- F.55 6pp copy of typescript of Award Lecture, with brief manuscript annotations, and a few manuscript and typescript notes, possibly related; 14pp manuscript draft, with revisions, of unidentified lecture (on the biosynthesis of B-lactam antibiotics) headed 'Vienna'.
- F.56 Copies of 2 printed 'Proceedings' of sections of the conference, one co-edited by Abraham; printed news bulletin on the congress.
- F.57 Correspondence with individuals in Austria and West Germany *re* various matters, mostly unconnected with the congress 1982-1985.
- Found with the material in F.54-F.56.
- F.58, F.59 Meeting organised by E.R. Squibb & Sons Inc.: 'Therapeutics for a Changing World', Princeton University, 27 September 1983.
- Held to commemorate the 125th Anniversary of the founding of E.R. Squibb & Sons Inc.
- F.58 Correspondence *re* arrangements, July-September 1983.
- F.59 9pp untitled manuscript draft of lecture with revisions; first page of another manuscript draft of the same; 1p manuscript notes and 5pp annotated typescript information for lecture.
- F.60, F.61 607th Meeting of the Biochemical Society, Polytechnic of Central London, 19-21 December 1983.
- Abraham gave a lecture at a colloquium on 'Advances in the Biochemistry and Genetics of Antibiotic Producing Organisms'.

Visits and conferences

- F.60 Correspondence *re* arrangements, with typescript summary of Abraham's lecture and provisional programme, November 1982-November 1983.
- F.61 1p manuscript notes for the lecture; correspondence *re* publication, June-September 1984; 8pp copy of typescript published version of the lecture entitled 'Aspects of the Biosynthesis of Beta-Lactam Antibiotics', with bibliography and figures for slides.
- F.62-F.67 Visit to India, January 1985.
- The principal reason for Abraham's visit was to participate in the Asian Congress of Pharmacology, New Delhi, 14-19 January 1985. After the congress he visited the Indian Institute of Technology, Ciba Geigy Research Centre, and the Tata Institute of Fundamental Research (Bombay), Hindustan Antibiotics Ltd and the National Chemical Laboratory (Poona), the Indian Institute of Sciences (Bangalore), and the Central Food and Technology Research Institute (Mysore). He gave a total of five seminars.
- A photograph taken during this visit is at J.24.
- F.62, F.63 Correspondence *re* arrangements, with itineraries etc, February 1984-January 1985.
- 2 folders.
- F.64 Correspondence etc arising, February-March 1985.
- F.65-F.67 'Penicillins and Cephalosporins and Antibiotics of the future'.
- Lecture given by Abraham at the Asian Congress of Pharmacology.
- F.65 21pp typescript draft of lecture, with corrections and revisions, and related tables and information.
- F.66 23pp copy of revised version with copies of material for slides; 3 additional typescript pages, possibly part of the final text.
- F.67 Copy of printed abstract of the lecture, with possible manuscript draft of the same; 8pp manuscript notes and draft slides; manuscript notes found elsewhere, probably for this lecture (one page is headed 'New Delhi').

Visits and conferences

- F.68-F.71 Hoechst Workshop Conference on 'Regulation of Secondary Metabolite Formation', Schloss Gracht, Germany, 12-16 May 1985.
- Abraham gave a lecture 'Enzymes Involved in Penicillin and Cephalosporin Formation'.
- F.68 Correspondence *re* arrangements, with 2 annotated copies of programme, March 1984-May 1985.
- F.69 Correspondence arising; brief correspondence with German scientists *re* various matters. April-October 1985.
- F.70 3pp incomplete manuscript draft of Abraham's lecture with revisions; 14pp typescript of the lecture with additional pages of bibliographic references for possible publication.
- F.71 Typescript abstract of lecture with copy of earlier or expanded version; figures (for ?slides accompanying lecture).
- F.72-F.74 17th FEBS Meeting, West Berlin, 24-29 August 1986.
- Abraham gave a lecture entitled 'Beta lactamases' at one of the Meeting's symposia.
- F.72 Correspondence *re* arrangements and arising, November 1985-October 1986.
- F.73 1p manuscript draft outline of lecture; 18pp copy of typescript of lecture, with manuscript corrections; additional typescript pages and figures (for ?slides).
- F.74 1p typescript entitled 'Abstract'; manuscript notes for lecture; miscellaneous papers, probably relating to the lecture, including re-print of earlier article by Abraham.

Visits and conferences

- F.75-F.81 '50 Years of Penicillin Application', a Symposium in Honour of Abraham organized by the Technische Universität Berlin, West Berlin, 9-12 September 1990.
- Abraham gave a lecture entitled 'From Penicillins to Cephalosporins'.
- See J.28 for photographs taken at the event.
- F.75, F.76 Correspondence *re* arrangements, with programme, and correspondence arising, October 1989-December 1990.
- 2 folders.
- F.77-F.81 Abraham's lecture: 'From Penicillins to Cephalosporins'.
- The lecture was published in a book *50 Years of Penicillin Application – History and Trends* (Technische Universität Berlin).
- F.77 2pp manuscript and 1p typescript notes; 6pp and 2pp incomplete manuscript drafts with revisions; later 10pp typescript version with manuscript corrections and 1p manuscript list of references; 11pp typescript final version (for publication).
- F.78 Figures for slides.
- F.79-F.81 Correspondence *re* publication with expanded typescript version and corrected proofs, 1991-1994.
- 3 folders.
- F.82, F.83 Penicillin Symposium, University of Oxford, 28 September 1990.
- The event was held to mark the 50th anniversary of the publication of the paper on penicillin in the *Lancet* which described animal experiments. Abraham gave a lecture entitled 'Penicillin F and its Beta-lactam descendants: chance, motivation and personalities'.
- See J.40 for a videotape of this event, including Abraham's lecture.
- F.82 Correspondence etc *re* arrangements, with 1 letter arising, January-October 1990.

Visits and conferences

- F.83 1p typescript notes for Abraham's lecture; 1p typescript entitled 'Extract from the Will of Sir William Dunn'.
- F.84, F.85 Science and Medicine Conference, Royal College of Physicians, London, 6 and 7 November 1991.

Abraham gave a lecture entitled 'Overview: past history of penicillins and cephalosporins'.
- F.84 Correspondence *re* arrangements, with programme, and correspondence arising, March-November 1991.
- F.85 18pp typescript draft of lecture, with manuscript corrections and revisions, and drafts for accompanying slides.
- F.86, F.87 'Phenoxymethylpenicillin amidohydrolase from penicillium chrysogenum'.

Typescript drafts of a lecture so entitled, with manuscript revisions and corrections, [?1995].

Inscriptions on the drafts in F.86 indicate that the lecture was intended for a FEBS meeting.
- F.86 9pp draft with manuscript revisions, inscribed '1st Draft'; draft with manuscript corrections, inscribed '2nd Draft – reversibility – 6-APA?'.
- F.87 3 further drafts one entitled '4th Draft Oct 1995', with manuscript notes written to Abraham by another.
- F.88, F.89 Undated and unidentified visits.
- F.88 1 page of a manuscript draft of an unidentified lecture, n.d.
- F.89 Manuscript notes by Abraham for a lecture or lectures, n.d.

One page is headed 'New Delhi', another 'Biosynthesis'.

SECTION G

SOCIETIES AND ORGANISATIONS

G.1-G.90

G.1-G.5	AMERICAN ACADEMY OF ARTS AND SCIENCES
G.6-G.20	AUSTRALIAN NATIONAL UNIVERSITY
G.21-G.28	BIOCHEMICAL SOCIETY
G.27-G.29	BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE
G.30-G.32	BRITISH COUNCIL
G.33-G.39	BRITISH SOCIETY FOR ANTIMICROBIAL CHEMOTHERAPY
G.40-G.44	CHEMICAL SOCIETY
G.45-G.47	CIBA FOUNDATION
G.48-G.57	COUNCIL FOR SCIENCE AND SOCIETY
G.58-G.73	ROYAL SOCIETY
G.74-G.78	ROYAL SOCIETY OF CHEMISTRY
G.79-G.81	SOCIETY FOR GENERAL MICROBIOLOGY
G.82-G.90	WELLCOME TRUST

Societies and organisations

G.1-G.5 AMERICAN ACADEMY OF ARTS AND SCIENCES 1983-1985

Abraham was elected a foreign honorary member in 1983. In 1985 he gave an address to the Academy on 'Penicillin and its successors: a personal view'.

G.1-G.5 Correspondence and papers *re* honorary membership and address, 1983-1985.

Papers include manuscript notes and typescript drafts for address.

5 folders.

G.6-G.20 AUSTRALIAN NATIONAL UNIVERSITY 1981-1988

In 1981 Abraham accepted an invitation to join a newly formed Advisory Board for the John Curtin School of Medical Research. He attended its first meeting in Canberra, 24 September 1982 but does not appear to have attended subsequent meetings. Abraham's correspondent is the Director of the John Curtin School, R. Porter.

Correspondence, agenda, committee papers and minutes, 1981-1988.

G.6 Correspondence and papers, 1981.

Includes invitation for Abraham to serve on Advisory Board.

G.7-G.9 Correspondence and papers, 1982.

Includes papers about the Advisory Board and its first meeting.

3 folders.

G.10 Correspondence and papers, 1983.

Includes papers for second meeting of Advisory Board, 5 August 1983.

G.11 Correspondence and papers, 1984.

Includes papers for third meeting of Advisory Board, 6 July 1984.

Societies and organisations

- G.12-G.18 Correspondence and papers, 1985.
Includes papers for fourth meeting of Advisory Board, 29 May 1985 and fifth meeting of Advisory Board, 25 September 1985.
7 folders.
- G.19 Correspondence and papers, 1986.
- G.20 Correspondence and papers, 1987-1988.
- G.21-G.26 BIOCHEMICAL SOCIETY 1981-1997**
- G.21 Miscellaneous correspondence and papers, 1981, 1984, 1989, 1992, 1997.
- G.22-G.26 Correspondence and papers *re* Abraham's participation in the Society's programme of video recordings and related matters, 1989-1993.
5 folders.
Abraham was recorded in conversation with Professor Robert Thomas at Imperial College London on 1 May 1990. The interview was arranged by the Society's Honorary Archivist, Professor H.F. Bradford (see J.41 for a videotape of the interview).
- G.27-G.29 BRITISH ASSOCIATION FOR THE 1980, 1986-1988**
ADVANCEMENT OF SCIENCE
- G.27, G.28 Correspondence and papers *re* Abraham's 53rd Royal Society BAYS [British Association Youth Section] Lecture, 1980.
Abraham delivered the lecture on 'Penicillin and after' at Gravesend School for Boys, Kent, 23 October 1980.
2 folders.

Societies and organisations

G.29 Correspondence and papers *re* the 1988 British Association for the Advancement of Science Annual Meeting at Oxford, 1986-1988.

G.30-G.32 BRITISH COUNCIL 1960-1975

Correspondence and papers *re* Abraham's involvement in British Council activities.

G.30 1960, 1963.

G.31 1964.

Includes papers *re* course on the use and abuse of antibiotics.

G.32 1965, 1970, 1975.

G.33-G.39 BRITISH SOCIETY FOR ANTIMICROBIAL CHEMISTRY 1972-1996

The Society was formed in August 1971 at the VIIth International Congress of Chemotherapy in Prague. Abraham was invited to join the Society in 1972 and became an honorary member in 1979. In 1974 he accepted an invitation to join the Editorial Board of the Society's new journal *Antimicrobial Chemotherapy*. Abraham delivered the 5th L.P. Garrod Lecture to the Society on 'B-Lactam Antibiotics: motivation, science and luck in their past and future', 21 November 1986.

Correspondence and papers.

G.33 1972, 1974, 1979.

G.34 1984-1986.

Includes typescript draft of Abraham's L.P. Garrod Lecture.

G.35 1991.

Societies and organisations

- G.36 1992.
- G.37 1993-1994.
- G.38 1995.
- G.39 1996.
- G.40-G.44 CHEMICAL SOCIETY 1965-1979**
- G.40-G.43 Correspondence and papers *re* publications, meetings, protein group etc., 1965-1979.
- G.40 1965-1968.
- G.41 1969-1970.
- G.42 1971-1973.
- G.43 1975-1979.
- G.44 Papers *re* symposium on 'Recent advances in the chemistry of B-lactam antibiotics', Cambridge, 28-30 June 1976.
- G.45-G.47 THE CIBA FOUNDATION 1957-1979**
- G.45 Correspondence and papers *re* symposium on amino-acids and peptides held in March 1958, 1957-1958.

Societies and organisations

G.46 Correspondence and papers *re* study group on resistance of bacteria to the penicillins, 1961-1962.

G.47 Miscellaneous correspondence, 1973-1979.

G.48-G.57 COUNCIL FOR SCIENCE AND SOCIETY 1985-1986

The Council for Science and Society was founded in 1973 and published a number of reports on various social issues connected with science and technology. Abraham accepted an invitation in 1985 to join a study group on access to scientific information.

G.48-G.57 Correspondence and papers *re* the work of the study group.
10 folders.

G.58-G.73 THE ROYAL SOCIETY 1958-1998

Abraham was elected to the Fellowship of the Royal Society in 1958 (Royal Medal, 1973; Mullard Medal, 1980).

G.58-G.67 General correspondence and papers, 1958-1998.

G.58 1958-1961.

G.59 1962-1963.

G.60 1964-1968.

G.61 1970-1972.

G.62 1973-1976.

Societies and organisations

- G.63 1977-1978.
- G.64 1979-1982.
- G.65 1983-1989.
- G.66 1990-1994.
- G.67 1995-1998.
- G.68, G.69 Correspondence, papers and photographs *re* antibiotics exhibit for Royal Society Tercentenary exhibition, 1960.
2 folders.
- G.70-G.73 Correspondence and papers *re* elections, 1959-1995.
- G.70 1959-1968.
- G.71 1971-1979.
- G.72 1985-1989.
- G.73 1990-1995.
- G.74-G.78 ROYAL SOCIETY OF CHEMISTRY 1985-1995**
- G.74 General correspondence and papers, 1985-1995.

Societies and organisations

- G.75-G.77 Correspondence and papers *re* Centenary Tribute to Sir Robert Robinson at the 1986 Annual Congress, 1985-1987,

Abraham talked on 'Sir Robert Robinson and the early history of penicillin'.

3 folders.
- G.78 Correspondence and papers *re* article on 'The biosynthesis of penicillins and cephalosporins' written with J.E. Baldwin, 1985-1988.
- G.79-G.81 SOCIETY FOR GENERAL MICROBIOLOGY 1963-1997**
- Abraham became a member in 1948 and resigned from the Society in 1997.
- G.79 Correspondence and papers *re* meeting etc, 1963.
- G.80 Correspondence and papers *re* publications, 1973, 1975.
- G.81 Correspondence and papers *re* publications, meetings and membership, 1981-1997.
- G.82-G.90 WELLCOME TRUST 1957-1989**
- G.82-G.87 Correspondence and papers *re* Abraham's applications to the Wellcome Trust for grants for equipment, travel and to modernise / extend the chemical pathology section of the Oxford Department of Pathology, 1957-1965.

6 folders.
- G.88 Correspondence, 1979, 1981.

Societies and organisations

G.89, G.90

Correspondence with historians at the Wellcome Institute for the History of Medicine, London, 1985-1989.

2 folders.

SECTION H

CORRESPONDENCE

H.1-H.563

H.1-H.334	SCIENTIFIC CORRESPONDENCE (presented alphabetically by individual)
H.335-H.495	SCIENTIFIC CORRESPONDENCE (presented alphabetically by country)
H.496-H.534	SHORTER SCIENTIFIC CORRESPONDENCE (chronological sequence)
H.535-H.563	REFERENCES AND RECOMMENDATIONS

Correspondence

H.1-H.334 SCIENTIFIC CORRESPONDENCE 1944-1998
(presented alphabetically by individual)

This sequence includes a large number of the scientists who researched in Abraham's laboratory including D.Phil. students, post-doctoral fellows and visiting scientists.

H.1 Baker, W.L. 1976

Baker was based at the Swinburne College of Technology, Hawthorn, Melbourne, Australia.

Correspondence *re* possibility of work on penicillin problems in Abraham's laboratory during sabbatical leave.

H.2-H.11 Baldwin, G.S. 1974-1992

Baldwin came to Abraham's laboratory from the University of Melbourne in 1975 to work for two years as a postdoctoral researcher on the mechanism of enzyme function. He was subsequently based at the University of Adelaide and the Ludwig Institute for Cancer Research, Melbourne Tumour Biology Unit, Australia.

H.2-H.6 Correspondence and papers *re* career and appointments, 1974-1992.

Includes references and recommendations.

H.2 1974.

H.3 1975.

H.4 1976-1978.

H.5 1980, 1983.

H.6 1991-1992.

H.7-H.11 Correspondence and papers *re* research and publications, 1975-1990.

Correspondence

- H.7 1975-1976.
Includes correspondence and report *re* work of M. Tully on the production of B-lactamase I and II, 1976.
- H.8 1976-1977 and n.d.
Includes manuscript drafts by Baldwin.
- H.9 1978.
Includes correspondence with R.P. Ambler, Department of Molecular Biology, University of Edinburgh.
- H.10 1979.
- H.11 1979-1981, 1985, 1990.
- H.12-H.19 Berks, M. (née McPhail) 1971-1996
Berks worked in Abraham's laboratory, 1971-1977, first as a research assistant and then as a post-doctoral researcher. She died in 1996.
Career, research, publications and personal news.
Includes references and recommendations.
8 folders.
- H.20 Betina, V. 1964-1972
Betina was based at the Department of Microbiology and Biochemistry, Slovak Polytechnic University, Bratislava, Czechoslovakia. He met Abraham at the 'Antibiotica Congressus' in Prague, 1964 and subsequently worked in Abraham's Laboratory for a period in 1966 on the antibiotic activity of cyanein supported by a World Health Organization Senior Research Training Grant.
Arrangements for visit, publication etc.

Correspondence

- | | | |
|------------|---|-----------|
| H.21 | Blackwell, C.M. | 1977 |
| | Blackwell was appointed to a two-year postdoctoral post in Abraham's laboratory in 1977. | |
| | Appointment only. | |
| | Includes recommendations. | |
| H.22-H.29 | Bleaney, R.C. | 1974-1978 |
| | Bleaney was a postdoctoral organic chemist appointed to research in Abraham's laboratory on the synthesis of compounds related to penicillins and cephalosporins. | |
| H.22 | Correspondence and papers <i>re</i> career and appointments, 1974-1978. | |
| | Includes references and recommendations. | |
| H.23-H.29 | Correspondence and papers <i>re</i> research, 1976-1978, n.d. | |
| | 7 folders. | |
| H.30 | Brannan, S. | 1977 |
| | Brannan was appointed to a two-year postdoctoral post in Abraham's laboratory, 1977. | |
| | Appointment only. | |
| | Includes references and recommendations. | |
| H.31-H.37 | Brightwell, M. | 1972-1975 |
| | Brightwell came to Abraham's laboratory as a research assistant in 1972 to work on the structure and function of members of the penicillinase group of enzymes. | |
| H.31, H.32 | Correspondence and papers <i>re</i> career and appointments, 1972-1975. | |
| | Includes recommendations. | |
| | 2 folders. | |

Correspondence

- H.67 Crawford, K. 1958, 1959, n.d.
- Crawford was a Departmental Demonstrator in the Oxford Department, commencing 1 December 1954.
- Includes report on 'The enzymes inactivating Cephalosporins P and N and Penicillin'.
- H.68-H.73 Crout, D.H.G. 1979-1984
- Crout was based at the Department of Chemistry, Exeter University.
- Correspondence and papers *re* research and publications.
- 6 folders.
- H.74-H.78 Davies, R.B. 1969-1974
- Davies was a D.Phil. student of Abraham's from October 1970.
- H.74 Correspondence and papers *re* career, 1969-1974.
- Includes references and recommendations.
- H.75-H.78 Correspondence and papers *re* research and publications, 1971-1974
- 4 folders.
- H.79 Dougall, D.K. 1953-1956
- Principally research reports.
- H.80 Duncan, M.J. 1965-1971
- Duncan was a D.Phil. student in the Sir William Dunn School of Pathology,
- Includes references and recommendations.

Correspondence

- H.81 Dyke, K.D.G. 1966-1967
Correspondence and papers *re* research and career.
Includes references and recommendations.
- H.82-H.84 Edwards, G.F. St L. 1974-1979
Edwards worked in Abraham's laboratory as a post-doctoral research assistant, 1974-1977.
- H.82 Correspondence and papers *re* career and publication.
Includes references and recommendations.
- H.83, H.84 Research notes and reports.
2 folders.
- H.85-H.91 Fawcett, P.A. 1971-1997
After graduating from the School of Biological Sciences, University of East Anglia, Fawcett came to Oxford to work as a research assistant in Abraham's laboratory, taking a D.Phil. under his supervision. After a period in the USA she returned to England in 1979 and resumed research in Abraham's laboratory in 1983. Correspondence and papers from 1975 are under her married name of Whiteman.
See also C.1075-C.1082.
- H.85 Correspondence *re* career, 1971-1975.
Includes references and recommendations.
- H.86-H.91 Correspondence and papers *re* research, publications, etc., 1971-1997.
6 folders.
- H.92-H.97 Fisher, A.J. 1976-1980
Fisher undertook D.Phil research under Abraham's supervision.

Correspondence

- H.108 Ghuysen, J.-M. 1976-1977
- Ghuysen was based at the University of Liège, Belgium.
- Correspondence *re* research.
- H.109, H.110 Glynn, M.F. 1970-1973
- Abraham took over Glynn's D.Phil. supervision on the sudden death of his previous supervisor.
- Principally *re* Glynn's Oxford D.Phil. thesis.
- 2 folders.
- H.111 Gore, P.J.M. 1975-1978
- Gore worked as a research assistant in Abraham's laboratory for a period from 1 February 1977
- Correspondence *re* career and research.
- Includes references and recommendations.
- H.112-H.115 Gunetileke, K.G. 1967-1978
- Gunetileke was a Sinhalese who came from the Department of Biochemistry, University of Toronto to spend a year in Abraham's laboratory, 1968-1969, as a postdoctoral fellow before returning to Ceylon. In Oxford he worked on problems relating to the biosynthesis of penicillins and cephalosporins. He died *ca* 1989.
- See also H.128.
- H.112, H.113 Correspondence *re* arrangements to work in Abraham's laboratory, subsequent career etc., 1967-1978.
- Includes references and recommendations.
- 2 folders.
- H.114, H.115 Research notes, September 1968-July 1969.
- 2 folders.

Correspondence

- H.122 Hopwood, D.A. 1982
Hopwood was the head of the Department of Genetics, John Innes Institute, Norwich.
Correspondence *re* research.
- H.123-H.125A Huddleston, J.A. (née Mitchell) 1974-1980
Huddleston worked as a research assistant in Abraham's laboratory from October 1974.
See C.698-C.833 for laboratory notes by Huddleston.
- H.123 Correspondence *re* appointment etc, 1974, 1980.
- H.124-H.125A Research notes and drafts.
3 folders.
- H.126-H.131 Jayatilake, G. S. 1978-1993
Jayatilake was a Sri Lankan organic chemist who came to Abraham's laboratory in 1978 where he worked on the biosynthesis of penicillins and cephalosporins in cell-free systems.
See C.251-C.268 for laboratory notes by Jayatilake.
- H.126-H.128 Correspondence and papers *re* career and appointments, 1978-1993.
Principally references and recommendations.
3 folders.
- H.129-H.131 Research reports, printed material etc., 1979-1981, 1991.
3 folders.

Correspondence

- H.132-H.134 Jeffery, J. 1959, 1970-1981
- Jeffery was a graduate student in the Sir William Dunn School of Pathology, 1958-1961, working on the chemistry and biochemistry of a member of the cephalosporin family. After a period with ICI (Pharmaceuticals Division), Alderley Park, Cheshire he moved to the University of Aberdeen.
- Correspondence and papers *re* career and appointments.
- Principally references and recommendations.
- 3 folders.
- H.135-H.139 Kasik, J.E. 1965-1986
- In 1966 Kasik spent sabbatical leave from the Department of Medicine, University of Chicago researching in Abraham's laboratory where he worked on the relationship between penicillinase production and the sensitivity of mycobacteria to penicillins and cephalosporins. He returned to the University of Chicago, subsequently moving to the University of Iowa.
- Correspondence *re* research, publications etc
- 5 folders.
- H.140-H.148 Kenig, M.D.J. 1970-1976
- Kenig came from the Beecham Research Laboratories, Brockham Park, Surrey, to undertake D.Phil. research on the peptide antibiotic bacilysin under Abraham's supervision.
- H.140, H.141 Correspondence *re* career and appointments, 1970-1974.
- Includes references and recommendations.
- 2 folders.
- H.142-H.148 Correspondence and papers *re* research and publications, 1971-1976.
- 7 folders.
- H.149 Khuon, E. von 1984
- Correspondence *re* proposed television documentary about Sir Alexander Fleming.

Correspondence

- H.183 1956-1957.
- H.184 1958-1959.
- H.185 1960-1965.
- H.186 1966.
Includes two copies of 'G.G.F. Newton - Senior Research Officer Report on first period of office. Oct. - Sept. 1966'.
- H.187 1967.
Includes 'Report on visit to the USA by E.P. Abraham and G.G.F. Newton October-November 1967'.
- H.188 1968.
- H.189 Undated papers.
Include 'Comments by GFN on HSB[urton]'s Declaration' and 'Possible experiments to be considered for the new Honours School of Physiological Sciences Experiments in "Chemical Pathology".'
- H.190 Letter from E.J. Farrar, Chief Chemist, to T.I. Williams at the Sir William Dunn School of Pathology, Oxford, 8 December 1944 with a 'rough draft of the few experimental fermentations, using *Aspergillus Fermagatus*, Mut. *Helvola* which we have been able to set up so far'.
Found with Newton's papers.
- H.191-H.194 Correspondence and papers arising from Newton's death including obituaries, January-September 1969.
- H.191 January.

Correspondence

- H.192 February.
- H.193 March.
- H.194 April - September.
- H.195 Correspondence about Newton or with or about members of his family, 1971-1997.
- H.196 Photographs.
- H.197-H.201 O'Sullivan, J. 1975-1994
Sullivan came from the Eidgenössische Technische Hochschule, Zürich, to work in a postdoctoral position in Abraham's laboratory, 1975-1979, on the biosynthesis of penicillins and cephalosporins. He subsequently made his career at the Squibb Institute for Medical Research, Princeton, New Jersey, USA.
- H.197-H.199 Correspondence and papers *re* career and appointments, 1975-1992
Includes references and recommendations.
3 folders.
- H.200, H.201 Correspondence and papers *re* research, publications etc, 1977-1994.
2 folders.
- H.202-H.211 Pang C.-P. 1975-1996
Pang was born in Hong Kong and took a first degree at Chelsea College, University of London, 1975-1978 before becoming a D. Phil. student at Oxford under Abraham's supervision, 1978-1981. He was a postdoctoral research assistant in Abraham's laboratory, 1982-1983. His career was subsequently based at the Department of Chemical Pathology, Faculty of Medicine, Chinese University of Hong Kong.
See C.284 for laboratory notes by Pang.

Correspondence

- H.202, H.203 Correspondence and papers *re* career and appointments, 1978-1994.
Includes references and recommendations.
2 folders.
- H.204-H.210 Correspondence and papers *re* research, publications, visits etc., 1978-1996.
7 folders.
- H.211 Duplicated research notes, 1975-1978.
Pre-date Pang's arrival at Oxford but found with papers relating to his work.
- H.212 Park, J.T. 1970
Park was based at the Department of Microbiology, University of Umea, Sweden.
Correspondence *re* visit to Oxford, 1970.
- H.213-H.226 Perry, D. 1974-1989
Perry came from the University of Birmingham to work in a postdoctoral position in Abraham's laboratory, 1974-1978, on the mechanism of action of the dipeptide antibiotic bacilylsin. After a period at Princeton he returned to Abraham's laboratory in 1983 to work on isopenicillin N synthetase before moving to a lectureship at the Polytechnic of Central London.
See C.1071-C.1074 for related material.
- H.213-H.215 Correspondence and papers *re* career and appointments, 1974-1986.
Includes references and recommendations.
3 folders.
- H.216-H.221 Correspondence and papers *re* research and publications, 1974-1989.
6 folders.

Correspondence

/...	In 1970 he accepted an invitation to become a Trustee of the E.P. Abraham Cephalosporin Fund. See C.233 for laboratory notes by Sabath.
H.232-H.245	Correspondence <i>re</i> arrangements to come to Oxford, research, publications and visits, 1962-1993.
H.232	1962.
H.233	1963.
H.234	1964.
H.235, H.236	1965. 2 folders.
H.237, H.238	1966 2 folders.
H.239	1967-1970.
H.240, H.241	1971. 2 folders.
H.242	1972-1973.
H.243	1974-1975.
H.244	1976-1985.

Correspondence

- H.245 1987-1993.
- H.246 Correspondence and papers *re* career and appointments, 1967,1972.
- H.247, H.248 Schaaf, C.H. 1971-1993
Schaaf was Resident Representative of the United Nations Development Programme in Ceylon when the correspondence was initiated.
Principally non-scientific correspondence but includes a few references to Abraham's work.
2 folders.
- H.249-H.253 Stevens, C.M. 1972-1980
Stevens came from the Chemistry Department, Washington State University, Pullman to spend a sabbatical year in Abraham's laboratory, 1973-1974.
Correspondence and papers *re* arrangements for sabbatical, research, publications etc.
5 folders.
- H.254, H.255 Thorniley, M.S. 1984-1986
Thorniley was appointed as a research assistant in the Sir William Dunn School of Pathology from 1 October 1984. She worked on the isolation and properties of isopenicillin N synthetase, an enzyme with a central role in the biosynthesis of penicillins and cephalosporins.
See C.1083-C.1088 for laboratory notes by Thorniley.
- H.254 Correspondence *re* appointment etc., 1984-1985.
- H.255 Research notes and drafts, 1986 and n.d.

Correspondence

- H.300 1971-1973, 1988, 1995, 1997.
- Walker's letter to Abraham of 10 August 1995 gave him 'the opportunity to write to ... express my appreciation of the help and guidance that you gave me at a critical time in my scientific development'.
- H.301 Correspondence and papers *re* career and appointments, 1969-1976.
- H.302 Warren, S.G. 1966-1967, 1980
- Warren was based at the Sir William Dunn School of Pathology, 1962-1966, working in close association with G.G.F. Newton on the problem of the biosynthesis of antibiotics by certain fungi.
- Correspondence *re* research and career.
- H.302 Includes recommendation.
- H.303-H.305 White, R.L. 1979-1989
- White came from McMaster University, Ontario, Canada in November 1979 to work as a Postdoctoral Fellow in Abraham's group on penicillin-cephalosporin biosynthesis, returning to Canada in 1981.
- Correspondence *re* research, publications, career and appointments.
- H.303-H.305 Includes references and recommendations.
- 3 folders.
- H.306-H.334 Wylie, J.A.H. 1968-1987
- Wylie was a microbiologist and experimental pathologist. He came to Oxford in 1945 as assistant bacteriologist in the Emergency Public Health Service, temporarily situated in the Sir William Dunn School of Pathology. After two years he became departmental demonstrator in the same building. He was helped through difficult times in his later years by many friends and former colleagues including Abraham.
- Correspondence and papers.
- H.306 1968.

Correspondence

H.307, H.308 1969.
2 folders.

H.309, H.310 1970.
2 folders.

H.311, H.312 1971.
2 folders.

H.313, H.314 1972.
2 folders.

H.315 1973.

H.316, H.317 1974.
2 folders.

H.318, H.319 1975.
2 folders.

H.320 1976.

H.321, H.322 1977.
2 folders.

H.323, H.324 1978.
2 folders.

Correspondence

H.325	1979.	
H.326	1980-1981.	
H.327, H.328	1982. 2 folders.	
H.329	1983-1984.	
H.330	1985-1987.	
H.331	Correspondence and drafts <i>re</i> obituary of Wylie (published in <i>The Lancet</i> , 7 November 1987), 1987.	
H.332	Biographical information about Wylie including curriculum vitae and list of publications; photograph of Wylie.	
H.333, H.334	Copies of Wylie's publications in the history of medicine and the history of religion.	
H.335-H.495	SCIENTIFIC CORRESPONDENCE (Presented alphabetically by country)	1946-1995
H.335-H.342	Australia	1959-1995
H.335-H.340	IUPAC International Symposium on the Chemistry of Natural Products, Melbourne, Canberra and Sydney, Australia, 15-25 August 1960. See E.37, F.2 for related material.	

Correspondence

- H.335-H.338 Correspondence *re* arrangements for Abraham to give a paper at the symposium with associated visits and travel, 1959-1960.
4 folders.
- H.339 Abraham's addresses, 3 August-1 October 1960; reprint of his symposium paper, etc.
- H.340 Correspondence arising from his visit to Australia, 1960-1961.
- H.341, H.342 Miscellaneous correspondence with Australian scientists, 1961-1995.
- H.341 1961-1966.
- H.342 1968-1972, 1976-1978, 1988, 1995.
- H.343-H.349 Belgium 1969-1993**
- H.343-H.346 European Meeting on Medicinal Chemistry, Brussels, 14-17 September 1970.
Abraham gave a plenary lecture on 'Some contributions of synthesis and semisynthesis to antibacterial and antiviral chemotherapy'.
- H.343 Correspondence *re* arrangements for meeting, publication of plenary lecture etc., 1969-1971.
- H.344 Programme, list of participants, etc.
- H.345 Typescript draft of Abraham's plenary lecture.
- H.346 Duplicated papers (? background material for lecture).

Correspondence

H.347 Miscellaneous correspondence with Belgian scientists, 1972, 1976, 1983, 1978, 1989. 1993.

H.348, H.349 Correspondence and papers *re* the George Sarton Chair, University of Ghent, 1988-1991.

2 folders.

Abraham was chosen for the George Sarton Chair for the academic year, 1989-1990. He gave his Sarton Chair lecture on 'Reflections on the Development of the Penicillins and Cephalosporins'

A typescript draft of Abraham's lecture is at H.349.

H.350-H.353

Canada

1955-1985

H.350 Miscellaneous correspondence with Canadian scientists, 1955-1963.

H.351, H.352 Correspondence and papers *re* Symposium on Antibiotics, Ste Marguerite, Quebec, 1-3 March 1971.

Abraham gave a paper on 'Penicillins and Cephalosporins'.

2 folders.

A typescript draft of Abraham's paper is at H.352.

H.353 Miscellaneous correspondence with Canadian scientists, 1972-1973, 1981, 1985.

H.354, H.355

China

1982-1987

H.354 Correspondence *re* review article by Abraham for the *Chinese Journal of Antibiotics*, with draft of article, 1982-1984.

H.355 Correspondence *re* visit to Abraham's department by Chinese scientist, 1986-1987.

Correspondence

- | | | |
|---------------------|--|-----------------------------|
| H.356-H.360 | Czechoslovakia | 1960-1974, 1986 |
| H.356-H.358 | Correspondence and papers <i>re</i> Antibiotics Congress held in Prague, June 1964, 1960, 1963-1965.

1960 research correspondence was found with the Congress papers.

3 folders. | |
| H.359, H.360 | Miscellaneous correspondence with Czechoslovak scientists, 1961-1974, 1986.

2 folders. | |
| H.361-H.363 | Denmark | 1971-1972, 1982-1991 |
| H.361, H.362 | Correspondence and papers <i>re</i> Euchem Conference on Antibiotics Biosynthesis and Function held in Aarhus 28 August-2 September 1972, 1971-1972.

2 folders. | |
| H.363 | Miscellaneous correspondence with Danish scientists, 1982-1991. | |
| H.364, H.365 | Germany | 1970-1994 |
| | Miscellaneous correspondence with German scientists. | |
| H.364 | 1970-1979. | |
| H.365 | 1985-1994. | |
| H.366-H.377 | Italy | 1961-1991 |
| H.366 | Correspondence <i>re</i> arrangements etc for A. Migliacci of Farmitalia to work for a period of six months in Abraham's laboratory, 1961-1962.

See also H.171-H.174. | |

Correspondence

- H.367 Miscellaneous correspondence with Italian scientists, 1962-1965.
- H.368 Correspondence and papers *re* 6th International Congress of the International Society of Clinical Pathology held in Rome October 1966, 1965-1966.
- Abraham gave a paper on 'Old and New Antibiotics' in a symposium on the evaluation of antibiotic activity.
- H.369 Miscellaneous correspondence with Italian scientists and others, 1968-1971.
- In 1971 Abraham stayed for a short period at the Rockefeller Foundation's Villa Serbelloni, Bellagio to write his memoir of Lord Florey for the Royal Society.
- H.370 Miscellaneous correspondence with Italian scientists, 1973-1976.
- H.371 Correspondence and papers *re* scientific meetings held in Italy, 1978.
- Includes draft of Abraham's introductory remarks for round table on cerufoxime at 3rd International Symposium on 'Future Trends in Chemotherapy' held in Pisa, May 1978.
- H.372, H.373 Correspondence and papers *re* symposium on 'Action of Antibiotics in Patients' held in Florence 18 July 1981 and publication of proceedings, 1980-1981.
- Abraham gave a paper on 'Bioconversion of antibiotics'.
- The symposium was held just before the 12th International Congress of Chemotherapy, also held in Florence.
- 2 folders.
- H.374, H.375 Correspondence and papers *re* symposium 'From Genetic Experimentation of Biotechnology the Critical Transition' held in Rome, 20-23 September 1981, 1981.
- Abraham gave a paper on 'The development of penicillins and cephalosporins - similarities and contrasts'.
- 2 folders.

Correspondence

- H.376, H.377 Correspondence and papers *re* international meeting on 'Trends in Microbial Resistance to B-Lactam Antibiotics Molecular Aspects and Clinical Implications' held in L'Aquila and Rome, 12-15 May 1990. 1989-1991.
- The meeting marked the fiftieth anniversary of the paper by Abraham and E.B. Chain (*Nature*, Dec. 28, 1940) in which the ability of some bacterial extracts to destroy penicillin was reported.
- Abraham gave a paper on 'A retrospective view of B-lactamases'.
- See J.29 for a related photograph.
-
- H.378-H.381 'India and Pakistan' 1961-1987**
- Contents of folder so inscribed: correspondence and papers *re* research, publications and visits.
- H.378 1961-1969.
- H.379 1970-1979.
- H.380 1980-1987.
- H.381 'Herbal Therapeutics'.
- 29pp typescript by R.R. Chaudhury, n.d.
-
- H.382-H.421 Japan 1953-1992**
- H.382 Correspondence with Japanese scientists, 1953-1954, 1961-1962.
-
- H.383-H.388 Correspondence and papers *re* IUPAC Symposium on 'The Chemistry of Natural Products Kyoto, 12-18 April 1964, 1963-1964.
- 6 folders.

Correspondence

- H.389 Correspondence with Japanese scientists, 1965-1966.
- H.390 Correspondence with Japanese scientists, 1967.
Includes papers *re* the *Journal of Antibiotics*.
- H.391 Correspondence with Japanese scientists, 1968-1969.
- H.392 Correspondence with Japanese scientists and others, 1970-1971.
- H.393 Correspondence with Japanese scientists and others, 1972.
Abraham had to cancel a visit to Kyoto for the 4th International Fermentation Symposium, 19-25 March.
- H.394 Correspondence with Japanese scientists and others, 1973.
- H.395-H.400 Correspondence and papers *re* visit to Japan and the USA, 1974.
Abraham attended the First Intersectional Congress of the International Association of Microbiological Societies in Tokyo in early September and then flew to San Francisco for the Fourteenth Interscience Conference on Antimicrobial Agents and Chemotherapy.
6 folders.
- H.401 Correspondence with Japanese scientists, 1974-1977.
- H.402-H.408 Correspondence and papers *re* visit to Japan in 1977, 1976-1977.
Abraham attended a meeting to mark the 15th anniversary of the Microbial Chemistry Research Foundation Institute of Microbial Chemistry and the 30th anniversary of the *Journal of Antibiotics*, Tokyo, 25 and 26 October. He gave a lecture at the meeting on B-lactam Antibiotics and Related Substances. Abraham also visited other locations in Japan and India and Malaysia.
7 folders.

Correspondence

- H.409 Correspondence with Japanese scientists, 1978.
- H.410, H.411 Correspondence with Japanese scientists, 1979.
2 folders.
- H.412 Correspondence with Japanese scientists, 1980.
Includes 'A short history of the B-lactam antibiotics', 17pp typescript by Abraham for a volume on B-lactam antibiotics.
- H.413 Correspondence with Japanese scientists, 1981.
- H.414 Correspondence with Japanese scientists, 1982.
- H.415 Correspondence with Japanese scientists, 1983
- H.416 Correspondence with Japanese scientists, 1984.
Includes 'A brief history of the discovery of the penicillins and cephalosporins', 12pp typescript + references and figures by Abraham.
- H.417 Correspondence with Japanese scientists, 1985.
Includes Abraham's curriculum vitae after 1979.
- H.418 Correspondence with Japanese scientists, 1986
Includes Abraham's curriculum vitae.
- H.419 Correspondence with Japanese scientists, 1987-1988.
Includes correspondence and papers *re* obituary and memorial symposium for H. Umezawa, Director of the Microbial Chemistry Research Foundation Institute of Microbial Chemistry and *re Journal of Antibiotics*.

Correspondence

- H.420 Correspondence with Japanese scientists, 1989-1990.
Includes correspondence and papers *re Journal of Antibiotics*.
- H.421 Correspondence with S. Yamabe, System Director of Drug Research System International, 1991-1992.
- H.422-H.429** **'Malaysia'** **1976-1994**
- The sequence includes correspondence with Singaporean scientists.
- H.422 Correspondence with Malaysian scientists, 1976-1977.
Includes invitation from Royal Society for Abraham to consider Royal Society Inter-University Council Visiting Professorship at the University of Malaya, Kuala Lumpur.
Abraham visited the Department of Genetics and Cellular Biology at the University for a few days in October 1977.
- H.423 Correspondence with Ho Coy Choke of the Department of Genetics and Cellular Biology, University of Malaya and others, 1980-1981.
- H.424-H.426 Correspondence and papers *re* First Asian Workshop on Fermentation Technology held in Kuala Lumpur, 22-24 February 1982, 1981-1982.
Abraham spoke at the Kuala Lumpur meeting on 'B-lactam Antibiotics' and the 'Biosynthesis of B-lactam Antibiotics'. He also visited Singapore and Sri Lanka.
See also F.53A.
3 folders.
- H.427 Correspondence with Malaysian and Singaporean scientists, 1982-1985.
- H.428 Correspondence with Malaysian and Singaporean scientists, 1986-1988.

Correspondence

- H.429 Correspondence with Ho Coy Choke, Department of Genetics and Cellular Biology, University of Malaya, 1989-1994.
- H.430-H.432 Spain 1970-1993**
- H.430 Correspondence *re* article on the chemistry of new antibiotics for *Tribuna Medica*, 1970-1971.
- H.431 Correspondence and papers *re* Third International Symposium on Yeast Protoplasts in Salamanca 2-5 October 1972, 1972.
- H.432 Correspondence with Spanish scientists *re* research and visits, 1978-1981, 1986, 1993.
- H.433-H.438 Sweden 1975-1992**
- H.433-H.437 Correspondence and papers *re* visit to Sweden in December 1975, 1975-1976.
- Abraham was invited by the British Council to visit the University of Umea and by the Pharmacological Society of Sweden to give its Scheele lecture.
- 5 folders.
- H.438 Correspondence with Swedish scientists and others, 1976, 1984-1992.
- H.439-H.493 USA 1946-1993, n.d.**
- H.439-H.464 General correspondence with American scientists and others, 1946-1991.
- H.439 1946-1949.
- H.440 1950-1951.

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H.448	1959.
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H.450	1961.
H.451	1962 January-April. Includes papers <i>re</i> 1962 Gordon Conference on Medicinal Chemistry.
H.452	1962 May-December. Includes papers <i>re</i> 1962 Gordon Conference on Medicinal Chemistry.
H.453	1963.

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H.454	1964.	
H.455	1965-1966.	
H.456	1967.	Includes short article on E.B. Chain written by Abraham for <i>Encyclopedia Americana</i> .
H.457	1968.	
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H.459	1970.	
H.460	1971-1972.	
H.461	1973.	Correspondence and papers <i>re</i> visit to the USA by Abraham in May.
H.462	1975, 1978-1979.	
H.463	1980-1981, 1984-1988.	
H.464	1990-1991, n.d.	
H.465-H.469	Harvard University	1978-1993 Correspondence with colleagues at Harvard <i>re</i> visits, conferences, lectures, publications etc.

Correspondence

- H.465 1978.
Includes correspondence and papers *re* symposium on the cephalosporin derivative cefoxitin held at Harvard in May.
Abraham gave a talk on the early history of the cephalosporins. Symposium proceedings were published in the first issue of *Reviews of Infectious Diseases*, January-February 1979.
- H.466 1979.
Includes draft by Abraham on 'Fleming's Discovery' for *Reviews of Infectious Diseases*.
- H.467 1980-1984.
- H.468 1985.
Includes partial draft, pp14-23, probably for Abraham's 1985 Maxwell Finland Lecture on the B-lactam antibiotics.
- H.469 1988, 1993.
- H.470, H.471 Lederle Laboratories 1959-1963
Correspondence with colleagues at Lederle Laboratories, Pearl River, New York.
- H.470 1959-1960.
- H.471 1961-1963.
- H.472-H.476 Massachusetts Institute of Technology 1973-1991
Correspondence with colleagues at the Massachusetts Institute of Technology *re* research, visits, publications etc.
- H.472 1973-1977.

Correspondence

- H.473 1978-1979.
- H.474 1980-1981.
Includes Abraham and N.G. Heatley's comments on the typescript of J.C. Sheehan's book *The enchanted ring: the untold story of penicillin* and Abraham's foreword for the book.
- H.475 1982.
- H.476 1983-1991.
- H.477-H.480 'Rutgers' 1957-1981
Contents of folder so inscribed: correspondence with colleagues at Rutgers University, New Brunswick, New Jersey and others.
In April 1957 Abraham gave the CIBA Lectures in Microbial Biochemistry at Rutgers. His topic was 'Biochemistry of Peptide and Steroid Antibiotics' and they were published in book form by John Wiley and Sons, New York.
- H.477 Correspondence *re* visit to Rutgers and other US research centres on the occasion of Abraham's CIBA Lectures, January-May 1957.
- H.478, H.479 Correspondence and papers *re* publication of lectures, June-December 1957.
2 folders.
- H.480 Correspondence with colleagues at Rutgers and others, 1957-1960, 1972-1981.
- H.481, H.482 University of California, Berkeley 1977-1988
Correspondence with colleagues at Berkeley, principally Melvin Calvin and others at the Laboratory of Chemical Biodynamics.
- H.481 1977-1980.

Correspondence

- H.482 1982-1988.
- H.483-H.493 University of Wisconsin-Madison 1973-1986
Correspondence with colleagues at Madison *re* research collaboration in the field of penicillin and cephalosporin biosynthesis, visits etc. Abraham's principal correspondent is C.J. Sih of the School of Pharmacy.
- H.483 1973 January-April.
- H.484 1973 May-June.
- H.485 1973 July-September.
- H.486 1973 October-December.
- H.487 1974 January-June.
- H.488 1974 July-November.
- H.489 1975 January-June.
- H.490 1975 August-September.
- H.491 1977.
- H.492 1978.
Includes papers *re* meeting on 'Mechanisms of B-lactam Antibiotics' at Madison, 15 December.
- H.493 1979-1986.

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H.504	1961.
H.505	1962.
H.506	1963. Includes experimental results.
H.507	1964 January-June.
H.508	1964 July-December.
H.509	1965 January-May. Includes 'Commentary & Dialogue' for ?radio broadcast on a new antibiotic from the fungus <i>cephalosporium</i> .
H.510	1965 June-November.
H.511	1966.
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H.514	1969.
H.515	1970-1971.
H.516	1972.

Correspondence

- H.517 1973 January-June.
- H.518 1973 August-December.
- H.519 1974.
Includes review of book on protoplasts and article on 'Some British Contributions to Antibiotics and Progress in Chemotherapy', both by Abraham.
- H.520 1975.
Includes short article on the cephalosporins by Abraham for the *Oxford Medical School Gazette*.
- H.521 1976.
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- H.526 1981-1982.
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H.535-H.563 REFERENCES AND RECOMMENDATIONS 1958-1996

H.535-H.549 Miscellaneous correspondence and papers *re* appointments, promotions,
grant applications etc, 1958-1996.

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H.536 1967-1969.

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H.550-H.559	Indian higher education and research institutions Correspondence and papers <i>re</i> external examining.	1961-1976
H.550, H.551	Andhra University 2 folders.	1962-1964
H.552	Banaras Hindu University	1962-1963

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H.553-H.558	Indian Institute of Science, Bangalore	1961-1976
H.553	1961-1962.	
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H.555	1965.	
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H.560-H.563	Malaysia	1977-1994.
	Correspondence <i>re</i> external examining and refereeing for the University of Malaya.	
H.560	1977-1979.	
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SECTION J

NON-TEXT MATERIAL

J.1-J.41

J.1-J.31 PHOTOGRAPHS

J.32-J.38 SLIDES

J.39-J.41 VIDEOTAPES

Non-text material

J.1-J.31	PHOTOGRAPHS	1930-1995, n.d.
J.1-J.15	Abraham and family	
J.17-J.39	Visits, events and colleagues	
J.1-J.15	Abraham and family	1930-ca 1990, n.d.
J.1, J.2	2 photographs (mounted) of school hockey teams, including Abraham. The photograph in J.1 is inscribed 'King Edward VI School. Hockey Eleven 1930'. 2 folders.	
J.3	Photograph (mounted) of school rugby team, including Abraham, inscribed 'School 2nd XV 1930'.	
J.4	Abraham in group photograph (mounted), possibly from his undergraduate years, 1932-1936.	
J.5	Abraham seated on a terrace, possibly on a visit to Norway, n.d.	
J.6	Abraham and [?his wife] on a picnic, n.d.	
J.7	2 photographs of Abraham standing in a room, location unknown, n.d.	
J.8	Portrait of Abraham, n.d.	
J.9	Abraham and his wife, inscribed on verso 'Dr and Mrs Abraham, June 1975'.	
J.10	Abraham at home, inscribed '19 February 1978, by S. Kuwabara.'	

Non-text material

- J.11 Abraham, with mountain scenery in background, possibly taken in Norway, 1979.
- J.12 Portrait of Abraham in later years seated at a desk, n.d.
- J.13 Portrait of Abraham in later years, n.d.
- J.14 Abraham standing on a roof top, possibly of his home, n.d.
- J.15 Abraham reading in a chair in later years, n.d.
- J.16-J.31 Visits, events and colleagues ca 1938-1995, n.d.**
- Various photographs of Abraham and some of his colleagues and others taken at conferences and events.
- J.16 Photographs, one each of Abraham [ca 1938-1950]; Ernst Chain, n.d.; and Howard Florey, n.d.
- J.17 Group photograph of Abraham and other Royal Society medallists, 1980, inscribed 'Sir Denys Wilkinson, Professor W.F. Vinen, Dr. J.P. Wild, Sir Edward Abraham, Dr. F.J.M. Farley, Dr. C. Milstein, Professor A.W. Johnson, Sir Derek Barton, Professor Henry Harris, Professor Wright.'
- Abraham received the Mullard Prize.
- J.18 Photograph of a portrait of Robert Robinson with inscription: 'Pleased to have your photo in the D.P album. Original at R. Soc. rooms', 4 November 1955.
- J.19 Photograph of Guy Newton, n.d.

Non-text material

- J.20 Abraham and Edwin H. Flynn in front of an exhibition display. Labelled on verso: 'Professor E.P. Abraham, who was involved in the early development work on the cephalosporins in Oxford, recently visited Eli Lilly in Indianapolis. He is shown with Dr. Edwin H. Flynn, one of the Lilly scientists who contributed to the development of this new antibiotic 'family''. N.d.
- J.21 Abraham and Edwin H. Flynn in front of an exhibition display. Labelled on verso as in J.20.
- J.22 Photograph of Abraham's wife with various people, including Henry Harris, n.d.
- J.23 Abraham, in later years, seated in an audience at a ?conference, n.d.
- J.24 Photograph of Abraham with Indian scientists, taken during his visit to India in January 1985.

The names of the Indian scientists, as inscribed on verso, are Dr R.K. Nand, Dr P.V. Deshmukb, Dr Rama Rao (from National Chemical Laboratory), Dr P.S. Borkar, Dr N.R. Chatterjee'.

This appears to have been taken on Abraham's visit to India in January / February 1985 (see F.62-F.67).
- J.25 Group photograph of Abraham and colleagues inscribed 'Sir Edward Abraham's visit to the Hope Library [Oxford] on Tuesday, October 10th 1989. Dr. F.B. Atkins, Curator of Mineralogical Collections; Dr. T.S. Kemp, Curator of Zoological Collections; Prof. D. Spencer Smith, Hope Professor; Prof. J.D.C. McConnell, Dept. of Earth Sciences; Sir Edward Abraham; Dr. W.J. Kennedy, Curator of Geological Collections; Dr. S.J. Simpson, Principal Curator; Prof. G.A. Harrison, Chairman of the Committee for Scientific Collections.'
- J.26, J.27 Award of Honorary Doctor of Science Degree ceremony at Strathclyde University, 13 July 1989.

See also J.39.
- J.26 Abraham and other Honorary graduands, including Jack Baldwin.

Non-text material

- J.27 Abraham with Chancellor of Strathclyde University.
- J.28 '50 Years of Penicillin Application', a symposium organized by the Technische Universitat Berlin, West Berlin, 9-12 September 1980.
- Various photographs taken at the symposium, contents of an envelope inscribed 'Photographs Berlin, sent 1990', sent from the Technical University of Berlin'. Included is one of Abraham delivering a lecture.
- See F.75-F.81 for correspondence and papers *re* the symposium.
- J.29 International meeting on 'Trends in Microbial Resistance to B-Lactam Antibiotics: Molecular Aspects and Clinical Implications', held in L'Aquila and Rome, 12-15 May 1990.
- Photograph of Abraham, inscribed 'Int. Congress T.M.R.A-L'Aquila and Rome May 12-15 1990.'
- See H.376, H.377 for correspondence *re* this meeting.
- J.30 Visit by Abraham to King Edward VI School, Southampton, his old school.
- Various photographs, contents of an envelope inscribed 'Portrait by Daphne Tod, Sent 1991'.
- J.31 Photograph inscribed 'John Walker, Admission to R. S. 1995'.
- J.32-J.38 SLIDES 1978, n.d.**
- J.32-J.34 Lantern Slides Undated**
- J.32 1 box of 3 lantern slides contained in a box labelled 'Pen. Chem.' Slides used for a lecture.
- J.33 1 box of 41 lantern slides used to illustrate a lecture or lectures on penicillin.
- J.34 1 box of 13 slides labelled 'Ceph. Mycelin Electron Micrographs'.

Non-text material

J.35-J.38	Lecture Slides	1978
J.35	1 box labelled 'Prof. Abraham' containing 18 slides. Some slides are dated 1978.	
J.36	1 box labelled 'Sulphanilamide other antibiotics-bioconversion' containing 11 slides.	
J.37	1 box of 14 slides labelled 'Pseudomonas B-Lactam' and 'Mary Pseudomonas Enzyme'.	
J.38	1 box labelled 'Set 1 Baldwin' and 'B-Lactamases' containing 16 slides.	
J.39-J.41	VIDEOTAPES	1989, 1990
J.39	Honorary Doctor of Science Degree ceremony at Strathclyde University, 13 July 1989. Abraham was one of the graduands. See also official photographs of the ceremony at J.26, J.27.	
J.40	Series of lectures organised to celebrate the 50th anniversary of the publication of a paper on the production and therapeutic application of penicillin. The venue was the Sir William Dunn School of Pathology and speakers included Henry Harris, Norman Heatley and Abraham. The main topic was the creation of the Dunn School, research and production of penicillin. See F.82, F.83 for further material relating to this event.	
J.41	'Conversation with Eminent Biochemists, E.P. Abraham in conversation with R. Thomas, Imperial College London, 1 May 1990. The title of the video is 'Penicillin and after, the Rise of the Antibiotic Era'. Video recorded for the UK Biochemical Society archives.	/...

Non-text material

/... In the conversation Abraham recollects parts of his early career, giving anecdotes, and gives a detailed account of the development of penicillin and the cephalosporins. The video case also contains two pieces of correspondence.

See G.22-G.26 for further material relating to this interview.

J.42 'The Action of Antibodies on Bacteria'.

J.43 'Cephalosporins in Perspective'.

J.44 'Inca balloon footage'.

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Catalogue of the records of the

E.P. Abraham Research Fund

and

E.P. Abraham Cephalosporin Fund

(1965-1991)

by Peter Harper

National Cataloguing Unit for the Archives of
Contemporary Scientists, University of Bath

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GENERAL INTRODUCTION

PROVENANCE

The papers were received in July 2000 from the Trustees, E.P. Abraham Research Fund and E.P. Abraham Cephalosporin Fund, Sir William Dunn School of Pathology, University of Oxford.

OUTLINE OF THE ESTABLISHMENT OF THE TRUSTS

Edward Abraham was a member of the larger team that turned penicillin into a clinical reality at the Dunn School and went on to develop the cephalosporin class of antibiotics. Worldwide patents covering the cephalosporin group were taken out by the National Research Development Corporation (NRDC), and these eventually yielded massive royalties. Abraham diverted the greater part of his personal share of the royalty income into two trusts to support further scientific research and education, especially at Oxford.

In June 1965 Abraham wrote to the Registrar, University of Oxford about the NRDC royalties he was likely to receive during the next few years arising from the use of cephalosporins in medicine. At that point he could not predict whether the total sum would be relatively small or quite substantial though the first payment, which would probably be made in October, was not expected to be very large. He stated that it was his present intention to set up a Trust Fund so that some of the money involved might be used primarily for the benefit of the Dunn School, though also, if the sum became large enough, for other appropriate purposes in the University or Colleges at the discretion of the Trustees. His purpose in writing to the Registrar was to ask whether he could see any objection on the part of the University to his proceeding with such a scheme, citing the Burdon-Sanderson Pathology Trust, which was set up in 1906, as a precedent in the University for such a Trust. With his proposal welcomed by the Vice-Chancellor, with whom the Registrar discussed the proposal, Abraham was able to place the setting up of a charitable trust in the hands of his advisers.

The charitable trust was called the Edward Penley Abraham Research Fund. In addition to Abraham the Rector of Lincoln College, Oxford and the Professor of Pathology in the University of Oxford were *ex officio* Trustees of the Fund. At the time of the establishment of the Fund the Rector of Lincoln was Walter Fraser Oakeshott and the Professor of Pathology, Henry Harris. Abraham alone had the power to appoint new Trustees (other than *ex officio* Trustees) during his lifetime. When Professor Henry Harris ceased to be Professor of Pathology on his appointment as Regius Professor of Medicine in the University of Oxford he was appointed a Trustee in his personal capacity. The Trust

Deed, dated 17 March 1967, enabled the Trustees to support research in the medical, biological and chemical sciences in the University of Oxford and its Colleges.

The scale of the royalty payments received by Abraham made it possible for him to establish a second charitable trust called the Edward Penley Abraham Cephalosporin Fund. The original Trustees were Abraham, George Wallace Kenner, Professor of Organic Chemistry in the University of Liverpool and Leon David Sabath M.D., then at the Harvard Medical Unit, Boston City Hospital, Massachusetts, USA. The Trust Deed, dated 15 May 1970, enabled the Trustees to support research and education in the medical, biological and chemical sciences in the University of Oxford and its Colleges and by the Royal Society. In 1977 Abraham raised the possibility in a letter to the Headmaster of his old school, King Edward VI School, Southampton that in certain circumstances he and his co-Trustees might be prepared to take steps to give some support to the medical, biological and chemical sciences in the school. This was welcomed by the school and the necessary Declaration of Trust was prepared the following year. At the end of 1978 Sir James Baddiley, Professor of Chemical Microbiology, University of Newcastle upon Tyne, agreed to act as Trustee in place of Professor Kenner who had died. In 1989 the E.P. Abraham Professor of Chemical Pathology in the University of Oxford, George Gow Brownlee, became an *ex officio* Trustee of the Fund.

DESCRIPTION OF THE MATERIAL

The papers are presented in two sections corresponding to the two charitable trusts though since Abraham was a Trustee of both Funds and they had the same accountants, bankers, solicitors and so on the distinction is not always clear cut. The papers cover the period 1965-1991.

Section A, Edward Penley Abraham Research Fund, documents the Fund from the initial proposal to establish a charitable fund in 1965 to around 1990. There is documentation relating to the establishment and early history of the fund, 1965-1969, and correspondence and papers with Abraham's advisers such as accountants and solicitors. By far the largest group of papers relates to applications to the fund, 1970-1991, presented as far as possible in their original arrangement. Correspondence and papers relating to the Newton-Abraham Visiting Professorship established by the Trust form a separate sequence, 1978-1990. There are also papers for Trustees' meetings, 1979-1990 and a set of accounts, 1967-1986.

Section B, Edward Penley Abraham Cephalosporin Fund, documents the Fund from 1970, the year of its establishment, to around 1990. By far the largest group of papers relates to applications to the fund, 1970-1991, presented as far as possible in their original arrangement. Correspondence and papers relating to Abraham and the Fund's role in the establishment of Green College, Oxford form a

separate sequence. There is also correspondence and papers with Abraham's advisers such as accountants and solicitors, a sequence of 'financial papers/papers for Trustees' meetings', 1976-1989 and a set of accounts, 1970-1986.

There is also an index of correspondents.

Peter Harper
University of Bath
June 2002

SECTION A EDWARD PENLEY ABRAHAM RESEARCH FUND, A.1-A.191 1965-1991

The Fund was established by Abraham with royalties received from the National Research Development Corporation arising from the use of cephalosporins in medicine. In addition to Abraham the Rector of Lincoln College, Oxford and the Professor of Pathology in the University of Oxford were *ex officio* Trustees of the Fund. At the time of the establishment of the Fund the Rector of Lincoln was Walter Fraser Oakeshott and the Professor of Pathology, Henry Harris. Abraham alone had the power to appoint new Trustees (other than *ex officio* Trustees) during his lifetime. When Professor Henry Harris ceased to be Professor of Pathology on his appointment as Regius Professor of Medicine in the University of Oxford he was appointed a Trustee in his personal capacity. The Trust Deed enabled the Trustees to support research in the medical, biological and chemical sciences in the University of Oxford and its Colleges.

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A.7-A.114	APPLICATIONS
A.115-A.131	VISITING PROFESSORSHIP
A.132	BARCLAYS BANK PLC
A.133-A.141	W.H. BAYLISS, SONS & CO. /KIDSONS (Chartered Accountants)
A.142-A.147	NATIONAL RESEARCH DEVELOPMENT FUND/ BRITISH TECHNOLOGY GROUP
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A.173-A.190	ACCOUNTS
A.191	MISCELLANEOUS

E.P. Abraham Research Fund

- A.1-A.6** **ESTABLISHMENT AND EARLY HISTORY** **1965-1969**
- A.1 'Papers 1965'. Contents of folder so inscribed.
- Includes correspondence with Registrar, University of Oxford *re* Abraham's proposal to set up a Trust Fund with some of the money he received as royalties from the National Research Development Corporation (NRDC) arising from the use of cephalosporins in medicine, June-July 1965.
- A.2 'Papers 1966'. Contents of folder so inscribed.
- Correspondence with solicitors, accountants, NRDC etc *re* proposed Trust, and drafts of 'Terms of the Trust Proposed', 1965-1966.
- A.3 'Papers 1967'. Contents of folder so inscribed.
- Correspondence with solicitors, NRDC, University of Oxford Registry and Rector of Lincoln College and copy of Trust Deed for the Guy Newton Research Fund Trust, February-August 1967.
- A.4 'Papers 1968'. Contents of folder so inscribed.
- Correspondence with accountants, Barclays Bank Ltd, NRDC and Robert Fleming & Co Ltd, February-December 1968.
- A.5, A.6 'Papers 1969'. Contents of folder so inscribed divided into two for ease of reference.
- Correspondence with Rector of Lincoln College, Oxford, accountants, Barclays Bank Ltd, NRDC and Robert Fleming & Co Ltd, 1969-1970.
- A.7-A.114** **APPLICATIONS** **1970-1991**
- A.7 'Applications Trustees Receipts 1970'. Contents of folder so inscribed.
- Correspondence and papers, January-October 1970.

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- A.8 'Applications Trustees Receipts 1971'. Contents of a folder so inscribed.
Correspondence and papers, January-November 1971.
- A.9 'Applications Trustees Receipts 1972'. Contents of a folder so inscribed.
Correspondence and papers, February-September 1972.
- A.10 'Applications Trustees Receipts 1973'. Contents of a folder so inscribed.
Correspondence and papers, May-December 1973.
- A.11, A.12 'Applications Receipts Trustees 1974'. Contents of a folder so inscribed
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Correspondence and papers, 1974.
- A.13-A.15 'Applications Receipts Trustees 1975'. Contents of a folder so inscribed
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Include papers *re* endowing a professorship of chemical pathology.
- A.16 'Applications Receipts Trustees Financial Summaries 1976'. Contents of
a folder so inscribed.
Correspondence and papers, 1976.
- A.17-A.20 'Applications Receipts Trustees Financial Summaries 1977'. Contents of
a folder so inscribed divided into four for ease of reference.
Correspondence and papers, 1977.
- A.21-A.24 'Correspondence - University - NRDC 1978'. Contents of folder so
inscribed divided into four for ease of reference.
Correspondence and papers, 1978.
Includes papers *re* endowing a visiting professorship in the medical,
biological and chemical sciences.

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- A.25-A.29 'Correspondence - University - NRDC 1979'. Contents of folder so inscribed divided into five for ease of reference.
Correspondence and papers, 1979.
- A.30-A.34 'Correspondence - University - NRDC Jan 1980-April 1981'. Contents of folder so inscribed divided into five for ease of reference.
Correspondence and papers, 1979-1981.
- A.35 '2 Applications - refused'. Contents of envelope so inscribed.
Correspondence and papers, 1980.
- A.36-A.42 'Correspondence & Completed Applications April 1981-March 1982'. Contents of folder so inscribed divided into seven for ease of reference.
Correspondence and papers, 1979-1982.
- A.43, A.44 'D. Phil. Students. April 1981 - March 1982'. Contents of folder so inscribed divided into two for ease of reference.
Correspondence and papers, 1980-1981.
- A.45 'E.P.A. Research Fund For Attention April 1981 - March 1982'. Contents of folder so inscribed.
Correspondence and papers, 1981-1982.
- A.46-A.52 'Completed Applications Correspondence April 1982-1983'. Contents of folder so inscribed divided into seven for ease of reference.
Correspondence and papers, 1979-1983.
- A.53 'D.Phil. Students April 1982-83'. Contents of folder so inscribed.
Correspondence and papers, 1982.

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- A.54 Contents of untitled folder.
Correspondence and papers *re* application, 1981-1983.
- A.55-A.63 'Completed Applications (Correspondence) April 1983-84'. Contents of folder so inscribed divided into nine for ease of reference.
Correspondence and papers, 1981-1984.
- A.64 Contents of untitled folder.
Correspondence and papers including list of D. Phil students 1983-1984, 1983.
- A.65-A.68 'Completed Applications'. Contents of folder so inscribed divided into four for ease of reference.
Correspondence and papers, 1981-1984.
- A.69-A.77 'Completed Applications'. Contents of folder so inscribed divided into nine for ease of reference.
Correspondence and papers, 1980-1985.
- A.78-A.88 'Completed Applications April 1985-1986'. Contents of folder so inscribed divided into eleven for ease of reference.
Correspondence and papers, 1981-1986.
- A.89, A.90 'For Attention April 1985-86'. Contents of folder so inscribed divided into two for ease of reference.
Correspondence and papers, 1983-1986.
- A.91-A.102 'Completed Applications April 1986 - December 1987'. Contents of folder so inscribed divided into twelve for ease of reference.
Correspondence and papers, 1983-1987.

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- A.103 'For Attention April 1986 - December 1987'. Contents of folder so inscribed.
Correspondence and papers, 1985-1987.
- A.104-A.113 'Completed Applications January 1988 - August 1989'. Contents of folder so inscribed divided into ten for ease of reference.
Correspondence and papers, 1984-1991.
- A.114 'For Attention January 1988 - August 1989'. Contents of folder so inscribed.
Correspondence and papers, 1986-1987.
- A.115-A.131 VISITING PROFESSORSHIP 1978-1990**
- In February Abraham wrote to the University Registrar to the effect that the E.P. Abraham Research Fund was considering whether to offer to support a Visiting Professorship in the Medical, Biological and Chemical Sciences. Welcomed by the University and the relevant Departments it was duly established with the title Newton-Abraham Visiting Professorship. The Visiting Professorship was associated with Lincoln College Oxford. The first holder was A.J. Birch of the Research School of Chemistry, Australian National University, Canberra from December 1980.
- A.115-A.118 'Visiting Professorship'. Contents of folder so inscribed divided into four for ease of reference.
Correspondence and papers *re* the establishment of the Visiting Professorship, 1978-1981.
- A.119-A.123 'Visiting Professor Electoral Board 1979-1983'. Contents of folder so inscribed divided into five for ease of reference.
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- A.124-A.127 'Visiting Professor Electoral Board 1984-June 1990'. Contents of folder so inscribed divided into four for ease of reference.
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- A.128-A.131 'Correspondence with Visiting Professors 1981-June 1990'. Contents of folder so inscribed divided into four for ease of reference.
Correspondence and papers, 1981-1990.
- A.132 BARCLAYS BANK PLC 1967-1986**
- A.132 Miscellaneous correspondence and papers *re* financial administration from the Fund's Barclay's Bank files, 1967-1986.
Includes pass book in use 1967-1971.
- A.133-A.141 W.H. BAYLISS, SONS & CO. / KIDSONS 1968-1988**
(Chartered Accountants)
- Correspondence and papers with the Fund's accountants, W.H. Bayliss, Sons & Co. (Kidsons from September 1987).
Bayliss, Sons & Co. were the accountants for the Funds established with Cephalosporin royalties and that is reflected in some of the papers listed below.
- A.133 1968, 1970.
Includes letters to H.M. Chief Inspector of Taxes on the policy of the Trust.
- A.134 1971-1973.
- A.135 1974-1976.
- A.136 1977-1978
- A.137 1979, 1981-1982.
- A.138 1983-1984.

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- A.139 1985-1986.
- A.140 1986.
Correspondence and papers *re* proposed changes in tax legislation which would affect charities.
- A.141 1987-1988.
- A.142-A.147 NATIONAL DEVELOPMENT RESEARCH CORPORATION / 1970-1987
BRITISH TECHNOLOGY GROUP**
- Includes copies of the Cephalosporin Exploitation and Revenue Sharing Accounts and related correspondence.
- A.142 1970-1974.
- A.143, A.144 1975.
Principally correspondence and papers *re* future prospects for royalty payments.
2 folders.
- A.145 1976-1981.
- A.146 1982-1985.
- A.147 1986-1987.

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A.148-A.153 **ROBERT FLEMING & CO. LTD / ROBERT FLEMING** **1970-1989**
INVESTMENT MANAGEMENT LTD

The Trustees of the E.P. Abraham Research Fund invested in the Robert Fleming Property Unit Trust. At the end of 1977 the Trustees agreed to employ Robert Fleming to provide management for all the current assets other than the amounts invested in the Oxford Trusts Pool or held on current account with the Trustees' bankers.

Correspondence and papers, 1970-1989.

A.148 1970, 1976-1977.

A.149, A.149A 1977-1978

Correspondence and papers *re* proposals for investment management.

2 folders

A.150 1979, 1983.

A.151 1984.

A.152 1985-1987.

A.153 1988-1989.

A.154 **UNIVERSITY OF OXFORD TRUSTS POOL** **1970-1988**

A.154 Correspondence and papers *re* the Fund's Trusts Pool investments, 1970-1988.

E.P. Abraham Research Fund**A.155 MOVEMENT ON GRANTS 1983-1987**

A.155 Annual records of 'movement on grants' from year ending 5 April 1983 to year ending 5 April 1987.

A.156-A.172 PAPERS FOR TRUSTEES' MEETINGS 1975-1990

Includes minutes of meetings.

A.156 1975-1976.

A.157 1977-1978.

A.158 1979-1980.

A.159 1981.

A.160 1982.

A.161, A.162 1983.
2 folders.

A.163, A.164 1984.
2 folders.

A.165, A.166 1985.
2 folders.

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A.167, A.168 1986.
2 folders.

A.169 1987.

A.170 1988.

A.171 1989.

A.172 1990.

A.173-A.190 ACCOUNTS**1967-1986**

A.173 1967.

1968.

A.174 1969.

A.175 1970.

A.176 1971.

A.177 1972.

A.178 1973.

A.179 1974.

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A.180	1975.	
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A.183	1978.	
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A.185	Year ended 5 April 1981.	
A.186	Year ended 5 April 1982.	
A.187	Year ended 5 April 1983.	
A.188	Year ended 5 April 1984.	
A.189	Year ended 5 April 1985.	
A.190	Year ended 5 April 1986.	
A.191	MISCELLANEOUS	1977-1985, n.d.
A.191	Miscellaneous correspondence and papers, 1977-1985, n.d.	

**SECTION B EDWARD PENLEY ABRAHAM CEPHALOSPORIN FUND, 1970-1991
B.1-B.148**

The Fund was established by Abraham with royalties received from the National Research Development Corporation arising from the use of cephalosporins in medicine. The original Trustees were Abraham, George Wallace Kenner, Professor of Organic Chemistry in the University of Liverpool and Leon David Sabath M.D., then at the Harvard Medical Unit, Boston City Hospital, Massachusetts, USA. The Trust Deed enabled the Trustees to support research and education in the medical, biological and chemical sciences in the University of Oxford and its Colleges and by the Royal Society.

In 1977 Abraham raised the possibility in a letter to the Headmaster of his old school, King Edward VI School, Southampton, (B.29) that in certain circumstances he and his co-Trustees might be prepared to take steps to give some support to the medical, biological and chemical sciences in the school. This was welcomed by the school and the necessary Declaration of Trust was prepared the following year.

At the end of 1978 Sir James Baddiley, Professor of Chemical Microbiology, University of Newcastle upon Tyne, agreed to act as Trustee in place of Professor Kenner who had died.

In 1989 the E.P. Abraham Professor of Chemical Pathology in the University of Oxford, George Gow Brownlee, became an *ex officio* Trustee of the Fund.

B.1-B.111	APPLICATIONS
B.112-B.114	GREEN COLLEGE, OXFORD
B.115	BARCLAYS BANK PLC
B.116, B.117	W.H. BAYLISS, SONS & CO./KIDSONS (Chartered Accountants)
B.118	MALLAM, LEWIS & NORRIS/MALLAM, LEWIS & TAYLOR (Solicitors)
B.119, B.120	NATIONAL RESEARCH DEVELOPMENT FUND/ BRITISH TECHNOLOGY GROUP

E.P. Abraham Cephalosporin Fund

B.121, B.122	ROBERT FLEMING INVESTMENT MANAGEMENT LIMITED	
B.123	UNIVERSITY OF OXFORD TRUSTS POOL	
B.124	MOVEMENTS ON GRANTS	
B.125-B.132	FINANCIAL PAPERS/PAPERS FOR TRUSTEES' MEETINGS	
B.133-B.148	ACCOUNTS	
B1-B.111	APPLICATIONS	1970-1991
	Correspondence and papers <i>re</i> applications and related matters.	
B.1, B.2	'Applications Trustees Mallam, Lewis & Taylor [Solicitors] 1970'. Contents of folder so inscribed divided into two for reference.	
	Correspondence and papers, 1970.	
	Includes correspondence and papers <i>re</i> Trust Deed.	
B.3-B.6	'Application Trustees Receipts Mallam, Lewis & Taylor [Solicitors]'. Contents of folder so inscribed divided into four for ease of reference.	
	Correspondence and papers, 1971.	
B.7, B.8	'Applications Receipts Trustees Fin. Calculations 1972'. Contents of folder so inscribed divided into two for ease of reference.	
	Correspondence and papers, 1972.	
B.9, B.10	'Applications Receipts Trustees 1973'. Contents of folder so inscribed divided into two for ease of reference.	
	Correspondence and papers, 1973.	

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- B.11, B.12 'Applications Receipts Trustees 1974'. Contents of folder so inscribed divided into two for ease of reference.
Correspondence and papers, 1974.
- B.13-B.16 'Applications Receipts Trustees Mallam Lewis & Norris [Solicitors] 1975'. Contents of folder so inscribed divided into four for ease of reference.
Correspondence and papers, 1975.
- B.17-B.23 'Applications Receipts Trustees Financial Calculations 1976'. Contents of folder so inscribed divided into seven for ease of reference.
Correspondence and papers, 1976.
- B.24-B.34 'Papers 1977 Jan-Dec'. Contents of folder so inscribed divided into eleven for ease of reference.
Correspondence and papers, 1977.
Includes Abraham's correspondence with Trustees and the Trust's solicitors Mallam, Lewis & Norris.
- B.35-B.39 'Correspondence - University - Royal Society - King Edward School - St Annes - Wellcome - St Hughs -TV - Green College - Queens - Lincoln - LMH - Mr Keating - Linacre + Trustees'. Contents of folder so inscribed divided into five for ease of reference.
Correspondence and papers, 1978.
- B.40-B.42 Correspondence and papers *re* support for film on the Paget-Gorman system for the problem of communication in cerebral palsy children, 1975-1979.
Contents of folder divided into three for ease of reference.
- B.43-B.46 'Correspondence Trustees Queens KES [King Edward VI School Southampton] 1979'. Contents of folder so inscribed divided into four for ease of reference.
Correspondence and papers, 1978-1979.

E.P. Abraham Cephalosporin Fund

- B.47-B.51 'Correspondence 1980 Jan-1981 April 2'. Contents of folder so inscribed divided into five for ease of reference.
- Correspondence and papers, 1979-1981.
- B.52 'Correspondence 1981 April 3 - March 1982'. Contents of folder so inscribed.
- 2 letters only, May 1981.
- B.53-B.57 'For attention 1981-2'. Contents of folder so inscribed divided into five for ease of reference.
- Correspondence and papers, 1980-1982.
- B.58-B.60 'For attention April 1982-1983'. Contents of folder so inscribed divided into three for ease of reference.
- Correspondence and papers, 1981-1982.
- B.61-B.66 '(Correspondence) Completed Applications April 1982-1983'. Contents of folder so inscribed divided into six for ease of reference.
- Correspondence and papers, 1981-1983.
- B.67-B.69 '(Correspondence) Completed Applications April 1983-4'. Contents of folder so inscribed divided into three for ease of reference.
- Correspondence and papers, 1982-1984.
- B.70 'Keith Murray Award Appeal Committee Minutes'. Contents of folder so inscribed.
- Correspondence and papers, 1982-1983.
- The appeal was launched to fund awards for graduate studentships at Lincoln College, Oxford in honour of Lord Murray of Newhaven, Rector of Lincoln, 1944-1953 and first Chairman of the University Grants Committee, 1953-1963. Abraham was a member of the Committee. The E.P.A. Cephalosporin Fund made a significant contribution to the appeal which involved the preparation of a supplementary deed.
- See B.89-B.91.

E.P. Abraham Cephalosporin Fund

- B.71-B.78 'Completed Applications 1984-85'. Contents of folder so inscribed divided into eight for ease of reference.
Correspondence and papers, 1983-1985.
- B.79-B.86 'Completed Applications April 1985-86'. Contents of folder so inscribed divided into eight for ease of reference.
Correspondence and papers, 1983-1986.
- B.87 'For Attention April 1985-86'. Contents of folder so inscribed.
Correspondence and papers, 1985-1986.
- B.88 'Extra Applications 11 June 1985 outside Trust Deed etc. Should any be answered further?'. Contents of folder so inscribed.
Correspondence and papers, 1983-1985.
- B.89-B.91 Correspondence and papers *re* Keith Murray Award Fund, 1982-1985.
3 folders.
See also B.70.
- B.92-B.99 'Completed Applications April 1986 - July 1987'. Contents of folder so inscribed divided into eight for ease of reference.
Correspondence and papers, 1985-1987.
- B.100 'Applications for Attention August 1987 - September 1988'. Contents of folder so inscribed.
Correspondence and papers, 1985-1987.
- B.101-B.105 'Completed Applications August 1987-August 1988'. Contents of folder so inscribed divided into five for ease of reference.
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- B.106 'Applications for Attention August 1988 - September 1989'. Contents of folder so inscribed.
- Correspondence and papers, 1988-1989.
- B.107-B.111 'Completed Applications September 1988 - August 1989'. Contents of folder so inscribed divided into five for ease of reference.
- Correspondence and papers, 1987-1991.
- B.112-B.114 GREEN COLLEGE, OXFORD 1977-1978**
- Contents of folder inscribed 'Radcliffe College' and 'Green College' divided into three for ease of reference.
- Correspondence and papers *re* the establishment of Green College, 1977-1978.
- Green College was founded in 1979 as a postgraduate college for Oxford medicine. The proposed new college was initially referred to as Radcliffe College from its Radcliffe Observatory site. Abraham was a member of the Radcliffe College Committee which was set up by the University to advise Council on the steps to be taken to bring the College into existence including recommendations to Council on the selection of the first Warden and Fellows. The E.P. Abraham Cephalosporin Fund made a generous benefaction to the University for the use of the new Society. The College was named Green College after its principal benefactors Dr Cecil Green, a founder of Texas Instruments and his wife Dr Ida Green. Sir Richard Doll was the first Warden of Green College.
- B.115 BARCLAYS BANK PLC 1970-1989**
- B.115 Miscellaneous correspondence and papers *re* financial administration from the Fund's Barclays Bank files, 1970-1989.

E.P. Abraham Cephalosporin Fund

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|---------------------|---|------------------|
| B.116, B.117 | W.H. BAYLISS, SONS & CO. / KIDSONS
(Chartered Accountants) | 1970-1989 |
| | Correspondence and papers with the Fund's accountants, W.H. Bayliss, Sons & Co. (Kidsons from September 1987). | |
| | Bayliss, Sons & Co. were the accountants for the Funds established with Cephalosporin royalties. See also A.133-A.141. | |
| B.116 | 1970-1978. | |
| | Includes correspondence <i>re</i> Chief Inspector of Taxes' enquiries <i>re</i> the Fund. | |
| B.117 | 1979-1989. | |
| B.118 | MALLAM, LEWIS & NORRIS / MALLAM, LEWIS &
TAYLOR (Solicitors) | 1970-1989 |
| B.118 | Correspondence with the Fund's solicitors, 1970-1989. | |
| | Includes draft of Deed of Appointment of George Gow Brownlee, E.P. Abraham Professor of Chemical Pathology in the University of Oxford, as an ex officio Trustee of the Fund, 1989. | |
| B.119, B.120 | NATIONAL RESEARCH DEVELOPMENT FUND /
BRITISH TECHNOLOGY GROUP | 1970-1987 |
| | Includes copies of the Cephalosporin Exploitation and Revenue Sharing Accounts and related correspondence. | |
| B.119 | 1970-1978. | |
| B.120 | 1982-1987. | |

E.P. Abraham Cephalosporin Fund

B.121, B.122 ROBERT FLEMING INVESTMENT MANAGEMENT LTD 1978-1987

Correspondence and papers, 1978-1987.

See A.148-A.153

B.121 1978-1981.

B.122 1982-1987.

B.123 UNIVERSITY OF OXFORD TRUSTS POOL 1971-1986

B.123 Correspondence and papers *re* the Fund's Trusts Pool investments, 1971-1986.

B.124 MOVEMENT ON GRANTS 1983-1987

B.124 Annual records of 'movement on grants' from year ending 5 April 1984 to year ending 5 April 1987.

B.125-B.132 FINANCIAL PAPERS / PAPERS FOR TRUSTEES' MEETINGS 1976-1989

The sequence of papers includes statements of assets, commitments, donations, expenditure, investments, royalties, and minutes of a number of meetings of Trustees and meetings with representatives of Robert Fleming Investment Management Ltd.

B.125 1976-1979.

B.126 1980-1981.

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B.129	1984.	
B.130	1985.	
B.131	1986.	
B.132	1987-1989.	
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B.134	1971.	
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B.136	1973.	
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B.138	1975.	
B.139	1976.	

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B.141	1978.
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B.143	Year ended 5 April 1981.
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B.145	Year ended 5 April 1983.
B.146	Year ended 5 April 1984.
B.147	Year ended 5 April 1985.
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