

THE ROYAL COMMISSION ON HISTORICAL MANUSCRIPTS

Report on the correspondence and papers

of

SIR ERNST BORIS CHAIN

(1906 - 1979)

biochemist

Vol I

deposited in the

Contemporary Medical Archives Centre,  
Wellcome Institute for the History of Medicine,  
London

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Catalogue of the papers and correspondence of

SIR ERNST BORIS CHAIN FRS

(1906 - 1979)

Compiled by:

Jeannine Alton and Julia Latham-Jackson

VOLUME I

List of Contents

General Introduction

Sections A - E

Deposited in the Contemporary Medical Archives Centre,  
Wellcome Institute for the History of Medicine, London

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## LIST OF CONTENTS

	<u>Page</u>
GENERAL INTRODUCTION	6
SECTION A BIOGRAPHICAL AND PERSONAL, A.1 - A.234	11
A.1 -A.6 General biographical information	11
A.7 -A.174 Career, honours and awards	13
A.175-A.217 Personal and family material	31
A.218-A.234 Photographs and press-cuttings	38
SECTION B RESEARCH AT CAMBRIDGE AND OXFORD, B.1 - B.112	40
B.1 -B.7 Research notes and drafts, 1934-39	41
B.8 -B.14 Scientific correspondence, 1931-38	42
B.15-B.33 Penicillin: research, reports, correspondence	44
B.34-B.60 Penicillin: lectures, drafts, publications	47
B.61-B.92 Historical accounts of the discovery of penicillin	50
B.93-B.112 Correspondence on the history of penicillin	54
SECTION C ISTITUTO SUPERIORE DI SANITÀ, ROME, C.1 - C.101	58
C.1 -C.17 Chain's career at Istituto, 1947-65	59
C.18-C.27 The 'Marotta Case', 1965-66 With an introductory note	62
C.28-C.65 Administrative correspondence, 1948-65	64
C.66-C.78 Research projects	68
C.79-C.101 Lectures and conferences With an introductory note	70

		<u>Page</u>
SECTION D	IMPERIAL COLLEGE, LONDON, D.1 - D.168	74
D.1 -D.42	Appointment to the Chair of Biochemistry at Imperial College	75
	Correspondence and papers, 1953-64	
D.43-D.74	Retirement and the future of the Department	80
	Correspondence and papers, 1972-79	
	With an introductory note	
D.75 -D.123	Department of Biochemistry, administrative correspondence, 1961-78	84
D.124-D.153	Department of Biochemistry, research and teaching, 1962-79	89
D.154-D.168	General correspondence on departmental and college affairs	94
SECTION E	SOCIETIES AND ORGANISATIONS, E.1 - E.238	96
	Introduction and list of contents	96
SECTION F	INDUSTRIAL CONSULTANCIES AND COLLABORATIVE RESEARCH, F.1 - F.346	137
	Introduction and list of contents	137
SECTION G	LECTURES, PUBLICATIONS, ADDRESSES, BROADCASTS, G.1 - G.221	196
G.1	Published papers and bibliography	197
G.2 -G.125	Lectures, papers, addresses	197
G.126-G.155	Undated notes and drafts	215
G.156-G.178	Radio and television	218
G.179-G.221	Correspondence <u>re</u> publications and lectures	221

	<u>Page</u>
SECTION H	
ISRAEL AND JEWISH ORGANISATIONS, H.1 - H.141	229
Introduction and list of contents	229
SECTION J	
VISITS AND CONFERENCES, J.1 - J.193	252
Introduction to Section J	252
SECTION K	
GENERAL CORRESPONDENCE, K.1 - K.341	286
With an introductory note	
LIST OF PUBLICATIONS	339
INDEX OF CORRESPONDENTS, ORGANISATIONS AND FIRMS	362



## GENERAL INTRODUCTION

### PROVENANCE

The collection, which is very extensive, was received from Lady Chain who had assembled it from Sir Ernst's rooms at Imperial College, London, and from their London home. With the assistance of her family and of Miss Vera Owen, Sir Ernst's secretary at the time of his death, she had undertaken a preliminary survey of the material and removed from it ephemera, journals and entirely family material. She had also attempted to make contact with acquaintances of Chain and the Chain family in the hope of tracing more records of his early life, as a result of which the letters to Lola Sarsowsky and Vera Katz were made available and now appear at A.200, A.200a.

### DESCRIPTION OF THE COLLECTION

Much has already been written about Chain's career and work, and no attempt will be made here at a detailed biographical account. The paragraphs below aim to do no more than furnish a guide to the contents of the manuscript collection, some of which may be less well known than certain familiar episodes. Additional explanatory notes accompany the relevant entries in the body of the catalogue.

More even than most Jewish scientists of his generation, Chain's career suffered from the vicissitudes of politics and war. His father, Michael Chain, had already left his native Russia for Berlin where Chain was born in 1906, and his death in 1919 inflicted hard times on the family; Chain's mother and sister, whom he supported as best he could from his earnings in Britain during the Thirties, disappeared without trace during the Second World War; he himself, after making a home and participating in the great research project on penicillin in Oxford, emigrated once more to Rome for many years before returning to work in London. One of the most obvious signs of all these movements is the polyglot nature of the documents.



Throughout his life Chain continued to write in Russian and, more frequently, in German. English became his language of choice (even, sometimes, when replying to German correspondents) and he also wrote and spoke fluently in French. It is remarkable to notice how rapidly he made himself familiar with Italian, writing letters and speeches and giving research talks in that language within a few months of taking up his post in Rome. This linguistic facility can be seen throughout the collection.

Although, for obvious reasons, so little survives relating to Chain's immediate family (see A.201 - A.205), he himself enjoyed a close and affectionate domestic family life, with his cousin Anna Sacharina, another émigrée for whom special permission was obtained to come to Britain to look after him and who shared his roof (wherever it was) for the rest of her life (A.206 - A.212), and with Anne Beloff whom he married in 1948 and who shared his work and interests (A.189). Many of the letters throughout the 1950s testify to their happiness and joy in the birth of their three children. It is interesting also to note their pleasure in the tranquil solitude of Western Ireland where they built a holiday home and where Chain died in 1979 (A.191).

Mention should be made of Chain's love of music and his skill as a pianist. His pianos are often mentioned, whether as an essential working tool to support his family in the harsh Berlin days, an indispensable appurtenance of his hotel accommodation on an overseas conference (J.166) or part of the household effects requiring an import licence to Ireland. As a young man, Chain had, it seems, seriously contemplated a career in music, whether as soloist or as impresario, and it remained an active principle of calm and balance in his life.

Altogether more vital, however, was the Jewish faith which underpinned his existence. References may be found passim but the whole of Section H is devoted to Israel and Jewish organisations, notably the Weizmann Institute of Science, where Chain was a governor and had at one time considered taking up an appointment. It is of interest to note that he arranged for many of his lecturing and broadcasting fees to be given to the London Synagogue or other Jewish charities, and that he declined to accept consultancy fees from close Jewish friends (F.242).



Chain's scientific career is for many synonymous with the research and development of penicillin for which he shared with Fleming and Florey the Nobel Prize for Medicine in 1945. This great achievement, so unhappily marred by various strained relationships and conflicts of view, and remaining still a matter of controversy, is documented in Section B although unfortunately no first-hand material survives in the way of laboratory notebooks, experimental observations and the like. The substantial records relating to Chain's career at Rome (Section C) and at Imperial College, London (Section D) give a fuller account (mainly through research grant applications and progress reports) of his continuing contributions to several biochemical problems such as carbohydrate metabolism, ergot alkaloids, edible protein, aeration studies, etc. Also of interest in Section D are the records of the early negotiations for the creation - administrative, financial and architectural - of the Department of Biochemistry at Imperial College, and of its development after Chain's statutory retirement in 1973. A considerable amount of additional information about Chain's lifelong active research should be sought in Sections E and F, since much was done as collaborative work under consultancy agreements with industrial firms (see especially Astra, Beechams, Ranks Hovis MacDougall) or with funding from various government and charitable organisations (see especially the British Heart Foundation, Cancer Research Campaign, Medical Research Council).

The writing, lecturing, travel and attendance at conferences concomitant with Chain's position as an acknowledged leading figure in the scientific world are documented in Sections G (Lectures and Writings) and J (Visits and Conferences). The former (Section G) includes a very substantial number of unpublished talks, addresses and papers, and also drafts and versions of published papers additional to those listed in the Bibliography compiled at Chain's death (G.1 and pp.340-361). Although Chain did not regularly keep drafts of published papers once they had appeared in print, the multiple manuscript and typescript versions which have by chance survived in some cases, testify to the care he took in the preparation even of relatively short informal speeches or writings - and indeed occasionally of 'spontaneous' or 'unprepared' remarks.

Possibly as the son of an industrial chemist, Chain always argued strongly for the forging of strong links - and well-defined frontiers of interest - between government, universities and industry. This was indeed one of the principal causes of the painful disagreements within the Oxford team over the development of penicillin, and certainly Chain continued to write and lecture extensively on the theme throughout his life; see especially 'Social responsibility and the scientist in modern western society' (1970), 'Relationships between industrial and academic laboratories' (1973), 'The pharmaceutical sciences, government and the people' (1975). In broad terms his argument was that government should provide the initial funding for research projects, universities should foster and guarantee absolute freedom of enquiry, and manufacturing industry should furnish the resources for the eventual exploitation of discovery. He practised what he preached, and in so doing earned a fearsome reputation for persistence whether in defence or opposition, both as a member of academic or official boards, grant-giving bodies or research councils (Section E) or as a consultant to industrial and pharmaceutical firms throughout the world.

Despite the wealth of material in the collection, lacunae remain, not surprisingly perhaps in view of Chain's many changes of workplace and the varying methods and efficiency of their secretariats. Mention has already been made of the lack of first-hand research records especially up to and including the penicillin work. Equally unfortunate are the gaps in the correspondence files, which are most noticeable before 1945 but also occur sporadically after that date. Sometimes only Chain's carbons survive, e.g. for the period of the Second World War, and for 1948 when he was organising his move to Rome; some years are fully represented in the remaining folders, e.g. 1958, 1959, 1963, some very sparsely, e.g. 1956, 1966-68, and some are almost completely missing, e.g. 1960. A note is usually made in the relevant catalogue entries where gaps are found, but it is notoriously more difficult to notice absence than presence, and some may have been missed.

The index includes individuals, organisations, societies and firms.



#### FURTHER MATERIAL

Lady Chain retains some personal correspondence.

A biography of Chain has been commissioned and is to be written by R.W. Clark. Mr. Clark has kindly agreed to deposit with the present collection the material assembled in the course of his research. This will eventually be incorporated at the end of Section A.

#### ACKNOWLEDGEMENTS

Our main debt is to Lady Chain and her family, for their initial work on the collection, for continuing encouragement and advice throughout the work, and for comments on the draft catalogue.

We are also indebted to:

Dr. N.G. Heatley and Dr. T.I. Williams, for information about the work at the  
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in German

Dr. C.M. MacRobert, for identifying and providing summaries of material in  
Russian

Mrs. M.M. Edwards, for careful and accurate typing.



SECTION A                      BIOGRAPHICAL AND PERSONAL    A.1 - A.234

A.1    - A.6                      GENERAL BIOGRAPHICAL INFORMATION

A.7    - A.174                   CAREER, HONOURS AND AWARDS

A.175 - A.217                   PERSONAL AND FAMILY MATERIAL

A.218 - A.234                   PHOTOGRAPHS AND PRESS-CUTTINGS

A.1-A.6                      GENERAL BIOGRAPHICAL INFORMATION

A.1                      Miscellaneous biographical notes prepared by Chain  
at various dates.

Includes 3 pp. notes prepared for a Beecham Symposium,  
1970, and 2 pp. reply to a request for information  
received from R. Robinson who was writing his auto-  
biography, 1973.

A.2                      Miscellaneous accounts of his research activities prepared  
by Chain at various dates. Some of these are duplicated  
elsewhere in the collection but are assembled here for  
ease of reference.

Includes 7 pp. typescript 'Sequence of events which led  
to my scientific activities in Italy at the Istituto Superiore  
di Sanità; 2 pp. summary of 'Research Activities'; 14 pp.  
account of 'Research carried out in the Fermentation Pilot  
Plant from 1966-1972'.

A.3                      List (incomplete) of honours, awards, medals received  
by Chain.

Miscellaneous notes of honours sent for inclusion in Imperial  
College Directory.

Biographical and personal

- A.4 Articles and biographical accounts, as published in New Scientist, March 1959, Ahead, December 1969.
- A.5 Drafts for articles and biographical sketches prepared by journalists and researchers and submitted to Chain for comment.
- Includes draft of article in Ahead (in A.4 above) not identical with published version, 1969, and 3 pp. 'Profile' of Chain by M. Weisman for publication in Menorah, 1976.
- A.6 Obituary notices and tributes, 1979-80.

A list (incomplete) of Chain's publications, prepared at Imperial College, is reproduced on pp. 340-361.

Biographical and personal

A.7-A.174 CAREER, HONOURS AND AWARDS

In chronological order.

For similar material, see also:

D.31

E.1, E.73-E.75, E.84, E.157, E.186, E.198, E.204, E.218

G.50, G.105

H.6-H.8, H.94

J.9, J.27, J.37, J.42, J.60, J.81-J.82, J.136, J.165-  
J.171, J.178

K.151

A.7 Birth Certificate, Berlin 1906.

A.8 School reports, 1920, 1924.

A.9 'Fest-Zeitung', humorous journal for end of term, 1922.

A.10 German naturalisation certificate, 1928.

A.11 Miscellaneous passes and identity cards, for University, Charité hospital, etc., Berlin, 1931-33.

A.12 Chain's passport, issued Berlin 8 October 1929, bearing visas for Argentina (1929), France, Belgium, Russia, Poland (all 1930) and first 'leave to land' stamp in Britain dated 2 April 1933. Miscellaneous 'leave to land' stamps continue to 1935 and an unconditional 'leave to land' stamp is dated 26 November 1936.

N.B. The Argentina visa relates to Chain's musical activities, see also A.175.

A.13 German exit pass to London, stamped 19 May 1933.



Biographical and personal

- A.14 Chain's Doctorate in absentia from Friedrich-Wilhelms-Universität, Berlin, May 1933.
- A.15-A.24 Material relating to Chain's arrival and arrangements to work in Britain.
- A.15 Card from A. Szent-Györgyi, recommending Chain, n.d.
- A.16 Letter from A. McKenzie, 22 August 1932, inviting Chain to work in Dundee, and another letter, 21 April 1933, recommending him to R. Robinson and to the Rockefeller Foundation.
- A.17 Letter from H. Lieb re proposed participation by Chain in lecture course at Graz, October 1933.
- A.18 References for Chain from P. Rona (Director, Pathology Institute, Charité Hospital), March 1933.
- Also includes letter re Chain's grant, letters re research, May-September 1933.
- A.19 Two draft letters by Chain, addressee(s) unknown, one dated '5.IV' and both written immediately after arrival in Britain, requesting help in finding a place to continue planned programme of research on lecithin fermentation by enzymes.
- Draft of similar letter in Russian (addressee Iosif Borisovitch) re possibility of finding work in America. n.d. but similar to above.
- A.20 Letter from Rockefeller Institute advising Chain to apply to Rockefeller Foundation for a fellowship, 21 April 1933.
- A.21 Letter from R.N. Salaman advising application to Joint Foreign Committee for financial help, 29 April 1933.
- A.22 Correspondence, 1933, re arrangements for Chain to work in the Sir William Dunn Institute, Cambridge.
- Includes copy of Chain's letter to F.G. Hopkins (8 April) and letter from N.W. Pirie outlining arrangements for Chain's work (9 September).
- Also included here is later correspondence, 1963, re retirement presents for Fred Johnson and Alf Cowell, members of the Department in Chain's time.



Biographical and personal

- A.23 Correspondence, 1933-35, with Jewish Refugees Committee and with the Liberal Jewish Synagogue re financial help for Chain.
- A.24 Shorter personal and scientific correspondence re early days in Britain, 1933-35.
- A.25 'Arische und nichtarische Mathematik'. Summary (author unknown) of article in 'Deutsche Zukunft' by Biederbach, with a ms. note by Chain 'G.V. 12.4.34', and with a letter of introduction from L.J. Harris for Chain 'who is anxious that some of this unbelievably virulent literature should be shown to those in authority'.
- Included here are two letters in Russian from a friend or colleague in Berlin about conditions in Germany (one letter dated May 1934). A summary of the contents by Dr. M. McRobert, 1982, is attached.
- An early copy of Der Sturmer, on Jewish ritual murder, c.1933-34, is also included here.
- A.26 Correspondence with the Academic Assistance Council and the Home Office re permission for Chain to remain in Britain, and the cancellation of time limit on his passport, 1935-36.
- A.27 Brief correspondence re award of Ph.D., Cambridge, June 1935.
- Includes letter from F.G. Hopkins arranging viva and adding 'You need not fear the ordeal; we shall be very merciful!'.
- A.28 Two letters, 1935, re Chain's work on snake venom.
- A.29 Personal correspondence, 1935. Includes letter re Chain's sending money to his family in Germany.

Biographical and personal

- A.30 Correspondence, 1935, re Chain's move to Oxford. Includes letter from H.W. Florey arranging a meeting with Chain at Oxford (dated 16 July, no year), letter of farewell from D.D. Woods (26 September).
- Also included here is a letter from N.G. Heatley saying that he 'should be very pleased, and honoured, to work with you, provided one or two small matters can be put right'. The letter is dated 'January 13th 1935' but this would seem to be an error for 1936.
- A.31 Correspondence re visas for France, 1937, 1938. Letter of 1938 states that visas cannot be granted in the future.
- A.32 Shorter correspondence re grants for Chain's research from British Empire Cancer Campaign, etc., 1938.
- A.33 Shorter correspondence re support for Chain's mother, 1938-39.
- A.34 Miscellaneous items of biographical interest, invitations, shorter personal correspondence, 1930s.
- A.35 Chain's British Aliens Registration card, showing his first arrival at Harwich, 2 April 1933, and his various addresses in Cambridge and Oxford until his naturalisation 1939.
- A.36 Certificate of proficiency, British Red Cross Society, 1938.
- Letter from A.R.P. Department, Oxford, declining Chain's offer of service in First Aid Section on the grounds that he was not a British subject.
- A.37 Certificate of Naturalization, issued 18 April 1939, and preliminary correspondence.
- A.38 F.S.S.U. Agreement on appointment as Departmental Demonstrator, Sir William Dunn School of Pathology, Oxford, 20 February 1940.
- Invitation to Membership of Senior Common Room, University College, Oxford, April 1942.
- A.39 Brief correspondence, 1943 and 1945, re Chain's salary.
- A.40 Letter re conferment of M.A. by decree, Oxford, 1945.
- Letter re Honorary Membership, Royal Medical Society of Edinburgh, 1945.



Biographical and personal

A.41-A.55 Visit to America, July-November 1945.

The group of U.K. scientists was headed initially by Sir Robert Robinson and included Dr. H. King.

Chain visited and/or lectured at various universities, institutions and laboratories. See A.41 for his own account of the scientific purpose of the visit.

Towards the end of his stay, the award of the Nobel Prize was announced and there is some reference to this in the later correspondence.

See B.26-B.29 for letters from colleagues at Oxford reporting on penicillin work in progress during Chain's absence.

See A.207 for letters from Chain's cousin Anna Sacharina during this period.

A.41 Copies and drafts of letters from Chain to Sir Edward Mellanby (Secretary, Medical Research Council), April 1944 and March 1945.

Letter of 1944 urges the importance of fuller exchange of information between British and American scientists on penicillin synthesis.

Letter and drafts of 1945 are re publication of material on penicillin purification, and re Chain's wish to visit America 'to become acquainted with the latest developments in the deep fermentation technique, particularly as applied to the growth of actinomycetes'.

A.42 Correspondence with Medical Research Council, British Commonwealth Scientific Office, etc. re visit, salary, etc.

A.43 Letters of introduction, laissez-passers.

A.44 Exercise book containing a brief autobiographical summary (written in 3rd person, perhaps in connection with American lecture tour), and notes on visit to an unidentified penicillin plant on 25 July. Few pages only used.

Also included here is 1 p. ms. outline itinerary of visits.

Biographical and personal

- A.45-A.48 Correspondence, etc. re lectures and visits to laboratories. In alphabetical order.
- A.45 Abbot Laboratories
- Best, C. H. (telegram)
- Connecticut Pharmaceutical Association
- Chain spoke at the Twentieth Anniversary of the College, 11-12 October, on 'The introduction of penicillin as a drug into medicine'. Correspondence continues to May 1946. Includes photographs of Chain.
- Cornell University.
- A.46 Lilly Research Laboratories
- Merck & Co.
- re possible supply of streptomycin for F.G. Hopkins.
- University of Minnesota (Mayo Foundation)
- Mount Sinai Hospital (N.Y.)
- A.47 Polytechnic Institute of Brooklyn
- The Rockefeller Foundation
- re equipment, grants, visits, congratulations on Nobel Prize.
- Saint Louis University School of Medicine.
- A.48 U.S. Department of Agriculture, Peoria
- Wyeth Institute of Applied Biochemistry
- Yale Medical Library
- A.49-A.51 Correspondence with colleagues and personal friends. In alphabetical order.
- A.49 Dakin, H. D.
- Estermann, R.
- Friedheim, E. A. H.
- Hodgkin, D. C.
- Ilse



Biographical and personal

A.50 Kolinski, M.

Lotte

Malko, N. A.

Ochoa, S.

Samojlovna, R.

Stern, K. G.

Tavernier, J. B.

A.51 Wechsler, I. S.

re proposed medical school at Hebrew University in  
Jerusalem.

Weissberger, A.

Williams, T. I.

Wrinch, D.

A.52 Miscellaneous shorter correspondence re purchase of books,  
apparatus, specimens, etc.

A.53 Draft interview with Chain for broadcast in 'Headline  
Edition', 29 October 1945 (on penicillin).

A.54 Correspondence re another interview on the subject, prepared  
for C.B.S. programme 'We The People', but not used because  
of disagreement over presentation of the script.

A.55 Miscellaneous bills, receipts, personal notes, etc.

Biographical and personal

A.56-A.77      The Nobel Prize

The Nobel Prize for Physiology and Medicine for 1945 was awarded to Fleming, Florey and Chain 'jointly for the discovery of penicillin and its curative action in various infectious diseases'.

Chain was in America when the award was announced; some of the letters and telegrams of congratulation in A.60-A.73 were therefore addressed to his cousin Anna Sacharina who kept house for him in Oxford (see also A.207).

The publicity attendant on the award prompted several letters from former friends or family acquaintances describing their wartime vicissitudes and enquiring about the fate of others. These letters have been grouped together in A.72.

A.74-A.77 contain later material relating to various celebrations and meetings organised by the Nobel Foundation, 1950-75.

See B.36-B.38 for material relating to Chain's Nobel lecture on 'The Chemical Structure of the Penicillins'.

A.56      Telegrams and letters announcing award, including brief telegram from Florey, with copies of Chain's replies, October-November

A.57      Typescript programme of Nobel Prize celebrations.

A copy of Chain's speech at the prize-giving ceremony is also included in the folder.

A.58      Miscellaneous material arising from visit, travel arrangements, invitations, menus, requests for biographical information, export licence for Nobel Medal, etc.

A.59      Translations of Swedish press coverage of the Nobel Prize celebrations.

Press-cutting from The Times announcing the award is also included here.

See A.226 for additional press-cuttings and printed material relating to the award.



Biographical and personal

- A.60-A.73 Letters and telegrams of congratulation, many with reminiscences, and references to Chain's musical talents.
- A.60 Official congratulations from Oxford University, University College, etc. Includes ms. draft of Chain's reply to the Vice-Chancellor.
- A.61 A - B
- A.62 C - D
- A.63 E - F - G
- A.64 H
- A.65 J - K - L
- A.66 M - N
- A.67 O - P
- A.68 R
- A.69 S
- A.70 V - W
- A.71 Telegrams (not indexed)
- A.72 Letters from relations, friends or family acquaintances, renewing contact after wartime events. In English, French, Russian and German. (Alphabetical order. Not indexed.)
- A.73 Unidentified or first-name signatures.
- A.74-A.77 Correspondence, etc. re Nobel Foundation meetings, 1950-75. See also E.130.
- A.74 1950
- 50th Anniversary celebrations. Chain attended, as did D. Marotta. Folder includes programme of events and correspondence with colleagues.

Biographical and personal

- A.75      1954
- Invitation to Lindau meeting, programme of lectures, correspondence.
- A.76      1955
- Chain attended, as did Marotta. The Prize for Physiology and Medicine was awarded that year to A.H.T. Theorell.
- Brief correspondence only.
- A.77      1975
- 75th Anniversary celebrations. Chain attended. Travel schedule, programme of events, list of participants, invitations, etc.
- A.78      Ms. draft letter (addressee unknown) re possibility of developing penicillin research at London School of Hygiene and Tropical Medicine. Undated, but written on British Commonwealth Scientific Office letter-paper and presumably during visit to America, autumn 1945.
- A.79, A.80      Visit to Palestine
- The visit took place in April 1946 and included discussions about the possibility of Chain's moving to work in the proposed new department of biochemistry in the Weizmann Research Center (later Institute). Folder includes letter of 12 December 1945 from E. Bergmann setting out terms of offer.
- A.79      Correspondence re lectures, requests for articles, advice on appointments, letters of thanks, etc.
- A.80      Volume of papers to commemorate 70th Anniversary of Chaim Weizmann, one of 100 privately-printed copies, sent to Chain as a memento of his visit.
- A.81      Menu of dinner given in honour of the penicillin team at Magdalen College, Oxford, 13 March 1946 and signed by participants.
- A.82      Award of Hon. Doctorate, University of Bordeaux, 1947.
- Letter of notification only.



Biographical and personal

A.83                    Nomination as Commandeur de la Légion d'Honneur, 1948.  
  
Press-cutting, oration by P. Vallery-Radot.

A.84                    Letter from H.W. Florey accepting Chain's resignation from  
the Sir William Dunn School of Pathology, Oxford, to work  
in Rome, 26 September 1949.

For material relating to Chain's period in Rome, see Section C.

A.85, A.86           Election to Fellowship of Royal Society, 1949.

A.85                   Telegram and certificate of election, arrangements for  
reception in Rome.

A.86                   Letters and telegrams of congratulation (few survive).

A.87                   Nomination as Foreign Corresponding Member, Istituto  
Lombardo, 1950.

Letter of notification.

A.88                   Election as Foreign Corresponding Member, Académie  
Nationale de Médecine, Paris, 1952.

Correspondence, 1952-54.

A.89                   Accademia Nazionale dei XL, 1953.

Booklet prepared on election.

A.90-A.94           Paul Ehrlich Prize, 1954.

The Prize was awarded to Chain in March 1954, the centenary  
of Ehrlich's birth, and gave him particular pleasure. He later  
became a member of the Council of the Paul Ehrlich Founda-  
tion (see E.137-E.145). Chain's Paul Ehrlich Lecture was  
on 'The Development of Bacterial Chemotherapy' (Bibliog. 45).  
(See G.9.) This was his first visit to Germany since 1933.

A.90                   Correspondence with Director of Paul-Ehrlich Institute and  
others re prize, arrangements for visit and lecture, translation  
and publication, etc., 1953-55.

A.91                   Correspondence with Hoechst re travel arrangements. Chain  
and Marotta were guests of the firm.

A.92                   Letters of thanks and correspondence arising from visit.

Biographical and personal

- A.93 Letters and telegrams of congratulation, some with replies by Chain. Letter from A.I. Virtanen encloses press-cutting photograph of Ehrlich ceremony.
- A.94 Programmes, schedules, biographical notes prepared for ceremony, etc.
- A.95 Hon. Doctorate, Università degli Studi di Torino, 1954.  
  
Correspondence and press-cutting.
- A.96 Letter from Comunità Israelitica di Roma re Chain's religious faith, 1955.
- A.97 Hon. Fellowship, National Institute of Sciences of India, 1955.  
  
Letters of notification.
- A.98 Hon. Membership, Central Committee of the Microbiological Society of Israel, 1955.  
  
Letters of notification.
- A.99 Election as Corresponding Member, Accademia Medica di Roma, 1955.  
  
Letter of notification.
- A.100 Award of Gold Medal in Therapeutics of the Worshipful Society of Apothecaries of London, 1957.  
  
Correspondence re award and presentation of medal; includes telegram of congratulation from Marotta.  
  
See also A.147, G.16.
- A.101 Consigliere, Sezione Laziale, Società Italiana per lo Studio delle Malattie Infettive, 1957.  
  
Letter of election.
- A.102 Conferment of Medal of the City of Paris, 1957.  
  
Notice of ceremony.



Biographical and personal

- A.103            Hon. Membership, Société Française de Microbiologie, 1959.  
  
Correspondence re election 1959, and a little later correspondence, 1979.
- A.104            Hon. Doctorate, Université de Paris, 1959.  
  
Correspondence re award of degree, arrangements for ceremony (Chain's carbons only).
- A.105            Hon. Membership, Finnish Biochemical Society, 1959.  
  
Letter of acceptance (to A.I. Virtanen) (Chain's carbon only).
- A.106            Election as Associé Étranger, Académie des Sciences, Institut de France, 1962.  
  
Correspondence, telegrams of congratulation.
- A.107            Election to Fellowship of Royal Society of Arts, 1963.  
  
Certificate only.
- A.108            Membership of Medical Advisory Committee, Hektoen Institute for Medical Research, Chicago, 1963.  
  
Letter only.
- A.109            Election as Fellow Member, World Academy of Art and Science, 1963.  
  
Correspondence re election.
- A.110            Shorter correspondence with Imperial College, mainly 1965, re Chain's flat, but includes letter, 1967, reappointing him to Chair of Biochemistry to 30 September 1973, and brief correspondence on his retirement, 1973.
- For material relating to Chain's period at Imperial College, see Section D.
- A.111            Hon. Doctorate, University of Chicago, 1965.  
  
Press release.
- A.112            Election Hon. Life Member, New York Academy of Sciences, 1966.  
  
Press release.

Biographical and personal

- A.113 Award of Carl Neuberg Medal and of Hon. Doctorate, Philadelphia College of Pharmacy and Science, 1967.
- Notification. (See J.81-J.83.)
- A.114-A.146 Knighthood, 1969.
- The knighthood was announced in the Birthday Honours and conferred on 8 July.
- A.114 Correspondence re conferment, arrangements for Investiture, coat of arms, etc.
- A.115 Ms. and typescript versions of Chain's letter to Prime Minister (H. Wilson) thanking him for recommendation for honour, and recalling the chief events of his scientific career.
- A.116 Ms. and typescript versions of Chain's speech of thanks at lunch given in his honour by Lord Rank, 11 July; speech includes autobiographical recollections and Chain's views on relations between academic, industrial and governmental sponsorship of research.
- Lunch menu also included.
- A.117 Correspondence with College of Arms, and with Imperial Society of Knights Bachelor, various dates, 1969-79.
- A.118-A.146 Letters and telegrams of congratulation, a few with replies by Chain.
- A.118 4 pp. ms. list of names, perhaps of those who sent congratulations.
- A.119 A
- A.120 Ba - Be
- A.121 Bi - Bo
- A.122 Br - Bu
- A.123 C
- A.124 D
- A.125 E - F



Biographical and personal

A.126	G
A.127	Ha
A.128	He - Hu
A.129	I - J
A.130	K
A.131	L
A.132	M
A.133	N - O
A.134	P
A.135	Ra - Ri
A.136	Ro - Ru
A.137	Sa - Se
A.138	Sh - Sn
A.139	So - Su
A.140	T
A.141	U - V - Wa - Wh
A.142	Wi
A.143	Wo - Wy
A.144	Y - Z
A.145, A.146	Unidentified and first-name signatures.

Biographical and personal

- A.147 Election to Freedom by Redemption of Worshipful Society of Apothecaries of London, 1969.
- Correspondence and notification of Election.
- Also enclosed here is later correspondence re Chain's election to the Livery of the Society, with a Certificate for use when applying to take up the Freedom of the City of London.
- See also A.100, A.174.
- A.148 Honorary Membership of Council, Società Italiana di Scienze Farmaceutiche, 1969.
- Correspondence.
- A.149 Election as Associé Étranger, Académie Nationale de Médecine, Paris, 1969.
- Correspondence.
- A.150 The Mark Twain Society.
- Correspondence notifying Chain of various honorary elections made by the Society, 1969-78.
- A.151 Nomination to Board of Electors to Sir William Dunn Chair of Biochemistry, Cambridge, 1970.
- A.152, A.153 The Athenaeum.
- A.152 Correspondence re Chain's election under Rule II, 1972.
- Includes certificate of election.
- A.153 Correspondence re nominations and elections, 1974-79.
- A.154 Award of Hanbury medal, May 1972.
- Letter of congratulation only.
- A.155 Award of Grand Decoration of Honour in Gold of the Federal Republic of Austria, and Hon. Membership of Gesellschaft der Wiener Ärzte, 1973.
- Letters of congratulation, letter re official permission to wear insignia.
- See also J.136.



Biographical and personal

- A.156            Conferment of title 'Emeritus Professor of Biochemistry',  
University of London, 1973.
- Letter only.
- A.157-A.168    Chain's 70th birthday, 1976.
- A.157            Chain's speech of thanks at the dinner given in the Middle  
Temple Hall in his honour by colleagues and friends, 15 June,  
with autobiographical recollections and personal information.
- The dinner was held during the International Symposium on  
'Biologically Active Substances - Exploration and Exploitation'.
- A.158            Ms. drafts of some of Chain's replies to birthday letters or  
telegrams.
- A.159-A.168    Letters and telegrams, a few with Chain's replies; the  
majority of the greetings are from Jewish friends and organisations,  
who attached a special significance to the attaining of this  
birthday.
- A.159            A - B
- A.160            C - E
- A.161            G - H
- A.162            J - K - L
- A.163            M - N - O
- A.164            P - R
- A.165            S
- A.166            T - V
- A.167            W - Y - Z
- A.168            First-name or unidentified signatures.

See H.20 for another birthday celebration organised for Chain by the  
Hillel Foundation.

Biographical and personal

- A.169 Place list for lunch at Windsor Castle on occasion of visit of President of Israel, E. Katzir, June 1976.
- Honorary Fellowship, Società Italiana per il Progresso delle Scienze, 1977.
- Notification of election.
- A.170 Foreign Membership, USSR Academy of Sciences, 1977.
- Brief correspondence re ceremony.
- See also E.218, H.59.
- A.171 Correspondence re celebration of 50th Anniversary of the Sir William Dunn School of Pathology, Oxford, 1977.
- A.172 Correspondence re Fellowship of the Zoological Society of London, 1978.
- A.173 Corresponding Member, Academia de Ciencias Médicas, Argentina, 1978.
- Correspondence re nomination.
- A.174 Freedom of City of London, April 1979.
- Certificate.
- Miscellaneous other certificates and tessere are included here.



Biographical and personal

A.175-A.217 PERSONAL AND FAMILY MATERIAL

A.175-A.186 Music

Chain's musical gifts were widely acknowledged. He played the piano to recital standard and also in chamber ensembles with friends. In his early days he seems to have contemplated a career in music (see A.175). Towards the end of his life it gave him great pleasure to share performances with his son Benjamin. The folders below contain correspondence with musical friends, requests for sponsorship for individuals or institutions, invitations to give recitals, attend concerts, etc. There are many additional references to musical activities and interests in general correspondence passim.

A.175 Programmes of concerts at which Chain played, 1920-22.

Documents, 1928, 1929-30, issued by the Berlin branch of the USSR Volksarbeitskommissariat, authorising Chain to go to America to engage Russian artistes and musicians to give concerts in North and South America. The visa for Argentina in Chain's passport issued in October 1929 (see A.12) suggests that he made this journey and indicates his serious consideration at that time of a musical career.

A.176 Miscellaneous material, 1930s, re concerts/recitals in Cambridge and Oxford.

A.177 1947, 1952-59

A.178 1961-67

A.179 1967-69

Includes support for Yehudi Menuhin School, London Bach Society, Royal College of Music.

A.180 1970-73

A.181 1973

Correspondence with the Heberden Society re arrangements for the Annual Dinner, 23 November. Chain and R. Kohn gave a recital after the dinner.

Letters of invitation, and of thanks, from the President refer to Chain's Honorary Membership of the Society and to the use of D-Penicillamine in the treatment of rheumatoid arthritis.

Biographical and personal

- A.182 1974-78
- A.183 Correspondence with M. Kolinski, 1936-75. Kolinski died in 1981 and an obituary published in Ethnomusicology is included here.
- A.184 Correspondence (in Russian), photographs and publicity material from N. Malko, a Russian conductor and old friend of Chain, who worked in Copenhagen and Prague and later emigrated to U.S.A. 1934-48.
- Letter of 8 December 1935 congratulates Chain on his appointment at Oxford, and insists that he cannot instruct Chain, who is a difficult pupil, in conducting.
- Other letters during 1930s include information and gossip about various composers and musicians.
- A.185 Correspondence with C.D.W. Stafford, 1965-70, mainly invitations to opera performances.
- Miscellaneous notes by Chain on composers, records, etc.
- A.186 Miscellaneous correspondence on music, 1930s-1976.
- The correspondence is in Russian and bears notes on the content kindly provided by M. MacRobert.
- A.187, A.188 Miscellaneous material re Chain's health.
- A.187 1936, includes prescriptions, medical bills, Chain's own notes on his health and family medical history, 1933-36.
- A.188 1954-79.
- A.189 Material relating to Chain's engagement and marriage to Anne Beloff. The marriage took place on 7 October 1948, at Hampstead Synagogue.
- Includes letter of good wishes signed by Florey and all colleagues in the School of Pathology, Oxford.
- Also included is brief correspondence re activities of Chain's children, 1968, 1976.



Biographical and personal

A.190

Fitzwilliam College, Cambridge, 1966-78

Chain was accepted as a student at Fitzwilliam House (as it then was) in 1933, when he was working for his Ph.D. with F.G. Hopkins. The connection, made at such a time, meant much to him. When the non-collegiate Fitzwilliam House received its Charter of Incorporation as Fitzwilliam College in 1966, the Governing Body unanimously elected Chain as an Honorary Fellow. He proposed the toast of the College at the Annual Dinner in 1967 and also gave the Inaugural Lecture of the 'College Centenary Lectures' in 1969 (see G.88).

The correspondence is with successive Masters of the College, and with colleagues, re Annual Dinners held in January each year and which Chain attended whenever his health and other engagements allowed. The folder also includes menu, table-plan and Chain's 'Toast' at the 1967 Dinner, with reminiscences of his connection with Cambridge, and the College, in the 1930s.

A.191

Correspondence and papers re Chain's house at Mulranny, Co. Mayo, mainly 1970-72, and one letter 1979.

This was a holiday house, built by Chain after he and his family had enjoyed several holidays in rented property in the district. The family moved into the house in August 1971. Chain was greatly attached to the house and its surroundings, spent as much time there as possible during his later years, and died there in 1979.

Folder includes material re the importing of Chain's Steinway grand piano, and a copy of Mayo News ('Connacht's Brightest Weekly'), August 1970, with an article 'Mulranny Captures Research V.I.P.'

See K.74, K.126 for correspondence about other property in Italy and Israel which Chain was considering purchasing at various dates.

A.192

Miscellaneous correspondence re portraits of Chain, 1969, 1973, and request for him to write his memoirs, 1979.

A.193

Two short travel notes by Chain, describing journey from Rome to London and Moscow (3 pp., n.d.), and 'Impressions of flight over Sinai desert' (3 pp., n.d. but probably 1967).

Biographical and personal

- A.194            Letters and telegrams of birthday greetings, sent to Chain, various dates, 1955-78.
- See A.157-A.168 for material relating to Chain's 70th birthday in 1976.
- A.195-A.197    Replies to letters or cables of congratulation sent by Chain to colleagues on awards of honours, Nobel prizes, etc.
- A.195            1950-59
- A.196            1960-69
- A.197            1970-79
- A.198            Replies to letters of condolence written by Chain.
- A.199            Ms. drafts for Chain's last letters, 1979.
- Mainly to personal friends, several referring to the engagement of his elder son Benny, and to his own illness.
- A.200-A.217    Family correspondence.
- Very little first-hand material survives about Chain's own family and early days. His Russian-born father Michael, an industrial chemist, died in 1919 when Chain was thirteen, and the family knew hard times during the inflationary 1920s when his mother Margarete had to let rooms in her house. After Chain settled in Britain he sent money home as far as he was able (see A.29, A.33) but his family's circumstances remained poor. His mother and sister Hedwig did not survive the Second World War (see A.205 for references to the last dates at which they were seen alive).
- A.200            Chain's letters to Lola Sarsowsky.
- 11 letters, September 1921-December 1923, and one letter c. October 1933.
- The earlier letters, many enclosed in Michael Chain's business envelopes, are mainly personal and include references to family affairs following Michael Chain's death, school, musical and political activities. Chain was strongly left-wing at that time.
- The last letter, from Britain, describes how Chain is able to send some money home, and still expresses a strongly left-wing reaction to 'bourgeois' England.

Continued



Biographical and personal

A.200 (Cont'd.) Most of the envelopes have a date, number and note of content by L. Sarsowsky (on verso). The summaries of content attached to the letters were provided by U. Horstmann in June 1982.

A.200a Chain's letters to Vera Katz.

8 letters, October 1934-April 1935. These are photocopies, sent to Lady Chain with a covering letter from Mrs. Ambrose (née Katz) in November 1982 and made available by her. They are mainly concerned with conditions in Britain and Vera Katz's plans to emigrate.

A.201-A.203 Folder of cards and letters from Chain's mother to Boris Haine, brother of Michael, with whom Chain stayed when he first arrived in London (A.201), to Chain (A.202), to Nura (Anna Sacharina, see below) and others (A.203), mainly 1933-36, and one letter 1939 to 'Meine Lieben'. The cards are not signed, and the letters are signed 'Frauchen'; some include post-scripts from Hedwig. The last letter is dated 12 August 1939.

The letters describe life in Berlin, family difficulties, loss of property and furniture including Chain's grand piano. There are many references to financial problems and Chain's support of the family.

A.204 Summons and deposition re the Chain family's debts, 1936.

Summons is dated 26 August 1936, in the name of Liselotte Goerk, minor, resulting from a previous case of 7 March 1927.

Deposition is from the Chain family's lawyer (Manecke) applying for an annulment of the distraint of property on the grounds that the property is personal belongings required in the household and for their work (this being the taking-in of lodgers and Chain's musical activities as lecturer and critic for which a desk and piano are required) and that the family's inability to meet the demands was due to the early death of Michael Chain and consequent loss of prosperity.

A.205 3 letters re Chain's mother.

Letter in Russian, 1935, re financial difficulties.

Letter from German prisoner-of-war, 1945, who had news up to beginning of 1943.

Letter in German, 1951, writer saw Margarete 1942, when Hedwig was ill.

Biographical and personal

A.206-A.212    Material re Anna Sacharina (Nura).

Anna Sacharina was a relation by marriage, her husband being a relative of Michael Chain; she was always deemed to be a cousin and referred to as such. After several shorter visits, she was allowed to settle in Britain (A.206) and kept house for Chain in Oxford. After his marriage and removal to Rome, she remained part of the household, returning later with the family to London. She died in 1978 at the age of 89.

A.206            Correspondence, 1934-37, with Home Office, officials and colleagues re permission for Anna Sacharina (then resident in Paris) to come to Britain.

Includes two postcards sent to Anna Sacharina, 1936.

A.207            Letters from Anna Sacharina to Chain, various dates, 1945-48, 1954.

The 1945 letters, many addressed to 'My dear Mops', cover the period of Chain's journey to America and the award of the Nobel Prize.

A.208            Letters from Chain to Anna Sacharina, various dates, 1957, 1958, 1961, 1963.

Letters of 1958 describe the progress of negotiations with Imperial College about Chain's proposed department there; letters of May 1961 are from China describing conditions there (see also J.30-J.34); letter of June 1961 refers to cephalosporin patent case (see also K.22-K.25).

A.209            Not allocated.

A.210            Miscellaneous shorter correspondence re Anna Sacharina, her friends and relatives, visits, etc., 1958-72.

A.211            Correspondence from Anna Sacharina, and with officials, 1965-66, re visa for Raissa Slepakova to visit her sister Anna.

In his letter to the Home Office of 28 June 1965, Chain states that Anna Sacharina (then aged 76) was 'a naturalised British subject since 1942 and has been living with me and my family since 1923 when she left the Soviet Union'.

A.212            Letters of condolence received on the death of Anna Sacharina, 1978.



Biographical and personal

- A.213 Letters and cards from W. Lederer, various dates 1933-37. Lederer was an uncle of Chain, then working at Nachod, Czechoslovakia. Letter of April 1933 is addressed to B. Haine, another uncle with whom Chain stayed on his first arrival in Britain.
- A.214 Letters from F. Eisner (a relative of Chain's mother), various dates, c.1935-59.
- A.215 Miscellaneous letters from relatives and old acquaintances, 1948-78.
- Not indexed.
- A.216 Correspondence with M. Hain (relative of Chain's father) and her husband V. Staroselsky, 1963, 1976.
- In Russian, with summary of content provided by M. MacRobert.
- A.217 Shorter personal correspondence, in Russian.

Biographical and personal

A.218-A.234      PHOTOGRAPHS AND PRESS-CUTTINGS

A.218-A.225      PHOTOGRAPHS

N.B. Other photographs relating to specific occasions and visits have been left in place.

A.218      7 photographs of Chain, taken in Jerusalem, possibly on his visit in 1946 (A.79, A.80).

A.219      Photograph of Chain, probably in Rome laboratory.

Photograph of equipment (Milan).

Photograph of Chain, probably at Imperial College.

A.220      Portrait photographs of Chain.

A.221      3 photographs of Chain and Anne Chain, n.d.

Photograph of Chain and friends, 1973.

A.222      Photographs of Chain at Honorary Degree (mounted, with citation).

Signed photograph of André Gratia.

A.223      Black album of photographs and press-cuttings of Chain's visit to South America (see J.42-J.45).

The album was sent by M. Goldman, from whom a letter is included.

A.224      Red album of photographs of the opening of the Department of Biochemistry, Wolfson Laboratories, by Queen Elizabeth the Queen Mother, 4 November 1965.

Includes photographs of Chain and his family, Linstead, Sherfield, Wolfson and members of the departmental staff.

A.225      Brown album, 'Reflections on Research and the Future of Medicine', compiled to commemorate the dedication of new research facilities of Merck Sharp and Dohme Laboratories, Rahway, New Jersey, May 1966 (see also J.70-J.73).

Includes photographs of many distinguished guests.



Biographical and personal

- A.226-A.234 PRESS-CUTTINGS
- A.226 Material relating to award of Nobel Prize, visit to Stockholm and press comment on penicillin, etc. Mainly c.1945.  
1 Box.
- A.227 Folder of press-cuttings, mainly re lectures, conferences and visits, 1959-60.
- A.228 Folder of press-cuttings, mainly re affairs of Istituto Superiore di Sanità, Marotta case and other matters re science in Italy, c.1963-64.
- A.229 Folder of miscellaneous material, 1950s, 1960s.
- A.230 Envelope of press-cuttings re Chain's Trueman Wood Lecture, 1963.
- A.231 Envelope of miscellaneous press-cuttings, 1972-73.
- A.232 Folder of miscellaneous material, 1960s.
- A.233 Blue album of press-cuttings, mainly 1962-65. Includes material re work with Beechams.
- A.234 Large blue album of press-cuttings, mainly 1965-71.

<u>SECTION B</u>	<u>RESEARCH AT CAMBRIDGE AND OXFORD B.1 - B.112</u>
B.1 - B.7	RESEARCH NOTES AND DRAFTS, 1934 - 39
B.8 - B.14	SCIENTIFIC CORRESPONDENCE, 1931 - 38
B.15 - B.33	PENICILLIN: RESEARCH, REPORTS, CORRESPONDENCE
B.34 - B.60	PENICILLIN: LECTURES, DRAFTS, PUBLICATIONS
B.61 - B.92	HISTORICAL ACCOUNTS OF THE DISCOVERY OF PENICILLIN
B.93 - B.112	CORRESPONDENCE ON THE HISTORY OF PENICILLIN

This Section documents Chain's early research at Cambridge and Oxford on lecithin and snake venom, and the work in Oxford on penicillin which led to the award of the Nobel Prize with Fleming and Florey in 1945.

It will be obvious from the above list of contents that very little actual research material has survived from this period. There are no notebooks, few records of experiments (with the possible exception of B.1) and even the scientific correspondence is very sparse for the 1930s and consists of Chain's carbons only for the duration of the Second World War. B.15ff. contains a few documents relating to the early penicillin work, in particular the draft for the grant application to the Rockefeller Foundation submitted by Florey in 1939 (see also B.107), but most of the information about this period is to be found in the historical accounts and correspondence at B.61 - B.112.

See C.4 - C.9 for carbon copies of 1948 correspondence including some references to penicillin.



Research at Cambridge and Oxford

B.1-B.7 RESEARCH NOTES AND DRAFTS, 1934-39

- B.1 Bundles of ms. notes and drafts in German, mainly relating to work on enzymes, including lecithin. The papers appear to be in no particular order and are undated, with one exception (14.8.34.).

The notes almost certainly relate to work with H. Fischgold with whom Chain published 2 papers in 1934-35. A draft letter to Fischgold, 19 February 1934, which was found among them, has now been transferred to B.9

- B.2 'The determination of the isoelectric point of lecithin and spingomyelin', by E. Chain, H. Fischgold and J. Kemp.

6 pp. typescript draft of paper published in a slightly different form, and without Fischgold's name, in Biochem. J., 1934 (Bibliog. 3).

For correspondence with Fischgold see B.9

- B.3 Ms. and typescript drafts for talk on enzyme reactions, n.d., c.1934.

Folder also includes 1 p. ms. note on lecithin in an unidentified hand.

- B.4 'Some chemical and biochemical investigations on phospholipins'

Chain's Cambridge Ph.D. thesis, 1935. For brief related correspondence see A.27.

- B.5 'Studies on Phosphorylcholine', by A.B.L. Beznák and E. Chain.

3 typescript drafts (one incomplete) and originals of figures I - VI for paper published in Quart. J. Exp. Physiol., 1937 (Bibliog. 9).

For correspondence from Beznák see B.13

- B.6 Ms. and typescript research notes and drafts in English and German, in no apparent order, n.d., c.1936 onwards.

- B.7 Ms. and typescript notes and drafts, c.1937-39.

Includes draft letter of application for a grant to visit Stockholm in connection with the work on snake venom, n.d.

Research at Cambridge and Oxford

B.8-B.14

SCIENTIFIC CORRESPONDENCE, 1931-38

See also A.28, K.209.

B.8

1931

Brühl, L. J.

March

re specimens of Norwegian whale liver and  
pancreas.

1933

Walton, A.

August

Letter to Florey re sample of boar mucin.

B.9

1934 (and n.d.)

Fischgold, H.

February-November

Correspondence re publication of collaborative  
research papers (see B.1, B.2). Sequence includes  
letter from an unidentified correspondent, 30 January  
1934, and referees' reports on paper by Fischgold  
and Chain submitted for publication in Proc. R. Soc. Lon.

B.10

1935

Gulland, J. M.

October

re lecithinase.

Hall, H. W.

December

re Warburg flasks (p.2 of another letter re Warburg  
flasks is also included here).

Hopkins, F. G.

March

Krebs, H. A.

August

B.11

Munch, J. C.

May

Reichel, J.

April

re sample of antivenin.

Wrinch, D. M.

November

Yudkin, J. (and Yudkin, M.)

October



Research at Cambridge and Oxford

B.12      1936

Butantan Institute, Brazil  
(Chain's carbon only).

November

Fildes, P.  
(Chain's carbon only)

December

Heatley, N.    G.

January-February

Köhler, F.

December

Sending catalogue of apparatus.

(signature illegible)

June

re samples required for Chain's research.

B.13      1937

Beznák, A.    B.    L.

March

re reprints of joint paper with Chain (Bibliog. 9).

(signature illegible)

January

re possible collaboration with Chain.

B.14      1938

Menkin, V.

October

re leukotaxine.

Myrbäck, K.

November

re supply of yeast for preparation of apozymase.

Valentine, A.    H.

July

Comments on paper published by Chain in Biochem. J.  
(Bibliog. 11).

Research at Cambridge and Oxford

B.15-B.33      PENICILLIN: RESEARCH, REPORTS, CORRESPONDENCE

- B.15      'Preparation from certain bacteria and fungi of strongly bactericidal enzymes, effective against staphylococci, pneumococci and streptococci'
- 3 pp. ms. draft outlining proposed investigation of the bactericidal principle' in certain strains of penicillium and actinomyces. n.d., perhaps intended for grant application.
- B.16      Typescript drafts for grant application to the Rockefeller Foundation, submitted by Florey in November 1939.
- See also B.107.
- B.17      'Report on biochemical research carried out during the year 1941'
- 3 pp. typescript with ms. date 28 August 1941.
- B.18      2 photographs of apparatus with a ms. note by N.G. Heatley (1980) 'Part of the war-time plant for extraction of penicillin designed and built by A.G. Sanders and J. Kent (with help from G. Maskell) at the Sir William Dunn School of Pathology, Oxford, 1942-43'.
- B.19      Undated ms. notes and diagrams, mainly re penicillin.
- B.20      'Report on teaching activities and research during the tenure of an University Demonstratorship in Chemical Pathology in the years 1941-1945'
- 4 pp. typescript draft.
- B.21-B.25      Carbon copies of Chain's outgoing correspondence, October 1940-July 1945. These were filed in a single chronological sequence which has now been split into several folders for ease of reference. Very occasionally the sequence included an incoming letter and these have been left in place and indexed. Although Chain's carbons would not normally be indexed, some of the correspondents are cross-referenced in the index as an additional aid to researchers.



Research at Cambridge and Oxford

- B.21      October-December 1940
- Mainly letters to various colleagues to accompany reprints of Lancet paper (Bibliog. 19) and/or samples of penicillin culture. Includes letter to L.A. Epstein, 19 November, re preparation of collaborative paper (Bibliog. 23) for publication, and Epstein's ms. reply.
- B.22      March 1941, February-November 1942
- Includes letter to the Editor of Nature, 17 February 1942, withdrawing note by Chain and Abraham on the purification of penicillin after a government request to stop all publications on penicillin, and request to I.C.I. for a sample of crude penicillin, 24 June 1942.
- B.23      April-December 1943
- Includes letter to Sir Robert Robinson, 24 May, re penicillin supply.
- B.24      January-December 1944
- Includes letter to M. Howarth re proposed article on penicillin for Strand magazine, to editors of various journals re proofs, etc. of papers (e.g. Bibliog. 31, 32) and to B.C. Wright re film about penicillin.
- B.25      January-July 1945
- Includes draft letter to F.G. Young, 25 February, commenting on recently published paper by Glaxo workers on preparation of purified penicillin, letter to Mellanby, 10 March, re restrictions on publication of penicillin work, and 2 letters to Sir Henry Tizard, 3 and 17 July, re the public view of the role of the Oxford workers in the penicillin story.
- B.26-B.29      Letters from colleagues at the Sir William Dunn School, July-October 1945, reporting on penicillin work in progress during Chain's absence in U.S.A.
- See A.41-A.55 for additional material relating to Chain's visit to U.S.A.

Research at Cambridge and Oxford

- B.26      Burt, J.
- Letters are numbered 2-16. (nos. 6-8 are missing from the sequence).
- B.27      Callow, D.
- Duthie, E.    S.
- B.28      Florey, H.    W.
- B.29      Philpot, F.    J.    (Flops)
- B.30      Miscellaneous correspondence, September-November 1945
- Includes copy of letter from Chain to the Rockefeller Foundation re grant for purchase of molecular distillation equipment, and letter from A.W.M. Ellis inviting Chain to meet representatives of the Rockefeller Foundation in Oxford.
- B.31      Ms. flow diagram for a fermentation plant with separate sketch of pipe layout for antifoam tank, signed 'Oxford 2/9-46. IB'.
- B.32      Ms. notes on the published literature relating to penicillin, 1943-48, arranged under subject headings. Subjects include 'Lysis by penicillin', 'Penicillinase', 'Production', 'Acquired resistance' and 'Mode of action'.
- B.33      Ms. notes similar to above, but on reports from American laboratories sent to the Committee for Penicillin Synthesis of the Medical Research Council under their agreement with the U.S. Office of Scientific Research and Development. The reports are numbered (e.g.) CPS 13 Merck, CPS 96 Squibb, CPS 221 Cornell, etc. Very few of them are dated, but according to Chain in his Nobel lecture (Bibliog. 35) the first reports were received in England in April 1944 and the arrangement continued until October 1945.



Research at Cambridge and Oxford

B.34-B.60      PENICILLIN: LECTURES, DRAFTS, PUBLICATIONS, 1944-49

See also G.2, G.3.

B.34      Copy of British Medical Bulletin, 2, 1, 1944, devoted to 'Penicillin 1929-43', including articles contributed by Chain, Fleming and Florey.

B.35      Russian translation of article on Penicillin published in Endeavour, 3, 9, 1944 (Bibliog. 32).

B.36-B.38      'The Chemical Structure of the Penicillins'

Nobel Lecture, delivered 20 March 1946 (Bibliog. 35).  
See also A.56-A.77 for material relating to the award of the Nobel Prize.

B.36      Complete typescript with ms. corrections.

B.37      Incomplete ms. and typescript drafts.

B.38      2 envelopes labelled 'Synthesis' and 'Degradation' containing photographs of figures and diagrams. These were found with B.36 and some of them correspond with the figures in the published version of the lecture.

B.39      Fragmentary ms. drafts (mainly opening paragraphs) for lectures on penicillin in Holland, Denmark, Scotland, Finland, Palestine and Newcastle, n.d., but probably all 1946.

For correspondence re Chain's visit to Palestine see A.79, A.80.

B.40      Miscellaneous requests to lecture, 1946.

B.41      'What is penicillin?'

6 pp. ms. for talk on penicillin, n.d.

B.42      Patent specification for 'Improvements in or relating to the preparation of stable penicillin-containing solutions', by Chain and F.J. Philpot, 24 December 1947.

Includes a letter from the Patent Agents, 8 November 1948.

See also K.180.

Research at Cambridge and Oxford

- B.43        'The catalytic effect of metal ions on the alcoholysis of the penicillins', by E. Chain and F.J. Philpot.  
  
14 pp. typescript + 1 additional page, n.d.  
  
Presumably not published. Not in Bibliog.
- B.44        'Structural and synthetic studies on Penicillin'.  
  
Ms. and typescript drafts for talk in Paris, n.d., c.1948.
- B.45        'The Industrial Production of Penicillin'  
  
95 pp. typescript memorandum with Supplements prepared by Chain for the U.S.S.R. in 1948 (see correspondence below). Ms. draft for pp.13-17 is also included in the folder.
- B.46        Carbon copies of Chain's letters to members of the U.S.S.R. Trade Delegation, April-September 1948, and a ms. draft in reply to a letter from one of the members of the delegation (N. Borodin) written on 23 January [1948]. Most of the letters refer to the preparation of the memorandum now at B.45 which was submitted to the Trade Delegation with a covering letter on 23 September.
- B.47        'The case for a state-owned penicillin factory in this country'  
  
10 pp. typescript memorandum, n.d., but c.1948.  
  
See also K.14, K.286.
- B.48-B.53    Material relating to collaborative book with Florey et al. ('Antibiotics'), published by Oxford University Press, 1949.
- B.48        Typescript draft of chapter on 'Acquired resistance to penicillin in vitro', with a few ms. corrections by J. Burt.
- B.49        Typescript draft of chapter on 'The nature of the action of penicillin' with similar ms. corrections.
- B.50        Typescript draft of chapter on 'Penicillinase' with similar ms. corrections.
- B.51        Drafts of 'Table of Contents' for Volume II marked 'alternative A', 'alternative B', and list of references.



Research at Cambridge and Oxford

- B.52 Correspondence with Florey and Abraham re the book, 1948-49.
- B.53 Correspondence with the Medical Editor, Oxford University Press, re royalties, etc., 1950.
- B.54-B.60 Reports, photographs and other material re penicillin sent to Chain for information.
- B.54 'Penicillin'. 127 pp. monograph produced by Merck & Co. Inc., June 1944. Ms. note on the front cover reads 'Recd. 23/5/45 Sir Howard Florey'.
- B.55 'Biosynthesis of Penicillins'. 7 pp. duplicated typescript issued under the auspices of the Committee on Medical Research (O.S.R.D., Washington) and the Medical Research Council, n.d., c.1946, as preliminary to a joint monograph on penicillin.
- Memorandum to 'Authors of contributions for the penicillin monograph'. 4 pp. duplicated typescript, n.d.
- B.56 'Summarised Description of the Speke Process for the Manufacture of B.P. Standard Amorphous Penicillin as at 1st August 1947'. 4 pp. typescript.
- Duplicated typescript extracts from the Federal Register relating to penicillin, July 1947-March 1948.
- B.57 Photographs re penicillin issued by the Ministry of Information.
- B.58 Photographs sent to Chain by Chas. Pfizer & Co., 18 January 1946.
- B.59 Miscellaneous other photographs. Includes a letter from Distillers Co. Ltd., 14 February 1947, re photographs for book on penicillin.
- B.60 Miscellaneous diagrams.

Research at Cambridge and Oxford

B.61-B.92 HISTORICAL ACCOUNTS OF THE DISCOVERY OF PENICILLIN

The following papers consist mainly of drafts for publications, lectures, contributions to symposia, etc. and a little correspondence. The main sequence of correspondence is at B.93ff.

See also F.76, F.177, F.236, G.88, J.108, J.184, J.186-J.189.

B.61 4 pp. ms. draft, describing the early work on penicillin at Oxford, n.d.

B.62 'Short account of the events which led to the re-investigation of the chemical and biological properties of penicillin in the Sir William Dunn School of Pathology'.

4 pp. typescript, n.d., c.1944.

B.63 Copies of two letters to 'Professor Burn', 6 and 31 January 1945, re statement on the origin of the penicillin work in Oxford.  
A 6 pp. typescript is appended to the second letter.

B.64 4 pp. ms. in German re the discovery of penicillin, n.d.

B.65 13 pp. typescript draft of letter to the Evening Standard, September 1952, containing an account of the discovery of penicillin.

The letter was not published, but Chain sent copies of it to various newspapers and journals; correspondence with editors of the Lancet, Sunday Times and Discovery is included in the folder.

B.66 'Alexander Fleming and the history of the penicillin discovery'

22 pp. typescript, English version of article published in Nuova Antologia, 1955 (Bibliog. 48).

Brief correspondence arising from the Italian version is also included in the folder.

B.67 18 pp. typescript, autobiographical account including description of the early penicillin research, n.d., c.1956.



Research at Cambridge and Oxford

- B.67A 'Extract from a lecture on Antibiotics to be given in London in November 1964'
- 9 pp. typescript account of early penicillin work. Part of the Oliver-Sharpey lecture (see G.51).
- B.68-B.72 Material arising from the death of Lord Florey in February 1968.
- B.68 Ms. and typescript drafts for appreciations of Florey written for various newspapers and journals.
- B.69 Correspondence with the Editor of the British Medical Journal arising from their leader on Florey on 1 March 1968.
- B.70 Letters to the Editor of The Listener re article on Florey, June 1969. A reprint of the article is included in the folder.
- B.71, B.72 Correspondence with the President (P.M.S. Blackett) and the Biological Secretary (B. Katz) of the Royal Society re the Florey Memorial Appeal. Includes ms. drafts of several long letters from Chain commenting on the text of the appeal pamphlet.
- B.71 Correspondence with Blackett, February-March 1969. Includes 2 pp. transcript of part of a talk recorded by Florey in Australia, c.1965, with a letter from the producer of the B.B.C. radio programme 'Portrait of Lord Florey', referred to in B.70.
- B.72 Correspondence with Katz, February-May 1969.
- B.73-B.84 Discussion meeting on 'Penicillin and related antibiotics - past, present and future', held jointly by the Royal Society and the Royal College of Physicians to commemorate the thirtieth anniversary of the introduction of penicillin into medicine, 20-21 May 1971. The meeting was organised by Chain and E.J. Stokes and Chain delivered the opening address on 'Thirty Years of Penicillin Therapy' (Bibliog. 149).
- B.73 Correspondence with the Royal Society, July-September 1969, including letter from the Executive Secretary, 3 July, inviting Chain to organise a discussion meeting on the subject of antibiotics.
- B.74 Correspondence with the President of the Royal College of Physicians, July-September 1969, re arrangements for holding a joint meeting with the Royal Society.

Research at Cambridge and Oxford

- B.75, B.76 Correspondence with the Royal Society and others re programme, financial arrangements, invitations to participants, etc., 1970-71.
- B.75 July-December 1970
- B.76 January-May 1971
- B.77-B.80 Correspondence with colleagues invited to attend the meeting. In alphabetical order.
- B.77 B - N
- B.78 P
- B.79 P - S
- B.80 S - W
- B.81 Fragmentary ms. drafts and complete typescript of Chain's paper on 'Thirty Years of Penicillin Therapy'
- B.82 Correspondence re arrangements for publication of contributions to the meeting in Notes and Records of the Royal Society and the Journal of the Royal College of Physicians.
- B.83, B.84 Correspondence with recipients of complimentary copies of Chain's paper on 'Thirty Years of Penicillin Therapy'.
- B.83 B - H
- B.84 R - T
- B.85 Typescript draft describing the early work on penicillin, sent to Chain by the Earl of Halsbury, 1971. The typescript has corrections in Chain's hand.
- B.86-B.88 'The Early Years of the Penicillin Discovery'

This was a talk given by Chain at a symposium on 'Penicillin 1928-78' held at St. Mary's Hospital Medical School, London, 10 November 1978. An edited version of the talk was published in the inaugural issue of Trends in Pharmacological Sciences (TIPS), 1979 (Bibliog. 181).

Continued



Research at Cambridge and Oxford

- B.86-B.88  
(Cont'd.) Chain used the paper as the basis for a more extended version which he gave at the Symposium on the History of Antibiotics, Honolulu, April 1979 (see J.186-J.189).
- B.86 Correspondence with the organiser of the St. Mary's Symposium (A.A. Glynn), April-November 1978. Includes programme and text of Chain's opening remarks.  
  
See also E.86.
- B.87 Typescript of Chain's talk.
- B.88 Correspondence with the Editor of TIPS, November 1978-February 1979.
- B.89 'The Discovery of Penicillin and its Curative Properties'  
  
Ms. and typescript drafts, n.d.
- B.90 Royal Society discussion meeting on 'Penicillin 50 Years After Fleming', 1-3 May 1979. Chain was asked to chair a session.  
  
Correspondence with the organisers and with the Royal Society.
- B.91 'The Early Years of the Penicillin Discovery 1929-1941'  
  
Ms. and typescript of article published in abbreviated form in Trends in Biochemical Sciences (TIBS), 1979, under the title 'Fleming's Contributions to the Penicillin Discovery'. The alterations were made because Chain published a similar article in TIPS at the same time (Bibliog. 181). Folder includes correspondence with O. Hoffmann-Ostenhof and the Editor of TIBS.
- B.92 Fragmentary ms. notes re penicillin, n.d.

Research at Cambridge and Oxford

B.93-B.112 CORRESPONDENCE ON THE HISTORY OF PENICILLIN

Much of the following correspondence consists of comments by Chain on drafts or publications by others. The correspondents are arranged in alphabetical order.

See also K.202.

B.93 Abraham, E. P. April-May 1969

re Abraham's Royal Society Memoir of Florey and the grant application submitted to the Rockefeller Foundation by Florey in 1939.

See also B.107

B.94 Anson, M. L. February 1958

re autobiography of S.A. Waksman.

AJffarth, F. December 1954

Baldry, P. E. June 1977

Comments on Baldry's book 'The Battle against Bacteria'.

B.95 British Broadcasting Corporation May 1970

re script of broadcast for children 'Fleming Discovers Penicillin'. Includes 2 versions of the script.

B.96 Calder, R. (later Baron Ritchie-Calder) October-November 1952

Mainly re review by Calder of biography of Fleming by Ludovici.

B.97 Catherwood, F. (and others) January-July 1977

Comments on the treatment of the penicillin discovery in the John Player Foundation British Genius Exhibition. Includes correspondence with the Exhibition Director and letter to the Editor of The Times.

B.98 Central Office of Information October 1962

Chain's carbon only, commenting on script for film of penicillin story.



Research at Cambridge and Oxford

- |             |   |                        |
|-------------|---|------------------------|
| B.99        | Clarke, E.  | July 1971-January 1972 |
|             | re medal commemorating the introduction of penicillin into therapy and text of proposed accompanying brochure. Includes copy of draft for the brochure and letter from Chain with comments and corrections. |                        |
| B.100       | Eagle, H.   | June 1959              |
|             | Enebdck, C.   | April-May 1975         |
|             | Includes Chain's brief comments on article by Enebdck on the penicillin discovery.  |                        |
| B.101       | Ford, B. J.   | July-August 1974       |
|             | Comments on reply by Ford to a letter by Chain published in <u>Nature</u> .   |                        |
|             | Geissler, E.  | February 1957          |
|             | Howard-Jones, N.  | July 1974              |
|             | Comments on article by Howard-Jones published in <u>World Health</u> .  |                        |
| B.102-B.105 | Macfarlane, R. G.   | 1976-79                |
|             | Correspondence re Macfarlane's biography of Lord Florey ('Howard Florey. The Making of a Great Scientist', Oxford University Press, 1979).  |                        |
| B.102       | June-July 1976  |                        |
| B.103       | January-May 1978  |                        |
| B.104       | December 1978-January 1979  |                        |
|             | Includes 6 pp. letter from Chain, 3 January, commenting on draft chapters of the book.  |                        |
| B.105       | Correspondence with the Book Review Editor of <u>Nature</u> , April-May 1979 arising from request to Chain to review Macfarlane's book.   |                        |

Research at Cambridge and Oxford

- B.106                      Marti-Ibanez, F.                      November 1958
- Chain's carbon only, commenting on article in MD Medical News Magazine.
- Olby, R.                      October-November 1972
- re grant applications by Chain and Florey associated with the penicillin work.
- Ratcliff,                      n.d.
- Chain's ms. draft only, commenting on booklet 'The Story of Penicillin'.
- B.107                      Rockefeller Foundation                      April-May 1969
- Request by Chain for a copy of Florey's original grant application relating to the penicillin work. This is now included in the folder.
- See also B.16.
- B.108                      Smithsonian Institution                      June-August 1974
- re penicillin exhibit at The National Museum of History and Technology. Includes copy of letter from M. Sela.
- B.109                      Trueta, J.                      June 1973, June 1976
- re various aspects of the early penicillin history including the circumstances of the first toxicity test on penicillin.
- B.110                      Van Heyningen, W.      E.                      April 1959
- Correspondence arising from a letter from Van Heyningen to The Sunday Times about the part played by other members of the Sir William Dunn School of Pathology in the early penicillin work.
- B.111                      Williams, H.                      May 1963
- Chain's carbon only.
- Wilson, A.      D.                      June-July 1971, September 1976
- Includes comments on Wilson's book 'Penicillin in Perspective'.



Research at Cambridge and Oxford

B.112

Wunderlich, G.

March 1969

Wyatt, H. V.

April-May 1975

Comments on article by Wyatt.

SECTION C      ISTITUTO SUPERIORE DI SANITÀ, ROME C.1 - C.101

C.1 - C.17      CHAIN'S CAREER AT ISTITUTO, 1947 - 65

C.18 - C.27      THE 'MAROTTA CASE', 1965 - 66

With an introductory note

C.28 - C.65      ADMINISTRATIVE CORRESPONDENCE, 1948 - 65

C.28 - C.41      Equipment, supplies

C.42 - C.45      Requests for reprints and information

C.46 - C.53      Staff

C.54 - C.65      Requests to visit/work in Chain's laboratory

C.66 - C.78      RESEARCH PROJECTS

C.79 - C.101      LECTURES AND CONFERENCES

With an introductory note



Istituto Superiore di Sanità, Rome

C.1-C.17 CHAIN'S CAREER AT ISTITUTO, 1947-65

C.1 Letter from Madame Bovet, 10 May 1947, on research plans and hopes for collaboration with Chain at Istituto in Rome.

C.2 Draft letter of appointment to direct Laboratory of Biological Chemistry and conduct a course of lectures at Istituto for one year 1 October 1948-September 1949.

C.3 Miscellaneous plans for equipment at Istituto.

Includes 5 pp. ms. 'Suggestions for the equipment of a laboratory for studies on penicillin fermentation', by Chain.

3 pp. 'List of items shipped ...'

List of Chain's journals.

C.4-C.9 Correspondence, January-October 1948

This is a sequence of carbon copies only of Chain's correspondence on all topics for this period.

The main theme is Chain's forthcoming appointment to the Istituto from 1 October, with arrangements for terms of contract, building, equipment and supplies, books and journals for the laboratory, and removal arrangements for Chain, his cousin Mrs. Sacharina, and his technician D. Callow who accompanied him on secondment.

There is also general scientific correspondence on theses, lectures, visits to several countries to advise on penicillin production, consultancies, patent rights, publications.

C.4 January (1 letter only), March 1 (1 letter only), April

C.5 May

C.6 June

C.7 July Includes letter, 5 July, on acquired resistance of bacteria to penicillin.

C.8 August

C.9 September-October

Istituto Superiore di Sanità, Rome

- C.10, C.11 Correspondence with editors, journalists and authors re articles or information on Istituto and on Chain's research centre.
- C.10 1951-53
- C.11 1955-59
- C.12 2 typescript drafts on Istituto, its work and personnel, n.d.  
  
In original folder inscribed 'Manoscritto del Film sull'Istituto' and perhaps intended as commentary to film.
- C.13 'My activities at the Istituto Superiore di Sanità - a brief survey'  
  
Typescript prepared by Chain for R.P. Linstead (Rector, Imperial College), May 1958, 11 pp.  
  
There is another copy at D.8.
- C.14 Correspondence and informal writings by Chain describing work at Istituto.  
  
Includes ms. drafts for letters written from Rome to Weizmann (1948), McKenzie, Williams (1949) describing life and work.  
  
8 pp. ms. speech (in Italian) welcoming guests at a party at home and describing work, n.d., but on first birthday of son.  
  
3 pp. typescript speech welcoming guests at a dinner given at Chain's home for retirement of Marotta and appointment of Giacomello as his successor, n.d., c.1962.  
  
1 p. undated note on reorganisation required.
- C.15 Correspondence, October 1963-June 1964, re an article published 11 August 1963 in L'Espresso alleging irregularities in the financing and patenting of Chain's research. Correspondence is with solicitors in London and Rome and includes drafts of withdrawal statement to be published in journal. Letter of 1 April 1964 gives details of Chain's appointments and research as consultant to Beechams from 1956.



Istituto Superiore di Sanità, Rome

- C.16 Correspondence re Chain's move to Imperial College, London, 1960-65.

Includes copy of Chain's letter to Marotta, February 1960, explaining his move to Imperial College (scheduled for 1 October 1961), letters exchanged on resignation from contract with Istituto, January 1965, and shorter correspondence re termination of residence in Italy.

See D.41 for arrangements for Chain's removal to London.

- C.17 Personal letters from former Italian colleagues and friends, 1964-79.

Istituto Superiore di Sanità, Rome

C.18-C.27      THE 'MAROTTA CASE', 1965-66

In 1964 Domenico Marotta, founder of the Istituto Superiore di Sanità and its head until his retirement in 1963 (see C.14), was prosecuted on various charges of malfeasance and misappropriation of funds. The trial lasted over eight months and in July 1965 Marotta, then almost eighty, was found guilty and sentenced to six years and eight months in prison. Among others charged with similar offences were Giordano Giacomello, Marotta's successor as head of the Istituto, who received a sentence of three years, five months, and Italo Domenicucci, sentenced to six years, five months.

When the case was heard, Chain was at Imperial College, London. He offered to give evidence but was not called; an expression of sympathy in a letter to Domenicucci's wife, however, was quoted by the public prosecutor, Renato Ricciardi, who went on to accuse Chain of contempt of the judiciary. A prosecution was set in train, and counsel engaged, but the charges were dropped under an amnesty declared in May 1966 as part of the celebrations of the twentieth anniversary of the Italian Republic.

Chain's anger and distress at the proceedings against both Marotta and Giacomello arose not only from his personal regard for them but because part of the funds allegedly misappropriated by them were his own research grants from American sources which were administered as a matter of form by the Director in place.

The material includes correspondence with lawyers, friends and colleagues, press-cuttings, and legal depositions. It runs in a roughly chronological sequence from February 1965 to May 1966.



Istituto Superiore di Sanità, Rome

- C.18 Correspondence, February-May 1965, with Domenicucci. Letter of 6 April includes official statement of charges against all the accused.
- C.19 Correspondence and papers, June, including Chain's telegram of protest sent to Prosecuting Counsel and others, correspondence with lawyers and colleagues, press-cuttings on the subject, copy of Prosecuting Counsel's statement on defamatory nature of telegram.
- C.20 Papers, July, including copy of part of concluding speech by Prosecuting Counsel with accusations against Chain, press-cuttings and articles.
- C.21 Copies of defence submissions by A. Sorrentino (for Marotta) and L. Salerni (for Domenicucci). July.
- C.22 Correspondence re Chain's prosecution for 'oltraggio', July-August. Includes press-cuttings and ms. draft letter by Chain to Editor, Corriere della Sera, re article published on 30 July.
- C.23 Correspondence and papers, September, with E. Trabucchi, re articles on the case and enclosing ms. and typescript drafts of Chain's 'Sequence of events which led to my scientific activities in Italy at the Istituto Superiore di Sanità'.
- C.24 Correspondence and papers, August-October, re a letter submitted for publication on the case in The Times, but not accepted. Includes various ms. and typescript drafts.
- C.25 Correspondence and papers, November, re articles and press comment on the case, and re engagement of counsel for Chain.
- C.26 Continuing correspondence, December 1965-February 1966, re legal representation, and draft letter from Chain to Giacomello.
- C.27 Correspondence, May 1966, including material re amnesty, as a result of which charges were cancelled.

Istituto Superiore di Sanità, Rome

C.28-C.65 ADMINISTRATIVE CORRESPONDENCE, 1948-65

- C.28 - C.41 Equipment, supplies, books and journals, specimens, apparatus
- C.42 - C.45 Requests for reprints and information
- C.46 - C.53 Staff
- C.54 - C.65 Requests to visit/work in Chain's laboratory, letters of thanks

Each sub-section follows a roughly chronological sequence including correspondence (not always complete), invoices, drawings, etc.

C.28-C.41 EQUIPMENT, SUPPLIES, ETC., 1948-63

- C.28 1948
- C.29 1949
- C.30 Drawings of fermenters of various capacities, executed at Milan 1948-49, perhaps for Istituto.  
  
Also included are two drawings of perfusion pumps, National Institutes of Health, 1950.
- C.31 1950
- C.32 1951, 1952 (mainly Chain's carbons)
- C.33 1951-53, with Walter J. Johnson Inc., re books and journals.
- C.34 1953
- C.35 1954, with Shandon Scientific Co.
- C.36 1954, 1955 (one letter only)
- C.37 1956-59, with Walter J. Johnson Inc., re books and journals.



Istituto Superiore di Sanità, Rome

C.38 1957-58

C.39 1959. Includes correspondence with Packard Instrument Co.  
re possible manufacture of electronic scanner developed  
in Istituto.

There is no surviving material for 1960.

C.40 1961-62

C.41 1963 and undated

C.42-C.45 REQUESTS FOR REPRINTS AND INFORMATION, 1949-63

C.42 1949-54

C.43 1955-58

C.44 1959-61

C.45 1962-63

C.46-C.53 STAFF, 1949-65

Correspondence re research students, visiting scientists,  
sponsored research fellows accepted or recommended for work  
with Chain at Istituto. May include references, scientific  
exchanges, later career, reports on work, etc.

N.B. Much of the correspondence is Chain's carbons only.

C.46 1949-52

C.47 1953

C.48 1954

C.49 1955-59

C.50 1960-61

C.51 1963

C.52 Miscellaneous general correspondence about staff, promotions,  
publications, payment of grants, etc. (many Chain's carbons  
only). Various dates, 1951-65.

Istituto Superiore di Sanità, Rome

C.53      Miscellaneous information, press releases, etc. re award of Nobel Prize for physiology and medicine to D. Bovet, 1957.

C.54-C.65    REQUESTS TO VISIT/WORK IN CHAIN'S LABORATORY, 1949-65

The facilities of Chain's department at the Istituto, and the research projects under way there, attracted a continuous stream of visitors and of applicants to work there. Successful applicants, or those sponsored by specific research grants, are included under 'Staff' in C.46 - C.53 above, but the full extent of the demand to participate in Chain's research can be better gauged from the folders below. In addition to prospective students, the correspondence also emanates from firms, government and university laboratories, organisations, publishers and journalists, and from established scientists many of whom were or became friends who made several visits to the Istituto over the years.

The material ranges from single letters of application to more substantial exchanges including travel arrangements, publication of results and letters of thanks for hospitality both in the laboratory and at home. There are several examples of Chain's wish to accept students from Eastern Europe and from developing countries.

Attention is drawn to similar material in D.112 - D.123 where Chain's Department of Biochemistry at Imperial College, London, also rapidly developed into an international centre of attraction for research.

The General Correspondence in Section K also includes many references to visits to Rome.

C.54	1949-50
C.55	1951-52
C.56	1953
C.57	January-June 1954
C.58	July-December 1954



Istituto Superiore di Sanità, Rome

C.59	1955
C.60	1957 (Four only remain) March-June 1958
C.61	July-November 1958
C.62	1959
No material survives for 1960	
C.63	1961
C.64	1962
C.65	1963-65

Istituto Superiore di Sanità, Rome

C.66-C.78 RESEARCH PROJECTS

This is the surviving material among Chain's papers. Many other lines of research were pursued under his direction but no documentation remains other than published papers.

- C.66 Hard-cover notebook inscribed on front cover 'John H. Daymond. Chimica Biologica. 1956'

Daymond was Chain's technician during part of his time in Rome. The front two-thirds of the notebook contains records of a series of 104 aeration experiments, January-October 1956, while the remainder is mostly taken up with analyses of various substances, September 1956-January 1957. There are also a few loose pages of notes (some in Chain's hand) and printed matter tucked inside the notebook at various points.

- C.67 Correspondence and papers re application for grants from United States Army Research and Development Liaison Group, 1957.

The projects were: 'To study the intermediate metabolism in higher animals to elucidate the mode of action of regulatory substances'; and 'To study the intermediate metabolism of microorganisms'.

Includes various drafts of submission of plans of research, budgets, etc.

- C.68 Letter re application to Division of Virology and Epidemiology, National Foundation, New York, re grant application, January 1959.

(Chain's carbon only. No other documentation remains.)

- C.69 Correspondence and papers re application for grant from National Institutes of Health, U.S.A., 1962-64.

The project was on 'Carbohydrate and amino acid interrelations in brain', in collaboration with M. Cohen of Minneapolis.

Includes grant application, reports on research, financial and travel arrangements.

See also K.35-K.38



Istituto Superiore di Sanità, Rome

- C.70 Correspondence and papers re application for grant from United States Department of Agriculture, European Regional Research Office, 1963.
- The project was on 'Investigation of aerobic fermentation processes by measurement of the effect of differences in vessel size and mechanical agitation on the concentration of dissolved oxygen'.
- Includes budget, final report.
- C.71 'Aeration Studies IV: Aeration conditions in submerged fermentations with different microorganisms in 3000 litre fermenters'.
- Collaborative paper with G. Gualandi and G. Morisi, published with slightly different title in Biotechnology and Bioengineering, 8, 1966 (Bibliog. 119).
- Draft of paper, earlier version probably given as conference paper, editorial correspondence 1965-66.
- C.72-C.76 Miscellaneous reports and notes on research. (Few dated or signed and perhaps not all by Chain.)
- C.72 'Chemical questions' and 'biological questions' to be answered on penicillin, with bibliography (latest date 1947).
- C.73 Research note on use of fibreglass as filter, and possible patent.
- C.74 'Notes' by Chain for a discussion group on penicillin resistant staphylococci.
- C.75 'Un isolatore per singole spore'.
- C.76 Report on fermentation research, November 1961-February 1962, and programme of work for March-June 1962.
- C.77 13 pp. typescript in Italian describing experiments with fermentation processes, n.d. Includes 'Discussione' and was probably a conference paper.
- C.78 Miscellaneous shorter unidentified ms. notes, almost all on Istituto headed jotter pads, some in numbered sequences, on various topics of research, equipment, conference notes, notes on the literature, etc.

Istituto Superiore di Sanità, Rome

C.79-C.101 LECTURES AND CONFERENCES

These were an important aspect of Chain's work in Rome. They had a dual purpose: on the one hand to attract scientists of international reputation to visit the Istituto for 'in-house' lectures and thereby keep its members in touch with the latest research ideas; and on the other, by these personal contacts and by the organising (in collaboration with the Director, D. Marotta) of major international conferences and symposia, to make more widely known the resources available in Rome for fermentation studies, the successful research projects undertaken and the results obtained.

The inauguration of the fermentation pilot plant in 1951 was marked by a major symposium on fermentation biochemistry held under the auspices of the Istituto and the World Health Organisation (C.93), and throughout the 1950s there was a succession of such events in addition to invitation lectures on a smaller scale.

Some account of this effort to strengthen the international contacts of the Istituto is given in Chain's paper at C.23, 'Sequence of events which led to my scientific activities at the Istituto Superiore di Sanità'. Many of the letters of thanks, like the requests to visit or work at the Istituto at C.54 - C.65 above, testify to its success.

The material is presented as follows:

C.79 - C.92 LECTURES

An alphabetical sequence with scientific colleagues invited by Chain to lecture at the Istituto, and which may include travel arrangements, personal and scientific correspondence, texts or translations of lectures, etc.

C.93 - C.101 CONFERENCES

A chronological sequence on major conferences and symposia, similar to above but involving a wider range of international activity.



Istituto Superiore di Sanità, Rome

C.79-C.92 LECTURES

See also E.96, K.187, K.251.

C.79 Anfinsen, C. B.

Chain's introductory remarks, n.d.

Berenblum, I.

'Biological and metabolic aspects of skin carcinogenesis',  
June 1958.

Telegram, 15 pp. typescript of lecture.

C.80 Calvin, M.

'Il ciclo fotosintetico', December 1955.

Correspondence, 42 pp. typescript. Italian translation of  
lecture and 1 p. introductory remarks.

C.81 Dickens, F.

Correspondence only, 1957.

C.82 Dodds, E. C.

'Specificità nel campo di azione degli ormoni', April 1955.

Correspondence, 1954-55.

Also included is material relating to 'Hormone analogues - a new  
Phase', lecture delivered by Dodds at Bologna, May 1958;  
English text, Italian translation with many ms. corrections by  
Chain, revised version of translation.

C.83 Holter, H.

Correspondence 1954-55 re lecture on cytochemical microtechniques.

C.84 Krebs, H. A.

'The control of metabolic processes', October 1956.

Correspondence, Chain's introductory remarks, 16 pp. typescript  
English text, 12 pp. Italian translation.

C.85 Martin, A. J. P.

'Gas-liquid chromatography', February 1955.

Correspondence, 17 pp. typescript English text.





Istituto Superiore di Sanità, Rome

- C.94 Minutes of Departmental Meeting, February 1952, with a list of personnel and account of research in hand.
- C.95, C.96 Sixth International Congress of Microbiology, Rome, June 1953.
- C.95 Correspondence with colleagues re organisation and invitations, 1952.
- Chain's introductory remarks welcoming members to Third Symposium (on Microbial Metabolism).
- Press-cutting on published reports (1954).
- Shorter correspondence re publication.
- C.96 Correspondence arising from Congress, with R. Cruickshank re possible discussion group on 'air hygiene', with P. Hauduroy re meeting of Sub-Committee of International Society of Microbiology held during Rome Congress, and with S. Aji re Seventh Congress held in Moscow 1956.
- C.97-C.99 Commemoration of centenary of death of Amadeo Avogadro, June 1956.
- The celebrations were organised by the Accademia dei XL; L. Pauling and C.N. Hinshelwood gave addresses and were awarded Avogadro Medals, the first recipients of this newly-instituted honour. Chain wrote to several colleagues in Britain, U.S.A. and France requesting their participation and also arranging visits or lectures at the Istituto.
- C.97 Letters to colleagues re celebrations, publicity arrangements.
- C.98 Correspondence with C.N. Hinshelwood, English and Italian texts of his address.
- C.99 Correspondence with L. Pauling, English and Italian texts of his address, lecture notice and summary only of Pauling's lecture at the Istituto during his visit, on 'Emoglobine anormali in rapporto alle malattie'
- C.100, C.101 First International Symposium on Fermentation, May 1960, held at Istituto and sponsored jointly by Istituto, American Chemical Society and Società Chimica Italiana.
- C.100 Correspondence with colleagues inviting them to attend or read papers at Conference (almost entirely Chain's carbons only), 1959.
- Chain's speech of welcome, 16 pp. typescript.
- C.101 Printed programme, and account of Symposium.

<u>SECTION D</u>	<u>IMPERIAL COLLEGE, LONDON D.1 - D.168</u>
D.1 - D.42	APPOINTMENT TO THE CHAIR OF BIOCHEMISTRY AT IMPERIAL COLLEGE Correspondence and papers, 1953-64
D.43 - D.74	RETIREMENT AND THE FUTURE OF THE DEPARTMENT Correspondence and papers, 1972-79 With an introductory note
D.75 - D.123	DEPARTMENT OF BIOCHEMISTRY, ADMINISTRATIVE CORRESPONDENCE, 1961-78 D.75 - D.87 Building and equipment D.88 - D.99 Funding D.100 - D.111 Staff D.112 - D.123 Requests to visit/work in Chain's laboratory
D.124 - D.153	DEPARTMENT OF BIOCHEMISTRY, RESEARCH AND TEACHING, 1962-79
D.154 - D.168	GENERAL CORRESPONDENCE ON DEPARTMENTAL AND COLLEGE AFFAIRS

Sections E and F contain considerable additional material relating to research grants awarded to the Department of Biochemistry during this period. See especially E.25, E.39 - E.43, E.57, E.61 - E.63, E.96 - E.112, E.120, E.124-E.129, E.190, E.195, F.121-F.168 *passim*, F.260, F.314ff., F.330

For research projects undertaken by the Department of Biochemistry on behalf of various industrial firms, see F.182, F.282ff., F.312, F.313, F.343, F.344.



Imperial College, London

D.1-D.42 APPOINTMENT TO THE CHAIR OF BIOCHEMISTRY AT  
IMPERIAL COLLEGE

Correspondence and papers, 1953-64.

D.1-D.5 Preliminary negotiations, 1953-56

D.1 Correspondence with P.M.S. Blackett, 1953-54. 1953 correspondence is re arrangements for Chain to visit Imperial College with a view to having a general discussion with the Rector (R.P. Linstead) and others re the need for developing the study of applied microbiology in England, with particular reference to Imperial College.

D.2 Correspondence with D.M. Newitt, October-November 1953, re arrangements for a visit to Chain's laboratory in Rome.

D.3 Letters from I. Heilbron and E.C. Dodds, 1955, reporting on conversations with Blackett and Linstead re future developments at Imperial College.

D.4 'Memorandum on a project of an Institute for General and Applied Biochemistry at Imperial College'

2 typescript drafts and 6 pp. ms. notes for detailed prospectus setting out requirements of space, staffing and equipment, sent to Blackett and Linstead in January 1956 (see D.5).

D.5 Correspondence with Blackett and Linstead re Chain's memorandum, January-May 1956.

D.6-D.19 Correspondence leading to official appointment, 1957-59

D.6 Correspondence with Linstead, 1957. Includes 6 pp. letter from Chain, 3 October, with detailed comments on his 1956 memorandum.

D.7 Correspondence with Linstead, April-June 1958. Invitation to Chain to be considered as a candidate for the Chair of Biochemistry and further correspondence re requirements of space, staffing, equipment, etc.

D.8 11 pp. typescript 'My activities at the Istituto Superiore di Sanità' and 1 p. curriculum vitae prepared in connection with Chain's candidacy for the Chair of Biochemistry.

There is another copy at C.13.

Imperial College, London

- D.9 Letter from Linstead, 11 July 1958, conveying offer of the Biochemistry Chair and Chain's provisional letter of acceptance. Includes letter from H.A. Krebs urging Chain to consider the proposition very seriously, telegram re arrangements for meeting with Linstead for further discussions, and ms. notes + photograph re plans for new Department of Biochemistry at Imperial College.
- D.10 2 letters from M. Beloff, July and October 1958, re possible sources of financial support for the Imperial College project.  
  
See also K.49ff.
- D.11 Correspondence with Linstead, September-December 1958, re detailed administrative arrangements for the proposed new Department of Biochemistry at Imperial College. Includes drafts of grant application to the Wolfson Foundation and discussion of other possible sources of finance.
- D.12 Letters to Lord Nathan and L. Wolfson, October 1958-January 1959, re grant application to the Wolfson Foundation.
- D.13 Correspondence with Linstead, January-June 1959, mainly re progress of grant applications.
- D.14 Correspondence with Lord Falmouth (Chairman of the Board of Governors of Imperial College), February-March 1959, re arrangements for a visit to Chain's laboratory in Rome.
- D.15 Correspondence with Blackett re draft of grant application to the Department of Scientific and Industrial Research (D.S.I.R.), April 1959.
- D.16 3 pp. typescript note by H. Redman of a meeting with Nathan, J.D. Cockcroft and Linstead, 18 June 1959, to discuss the proposed Wolfson Foundation grant to Imperial College.  
  
Copy of letter to Redman from the Secretary, Imperial College, 2 July 1959, outlining draft heads of agreement with the Wolfson Foundation.
- D.17 Correspondence with Linstead, August-December 1959. Includes typescript drafts on 'Recent Developments in the Penicillin Field' (re isolation of the nucleus of the penicillin molecule) and a biographical outline, both prepared as source material for press releases announcing Chain's official appointment to the Biochemistry Chair at Imperial College.



Imperial College, London

- D.18 Correspondence with Lord Nathan, August-December 1959, mainly re final negotiations with the Wolfson Foundation and Imperial College. Includes draft of Press Release announcing Chain's official appointment.
- D.19 Correspondence with the Secretary, Imperial College, October-December 1959, re formalities leading to Chain's official appointment, arrangements for the press release, etc.
- D.20-D.42 Official appointment and related correspondence, 1960-66
- D.20 Official letter of appointment to the Chair of Biochemistry, 25 January 1960, and Chain's letter of acceptance.
- Folder also includes miscellaneous related press-cuttings and printed matter.
- See also A.110.
- D.21-D.26 Letters of congratulation on Chain's appointment.
- |      |   |
|------|---|
| D.21 | B - F   |
| D.22 | G - K   |
| D.23 | L - P   |
| D.24 | R - W   |
| D.25 | Friends and first name signatures (not indexed) |
| D.26 | Publishers, firms, organisations (not indexed)  |
- D.27 Copy of letter from Chain to I. Wolfson, 30 January 1960, expressing thanks for the Wolfson Foundation's contribution to the Imperial College project.
- D.28-D.31 Correspondence with Linstead, 1960-66, re a wide range of administrative matters connected with the building and setting up of the new Biochemistry Department.
- |      |                             |
|------|-----------------------------|
| D.28 | 1960                        |
| D.29 | 1961-62                     |
| D.30 | 1963 (Chain's carbons only) |

Imperial College, London

- D.31 1964-66  
Includes brief correspondence re conferment of Associateship of the Royal College of Science, honoris causa, 1966.
- D.32 2 letters from the Secretary, Imperial College, September-December 1960, re implications of decision to abandon plans for adapting the existing Royal College of Science Building to provide accommodation for the Departments of Chemistry and Biochemistry in favour of erecting a completely new building on the site of the old one.  
  
Draft press release re building plans, 18 January 1961, is also included in the folder.
- D.33 Correspondence with Lord Nathan, 1961-63, re building arrangements, funding, etc.
- D.34-D.37 Correspondence with Chain's Secretary at Imperial College, December 1961-March 1964.
- D.34 1961-62
- D.35 1963
- D.36 1964
- D.37 Another sequence, mainly duplicates, much less complete.
- D.38 Correspondence with the Office of the Minister for Science, 1961, in reply to a request for an outline of Chain's proposed research programme and his views on the current position of British research in microbiology and biochemical engineering.
- D.39 Copy of Press Release announcing approval by the University Grants Committee of space and cost estimates for the new biochemistry building at Imperial College to incorporate the Wolfson Laboratories and a fermentation pilot plant, 26 June 1962.  
  
Included here are 2 pp. undated typescript notes re the fermentation pilot plant.



Imperial College, London

- D.40 Several drafts of Press Release announcing the award of the D.S.I.R. grant for the running expenses of the Department of Biochemistry, June 1963.
- D.41 Correspondence with Imperial College and various removal firms re estimates of cost for removal of Chain's household goods from Rome to London, 1964.
- D.42 Ms. draft outlining the history of the Biochemistry Department at Imperial College with a description of the facilities offered by the new Biochemistry building, n.d., c.1965-66.
- The draft is written on pages torn from a notebook (numbered 1-11) and is prefaced by 2 pp. unrelated notes.
- See A.224 for an album of photographs commemorating the opening of the Department.

Imperial College, London

D.43-D.74

RETIREMENT AND THE FUTURE OF THE BIOCHEMISTRY  
DEPARTMENT

Correspondence and papers 1972-79.

Chain's last years at Imperial College were marred by a violent controversy over the future of the Biochemistry Department which involved two successive Rectors of the College, two Chairmen and other members of the Board of Governors, two Vice-Chancellors of the University and various legal advisers and scientific colleagues.

Part of the controversy centered around the circumstances of a gift of £50,000 originally made by Lord Rank in 1967 (see F.316) for the establishment of a second Chair of Biochemistry in Chain's department. At the time, the College was unable to find the additional money needed for the financing of a Chair so, with Lord Rank's agreement, it was arranged that the money would be made available to Chain through the College for research Fellowships. Chain used only the interest for this purpose, leaving the principal intact, and at the beginning of 1973 he approached the Rank Trustees for a further donation of £50,000 in order to make up the amount needed for the endowment of a second Chair.

It was Chain's wish that the Rank Chair should be in the field of physiological biochemistry while his own successor as Professor and Head of the Biochemistry Department should be a chemical microbiologist, thus ensuring the continuation of his own main areas of research. After considerable correspondence with the Rector and others about suitable candidates for the two Chairs the posts were advertised in September 1973. B. Hartley (a molecular biologist) was appointed as Chain's successor (and Head of Department) in January 1974 and the Rank Chair was filled a year later by E.A. Barnard.

Chain bitterly contested both these appointments which he thought were contrary to the interests of the Biochemistry Department, since they would almost inevitably foreshadow the running down of the fermentation pilot plant, and he also considered them to be a misuse of the funds which he had obtained for the endowment of the Rank Chair. The controversy continued until 1978 and was only finally resolved through the intervention of a legal adviser.



Imperial College, London

- D.43 Correspondence with Lord Penney (Rector of Imperial College 1967-73 in succession to R.P. Linstead) and others, January-March 1972, re arrangements for the future of the Biochemistry Department.
- D.44 9 pp. typescript on 'Future Contributions from Biochemistry to the Advancement of Medical Research', March 1972.
- D.45 Correspondence with Lord Penney and others, June-December 1972.
- D.46 'The case for the endowment of a second Chair of Biochemistry, for the subject of Physiological Biochemistry at Imperial College'
- 9 pp. typescript, n.d., but folder also contains letters to A. Spicer and R.S. Edwards forwarding copies of the memorandum, 9 January 1973.
- D.47 Correspondence with A. Spicer and J.D. Hutchison, January-April, 1973, re Chain's application to the Rank Trustees for funds to make up the amount needed in addition to the original Rank benefaction for the endowment of a second Chair.
- D.48-D.50 Correspondence with Lord Penney, January-July 1973.
- D.48 January-April
- Includes comments on the progress of negotiations for the endowment of a second Chair.
- D.49 May
- Includes further correspondence re negotiations with the Rank Trustees.
- D.50 July
- Includes draft letter from Penney to the Principal, University of London, requesting approval for the establishment of the Rank Chair.
- D.51 Correspondence and drafts re advertisements for both Chairs, August-September 1973.
- D.52 Correspondence re arrangements for public announcement of the institution of the Rank Chair of Physiological Biochemistry, 1 October 1973.

Imperial College, London

- D.53 Correspondence re use of monies remaining from research grants made to Chain by various firms and organisations, and letter from Penney, 27 September 1973, offering Chain a Senior Research Fellowship tenable for 3 years from 1 October 1973 on his retirement as Head of the Biochemistry Department.
- D.54 Correspondence with colleagues re the appointment of Chain's successor, November-December 1973 (mainly Chain's carbons only).
- D.55-D.69 Extensive correspondence with Sir Brian (later Lord) Flowers, (Penney's successor as Rector of Imperial College from October 1973), the Chairman and members of the Board of Governors and others, following the appointment of B. Hartley as Chain's successor in January 1974. The sequence includes several drafts of a detailed memorandum sent to Lord Goodman in October 1974 (see D.61-D.64) putting forward Chain's view of the controversy. The correspondence continues to 1976 (but see also D.70-D.72).
- D.55 1974  
January  
Includes minutes of a Special Biochemistry Departmental Committee Meeting, 9 January.
- D.56 February-March
- D.57 April
- D.58 May
- D.59 June-July
- D.60 October-December
- D.61-D.64 'Biochemistry at Imperial College. History and Outlook'  
  
Drafts for paper prepared by Chain giving his views of the matter, the final version of which was sent to Lord Goodman on 28 October 1974 (see letter in D.60).
- D.61 Ms. and typescript draft with additional ms. fragments.
- D.62 28 pp. typescript with ms. and typescript additions.



Imperial College, London

- D.63 Another copy of D.62 incorporating the additional material with some further corrections.
- D.64 35 pp. typescript, final version, dated 27 October 1974.
- 1975
- D.65 January-March
- D.66 April-May
- D.67 June-November
- 1976
- D.68 January-March
- D.69 April-July
- D.70-D.72 Correspondence with S. Berwin of Berwin Leighton (solicitors), April 1976-August 1977. The correspondence opens with a long letter from Chain listing several letters and memoranda most of which are now among the papers in D.43-D.69 (but see also F.316-F.318). See also D.73.
- D.70 April-July 1976
- D.71 September 1976-January 1977
- Mainly copies of correspondence between Berwin and Flowers. Two letters from D.H.R. Barton are also included.
- D.72 April-August 1977
- Includes further copies of correspondence with Flowers and several drafts of arrangement between Chain and Imperial College, the final version of which was accepted by him in July 1977.
- D.73 Correspondence with Flowers and others, November 1975-October 1976, arising from Chain's request for the renewal of his Senior Research Fellowship after its expiry in September 1976.
- D.74 Correspondence re award of Honorary Fellowship to Chain, December 1977. The official award was made on 26 October 1978. Brief correspondence re continuation of secretarial arrangements after the academic year 1978-79 is also included here.

Imperial College, London

D.75-D.123      DEPARTMENT OF BIOCHEMISTRY, ADMINISTRATIVE  
CORRESPONDENCE, 1961-78

D.75 -D.87      Building and equipment

D.88 -D.99      Funding

D.100-D.111      Staff

D.112-D.123      Requests to visit/work in Chain's  
laboratory

See also D.28-D.37

D.75-D.87      BUILDING AND EQUIPMENT

D.75      'List of Rooms in Biochemical Department of Pilot Plant'

Schedule of space requirements, in English and Italian,  
n.d., but possibly connected with early plans for  
Biochemistry Department at Imperial College.

D.76      Set of plans for expansion of Biochemistry Department at  
Imperial College dated 14 January 1959, and brief corres-  
pondence with the Planning Office, December 1958, re  
space needed for fermenters.

D.77-D.79      Correspondence with Imperial College Planning Office,  
February 1960-May 1963, re details of building plans and  
equipment.

D.77      February-December 1960

D.78      March-October 1961

D.79      May 1962-May 1963 (Chain's carbons only)

D.80-D.83      Correspondence with Architects' Co-Partnership, June 1960-  
April 1963.

D.80      June 1960

Brief correspondence with A.W. Cox re arrangements  
for visit to Rome. Schedule of rooms in the Bio-  
chemistry Building, November 1960, is also included  
here.



Imperial College, London

- |           |  |
|-----------|--|
| D.81      | March-December 1961  |
| D.82      | January 1962-April 1963<br>(mainly Chain's carbons only)                   |
| D.83      | Architects' drawings for the internal layout of the Biochemistry Building. |
| D.84      | Correspondence with engineers and contractors, 1961-63.                    |
| D.85-D.87 | Equipment, library books, etc., correspondence and schedules, 1960-64.     |
| D.85      | 1960   |
| D.86      | 1961-62  |
| D.87      | 1963-64  |
| D.88-D.99 | FUNDING  |

The following papers relate mainly to two major initial grants towards the setting up of the Biochemistry Department, from the Department of Scientific and Industrial Research and the University Grants Committee. Pre-1960 correspondence re grant applications, including the grant awarded by the Wolfson Foundation in 1959, is to be found passim in D.1 - D.42.

Also included here is correspondence re a further application to the U.G.C. in 1966 and drafts of a letter to The Times on the general problem of the funding of scientific research.

Correspondence re subsequent grants for research in the Department of Biochemistry is at D.124ff. There is a list of references to grants in other parts of the collection at the beginning of Section D.

- |      |  |
|------|--|
| D.88 | Correspondence with Imperial College <u>re</u> grant application to D.S.I.R., 1960. Includes copy of application, February 1960, and of Addendum submitted in April. |
| D.89 | Drafts and background material for the Addendum to the D.S.I.R. application.   |

Imperial College, London

- D.90 Further correspondence re D.S.I.R. grant, 1962-63 (Chain's carbons only), including 7 pp. letter, 18 May 1962, with detailed replies to points raised by D.S.I.R.
- D.91 Correspondence with E. Lester Smith (Assessor) re grant application to the University Grants Committee (U.G.C.), March-April 1963. Includes an earlier letter from the Registrar, Imperial College.
- D.92 Ms. drafts and typescript lists of requirements for equipment and staff, prepared for U.G.C., May 1963.
- D.93 Draft equipment schedule prepared by Imperial College for submission to U.G.C., June 1963.
- D.94 Correspondence with the Secretary and the Financial Secretary, Imperial College, 1963-64 (mainly Chain's carbons only). Includes arrangements for press releases re grants from D.S.I.R., M.R.C., Fleming Memorial Fund and U.G.C.
- D.95 Copy of assessors' report, July 1966, on application by Chain to U.G.C. for a further grant for capital equipment, and brief correspondence arising. The report recommended an award of less than one third of the total amount requested.
- D.96 Correspondence with O.A. Saunders (Acting Rector, Imperial College 1966-67) re Chain's U.G.C. application, October 1966-January 1967, including copies of letters exchanged between Saunders and the Chairman of U.G.C.
- D.97 Further correspondence with Saunders, February-August 1967, mainly re the financial implications of U.G.C.'s decision.
- D.98 3 letters to P.M.S. Blackett, 10 May 1967, re the possibility of obtaining a special grant from the Ministry of Technology, with a brief reply from Blackett, 23 May.
- D.99 Drafts for letter to The Times signed by Chain and six other members of Imperial College, July 1967, re government limitations on university equipment grants, related press-cuttings from other newspapers, drafts for letter to the Daily Telegraph, and correspondence arising, July-August 1967.



Imperial College, London

D.100-D.111      STAFF

The majority of the following papers relate to Chain's initial search for staff during the setting up of the Biochemistry Department and includes some unsolicited letters of invitation as well as routine job applications and letters of recommendation from colleagues. The picture is far from complete (see especially 1963 correspondence which is mostly Chain's carbons only), but it is nevertheless interesting.

The remainder of the section contains some rather scanty correspondence with and re research students, visiting scientists, etc. accepted or recommended for work at Imperial College, 1963-76.

- |       |   |
|-------|---|
| D.100 | February-March 1960   |
| D.101 | April-November 1960   |
| D.102 | 1961  |
| D.103 | 1962  |
| D.104 | 1963 (Chain's carbons only, with 2 exceptions)  |
| D.105 | Copies of letters answering advertisements for posts in <u>Nature</u> and other journals, April 1963. |

- D.106-D.108 Research students, etc. accepted or recommended for work at Imperial College, 1963-76.

For material on W.H.O. Fellows, see E.235.

- |       |   |
|-------|---|
| D.106 | 1963-67   |
| D.107 | 1968-71   |
| D.108 | 1969-76   |
| D.109 | Shorter correspondence <u>re</u> staff salaries, promotions, etc., 1964-74. |

See also D.126, D.127, D.128.

Imperial College, London

- D.110 Drafts and brief correspondence re advertisements for staff in the Department of Biochemistry, 1967-72.
- D.111 Information or requests for advice re posts in other universities or laboratories, 1963-74.

D.112-D.123 REQUESTS TO VISIT/WORK IN CHAIN'S LABORATORY

As in Rome, the research and facilities, in particular the fermentation pilot plant, attracted a large number of visitors and requests to work there. Unfortunately the surviving correspondence is rather patchy, the years 1964-67 being particularly badly documented in this collection.

For similar material re Chain's laboratory in the Istituto Superiore di Sanità see C.54-C.65.

- |       |                    |
|-------|--------------------|
| D.112 | 1964               |
| D.113 | 1965-67            |
| D.114 | 1968               |
| D.115 | February-June 1969 |
| D.116 | July-December 1969 |
| D.117 | 1970               |
| D.118 | 1971               |
| D.119 | 1972               |
| D.120 | 1973               |
| D.121 | 1974               |
| D.122 | 1975               |
| D.123 | 1976, 1978, 1979   |



Imperial College, London

D.124-D.153      DEPARTMENT OF BIOCHEMISTRY, RESEARCH AND  
TEACHING, 1961-78

D.124-D.138      RESEARCH

The following papers document two of the many research grants awarded to Chain for work at Imperial College and contain some correspondence and research reports relating to the fermentation pilot plant as well as a few more general reports on research in the Department of Biochemistry.

D.138 contains correspondence with various organisations interested in collaborating on the development of an automatic amino acid analyser designed by A.J. Thomas in Chain's department.

See also D.88-D.99 (and introductory note) and the list of references at the beginning of Section D.

D.124-D.126    Fleming Memorial Fund Grant

D.124      Correspondence with E.C. Dodds, 1962, arising from a suggestion by Dodds that Chain should apply for a grant from the Fleming Memorial Fund. Two letters from Chain to the Secretary of the Fleming Memorial Fund, March and April 1962, are also included.

D.125      Correspondence with Imperial College and the Secretary of the Fleming Memorial Fund, 1963-66, re arrangements for acceptance and administration of the grant.

D.126      Correspondence re expenditure on staff salaries, equipment and books from the Fleming Memorial Fund grant, 1973-79. Correspondence 1977-79 is with E.A. Barnard.

See also D.72, D.94, E.61-E.63.

Imperial College, London

D.127-D.130      Beecham Research Grants

The Beecham Group sponsored two research projects and two studentships in the Department of Biochemistry between 1967 and 1972, and a further grant was made in 1974 for work on ds-RNA. Most of the correspondence re the progress of these research projects is with the rest of the Beecham material in Section F, but administrative correspondence with Imperial College and a few research reports have been included here.

D.127, D.128      Correspondence with Imperial College, 1968-72, re administration of research grants for work on 'Microbial metabolites' and 'Mode of action of penicillins'.

D.127              1968-70

D.128              1971-72

D.129              '2nd Annual Progress Report on Mode of Action of Penicillin carried out by Dr. Work's Group at Imperial College'. 21 pp. typescript with figures, January 1971.

D.130              Copy of letter from J. Edwardson to Beecham Research Laboratories, January 1974, outlining proposals for work at Imperial College on ds-RNA, and research report on 'Studies on the Mechanisms Involved in the Toxicity of BRL 5907', June 1974. The front page of the report is annotated 'Beecham. Inteferon'.

D.131              General correspondence re the fermentation pilot plant, 1966-73. Letter from G.T. Banks, 15 February 1971, contains a list of research contracts involving the pilot plant, 1970-71.

D.132              Memoranda, schedules, data, etc. connected with the pilot plant, 1967-70, and nd. Includes:

'Pilot Plant Fermentation Charges', 2 pp. typescript, 3 October 1967, re contract work for outside bodies.

Schedule of 'Proposed Additional Equipment for Use in the Pilot Plant and Workshop', 2 December 1969.

'Technical Staff requirements for Pilot Plant', 13 May 1970.

'Instrumentation of Imperial College Fermentation Pilot Plant.' 3 pp. typescript, n.d.

Continued



Imperial College, London

- D.132(Cont'd.) 'Fusicoccin. Summary of work carried out at Imperial College'. 4 pp. typescript by G.T. Banks, n.d.
- D.133 'Report of work carried out in the Biochemistry Department, Imperial College (October 1969-March 1971)'. 13 pp. typescript.
- D.134 'The Ergotamine Fermentation. Report on Microbiological and Fermentation Studies'. 14 pp. typescript with diagrams and photographs by G.T. Banks, October 1971.
- D.135 Ms. and corrected typescript drafts by Chain of report on 'Research carried out in the fermentation pilot plant from 1966-1972'.
- D.136 Report on 'Annual Estimated Cost of Fermentation Pilot Plant'. 7 pp. typescript, 1973.
- D.137 Miscellaneous reports on research at Imperial College, 1966, 1976 and n.d.
- D.138 Correspondence 1970-71 with various firms and organisations interested in collaborating on the development of an automatic amino acid analyser designed by A.J. Thomas in the Department of Biochemistry. The instrument was eventually produced by Rank Precision Industries Ltd. and marketed under the name of 'Chromaspek' (see F.312, F.313).
- D.139-D.153 TEACHING
- The following papers mainly relate to various Working Parties set up in Imperial College of which Chain was a member.
- D.139 Working Party on Biological Studies.
- Invitation to serve; minutes of meeting, 9 May 1967, and brief correspondence; copy of report, June 1967. Folder also includes report of "1974 Committee" on 'Expansion of the Biological Sciences at Imperial College', February 1964.

Imperial College, London

- D.140-D.146      Biology Working Party.
- See also 'Working Party on Biological Studies'.
- D.140      Correspondence, 1968-69, re arrangements for reappraisal of proposals submitted by the Working Party on Biological Studies for common first-year undergraduate course in biological subjects in June 1967.
- D.141      Invitation to serve on the newly-constituted Biology Working Party, December 1968, with outline of its terms of reference and constitution.
- D.142      Correspondence and drafts leading to interim report, March 1969-January 1970.
- D.143      Correspondence with T.R.E. Southwood, December 1969-May 1970, mainly re Imperial College Field Station at Silwood Park. Includes draft revision of part of the Biology Working Party Report.
- D.144      Memoranda and correspondence re visit of U.G.C. Biological Sciences Sub-Committee to Imperial College, 12 November 1970.
- D.145      Minutes of last 2 meetings of the Biology Working Party, September 1970 and February 1971, with copies of Interim, Revised and Final Reports.
- D.146      Brief correspondence, January-March 1971.
- D.147-D.149      Working Party on Physiological Flow.
- Correspondence and papers, 1967-69.
- D.147      Invitation to attend the first meeting, January 1967; minutes and correspondence re further meetings to October 1967.
- D.148      Progress reports on the Physiological Flow Studies Unit, by C. Caro (Director), February 1968.
- D.149      Further correspondence, minutes of meetings, etc., January 1968-December 1969.



Imperial College, London

- D.150            Working Party on Bio-Engineering
- Invitation to attend the first meeting, June 1968, with terms of reference of the working party; brief correspondence, July-December 1968; 4 pp. typescript on 'Bioengineering in Biochemistry', prepared for the report of the Working Party.
- D.151            Memorandum by G.T. Banks on Courses in Fermentation Science and Technology, April 1978.
- 3 pp. ms. notes by Chain on the same subject, n.d.
- D.152            Shorter correspondence re academic affairs of Department of Biochemistry, courses proposed, examinations, etc., 1967-74.
- D.153            Miscellaneous arrangements for meetings, seminars, inter-departmental colloquia, etc., 1966-73.

Imperial College, London

D.154-D.168	GENERAL CORRESPONDENCE ON DEPARTMENTAL AND COLLEGE AFFAIRS	
D.154-D.163	Correspondence with colleagues at Imperial College, 1961-79. Includes personal and scientific exchanges.	
D.154	Barrer, R. M.	1962, 1967
	1962 letter Chain's carbon only.	
	Barton, D. H. R.	1961, 1967, 1968
	1961 letter Chain's carbon only.	
	Brown, J.	1969
	Butler, C. C.	1966
D.155	Caro, C. G.	1970
	Includes copy of grant application to the British Heart Foundation.	
D.156	Ford, H.	1966-68, 1973
	1968 correspondence is mainly <u>re</u> E.M.B.O.	
	Gabor, D.	1966
	Hinshelwood, C. N.	1966
D.157	Jackson, Lord	1966-70
D.158	James, W. O.	1961
	Jones, H.	1971
	Richards, O.	1966
	Chain's carbon only.	
D.159	Roberts, E. R.	1966-67
D.160	Rogers, D.	1968
	<u>re</u> fusicoccin	
	Saunders, O. A.	1965-67
	Southwood, T. R. E.	1971



Imperial College, London

- |       |  |         |
|-------|--|---------|
| D.161 | Spalding, D. B.  | 1979    |
|       | <u>re</u> plans for collaboration with G.T. Banks.   |         |
|       | Tooms, J. S.   | 1968    |
| D.162 | Ubbelohde, A. R.   | 1967-70 |
| D.163 | Whittingham, C. P.   | 1969-70 |
|       | Includes 2 pp. ms. draft <u>re</u> choice of successor to Whittingham, n.d., c.1971.                     |         |
|       | Welch, A. J. E.  | 1961    |
| D.164 | Shorter correspondence <u>re</u> college and departmental affairs, 1961-76.                              |         |
| D.165 | Shorter social correspondence, 1968-74   |         |
| D.166 | Ms. for speech at Heads of Department Dinner, n.d.   |         |
| D.167 | Miscellaneous incomplete drafts for correspondence, speeches, grant applications, etc., 1 p. dated 1974. |         |
| D.168 | Miscellaneous requests for information <u>re</u> courses, etc. at Imperial College, 1969-77.             |         |

SECTION E

SOCIETIES AND ORGANISATIONS E.1 - E.238

INTRODUCTION AND LIST OF CONTENTS

The material is presented in an alphabetical sequence and covers both British and overseas organisations.

While some entries are relatively trivial and deal with membership, invitations to meetings and the like, others are substantial folders covering a lengthy time-span and matters of consequence such as research policy, grant applications for Chain's own research projects or those referred to him for comment. Examples of these are the British Heart Foundation, the Medical and Science Research Councils, and the World Health Organization.

ACCADEMIA FLAMINIA	E.1
ACCADEMIA NAZIONALE DEI LINCEI	E.2
ACCADEMIA NAZIONALE DEI XL	E.3
AGRICULTURAL RESEARCH COUNCIL	E.4
AIMS FOR FREEDOM AND ENTERPRISE	E.5
AMERICAN CHEMICAL SOCIETY	E.6
ARTS COUNCIL	E.7
ASSOCIATION NATIONALE DE LA RECHERCHE TECHNIQUE	E.8
ASSOCIATION OF CLINICAL PATHOLOGISTS	E.9
ASSOCIATION OF THE BRITISH PHARMACEUTICAL INDUSTRY	E.10
THE BIOCHEMICAL SOCIETY	E.11-E.17
BRITISH ASSOCIATION FOR CANCER RESEARCH	E.18
THE BRITISH COUNCIL	E.19
THE BRITISH DIABETIC ASSOCIATION	E.20
BRITISH HEART FOUNDATION	E.21-E.25
THE BRITISH INDUSTRIAL BIOLOGICAL RESEARCH ASSOCIATION	E.26
THE BRITISH NUTRITION FOUNDATION	E.27-E.32



Societies and organisations

CANCER RESEARCH CAMPAIGN	E.33-E.43
THE CHEMICAL SOCIETY	E.44
THE CIBA FOUNDATION	E.45-E.52
THE CONSERVATIVE PARTY	E.53
COUNCIL FOR SCIENTIFIC POLICY	E.54
COUNCIL OF ENGINEERING INSTITUTIONS	E.55
DEPARTMENT OF HEALTH AND SOCIAL SECURITY	E.56
DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH	E.57
EUROPEAN SOCIETY FOR BIOCHEMICAL PHARMACOLOGY	E.58
EVOLUTION PROTEST MOVEMENT	E.59
FEDERATION OF EUROPEAN BIOLOGICAL SOCIETIES	E.60
THE FLEMING MEMORIAL FUND FOR MEDICAL RESEARCH	E.61-E.63
FOOD AND AGRICULTURE ORGANISATION	E.64
FUNDACIÓN GENERAL MEDITERRANEA (MIGUEL SERVET FUND)	E.65
THE INDEPENDENT UNIVERSITY	E.66-E.72
INSTITUTE OF BIOLOGY	E.73-E.75
THE INSTITUTE OF ECONOMIC AFFAIRS	E.76
THE INSTITUTION OF CHEMICAL ENGINEERS	E.77
INTERNATIONAL ASSOCIATION OF MICROBIOLOGICAL SOCIETIES	E.78
INTERNATIONAL CULTURAL FOUNDATION	E.79
INTERNATIONAL FEDERATION OF UNIVERSITY WOMEN	E.80
INTERNATIONAL ORGANIZATION FOR BIOTECHNOLOGY AND BIOENGINEERING	E.81
INTERNATIONAL SCIENTIFIC ACADEMY FOR THE PROTECTION OF LIFE, FOR ENVIRONMENT AND BIOPOLITICS	E.82
INTERNATIONAL UNION OF BIOCHEMISTRY	E.83
THE IRAN SOCIETY	E.84
THE LISTER INSTITUTE OF PREVENTIVE MEDICINE	E.85

Societies and organisations

MEDICAL RESEARCH CLUB	E.86
MEDICAL RESEARCH COUNCIL	E.87-E.112
MINISTRY OF AGRICULTURE, FISHERIES AND FOOD	E.113-E.118
MINISTRY OF HEALTH	E.119
MINISTRY OF TECHNOLOGY	E.120
NATIONAL RESEARCH DEVELOPMENT CORPORATION	E.121-E.129
NOBEL COMMITTEE	E.130
THE NUFFIELD FOUNDATION	E.131, E.132
THE NUTRITION SOCIETY	E.133
OFFICE OF HEALTH ECONOMICS	E.134
PAN AMERICAN HEALTH ORGANIZATION	E.135
THE PARLIAMÉNTARY AND SCIENTIFIC COMMITTEE	E.136
PAUL ERHLICH FOUNDATION	E.137-E.145
PAUL ERHLICH INSTITUTE	E.146
THE PHARMACEUTICAL SOCIETY OF GREAT BRITAIN	E.147
PUGWASH CONFERENCES ON SCIENCE AND WORLD AFFAIRS	E.148
THE RANK PRIZE FUNDS	E.149-E.155
THE ROCKEFELLER FOUNDATION	E.156
ROYAL COLLEGE OF PHYSICIANS	E.157
ROYAL GEOGRAPHICAL SOCIETY	E.158
THE ROYAL INSTITUTE OF CHEMISTRY	E.159
THE ROYAL INSTITUTION	E.160
ROYAL POSTGRADUATE MEDICAL SCHOOL	E.161
THE ROYAL SOCIETY	E.162-E.183
THE ROYAL SOCIETY OF ARTS	E.184
THE ROYAL SOCIETY OF HEALTH	E.185
THE ROYAL SOCIETY OF MEDICINE	E.186



Societies and organisations

ST. MICHAEL'S FOUNDATION LIMITED	E.187
ST. VINCENT INTERNATIONAL PRIZE	E.188
SCIENCE RESEARCH COUNCIL	E.189-E.196
SLOAN-KETTERING INSTITUTE FOR CANCER RESEARCH	E.197
SOCIETÀ CHIMICA ITALIANA	E.198
SOCIETÀ ITALIANA DELLE SCIENZE VETERINARIE	E.199
SOCIETÀ ITALIANA DI CHEMIOTERAPIA	E.200
SOCIETÀ ITALIANA DI MICROBIOLOGIA	E.201
SOCIETÀ ITALIANA DI SCIENZE FARMACEUTICHE	E.202
SOCIETY FOR ANGLO-CHINESE UNDERSTANDING	E.203
SOCIETY FOR ANTIMICROBIAL CHEMOTHERAPY	E.204
SOCIETY FOR DRUG RESEARCH	E.205
SOCIETY FOR GENERAL MICROBIOLOGY	E.206
SOCIETY OF CHEMICAL INDUSTRY	E.207-E.216
UNESCO	E.217
USSR ACADEMY OF SCIENCES	E.218
THE WELLCOME FOUNDATION LIMITED	E.219
THE WELLCOME RESEARCH LABORATORIES	E.220
THE WELLCOME TRUST	E.221
WORLD FEDERATION OF DOCTORS WHO RESPECT HUMAN LIFE	E.222
WORLD HEALTH ORGANIZATION	E.223-E.237
WYNDHAM PLACE TRUST	E.238

Societies and organisations

- E.1            ACCADEMIA FLAMINIA (Bologna)            1972, 1979
- 1972 correspondence is re Chain's election as an Honorary Academician, in the founding year of the Accademia.
- 1979 correspondence is with the President (G. Baldoni) re the activities of the Accademia Flaminia.
- E.2            ACCADEMIA NAZIONALE DEI LINCEI            1949, 1959
- 1959 correspondence is re Chain's nomination to serve on committee for Feltrinelli Prize.
- E.3            ACCADEMIA NAZIONALE DEI XL            1956-79
- Miscellaneous correspondence from successive Presidents and Secretaries (including D. Marotta).
- E.4            AGRICULTURAL RESEARCH COUNCIL (ARC)            1971
- Correspondence and papers on the rôle and policy of ARC, mainly prepared by N. Goldenberg for submission to Sir Alan Cottrell.
- E.5            AIMS FOR FREEDOM AND ENTERPRISE            1978
- Brief correspondence only.
- E.6            AMERICAN CHEMICAL SOCIETY            1963  
(Division of Medicinal Chemistry)
- Brief correspondence re Trueman Wood lecture (Bibliog. 99).
- E.7            ARTS COUNCIL            1977
- Brief correspondence re Chain's suggestion of an exhibition of Russian painting.
- E.8            ASSOCIATION NATIONALE DE LA RECHERCHE  
TECHNIQUE            1977
- Invitation to serve on Comité d'honneur.



Societies and organisations

- E.9                      ASSOCIATION OF CLINICAL PATHOLOGISTS                      1963-70
- Correspondence re organisation of meetings, sponsored by Chain at Imperial College. Various dates 1963-70.
- E.10                      ASSOCIATION OF THE BRITISH PHARMACEUTICAL INDUSTRY                      1964-71
- General correspondence re meetings and activities.
- E.11-E.17                THE BIOCHEMICAL SOCIETY                      1964-74
- Correspondence with colleagues and with officers of the Society, mainly re meetings and Symposia sponsored by Chain at Imperial College or with contributions by him.
- E.11                      Ms. draft for Chain's speech of welcome at first meeting of Society at Imperial College, n.d. [1964].
- Brief correspondence re 1965 meeting.
- E.12                      Correspondence 1966 re colloquium on 'Comparative Biochemistry of Resistance to Drug Action' (November 1966). Chain gave Chairman's introductory speech, and opened the final discussion.
- Includes ms. and typescript versions of introductory speech.
- E.13                      Correspondence 1967 re possible Science Travel Service.
- E.14                      Correspondence and papers 1969 re colloquium on 'Naturally Occurring Substances of Potential Use for Control of Plants and Animals' (May 1969). Includes typescript of part of Chain's collaborative paper with K.D. Barrow, 'The wilting toxins of Fusicoccum amygdali Del.'
- E.15                      Correspondence 1969-70 re 500th Meeting of Society, on 'Biochemistry Past and Present', and proposed contribution by Chain on history of anti-biotics, which he did not feel able to undertake.

Societies and organisations

- E.16 Correspondence 1969-71 re Joint Meeting with Society for General Microbiology, held at Imperial College in December 1972, on 'Fungal Biochemistry'. Includes programmes, ms. opening remarks by Chain, and typescript of collaborative contributions to colloquium, on 'Claviceps purpurea', and on 'Viruses of Penicillia and Aspergilli'.
- E.17 Shorter correspondence 1973-74, including Chain's transfer to Emeritus Membership (1973) and Joint Symposium with British Association (1974).
- E.18 BRITISH ASSOCIATION FOR CANCER RESEARCH 1979  
Brief correspondence re presentation to I. Berenblum.
- E.19 THE BRITISH COUNCIL 1958, 1970-72  
1958 correspondence is re Marotta.  
Later correspondence is re British Council visitors from overseas.
- E.20 THE BRITISH DIABETIC ASSOCIATION 1967-71  
Shorter correspondence re Chain's contribution to, and Honorary Patronage of, the Association, various dates.
- E.21-E.25 BRITISH HEART FOUNDATION 1963-74  
Chain was a member of the Science Committee (renamed the Scientific Advisory Committee in 1970) from its inception in 1963 until its disbandment in 1973. He also served on the Research Funds Committee, which was set up in 1970 to review applications for research grants and to allocate funds, in place of the Science Committee which was felt to have become too cumbersome to deal with the growing volume of work.  
Chain received support from the Foundation for some of his own research projects at Imperial College; see especially E.25 below for material relating to his application with D.J. Hearse for a grant for research into 'Drugs and Cardiac Metabolism'.
- E.21 Correspondence re Chain's membership of the two Committees, 1963-73. Includes letters of invitation to serve, letters of thanks for service on both committees, letter re disbandment of Scientific Advisory Committee.



Societies and organisations

- E.22 Correspondence re arrangements for committee meetings, symposia, and other business of the Foundation, 1967-72.
- E.23, E.24 Correspondence re applications for research grants, with Chain's comments, evaluations, correspondence with colleagues or applicants, lists of grants made at meetings of Advisory Committee, etc.  
2 folders as follows:
- E.23 1967-71
- E.24 1972-74
- E.25 Correspondence re grants made by the British Heart Foundation to the Biochemistry Department, Imperial College, 1967-74. Includes grant applications, correspondence re staff appointments, press releases, reports on research, publications, etc. The grants include work on 'Oxygen Metabolism of Heart Muscle', 'Metabolism of Heart Muscle', 'Drugs and Cardiac Metabolism'.
- E.26 THE BRITISH INDUSTRIAL BIOLOGICAL RESEARCH ASSOCIATION (BIBRA) 1970-78  
General correspondence re meetings and lectures.
- E.27-E.32 THE BRITISH NUTRITION FOUNDATION (BNF) 1967-78  
Chain served on the first Scientific Advisory Committee of the Foundation, on the Executive Committee (sometimes as Chairman), and on the Information Committee. In 1974 he chaired a committee set up 'to re-assess the Foundation and the direction in which it is heading', and he played a major part in its grant-awarding and prize-giving activities.  
The material includes correspondence with Officers of the Foundation, and with scientific and industrial colleagues, on all aspects of the Foundation's work. There is also a little personal material.
- E.27 1967-70  
Includes invitation to serve on Scientific Advisory Committee, correspondence with A.C. Frazer (first Director-General of the Foundation), etc.

Societies and organisations

- E.28 1972
- E.29 1973, January-April 1974  
Includes meetings chaired by Chain, funding and matters arising.
- E.30 May-December 1974  
Includes speeches by Chain at Nutrition Foundations' Annual Book Award, and at BNF Annual Luncheon (both October), and correspondence re B.B.C. 'Tuesday Call-in' programme on chickens.
- E.31 1975-78  
Includes correspondence re press comment on alleged carcinogens in coffee, Chain's service on Information Committee of BNF and his re-appointment to other Committees.
- E.32 Correspondence 1972-75 with J. Rank re affairs of the Foundation, officers, etc.
- E.33-E.43 CANCER RESEARCH CAMPAIGN 1966-76  
(Until 1970: British Empire Cancer Campaign for Research)  
  
Chain served as Royal Society representative on the Grand Council 1969-75 (see E.33) and on the Executive Committee (see letter of 20 July 1970 in E.34).  
  
E.33-38 are a chronological sequence of general correspondence on policy, funding, committee and discussion meetings, lectures and the general affairs of the organisation.  
  
E.39-E.43 deal with research grants made to Chain by the Campaign for projects at Imperial College.
- E.33 Letters of re-appointment as Royal Society representative on Grand Council, 1969-75.
- E.34 1966-May 1972
- E.35 October-December 1972  
Includes correspondence on research developments, typescript of an address by Lord Nathan at Royal Society Cancer Research Symposium, and letter by Chain setting out his views on fruitful lines in cancer research.



Societies and organisations

- E.36      January-February 1973  
Mainly re research policy of C.R.C.
- E.37      April-November 1973  
Mainly re committee membership, with various memoranda by Chain.
- E.38      1974-76  
Letter of 15 May 1975 refers to nomination of D.A.J. Tyrell as Royal Society representative on Grand Council in place of Chain, and other membership changes.  
Also included is letter of thanks (May 1976) from the President for Chain's service.
- E.39-E.43      Correspondence and papers 1967-73 re grant to Chain for research on 'Large scale production of microbial asparaginase and the study of its antileucaemia and pharmacological properties', and continuing related researches.  
N.B. This grant was awarded by the British Empire Cancer Campaign for Research, and continued after the change of name to Cancer Research Campaign.  
5 folders as follows:
- E.39      1967-68  
Includes grant application, correspondence with Imperial College, press releases, research report.
- E.40      1969-70  
Statements of account, arrangements for visitors and meetings, applications for grant renewal, report.
- E.41      1971  
Application for continuation grant for 'Studies on the isolation and purification of bacterial asparaginases', statement of account.
- E.42      1972  
Application for continuation grant with statement of research on 'Large scale preparation of purified deaminases of essential amino acids of bacterial origin'.

Societies and organisations

E.43 1973

Application for renewal of grant for work on 'Large scale preparation of purified deaminases of bacterial origin for essential amino-acids', arrangements for visit to Chain's department by Scientific Committee of C.R.C., and for future of enzyme research after Chain's retirement as Head of Department of Biochemistry.

E.44 THE CHEMICAL SOCIETY 1950, 1968

Brief correspondence re Chain's application for Fellowship, 1950.

Correspondence and papers re 5th International Symposium on 'The Chemistry of Natural Products', London 1968.

Chain was one of the Honorary Vice-Presidents and chaired the Plenary Lecture by C.B. Anfinsen on 12 July.

Includes ms. and typescript drafts of Chain's introductory speech, Handbook, List of participants.

E.45-E.52 THE CIBA FOUNDATION 1961-79

Correspondence and papers re meetings and symposia. A little personal material is also included.

E.45 1961-62

Correspondence re Symposium on 'Enzymes and Drug Action', March 1961.

Chain's contribution, 'Action of Insulin on Metabolic Reactions', was published in the symposium proceedings 1962 (Bibliog. 91).

E.46, E.47 1961-62

Correspondence and papers re Study Group on 'Resistance of Bacteria to the Penicillins', February 1962.

E.46 Invitation, programme, list of speakers and participants, abstract of Chain's paper, etc.

Chain spoke on 'The new penicillins', and his contribution was published in the proceedings.

E.47 Editorial correspondence, transcript of discussion at Study Group, sent to Chain for correction.



## Societies and organisations

- |      |                        |  |
|------|------------------------|--|
| E.48 | 1965                   | Letter of invitation to seminar on 'The Problem of Determining Social Usefulness', October 1965.   |
|      | 1966-67                | Correspondence and papers <u>re</u> Symposium on 'Interferon', April 1967.<br><br>The Symposium was organised at the request of Alick Isaacs, who died in January 1967. The symposium was dedicated to his memory. |
| E.49 | 1967-69                | Shorter correspondence <u>re</u> 'Dunant Coterie' Dinners, etc.<br>(Chain gave a talk at a 'Dunant Coterie' Dinner in 1969, on the Independent University. See E.68.)  |
| E.50 | 1969,                  | Correspondence <u>re</u> possible Chinese participation in a Ciba conference.  |
|      | 1970-71                | Programme and correspondence <u>re</u> Study Group on 'Peptide Transport in Bacteria and Mammalian Gut', November 1971, and <u>re</u> 23rd Ciba Annual Lecture, given by H. Theorell, 1971.                        |
| E.51 | 1972-74                |  |
| E.52 | 1977-79                | <u>re</u> Symposium on 'Further perspectives in organic chemistry' (to commemorate Sir Robert Robinson), February 1977, and other commemorative meetings.  |
| E.53 | THE CONSERVATIVE PARTY | 1965-75  |
|      |                        | General correspondence with members of the Conservative party, ministers and officials on the organisation of scientific and technological research.   |

Societies and organisations

E.54 COUNCIL FOR SCIENTIFIC POLICY 1965-67

Working Party on Liaison between Universities  
and Government Research Establishments.

The Working Party was set up under the Chairmanship of Sir Gordon Sutherland, and an interim report was produced in October 1965. It was then decided to expand the committee to present a final report by June 1966. Chain was invited to serve on the committee in November 1965. The Secretary of the Working Party was A.V. Cohen.

Papers include invitation to serve, notices of meetings, material especially re German university and research systems (includes draft 'Comments' on the subject prepared by Chain), correspondence re drafting of report, letter of thanks for service.

E.55 COUNCIL OF ENGINEERING INSTITUTIONS 1967-68

Joint Manpower Committee.

Chain served as one of the Royal Society representatives on the committee, which was set up 'to review and analyse the various manpower reports and surveys in relation to the future needs of industry'. The Chairman was Sir Eric Mensforth.

Material includes invitation to serve, correspondence and drafts of report, final revised version entitled 'Engineers, Technologists and Scientists in the National Economy'.

E.56 DEPARTMENT OF HEALTH AND SOCIAL SECURITY 1969, 1975-76

Correspondence 1969 is re Medicines Commission.

Correspondence 1975-76 is with Minister (D. Owen), advisers and colleagues re medical research policy.

E.57 DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH (DSIR) 1963-65

Mainly concerned with grant of £100,000 made by DSIR to Department of Biochemistry, Imperial College, for Chain's research on 'Fermentation Biochemistry and Technology and Biosynthetic Mechanisms in Micro-Organisms'.

Continued



Societies and organisations

- E.57 (Cont'd.) Includes correspondence, details of grant budget, claims and statements of account, etc. and a note by Chain on a new Postgraduate Course in Biochemistry to start in October 1966.
- Also included here is brief correspondence re visit of Russian scientists, 1964.
- E.58 EUROPEAN SOCIETY FOR BIOCHEMICAL PHARMACOLOGY 1963
- The Society was formed in 1963. Chain was a member of the international organising committee, and the first President.
- Correspondence re formation of society, ms. draft of Chain's 'Opening address, introducing Professor Otto Warburg' at first public meeting of society.
- Reprint of printed version, published in Progr. biochem. Pharmacol. 1, 1965.
- See E.60, G.190, K.236.
- Also included here is brief correspondence re newly-founded Pakistan Society of Pharmacology and Experimental Therapeutics, 1963.
- E.59 EVOLUTION PROTEST MOVEMENT 1970-75
- Correspondence, mainly re request to quote from Chain's article on 'Social responsibility and the scientist'.
- E.60 FEDERATION OF EUROPEAN BIOCHEMICAL SOCIETIES (FEBS) 1964
- Correspondence and papers re first meeting of the Federation, March 1964.
- The European Society for Biochemical Pharmacology applied for membership of the Federation at this meeting (see E.58).

Societies and organisations

- E.61-E.63      THE FLEMING MEMORIAL FUND FOR MEDICAL RESEARCH      1959-64
- Chain was one of the founding members of the Council of the Fund (see letter of 19 March 1959 in E.61).
- E.61      General correspondence re launching, organisation, publicity, etc. of the Fund, 1959.
- N.B.      Almost all of this is Chain's carbons only; few incoming letters survive.
- E.62      Announcement of grant of £50,000 from Fleming Fund to Chain for research on 'The study of regulatory mechanisms' and on 'The study of metabolic reactions in nervous tissue', 1963.
- Copy of minutes of 24th and Final Meeting of Executive Committee, 1963.
- E.63      Correspondence re applications for research grants, submitted to Chain for comment, 1964.
- E.64      FOOD AND AGRICULTURE ORGANIZATION (FAO)      1954, 1963
- Brief correspondence 1954 re lecture to be given by Chain in Rome.
- Correspondence and papers 1963 re meeting held in Rome in March 1963 to publicise Freedom from Hunger Campaign.
- Includes programme, list of participants, discussion of manifesto to be issued, Chain's carbons of letters to colleagues sending copies of the amended version of the manifesto.
- E.65      FUNDACIÓN GENERAL MEDITERRANEA (MIGUEL SERVET FUND)      1974-77
- The Fundación, a philanthropic non-profit foundation, was established in 1971; the Miguel Servet Fund was created in April 1973 under the patronage of the Fundación with the aim of assisting research in diseases of the heart.
- Chain served as Honorary Member of the Council.

Continued



Societies and organisations

- E.65 (Cont'd.)      Material includes invitation to serve, arrangements for meetings, conferences, awards of Miguel Servet Prizes, and a little scientific correspondence. Chain gave his lecture on 'Government, the Medical Sciences and the People' at the Fundación's meeting in October 1975 (see J.163).

Includes photographs taken at 1976 meeting.

E.66-E.72      THE INDEPENDENT UNIVERSITY      1968-75

Chain was a member of the Planning Board (see letter of 3 February 1969 in E.67): his brother-in-law Max (later Lord) Beloff became the first Principal of the Independent University when it was established at Buckingham in 1974.

The material deals with the early organisation, funding, manifestos, meetings and conferences, publicity and launching for the project and includes some committee papers.

E.66      1968

E.67      1969

E.68      1969

Ms. draft and typescript version of talk by Chain on the Independent University, given at the Dunant Coterie Dinner Meeting, Ciba Foundation, October 1969. With a little related correspondence.

E.69      1970

E.70      1971

E.71      1972

Correspondence with Dr. M.L. Zarnitz.

E.72      1973-75

Societies and organisations

E.73-E.75      INSTITUTE OF BIOLOGY      1964-74

Chain was invited to become a Fellow in 1964 and was made an Honorary Fellow in 1966.

E.73      General correspondence 1964-74 on the affairs of the Institute, elections, meetings, etc.

E.74      Symposium on 'Biology and the Manufacturing Industries', London, 29 and 30 September 1966.

Chain was invited to take the Chair for the first session of the Symposium. Folder includes correspondence re arrangements, typescript drafts of Chain's introductory remarks, and of the report of Chain's speech and the discussions in which he took part, sent to him for correction prior to publication (Academic Press).

E.75      Conference on 'Improving the contacts between industry and university', held at the Royal Society, 1 December 1967.

Chain was asked to give a short talk on 'Academic biologists as consultants to industry'. Folder includes correspondence re arrangements and part of typescript drafts of Chain's talk, for publication in the Institute's Journal.

E.76      THE INSTITUTE OF ECONOMIC AFFAIRS LTD.      1968-79

General correspondence with R. Harris (General Director) on the affairs of the Institute.

E.77      THE INSTITUTION OF CHEMICAL ENGINEERS      1963

Brief correspondence re formation of a Working Party on Biochemical Engineering.

E.78      INTERNATIONAL ASSOCIATION OF MICROBIOLOGICAL SOCIETIES (IAMS)      1963

Correspondence and papers re formation of a Section on 'Economics and Applied Microbiology'.

Chain was nominated as a Councilor.





Societies and organisations

- E.85 THE LISTER INSTITUTE OF PREVENTIVE MEDICINE 1975
- Correspondence with Chairman (A. Neuberger) and others on the affairs of the Institute.
- E.86 MEDICAL RESEARCH CLUB 1950-78
- Chain was a member from 1946.
- Brief correspondence re subscriptions and meetings, including invitation to speak at the Club's meeting to commemorate Fleming's original 1929 paper on penicillin.
- E.87-E.112 MEDICAL RESEARCH COUNCIL (MRC) 1950-76
- Chain had many links with the Council. He was a member of some of its committees, a referee for grant applications, and on friendly terms with many administrative and scientific officers. The Council contributed to the funding of several of his research projects at Imperial College, sometimes in collaboration with other bodies such as the Department of Scientific and Industrial Research, the Beecham Group, the Fleming Research Fund (qqv.).
- From the early 1970s Chain became increasingly critical of the direction of officially-funded medical research, which he considered too favourable to molecular biology at the expense of other disciplines. He waged vigorous polemical campaigns with MRC and others; see especially E.93-E.95 for material on this subject.
- E.87-E.92 General correspondence on affairs of MRC 1950-76.
- E.93-E.95 Correspondence and papers on the organisation of medical research 1972-76.
- E.96-E.112 Chain's research projects funded by MRC 1961-73.
- E.87-E.92 GENERAL CORRESPONDENCE ON MRC AFFAIRS, 1950-76
- E.87 1950-54
- E.88 Correspondence re lecture to MRC by Chain (January 1962), on some recent developments in chemical microbiology.
- Correspondence re Chain's service on Chemotherapy Committee, 1962.



Societies and organisations

- E.89 Correspondence re visit and lecture to MRC by Chain, October-November 1962. Includes ms. and typescript drafts of talk with provisional title 'Some contributions of chemical microbiology to biochemistry and medicine'.
- E.90 Correspondence with the Secretary, 1963, re Fellowship Fund for bringing foreign scientists to Britain.
- E.91 Correspondence with A. Isaacs, 1963.
- E.92 Miscellaneous references for grants, etc., 1970-75.
- E.93-E.95 CORRESPONDENCE AND PAPERS ON THE ORGANISATION OF MEDICAL RESEARCH 1972-76

Chain felt very strongly that physiological biochemistry was becoming neglected in favour of molecular biology, and he lobbied vigorously against this trend. In particular, he pressed officials of the Department of Health and Social Security and of the Medical Research Council on the subject, and a joint meeting was held at the Council on 22 July 1974.

Among the papers discussed at the meeting was Chain's 'Future contributions from biochemistry to the advancement of medical research', originally a talk given to a special meeting of the Council's Training Awards Committee in May 1972, when Chain first obtained a hearing for his views. A copy is included in E.93.

See also E.104, E.105.

- E.93 Correspondence and papers exchanged with Department of Health and Social Security, leading up to Joint Meeting. 1972-74
- E.94 Correspondence and papers exchanged with MRC including papers for Joint Meeting. 1973-74
- E.95 Correspondence re MRC Cell Board on molecular biology and on EMBO. 1976

Correspondence with Secretary, 1976.

Societies and organisations

- E.96-E.112 CHAIN'S RESEARCH PROJECTS FUNDED BY MRC 1961-73
- E.96-E.101 Metabolic Reactions Research Unit 1961-71
- E.96 Correspondence 1961-62 with Secretary and officials exploring possibilities of setting up unit at Imperial College. Includes letters relating to lecture by H. Himsworth at Istituto, Rome, on the organisation of medical research in Britain.
- E.97 Correspondence 1963-64 re application for funding and its acceptance, press release, etc.
- E.98 Correspondence 1962-64 re staffing of unit.
- E.99 Correspondence 1967-68 re 'press visit' for medical and science correspondents to Chain's unit, arranged at request of MRC, on 23 January 1968. Includes time-table of visit, press release and notices.
- E.100 Correspondence and papers 1968-69 re visit to Chain's unit of MRC Sub-Committee, on 5 March 1969.  
  
Includes programme of visit, guest-list, miscellaneous drafts for Chain's introductory talk.
- E.101 Miscellaneous typescript reports on the work of the Metabolic Reactions Research Unit, 1965-67, 1969 (for visit in E.99 above), on apparatus, visits to U.S. laboratories, etc.
- E.102-E.105 Continuing metabolic research 1971-73
- The MRC Metabolic Reactions Research Unit at the Biochemistry Department, Imperial College, was closed on 1 September 1971. Chain applied to the Council for funding for two research projects to continue the work of the Unit.
- The projects, to run 1 September 1971-31 August 1973 with possible extension for one further year, were:
- 'The mode of action of insulin'
- 'The biogenesis of ergot alkaloids'
- The Council did not accept these applications in full; although Chain was able to continue his research on insulin (partly from MRC Private Funds), his application to work on ergot was refused, as was his application for training grants for Ph.D. students.

Continued



Societies and organisations

- E.102-E.105  
(Cont'd.)      These refusals prompted him to raise the question of the balance between molecular biology and physiological whole-animal biochemistry in U.K. research. A special meeting of the MRC Training Awards Committee was held on 10 May 1972 for which Chain prepared and spoke to a paper 'Future contributions from biochemistry to the advancement of medical research'.  
See E.93-E.95 for similar material.
- E.102      'The mode of action of insulin'.  
Ms. drafts of application and background information,  
copy of application as sent 1971.
- E.103      'Production and biosynthesis of the ergot alkaloids'  
Ms. drafts of application and background information,  
copy of application as sent 1971.
- E.104      Correspondence, October 1971-June 1972, re refusal of Chain's applications, and the special meeting of Training Awards Committee (includes committee papers) and correspondence after the meeting.
- E.105      Ms. and revised typescript versions of Chain's paper for the meeting.
- E.106-E.108      Non-specific immunity 1968-73  
  
The first grant for this project was made in 1966 (starting date 1 March) but the original application does not survive.  
The papers deal with various renewals of the grant 1968-73. The research was a collaborative project with the MRC Common Cold Research Unit and with Beecham Research Laboratories.
- E.106      Miscellaneous drafts and revisions of application for renewal of grant, correspondence with MRC, Beecham and Imperial College officials on the matter, notification of support from MRC, December 1968-February 1969.
- E.107      Budget accounts, reports on research in progress, renewals of grant, etc., April 1969-December 1970.
- E.108      Similar material, December 1970-March 1973.

Societies and organisations

E.109-E.112      Interferon Inducer Project, 1969-72

This was a collaborative project between MRC (funding Chain's team at the Biochemistry Department, Imperial College), Beecham Research Laboratories, the MRC Common Cold Research Unit, and researchers in other laboratories and institutions.

E.109      General discussion of project, definition of fields of collaboration, preliminary meetings and visits, January-November 1969.

E.110      Correspondence and drafts, January-June 1970, re terms of agreement between MRC, Beecham and Imperial College, progress reports, background information, copy of agreement as finally signed 2 June.

E.111      Correspondence, etc., September-November 1970, re project, results, and re Chain's proposed paper (with Buck and Himmelweit) on 'Interferon Induction in mice ...', published in J. gen. Virol. 12, 1971 (draft included) (Bibliog. 145).

E.112      Correspondence, etc., 1971, re project and renewal of grant, patents, etc.

E.113-E.118      MINISTRY OF AGRICULTURE, FISHERIES AND  
FOOD

1965-77

Chain was a member of the Scientific Advisory Panel 1965-68, when the Panel was dissolved in favour of co-optation of 'independent scientists, where necessary, for particular investigations' (see Minister's letter of 28 June 1968 in E.115). Chain continued to act as adviser and to correspond with Ministry officials on various problems until 1977.

E.113      1965. Correspondence, references and material assembled on the subject of diseases due to bacteria and the use of antibiotics in food and feedstuffs.

E.114      1967. Correspondence and papers, including report by Chain on Zimpro Wet Sludge Oxidation Process, arrangements for Central Veterinary Laboratory Golden Jubilee, etc.

E.115      1968. Includes Minister's letter dissolving Panel.

E.116      1972, 1974 (on single cell protein).

E.117      1976-77, on microbial fermentation of straw.

E.118      1976-77, on 'vertical greenhouses'.



Societies and organisations

E.119                      MINISTRY OF HEALTH                      1961, 1968

Correspondence 1961 is on pharmaceutical industry (Chain advised on the Italian pharmaceutical industry).

Correspondence 1968 is re exchange of information on asparaginase.

E.120                      MINISTRY OF TECHNOLOGY                      1967

Correspondence, notes of meetings and application for research support (submitted jointly by Department of Biochemistry, Imperial College, and Department of Medical Physics, Manchester University) for 'Project for the development of the spark chamber as a tool for the quantitative evaluation of mono and bidimensional paper and thin layer radiochromatograms, and for clinical use in  $\gamma$ -cameras', 1967.

E.121-E.129              NATIONAL RESEARCH DEVELOPMENT CORPORATION (NRDC)                      1969-76

Chain was invited to act as a consultant from 1 January 1970 (see E.121 for preliminary discussions and contract of service).

The material is presented as a chronological sequence; it deals mainly with meetings, research projects, appointments, etc. and a brief indication is given of the principal topics in each folder. Reports and background material of special relevance have been retained as well as Chain's reports and comments on research.

The Department of Biochemistry, Imperial College, also participated in an NRDC project on 'Meat Tenderisation by Ante-Mortem Treatment', in collaboration with the Agricultural Research Council's Meat Research Institute and others. The first reference to this is in letter of 29 February 1972 (see E.124), and E.125-E.129 also refer.

E.121                      1969. Correspondence re meetings and research projects. Preliminary discussions leading up to Chain's appointment as consultant 'within the fields of biochemistry (including chemical microbiology), pharmaceutical chemistry, bio-engineering and biochemical instrumentation' (December 1969).

Societies and organisations

- E.122      1970  
Gnotobiotic Technology  
Specific Polyelectrolytes  
Edible Proteins of Fungal Origin  
Viral Insecticides  
Medical Isolators
- E.123      1971  
Viral Insecticides  
Specific Polyelectrolytes  
Fermentation Processes for Selected Ergot Alkaloids
- E.124      1972, January-April  
Viral Insecticides  
Meat Tenderisation by Ante-mortem Treatment (collaborative project with Imperial College and ARC's Meat Research Institute)  
Plant Suspension Cultures
- E.125      1972, June-November  
Meat Tenderisation
- E.126      1973, March-August  
Meat Tenderisation  
Letter to Chain of 20 March announces NRDC support for a two-year programme of work on the project, to be carried out at Imperial College and ARC Meat Research Institute. Also included is general correspondence re terms of contract, appointments, progress of research.
- E.127      1973, September-November  
Meat Tenderisation
- E.128      1974  
Meat Tenderisation (the project was closed in July)
- E.129      1975-76  
Meat Tenderisation  
Effluent Treatment with Tubular Reactor  
Antibiotic from *Ps Cocovenenans*



Societies and organisations

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|--------------|---|---------|
| E.131, E.132 | THE NUFFIELD FOUNDATION   | 1969-71 |
| E.131        | General correspondence on the affairs of the Foundation, grant applications, research fellowship project, etc. 1969-71  |         |
| E.132        | Correspondence and papers <u>re</u> Second Food Safety Conference, organised by the Foundation and held at Churchill College, Cambridge, 14-17 July 1969.   |         |
|              | The opening paper, on 'The need for more biochemical information in the field of food safety evaluation', was to have been given by A.C. Frazer, who died suddenly on 14 June. Chain presented the paper, with an introductory tribute to Frazer. Chain's tribute, and his contribution to the discussion, were published in the conference proceedings.  |         |
|              | Material includes programme, list of participants, typescript of Frazer's paper, ms. and typescript versions of Chain's tribute and contribution, correspondence <u>re</u> conference and publication of proceedings as a book 'Metabolic Aspects of Food Safety'.  |         |
| E.133        | THE NUTRITION SOCIETY   | 1972    |
|              | Brief correspondence <u>re</u> a symposium held by the Scottish Group of the Society.   |         |
| E.134        | OFFICE OF HEALTH ECONOMICS  | 1963-78 |
|              | Chain was an Honorary Adviser (see letter of 1 January 1964, and E.219).  |         |
|              | General correspondence with G. Teeling-Smith (Director) <u>re</u> publications, meetings and affairs of the organisation.   |         |
| E.135        | PAN AMERICAN HEALTH ORGANIZATION  | 1973-77 |
|              | Chain was asked to serve on the Advisory Committee on Medical Research for 4 years from 1973 (letter 22 February 1973). Folder contains correspondence <u>re</u> arrangements for annual meetings of the Committee in Washington, 1973-75. Chain was unable to attend the meeting in 1976 because of other commitments. Also included are transcripts of Chain's remarks at the 1973 and 1974 meetings, with Chain's ms. corrections. |         |

Societies and organisations

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|-------------|---|---------|
| E.136       | THE PARLIAMENTARY AND SCIENTIFIC<br>COMMITTEE   | 1973    |
|             | Brief correspondence only <u>re</u> meeting.  |         |
| E.137-E.145 | PAUL EHRLICH FOUNDATION   | 1959-79 |
|             | <p>Chain was awarded the Paul Ehrlich Prize, and gave the Paul Ehrlich Lecture, in 1954, Ehrlich's Centenary Year (see A.90-A.94). This award gave him great pleasure. He became a member of the Council of the Foundation (Stiftungsrat) and played an active part in meetings of the Council and in the nomination and recommendation of candidates for prizes; he also, whenever possible, attended the annual prize-giving ceremonies at Frankfurt on 14 March (Ehrlich's birthday).</p> <p>Formal circular letters to members of the Council <u>re</u> meetings, recommendations and elections, etc. have been discarded as a complete record of deliberations is held at the Paul Ehrlich Foundation. The folders below contain correspondence addressed to and conducted by Chain personally, including recommendations, elections and meetings in which he was actively concerned.</p> <p>The correspondence is mainly conducted with scientific colleagues and with successive Secretaries of the Foundation, but also includes letters from members of the Ehrlich family.</p> <p>An explanatory booklet about the Foundation is included for information in E.137.</p> |         |
| E.137       | 1959-64   |         |
| E.138       | 1965-66   |         |
|             | Includes correspondence with and <u>re</u> F. Peyton Rous.  |         |
| E.139       | 1967  |         |
| E.140       | 1968-70   |         |
| E.141       | 1971-73   |         |
| E.142       | 1974  |         |



E.143	1975	
	Correspondence with colleagues <u>re</u> research on cell fusion.	
E.144	1976-77	
E.145	1978-79	
	Includes arrangements for Chain to give farewell address to outgoing Secretary.	
E.146	PAUL EHRLICH INSTITUTE	1952, 1955, 1961-62
	Brief scientific correspondence 1952, 1955 with Director of Institute, R. Prigge.	
	Correspondence 1961-62 <u>re</u> Prigge's successor as Director.	
E.147	THE PHARMACEUTICAL SOCIETY OF GREAT BRITAIN	1955, 1975
	Brief correspondence only.	
E.148	PUGWASH CONFERENCES ON SCIENCE AND WORLD AFFAIRS (and BRITISH PUGWASH GROUP)	1970, 1971
	Brief correspondence only.	
E.149-E.155	THE RANK PRIZE FUNDS	1972-79
	The prizes were distributed by the Rank Science Trust, the establishment of which was announced in April 1972.	
	Chain was a member of the Committee on Nutrition (Chairman: A. Spicer).	
	The material relates mainly to arrangements for committee meetings, applications for awards, symposia organised by the Rank Prize Funds, etc.	
E.149	1972	
	Includes invitation to serve on committee and initial arrangements for organising Funds. Also included here is a letter of thanks from Joseph Rank to Chain for his obituary of Lord Rank (April 1972).	

Societies and organisations

- E.150 1973
- E.151 1974  
Includes material re Symposium on 'Bread' held in September.  
(Chain chaired a session and edited transcripts for publication.)
- E.152 1975
- E.153 1976
- E.154 1977  
Includes material re International Symposium on 'The Diet of Man - Needs and Wants', held in April 1977. (Chain chaired a session.)
- E.155 1978-79  
Includes brief correspondence re International Symposium on 'Food Chains and Human Nutrition', held in April 1979.  
(Chain was to chair a session but declined for reasons of ill-health.)
- E.156 THE ROCKEFELLER FOUNDATION 1949  
Correspondence re request for Foundation support for work with D. Bovet at Istituto Superiore di Sanità, Rome.
- E.157 ROYAL COLLEGE OF PHYSICIANS 1965-72  
General correspondence and papers.  
Includes Chain's election as an Honorary Fellow (1965), 450th Anniversary Appeal (1968), and exchange of views on the organisation of biochemical research and the Research Councils (1971-72). Chain addressed guests at a specially-convened small dinner-party to discuss the subject and a typescript of his remarks is included.  
In 1964 Chain gave the Oliver-Sharpey Lecture at the College (see G.51).



Societies and organisations

- E.158 ROYAL GEOGRAPHICAL SOCIETY 1975  
Brief correspondence only, re Louis Rey.
- E.159 THE ROYAL INSTITUTE OF CHEMISTRY 1954  
Brief correspondence, chiefly re publication of lectures by Chain.
- E.160 THE ROYAL INSTITUTION 1965  
Correspondence 1965 re Evening Party to celebrate 50th Anniversary of Award of Nobel Prize to Sir Lawrence Bragg. See also K.188 (Porter, G.)
- E.161 ROYAL POSTGRADUATE MEDICAL SCHOOL 1964, 1971-74  
Correspondence 1964 is a brief note re speakers for Symposium.  
  
Correspondence 1971-74 is on the affairs of the Committee of Management on which Chain served as a co-opted member. In 1974 the School was granted a new Royal Charter which established a School Council in place of the former Committee.
- E.162-E.183 THE ROYAL SOCIETY 1954-79  
For Chain's election to the Fellowship of the Society, see A.85, A.86.  
  
E.162-E.170 Committees, meetings, symposia  
E.171-E.176 Elections  
E.177-E.183 General correspondence on affairs of the Society
- E.162-E.170 COMMITTEES, MEETINGS, SYMPOSIA  
  
E.162 Letter of appointment as Royal Society representative on the Grand Council, British Empire Cancer Campaign (later Cancer Research Campaign, q.v.), 1964.

Societies and organisations

- E.163 Papers re Use and Management of Biological Resources Subcommittee of the British National Committee for the International Biological Programme, 1967-72.  
The Chairman of the Subcommittee was N.W. Pirie, and there is earlier correspondence with Pirie from 1963.
- E.164 Papers re Mullard Award. Chain served on the Standing Advisory Committee. Includes Chain's nomination of a team from the Beecham Research Laboratories for the 1971 Award (for work on semi-synthetic penicillins).
- E.165 Discussion meeting on U.K. participation in European Molecular Biology Organization (EMBO), October 1969. Includes programme, background papers, ms. and typescript drafts of Chain's contribution to discussion.

For Discussion meeting on 'Penicillin and related antibiotics - past, present and future', organised by Chain and E.J. Stokes and held 20-21 May 1971, see B.73-B.84.

- E.166 Correspondence and papers re 'A Framework for Government Research and Development' (the "Rothschild Report") 1971-72. Includes Chain's letters to Officers of the Society, papers and minutes of the Royal Society Industrial Activities Committee (Chain was a member) commenting on the Report, correspondence re Select Parliamentary Committee on Science and Technology, and later correspondence with Rothschild, April-June 1972.
- E.167-E.169 Discussion meeting on 'Food Technology in the 1980s', May 1974, organised by Chain, S.A. Goldblith, L. Rey and A. Spicer.  
The meeting arose from discussion at June 1972 meeting of the Royal Society Industrial Activities Committee, and the papers were published in Proc. Roy. Soc., B, 191 (Bibliog. 170).  
3 folders as follows:
- E.167 1973  
Preliminary discussions and arrangements, scope of meeting, invitations to speakers, provisional programme.
- E.168 1974  
Continuing correspondence re arrangements, time-tabling, letters of invitation and thanks, includes some abstracts of papers and copy of Chain's 'Concluding remarks'.



Societies and organisations

E.169 1975

Mainly correspondence re publication in the Society's Proceedings, and the paper on 'Engineered Food' given by E.F. Binkerd (substituting for J.V. Luck) which was omitted from the publication. A copy of the paper as delivered, with accompanying photographs, is enclosed.

E.170 Termination of service on National Committee for Biochemistry, 1976.

Correspondence on new technologies, 1978.

Correspondence on Joint Working Party on Biotechnology, 1979 (Chain was to give evidence to the Working Party on 6 September 1979, but died the previous month).

For correspondence on Discussion meeting 'Penicillin 50 years after Fleming', see B.90.

E.171-E.176 ELECTIONS

E.171 1954-60

E.172 1963-70

E.173 1971-78

E.174 1971-74

E.175 1972-77

E.176 1974

E.177-E.183 GENERAL CORRESPONDENCE ON AFFAIRS OF THE SOCIETY

E.177 1963-66

E.178 Correspondence re Royal Society/Israel Academy scheme for the exchange of scientists, 1970.

E.179 1970

E.180 Correspondence and papers re Royal Society Club, 1970-72, 1978 (and one letter 1958).

Societies and organisations

- E.181      Brief correspondence and papers re visits of Russian scientists arranged under Royal Society's exchange agreement with the USSR Academy of Sciences. Various dates, 1971-79.
- E.182      Correspondence re Appeal fund, 1974.
- E.183      1977-78.
- 
- E.184      THE ROYAL SOCIETY OF ARTS      1972, 1974  
Brief correspondence only.
- E.185      THE ROYAL SOCIETY OF HEALTH      1969  
Correspondence re award of Gold Medal to A. Sabin.
- E.186      THE ROYAL SOCIETY OF MEDICINE      1961-79  
General correspondence on the affairs of the Society.  
Correspondence 1968 refers to award of Jephcott Medal to Chain.  
Correspondence 1969 refers to Chain's election as Honorary Fellow of the Society.  
Correspondence 1977-79 includes requests for an editorial on virus chemotherapy and Chain's reasons for considering the time premature.
- E.187      ST. MICHAEL'S FOUNDATION LTD.      1972-74, 1977  
Chain was a member of the Council of Management.  
Correspondence and papers 1972-74 is mainly re St. Michael's Medical Services Ltd. and proposed St. Michael's Hospital for diseases of heart and circulation.  
Correspondence 1977 includes announcement of the winding-up of the Foundation.



Societies and organisations

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|-------------|--|---------|
| E.188       | SAINT-VINCENT INTERNATIONAL PRIZE  | 1978-79 |
|             | Includes invitation to serve on committee for the Seventh Saint-Vincent International Prize for Medical Science (instituted in 1950), and Chain's recommendation of Sir John Charnley for the prize.   |         |
| E.189-E.196 | SCIENCE RESEARCH COUNCIL (SRC)   | 1968-73 |
|             | Correspondence and papers on general SRC policy and support for projects in areas of biochemical research and the biological sciences, including Chain's reports on applications for research grants from SRC Biological Sciences Committee.   |         |
| E.189       | July 1968-January 1969   |         |
|             | Mainly correspondence with the Secretary (Professor (now Lord) Flowers) and with colleagues <u>re</u> increased support for biochemical research and Chain's proposal for a Biochemistry Committee of SRC. Includes an earlier (1966) paper by Chain 'Arguments for increased support of basic biochemical research by the SRC', and his views on the report of the SRC's Enzyme Chemistry and Technology Panel. |         |
| E.190       | Correspondence October 1968 <u>re</u> SRC Grant for Fermentation Biochemistry in Chain's Department at Imperial College.   |         |
| E.191       | Correspondence and papers <u>re</u> meeting held at SRC to discuss 'Industrial Biology', 3 April 1969.   |         |
|             | Includes discussion papers prepared for meeting (Chain's was entitled 'The case for support by the SRC of long term research projects in the field of industrial biology'), minute of meeting and Chain's comments on it.  |         |
| E.192       | Continuing correspondence <u>re</u> SRC Working Party on Industrial Biology, Biological Sciences Committee, and Enzyme Chemistry and Technology Committee, August-October 1969.  |         |
| E.193       | Chain's reports on grant applications for SRC Biological Sciences Committee, February 1970.  |         |
| E.194       | Correspondence and papers, mainly <u>re</u> SRC interim Report on Developmental Biology, August-November 1970.   |         |
|             | Includes correspondence with colleagues, and comments on Report by Chain, and by L. Wolpert.   |         |

Societies and organisations

- E.195 Correspondence and papers re funding of Chain's Advanced M.Sc. Course in Microbial Biochemistry and Fermentation Technology, February-December 1972.  
Included here is a ms. draft letter on similar subject, n.d. and perhaps earlier.
- E.196 Chain's reports on grant applications for SRC's Biological Sciences Committee, 1973.
- E.197 SLOAN-KETTERING INSTITUTE FOR CANCER RESEARCH 1978-79  
Chain was invited to serve as a member of the Board of Scientific Consultants from July 1978.  
Correspondence re arrangements for meetings of the Board in October 1978 and March 1979.
- E.198 SOCIETÀ CHIMICA ITALIANA 1952-62  
General correspondence re conferences, invitations to lecture, conferral of Honorary Membership (1958).
- E.199 SOCIETÀ ITALIANA DELLE SCIENZE VETERINARIE 1954-55  
Brief correspondence re lecture at congress.
- E.200 SOCIETÀ ITALIANA DI CHEMIOTERAPIA 1953-63  
Chain was one of the founder members, and a member of Council (1953) and Honorary President (1963).
- E.201 SOCIETÀ ITALIANA DI MICROBIOLOGIA 1958  
Brief correspondence re conference.
- E.202 SOCIETÀ ITALIANA DI SCIENZE FARMACEUTICHE 1958-59  
Brief correspondence only re congress.



Societies and organisations

E.203                      SOCIETY FOR ANGLO-CHINESE UNDERSTANDING      1965-66

Correspondence re formation of Society. Chain was one of its sponsors and was asked to serve as co-treasurer, but declined from pressure of work.

E.204                      SOCIETY FOR ANTIMICROBIAL CHEMOTHERAPY      1979

Brief correspondence, May 1979, re Chain's nomination as one of the Society's first Honorary Members.

E.205                      SOCIETY FOR DRUG RESEARCH                              1971

Correspondence 1971, mainly re Symposium on 'Interferon Inducers', organised by Society, 27 October 1971.

Chain was one of the Chairmen and spoke on 'Double stranded ribonucleic acids as interferon inducers'.

E.206                      SOCIETY FOR GENERAL MICROBIOLOGY                      1951-79

Includes correspondence re Symposium on 'Antibiotics: Structure and Function', September 1963 (Chain gave the opening speech on 'Retrospect and Prospect') and Symposium on 'Biochemical Activities of Antimicrobial Drugs', April 1966.

E.207-E.216              SOCIETY OF CHEMICAL INDUSTRY                              1958-70

E.207-E.210 deal with the VIIIth National Congress of the Società Chimica Italiana held jointly with the Society of Chemical Industry, Turin, 26 May-2 June 1958. The Italian organisers were Marotta and Chain.

E.207                      Correspondence 1958 re Congress with colleagues, invitations to speak or attend, letters of thanks, publication, etc. A little scientific correspondence is included.

E.208                      Correspondence 1958-59, mainly with Editor, Chemistry and Industry, re publication of material about Congress, and of its papers.

Includes an article by Marotta on Istituto Superiore di Sanità, and also correspondence with Editor, Manufacturing Chemist.

A little correspondence re award of C.B.E. to Marotta is also included.

Societies and organisations

- E.209      Miscellaneous typescript and ms. drafts of Chain's account of the Congress, for publication in Chemistry and Industry.  
Ms. draft of speech by Chain introducing Sir Robert Robinson.
- E.210      Printed programme, speeches, menus, etc.
- E.211      Correspondence 1959, mainly re meeting of the Society in Glasgow when Hon. Membership was conferred on Marotta.  
Includes biographical notes on Marotta prepared by Chain.
- E.212      Shorter correspondence 1960  
Miscellaneous invitations to Chain to lecture to various Groups of the Society, 1961-68.
- E.213      Invitation to give the Lister Memorial Lecture (given in Edinburgh, 28 May 1965) and arrangements, 1963-65.
- E.214      Correspondence 1961-63 re Second International Fermentation Symposium, held in London 1964.  
Chain and his collaborators contributed their paper on Aeration Studies IV (Bibliog. 119).  
Also included here is brief correspondence 1966 re meeting on cephalosporin.
- E.215      Correspondence and papers re Symposium on 'The isolation and applications of microbial enzymes', London, September 1968.  
Includes programme, and ms. and typescript versions of Chain's introductory remarks.
- E.216      Correspondence and papers re Symposium on 'Keys to Industrial Fermentation Development', held at Imperial College, June 1970.  
Chain chaired the meeting and led the discussion.
- E.217      UNESCO      1975  
Correspondence re 'Rencontre pour l'universalité de l'UNESCO'.



Societies and organisations

- E.218                      USSR ACADEMY OF SCIENCES                      1975-79
- Miscellaneous correspondence, 1975-79, mainly with Secretary, G.K. Skryabin.
- Correspondence 1975 refers to Chain's visit to Russia for celebrations of 250th Anniversary of Academy.
- Correspondence 1976 refers to Chain's election to Honorary Membership of Academy. See also A.170, H.59.
- Correspondence 1976-79 refers to research, publications, etc.
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- E.219                      THE WELLCOME FOUNDATION LTD.                      1961-65, 1972
- General correspondence with Directors of the Foundation re visits, collaboration, etc.
- Includes correspondence 1963 re link with Sclavo (q.v.) and invitation to Chain 1964 to serve on Advisory Panel, Office of Health Economics (see E.134).
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- E.220                      THE WELLCOME RESEARCH LABORATORIES                      1957-64, 1976
- General correspondence with Directors and research scientists re exchanges of specimens and information, visits to laboratories, etc.
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- E.221                      THE WELLCOME TRUST                      1966-77
- Correspondence mainly re grant applications supported by or referred to Chain.
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- E.222                      WORLD FEDERATION OF DOCTORS WHO RESPECT HUMAN LIFE                      1975, 1976
- Brief correspondence only, re conferences organised by the British Section.

Societies and organisations

E.223-E.237      WORLD HEALTH ORGANIZATION (WHO)      1948-74

Chain's connection with WHO began in 1948. He served on the Expert Committee on Antibiotics (later designated Expert Advisory Panel on Antibiotics) from its inception in 1950. The International Research Centre of Chemical Microbiology at the Istituto Superiore di Sanità was one of the research stations affiliated to the WHO, accepting WHO Fellows for research and training. Many of the conferences organised by Chain in Rome (see Section C) were held under the auspices of this scheme.

From 1971 the Expert Advisory Panel on Antibiotics was integrated in the Expert Advisory Panel on Biological Standardization on which Chain was invited to serve.

E.223      Copies of correspondence, 1948, re lectures on penicillin given in Czechoslovakia by Chain on behalf of WHO.

E.224      January-February 1949

Mainly re arrangements for meeting at Geneva, February 1949, 'to determine aspects of the way in which WHO and ECE [Economic Commission for Europe] can assist in getting the UNRRA donated penicillin plants into operation'. Chain attended as an Expert Consultant.

Includes Report on the findings of the meeting.

E.225      April-December 1949

Includes correspondence re formation of an Expert Committee on Antibiotics, and plans for establishment in the Istituto Superiore di Sanità of a Centre for research and training in antibiotics, with funding from WHO.

Some correspondence re Podbielniak extractors, and re penicillin research in Czechoslovakia and Poland, is also included.

E.226      Miscellaneous WHO research reports on antibiotics, 1948-49.

E.227      January-March 1950

Mainly re arrangements for first meeting of Expert Committee on Antibiotics, Geneva, 11-15 April. Includes drafts of agenda, memoranda by Chain and by S.A. Waksman, committee papers (with WHO report on 'Training and research facilities in Antibiotics' at Istituto).

Chain was elected Chairman of the committee at this meeting.



Societies and organisations

- E.228 April-May 1950  
Includes draft and final versions of report on the committee meeting.
- E.229 June-August 1950  
re Committee, WHO Fellowships at Rome, criticisms of Expert Committee's report.
- E.230 September-November 1950  
re WHO Fellowships, penicillin plant in India, etc.
- E.231 1951  
Includes letter, 21 January, inviting Chain to serve on Expert Advisory Panel on Antibiotics which replaced former 'expert committee', and correspondence re proposed visit by Chain to U.S.A. (letter of 16 March gives briefing). In the event, the visit was cancelled by WHO and Chain's U.S. visa was refused (see E.232).  
Folder also includes material on Indian penicillin project and symposium at Rome.
- E.232 1952-53  
Correspondence and papers re refusal of a U.S. visa to Chain and the cancellation of his WHO visit in 1951 (see E.231 above). Includes 16 pp. account prepared by Chain of his relations with WHO, penicillin plants from UNRRA, etc. The account was originally intended for publication in Bulletin of the Atomic Scientists but was sent to the U.S. State Department via the Science Attaché. Also includes press-cuttings.
- E.233 1952  
Correspondence re symposium, visa, publications, etc.
- E.234 1953-60  
Correspondence re renewal of service on panel, symposium, meetings, etc.
- E.235 1966  
Correspondence re WHO Fellows wishing to work in Chain's Department at Imperial College.

### Societies and organisations

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| E.236 | 1967-71   |            |
|       | Correspondence <u>re</u> renewal of service, visits, etc.   |            |
| E.237 | 1971-74   |            |
|       | Correspondence <u>re</u> service on Expert Advisory Panel on Biological Standardization, WHO circulars on rauwolfia, etc. |            |
| E.238 | WYNDHAM PLACE TRUST   | 1969, 1972 |
|       | Brief correspondence only, <u>re</u> meetings.  |            |