

**Catalogue of the papers  
and correspondence of**

**Dorothy Mary Moyle Needham FRS**

(1896 - 1987)

+

First supplementary catalogue of the papers  
and correspondence of

Dorothy Mary Moyle Needham FRS

+

Second supplementary catalogue of the papers  
and correspondence of

Dorothy Mary Moyle Needham FRS

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## General contents:

Catalogue of the papers and correspondence of Dorothy Mary Moyle Needham FRS... 3-56

First supplementary catalogue of the papers and correspondence of  
Dorothy Mary Moyle Needham FRS ..... 57-79

Second supplementary catalogue of the papers and correspondence of  
Dorothy Mary Moyle Needham FRS ..... 79-108

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NOT ALL THE MATERIAL IN THE COLLECTION  
IS YET AVAILABLE FOR CONSULTATION.  
ENQUIRIES SHOULD BE ADDRESSED IN THE  
FIRST INSTANCE TO:

THE ARCHIVIST  
GIRTON COLLEGE  
CAMBRIDGE

## GENERAL INTRODUCTION

SECTION A	BIOGRAPHICAL AND PERSONAL	A.1 - A.120
SECTION B	CAMBRIDGE UNIVERSITY	B.1 - B.33
SECTION C	NOTEBOOKS	C.1 - C.78A
SECTION D	PUBLICATIONS AND LECTURES	D.1 - D.74
SECTION E	VISITS AND CONFERENCES	E.1 - E.11
SECTION F	CORRESPONDENCE	F.1 - F.38
SECTION G	NON-TEXTUAL MATERIAL	G.1 - G.10

## INDEX OF CORRESPONDENTS

## GENERAL INTRODUCTION

## PROVENANCE

The papers were received in March and August 1990 from Dr Joseph Needham FRS via Girton College Cambridge.

## OUTLINE OF THE CAREER OF D.M.M. NEEDHAM

Dorothy Mary Moyle was born in London on 22 September 1896. She was educated at Claremont College, Stockport, and St. Hilary's School, Alderley Edge, before passing the entrance examination to Girton College Cambridge in 1915 to study for the Natural Science Tripos. She passed Part I in 1918 and Part II, specialising in Chemistry, in 1919.

There followed research on aerobic synthesis of the muscle fuel glycogen for the Food Investigation Board of the Department of Scientific and Industrial Research, working under F.G. Hopkins and the Sir William Dunn Institute of Biochemistry, Cambridge. Dorothy Moyle received the 'title' of BA and MA in 1923 and of PhD in 1926, as women were not at the time able to receive degrees in the Senate House.

In 1924 Dorothy Moyle married Joseph Needham, a fellow worker in Hopkins's laboratory. She was awarded a Beit Memorial Fellowship for 1925-28 and during this period she did much collaborative work with her husband as well as pursuing her own lines of research. Dorothy Needham's most important work was on carbohydrate metabolism in muscle. From 1930 to 1940 she was involved in pioneering work on the part played by ATP (adenosinetriphosphate) in the contraction of muscle. For this and other research she was awarded the Cambridge University Sc.D. (1945) and elected to the Fellowship of the Royal Society (1948).

In 1940 she joined Dr. Malcolm Dixon's chemical defence research group to work on the effects of chemical weapons (mustard gas in particular) on the metabolism of skin and bone-marrow. This was followed by a period in China 1944 - 45 where Joseph Needham was Scientific Counsellor at the British Embassy in Chungking (Chongqing). Dorothy Needham was appointed Associate Director of the Sino-British Cooperation Office.

After the war Dorothy Needham returned to the Sir William Dunn Institute in Cambridge to take up work on enzyme biochemistry. Despite her great distinction she had never held an established post the University and was now supported by a short-term Medical Research Council grant, twice renewed. In 1952, however, the MRC declined to extend her grant further on the grounds that to do so would run

counter to the Council's policy of not providing long-term funding for personal stipends. The Broodbank Fund of the University awarded Dorothy Needham a grant to run 1952-55 but there were difficulties in securing further funding. An approach to the Royal Society in 1955 was unsuccessful, the President, Lord Adrian, apparently believing that it was unnecessary for married women, FRSS not, to have salaries (see A.13). However, support was forthcoming from the Agricultural Research Council and thereafter she was funded principally by the ARC for research on the proteins of smooth muscle in the uterus.

Dorothy Needham retired from active research in 1963 to work on her book Machina Carnis: the biochemistry of muscular contraction in its historical development, published by Cambridge University Press in 1971. Following this she began work on a Sourcebook for the history of biochemistry in collaboration with the historian M. Teich. This was unfinished on her death in 1987.

In recognition of her work in Cambridge Dorothy Needham was elected to the Fellowships of three Cambridge colleges; Girton, at which she was educated, Lucy Cavendish, which she helped to found in 1964, and Gonville and Caius, where she was the first woman to be admitted to the Fellowship.

#### DESCRIPTION OF THE COLLECTION

The material is presented in the order given in the List of Contents. Although by no means comprehensive there are interesting records of many aspects of her life and career.

Section A, Biographical and Personal, is the largest in the collection. It consists chiefly of personal correspondence received from friends and relatives, including a sequence of letters from her husband during his visits abroad, and material documenting Dorothy Needham's involvement with a wide range of charitable, humanitarian and political causes. There is also important correspondence relating to her career 1949-55. Other items of interest include a brief autobiographical account written for *Women Scientists: the road to liberation*, D. Richter ed. (Macmillan, 1982) and a hand-written and illustrated poem by F.G. Hopkins celebrating the Needham's marriage in 1924.

Section B, Cambridge University, comprises lectures and other teaching material for Dorothy Needham's biochemistry courses to 1963, correspondence and papers on the funding and administration of her research from 1952 and material relating to Lucy Cavendish College. A little 1930s research work found with the teaching material is also presented.

Section C, Notebooks, consists of large notebooks of varying formats used for lecture notes and drafts, bibliographical references, notes on lectures by others, research data etc., and a sequence of pocket notebooks including a set of 60 containing bibliographical references for Machina Carnis. Among the

loose items found enclosed within the larger notebooks were drafts for lectures delivered in China during the war. Also relating to Needham's work in China is a small hand-drawn map at C.78A.

Section D, Publications and Lectures, is patchy in its coverage. There are drafts and proof copies of some of Dorothy Needham's postwar publications and correspondence and papers relating to Machina Carnis. The largest body of material is correspondence, drafts and notes for the unfinished Sourcebook for the history of biochemistry. The section is completed by a short sequence of drafts of postwar lectures and a set of reprints (incomplete).

Section E, Visits and Conferences, is slight. It is a chronological sequence of material recording some of her visits and conferences between 1954 and 1979. There is also a little material from a visit to Rumania made by Joseph Needham in 1981.

Section F, Correspondence, is not extensive. It contains only two extended sequences of correspondence. As elsewhere in the collection Dorothy Needham's letters are often only represented by rough manuscript drafts. References and recommendations form a separate subsection.

Section G, Non-print Material, consists of slides for microscope work and glass photographic plates some of which were probably used to illustrate lectures.

There is also an index of correspondents.

#### ACKNOWLEDGEMENTS

We are very grateful to Dr. Joseph Needham FRS for making the material available and to Mrs. Kate Perry, Girton College Archivist, for advice and encouragement.

Timothy E. Powell  
Peter Harper  
Bath 1990.



A.1 - A.9	BIOGRAPHICAL
A.10 - A.16	CAREER AND HONOURS
A.17 - A.23	DIARIES
A.24 - A.75	PERSONAL CORRESPONDENCE
A.76 - A.112	APPEALS AND CAMPAIGNS
A.113, A.114	PHOTOGRAPHS
A.115 - A.120	MISCELLANEOUS

## BIOGRAPHICAL

A.1	<i>The Times</i> obituary 26 December 1987 <i>Independent</i> obituary 11 January 1988
A.2	'Dorothy Mary Moyle Needham'. Typescript draft and printed version of Joseph Needham's tribute delivered at Gonville and Caius College Chapel 11 February 1988, and published in 'The Caian' November 1988.
A.3	Biographical information supplied for the Girton College Cambridge 'Register'.
A.4	Entries for Who's Who etc. 1973-81.
A.5 - A.8	'Women in Cambridge biochemistry'.  In 1978 Needham was approached to write a chapter for <i>Women Scientists: the road to liberation</i> , relating her personal experience to the position of women in science. The book was edited by D. Richter and published by Macmillan in 1982.
A.5	Correspondence from Richter with drafts of Needham's replies 1978, 1981.
A.6	Needham's manuscript notes for her contribution. Also includes draft of Needham's letter to Miss A. Duke, Girton College, asking for information on her student career at Cambridge from 1919, with Duke's reply.
A.7	Heavily corrected typescript drafts of Needham's contribution.

- A.8 6pp typescript copy as sent, September 1978, reviews of Women Scientists 1982.
- A.9 Miscellaneous correspondence re biographical information 1974, 1982.

#### CAREER AND HONOURS

- A.10 'A professorial plea'. Poem celebrating the marriage of Dorothy Moyle to Joseph Needham, written and illustrated by Sir Frederick Gowland Hopkins. They were married in 1924.
- Manuscript note to 'Professor (?Hopkins) Oct 29th 1925' on chemical differentiation of cells; manuscript list of references found with it.
- A.11-A.13 Correspondence re terms and conditions of support for Needham's work in Cambridge 1949-55.
- From 1946-52 Needham's research was supported by the Medical Research Council. In 1952, however, the MRC declined Needham's request for a further extension of her grant on procedural grounds, not wishing to provide long-term funding by renewing short-term grants.
- Needham received support from the Broodbank Fund 1952-55 and from the Agricultural Research Council thereafter. See also B.2 - B.27.
- A.11 1949-51.
- A.12 1952. Includes memo to Sir Harold Himsworth from Needham outlining her work from 1920, 28 January, and 'Statement of career' and 'Outline of research program' for her application to the Broodbank Fund.
- A.13 1953, 1955. Re possible Agricultural Research Council support.
- A.14 Election to Honorary Membership of the Biochemical Society, 18 April 1974.
- A.15 80th birthday celebrations, 1976. Includes congratulatory card signed by friends and colleagues, and manuscript notes for Reply to the Toasts at Lucy Cavendish College Annual Dinner at which her birthday was celebrated.

A.16 Election to Honorary Fellowship of Girton College, 5 November 1976.

Election to Honorary Fellowship of Gonville and Caius College, 12 October 1979.  
Needham was the first woman to be elected Honorary Fellow of the College.

## DIARIES

A.17-A.23 Cambridge University pocket diaries.

A.17	1959-60	A.21	1965-66
A.18	1960-61	A.22	1980-81
A.19	1963-64	A.23	1982-83
A.20	1964-65		

## PERSONAL CORRESPONDENCE

A.24-A.65 Arranged alphabetically. The material is chiefly letters received by Needham. Outgoing correspondence is poorly documented by a very few carbon copies and some rough manuscript drafts,

A.24 Baldwin, E.H.F. and P.M. 1968-80  
E.H.F. Baldwin was Demonstrator (1936-43) and Lecturer (1943-50) in Biochemistry at Cambridge. Most of the correspondence is with Baldwin's widow.

A.25 Balinska, I 1966-81

A.26, A.27 Bernal, E. 1972-81 and nd  
Eileen Bernal was the widow of J.D. Bernal. The correspondence chiefly concerns CND activities.

A.26	1972-78	A.27	1980-81, nd.
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A.28	Burbridge, P.G. 1979, 1981 1979 correspondence is chiefly <u>re</u> the presentation of J. Needham's Science and Civilisation in China to Chairman Hua by Mrs. Thatcher on his visit to Britain in November.
	Chambers, F. 1962-81
A.29	Chin-I 1970-78 and nd.
A.30	Cohen, J.A. and Cohen-Welter 1956, 1969-81
A.31	Delay, M.R. and U. 1965, 1970-81 and nd.
A.32, A.33	The Flear Family 1957, 1971-81 and nd. 2 folders.
A.34	Frost, H. 1970-77.
A.35	The Gorringe Family 1969-83 and nd.
A.36	Hibberd, H. 1970-81 and nd.
A.37	Iriyagolle, I. 1966-81 Iriyagolle was a research student of J. Needham's in the 1960's.
A.38	Keighley, A. 1970-76 and nd.
A.39	Krause, G and J 1968-80
A.40	Lehmann, H. 1968-82 and nd. Lehmann was Professor of Clinical Biochemistry at Cambridge 1967-77.
	The McCollester Family 1966-73 and nd.

A.41	Miall, M	1977-82
	Montefiore, H.W. Montifiore was Dean of Gonville and Caius College 1954-63. He was appointed Bishop of Birmingham in 1978.	1978-81
A.42	Moyle, J. Jeremy Moyle was Needham's nephew.	1965-83 and nd
A.43	Moyle, J and P Joh Moyle was Needham's brother	1964-81
A.44-A.52	Needham, J. Chiefly letters and postcards sent home by Joseph Needham during visits abroad. In the course of these visits the Needhams were prolific correspondents but unfortunately no drafts or copies of Dorothy's letters to her husband were found. Joseph's letters are of considerable importance because they give detailed accounts of his activities abroad.	1940, 1967, 1977-86.
A.44	Telegram sent by J. Needham from Osborne Laboratory, Newhaven, Conneticut, 25 September 1940, stating 'Please reply whether all right'. The telegram is annotated 'Merciful preservation we've had.'	
A.45-A.52	Visits.	
A.45	1967 August.	Corsica, Leeds.
A.46	1977 June-July.	Mexico, USA.
A.47	1978 April.	New York.
A.48	1979 September- November.	Switzerland, Hong Kong

A.49	1980 May	USA
A.50	1981 August- September	Rumania, China, Japan, Hong Kong
A.51	1982 August	Belgium, Norway
	1983 August	Stockholm, Venice
	1983 October - November	Singapore, USA
A.52	1984 August - September	China, Taiwan
	1986 May	West Germany
	1986 December	Japan
A.53	The Nowinski Family	1962-79
A.54	The Pollitt Family	1972
A.55	Rajchman, M.	1967-73 and nd

- A.56 Rapkine, S.M. 1963-82
- A.57 The Reid Family 1968-82
- A.58 Shoenberg, C.F. 1969, 1977-78 and nd  
Catherine Shoenberg worked under Needham 1955-63.  
See F.7-F.16.
- A.59 Silva, M. 1972-80
- Teich, M. 1975-82  
Teich worked with Needham on a 'Sourcebook for the history of  
biochemistry'. See D.38-D.63.
- A.60 Teryuo, U. 1974-82
- A.61 van Heyningen, W.E. 1960-79 and nd
- A.62 Wakid, N.W. 1969-81  
Wakid was a British Council scholar working under Needham 1956-58.  
See F.17-F.20.
- A.63-A.65 Williams (née Cawkwell), J.M. 1973-82 and nd.  
Jennifer Williams worked under Needham on the biochemistry of the  
uterus to 1962. She was invited to co-author the Royal Society's  
Biographical Memoir of Needham.
- A.63 1973-76

A.64 1977-82

A.65 nd.

A.66-A.71 Correspondence, arranged chronologically.

A.66 1957-71

A.67 1972-74

A.68 1975-77

A.69 1978-79

A.70 1980-81

A.71 1982

A.72-A.75 Undated correspondence.  
4 folders.

#### APPEALS AND CAMPAIGNS

Needham supported a wide range of pressure groups, voluntary organisations and charities campaigning for human rights, nuclear disarmament, animal welfare etc. She also supported a number of Cambridge groups.

The material is presented in an alphabetical sequence, with some indication of the nature of Needham's involvement given where appropriate. However, many of the causes supported are not documented by correspondence but only by printed appeals annotated by Needham to indicate the response.

A.76-A.78 Amnesty International 1976-81

Needham wrote many letters on behalf of prisoners of conscience, and fragmentary manuscript drafts of some of these survive.

- |      |  |            |
|------|--|------------|
| A.76 | Amnesty International literature.                              |            |
| A.77 | Manuscript drafts of Needham's letters on behalf of prisoners. |            |
| A.78 | Correspondence received in reply to the preceding.             |            |
| A.79 | Animal Aid   | nd.        |
|      | Animals' vigilantes  | 1981.      |
| A.80 | Anti Nuclear Campaign  | 1981.      |
| A.81 | British Deaf Association                                       | 1978-79.   |
|      | Cambridge Association for Social Welfare                       | 1977       |
|      | Cambridge Drawing Society                                      | 1976, 1978 |
|      | Cambridge Preservation Society                                 | 1978       |
| A.82 | Cambridge University Newcomers' Club                           | 1971-74    |

Needham helped to found this club, established in 1971 under the aegis of the Society for Visiting Scholars, to improve 'arrangements for introducing new senior members and visiting scholars to Cambridge'.

A.83-A.85	Campaign for Nuclear Disarmament (CND)	1977-82.
A.83	Correspondence on nuclear disarmaments and CND activities	1979-82.
A.84	CND literature.	
A.85	Miscellaneous background material.	
A.86	Caribbean Labour Solidarity	1979.
	China Policy Study Group	1982.
	J. Needham was a sponsor.	
	Christian Aid.	1982.
	Church of England Children's Society	1979
A.87	Compassion in World Farming	1977-79.
A.88	Defence and Aid Fund	1982-83.
	El Salvador Committee for Human Rights	1981.

- A.89-A.91      Farm and Food Society                      1973-82.  
 This Society campaigned for humane farming. Needham wrote to her MP on a number of occasions on behalf of the Society.
- A.89              Correspondence 1973-1976.
- A.90              Correspondence 1977-82.
- A.91              Farm and Food Society literature.
- A.92              Friends of the Earth                              1981-83.  
Re the proposed Sizewell B Pressurized Water Reactor.
- A.93              Greek Relief Fund                                  1976, 1980  
                             Help the Aged    1977-78  
                             Horder Centre for Arthritics                      1977  
                             International Christian Relief                      1981-82  
                             Labour Party    1978-81
- A.94              Liberation    1976, 1982
- A.95              Medical and Scientific Aid for Vietnam,      1977-82  
                             Laos and Kampuchea.
- A.96              Medical and Scientific Committee for              1974-82.  
                             Soviet Jewry.

Also includes copy of Needham's letter to Dr. David Owen, UK Foreign Secretary, re Soviet dissidents Orlov, Ginzburg and Scharansky, 19 December 1977.

A.97	Minority Rights Group	1982.
A.98	Movement for the Ordination of Women	1981
A.99	Newnham Against the Bomb Newnham Residents Association	1981, nd. 1980
A.100	Oxfam People's Progressive Party (Guyana)	1978-82 1977
A.101, A.102	Rita Nightingale Society Rita Nightingale was imprisoned by the Thai authorities for alledgedly smuggling heroin. The campaign mounted by the Rita Nightingale Society helped win her release in 1980.	1978-80
A.101	Correspondence 1978-80.	
A.102	Background material on the case.	
A.103	Russell Committee against Chemical Weapons	1982

- Save the Children Fund 1978-79
- A.104 Scientists Against Nuclear Arms 1981-83
- A.105 Social Democratic Party 1981
- Society for the Protection of Science  
and Learning Ltd. 1978
- A.106 Society for Visiting Scientists 1948  
Needham was a member of a 'Special  
Committee appointed to examine the finances  
and administration of the Society'.
- A.107, A.108 TAPOL - British Campaign for the Defence of  
Political Prisoners and Human Rights in  
Indonesia 1978-83  
Needham wrote a number of letters on  
behalf of human rights and political prisoners in  
Indonesia.
- A.107 Correspondence 1978-81.
- A.108 TAPOL literature.
- A.109 UNIPAL - Universities' Educational Fund for  
Palestinian Refugees 1977-82
- Material 1981-82 is re the closure of Birzeit  
University by the Israeli authorities.

- A.110 United Nations Association 1977.
- Women's International League for  
Peace and Freedom 1981-82
- A.111, A.112 World Disarmament Campaign 1979-82  
2 folders.

#### PHOTOGRAPHS

- A.113 'Photographs of me and G-D (Gwei Djen Lu) 1975'.  
Four colour photographs found in envelope so  
inscribed. Two feature Needham.
- Two colour photographs taken during visit to the Needhams by R. Huang July  
1981. Both feature Needham. With covering letter.
- Four black and white passport photographs of Needham. Nd but probably post-  
decimalisation (1971).
- A.114 Three black and white photographs of Cambridge University occasion.  
Two feature J. Needham.

#### MISCELLANEOUS

- A.115 Exercise book used intermittently June 1946 - November 1967 probably to  
record books borrowed from the Needhams' private library.

- A.116 Correspondence 1970-72, 1976 re disposal of journals and other material.
- A.117 'Science for People' Women's Collective issue c. 1975.
- A.118 Copy of letter from Sir Frederick Gowland Hopkins to Sir Walter Fletcher re their 1915 joint Croonian Lecture. This letter was discovered in 1976 and a copy sent to Needman.
- A.119 'The ida of the self', 10pp manuscript draft. Nd.
- A.120 1966, 1981, nd. Includes memorabilia.

**SECTION B****CAMBRIDGE UNIVERSITY****B.1 - B.33**

B.1 - B.23

TEACHING

B.24 - B.29

FUNDING AND ADMINISTRATION OF RESEARCH

B.30 - B.33

LUCY CAVENDISH COLLEGE

TEACHING

See also C.2, C.5-C.9

B.1 - B.13

'Old lectures'. Contents of Needham's bulky folder so inscribed, divided into thirteen for ease of reference. Includes significant non-lecture material at B.1 and B.2.

B.1

'Linkage of chemical changes in muscle' by Needham and others, 3pp typescript, 28 February 1935, reporting on work extending the findings of J.K. parnas and colleagues; manuscript notes on the work of parnas, October 1935.

Letter to Needham from R. Gaddie, 2 December 1935, re queries arising from an article by Gaddie and C.P. Stewart. With Needham's manuscript notes and a reprint of the article.

B.2

Manuscript notes on experiments conducted 23 September - 14 October 1938.

B.3, B.4

'Lecture IV'. 60pp typescript. Latest bibliographical reference 1941. See also C.8.

2 folders.

B.5

'Transfer of phosphate and entergy in the living cell', lecture to Academia Sinica Chemistry Institute, August 1944. 6pp typescript.

- The lecture was published in Biochemical Bulletin no.47, 20 January 1945.
- Manuscript notes on contributions of A Szent-Györgyi, V.A. Engelhardt and A.E. Braunstein at 'Moscow Conference' 20 June 1945.
- B.6 'Muscle contraction: the nature of the machine and the elaboration of the fuel', 12pp typescript (page 2 missing) with manuscript notes on the verso of pages 1, 3 and 4. Nd.
- B.7 'The working of the muscle machine', 6pp typescript, nd.
- 'Structure of proteins, with special reference to the muscle machine', 12pp manuscripts, nd.
- B.8 - B.13 Miscellaneous pages of manuscript and typescript lecture notes, probably originally kept in a loose-leaf notebook.
- 6 folders.
- B.14 'Pt II Class sheets Practical'. Contents of Needham's folder so inscribed: duplicated typescript sheets, some with manuscript annotation. Also a few manuscript notes for practicals. 1949-53.
- 3 folders.
- B.17 - B.22 'Pt II and PG lectures. 1960 Rumanian lectures'. Contents of Needham's bulky folder so inscribed: manuscript drafts of untitled lectures, not all complete, sometimes with several dates reflecting the reuse of the same material over several years. The latest date is 1966.
- 6 folders.
- B.23 Biochemistry Department Part II reading lists, some annotated. 1960's.

#### FUNDING AND ADMINISTRATION OF RESEARCH

- B.24 1953, 1955. Research report 1952-53; 'Memorandum on the study of uterus muscle', 19 April 1955.

- B.25 1958-59. Renewal of 1955 Agricultural Research Council grant (See A.11-A.13).
- B.26 1960. Renewal of 1958 ARC grant; award of Royal Society grant.
- B.27 1961. Includes research report for the Royal Society, July.
- B.28 1962. Applications for support from the Broodbank Fund, US National Institutes of Health and the Leverhulme Trust for work on a book on the biochemistry of muscle contraction (published 1971 as Machine Carnis, see D.14-D.31); research report to Royal Society 20 August.
- B.29 1963-65. Support for C.F. Shoenberg. Shoenberg had worked as a research assistant of Needham's (see also F.7-F.16); Leverhulme Trust award; research reports 1963 and 1964-65.

#### LUCY CAVENDISH COLLEGE

Needham was elected a Fellow of this all-women's College in 1964. Needham was a member of the women's dining club from which the College originated.

- B.30 - B.32 General correspondence and papers 1976-82.  
3 folders.
- B.33 References, 1981-82.

#### SECTION C

#### NOTEBOOKS

#### C.1 - C.78A

- C.1 Hardback notebook inscribed on first page 'D.M. Needham Biochemical Lab. Cambridge'. Used from the front for notes on a series of three lectures on

enzymes by M. Dixon, October and November 1939; notes on lectures by J.F. Danielli (April 1941), T.R.R. Mann (1941), W.S. Feldberg (17 October 1942), S.J. Bach and M. Dixon; and notes on proceedings of Society for Experimental Biology Conference on Wound healing 22 September 1943.

Pasted onto three pages near the front are a collection of humorous wartime press-cuttings.

- C.2 Green hardback looseleaf notebook labelled on front cover 'Old Part II lectures (1st lot)' and on spine 'III'. Contains manuscript lecture notes on muscle contraction, latest bibliographical reference 1940.
- Loose manuscript notes are enclosed at front of book. Loose at back is an untitled 14pp and typescript draft beginning 'During the last 100 years, there has been an enormous amount of work on the biochemistry of muscle', January 1954, annotated 'Manchester'.
- C.3 Dark blue 'Cantab' looseleaf notebook used for typescript and manuscript notes on the literature. Latest bibliographical reference 1951.
- C.4 Black hardback looseleaf notebook containing copy of J.D. Bell's D. Phil. thesis (Cambridge 1955) 'Studies in the effect of adrenal cortical hormones on aspects of liver metabolism'. June Bell was a research student of Needham's.
- C.5 Looseleaf notebook used for 'Part II lectures Carbohydrate metabolism Oxidative phosphorylation...'. Manuscript and typescript pages of lecture notes. The second page is dated '9.5.58'. See C.6, C.7 and C.8, C.9 for material found loose at front and back of notebook.
- C.6, C.7 Material found loose at front of preceding.
- C.6 57pp typescript lecture notes on 'Aerobic contraction Aerobic phosphorylation Unstriated muscle Heart Acetylcholine Interfibre spaces'. Stamped 'British Council cultural Scientific Office, Chungking'.
- Needham served with the British Scientific Mission in China 1944-45.
- C.7 Miscellaneous typescript and manuscript pages of lecture notes and references. Latest bibliographical reference 1961.

- C.8, C.9                   Material found loose at back of C>5.
- C.8                        'Lecture iV'. Typescript and manuscript draft. Latest bibliographical reference 1941. See also B.3, B.4.
- C.9                        Miscellaneous manuscript and typescript pages of lecture notes, references etc. Latest bibliographical reference 1961.
- C.10                      Red hardback notebook inscribed on front cover 'IV' used from the front for experimental data 23 April 1960 - 13 December 1961. At the back are miscellaneous notes including 'conversation with Dr. Filton Jackson July 17th 61' and conversation with K. Bailey June 26th 1961'.
- Loose at front of book is correspondence and data from Brenda (?) 1963 AND 1964. Loose manuscript notes and data are enclosed at back of book.
- C.11-C.70               60 looseleaf pocket notebooks used for notes on the literature for Machina Carnis (D.14-D.31). These notebooks were housed in three specially made wooden boxes.
- C.11-C.69 are brown plastic covered notebooks, most of which were labelled by Needham with the chapter number and/or subject to which they referred. C.67-C.69 are unlabelled. C.70 is different format notebook found with the series.
- C.11    'CH.1A'
- C.12    'CH.1B'
- C.13    'CH.3'
- C.14    'CH.3'
- C.15    'CH.4'
- C.16    'CH.5 PG'
- C.17    'CH.6 ATP 1'
- C.18    'VII STRUCTURE 1'
- C..19   'VII STRUCTURE 2'
- C.20    'CH.8 ATP-ACTO-MY Pt.1'
- C.21    'CH.8 ATP-ACTO-MY Pt.2'

- C.22 'CH.9 ACTIN'
- C.23 'CH.9 ACTIN & TMB'
- C.24 'CH.9 MYOSIN'
- C.25 'CH.9 PROTEINS'
- C.26 'CH.9 TROPOMYOSIN'
- C.27 'CH.10 MECHANISMS Pt.1'
- C.28 'CH.10 MECHANISMS Pt.2'
- C.29 'CH.11 SLID.MECH.Pt.1'
- C.30 'CH.12 SM/THEOR. Pt.1'
- C.31 'CH.12SM./THEOR.Pt.2'
- C.32 'CH.12 SM./THEOR.Pt.3'
- C.33 'CH.12 SM./TONOMURA'
- C.34 'CH.14 INTACT A'
- C.35 'CH.14 INTACT B'
- C.36 'CH.14 INTACT C'
- C.37 'CH.15 RIGOR'
- C.38 'CH.16 RESPIRATION A-D'
- C.39 'CH.16 RESPIRATION E-J'
- C.40 'CH.16 RESPIRATION K-L'
- C.41 'CH.16 RESPIRATION M-R'
- C.42 'CH.16 RESPIRATION S-T'
- C.43 'CH.16 RESPIRATION U-Z'
- C.44 '17 OXID. PHOS. 1'
- C.45 '17 OXID. PHOS.2'
- C.46 '18 REGULATION 1'
- C.47 '18 REGULATION 2'
- C.48 '18 REGULATION 3'
- C.49 '19 DEVELOPMENT'

- C.50 '19 RED & WHITE 1'
- C.51 '19 RED & WHITE 2'
- C.52 '19 SLOW/HEART '
- C.53 '19 SLOW/HEART 2'
- C.54 '20, 21 DENERVATION/GLYCOGEN S.D.'
- C.55 '21 DYSTROPHIES 1'
- C.56 '21 DYSTROPHIES 2'
- C.57 '21 HOLDING MECH'
- C.58 '21 INSECT FLIGHT'
- C.59 21 PHOSPHAGENS'
- C.60 'SMOOTH MUSCLE'
- C.61 'SMOOTH MUSCLE 2'
- C.62 '23 SMOOTH MUSCLE 3'
- C.63 'RELAXATION A-G'
- C.64 'RELAXATION H-L'
- C.65 'RELAXATION M-T'
- C.66 'RELAXATION U-Z'
- C.67 Unlabelled
- C.68 Unlabelled
- C.69 Unlabelled
- C.70 Black hardback looseleaf pocket notebook. Unlabelled.
- C.71-C.77 7 pocket notebooks, same format as C.11-C.69, chiefly used for notes on the literature. 1960's.
- C.78 Leather-bound pocket notebook inscribed on inside cover 'D M Needham Master's Lodge Caius College'. Used from the front for notes 18 October and 3 December on a planned 1972 Royal Society Symposium, and notes on talks by H. Huxley 24 January and A G Szent Györgyi 29 January 1973. At the back are miscellaneous notes on the literature etc. Most pages not used. Photograph found enclosed in pocket at front of book. See also C.78A.

C.78A Hand-drawn plan possibly of wartime journey made between Chungking (Chongqing), and Baochi (Baoji) and Sian (Xi'an). Found in pocket at front of C.78.

Very fragile.

**SECTION D PUBLICATIONS AND LECTURES D.1 - D.74**

D.1 - D.63 PUBLICATIONS

D.64 - D.73 LECTURES

D.74 REPRINTS

D.1 'Myosin and adenosinetriphosphate in relation to muscle contraction', Meyerhof-Festschrift (Amsterdam, c.1949).

2nd proof copy with manuscript corrections.

D.2, D.3 'Adenosinetriphosphate and the structural proteins in relation to muscle contraction' in ed. F.F. Nord Advances in Enzymology 8 (1952), 151-197.

D.2 53pp typescript and references.

D.3 Proof copy with manuscript corrections.

D.4 'Energy production in muscle', British Medical Bulletin 12 (1956), 194-198.

Extensively annotated reprint.

Letter from Academic Press expressing disappointment Needham 'cannot accept the editorship of the book on the Physiology of Muscle', 10 January 1956.

D.5 'Biochemistry of muscular action', in ed. G.H. Bourne The Structure and function of muscle vol. II (Academic Press New York, 1960)

This chapter was revised and retitled for the 2nd edition of the book published in 1972. See d.32-D.36.

Proof copy with manuscript corrections; review, royalty statements 1964, 1965.

- D.6 'Molecular aspects of the contractile mechanism of the uterus and its changes during pregnancy' ?Unpublished. Latest bibliographical reference 1960.  
14pp typescript with manuscript corrections.
- D.7 'Contractile proteins in smooth muscle of the uterus', *Physiological Reviews* 42 (1962) Supplement 5, 89-96.  
Proof copy with manuscript corrections.
- D.8 'The proteins of the dilution precipitate obtained from salt extracts of pregnant and non-pregnant uterus' by Needham and J.M. Williams, *Biochemical Journal* 89 (1963), 534-545.  
Proof copy with manuscript corrections.  
Letter commenting on draft (not found) of 'Proteins of the uterine contractile mechanism', *Biochemical Journal* 89 (1963), 552-561.  
Invitation to contribute to *Revue roumaine de Biochemie* 3 (1966).
- D.9 'A biochemical and electron microscope study of the contractile proteins in vertebrate smooth muscle', with C.F. Shoenberg et al, *Biochemische Zeitschrift* 345 (1966), 255-266.  
Proof copy with manuscript corrections.
- D.10 'Biochemistry of the myometrium' with C.F. Shoenberg, in ed. R.M. Wynn *Cellular Biology of the Uterus* (New York, 1967), 291-352.  
Correspondence; review; royalty statements 1965-68, 1972.
- D.11 Review of D. Keilin, *The History of Cell Respiration and Cytochrome* (Cambridge, 1966). In *ISIS*, 58 (1967), 423.  
4pp typescript; correspondence.

'Proteins of the contractile mechanism in vertebrate smooth muscle' in Handbook on the physiology of the alimentary canal Vol. II (American Physiological Society, 1968).

Letter only.

- D.12 'Professor E. Lundsgaard', obituary in Nature 222 (1969), 804.  
Correspondence with Professor Christian Crone, University of Copenhagen 1969, re the obituary; typescript draft; proof copy.
- D.13 Untitled 9pp typescript draft beginning 'If Szent Györgyi had called attention to dicarboxylic acids then in 1937 Hans Adolf Krebs (1900-) ....brought out the special place of tricarboxylic acid...'. Latest bibliographical reference 1970.
- D.14 - D.31 Machina Carnis: The biochemistry of muscular contraction in its historical development (Cambridgee, 1971)  
Needham had planned for a number of years to write a substantial volume to update her 1932 monograph Biochemistry of Muscle published by Methuen. In 1954 she was approached by Oxford University Press but declined their invitation to write such a book as 'I reckon that I have still before me half a dozen years and it is therefore... my intention not to begin the writing of this book until toward the end of thier period'. In 1955 Cambridge University Press expressed an interest, reiterated in 1962 on the eve of Needham's retirement from active research. Needham began work on Machina Carnis in 1963.  
For Needham's working notebooks used for notes on the literature etc., see C.11-C.70.
- D.14 Unbound copy of Machina Carnis with extensive manuscript correction and annotation. The copy incorrectly gives the publication date as 1972.
- D.15 Correspondence 1951-65. Includes letter from Methuen & Co. Ltd., re possible new edition of 'Biochemistry of Muscle' 26 February 1951; letters from Oxford University Press 1954 re 'a definitive treatise on Muscle Chemistry' 1964, with draft of Needham's reply; correspondence from Cambridge University Press; 1965 request from A Neuberger on behalf of North Holland Publishing Company 'to write a book on the biochemistry of muscle'.
- D.16 7pp typescript synopsis outlining areas to be covered by Machina Carnis. Typed on back of P R China News Agency material ?1964.



See D.5.

- D.32-D.34            Typescript draft paginated 1-80a.  
3 folders.
- D.35                    Correspondence 1969-70. Includes invitation (declined) to write a second chapter for the book on 'History of muscle research'.
- D.36                    Correspondence 1971-73.
- D.37                    Review of H A Krebs, Otto Warburg, Zellphysiologe - Biochemiker - Mediziner, 1883-1970 (Stuttgart, 1979). In *Annals of Science* 37 (180) 108.  
4pp typescript draft with manuscript correction; 3pp typescript as sent.
- D>38-D.63            'Sourcebook for the history of biochemistry 1740-1940', with M Teich.  
  
Needham and M Teich began work on this book following the publication of Machina Carnis. It was intended for publication by Harvard University Press but not completed before Needham's death.
- D.38                    Undated letter to E H Madden, State University of New York, Buffalo, re publishing the planned Sourcebook in the 'Source-Books in the History of the Sciences' series edited by Madden; letter from Teich to Needham re proposed coverage of the book, 29 April 1974; letter from Harvard University Press to Teich re layout, 22 January 1979.
- D.39                    'Publishers' addresses'. Contents of Needham's envelope so inscribed; addresses of publishing houses and journals for requests to reproduce material.
- D.40-D.62            Typescript drafts.
- D.40-D.42            'I Enzymes: fermentation and digestion. From the end of the 18th Century to the 1890's'. 92pp.  
3 folders.

- D.43-D.46 'I ENZYMES'. pp. 1-116.  
4 folders.
- D.47, D.48 'II PHOTOSYNTHESIS'. pp.1-49.  
2 folders.
- D.49-D.51 'III RESPIRATION'. pp.1-98.  
3 folders.
- D.52-D.56 'V PROTEINS'. pp.1-159 (incomplete). No draft numbered IV was found.  
5 folders.
- D.57-D.59 'V Carbohydrates'. pp.1-94.  
3 folders.
- D.60-D.62 'VI LIPIDS'. pp. 1-87.  
3 folders.
- D.63 Miscellaneous typescript and manuscript references, extracts from the literature, pages of drafts etc.  
1 box.
- LECTURES
- D.64 Letter from E H F Baldwin, 25 September 1956, re two Public Lectures to be given by Needham at University College, London, probably later that year.
- D.65 'On the contractile mechanism of uterus muscle'. Latest bibliographical reference 1962.

7pp typescript + references.

- D.66                    Untitled 12pp manuscript draft beginning 'Since the pioneer work of Csapo, beginning about fifteen years ago, it has been realised that from the uterine smooth muscle a protein can be extracted'. Annotated 'Tokyo 1964'.
- A version of this lecture was published as 'Proteins of the contraction mechanism' in Pharmacology of smooth muscle - Proceedings of the 2nd International Pharmacological Meeting, Prague, 20-23 August 1963, 87-94.
- D.67                    'Nineteenth century conceptions of energy utilisation by muscle, 11th International Congress on the History of the Sciences, Warsaw and Krakow, 24-29 August 1965.
- 6pp typescript with manuscript corrections.
- D.68, D.69            'Machina Carnis; a chemical history of muscular contraction', Lectures in honour of Einar Lundsgaard, 28-29 September 1967.
- D.68                    23pp typescript with manuscript corrections. Although Needham's lecture was entitled 'Machina Carnis' after the book on which she was working (D.14-D.31), the lecture concentrates on Lundsgaard's contributions to the 'understanding of energy provision in muscle.
- D.69                    Correspondence re arrangements with C Crone and D R Wilkie; programme; memorabilia.
- D.70                    'Development of our knowledge of energy provision for muscle contraction'. Annotated 'Lecture given at Kuala Lumpur Sept. 1971'.
- 25pp manuscript; manuscript notes.
- D.71, D.72            'Muscle contraction: from the Greeks to the sliding mechanism', Redfearn Memorial Lecture, Leicester University, 19 March 1973. This was also delivered at the University of Guelph, Canada, in 1972. See E.8.
- D.71                    20pp typescript + notes for blackboard diagrams and list of slides.

- D.72 Correspondence with H L Kornberg re arrangements.
- D.73 'Chinese scientists revisited - 1972', lecture delivered at Bristol University, 10 May 1973, and Leicester.
- 19pp typescript with manuscript corrections (one dated April 1972); manuscript notes; notice for Bristol lecture.

## REPRINTS

- D.74 Incomplete set of reprints of articles by Needham (those 1939-50 in bound volume); author's annotated copy of Machina Carnis, 1 box.

## SECTION E

## VISITS AND CONFERENCES

## E.1 - E.11

- E.1, E.2 Hungarian Physiological Society 20th Conference, Budapest, July 1954. Needham spoke on 'Some preliminary observations on the protein fractions of the uterus, and on the ATPase activity of this organ'.
- E.1 Typescript draft of Needham's contribution.
- E.2 Conference pocket notebook used by Needham for notes on the proceedings.
- E.3 Mittelrheinische Gesellschaft für Geburtshilfe und Gynäkologie 117th meeting, Mainz, 22-24 July 1955. Needham spoke at the Symposium on contractile protein of the uterus on 'Die Zusammensetzung der Proteine und die Adenosintri-phosphatase Aktivität in der Uterus-Muskulatur normaler overektomierter und schwangerer Tiere'.
- Correspondence re arrangements; programme, duplicated typescript ?summary of Needham's contribution.

- E.4 Visit to USA, November 1961.
- Invitation to visit University of California Medical Center during visit.
- Invitation to International Symposium on the arterial wall, Brussels, 22-24 May 1962.
- E.5 Invitation to Symposium on the mechanism of labour Würzburg, 31 May - 2 June 1964.
- Invitation to Symposium on Muscle, Budapest, September 1966.
- E.6 2nd International Symposium on Angiology, Fribourg, Switzerland, 21-22 June 1968. Needham chaired two sessions.
- Correspondence; annotated programme.
- E.7 Invitation to meeting on molecular biology and ultrastructure in the systematics of the higher group, Cambridge, 24-26 March 1969.
- Invitation to conference on the history of biochemistry and molecular biology, Brookline, Massachusetts, 21-23 May 1970.
- E.8 Visit to Canada November-December 1972.
- Needham gave seminars on 'Muscle contraction: From the Greeks to the sliding mechanism' (See D.71, D.72) at the University of Guelph, and on biochemistry of muscle at the University of Toronto.
- Correspondence re arrangements.
- E.9 Invitation to conference on the history of bioenergetics, Brookline, Massachusetts, 11-13 October 1973.
- University of Cambridge meeting on 'Of timeliness and promise - sterile and fruitful approaches in the development of biochemistry', 4 December 1978.
- Annotated programme only.
- E.10 Visit to Cyprus May-June 1979.
- The Needhams visited Cyprus under the auspices of the British Council.

Itineraries; Dorothy Needham's manuscript journal for 21-31 May.

E.11 Annotated memorabilia from Joseph Needham's visit to Rumania 1981. See A.50.

## **SECTION F**

### **CORRESPONDENCE**

**F.1 - F.38**

F.1 - F.21

#### **GENERAL SCIENTIFIC CORRESPONDENCE**

Correspondence with individuals. In alphabetical order with an indication of information of particular biographical, historical or scientific interest.

F.22 - F.27

#### **SHORTER SCIENTIFIC CORRESPONDENCE**

In chronological order.

F.28 - F.38

#### **REFERENCES AND RECOMMENDATIONS**

F.1

Astbury, W T

1949

'Contraction of actomyosin fibrils under the action of ATP'.

F.2

Bailey, K

1962, 1963

F.3	Cohen, J A	1952, 1954, 1963
F.4	Hill, A V	1965, 1967
	1967 correspondence <u>re</u> correlation between actomyosin ATPase activity and muscle shortening.	
F.5	Hoet, J P	1967
	Chiefly <u>re</u> visit to Cambridge	
F.6	Kalckar, H M	1963-66, 1977
F.7 - F.16	Shoenberg, C F	1950-1974 and nd.
	Catherine Shoenberg, wife of the physicist David Shoenberg, returned to scientific research in 1955 as a member of Needham's research team working on 'biochemistry of the uterus'.	
	Most of the material relates to Needham's subsequent efforts before her retirement to find appropriate facilities and funding for Shoenberg's work on contractile mechanism of vertebrate smooth muscle.	
F.7	1950, 1956, 1958.	
F.8	1960. <u>Re</u> laboratory accommodation.	
F.9	1961, 1962 Mar-May.	
F.10	1962 June-July. Includes typescript draft 'Pseudopia in vertebrate smooth muscle cells' by Shoenberg.	
F.11	1963. Chiefly <u>re</u> laboratory accommodation.	
F.12	1964-66. Includes 1966 research reports.	

- F.13 1967, 1969. Includes Shoenberg's 1967 account of her work with Needham.
- F.14 1970, 1972. Chiefly re grant applications. Includes 'Report' of planned investigation into the sliding filament mechanism in vertebrate smooth muscle.
- F.15 1973-74. Correspondence 1973 re grant applications.
- F.16 Nd.
- F.17-F.20 Wakid, N W 1957-67 and nd.  
Wakid was a British Council Scholar studying under Needham's supervision for his PhD 1956-58.
- F.17 1957-59. Chiefly re joint papers.
- F.18 1960. Chiefly re joint papers.
- F.19 1961. joint papers; references.
- F.20 1962-67, nd.
- F.21 Weber, H H 1970-71  
Re Weber's Meyerhof Memorial Lecture.

## SHORTER SCIENTIFIC CORRESPONDENCE

- F.22 1949-59

F.23 1961-65

F.24 1966-67

F.25 1968-69

F.26 1971-82

F.27 Nd.

#### REFERENCES AND RECOMMENDATIONS

F.28-F.30 Examining

F.31-F.33 Appointment and Grant Applications

F.34-F.38 Elections to the Royal Society

#### Examining

F.28 1956-65

F.29 1966-73

F.30 Nd.

#### Appointments and Grant Applications

F.31 1952-60

F.32 1963-69

F.33 1970, 1974

Elections to the Royal Society

F.34 1964-81

F.35 1967-68

F.36 1969-72

F.37 1973

F.38 1974-80

**SECTION G**

**NON-TEXTUAL MATERIAL G.1 - G.10**

This section comprises microscope slides and photographic plates, some probably used for illustrating lectures and/or publications.

G.1 - G.3 Microscope slides with labelled sections of uterus muscle. 3 sets.

G.4 Microscope slides, labelled either '1' or '2'.

G.5 - G.8 82mm x 107mm glass photographic plates. 4 boxes.

- G.9 51mm x 253mm glass photographic plates. 1 bundle.  
The plates were found in pairs or singly, in paper wrapping or in envelopes. A note found with the bundle is inscribed '6/7.3.57 H acto mero myosin enzymically (?) inactive'.
- G.10 51mm x 253mm glass photographic plates. 1 box.

## INDEX OF CORRESPONDENTS

ACADEMIC PRESS, INC.	D.4, D.5, D.35, D.36
ADELMAN, M R	F.25
AGRICULTURAL RESEARCH COUNCIL	A.13, B.25-B.27, B.29, F.8, F.11-F.13
ALLEY, Rewi	A.69
AMNESTY INTERNATIONAL	A.76-A.78
AMOROSO, Emmanuel Ciprian	F.35, F.38
ANDREEN, Andrea	A.66, A.67
ASTBURY, William Thomas	F.1

BAILEY, Kenneth	F.2 See also F.23
BALAIS, Robert	F.27
BALDWIN, Ernest H F	A.24, D.64, F.28
BALINSKA, Irena	A.25
BANERJI, Goutom G	A.67
BÁRÁNY, Michael	F.23
BASTHOLM, E.	D.21
BATE-SMITH, Edgar Charles	F.11
BAUER, H	F.31
BENDALL, J R	F.32
BERNAL, Eileen	A.26, A.27
BERNAL, John Desmond	See A.26
BLAXTER, Sir Kenneth (Lyon)	F.38
BODDE, Derk	A.69, A.70, A.72
BOURNE, Geoffrey H	D.32, D.35, D.36, F.22
BOYCOTT, Brian Blundell	F.34
BRINK, Charles Oscar	A.68
BRUMWELL, J R Marcus	A.106
BRYDEN, David J	D.20
BUCHTHAL, Fritz	F.27
BUESS, Heinrich	D.21
BÜLBRING, Edith	F.11
BURBRIDGE, Peter G	A.16, A.28, D.19, D.21
BURTCHAELL, James T	A.69, A.70
CALNE, Sir Roy (Yorke)	F.26
CAMBRIDGE UNIVERSITY PRESS	D.15, D.17-D.19, D.24

CAMPAIGN FOR NUCLEAR DISARMAMENT	A.83-A.85
CARSTEN, Mary E	F.23
CHADWICK, Ruth Romaine	A.82
CHAMBERS, Frances	A.28
CHAPLIN, R A	F.24
CHAPPELL, John Brian	F.24
CODE, Charles Frederick	D.11
COHEN, Jacob Antonie	A.30, F.3
COHEN, Ruth Louisa	F.8
COHEN-WELTER, Willy A	A.30
COLLINGWOOD-WHITTICK, M	A.66-A.68
COX, Sir (Ernest) Gordon	F.13
CRONE, Christian	D.12, D.69
DAILY TELEGRAPH	A.83
DALY, Ivan de Burgh	F.7
DANIEL, E E	F.32
DAVIES, Robert Ernest	D.35, F.22
de HANN, E J	F.25
DELAY, Ute	A.31
DRESSEL, Elisabeth Irmgard Brigitte	F.22, F.31
DREW, John	A.68
DUBOWITZ, V	D.35
DUKE, A	A.6
EBASHI, Setsuro	A.68, F.26
EDSALL, John Tileston	A.68, E.7, E.9, F.25
EDWARD, Anthony W F	F.26

ELLIOTT, Gerald	F.23, F.27
ELLIOTT, Kenneth Allan Caldwell	A.67, A.68, A.70, A.71
ENGELHARDT, Vladimir Aleksandrovich	D.21
FALLDING, Magaret Hardy	E.8
FARM AND FOOD SOCIETY	A.89-A.91
FATT, Paul	A.83
FEUER, G	F.31
FLEAR, Cecil T G	A.32, A.33
FRITZ, Irving Bandas	F.24
FROST, Honor	A.34
GABELOVA, Nina A	D.20
GADDIE, Robert	B.1
GOODALL, Forrest R	F.23
GORONWY-ROBERTS, Goronwy Owen, Baron	A.101
GORRINGE, Peter	A.35
GUTMANN, E	F.24, F.25
HAMOIR, G	F.23, F.25
HANSON, (Emmeline) Jean	F.9, F.34
HARDING, J J	F.23
HARLAND, Elisabeth	A.66, A.68
HARVARD UNIVERSITY PRESS	D.38
HASSELBACH, Wilhelm	D.35
HATFIELD (née MIAL), Frances Margaret	A.41
HEALD, Peter Joseph	F.32, F.33
HELE, Mary E Priscilla	F.31

HIBBERD, Hope	A.36
HILL, Archiblad Vivian	D.20, F.4
HIMSWORTH, Sir Harold (Percival)	A.11, A.12
HOET, J P	F.5
HOLLAND, D L	F.29
HONIG, Carl Robert	F.24
HOPKINS, Sir Frederick Gowland	See A.10
HOWELL, M L	A.9
HUXLEY, Sir Andrew Fielding	D.20, F.12, F.15
HUXLEY, High Esmor	F.8, F.34
IRIYAGOLLE, Indrani	A.37
JAISLE, Franz	F.23
KALCKAR, Herman Moritz	F.6
KAY, Cyril M	F.23
KEIGHLEY, Aylwin	A.38
KENDRICK, Carol	A.83
KOMINZ, David Richard	D.20
KRAUSE, Gerhard	A.39
KREBS, Sir Hans Adolf	F.34, F.35
LASZT, L	E.6
LE FANU, Mark	A.69
LEHMANN, Hermann	A.40
LEVERHULME TRUST	B.28, B.29, F.14

LIANG Chi Chin	F.32
LINFOOT, Joyce	B.30
LISSMANN, Hans Werner	F.25
LUNDSGAARD, Einar	D.69, F.6 See also D.12
McCOLLESTER, Duncan L	A.40, F.33
McILWAIN, Henry	F.23
McQUILLEN, Kenneth	A.16
MADDEN, E H	D.38
MANN, Thaddeus Robert Rudolph	D.21
MEDICAL RESEARCH COUNCIL	A.11-A.13
METHUEN & COMPANY LIMITED	D.15
MITCHELL, Joseph Stanley	F.4
MOMMAERTS, Wilfried F H M	E.4
MONTEFOIRE, The Rt. Rev. Hugh William	A.41
MOTT, Sir Nevill (Francis)	A.82, F.8, F.11
MOYLE, Jeremy	A.42
MOYLE, John	A.43
MURRAY, Keith Anderson Hope, Baron	F.14
NEEDHAM, Joseph	A.13, A.26, A.44-A.52, F.22
NEUBERGER, Albert	D.15
NOWINSKI, Wiktor W	A.53, D.21
NUFFIELD FOUNDATION	F.32, F.33
OFFER, Gerald W	F.28
OGSTON, Alexander George	F.38

OWEN, David Anthony Llewellyn	A.96
OXFORD UNIVERSITY PRESS	D.15
PALATY, Vladimír	F.24
PANTIN, Carl Frederick Abel	F.8, F.11
PARK, Jane Harting	D.36
PARTRIDGE, S. Miles	F.28
PERRY, Samuel Victor	F.20, F.23, F.29, F.34
PETERS, Sir Rudolph Albert	A.16, F.35, F.37
PIRIE, Antoinette ('Tony')	F.35-F.38
PIRIE, Norman Wingate	F.35, F.37, F.39
POLLITT, Geoffrey	A.54
PRINGLE, John William Sutton	F.24
RADU, Horia	D.21
RAJCHMAN, Marie	A.55
RANDLE, Sir Philip John	F.34
RAPKINE Sarah M	A.56
RHODES JAMES, Robert Vidal	A.78, A.83, A.90, A.101
RICHTER, Derek	A.5, A.8
ROSS, Robert	E.7
ROUGHTON, Francis John Worsley	B.28
ROYAL SOCIETY	A.13, B.25-B.28, D.21, F.12, F.15, F.36- F.38
RÜEGG, J Caspar	D.20, F.24, F.27
RUSHTON, William Albert Hugh	F.35
SALT, George	A.68

SCHIRMER, Heiner	D.20
SCHOTT, G D	F.29
SCHWALM, H	E.3, E.5
SCIENCE PRESS PTY LIMITED	A.9
SHOENBERG (née FISCHMANN), Catherine Felicité	A.58, D.20, F.7-F.16
SILVA, Mahindar	A.59
SLATER, Sir William (Kershaw)	A.13, B.25, B.26
SOBIESZEK, Apolinary	F.33
SOCIETY FOR CULTURAL RELATIONS WITH THE USSR	F.22
STEELE, Sydney	A.66-A.68
STRAUB, F B	E.5
SYNGE, Richard Laurence Millington	F.35
SZENT-GYÖRGYI, Albert	F.9
SZENT-GYÖRGYI, Andrew Gabriel	F.23
TEICH, Mikulás	A.59, D.21, D.38
TERYUO, Ushiyama	A.60
TONOMURA, Y	D.20
UNDERWOOD, Edgar Ashworth	D.21
URAKAWA, Norimoto	F.23
van HEYNINGEN, William Edward ('Kits')	A.61, D.21
VASILE, Marza D	F.24
WADDINGTON, Conrad Hal	A.13
WADE, H W R	A..16

WAKID, Nabil W	A.62, F.17-F.20
WEBER, Hans Hermann	D.20, D.21, F.21
WEEDS, Alan G	D.21, F.24
WEWIS-FOGH, Torkel	F.13, F.14
WILKIE, Douglas Robert	D.69
WILLIAMS (née CAWKWELL), Jennifer M	A.63-A.65
WILLMER, E N	A.90
WRINCH, Dorothy	F.25
WYNN, Ralph Matthew	D.10
YOUNG, Sir Frank (George)	A.13, B.25, B.26, F.7, F.8, F.10, F.11, F.24, F.26, F.34

First supplementary catalogue of the papers  
and correspondence of

**Dorothy Mary Moyle Needham FRS**

**(1896 - 1987)**

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## LIST OF CONTENTS

		Items	Page
INTRODUCTION			
SECTION A	BIOGRAPHICAL AND PERSONAL	A.121, A.122	
SECTION B	CAMBRIDGE UNIVERSITY	B.34-B.64	
SECTION C	NOTEBOOKS	C.79-C.150	
SECTION D	PUBLICATIONS AND LECTURES	D.75-D.123	
INDEX OF CORRESPONDENTS			

## INTRODUCTION

This catalogue is a supplement to that compiled in 1990 (NCUACS 22/7/90). The material has been arranged into sections and numbered to follow the sequence of the previous catalogue, which should be consulted in conjunction with this Supplementary Catalogue.

## DESCRIPTION OF THE COLLECTION

The collection is presented in the order given in the List of Contents. Material supplementary to the 1990 catalogue has been found for the first four sections.

Section A, Biographical and Personal, comprises two new items: an undergraduate essay by Needham and a thesis completed c.1925, probably submitted for the Beit Memorial Fellowship.

Section B, Cambridge University, consists chiefly of material relating to the foundation of two Cambridge women's colleges: New Hall in 1954 and Lucy Cavendish College, the first women's graduate college in the University, in 1965. The papers reflect Needham's close involvement in their establishment through her membership of the Third Foundation Association (which campaigned for New Hall) and 'the Dining Group' (or the Society of Women Members of the Regent House who are not Fellows of Colleges) which became Lucy Cavendish College.

Section C, Notebooks, covers the period 1914-62, a time-span encompassing the whole of Needham's research career. The section includes many undergraduate notebooks used by Needham for notes on lectures and practical work for the Natural Sciences Tripos at Girton College 1915-19. All aspects of Needham's research work are documented: from post-graduate and post-doctoral research under F.G. Hopkins and work in the 1930s on ATP (adenosinetriphosphate), to wartime research on chemical defence and post-war research on enzyme biochemistry.

Section D, Publications and Lectures, chiefly consists of further material relating to Needham's book *Machina Carnis: the biochemistry of muscular contraction in its historical development* (Cambridge 1971). There is a complete typescript draft of the '2nd copy' and correspondence 1967-70 with colleagues from whom she sought advice and comments.

There is also an index of correspondents.

P. Harper  
Bath 1992

**SECTION A BIOGRAPHICAL AND PERSONAL****A.121, A.122**

A.121 Undergraduate essay 'The Biology of Flowers', 11pp ms + 1p ms notes, January 1916.

This was awarded a 'B+' with the comment 'This is a good account of purely historic interest. It gives too little idea of flower biology as it is at present conceived'.

A.122 'A thesis on the pH and rH of the cell-interior and on the chemical dynamics of muscle by D. M. Needham'. Retained in original covers. Probably submitted in application for the Beit Memorial Fellowship which Needham was awarded in 1925.

**SECTION B CAMBRIDGE UNIVERSITY****B.34 - B.64**

B.34 - B.39	THIRD FOUNDATION ASSOCIATION
B.40 - B.47	THE DINING GROUP
B.48 - B.63	LUCY CAVENDISH COLLEGE
B.64	GIRTON COLLEGE

**THIRD FOUNDATION ASSOCIATION**

This Association was established in 1951 to press for the establishment of a third women's college in Cambridge. Its aim was achieved with the foundation of New Hall in 1954 and the Association was then wound up. Needham was a member of the Association through her membership of the Dining Group (see below B.40-B.47), which supported the establishment of a third foundation.

The events leading up to the formation of the Association are narrated in a note by Needham prepared for the Dining Group (B.40).

- B.34 1951 May - October. Includes 'Outline of proposals for a Third Collegiate Foundation for Women in the University of Cambridge', 4pp typescript.
- B.35 1951 November. Includes draft of proposal to establish a Third Foundation, 4pp typescript with ms amendments, and typescript list of 'Corrections agreed'.
- B.36 1951, nd. Includes 'Analysis of points of difference between the two schools of thought', 8pp typescript; ms notes by Needham on the requirements of a third foundation.
- B.37 1952-53. Papers of meetings 22 November 1952, 20 January and 12 February 1953; list of members 22 January 1953.
- B.38 1953. Publicity material March 1953; papers of meetings 17 July and 2 December; exchange with Dame Myra Curtis re name of third foundation, December.
- B.39 1954. Papers of meetings 9 February and 21 April (the final meeting of the Association); brochure for New Hall, July; papers re G.P. Bidder/Third Foundation Trust Fund.

## THE DINING GROUP

Needham was a member of the Dining Group, an informal social club of Cambridge University women. It supported the idea of a third women's college and co-operated in the formation of the Third Foundation Association (see above B.34-B.39) but continued in existence after New Hall was established. From 1953 it adopted as a formal title 'the Society of Women Members of the Regent House who are not Fellows of Colleges' and was instrumental in the creation of Lucy Cavendish College as a graduate college for women (see below B.48-B.63).

- B.40                    1952 March - May. Papers of meetings 26 March, 29 April, 13 May and 27 May (includes 3pp typescript draft by Needham on the Group's involvement in moves towards a third foundation).
- B.41                    1952 July - September. Papers of meetings 8 July, 15 July, 25 July (includes 3pp duplicated typescript 'Draft proposals for a new women's foundation at Cambridge University'), 5 August and 30 September.
- B.42                    1953. Minutes of meetings of 3 March and 10 November; 'An Open Letter to the Dining Club [...] containing suggestions for a Five-Year Policy' by M. Masterman, 15 February.
- B.43                    1955-58. Includes 'Memorandum submitted by the Society of Women Members of the Regent House, who are not Fellows of Colleges ("The Dining Group")', 6pp duplicated typescript, with reply from University Registrar 21 June 1955.
- The Memorandum pressed the University Council for recognition of the Society as a corporate body within the University.
- B.44                    1960. 'Memorandum submitted by the Society of Women Members', 5pp duplicated typescript draft 8 December 1960 and 6pp ?final version.
- The Memorandum was prepared for the Syndicate established by the University 'to report on any ways in which they think that the relations between the University and the Colleges could be improved'. The Memorandum pressed for recognition of the Society as a collegiate body.
- B.45                    1962 (1). 'Report of the Syndicate...', Cambridge University Reporter 13 March.
- B.46                    1962 (2). 'Statement by the Society of Women Members', 7pp duplicated typescript.
- This statement, published in the Cambridge University Reporter of 18 May, was critical of the Syndicate's Report and argued for the collegiate scheme presented in the Memorandum (B.44).
- B.47                    1962-64. Includes 'Report of the Council of the Senate on Societies for

graduates', Cambridge University Reporter 13 June 1963; request from Society of Women Members to Council for recognition as a Collegiate Society, 3pp duplicated typescript, 24 July 1963, with reply from the Registrar.

The Registrar noted the Council had received the Society's request with sympathy and felt, given University approval, it should be possible to establish a Collegiate Society on the lines suggested.

## LUCY CAVENDISH COLLEGE

The Society of Women Members of the Regent House who are not Fellows of Colleges (the Dining Group) adopted the name Lucy Cavendish Collegiate Society in 1964 in expectation of recognition by the University and conferment of collegiate status. It received recognition as an Approved Society of the University on 31 July 1965. The Collegiate Society was wound up on 31 December 1965, to become Lucy Cavendish College.

- B.48-B.52                      Collegiate Society
- B.48                              1964 February - May. Papers of business meetings 18 February, 10 March, 5 May.
- B.49                              1964 June-October. Papers of AGM 2 June and business meetings 2 June, 14 July, 11 August, 22 September and 20 October.
- B.50                              1964. Includes 'Draft Memorandum on the Lucy Cavendish Collegiate Society', 4pp duplicated typescript.
- B.51                              1965 January - June. Papers of business meetings 19 January, 9 March, 26 April, 25 May, 8 June and 22 June (includes 3pp duplicated typescript 'Material relating to the discussion of the Council of Senate's Report in the Regent House on 13 July').
- B.52                              1965 July - November. Papers of business meetings 23 July, 17 August (the last meeting of the Collegiate Society); list of members.
- B.53-B.63                      Lucy Cavendish College

Needham was a member of the Governing Body and of the Council of the College.

- B.53-B.62                      Papers for meetings of Governing Body and Council 1965-66.
- |      |                        |      |              |
|------|------------------------|------|--------------|
| B.53 | 1965 August-November   | B.58 | 1966 April   |
| B.54 | 1965 November-December | B.59 | 1966 May (1) |
| B.55 | 1966 January           | B.60 | 1966 May (2) |

- |      |                  |      |                       |
|------|------------------|------|-----------------------|
| B.56 | 1966 February    | B.61 | 1966 June-September   |
| B.57 | 1966 March-April | B.62 | 1966 October-December |

B.63 Printed material re College 1965-66; brief correspondence 1966.

## GIRTON COLLEGE

B.64 Miscellaneous material, 1948-51.

## SECTION C NOTEBOOKS

C.79 - C.150

- C.79 Hardback notebook inscribed on first page 'Dorothy M. Moyle, 79, Beech Road, Stockport. Botany'. Used from the front for notes on and pencil sketches of plants found growing wild, 3 June - 13 August [?1914] and 4 September 1920, and at the back for chemistry notes (some loose). A little intercalated material includes 1913 Christmas card.
- C.80-C.114 Undergraduate notebooks.
- Needham entered Girton College in 1915 to study for the Natural Sciences Tripos. She passed Part I in 1918 and Part II, specialising in Chemistry, in 1919.
- C.80 Softback notebook inscribed on spine 'PHYSIOLOGY II' and on first page 'Girton. October Term 1915. General Physiology. Professor [J.N.] Langley and Professor [F.G.] Hopkins'. Paginated 1-162, with incomplete list of contents at the back. Used for notes on lectures 11 November 1915 - 29 February 1916.
- C.81 Softback notebook inscribed on spine 'PHYSIOLOGY III' and on first page 'Lent Term 1916. General Physiology Professor Langley & Professor Hopkins'. Used for notes on lectures 4 March - 26 May 1916, and October - 8 December [?1916].
- C.82 Softback notebook inscribed on spine 'CHEMISTRY' and on first page 'Practical Chemistry. Miss [M.B.] Thomas'. Used for notes 12 October 1915-26 January 1916.
- C.83 Softback notebook inscribed on spine 'PRACTICAL CHEMISTRY II' and on first page 'Lent Term 1916. Practical Chemistry. Miss Thomas'. Used for notes 4 February - 17 May 1916, 9 May 1917, and nd (some loose).

- C.84 Softback notebook inscribed on spine 'BOTANY I' and on first page 'Lent Term, 1916. Botany. Mr [F.F.] Blackman and Mr [?C.E.] Moss'. Used for notes on lectures 21 January - 6 March.
- C.85 Softback notebook. Used for notes on lectures 6 March - 18 March 1916 (as a continuation of those in C.84), and 'Lent Term. 1918' 17 January - 28 February.
- C.86 Softback notebook inscribed on spine 'ANALYSIS' and on first page 'Easter Term, 1916. Qualitative Analysis'. Used from the front for notes 16 May - 29 May 1916, 23 April - 21 May [?], and from the back for notes on 'Organic Analysis' 21 February [?]. A little loose material.
- C.87 Softback notebook inscribed on first page 'May Term 1916. Electricity. Mr [C.M.] Sleeman'. Used from the front for notes on lectures 2 - 30 May and nd, and from the back for notes on lecture on magnetism.
- C.88 Manchester High School for Girls exercise book inscribed on cover '[...] Chemistry Notes'. Used for miscellaneous notes Long Vacation 1916, March 1917, and July [?1917].
- C.89 Manchester High School for Girls exercise book inscribed on cover '[...] Girton College, Cambridge'. Used for notes on physiology course Long Vacation 1916, 2 November 1916 - 8 February 1917, 6 September [?1917], and 25 February 1918.
- C.90 Softback notebook inscribed on spine 'PRACTICAL ORGANIC' and on first page 'Practical Organic Chemistry'. Used for notes 13 October 1916 - 12 February 1917.
- C.91 Softback notebook. Used for notes on lectures on botany 2 - 20 May [?1916], and 12 - 31 October [?1916]. The second set of notes probably continues in C.92.
- C.92 Softback notebook inscribed on first page 'Michaelmas Term, 1916. Elementary Botany. Professor [A.C.] Seward'. Used for notes on lectures 2 November - 7 December 1916 and Lent term January - 8 March 1917. Probably continued from C.91.
- C.93 Softback notebook inscribed on first page 'Elementary Botany. Practical. Professor Seward'. Used for pencil sketches from 4 May [?1917].
- C.94 Manchester High School for Girls exercise book inscribed on cover 'Botany notes'. Used for notes on lectures 28 November 1916 ('Evolutionary theory

and modern doubts' by W. Bateson) - 1 March 1918. A little material intercalated.

- C.95 Softback notebook inscribed on first page 'May Term. 1917. Plant Chemistry. Miss [M.] Wheldale'. Used from the front for notes on experiments 24 April - 22 May, and from the back for notes on ?practicals.
- C.96 Softback notebook inscribed on first page 'Long Vacation Term. 1917. Practical Chemistry. Inorganic Preparations. Miss Thomas'. Used for notes 5 - 24 July 1917, and 'Lent Term 1918. Revision' notes 17 January - 7 March.
- C.97 Softback notebook inscribed on first page 'Organic Chemistry. Preparations. Mr [W. H.] Mills'. Used for notes 5 - 29 July [?1917], and notes on 'Lactic Acid in Mammalian Muscle', probably made over an extended period (includes work dated 21 January 1921).
- C.98 Softback notebook inscribed on first page 'Long Vacation Term 1917. Dr [J.C.] Willis'. Used from the front for notes on lectures on plant taxonomy, ecology etc 4 - 25 July, and notes on plant biochemistry 4 - 12 March [?], and from the back for lists of plants found at different sites.
- C.99 Softback notebook inscribed on first page 'Bacteriology'. A note by Needham loose at front identifies the contents as: 'Bacteriology, Long Vac Course from sequence of dates [...] would have to be long vac 1917'. Used for notes 6 July - 8 August.
- C.100 Softback notebook inscribed on spine 'CHEMISTRY DR FENTON' and on first page 'Michaelmas Term. 1917. Practical Chemistry. Dr [H.J.H.] Fenton'. Used for notes on practicals from 16 October.
- C.101 Hardback notebook inscribed on first page 'Michaelmas Term 1917. Physical Chemistry. Dr Fenton'. Used for notes on lectures 24 November - 8 December 1917, Lent term January - 12 March 1918 and Summer Term from 23 April. A little intercalated material.
- C.102 Hardback notebook inscribed on first page 'Michaelmas Term 1917. Genetics. Professor [R.C.] Punnett'. Used for notes on lectures 16 October - 6 December 1917 and Lent term 17 January - 7 March 1918.
- C.103 Softback notebook inscribed on first page 'Oct. 1917. Central Nervous System. Dr [L.E.] Shore'. Used for pencil sketches and notes October 1917 and Lent term from 23 January 1918. A little intercalated material.
- C.104 Softback notebook inscribed on first page '1917. Practical Botany'. Used for pencil sketches.

- C.105 Softback notebook inscribed on spine 'PHYSIOLOGY DR SHORE' and on first page 'Lent Term 1918. Physiology. Dr Shore'. Used for notes on lectures 18 January - 7 March.
- C.106 Softback notebook used for notes on lectures. Loose note by Needham identifies the contents as: 'Oxidations in the cell Prof. Hopkins I, II, III, IV [towards back of book] & Lent Term 1918 Intermed 1) Set of Hopkins & Cole Chemical Physiology, Th 9 With practical work F. 10 [...] 2) Probably lects of Langley & [?F.H.A.] Marshall, Easter Term, Intermed lects in General Physics, MWF 9 [...] 3) Miscell lects by Hopkins & others & reading. Michaelmas 1918, Lent 1919'. Loose at front are ms notes dated 5 December 1923.
- C.107 Softback notebook inscribed on first page 'Michaelmas [sic] Term 1918. [...] Physical Chemistry'. Used for notes on lectures 18 October 1918 - 11 January 1919, and various dates 16 October 1921 - 15 November 1923 (lecturers include Hopkins and J.B.S. Haldane). A little intercalated material.
- C.108 Hardback notebook inscribed on first page 'Organic Chemistry. Part II. Mr Mills'. Used for notes 14 October 1918 - 30 January 1919. Notes possibly continued in C.109.
- C.109 Hardback notebook used for notes on chemistry 6 February - 13 March [?1919], possibly continuing notes in C.108.
- C.110 Hardback notebook inscribed on first page 'Michaelmas Term, 1918 [...] Metallurgy. Mr [C.T.] Heycock'. Used chiefly for notes on practicals.
- C.111 Softback notebook inscribed on first page 'Michaelmas Term, 1918. Organic Chemistry Reading'. Used for notes from 18 October 1918. A little intercalated material, including programme for Cambridge University versus All England tennis competition 14 June 1920.
- C.112 Softback notebook inscribed on first page 'Practical Chemistry'. Used for notes on practicals from 14 October [?1918]. Loose at front are two Chemistry examination papers for Part II of Natural Sciences Tripos, 27 May 1919.
- C.113 Softback notebook inscribed on first page 'Plant Physiology Practical Mr Blackman'. Used for notes 23 April - 9 May [?].
- C.114 Hardback notebook used for notes on chemistry, latest reference 1917. Loose notes at back of book.
- C.115 Softback notebook inscribed on first page 'D.M. Moyle. Balfour Laboratory,

Downing Place, Cambridge'. Paginated 1-85 (the pagination does not run to the end of the book). Used for notes on experiments Long Vacation [?1921] and 18 October 1921 - 17 January [?1923]. A little intercalated material.

- C.116 Softback notebook inscribed on first page 'D. M. Moyle. Biochemical Laboratory. Cambridge'. Used for notes on experiments Michaelmas Term 1921 and 1 February 1923 - 24 February 1925. Intercalated photograph of ?Dorothy and Joseph Needham in the laboratory.
- C.117 Softback notebook inscribed on first page 'D.M. Needham. Biochemical Laboratory March 18th, 1925'. Used for notes on experiments 18 March 1925 - 10 March 1927. A little intercalated material.
- C.118 Softback notebook inscribed on first page '[...] Biochemical Laboratory, Cambridge'. Used from the front for notes on experiments various dates 10 June 1927 - 29 January 1930, and at the back for rough notes, calculations and draft of humorous letter setting out dangers and difficulties in biochemical research. Intercalated material includes postcard from J. Needham in Ireland, 24 November 1932.
- C.119 Softback notebook inscribed on first page '[...] Biochemical Laboratory, Cambridge'. Used from the front for notes on experiments February 1934 - 26 January 1935, and at back for rough notes.
- C.120 Hardback notebook inscribed on first page '[...] Biochemical Laboratory, Cambridge'. Used from the front for notes on experiments from 29 January 1935. A little intercalated material.
- C.121 Foolscap hardback notebook inscribed inside front cover '17' and on first page '[...] Biochemical Laboratory. Cambridge. Feb. 1937'. Used for notes on experiments 4 February - 12 July 1937 and 27 October 1937 - 18 October 1939. A little material intercalated loose and clipped to pages of the notebook.
- C.122 Foolscap hardback notebook inscribed on first page '[...] Biochemical Laboratory Cambridge. Oct 20th 1939'. Used for notes on experiments October 1939-November 1940, January 1942, 25 March 1946 - 27 January 1950 and February 1952. Material intercalated includes correspondence 1943 and 1947.
- C.123 Softback notebook inscribed on first page '[...] Biochemical Laboratory Cambridge'. Used for notes on experiments 27 May 1941 - 25 January 1944.
- C.124 Hardback notebook inscribed on first page 'April 1942'. Used for notes on experiments. Intercalated material includes drafts of personal letter re health and future plans.

- C.125 Hardback notebook inscribed on first page '23-6-43 onwards' with typescript list of contents headed 'Mrs Needham (cum Dr [J.A.] Cohen)' pasted onto the page. Used for notes on experiments re chemical defence research (not all in Needham's hand) 23 June 1943 - 24 November 1944.\* A little intercalated material.
- C.126 Spiral bound notebook used for notes on lectures 18 January 1946 - 6 March 1947. Lecturers include M.F. Perutz, E.C. Bate-Smith, K. Bailey, M. Dixon, F.A. Lipmann, T.R.R. Mann and G.D. Greville. Loose at back is list of literature for 'Methods of X-ray Analysis and their Applications to Biological Problems', c.1946.
- C.127 Spiral bound notebook inscribed on first page '[...] Biochemical Laboratory...'. Used for rough notes and calculations from November 1946.
- C.128 Hardback notebook used chiefly for notes on lectures various dates 26 February 1947 - 53. Lecturers include K. Bailey, A.F. Huxley, A.L. Lehninger, M. Dixon, S.V. Perry and B. Chance.
- C.129 Spiral bound 'Century' notebook used for notes on experiments, calculations and jottings 1947.
- C.130 Spiral bound 'Century' notebook used for notes on experiments, calculations and jottings May - September [?1947].
- C.131 Softback notebook inscribed inside front cover 'D.M. Needham. Institut Pasteur. Rue du docteur Roux'. Used for notes on experiments 2 January - 29 November 1948. A little intercalated material.
- C.132 Softback notebook used for notes on experiments May - 10 December 1948. A little material intercalated.
- C.133 Hardback notebook used for notes on experiments, calculations and jottings 20 June - 19 August [?1948].
- C.134 Softback notebook used for notes on experiments 20 September - 9 November 1950, 16 February - 5 August 1952, 26 January 1955.
- C.135 Spiral bound 'Century' notebook used for notes on experiments, calculations, bibliographical references and jottings [?1950].
- C.136 Exercise book used for notes on experiments, calculations and jottings [?1952].

- C.137 Hardback notebook inscribed on front cover 'I' and inside cover 'D. M. Needham Biochemical Laboratory Tennis Court Road Cambridge May 1953'. Used from the front for notes on experiments 19 May 1953 - 28 July 1955, and from the back for results of ovariectomies. A little loose material at back.
- C.138 Hardback notebook inscribed on front cover 'II' and inside cover '[...] Aug 2nd 1955'. Used from the front for notes on experiments 1955-59, and from the back for results of ovariectomies. Loose material intercalated.
- C.139 Hardback notebook inscribed on front cover 'III' and inside cover '[...] Dept. of Biochemistry Univ. of Cambridge 14.1.59'. Used from the front for notes on experiments 14 January 1959-1 April 1960, and at the back for miscellaneous notes.
- For notebook IV see C.10 in the previous catalogue.
- C.140 Hardback notebook inscribed on front cover 'V' and inside front cover '[...] Dec. 18th 1961'. Used from the front for notes on experiments 4 January - 27 November 1962, and at the back for miscellaneous notes including 'Conversation with Dr Johnson & Dr [A.J.] Rowe' 18 December 1961 and 'Conversation with A. J. Rowe and Mihalyi' 14 February 1962. Loose material intercalated.
- C.141 Hardback notebook inscribed inside front cover '[...] Biochemical Laboratory Tennis Court Road Cambridge June 1953'. Used from the front for notes on experiments various dates June 1953 - February 1957, and at the back for rough notes. A little loose intercalated material.
- C.142 Spiral bound 'Century' notebook used for notes on experiments, calculations and jottings. Loose at back is Practical Biochemistry examination paper for Part I of Natural Sciences Tripos, 3 June 1953.
- C.143 Hardback spiral bound 'Century' notebook used for notes on experiments and for calculations [?1953-54].
- C.144 Spiral bound 'Century' notebook used for notes on experiments and for calculations [?April] - September 1954.
- C.145 Spiral bound 'Century' notebook used for notes on experiments, calculations from 30 September 1954.
- C.146 Softback 'Cantab' notebook inscribed inside front cover '[...] Biochemical Lab Tennis Court Rd'. Used for notes on experiments and calculations 14 March - 8 November 1955.

- C.147 Exercise book inscribed on cover 'D. M. Needham Biochemical Lab Cambridge'. Used for notes on experiments, calculations and jottings, nd.
- C.148 Spiral bound 'Century' notebook used for notes on experiments, calculations and jottings, nd.
- C.149 Spiral bound 'Century' notebook used for notes on experiments, calculations and jottings, nd.
- C.150 Spiral bound 'Century' notebook used for notes on experiments, calculations and jottings, nd.

**SECTION D PUBLICATIONS AND LECTURES****D.75 - D.123**

- D.75-D.120      *Machina Carnis*: The biochemistry of muscular contraction in its historical development (Cambridge, 1971).  
See D.14-D.31 of the previous catalogue.
- D.75-D.111      Typescript 'second copy' of draft with extensive ms correction and addition. With correspondence and comments on chapters of the draft found therewith.
- D.75              Title page, list of contents, preface.
- D.76              Chapter one.
- D.77              Chapter two.
- D.78              Correspondence re chapters one and two 1968-69.
- D.79              Chapter three; letter from R.A. Peters [re chapter three], 18 September 1968.
- D.80              Chapter four.
- D.81              Chapter five.
- D.82              Chapter six; letter to E. Lundsgaard re chapters five and six, 3 December 1968.
- D.83              Chapter seven.
- D.84              Correspondence from H.H. Weber re chapter seven, 1968-69.
- D.85              Chapter eight.
- D.86              Chapter nine.
- D.87              Chapter ten.
- D.88              Chapter eleven.
- D.89              Correspondence re chapters ten, eleven and fourteen, 1966, 1969.\_

- D.90, D.91 Chapter twelve. 2 folders.
- D.92 Correspondence, chiefly re chapters eleven and twelve, 1969.
- D.93 Chapter thirteen.
- D.94 Ms draft of lecture found with preceding (D.93) headed 'Bristol Oct 67'.  
Paginated 1 - 17, 25. Note on p25 states: 'Missing pages in one copy of  
Ch 13'. Not found.
- D.95 Correspondence re chapter thirteen, 1967, 1969-70.
- D.96 Chapter fourteen.
- D.97 Chapter fifteen; letter to Needham re chapter fifteen, nd.
- D.98 Chapter sixteen.
- D.99 Chapter seventeen.
- D.100 Chapter eighteen.
- D.101 Correspondence re chapters seventeen and eighteen, 1967, 1969.
- D.102 Chapter nineteen.
- D.103 Chapter twenty.
- D.104 Chapter twenty-one.
- D.105 Chapter twenty-two.
- D.106 Correspondence, chiefly re chapters twenty-one and twenty-two, 1967, 1969-70.
- D.107, D.108 Chapter twenty-three. 2 folders.
- D.109 Correspondence re chapter twenty-three, 1968-70.

- D.110 Chapter twenty-four.
- D.111 Correspondence re chapter twenty-four; 'Finalities'.
- D.112-D.119 Bibliography for Machina Carnis. 406pp typescript with extensive ms corrections and additions. 8 folders.
- D.120 Draft of summary note for dust-jacket of Machina Carnis; copy of dust jacket.
- D.121 'The Lundsgaard Symposium Lecture (19, 20, 21 contained material from 5 - 7 of chapter 6 [of Machina Carnis] )'. Paginated 1-23 (lacking pages 19 - 21) with ms corrections and additions. Nd.
- D.122 'D.M. Moyle. Biometer results'. Contents of folder so labelled: ms draft on 'Effects of different rates of freezing and thawing on gelatine gels', with associated data and graphs; ms notes (some from lectures) on electrons.
- D.123 'D. M. Needham Biochemical Lab Cambridge'. Contents of binder so inscribed: untitled 22pp ms and typescript draft beginning 'There is little doubt that the energy used by muscle in carrying out its function of performing work and maintaining tension is ultimately derived from the free energy of chemical reactions going on inside it.' Nd.

## INDEX OF CORRESPONDENTS

ALLCHIN, Bridget	B.63
BALDWIN, Ernest H F	D.106
BÜLBRING, Edith	D.109
CHEESMAN, Dudley	D.92
CIBA FOUNDATION	C.137
CURTIS, Dame Myra	B.38. See also B.35
DAEMERS-LAMBERT, C	D.109
FELL, Dame Honor Bridget	B.34
FLORKIN, Marcel	D.78
GLYNN, Ian	D.111
GOODFORD, Peter J	D.95, D.109
GREVILLE, Guy Drummond	D.101
GUTMANN, E	D.89
HANSON, (Emmeline) Jean	D.109
HASSELBACH, Wilhelm	C.139
HAWKING, (née WILDE) Jane	B.63
HOLMES, Frederic L	D.78
HUXLEY, Sir Andrew Fielding	D.95
KEATINGE, W.R.	D.95
KERRIDGE,	D.92
KOMINZ, David Richard	D.92
LLOYD, G.E.R.	D.78
LOWY, Jack	D.109
MACDONALD, I.I.	B.34
MEGAW, Helen D.	B.36
NEEDHAM, Joseph	C.118
OFFER, Gerald W.	D.89, D.92
PERRY, Samuel Victor	D.92
PETERS, Sir Rudolph Albert	D.79
POYNTER, (Frederick) Noel (Lawrence)	D.78
RANDALL,	C.122
RANDLE, Sir Philip (John)	D.101
RÜEGG, J. Caspar	D.106, D.109
SANDOW, Alexander	D.95
TEICH, Mikulás	D.78, D.95

TONOMURA, Yuji	D.92
WAKID, Nabil W.	D.101
WEBER, Hans Hermann	D.84
WEEDS, Alan G.	D.92
WILKIE, Douglas Robert	D.89
WILSON, Leonard G.	D.78

\* The collection of the papers and correspondence of Malcolm Dixon in Cambridge University Library contains a notebook used by Cohen and Needham 5 December 1942 - 22 June 1943, NCUACS catalogue no. 23/8/90, item B.28.

Second supplementary catalogue of the papers  
and correspondence of

**Dorothy Mary Moyle Needham FRS**

(1896 - 1987)

by Timothy E. Powell and Peter Harper  
NCUACS catalogue no. 62/5/96

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**LIST OF CONTENTS**

		Items
INTRODUCTION		
SECTION A	BIOGRAPHICAL	A.123-A.156
SECTION B	CAMBRIDGE UNIVERSITY	B.65-B.67
SECTION D	PUBLICATIONS AND LECTURES	D.124-D.130
SECTION E	VISITS AND CONFERENCES	E.12-E.41
SECTION F	CORRESPONDENCE	F.39-F.47
INDEX OF CORRESPONDENTS		

## INTRODUCTION

This catalogue of papers and correspondence of Dorothy Needham is a supplement to those compiled in 1990 (NCUACS 22/7/90) and 1992 (NCUACS 37/5/92). The material has been arranged into sections and numbered to follow the sequences of these previous catalogues, which should therefore be consulted in conjunction with this catalogue.

## DESCRIPTION OF THE COLLECTION

The collection is presented in the order given in the List of Contents. Material supplementary to the previous catalogues has been found for sections A (Biographical and personal), B (Cambridge University), D (Publications and lectures), E (Visits and conferences) and F (Correspondence).

Section A, Biographical and personal, includes material from Needham's time in China, 1944-1945, with the Sino-British Science Cooperation Office, of which her husband Joseph Needham was Director. There is also a little personal correspondence, material relating to a number of the appeals and campaigns with which she was associated, and photographs of Needham.

Sections B, Cambridge University, and D, Publications and lectures, are very slight additions to the material in the earlier deposits.

Section E, Visits and conferences comprises principally a sequence of travel diaries spanning the period 1944-1977. They are in the form of notebooks - or loose pages from same - used for recording, usually in some detail, travel, institutions visited, contacts made and personal observations on food, social activities etc. The section also includes a little material relating to other visits and conferences 1948-1972.

Section F, Correspondence, is chiefly the contents of Needham's folder of 'Notes concerning published papers and letters'. It includes correspondence from L. H. Stickland, Jean Hanson and Lou[?is Rapkine].

There is also an index of correspondents.

## LOCATIONS OF OTHER MATERIAL

Material relating to Dorothy Needham may also be found in the papers and correspondence of Joseph Needham, whose papers are deposited in the Cambridge University Library (catalogued as NCUACS 54/3/95).

Timothy E. Powell

Peter Harper

BATH 1996

**SECTION A****BIOGRAPHICAL AND PERSONAL****A.123-A.165**

A.123-A.136	BIOGRAPHICAL
A.137-A.144	CAREER AND HONOURS
A.145	DIARIES
A.146-A.150	PERSONAL CORRESPONDENCE
A.151-A.156	APPEALS AND CAMPAIGNS
A.157-A.160	PHOTOGRAPHS
A.161-A.165	MISCELLANEOUS

**BIOGRAPHICAL**

A.123	School certificates, 1907-1912.
A.124	B.A. and M.A. certificates, September 1923.  Ph.D. certificate, January 1930.
A.125	'Memorandum on the health of Dr Dorothy Needham, FRS' by Joseph Needham, 31 January 1985.
A.126-A.133	Letters of condolence received by Joseph Needham. Arranged alphabetically. Not indexed.
A.126	A, B
A.127	C-F

### Biographical and personal

- A.128 G-I
- A.129 J-L
- A.130 M-P
- A.131 R, S
- A.132 T-Z
- A.133 First name and unsigned.
- A.134 Memorial service, Gonville and Caius Chapel, Cambridge, 11 February 1988.
- A.135 Exchange *re* arrangements for Dorothy Needham's Royal Society *Biographical Memoir*, 1988.
- A.136 Endowment of Dorothy and Joseph Needham Studentship, Lucy Cavendish College Cambridge, 1988.

### CAREER AND HONOURS

- A.137-A.139 'Souvenirs'. Contents of Needham's envelope so inscribed: mostly material from China 1943-1945.
- In early 1944, Dorothy Needham joined her husband Joseph Needham in China where he was head of the Sino-British Science Cooperation Office (SBSCO), an organisation responsible for supplying Chinese research and teaching institutions with scientific, technical and medical support.



**Biographical and personal**

- /... For further material about the SBSCO see also E.12-E.15 of the present catalogue and the Catalogue of the Papers and Correspondence of Joseph Needham, deposited in Cambridge University Library (NCUACS catalogue no. 54/3/95), section C.
- A.137 Manuscript notes of telegrams *re* Needham's going to China, September 1943; manuscript notes on shrubs and other plants; note of inscription on Needham's personal seal.
- A.138 Pocket notebook used for notes on visits to Chinese research institutions, contacts made in China etc.
- A.139 2pp typescript account of the work of the Sino-British Cooperation Office; pass for Needham's return home; UN identity card for use in France; manuscript notes on international relations.
- A.140 Chinese pass card.  
  
Note (in Joseph Needham's hand) on the envelope in which it was found reads: 'This is a "passport" or permit issued to Dorothy Needham in Aug. 1945 by the Foreign Affairs Bureau of the Nationalist Govt of China. It request[s] that the holder be protected, treated with due respect, and facilitated in her affairs by all organs of the army & police'.  
  
'Wartime Dorothy Needham name card'. In Chinese.
- A.141 Notice of election to the Fellowship of the Royal Society, 19 March 1948.
- A.142 Menu for dinner in honour of Needham on her retirement from experimental work, 8 May 1963.
- A.143 Exchange *re* plaque commemorating Needham's Honorary Membership of the Biochemical Society, 1985.

A.144 Ninetieth birthday, 21 September 1986.

### Biographical and personal

#### DIARIES

A.145 '1910 diary'. Contents of envelope so inscribed: notebook and loose notes of trip to Garmisch, August 1910.

A.145A 1945 pocket diary.

#### PERSONAL CORRESPONDENCE

A.146 Needham, J. 1947, 1973, 1979.  
Postcards from visits abroad.

A.147 Teich, M. 1973

A.148 Wakid, N. W. 1964, 1969, 1973,  
nd

A.149, A.150 Correspondence arranged chronologically (includes some incomplete letters).

A.149 Various dates 1921-1972.

A.150 Various dates 1973-1983, nd.

### Biographical and personal

#### APPEALS AND CAMPAIGNS

A.151, A.152	Amnesty International	1973, 1974, 1983
A.151	Papers <i>re</i> activities of Amnesty International, chiefly the Cambridge branch.	
A.152	Correspondence <i>re</i> prisoners of conscience and human rights; manuscript drafts of Needham's letters on behalf of prisoners	
A.153	British Deaf Association	1972
	Cambridge Society for Social Responsibility in Science	nd
	Cambridge Women's Welfare Association	1974
A.154	Medical Aid for Vietnam	1974
A.155	National Campaign for the Abolition of Capital Punishment	1970
A.156	Greek Relief Fund	1974
	International Friendship Hospital for Women and Children in Hanoi	1973
	London Association for the Blind	1973
	Society for Anglo-Chinese Understanding	1973
	United Nations Association	1968

### Biographical and personal

#### PHOTOGRAPHS

- A.157                      Photograph of Needham as a young woman, nd.
- Photographs of Needham in envelope inscribed 'Taken by Sydney Steele June 1932'.
- Portrait photograph of Needham inscribed on verso 'Dr Dorothy Needham ca.1935 when a candidate for Castle Ward in the City Council elections, Cambridge'.
- A.158                      Studio photographs of Needham inscribed on verso '[...]Polyfoto, London ca.1935', but probably later.
- Photograph of Needham and other inscribed on verso '25, March, 1948'.
- A.159                      Photographs of Needham, one inscribed on verso '[...] in a laboratory at Mainz in the Rhineland. ca.1960'.
- Photograph of Needham inscribed on verso 'Malayan Students Society Dinner Mar 64'.
- A.160                      Photograph of Needham inscribed on verso '[...] near Eisenstadt Austria 1965'.
- Photographs of Needham in envelope inscribed 'To Joseph Needham early 77 with Hashimoto Keizo and family'. Feature the Needhams.

**Biographical and personal****MISCELLANEOUS**

- A.161 Passports: 1935-1944, 1945-1950, 1950-1960, 1960-1970.
- A.162 National Identity Card, 1943-1946; ration book 1953-1954.
- A.163 Power of Attorney, given to Joseph Needham, 5 December 1983.
- A.164 Hardback notebook labelled on front cover 'Recipes. D. M. Needham'.
- A.165 Pocket notebook used 1956-1958 possibly to record books read by Needham.

**SECTION B****CAMBRIDGE UNIVERSITY****B.65-B.67**

B.65 Duplicated typescript teaching material for biochemistry courses, 1950s-1960s.

B.66 Miscellaneous Department of Biochemistry papers, 1950s-1960s.

B.67 Printed material from British Federation of University Women, 1966-1973.

**SECTION D****PUBLICATIONS AND LECTURES****D.124-D.130**

D.124-D.128 PUBLICATIONS

D.129, D.130 LECTURE AND BROADCAST

**PUBLICATIONS**

D.124 'A quantitative study of succinic acid in muscle. I', *Biochemical Journal* 1924.  
Corrected proof.

D.125 'The biochemistry of the myometrium', with C.F. Shoenberg, in R.M. Wynn, ed. *Cellular Biology of the Uterus* (New York, 1967), 291-352.

Corrected proof.

See also D.10 in the first catalogue of Dorothy Needham's papers, NCUACS 22/7/90.

D.126, D.127 Miscellaneous manuscript and typescript pages of drafts. 2 folders.

D.128 Miscellaneous editorial correspondence, 1958-1968 and nd.

**LECTURE AND BROADCAST**

D.129 Invitation to Needham to give talk for BBC's Home Service 'Observation Post' programme, 10 October 1947.

D.130 Untitled manuscript draft beginning 'I should like to speak first about the universities'.

Possibly early draft of 'Chinese Scientists Revisited - 1972' delivered in Bristol and Leicester (see D.73 in the first catalogue of Dorothy Needham's papers, NCUACS 22/7/90).

**SECTION E****VISITS AND CONFERENCES****E.12-E.41**

E.12-E.36 TRAVEL DIARIES

E.37-E.41 OTHER VISITS AND CONFERENCES

**TRAVEL DIARIES**

Notebooks, or contents of same, used by Needham for notes on visits abroad. They record, usually in some detail, travel, institutions visited and contacts made and personal observations on food, social activities etc.

The visits were made with Joseph Needham and sometimes with Gwei-Djen Lu also. The postwar visits generally combine holiday activities with visits to research institutions and scientific colleagues and lectures.

- E.12-E.15 Softback memo books used in China 1944-1945.
- E.12 'I'. 7 February 1944 - 11 January 1945.
- E.13 'II'. 15 January - 2 April, 3 November - 11 December 1945.
- E.14 'III'. 25 August - 3 November 1945.
- E.15 Unnumbered. Used for notes on procedure for mailing post, expenses etc.
- E.16 Loose manuscript notes on visit to Lebanon and Turkey, 3-27 December 1948.
- The Needhams attended the first UNESCO General Conference held in Beirut and returned to the UK via Turkey.
- E.17 Hardback pocket notebook inscribed 'Ceylon  $\Delta$  1958'. Used 18 February - 26 April 1958.

**Visits and conferences**

- E.18 Softback pocket notebook labelled on front cover 'Spain & Portugal 1960'. Used 9 August - 8 September 1960.
- E.19 Softback pocket notebook inscribed on front cover 'Jugoslavia 1961'. Used 24 July - 24 August 1961.
- E.20, E.21 Softback pocket notebooks used in visit to Czechoslovakia and Austria, 15 August - 12 September 1963.
- E.20 Inscribed on front cover 'D.M. Needham Czechoslovakia & Austria 1963'.
- E.21 Inscribed on front cover 'Austria 63 (cont) D.M. Needham'.
- E.22 Loose manuscript notes headed 'Denmark & Sweden'. Used 3-20 April 1964.
- E.23 Pocket notebook inscribed on front cover 'China 64'. Used 1 July - 26 August 1964.
- E.24 Softback pocket notebook inscribed on front cover 'China & Japan 64'. Used 19 August - 22 September 1964. A little loose material intercalated.
- E.25 Pocket notebook used on visit to China and Japan, 22 September - 21 October 1964.  
Continuation of preceding.
- E.26 Ringback pocket notebook inscribed on front cover '1965 Austria & Poland'. Used 13 August - 11 September 1965. A little loose material intercalated at front.
- E.27 Spiral bound pocket notebook inscribed on front cover 'Greece & Lebanon 66'. Used 30 August - 27 September 1966.

### Visits and conferences

- E.28                      Spiral bound pocket notebook inscribed on front cover 'Malta Denmark 67'. Used 5-20 September (Malta) and 22-ca.30 September (Denmark) 1967.
- E.29                      Spiral bound pocket notebook inscribed on front cover 'Malta 67'. Used for notes on Maltese history in connection with visit. Intercalated loose at back are notes on wool preparation (not in Needham's hand).
- E.30                      Softback pocket notebook inscribed on front cover 'Japan 1971    Hong Kong 1971'. Used 3 July - 9 September 1971.
- E.31                      Softback pocket notebook inscribed on front cover 'Hong Kong    Singapore Guala Lumpar    Ceylon    1971'. Used 10-30 September 1971.
- E.32, E.33                Spiral bound notebooks used for notes on visit to China and Japan 1972.
- E.32                      Inscribed on front cover 'China 1972    1'. Used 2 July - 20 August, continued on loose pages at back. Paginated 1-96.
- E.33                      Inscribed on front cover 'China + Japan 1972    2'. Used 21 August - 23 September. Paginated 97-157.
- E.34                      Loose manuscript notes used for visit to south of France 30 June - 18 July 1973.
- E.35                      Loose manuscript notes used for visit to France and Italy 1-12 April 1974.
- E.36                      Softback notebook inscribed on front cover 'Edinburgh 1977 Congress etc Uppsala 1977 500th Anniversary Stockholm'. Used 7-20 August (Edinburgh) and 23 September - 8 October.

**Visits and conferences****OTHER VISITS AND CONFERENCES**

- E.37 Letter to Needham *re* her forthcoming visit to Holland in April, 25 March 1948; poster *re* Needham's lecture on 'Recent advances in biochemistry of muscle' to Nederlandse Vereniging voor Biochemie, Amsterdam, 21 April.
- E.38 Invitation to talk at Nutrition Society meeting on The Nutrition of Athletes, Royal Society of Medicine, London, 17 July 1948.
- Invitation to luncheon prior to Royal Society meeting on Muscular Contraction and Relaxation: their physical and chemical basis, 7 July 1949.
- E.39 British Biophysical Society meeting on Muscular Contraction, University College London, 18-20 Dcember, 1967.
- Abstracts.
- E.40 British Biophysical Society meeting on Conformation of Polypeptides and Fibrous Proteins, Leeds University, 6-8 April 1971.
- Notice; provisional programme; abstracts.
- E.41 Fourth International Biophysics Congress, Moscow, 7-14 August 1972.
- Programme only.

**SECTION F****CORRESPONDENCE****F.39-F.47**

- F.39-F.46 'Notes concerning published papers and letters'. Contents of Needham's folder so inscribed divided into eight for ease of reference: chiefly scientific correspondence with notes and drafts found therewith.
- F.39 Miscellaneous manuscript notes, tables etc, 1941.
- F.40 Correspondence from L. H. Stickland, 1941-1950, and H.A. Lardy, chiefly *re* glycolysis.
- F.41 Correspondence from Lou[?is Rapkine], nd, reporting on research in progress.
- F.42 'Experiments in crystalline enzyme', 12pp typescript and manuscript draft with manuscript material in the hand of correspondent of F.41; 3pp data from experiments, nd.
- F.43 Correspondence with Jean Hanson, 1962.
- F.44 Miscellaneous correspondence 1954-1961.
- F.45 Miscellaneous correspondence 1962-1964, nd.
- F.46 'On the question of the inhibition of enymes by cortisone', by Needham, 7pp typescript draft + graphs, latest bibliographical reference 1951; miscellaneous manuscript notes.
- F.47 Miscellaneous correspondence 1959-1985, nd.

## INDEX OF CORRESPONDENTS

AL-MALLAH, A. K.	F.47
ALOISI, M.	F.44, F.45
AMNESTY INTERNATIONAL	A.151, A.152
ANDREEN, Andrea	A.149
AZZONE, G. F.	F.44
BALDWIN, Ernest H. F.	F.47
BATE-SMITH, Edgar Charles	F.45
BIOCHEMICAL SOCIETY	A.143
<i>BIOCHIMICA ET BIOPHYSICA ACTA</i>	D.128
BRITISH BROADCASTING CORPORATION	D.129
BRITISH DEAF ASSOCIATION	A.153
CAMBRIDGE SOCIETY FOR SOCIAL RESPONSIBILITY IN SCIENCE	A.153
CAMBRIDGE WOMEN'S WELFARE ASSOCIATION	A.153
COHEN-WELTER, Willy A.	A.150
CSAPO, Arpad I.	F.44, F.45
GERGELY, John	F.44
GREEK RELIEF FUND	A.156
HANSON, (Emmeline) Jean	F.43
HUXLEY, Sir Andrew Fielding	F.47
HUYS,	F.45
INTERNATIONAL FRIENDSHIP HOSPITAL FOR WOMEN AND CHILDREN IN HANOI	A.156
IVANOV, I.	F.45
KENDREW, Sir John Cowdery	F.47
LARDY, Henry Arnold	F.40

### Index of Correspondents

LONDON ASSOCIATION FOR THE BLIND	A.156
McGEE, Harold	F.47
MEDICAL AID FOR VIETNAM	A.154
NATIONAL CAMPAIGN FOR THE ABOLITION OF CAPITAL PUNISHMENT	A.155
<i>NATURE</i>	D.128
NEEDHAM, Joseph	A.146
NEUBERGER, Albert	F.45
OPPEL,	F.45
PERGAMON PRESS LIMITED	D.128
PERRY, Samuel Victor	F.45
PICKLES, V. R.	F.45
RAPHAEL, Ralph Alexander	F.47
?RAPKINE, Louis	F.41
ROODYN,	F.45
ROTHSCHILD, Nathaniel Victor Mayer, Baron	F.47
ROYAL SOCIETY	A.134, A.135, A.141 F.47
SEREBRENICOVA,	F.45
SOCIETY FOR ANGLO-CHINESE UNDERSTANDING	A.156
STICKLAND, L. H.	F.40
TEICH, Mikulás	A.147
THEOBALD,	F.45
THOMAS, I. F.	F.47
UNITED NATIONS ASSOCIATION	A.156
VAN HEYNINGEN, William Edward ('Kits')	F.47

WAKID, Nabil W.

A.148