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FOREWORD

The completion of this catalogue of the manuscript papers of Professor Dorothy Hodgkin OM is a significant event in the work of the National Cataloguing Unit for the Archives of Contemporary Scientists. Like all such large-scale cataloguing projects it has had a long gestation. Professor Hodgkin approached the NCUACS's Oxford-based predecessor organisation in 1981 for advice about her papers and visited its offices in 1983. Contacts were maintained after the scientific archives project was transferred to Bath in 1987 and in 1991 Professor Hodgkin gave permission for the NCUACS to catalogue her papers for deposit in the Bodleian Library, Oxford. The Unit's archivists made a number of visits to the Chemical Crystallography Laboratory, Oxford and Professor Hodgkin's home to survey the very substantial accumulations of papers in both locations. A detailed archival assessment of their quantity, nature and importance for a wide range of aspects of the history of science was prepared, and a funding proposal for submission to the Leverhulme Trust was developed. We were very fortunate to secure funding from the Trust for two years and Mr Paul Newman was appointed in 1992 to catalogue the papers. Professor Hodgkin has been supportive throughout with advice and encouragement and Mr Newman has met the challenge of his first encounter with scientific archives with great success.

The NCUACS would like to take this opportunity to record our gratitude to the Director of the Leverhulme Trust, Sir Rex Richards, and the Leverhulme Trustees for their support of the scientific archives work since the transfer of operations to Bath in 1987. This has taken the form of three major cataloguing projects: the papers of Sir John Kendrew (1987-1989), Sir David Phillips (1991-1994) and Professor Dorothy Hodgkin OM (1992-1994). The three collections are deposited in the Bodleian Library, Oxford where they form an indispensable corpus of material for the history of twentieth-century British science.

Peter Harper Archivist, NCUACS May 1994

GENERAL INTRODUCTION

PROVENANCE

The material was received at various dates between October 1991 and February 1994 from Professor Hodgkin and from the Chemical Crystallography Laboratory at Oxford University.

7

OUTLINE OF THE CAREER OF DOROTHY MARY CROWFOOT HODGKIN

Dorothy Mary Crowfoot was born in Cairo in 1910 and brought up in East Anglia. She was educated at the Sir John Leman School, Beccles and Somerville College, Oxford where she read chemistry 1928-32. Apart from two years research at Cambridge University after graduation she remained in Oxford for the rest of her career. Here for twenty-five years she combined teaching chemistry at Somerville, where her students included the future Prime Minister Margaret Thatcher, with research at the highest level. She became University lecturer and demonstrator in 1946 and University Reader in X-ray crystallography in 1956. From 1960 to official retirement in 1977 she was Wolfson Research Professor of the Royal Society. She also married and raised a family. In 1937 she married Thomas Lionel Hodgkin (died 1982); they had three children Luke Howard born 1938, Prudence Elizabeth born 1943 and John Robin Tobias born 1946.

Dorothy Hodgkin carried out her first research at Oxford in 1931-32 with H.M. Powell on the structure of thallium diakyl halides. She then went to Cambridge to work for two years with J.D. Bernal who had just been appointed to start research on the study of crystals by x-ray diffraction and had begun to look at biologically interesting molecules. The international success of his investigations led to increasing demands on his research, and Hodgkin joined him to make the first measurements on materials sent for analysis. The research included work on sterols, vitamin B1 and the protein pepsin, and Hodgkin wrote her thesis for the Ph.D. degree at Cambridge on the results of the research on sterols. On her return to Oxford she decided to concentrate on one crystal structure in detail and (with C.H. Carlisle) correctly analysed cholesterol iodide, the first complex organic molecule to be determined completely by x-ray crystallography. Early in the Second World War the successful tests with penicillin extracts on infected mice by Howard Florey and his team in Oxford led to urgent attempts to determine its chemical structure. Hodgkin and her coworkers accomplished this in three years with x-ray techniques, showing conclusively that the formula of penicillin included β lactam and thiazolidine rings. This x-ray determination was of national importance at the time, and was to have a lasting effect on the development of antibiotics, since in

order to make synthetic drugs it is necessary to know the structure of the original material. She later elucidated the structure of cephalosporin C, an antibiotic closely related to penicillin.

After 1948 Hodgkin began work on the x-ray analysis of vitamin B12 which is essential to the life of red blood cells in the body - the inability to absorb sufficient vitamin B12 from the diet leads to pernicious anaemia. The red crystals of the anti pernicious anaemia factor were supplied by E.L. Smith of Glaxo Laboratories and after a lengthy step-by-step analysis lasting nearly ten years she and her team found the structure. The processing of data was aided by three of the first electronic computers located at Manchester University, the National Physical Laboratory, Teddington and the University of California, Los Angeles, and Hodgkin played a leading part in the campaign to provide computer facilities at Oxford University. After the success of the vitamin B12 work Hodgkin and her team refocused their research effort on the crystal structure of insulin - she had taken the first x-ray photographs of insulin crystals in 1935 - and were able to announce the three-dimensional structure of rhombohedral 2 Zn insulin in 1969. Research on insulin refinements continued into the 1980s.

Apart from her scientific research career at Oxford University, Hodgkin undertook a number of prominent public and professional responsibilities including in the UK, Chancellor of Bristol University, 1970-88, and President of the British Association for the Advancement of Science, 1977-78, and internationally, President of the International Union of Crystallography, 1972-75. Hodgkin's involvement in humanitarian and peace issues was given impetus by the Vietnam War. She became Vice-President of the Medical Aid Committee for Vietnam in 1965 and President in 1971. As President she visited North Vietnam in 1971 and 1974. Her second major commitment in the area of peace and international understanding was to the Pugwash movement (Pugwash Conferences on Science and World Affairs), which she served as President, 1976-88.

Hodgkin was elected FRS in 1947 (Royal Medal 1956, Copley Medal 1976; Tercentenary Lecture 1960, Bakerian Lecture 1972), and was awarded the Nobel Prize in Chemistry in 1964 for her determinations by x-ray techniques of the structures of important biochemical substances. In 1965 she became only the second woman to be appointed to the Order of Merit.

DESCRIPTION OF THE COLLECTION

The material is presented as shown in the List of Contents. Additional explanatory notes, information and cross-references are appended where appropriate to the separate sections, subsections and individual entries in the body of the catalogue. The following paragraphs are intended only to draw attention to items of particular interest. Section A (Biographical) presents records of Hodgkin's career, honours and awards, 1928-90, including documentation of the award of the Nobel Prize and subsequent meetings of Nobel prizewinners. There are also family and personal correspondence, though papers relating to Hodgkin's parents and husband were retained in family hands, drafts of an unfinished autobiography, shorter autobiographical writings, articles and interviews, and many requests for biographical information for which Hodgkin often prepared careful and detailed replies.

Section B (Research) is by far the largest in the collection and comprises very extensive documentation of Hodgkin's research in x-ray crystallography including the major topics of insulin, penicillin and vitamin B12. It covers a period of sixty years from about 1928 to 1988. Most of the material was found in Hodgkin's box folders which were labelled by topic. The contents of these boxes included correspondence, drafts for reports and publications, notebooks, notes and data. Arrangement is chronological by topic. J.D. Bernal, with whom Hodgkin worked in Cambridge 1932-34, and very many of her later collaborators including C.W. Bunn (penicillin) and E.L. Smith (vitamin B12) are represented in the papers by correspondence, drafts, notes and data.

Section C (Oxford University) provides useful documentation of Hodgkin's university teaching in the 1940s and 1950s, her research group and tenure of the Wolfson Research Professorship of the Royal Society, 1960-77, the funding and administration of her research (Rockefeller Foundation, Department of Scientific and Industrial Research, Nuffield Foundation), and the provision of equipment and supplies including the use of computer facilities at other institutions in the UK and USA and their development at Oxford.

Section D (Publications, lectures and broadcasts) presents chronological sequences of material relating to Hodgkin's scientific publications, invitation and public lectures and broadcasts, and editorial correspondence arranged alphabetically by publisher or journal title. There are substantial assemblages of material relating to her Royal Society memoirs of J.D. Bernal and Kathleen Lonsdale. Not all Hodgkin's scientific publications are documented in this section. There are drafts for many scientific papers with the related research material in Section B, and Hodgkin's Nobel Lecture is to be found in Section A with other documentation of the Nobel Prize. Drafts for a number of non-scientific publications and lectures are to be found in Section G.

Section E (Societies and organisations) brings together documentation of Hodgkin's involvement with 16 British and international societies and organisations including Bristol University, the British Association for the Advancement of Science, the Institute of Physics, especially its X-ray Analysis Group established 1943, the International Union of Crystallography (IUCr) and the Royal Society. Her major commitments to Bristol University, where she was Chancellor for nearly twenty years, and to the International Union, which she served as President and whose congresses she attended 1948-93, are particularly well documented. In respect of Bristol there is a substantial sequence of general papers and correspondence 1971-89, correspondence with Vice Chancellors A.W. Merrison and J.F.C. Kingman, Hodgkin's speeches at degree congregations, and material relating to the Department of Architecture closed by the University in 1984 despite Hodgkin's support for its efforts to remain open. Although there is some record of all the IUCr congresses Hodgkin attended from 1948, the bulk of the surviving material dates from Hodgkin's term as President, 1972-75, and includes general papers and correspondence and executive committee papers. The IUCr material reflects Hodgkin's interest in bringing Chinese scientists into the international crystallographic community. There is also material relating to scientific relations with China amongst the Royal Society papers.

Section F (Visits and conferences) presents a chronological sequence of material relating to Hodgkin's scientific visits and conferences, 1936-93, though the great bulk of the material is from the period after the award of the Nobel Prize in 1964. There is evidence of her interest in maintaining scientific contacts with the USSR and China during the Cold War, the first of many visits taking place in 1953 and 1959 respectively, and of visa difficulties in respect of visiting the USA during the same period. She also made frequent visits to Eastern Europe outside the USSR. India was another locus of valued scientific contacts and she made a number of extended visits, for example in 1974, 1978 and 1979. Not all Hodgkin's extensive travel is documented in this section. Records of her attendance at International Union of Crystallography congresses are to be found in Section E with other IUCr material. Visits which bear on Hodgkin's peace and humanitarian interests including Pugwash meetings and her visits to Vietnam are to be found in Section G. Some visits of particular biographical significance (including the award of the Nobel Prize and subsequent Nobel meetings) are to be found in Section A.

Section G (Peace and humanitarian interests) brings together documentation of the wide range of peace and humanitarian causes with which Hodgkin was involved. Her major commitments to the Medical Aid Committee for Vietnam and the Pugwash movement are particularly well documented. The activities of the Medical Aid Committee are recorded in general correspondence and papers, minutes and agenda and printed material; however the surviving material relating to Hodgkin's visits to Vietnam in 1971 and 1974 is disappointing in extent. The bulk of the Pugwash material dates from Hodgkin's Presidency, 1976-88, and includes general correspondence and papers, committee papers, conference, symposia and workshop papers, Hodgkin's addresses, and printed material. Of especial interest is the documentation of the Warsaw conference of 1982, which followed the imposition of martial law in Poland. Other organisations and topics represented in the section include the J.D. Bernal Peace Library, Palestine, Russian dissidents and Scientists Against Nuclear

Arms (SANA). The section also presents documentation of conferences attended by Hodgkin on peace and humanitarian issues, a number of her lectures and publications on these topics, and an extended chronological sequence of shorter correspondence with individuals and organisations, 1952-91.

Section H (Correspondence) presents an alphabetical sequence of Hodgkin's scientific correspondents including distinguished mentors and contemporaries such as J.D. Bernal, W.L. Bragg, J.W. Cornforth, P.P. Ewald, I. Fankuchen, H. Lipson, Kathleen Lonsdale, A.L. Patterson, Linus Pauling, M.F. Perutz, Robert Robinson, R.L.M. Synge and Dorothy Wrinch, and very many of the younger scientists from Britain and overseas who researched in various capacities in her laboratory such as G.G. Dodson, J.D. Dunitz and David Sayre. The sequence is noteworthy for the significant number of women scientists who trained in Hodgkin's laboratory including J. Glusker (née Pickworth) and B.W. Low. There is also an extended sequence of shorter scientific correspondence arranged chronologically 1933-91. Hodgkin kept together by topic much of the scientific correspondence relating to her principal research projects and this correspondence is to be found in Section B Research.

Section J (Non-print material) comprises photographs, photographic slides, sound recordings and film. There are photographs of Hodgkin, mostly undated, and with scientific colleagues including J.D. Bernal and I. Fankuchen, H.M. Powell and colleagues from Oxford laboratory, P.L. Kapitza and F.H.C. Crick, a photograph album recording Pugwash occasions, 1969-88, photographic slides for Hodgkin's lectures especially on insulin and vitamin B12 work and three sound recordings including the 1973 Nobel Guest Lecture and her Chancellor's Address to the Bristol University Education Department in 1974.

The bibliography was compiled for the catalogue from Hodgkin's own incomplete lists (D.108) and a search of the abstract literature. Following the example of Hodgkin's own lists it includes in the numbered sequence her Ph.D. thesis. References in the catalogue are to this bibliography in the form *Bibliog.* ...

There is also an index of correspondents.

LOCATIONS OF OTHER MATERIAL

Papers of Hodgkin's parents John Winter and Grace Mary Crowfoot are retained in family hands.

Papers of Hodgkin's husband Thomas Lionel Hodgkin are in the Rhodes House Library, Oxford and in family hands.

Papers of Thomas Hodgkin (1798-1866) are in the Library of the Wellcome Institute for the History of Medicine, London.

A photograph album recording Hodgkin's eightieth birthday celebrations is retained in family hands.

Videotape interviews of Hodgkin are held in the Archives of the Biochemical Society and the Library of the Royal College of Physicians, London.

Two models showing the crystal structure of vitamin B12 and two models made by Hodgkin to show the structure of pig insulin at a resolution of 2.8 Angstroms are held by the Science Museum, London.

Drawings of Hodgkin's hands by Henry Moore and a portrait of her by Bryan Organ are held by the Royal Society, London.

A portrait by Maggi Hambling was commissioned for the National Portrait Gallery, London.

ACKNOWLEDGEMENTS

We owe a first duty of thanks to Professor Hodgkin for making her papers available for cataloguing and for information and advice particularly about family and biographical matters.

We also owe a great debt of gratitude to Professor Judith Howard whose advice on the very extensive research materials was indispensable to the successful cataloguing of them.

Timothy E. Powell of the NCUACS at Bath has helped at all stages of the project with advice and information.

Hazel Gott has earned much gratitude for the patience and skill she has brought in the processing and revising of the catalogue.

> Peter Harper Paul M. Newman BATH 1994

SECTION A

BIOGRAPHICAL

A.1-A.53AUTOBIOGRAPHICAL AND BIOGRAPHICALA.54-A.155CAREER, HONOURS AND AWARDSA.156-A.181FAMILY AND PERSONALA.182-A.220MISCELLANEOUS BIOGRAPHICAL ITEMS

A.221, A.222 PRESS CUTTINGS

A.1-A.222

AUTOBIOGRAPHICAL AND BIOGRAPHICAL

Autobiographical writings

A.1-A.9	Sloan Foundation Science Book Series.
	Hodgkin was asked to write a scientific autobiography by the Alfred P. Sloan Foundation, New York as part of its Science Book Series. She devoted a considerable amount of time to this from the mid 1980s, but the book remained unfinished.
A.1-A.8	Manuscript and typescript drafts. Eight folders.
	Photocopies only. Originals retained by Hodgkin and her family.
A.9	Correspondence with the Sloan Foundation 1979-82, 1984-88.
A.10-A.18	Shorter autobiographical writings.
A.10	'The Dual Role of Women.' 8pp. typescript re Hodgkin's childhood and early scientific career.
	Folder also includes manuscript notes and exercise book inscribed 'D. Hodgkin. Sudan notes. Feb. 1982' found with typescript.
A.11	'Dorothy Hodgkin - Early Education.'
	Article in <i>L'Umile Pianta</i> , the official publication of the Charlotte Mason College Association, Spring 1985.
A.12	ʻ1917-1987.'
	Manuscript and typescript drafts of article written by Hodgkin for Soviet Weekly on the 70th anniversary of the Russian Revolution; letter, 1987.
	The article is an account of Hodgkin's first visit to the USSR in 1953 (see also F.7).
A.13	'Chemistry in Oxford, 1928-1960.'
	Transcript of seminar discussion in which Hodgkin took the leading part, describing her experience as a member of the Chemistry Department during this period.
	The folder also includes shorter manuscript drafts, correspondence, 1987- 89.

A.14	'Penicillin.'
	8pp. typescript of lecture by Hodgkin on her role in penicillin research, nd.
A.15-A.18	Miscellaneous shorter autobiographical notes and drafts, nd. Four folders.
A.19-A.23	Cvs, lists of honours, statements of research interests, short biographical notes, entries for biographical directories, etc. Five folders.
Articles and in	terviews
A.24	Typescript of untitled article in Ringier Swiss Illustrated (in German), 1956.
	'The crowded life of a crystallographer', New Scientist, 8 September 1960.
	'The Chemistry-Minded Mother', Time, 6 November 1964.
A.25	3pp. untitled typescript for Contemporary British Chemists. Includes correspondence 1969-70.
A.26	'Insulin in 3-D', New Scientist, 21 August 1969.
	'Women of Achievement', Woman's Journal, October 1971.
A.27	Article in Japanese journal, 1972.
A.28	'Wir sprachen mit Dorothy Crowfoot-Hodgkin', <i>Therapeutische Berichte</i> , February 1973.
A.29	Article in journal of the Council of Scientific and Industrial Research, India, 1975.
A.30	'Structures of life', Chemistry in Britain, April 1977.
	Folder also includes correspondence, 1975-77, and transcript of interview on which article was based.
A.31	'Impact Interview with Dorothy Crowfoot Hodgkin', Journal of Chemical Education, [1977].
	The interview is a published version of the interview on which the article for <i>Chemistry in Britain</i> (A.30) was based.

A.32	10pp. typescript of article by M.F. Perutz on 'Forty Years Friendship with Dorothy', 1980.
A.33	'Profiles in Chemistry. Dorothy Crowfoot Hodgkin : Nobel Laureate', Journal of Chemical Education, February 1982.
	'Wizard with Crystals. Dorothy Crowfoot Hodgkin', in The Lady Laureates, by O.S. Opfell, 1986.
	17pp. proof, with manuscript additions and corrections by Hodgkin
A.34	Transcript of interview with L. Wolpert, with manuscript additions and corrections by Hodgkin, 1987; proof; review.
	The interview was published as 'Finding What's There' in A Passion for Science, eds. L. Wolpert and A. Richards, 1989.
A.35	Transcript of interview, to be published as part of <i>Heroines</i> , by L. Tuttle, with manuscript additions and corrections by Hodgkin, 1987.
A.36	Typescript draft, manuscript revised draft by Hodgkin of biographical entry in W. & R. Chambers <i>Dictionary of Scientists</i> . Includes correspondence, 1989.
A.37	14pp. typescript for article in <i>Shell Times</i> on 'Dorothy Crowfoot Hodgkin. Unravelling the complexities of insulin, penicillin and vitamin B12', 1990.
A.38	'Ein Leben in der Wissenschaft', Naturwissenschaftliche Rundschau, 1990.
A.39	9pp. typescript of paper on 'Leadership and Gender in Science : D.C. Hodgkin and the Oxford School of Chemical Crystallography' by P.G. Abir- Am; related research proposal.
	The paper was given at a session on Great Women Chemists at the American Chemical Society Meeting, Boston, 1990, which Hodgkin attended (see F.162).
A.40	'Chemistry's crystal seer', New Scientist, 23 May 1992.
	Proof of Hodgkin's entry in The Dictionary of Nobel Laureates in Chemistry; letter, 1993.
A.41	Undated articles, transcripts of interviews.

A.42-A.48	Correspondence re interviews 1956-91.
A.42	1956, 1958, 1964-69.
A.43	1970-74.
A.44	1975-79.
A.45	1980, 1982-85.
A.46	1986-87.
A.47	1988-89.
A.48	1990-91, nd.
	biast information 1064.02
Requests for biograp	inical information 1964-92
Requests for biograp	Hodgkin was often very generous with her time, providing detailed information in her replies. From 1988 the replies are typed on the back of the letters.
A.49	Hodgkin was often very generous with her time, providing detailed information in her replies. From 1988 the replies are typed on the back of the letters. 1964-65, 1967-68.
A.49 A.50	Hodgkin was often very generous with her time, providing detailed information in her replies. From 1988 the replies are typed on the back of the letters. 1964-65, 1967-68. 1970, 1972-76.
A.49 A.50 A.51	Hodgkin was often very generous with her time, providing detailed information in her replies. From 1988 the replies are typed on the back of the letters. 1964-65, 1967-68. 1970, 1972-76. 1977-79.
A.49 A.50 A.51 A.52	Hodgkin was often very generous with her time, providing detailed information in her replies. From 1988 the replies are typed on the back of the letters. 1964-65, 1967-68. 1970, 1972-76. 1977-79.
Requests for biograp A.49 A.50 A.51 A.52 A.53	Hodgkin was often very generous with her time, providing detailed information in her replies. From 1988 the replies are typed on the back of the letters. 1964-65, 1967-68. 1970, 1972-76. 1977-79. 1980-81, 1985-87. 1988-89, 1991-92, nd.

A.54 Letter from Hodgkin's school chemistry teacher, C. Deeley, *re* books for Hodgkin's first year at Oxford, 5 October [1928].

A.55	Testimonial written for Hodgkin by S.M. Fry, Principal of Somerville College, Oxford, 9 March 1931.
A.56	Appointment as Research Fellow, Somerville College, Oxford 1933.
A.57	University Demonstrator, Oxford University. Includes correspondence re salary. 1945-51.
A.58-A.61	Election to the Fellowship of the Royal Society 1947.
A.58	Notification of election to Fellowship.
A.59-A.61	Letters of congratulation.
A.59	A-G.
A.60	H-M.
A.61	N-Z.
A.62	Governor of Royal Holloway College 1947.
	Hodgkin was nominated as a Governor by the Hebdomadal Council, Oxford University, but her nomination was disallowed by a regulation in the College's Deed of Foundation stipulating that Governors should be men.
A.63	Reader in X-ray Crystallography, Oxford University 1955.
A.64	Foreign Member of the Netherlands Academy of Science 1956. Includes letters of congratulation.
A.65	Royal Medal of the Royal Society 1956. Includes letters of congratulation.
A.66	Foreign Honorary Member of the American Academy of Arts and Sciences 1958.
A 67	Hon, D.Sc. Leeds University 1959. Includes letters of congratulation.

A.68, A.69	Wolfson Research Professor of the Royal Society 1960.
	See also C.57-C.66
A.68	Correspondence with the Royal Society.
A.69	Correspondence with University Registry, Oxford University.
	Letters of congratulation.
A.70	Honorary Member of the American Society of Biological Chemists 1961.
A.71	Hon. D.Sc. Manchester University 1961. Includes presentation address.
A.72	Hon.D.Sc. Cambridge University 1961.
	Honorary Visiting Professor, University of Ghana 1962.
A.73-A.91	Nobel Prize for Chemistry 1964.
	There is evidence that Hodgkin was nominated for the Nobel Prize for Chemistry as early as 1957. She was awarded the Nobel Prize in 1964 'for her x-ray determinations of the structure of biologically important substances'.
A.73	Communication from the Nobel Committee for Chemistry to W.N. Lipscomb acknowledging receipt of his nomination of Hodgkin for the Nobel Prize for Chemistry for 1957.
A.74, A.75	Letters of congratulation, 1964.
A.74	A-M.
A.75	N-Z.
A.76	Manuscript and typescript drafts of Hodgkin's speech of thanks on the occasion of the Nobel Award ceremonies.
A.77-A.79	Hodgkin's Nobel Lecture on 'The x-ray analysis of complicated molecules' (<i>Bibliog.</i> 90, 1964).

A.77	Preprint; proof of lecture, including Presentation Speech by G. Hägg.
A.78	22pp. typescript draft, with manuscript additions and corrections by Hodgkin.
A.79	Correspondence re publication of lecture in Science and in Angewandte Chemie, 1965-66.
A.80	Background material. Includes manuscript and typescript drafts of speech given by Hodgkin at a student celebration for the Nobel prizewinners at Stockholm, photograph.
A.81	Articles arising from Nobel award. In English, German and Dutch.
A.82-A.87	Meetings of Nobel Prize winners.
A.82	20th meeting of Nobel Prize winners, Lindau, West Germany, 29 June - 3 July 1970.
	Hodgkin gave a lecture on the 'Structure of Insulin'.
	Correspondence re arrangements. Includes summary of lecture.
	Programme.
A.83	75th anniversary of the Nobel Foundation, Stockholm, 7-13 December 1975.
	Correspondence re arrangements. Includes provisional list of participants.
	Newspaper article (in Swedish).
A.84	30th meeting of Nobel Prize winners, Lindau, West Germany, 30 June - 4 July 1980.
	Hodgkin gave a lecture on 'History and the x-ray analysis of protein crystals'.
	Letter re arrangements.
	Programme.
	1p. ?summary of lecture.

A.85, A.86	33rd meeting of Nobel Prize winners, Lindau, West Germany, 27 June - 1 July 1983.
	Hodgkin gave a lecture on 'Scientists in search of peace.'
A.85	Correspondence re arrangements.
	Programme.
A.86	Manuscript and typescript drafts of lecture.
A.87	36th meeting of Nobel Prize winners, Lindau, West Germany, 30 June - 4 July 1986.
	Correspondence re arrangements.
A.88-A.91	Nominations 1966-90. Four folders.
A.88	1966-67, 1969-70.
A.89	1971-72, 1974, 1976.
A.90	1977-78.
A.91	1980, 1984, 1986, 1989-90.
A.92	Honorary Fellow of the Ghana Academy of Sciences 1965.
A.93-A.97	Order of Merit 1965.
	Hodgkin was only the second woman to be appointed to the Order of Merit; the first was Florence Nightingale, in 1907.
A.93	Letters of congratulation.
A.94	List of members of the Order of Merit, 1966.
A.95	75th Anniversary of the Order of Merit, 17 November 1977.
	Includes invitations, order of service for members, typescript re history of the Order of Merit.

A.96	85th Anniversary of the Order of Merit, 23 June 1987.
	Includes photographs, list of members of the Order of Merit, newspaper article, photocopy of journal article.
A.97	Miscellaneous correspondence 1981, 1989, 1991.
A.98	Hon. D.Sc. Sussex University 1965.
A.99	Member of the Yugoslav Academy of Sciences and Arts 1965.
	Visiting Professor, Massachusetts Institute of Technology 1965.
	Honorary Fellow, Girton College, Cambridge 1965.
A.100	Isabella d'Este Prize 1965.
	Hodgkin was provisionally awarded the prize, subject to the condition that she should be able to receive it personally from the President of Italy. She was unable to travel at that time and therefore could not accept the award.
A.101	President of the Oxford and District Branch of the Association for Science Education 1966.
	Hon. D.Sc. University of East Anglia 1966.
A.102	Honorary Member of the Society for Analytical Chemistry 1966.
A.103	Corresponding Member in England of the Puerto Rico Academy of Arts and Sciences 1966.
	'Daughter of Mark Twain' 1966, 1972.
A.104	Hon. D.Sc. Hull University 1966.
A.105	Founder Member of the Institution of Computer Science and Cybernetics 1967.
	Honorary Fellow of the Royal Institute of Chemistry 1967.
A.106	Hon. D.Sc. University of Kent 1967.

A.107	Hon. D.Sc. Reading University 1968.
	Hodgkin was unable to accept the proposed degree because commitments in New Zealand prevented her from receiving it.
	Honorary Fellow of the Royal Australian Chemical Institute 1968.
A.108	Hon. D.Sc. Harvard University 1968.
A.109	Diploma of the Deutsche Akademie der Naturforscher Leopoldina 1968.
	Hon. D.Sc. Exeter University 1968.
A.110	Honorary degree Zagreb 1969.
A.111	Honorary Fellow of the Royal Society of Edinburgh 1970.
A.112	Hon. D.Sc. Sheffield University 1970.
A.113-A.116	Chancellor of Bristol University 1970.
	See also E.5-E.46.
A.113	Appointment.
A.114	Letters of congratulation 1970-71.
A.115	Installation. Includes programme, speech given by Hodgkin.
A.116	Newspaper and magazine articles.
A.117, A.118	Foreign Associate of the National Academy of Sciences, Washington D.C. 1971.
A.117	Notification of election.
A.118	Letters of congratulation.
A.119	Baly Medal of the Royal College of Physicians 1971.

A.120	Honorary Fellow of the Indian Academy of Sciences 1972.
	Honorary degree University of Pennsylvania 1972.
	Hodgkin was invited to receive a degree but declined 'on account of the actual time, and the feelings I have at the moment connected with the present state of the world and University functions.'
A.121	Hon. D.Sc. Brown University 1973.
A.122	Honorary Member of the Royal Irish Academy 1974.
A.123	Honorary Fellow of the Royal College of Physicians 1974. Includes letters of congratulation.
A.124	Hon. D.Sc. Yale University 1974.
	Hodgkin was initially unable to accept the proposed degree because of a prior engagement in the USSR. The visit to the USSR was subsequently postponed, however (see F.88, F.89).
A.125	President of the Oxford and District Branch of the British Diabetic Association 1974.
	Honorary Vice-President of the London International Youth Science Fortnight 1974.
A.126	Member of the Norwegian Academy of Science and Letters 1976.
A.127, A.128	Foreign Member of the USSR Academy of Sciences 1976.
A.127	Notification of election.
A.128	Letters of congratulation.
A.129	Honorary Member of the Indian Women Scientists' Association 1976.
A.130, A.131	Copley Medal of the Royal Society 1976.
A.130	Notification of award.

A.131	Letters of congratulation.
A.132	Gold Medal of the Royal Society of Medicine 1977. Includes letter of congratulation, correspondence <i>re</i> Gold Medal Lecture (see also D.147).
A.133	Hon. D.Sc. University of Massachusetts 1977.
	Hodgkin was invited to receive a degree but declined because of 'serious outstanding work I am trying to complete during this year.'
A.134	President of the British Association for the Advancement of Science 1977.
	Hodgkin held the post for one year. See also D.148, D.149, E.54-E.56.
A.135	Retirement from Wolfson Research Professorship of the Royal Society 1977.
	Professor Emeritus, Oxford University 1977.
	Election to Fellowship of Wolfson College, Oxford 1977.
A.136	Longstaff Medal of the Chemical Society 1978.
A.137	Hon. D.Sc. Council for National Academic Awards 1978.
	Hon. D.Sc. Bath University 1978.
	Honorary Member of the Section of Endocrinology of the Royal Society of Medicine 1978.
A.138	Honorary degree Open University 1979.
	Hon. D.Sc. Warwick University 1979.
A.139	Honorary Fellow of the Bangladesh Physical Society 1980.
	Honorary Fellow of the Royal Society of Chemistry 1980.
A.140, A.141	70th birthday 1980.
	A birthday luncheon was held at Somerville College, Oxford.
	Letters and messages of congratulation.

A.140	A-O.
A.141	R-Z.
A.142	Corresponding member of the Bavarian Academy of Sciences 1981.
	Honorary Fellow of Newnham College, Cambridge 1981.
	Honorary Member of the Manchester Literary and Philosophical Society 1981. See also D.156-D.158.
A.143	Kreeger-Wolf Professor North Western University 1981-82.
	Hodgkin was invited to be a Visiting Professor for one quarter during the 1981-82 academic year, but declined the invitation.
A.144	Lomonosov Gold Medal of the USSR Academy of Sciences 1983. Includes letter of congratulation, manuscript and typescript drafts of Hodgkin's 'Report on a visit to the Soviet Union from Feb. 28 - March 10, 1983'.
A.145	Foreign Member of the Austrian Honour Award for Science and Arts 1983. Includes photographs.
A.146	Visiting Professorship, York University 1984, 1987, 1990
A.147	Dimitrov Peace Prize, Bulgaria, 1984. Includes letter of congratulation, programme for Hodgkin's visit to Bulgaria.
A.148	75th birthday 1985.
	Letters of congratulation.
A.149	Member of the International Academy of Science 1985.
A.150	Hon. LL.D. Dalhousie University 1986.
A.151, A.152	International Lenin Peace Prize 1987.
A.151	Notification of award, visit to Moscow, prize money.

A.152	Letters of congratulation.	
A.153	Hon. D.Sc. Oxford University 1987. Includes letters of congratulation.	
A.154	Resignation as Chancellor of Bristol University 1988.	
A.155	Hon. D.Sc. St. Andrews University 1990.	
FAMILY AND PERSO	NAL	
Family		
A.156, A.157	Diana Royle (Dilly), sister. 1979-90, nd	
A.156	1979-80, 1983-88, 1990.	
A.157	Nd.	
A.158	Edward Hodgkin, brother-in-law. 1975-89, nd	
A.159	Elizabeth Hodgkin, daughter. 1967-88, nd	
A.160-A.162	Miscellaneous shorter family correspondence, in chronological order. 1943-92, nd.	
A.160	1943.	
	Letter from Hodgkin to her mother <i>re</i> her progress in the penicillin research.	
	1955.	
	Letters from Sir Frederic and Lady Hamilton re gift of £500 to Hodgkin.	
	Lady Hamilton was the sister of Hodgkin's mother-in-law, also called Dorothy Hodgkin. Consequently Hodgkin is referred to as 'Dorothy junior'.	
	Hodgkin used the money to publish archaeological work of her father in Samaria.	

Biographical

A.161	1957, 1960-79.	
A.162	1980-92, nd.	
A.163	Manuscript notes re family tree.	
Personal corres	pondence	
A.164	Renfrew Christie	1985-87
	Christie was a South African who had been imprison apartheid activities.	ed for his anti-
A.165	Maria Kostova	1984-86
	Kostova was a Bulgarian teacher of English whom Hodgk many years. The correspondence relates to a visit to Er	in had known for Igland.
A.166	James Moxon	1986-87, nd
	Moxon was a friend of Hodgkin and her husband from the	eir time in Ghana.
A.167	Elizabeth Murray	1949-86, nd
	Murray was a friend of Hodgkin's from Somerville College the expedition to Spain in 1936 (see A.189-A.195). S Principal of Bishop Otter College, Sussex.	e Oxford, who led the later became
A.168	Francis Pagan	1966-80, nd
	Pagan was the son of the woman with whom Hodgk attending the Sir John Leman School, Beccles. He was proposed biography of Hodgkin.	in boarded while researching for a
A.169	Galina Shemetova	1979, nd
	Shemetova was a Russian friend of Hodgkin's daughte correspondence mostly relates to her application for a Hodgkin family.	r, Elizabeth. The a visa to visit the
A.170	Elspeth Stanford	1979-89, nd

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A.171	E.N. ('Buzzer') Wurr	1980-89, nd
	Wurr was a contemporary of Hodgkin's from school.	
A.172-A.181	Miscellaneous shorter personal correspondence, in chronole 1950-92, nd.	ogical order.
A.172	1950-51, 1960-61, 1964-69.	
A.173	1970-75.	
A.174	1976-79.	
A.175	1980-82.	
A.176	1983-84.	
A.177	1985-87.	
A.178	1988.	
A.179	1989-90.	
A.180	1991-92.	
A.181	Nd.	
MISCELLANEOUS BIOGRAPHICAL ITEMS		
A.182-A.186	In chronological order.	

- A.182 Typescripts of accounts of visits to Russia (later the USSR), 1892, 1899, 1923, and 1925 'as Delegate to the Bicentenary of the Russian Academy of Science.' Probably same author (unidentified).
- A.183 Typescript 'circular' letter sent from British consulate in Leningrad, 1931. Includes general impressions of Soviet Union, account of visit by British party including Lady Astor and G.B. Shaw. Author and recipient unidentified.

A.184	Typescript extracts [?from letters sent by J. Pickworth], which form a record of the progress of vitamin B12 research in Hodgkin's laboratory in Oxford, July 1954 - June 1955.
A.185	'PNEU. The Journal of Parents National Education Union', July/August/ September 1975. Includes article <i>re</i> Hodgkin's attendance at a PNEU school in 1918.
A.186	Calendar, probably from Hodgkin's laboratory, 1976. Includes appointments.
A.187-A.220	By topic.
A.187, A.188	Appeals, charities, donations.
	1985-91, nd. Two folders.
A.189-A.195	Archaeological and architectural interests.
	The material mostly relates to an expedition to Spain in 1936 which Hodgkin made with friends from Somerville College Oxford. The expedition was led by Elizabeth Murray (see also A.167).
	The material includes correspondence, postcards, photographs, manuscript notes, drawings.
	Seven folders.
A.196-A.198	Archives and museum objects.
A.196	Correspondence re Hodgkin's manuscripts, 1973-92.
A.197	Correspondence and papers <i>re</i> manuscripts of other members of the Hodgkin family, 1969-89.
A.198	Correspondence re deposit of insulin models in the Science Museum, London, 1991.
A.199-A.201	Autographs.
	Letters requesting Hodgkin's autograph, signed photograph, etc.
	1955-82, nd. Three folders.

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A.202, A.203	Finances.
	1947-89. Two folders.
A.204	Health.
	1976-90, nd.
	Includes Hodgkin's account of her rheumatoid arthritis, from which she suffered from the late 1930s.
A.205-A.209	Photographs and portraits.
A.205	Correspondence with the National Portrait Gallery, <i>re</i> photograph for the National Photographic Record, 1965-69.
	Correspondence with the National Portrait Gallery, Maggi Hambling and others <i>re</i> portrait of Hodgkin by Hambling, 1984-88.
	Letter from Henry Moore and correspondence <i>re</i> Moore's drawings of Hodgkin's hands for the Royal Society, 1978, 1989.
	Correspondence with Graham Sutherland and others <i>re</i> portrait of Hodgkin by Sutherland intended for the Royal Society, 1978-80. Sutherland died before the portrait was completed.
A.206-A.209	Miscellaneous shorter correspondence <i>re</i> portraits and photographs. Four folders.
A.210	Political interests.
	1984-89.
A.211-A.214	Requests for Hodgkin's advice, opinions on a variety of topics.
	From 1989 Hodgkin's replies are typed on the back of the letters.
	1947-91. Four folders.
A.215	Schools.
	Correspondence principally with and <i>re</i> Hodgkin's school, the Sir John Leman School, Beccles, 1951-93.
	Includes a little correspondence <i>re</i> Crowfoot County Primary School, opened by Hodgkin's father in 1952, and with the Borough of Beccles, 1965-73.

Biographical

A.216-A.220	Social invitations.
	1965-91. Five folders

PRESS CUTTINGS

A.221, A.222 1955-91. Two folders.

SECTION B RESEARCH

This section comprises very extensive documentation of Hodgkin's research in x-ray crystallography including the major topics of insulin, penicillin and vitamin B12. It covers a period of sixty years from about 1928 to 1988.

Most of the material was found in Hodgkin's box folders which were labelled by topic. The contents of these boxes included correspondence, drafts for reports and publications, notebooks, notes and data. The material has been arranged in chronological order by topic. At the end of the chronological sequence of topics there is some miscellaneous material followed by large format items.

J.D. Bernal, with whom Hodgkin worked in Cambridge 1932-34, and very many of her later collaborators including C.W. Bunn (penicillin) and E.L. Smith (vitamin B12) are represented in the papers by correspondence, drafts, notes and data.

The material is presented as follows:

B.1-B.19	EARLY WORK
B.20-B.48	CHOLESTEROL
B.49	GENINS
B.50-B.53	TOAD POISONS
B.54-B.61	SEX HORMONES
B.62-B.81	THEORY, APPARATUS, TECHNIQUES
B.82-B.288	INSULIN
B.289, B.290	STEROLS
B.291-B.295	TOBACCO VIRUSES
B.296-B.313	PROTEINS
B.314-B.316	BENZPYRENE
B.317-B.336	CALCIFEROL
B.337, B.338	FATTY ACIDS

Research

B.339-B.471	PENICILLIN
B.472-B.500	GRAMICIDIN
B.501, B.502	LACTOGLOBULIN
B.503-B.505	FERRITIN
B.506-B.828	VITAMIN B12
B.829-B.847	NITROSO COMPOUNDS
B.848-B.851	PURPUROGALLIN
B.852, B.853	LUMISTEROL
B.854-B.870	MIROESTROL/BROMOMIROESTROL
B.871-B.875	FERROVERDIN
B.876	AGRAVIDE
B.877-B.896	PILOTY COMPOUNDS
B.897, B.898	SPORIDESMIN
B.899-B.928	CEPHALOSPORIN C
B.929	FORMAZAN
B.930, B.931	SUPRASTEROL II
B.932-B.938	THIOSTREPTON
B.939-B.982	MISCELLANEOUS
B.983-B.991	LARGE FORMAT

Research

EARLY WORK	ca 1928-32
B.1-B.4	Notebooks
	Four hardback chemistry notebooks, probably undergraduate, used for notes on techniques, preparations, properties, nd. Include some loose items.
B.5	'Crystallography'
	Exercise book, dated July 1931, from the short time Hodgkin spent at Heidelberg during the summer vacation between the third and fourth years of her degree. Hodgkin studied methods of measuring crystals with a goniometer and of drawing crystals under V. Goldschmidt.
B.6-B.11	Manuscript notes.
	Nd. Probably undergraduate.
B.6	'Electrochemistry'
B.7	'Molecular structure', 'structure of crystals'. Includes notes on x-ray diffraction.
B.8	'Chemical Kinetics'.
B.9	'Colloids'. Includes notes on 'Methods of determining size of particles by X rays'.
B.10	'Stereochemistry'.
B.11	'Quantum Theory', 'Chemistry of the Photographic Plate', 'Thermodynamics', 'Specific Heat of Solids'.
B.12-B.18	Essays
	Nd. Probably undergraduate.
B.12	'The relation between the thermal stability and the chemical stability of a molecule'.
	'The relation between the chemical reactivity and the thermal stability of molecules'.
B.13	'The criteria of Chemical Combination'.
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B.14	Answer to question on 'Hydrolysis of a salt of a strong base and a weak acid'.
B.15	'Chemiluminescence'.
B.16	'The Hydration of lons'.
B.17	'Chain Reactions'.
B.18	'The Nature, Properties and Uses of Alloys'.
	Untitled draft found attached to the preceding but on unrelated topic, ?1928,
B.19	'The Crystallographic Properties of some Alkyl Thallium Compounds'. Thesis submitted for Final Honour School of Chemistry (Part II) and B.Sc. Degree. [1932].
CHOLESTEROL	1933-71
	Cholesterol iodide was Hodgkin's first x-ray analysis of an organic structure.
B.20	X-ray films, annotated by Hodgkin and J.D. Bernal, of crystals of cholesterol bromide, cholesterol dibromide and cholesterol chloride, 1933.
B.21	Box of x-ray films, annotated by Bernal, of crystals of cholesterol iodide, etc. [1933].
B.22-B.31	'Chiefly Cholesterol'. Contents of box folder so labelled, divided into ten for ease of reference.
	Manuscript drafts, notes and data <i>re</i> Hodgkin's Ph.D. thesis, 'X-ray crystallography and the chemistry of the sterols', <i>Bibliog.</i> 15, 1936.
B.32, B.33	Contents of untitled binder, divided into two for ease of reference.

B.34, B.35	Contents of envelope divided into two for ease of reference.
	'X-ray crystallography and the chemistry of the sterols. Part I' (with J.D. Bernal and I. Fankuchen), <i>Bibliog.</i> 30, 1940.
	Manuscript draft, incomplete, including 4pp. by Bernal.
B.36	Contents of untitled folder.
	Typescript copy of 'An X-ray Study of i-Cholesterol and Related Compounds' by F.O. Bell, probably sent to Hodgkin for information, nd.
	Correspondence 1941, 1943, re work by Hodgkin and C.H. Carlisle on cholesteryl iodide.
B.37, B.38	'The crystal structure of cholesteryl iodide', Bibliog. 39, 1945.
B.37	15pp. manuscript draft by Hodgkin.
B.38	44pp. typescript draft, with manuscript additions and corrections by Hodgkin.
B.39	'Cholesterol'. Contents of folder so inscribed.
	Letter from Hodgkin to S. Abrahamsson, dated 18 October 1962, <i>re</i> her early research on cholesterol, with 3pp. manuscript draft from her Ph.D. thesis and two x-ray photographs.
	X-ray photographs and film. Some dated 1931, 1935 and 1962.
	Manuscript notes and data.
B.40-B.42	'1-cholesterol'. Contents of folder so inscribed.
B.40	'Crystal and molecular structure of 6B-bromoacetyl and 6B-chloroacetyl 3,5 α -cyclo-5 α -cholestane (i-cholesteryl bromoacetate and chloroacetate)' (in collaboration), <i>Bibliog.</i> 119, 1971.
	20pp. typescript draft, with manuscript additions and corrections, not by Hodgkin.
B.41	Correspondence re i-cholesterol 1967, 1971.

B.42	'Listing of the Structure Factors for i-cholesterol bromoacetate'. Computer printout, nd.	
B.43	Manuscript data, probably for Fourier analysis of cholesteryl bromide, nd.	
	'Trial Fourier Analysis of Cholesteryl Bromide', nd.	
	Handdrawn cholesteryl iodide projection, nd.	
B.44-B.48	Exercise books, nd.	
B.44	Data re dibromo cholesterol.	
B.45	'Cholesteryl bromide'. Patterson data.	
B.46	Data re cholesterol chloride.	
B.47	Patterson data for dibromo cholesterol chloride, dibromo cholesterol bromide, cholesterol chloride and cholesterol chloride hydrochloride.	
B.48	'Cholesteryl chloride'. Patterson data.	
GENINS	1934	
B.49	'Genins'. Contents of folder so inscribed.	
	'X-ray crystallographic measurements of some genins derived from digitalis' (with J.D. Bernal), latest bibliographical reference 1934. Not listed in <i>Bibliog</i> .	
	5pp. typescript.	
	Manuscript notes, data, handdrawn projections and sketches by Hodgkin and Bernal	
TOAD POISONS	1935-36	
	Hodgkin was given specimens of bufagin and cinobufagin to examine by H. Jensen.	

B.50	'A note on the X-ray Crystallography of the Toad Poisons, Bufagin and Cinobufagin, and of Strophanthidin', <i>Bibliog.</i> 13, 1935.
	4pp. typescript, with extensive manuscript additions and corrections by Hodgkin.
B.51, B.52	Manuscript notes and data, manuscript notes from the literature re toad poisons, 1935. Two folders.
B.53	'The molecular weight of cinobufagin' (with H. Jensen), Bibliog. 20, 1936.
	4pp. typescript draft; 3pp. manuscript draft by Hodgkin.
SEX HORMONES	1935-36
	The first x-ray crystallographic examination of a member of this series was undertaken by J.D. Bernal in 1932.
B.54, B.55	Manuscript notes and data <i>re</i> sex hormones by Hodgkin and J.D. Bernal, manuscript notes from the literature, sketches of crystals. A few pages dated 1935. Two folders.
B.56, B.57	'X-ray crystallographic data on the sex hormones, oestrone, androsterone, testosterone and progesterone and related substances' (with J.D. Bernal), <i>Bibliog.</i> 19, 1936.
B.56	26pp. typescript, with manuscript additions and corrections by Hodgkin and Bernal.
B.57	30pp. manuscript draft, with manuscript additions and marginal comments by Bernal.
	Tables; legends to figures.
B.58	'X-ray crystallographic examination of Testosterone', nd. Not listed in Bibliog.
	3pp. typescript draft; 3pp manuscript draft by Hodgkin.
B.59-B.61	Three exercise books, used for notes on sex hormones by Bernal.
B.59	'Pregnandiol'.

B.60	Untitled [cover missing].
B.61	'Oestron'.
THEORY, APPARATU	S, TECHNIQUES 1935-60
B.62-B.65	Contents of untitled binder.
B.62	'The interpretation of Weissenberg Photographs in relation to crystal symmetry', <i>Bibliog.</i> 12, 1935.
	Proof copy; figures, annotated by Hodgkin.
B.63, B.64	Tables of manuscript data. Two folders.
B.65	Manuscript data, calculations, sections, by Hodgkin and J.D. Bernal.
B.66-B.74	'Charts. Apparatus. Techniques. Early papers, mainly 1940s'. Contents of box folder so labelled.
B.66	Manuscript notes from the literature, not by Hodgkin, latest bibliographical reference 1936.
B.67	Contents of envelope, <i>re</i> delivery of Cu Anode Research Tube. Includes delivery notice, dated 17 March 1937, instructions for use, chart.
B.68	Letter from W.L. Bragg, 1937. Attached is a typescript copy of 'Structure-Factor Fields for the Plane-Groups C3m H3m C6m', by Bragg and H. Lipson.
B.69	'A Machine for the Calculation of Structure Factors in X-Ray Crystallography', by A.D. Booth. Nd, latest bibliographical reference 1943.
	3pp. typescript.
	Photographs; blueprints.

B.70	'Comments on the Wooster-Martin Weissenberg Two-Circle X-Ray Goniometer'.
	1p. typescript, not by Hodgkin, 1944.
	Typescript notes <i>re</i> the Buerger Equi-Inclination Weissenberg Goniometer, by E.G. Cox; letter from Cox, dated 11 February 1947.
B.71	Contents of envelope sent to Hodgkin, 1949.
	'An Integrating Weissenberg-Apparatus'.
	2pp. typescript.
	Plans; photographs.
B.72, B.73	'Papers on technique from Bill Cochran - 1950s'. Contents of folder so inscribed, divided into two for ease of reference.
	Miscellaneous typescripts, manuscript notes <i>re</i> experiments, photographs, stereographic projection, including typescript and manuscript notes by Hodgkin <i>re</i> practical course in Chemical Crystallography. One item dated 1953.
B.74	'X-Ray Crystallographic Apparatus, Labyrinth Radiation Traps'.
	Third Angle Projection, 1958.
B.75	'Proposals for New Beevers-Lipson Strips', by L.J. Comrie and G.B. Hey, 1945.
	4pp. typescript; 1p. table.
B.76	Contents of untitled binder.
	Manuscript notes, data, manuscript notes from the literature. Latest bibliographical reference 1947.
B.77	'X-ray analysis and molecular structure', [?1949]. Not listed in Bibliog.
	17pp. typescript, with manuscript additions and corrections by Hodgkin.
B.78	'Formfactor Tables and Atomic Scattering Factors'. Contents of folder so inscribed.
	11pp. typescript, latest bibliographical reference 1960.

B.79	'Weissenberg Photographs'. Contents of folder so inscribed.
	1p. typescript; typescript data. Nd.
B.80	'Operating Instructions for the Nonius Integrating Weissenberg'.
	1p. typescript, nd.
	'X-ray tubes'.
	1p. typescript, nd.
	'Patterson Synthesis'.
	2pp. typescript, nd.
	'Graphical Methods of Evaluating X-ray Diagrams'.
	1p. typescript, incomplete, nd.
B.81	'Patterson Fourier series in working out crystal structures'.
	2pp. manuscript draft by Hodgkin, nd.
	Miscellaneous manuscript notes by Hodgkin.
INSULIN	1935-88
	Hodgkin's research on this topic began in 1935 when she took the first x- ray photographs of rhombohedral crystals of insulin, given to her by Robert Robinson, Waynflete Professor of Chemistry at Oxford. The structure of insulin proved to be much more complicated than was first imagined and, with a molecular weight of 5780, the measurements and calculations needed to show the arrangement of the atoms present were lengthy and difficult. Thus it was not until 1969 that Hodgkin and her team were able to reveal the three-dimensional structure of rhombohedral 2 zinc insulin. Hodgkin's research on insulin refinements continued into the 1980s.
	For overviews of Hodgkin's insulin research, see for example D.38, F.53.
	The material, which is substantial, covers the period 1935-88, although the bulk dates from the 1950s onwards. There is an extensive correspondence with colleagues and others including letters of congratulation 1969 arising from the announcement of the three-dimensional structure, drafts for reports and publications, notebooks, notes and data.

The material is presented as follows:

B.82-B.132	Correspondence
B.133-B.204	Drafts for reports and publications
B.205-B.212	Notebooks
B.213-B.284	Data
B.285-B.288	Miscellaneous

Correspondence 1935-83

There is an extensive correspondence with colleagues and others which was kept together by Hodgkin in box folders.

The correspondence is presented as follows:

- B.82-B.104 Correspondence with individuals In alphabetical order
- B.105-B.132 Miscellaneous shorter correspondence In chronological order

Correspondence with individuals

3.82, B.83	T.L. Blundell	1970-81, nd
	From the late 1960s Blundell was one of Hodgkin's	orincipal collaborators
	in the insulin research.	

- B.82 1970, 1973-75. Includes correspondence *re* scientific visits to Poland and India by Blundell, letter to Blundell from G.H. Snyder.
- B.83 1976-78, 1981, nd. Includes outline of research project proposed by Blundell on 'X-ray analysis of protein hormones : insulin and growth hormones'.
- B.84 D. Brandenburg
- B.85-B.88 A.S. Brill

Most of the correspondence from 1962-64 is photocopied correspondence between Brill and J. Schlichtkrull (see B.100, B.101), sent to Hodgkin for information.

1971, 1973, 1975-76

1962-71, nd.

B.85	1962.	
B.86	1963.	
B.87	1964.	
B.88	1965-66, 1968, 1971, nd. Includes Hodg Kendrew commenting on draft of paper by commenting on Brill's conclusions.	kin's correspondence with J.C. Brill, and letter from B. Bleaney
B.89	A.C. Chibnall	1942-46, 1962, 1974-75
B.90	R.B. Corey	1946, 1954-56
B.91, B.92	G.G. Dodson	1964-82, nd
	From the mid 1960s Dodson was one of Ho in the insulin research. The sequence inc correspondence with others.	odgkin's principal collaborators cludes a little of Dodson's own
B.91	1964, 1971, 1973, 1975.	
B.92	1976, 1978-79, 1982, nd.	
B.93	J.T. Edsall	1976-77, 1981
B.94	P.T. Grant	1967-69, 1971
	re cod insulin data and samples.	
B.95	H. Gutfreund	1943-44, 1948-51, 1956, nd
	re crystallisation experiments with insulin	samples.
	Includes correspondence re lactoglobulin.	
B.96	B.W. Low	1970-72
B.97, B.98	M.G. Rossman	1962-70, nd

B.97	1962-63, 1965-66.	
B.98	1967, 1969-70, nd.	
B.99	K. and N. Sakabe	1975, 1978-83
	The Sakabes were Japanese crystallograph Hodgkin jointly.	ers who corresponded with
	Includes photocopies of letters sent by the Sa	akabes to R. Fourme in Paris.
B.100, B.101	J. Schlichtkrull	1957-77
	Schlichtkrull was based at NOVO Research devised the method by which the crystals of the the x-ray analysis that led to Hodgkin's dimensional structure of insulin.	Institute, Copenhagen. He native insulin were grown for elucidation of the three-
	See also B.85-B.87 for photocopied correspon and A.S. Brill, sent to Hodgkin for informati B.203, B.220, B.221.	ndence between Schlichtkrull ion. See also B.199, B.200,
B.100	1957-58, 1963, 1965, 1968.	
B.101	1973-75, 1977.	
B.102	D.F. Steiner	1969-77, 1982, nd
	Includes correspondence <i>re</i> Hodgkin's visits 1972. See also F.45, F.72.	to USA, May 1969, December
B.103	W.A. Wooster	1968, 1971, 1977-78
	Principally re construction of insulin model arising from invasion of Czechoslovakia by when Wooster was attending a symposium i	s. Includes correspondence Warsaw Pact forces in 1968, in Prague.
B.104	H. Zahn	1966, 1968-69, 1971-72
	Miscellaneous shorter correspondence	
B.105	1935.	

B.106	1937-39.
B.107	1940-42. Includes letters 1940, 1941, not obviously related to insulin work.
B.108	1945, 1947, 1949-50. Includes correspondence <i>re</i> First International Congress of Biochemistry, Cambridge, 19-25 August 1949. Hodgkin was asked to contribute a paper on insulin.
B.109	1951-52, 1954-55, 1958-59.
B.110	1963-65.
B.111	1966. Includes 1p. typescript draft re preparation of crystals.
B.112	1967.
B.113	1968.
B.114	1969 January-August. Includes letters of congratulation arising from announcement of elucidation of the three-dimensional structure of insulin.
B.115	1969 September. Includes letters of congratulation (see B.114), correspondence arising from article <i>re</i> insulin in <i>New York Times</i> , letter enclosing <i>Newsweek</i> article <i>re</i> insulin research by Hodgkin's group.
B.116	1969 October-December.
B.117	1970 January-April.
B.118	1970 May-December.
B.119	1971 January-May.
B.120	1971 June-December.
B.121	1972 January-June.

B.122	1972 July-November.
B.123	1973 January-May.
B.124	1973 June-December.
B.125	1974.
B.126	1975.
B.127	1976.
B.128	1977 January-May. Includes typescript by D. Eisenberg <i>re</i> J.D. Bernal written for textbook and sent to Hodgkin for comment.
B.129	1977 June-December.
B.130	1978-80.
B.131	1981, 1983.
B.132	Nd.
Drafts for reports an	d publications 1935-88
	A chronological sequence of drafts for reports and publications by Hodgkin and her collaborators, mostly kept together by her in box folders.
	There is also some related material such as correspondence, notes and data.
B.133-B.136	Contents of untitled binder.
B.133	'X-ray Single Crystals Photographs of Insulin', Bibliog. 11, 1935.
	8pp. manuscript draft.
	1p. manuscript draft re 'programme of research'.

D.M.C. Hodgkin NCUACS 47/3/94	49
	Research
B.134-B.136	Manuscript notes and data. Include 'Chibnall's insulin', expenditure, Fourier series, recrystallisation experiments. Three folders.
B.137, B.138	'The crystal structure of insulin. I. The investigation of air-dried insulin crystals', <i>Bibliog.</i> 23, 1938.
	34pp. manuscript draft. Two folders.
B.139	'Report for the Rockefeller Trustees on the work in progress in the Department of Crystallography, Oxford, 1941-2 assisted by a grant from the Rockefeller Foundation.'
	26pp. typescript, incomplete, <i>re</i> the research of Hodgkin's group on insulin and cholesterol iodide.
B.140	'Some observations on peptide chain models in relation to crystallographic data for gramicidin B and insulin' (with P.M. Cowan), <i>Bibliog.</i> 57, 1953.
	6pp. typescript, with manuscript additions and corrections by Cowan.
B.141	'A speculation on insulin.' Contents of folder so inscribed.
	'A speculation on insulin' (with B. Oughton), Bibliog. 65, 1956.
	10pp. typescript.
	Manuscript notes and data, not by Hodgkin.
B.142	'A speculation on insulin' (with B. Oughton), Bibliog. 65, 1956.
	10pp. typescript, with manuscript additions and corrections by Hodgkin.
B.143	'Insulin crystallising exp[erimen]ts - early.' Contents of folder so inscribed.
	Letter from H. Gutfreund, 1956; reprint, 1955.
	Manuscript notes, not by Hodgkin.
	4pp. typescript re 'Crystallisation of insulin experiments', nd.
B.144	Contents of untitled folder.
	3pp. manuscript draft; manuscript notes, manuscript notes from the literature latest bibliographical reference 1960.

B.145	App. typescript, incomplete, for preliminary report re pig insum crystals, latest bibliographical reference 1960.
	Handdrawn figures.
B.146	'Various heavy atom derivatives.' Contents of folder so inscribed.
	Manuscript notes, not by Hodgkin, 1961-62.
B.147	'X-ray crystallographic studies on zinc insulin crystals' (in collaboration), <i>Bibliog.</i> 99, 1966.
	6pp. typescript; 10pp. manuscript draft.
B.148	'A Report on Recent Calculations on Rhombohedral Insulin Crystals Containing Lead' (in collaboration), <i>Bibliog.</i> 100, 1967.
	10pp. typescript; 10pp. typescript, with manuscript additions and corrections by Hodgkin; legends to figures.
B.149	'The structure of rhombohedral 2 zinc insulin crystals' (in collaboration), <i>Bibliog.</i> 110, 1969.
	12pp. manuscript draft.
B.150, B.151	Contents of untitled folder, divided into two for ease of reference.
	Manuscript notes from the literature, latest bibliographical reference 1969; manuscript notes.
B.152	Untitled lecture on insulin.
	11pp. manuscript draft, [?late 1960s].
	Manuscript notes.
B.153	Manuscript notes ?for lecture to celebrate the fiftieth anniversary of the isolation of insulin [1971].
B.154-B.161	'Insulin : the structure in the crystal and its reflection in chemistry and biology' (in collaboration), <i>Bibliog.</i> 139, 1972.
	137pp, typescript including legends to tables, tables. Eight folders.

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B.162, B.163	Manuscript draft <i>re</i> 'studies on insulin action' by G.G. Dodson; manuscript notes, manuscript notes from the literature by Dodson, latest bibliographical reference 1972. Two folders.
B.164	'EMR Report' 'Neutron Studies on Insulin', by S.A. Mason, February 1973.
	10pp. typescript; table.
B.165-B.167	'Insulin - notes for paper. Old notes on A and B chains.'
	Manuscript notes, May 1974 - January 1977. Three folders.
B.168	Contents of untitled folder.
	'Work in China on the Structure and function of insulin', Bibliog. 150, 1975.
	7pp. manuscript draft.
	Manuscript notes; manuscript data re 'corresponding ρ sections', Peking and Oxford.
B.169	'The Structure of Insulin in 4-Zinc Insulin' (in collaboration), <i>Bibliog.</i> 152, 1976.
	7pp. typescript, includes legends to figures.
B.170	'Insulin notes. Some useful for write up.' Contents of folder so inscribed.
	Manuscript notes and data, not all by Hodgkin, manuscript notes from the literature, latest bibliographical reference 1976.
B.171	'The insulin lecture.'
	32pp. typescript, transcribed from tape, with extensive manuscript additions and corrections, not by Hodgkin. [?1978].
B.172, B.173	'Insulin. Biochem[ical] Soc[iety].' Contents of folder so inscribed.
B.172	'Insulin' (in collaboration), Bibliog. 166, 1983.
	5pp. typescript draft; 3pp. manuscript draft.
	Typescript references, legends to figures; manuscript references.

B.173	Manuscript notes and data.
	Brief correspondence re publication.
B.174	'Transmission of conformational change in insulin' (in collaboration), <i>Bibliog.</i> 167, 1983. 22pp. typescript.
B.175-B.189	'The crystal structure of insulin. VI. The structure of 2 Zn pig insulin crystals at 1.5Å resolution' (in collaboration), <i>Bibliog.</i> 171, 1988.
B.175-B.179	75pp. typescript including references, figures. Five folders.
B.180-B.183	Manuscript drafts. Four folders.
B.184-B.188	Manuscript notes and data, by Hodgkin and G.G. Dodson, handdrawn figures. Five folders.
B.189	Correspondence 1978, 1982, nd.
B.190	'Progress report on the structure of insulin' (in collaboration), nd.
	1p. typescript.
	'X-ray crystallographic studies on zinc insulin molecules' (in collaboration), nd.
	1p. typescript draft; 1p. manuscript draft.
B.191	'Water in insulin crystals', nd.
	3pp. typescript, with manuscript additions and corrections by Hodgkin.
	'Protein and solvent structure in 2 Zn insulin' (in collaboration), nd.
	2pp. typescript.
B.192	'The crystallography of insulin', nd.
	4pp. typescript, with manuscript additions and corrections by Hodgkin.
	5pp. manuscript draft; manuscript notes.

B.193	Untitled typescript <i>re</i> 'the hydrogen bonding in the 2 Zn insulin structure refined to 1.5Å resolution', nd.
	14pp. typescript; tables.
B.194	Manuscript notes, probably for lecture on history of insulin research, nd.
B.195, B.196	Miscellaneous shorter notes and drafts, nd. Two folders.
B.197-B.201	'Paper writing material.'
B.197	'Paper writing material. Ramachandran plots. York structure plots.' Contents of folder so inscribed.
	Handdrawn graphs, plots; manuscript notes.
B.198-B.200	'Insulin. Paper writing material.' Contents of folder so inscribed.
B.198	Manuscript notes and data, manuscript notes from the literature; typescript data; photographs of crystals, x-ray photographs.
B.199, B.200	Correspondence, mostly with J. Schlichtkrull re samples, 1958-71. See also B.100, B.101, B.203.
B.199	1958, 1963, 1965-67.
B.200	1968-71, nd.
B.201	'Insulin paper writing material.' Contents of folder so inscribed.
	Manuscript notes and data; manuscript notes re Hodgkin's collaborators on insulin.
	'Positions of alpha-carbon atom of the insulin dimer.'
	1p. typescript.
	'Cod insulin.'
	3pp. typescript.

B.202, B.203	'Background material.' Contents of folder so inscribed.
B.202	Manuscript notes and data, manuscript notes from the literature, not all by Hodgkin; x-ray photographs.
B.203	Correspondence with J. Schlichtkrull, 1957-58, 1979. See also B.100, B.101, B.199, B.200.
B.204	'Background.' Contents of folder so inscribed.
	Photocopy of letter from C.H. Best to I. Pavel <i>re</i> 50th anniversary of N. Paulescu's publication of paper on the secretion of the pancreas.
	'Parallele entre les travaux de Paulesco et ceux de Banting et Best.'
	4pp. typescript.
Notebooks 1937-67	
B.205	Notebook, inscribed 'Cholesterol Chloride Hydrochloride. Insulin.'
	Manuscript data. One page dated May 1937.
B.206	Untitled exercise book.
	Manuscript data re wet Zn insulin [1937].
B.207	Untitled exercise book.
	Manuscript data, including measurements from films, preliminary calculations for maps. Includes some data <i>re</i> lactoglobulin. One page dated November 1938.
B.208	Notebook, inscribed 'Insulin. M.M. Aitken. 1957-9.'
	Miscellaneous manuscript notes and data, not by Hodgkin.
B.209	Notebook, inscribed 'M.M.H.[arding]. Insulin. Exp[erimental] Work from Jan 1959.'
	Manuscript notes and data, by Harding; loose x-ray film, manuscript notes.

B.210	Notebook, inscribed 'General Notes (esp. Hartree curves).'
	Handdrawn graphs, manuscript data. Includes some work re gramicidin. One page dated August 1967.
B.211	Untitled notebook.
	Manuscript raw intensity data re wet Zn insulin, nd.
B.212	Notebook, inscribed 'Wet 2 Zinc Insulin.'
	Manuscript calculations from data, nd.
Data 1940-85	
	The material consists of handwritten and computer generated data, in the form of tables, maps, sections, mostly kept in folders and identified by title.
	There is also some related material such as correspondence and notes.
B.213	'Insulin early recryst[allisation] exp[erimen]ts.' Contents of folder so inscribed.
	Manuscript and typescript data, brief manuscript notes <i>re</i> recrystallisation method, 1940.
B.214, B.215	'Insulin. 1st Pattersons. Wet and dry beef insulin.' Contents of folder so inscribed, divided into two for ease of reference.
	Manuscript notes and data, manuscript notes from the literature; handdrawn Patterson maps and sections, mostly <i>re</i> zinc insulin, including 'The Patterson Harker map computed for Dr. Dorothy Crowfoot from data for "wet" insulin - x, y in 60ths and z in 30ths. Dorothy Wrinch 1947.'
B.216	'Insulin phosphate.' Contents of folder so inscribed.
	Manuscript notes and data, including 'Barbara [Low]'s measurements', 'F ² values', 'trial parameters for "chain structure", 'tests on heavy atom effects', 'densities of Zn insulin crystals'. A few pages dated 1949, 1951.
B.217-B.219	Contents of untitled folder, divided into three for ease of reference.
	Manuscript data <i>re</i> insulin phosphate, zinc insulin, wet and dry insulin, including handdrawn maps, 'Fourier calcs.', 'Patterson points for Wrinch model', 'Point structures'. Manuscript notes, manuscript notes from the literature, latest bibliographical reference 1951.

B.220, B.221	'Cubic insulin. Monoclinic insulin.' Contents of folder so inscribed, divided into two for ease of reference.
	Manuscript data, not by Hodgkin, with manuscript notes and correspondence <i>re</i> 'Schlichtkrull's visit March 25th 1958' (see also B.100, B.199, B.203); x-ray film. 1958-60.
B.222	'Hg Scattering.' Contents of folder so inscribed.
	Manuscript data, not by Hodgkin. A few pages dated May 1959 - October 1960.
B.223	Contents of untitled folder.
	X-ray films; manuscript data from films, not by Hodgkin; letter to Hodgkin re 2 Zn insulin, July 1959.
B.224	'4 Zn Ins[ulin]. Hg A. July 1959.' Contents of folder so inscribed.
	Manuscript data, calculations, graphs, not by Hodgkin.
B.225	Contents of untitled folder.
	Manuscript data <i>re</i> 'intensity distribution and Wilson Scale', 4 Zn insulin, not by Hodgkin, July 1959.
B.226	'2 Zn Insulin 3 D Data. October 1959.' Contents of folder so inscribed.
	Manuscript data, not by Hodgkin.
B.227	Contents of untitled folder.
	Computer printout data re '2 Zn insulin sharpening constants Dec 1959'; manuscript data re intensity distribution, sharpening functions, not by Hodgkin, November 1959.
B.228	'Insulin. S[tructure] F[actor]s on helical structures. B. Oughton's calculations.' Contents of folder so inscribed.
	Manuscript notes and data, by Oughton and Hodgkin, handdrawn 'transform of end-on projection of 4 chains in hexagonal close-packing'. [?1950s].
B.229	Contents of untitled folder.
	Manuscript data re '4 Zn Hg ₄ Companion', not by Hodgkin, April 1960.

B.230	Contents of untitled folder.
	Computer printout data <i>re</i> 'insulin Patterson rotation', March 1962; manuscript data, includes 'correlation of uranyl acetate with Hg', not by Hodgkin.
B.231, B.232	'2 Zn Ins[ulin] Projection. Fouriers.' Contents of folder so inscribed, divided into two for ease of reference.
	Manuscript and computer printout data <i>re</i> Pattersons and Fouriers, various hands, some pages dated March-September 1962.
B.233	Contents of untitled folder.
	Manuscript data ?re E C Scaling, 2 Zn, 4 Zn, UO ₂ insulin, not by Hodgkin, October 1962.
B.234	Contents of untitled folder.
	Manuscript data, not by Hodgkin. Includes 'Trial Structure Phases', 'Trial Phase Calculations'. July 1963.
B.235, B.236	'Translation Function.' Contents of folder so inscribed.
B.235	'The General Translation Function Program', by M.G. Rossman.
	9pp. typescript, dated 19 April 1963.
B.236	Manuscript data, computer printout data, October 1963.
B.237-B.239	'Sayre Function.' Contents of folder so inscribed, divided into three for ease of reference.
	Manuscript data, not by Hodgkin; computer printout data, mostly re 2 Zn insulin. Various dates, 1963-70.
B.240	Contents of untitled folder.
	Manuscript data, not by Hodgkin; computer printout date <i>re</i> monoclinic insulin, derivative P21 insulin hko projection, April 1964.
B.241	'2 Zn insulin data for Wilson Plot.' Contents of folder so inscribed.
	Manuscript data, not by Hodgkin, computer printout data, September 1964 - November 1965.

B.242	'4 Zn insulin. 6Å Patterson. 3.2Å Patterson.' Contents of folder so inscribed.
	Handdrawn sections, November 1964; computer printout data, February 1965.
B.243, B.244	'Early attempts at cadmium and zinc free projections.' Contents of folder so inscribed, divided into two for ease of reference.
	Manuscript data, not by Hodgkin; computer printout data, March 1965.
B.245, B.246	'Wilson Plot. Cod Insulin. Final Summary.' Contents of folder so inscribed, divided into two for ease of reference.
	Manuscript data, including handdrawn Wilson Plots, not by Hodgkin; computer printout data. Various dates July 1965 - September 1972.
B.247, B.248	'Pb Ins[ulin] Diffractometer. Scaling and Wilson Plot Dec 1965 and 2.5Å data.' Contents of folder so inscribed, divided into two for ease of reference.
	Manuscript data, handdrawn graphs and sections, not by Hodgkin; computer printout data. Various dates November 1965 - August 1967.
B.249	Handdrawn Fouriers and Pattersons with brief manuscript notes, January 1966.
B.250, B.251	'Insulin. 2-fold axis. Intensities. Pattersons.' Contents of folder so inscribed, divided into two for ease of reference.
	Manuscript notes and data, not all by Hodgkin. One page dated March 1967. Computer printout data, February 1966.
B.252	Handdrawn insulin maps, January 1968. One roll.
B.253, B.254	'Larry's Refinement.' Contents of folder so inscribed, divided into two for ease of reference.
	Computer printout data, August 1968; 1p. manuscript notes re planning of research.
B.255	Contents of untitled folder.
	Manuscript notes, handdrawn positions, various hands, re Zn insulin refinements. 1969-71.

B.256-B.258	Water molecules. Useful. Contents of folder so inscribed, divided inter three for ease of reference.
	Manuscript data, with manuscript notes intercalated, 1974-81 correspondence 1978, 1980-81, nd.

- B.259 Handdrawn maps, October 1975. One roll.
- B.260, B.261 'A chain old maps.' Contents of folder so inscribed, divided into two for ease of reference.

Handdrawn maps, mostly with manuscript notes and data attached, April 1977 - October 1981.

B.262 'Insulin. Calculation of absolute intensities. Glasgow Symposium.' Contents of folder so inscribed.

Manuscript data, manuscript notes, not all by Hodgkin. Various dates, ?1950s - ?1980. The folder was probably put together for a symposium held in Glasgow in September 1980 to mark the 80th birthday of the x-ray crystallographer, J.M. Robertson. See also F.134.

B.263, B.264 'A chain tables.' Contents of folder so inscribed, divided into two for ease of reference.

Manuscript data, handdrawn maps, some with manuscript notes attached. A few maps dated March 1981. Letter, June 1981. Computer generated maps, January 1985.

- B.265 Handdrawn map, April 1981. One roll.
- B.266 'Insulin. Doubtful Calculations. Fly's eye.' Contents of folder so inscribed.

Manuscript data, handdrawn maps, sections, including 'Peak system which might represent vectors due to structure within one molecule from projection 1) - dry insulin (cf. Wrinch) but which cannot do so from projection 2) - wet insulin', nd.

B.267 '2 Zn Insulin.' Contents of folder so inscribed.

Manuscript data, not by Hodgkin, including 'film factors', 'uncertain reflections', nd.

to of folder on incoribod divided into

B.268, B.269	'Water molecules. Tables. Latest variants.' Contents of envelope so inscribed, divided into two for ease of reference.
	Photocopied manuscript data, not by Hodgkin, with manuscript data by Hodgkin intercalated, nd.
B.270, B.271	'Insulin. General phosphate. Herman field figures, etc.' Contents of folder so inscribed, divided into two for ease of reference.
	Manuscript data, sketches, various hands, including 'Patt[erson] function cos cos', 'Patterson Insulin hol', 'Patterson Insulin okl Field Figures', 'Patterson Field Figures Insulin Rhombic', 'Insulin S.F.G. for strong reflections', nd.
B.272	Handdrawn ?Fourier refinement, probably insulin, nd.
B.273, B.274	'Original Zn insulin intensity measurements?' Contents of folder so inscribed, divided into two for ease of reference.
	Computer printout data, including ' F^2 Data for wet zinc-insulin'; manuscript and typescript data, including 'Wet insulin - rhombohedral', 'Wet Zinc Insulin. Table of Σ F (hikl) for Pxyo series', nd.
B.275	'Insulin structure factor graphs.' Contents of folder so inscribed.
	Manuscript data, handdrawn sections, handdrawn 'Reciprocal lattice of dry insulin', nd.
B.276-B.278	Handdrawn Zn insulin maps, nd. Three folders.
B.279	Miscellaneous handdrawn insulin maps, sections, found together, nd. One roll.
B.280	'Chinese' handdrawn maps, not by Hodgkin, nd. One roll.
B.281	'Insulin atomic positions in six molecules in hexamer projected along trigonal axis.'
	Computer generated diagram, nd. One roll.

B.282-B.284 Miscellaneous data. Three folders.

Miscellaneous

B.285	Examples of x-ray films, 1957.
B.286-B.288	Models.
B.286, B.287	'Drawings of Sections for Making Insulin Balsa Models.' Contents of envelope so inscribed, 1969. Two folders.
B.288	'Photographs. Insulin.' Contents of folder so inscribed.
	Photographs of insulin model.
STEROLS	ca.1936-42
	The x-ray investigation of the sterols was begun by J.D. Bernal in 1932 and had as its object the determination of the position of calciferol in the main sterol series. (See also B.317-B.336).
B.289	'Old sterol notes and Harry[Carlisle]'s dibenzyl'. Contents of folder so inscribed.
	Manuscript notes, data, Patterson and Fourier analyses, 1936. Some items in J.D. Bernal's hand.
	'Report of Preliminary Investigations.'
	6pp. typescript draft; 6pp. manuscript draft, not by Hodgkin.
B.290	'X-ray crystallography and sterol structure.' Not listed in Bibliog. [?1942].
	57pp. typescript. Incomplete.
TOBACCO VIRUSES	ca.1939-51
B.291	'Tables of Virus Data.' Examination answer book so labelled by J.D. Bernal.
	Manuscript data, by Bernal.
	'Plant Viruses. X-Ray Data.'
	9pp. typescript, nd. Latest bibliographical reference 1939.

B.292, B.293	'A comparison of x-ray measurements on air-dried tobacco necrosis protein crystals with electron microscope data' (with P.M. Cowan), <i>Bibliog.</i> 52, 1951.
B.292	7pp. typescript, with manuscript additions and corrections [by Cowan]; figures.
	6pp. typescript; 3pp. typescript.
B.293	2pp. manuscript draft, untitled, not by Hodgkin.
	Letter, 1949; manuscript notes and data.
	'Tobacco Necrosis Protein (Rothamsted Strain).'
	1p. typescript, nd.
B.294	'Physical properties of virus solutions.'
	6pp. manuscript draft, nd.
	Refers to work by J.D. Bernal and I. Fankuchen, 'who have put this so far unpublished paper in my hands'.
B.295	Tables, lists of figures, legends; 1p. manuscript draft, 1p. typescript draft by J.D. Bernal.
	Loose manuscript and typescript pages by Hodgkin and Bernal, nd.
PROTEINS	ca.1939-74
	The x-ray analysis of protein crystals began when the first x-ray diffraction photographs of single pepsin crystals were taken by J.D. Bernal in 1934. At this time Hodgkin was working in Cambridge as Bernal's research student, and together they published a note on pepsin (<i>Bibliog.</i> 7, 1934).
B.296	'Proteins.' Contents of folder so inscribed.
	2pp. typescript, re projects being carried out on protein crystals. [?1939].
	'Protein Crystals.'
	1p. typescript by Hodgkin, nd.
	'Research Programme submitted for a Beit Medical Research Fellowship.
	2pp. typescript, by D.P. Riley, nd.

3.297	Untitled report submitted to the Department of Scientific and Industrial Research, by D.P. Riley, 1940.
	31pp. typescript, re methaemoglobin, insulin, lactoglobulin.
	The report refers to work carried out in collaboration with Hodgkin.
B.298	'The correlation of X ray data on air-dried insulin with vector models: a correction and an apology.'
	1p. typescript, with manuscript additions and corrections by Hodgkin.
	This followed Hodgkin's paper 'A review of some recent work on protein crystals', <i>Bibliog.</i> 31, 1941.
B.299	Contents of untitled binder.
	Manuscript notes and data, manuscript notes from the literature <i>re</i> proteins, tobacco necrosis virus derivative, haemoglobin. One page dated 1944.
B.300, B.301	'Proteins.' Contents of folder so inscribed.
B.300	Letter from R.L.M. Synge, dated 1 May 1944, with 9pp. typescript, 'Proteins and Evolutionary Theory'.
	Letter from A.P. Tulinsky, dated 24 September 1957. Handdrawn figures and mounted photograph attached.
B.301	Typescript copy of English summary of 'Zur Deutung der Röntgendiagramme gewisser Eiweißstoffe I', by K. Schiff-Dornberger, 1949.
	Miscellaneous shorter manuscript notes and drafts by Hodgkin, nd.
B.302-B.305	'Proteins.' Contents of folder so inscribed.
B.302	Correspondence 1966-67.
B.303	'Some characteristics of protein crystals', Bibliog. 127, 1971.
	12pp. typescript draft.
B.304	17pp. manuscript draft, with manuscript references and legends to figures

B.305	'Towards the X-ray analysis of proteins', nd. Not listed in Bibliog.
	2pp. typescript.
	2pp. typescript re history of research on protein structure, nd.
B.306	'Some Ancient History of Protein X-Ray Analysis' (with D.P. Riley), <i>Bibliog.</i> 106, 1968.
	23pp. typescript.
B.307-B.309	'Problems in the x-ray analysis of proteins', Bibliog. 145, 1974.
B.307	14pp. typed copy of transcript of lecture.
B.308	21pp. manuscript draft.
B.309	Manuscript notes, manuscript notes from the literature, including 1p. manuscript copy by Hodgkin of letter from [Federov] to Nikolai Aleksandrovich [?] <i>re</i> x-rays, dated 2 October 1912.
	Figures.
B.310, B.311	'Protein Crystals', nd. Not listed in Bibliog.
B.310	13pp. typescript.
B.311	22pp. manuscript draft.
B.312	Miscellaneous shorter manuscript drafts, manuscript notes from the literature, nd.
B.313	Mounted x-ray photographs and figures, with legends, probably for exhibition, nd.

BENZPYRENE	1940-42
B.314	'The elimination of 3:4-benzpyrene from the animal body, after subcutaneous injection. (2) Changed benzpyrene' (with J.G. Chalmers), <i>Bibliog.</i> 33, 1942.
	1p. typescript draft of abstract.
	3pp. typescript draft of part of paper, 'Crystallographic examination of BPX, 6-hydroxy-benzpyrene and 4-hydroxy-benzpyrene'; 5pp. manuscript draft.
	Letter from Hodgkin to J.G. Chalmers dated 18 September 1941.
B.315	'Report on the crystallographic examination of "BPF" and 6-hydroxy-3:4- benzpyrene'.
	3pp. typescript draft; 2pp. manuscript draft.
	This report was probably written at the same time as the preceding, but was not published.
B.316	Manuscript notes, data and drawings, mostly <i>re</i> crystals of 'BPF' and 'BPX', 1940-42.
CALCIFEROL	1941-56
	The first x-ray crystallographic study of calciferol (vitamin D2) was undertaken in 1932 by J.D. Bernal. In 1948 Hodgkin and J.D. Dunitz resolved the conflict between the early crystallographic and chemical evidence on the structure of calciferol by the complete x-ray analysis of a calciferol derivative (<i>Bibliog.</i> 44), but such was the complicated atomic arrangement in crystals of calciferol itself that it was not until 1976 that x- ray methods had advanced far enough for the arrangement to be established.
B.317	Correspondence re obtaining sample of calciferol, 1941-42.
B.318	Handdrawn projections. One with [?J.D. Dunitz's] manuscript inscription '3:iodo 4:nitro benzoate of calciferol : 1st Fourier projections on (010) June 1947'. One roll.

B.319-B.323	'Calciferol Intensities and F values.' Contents of folder so inscribed.
B.319	'Work on 4-iodo; 5-nitro benzoate of calciferol done at Cal Tech during the period September, 1948 - September, 1949.'
	2pp. typescript of report [?by J.D. Dunitz].
	Manuscript notes and data.
B.320-B.323	Manuscript tables of data, nd. Four folders.
B.324-B.331	'Calciferol.' Contents of box so labelled.
B.324-B.326	'Calciferol.' Contents of folder so inscribed.
B.324	Correspondence 1950, 1962.
	'Calciferol iodo nitrobenzoate - October 1950. Structure viewed normal to a (one molecule only being shown)'. By J.D. Dunitz.
B.325	'Calciferol Final Refinements.'
	2pp. typescript notes, 1962.
	1p. typescript notes re calciferol nitro-iodobenzoate, 1962.
	Printout data, 1962.
B.326	'The crystal structure of a calciferol derivative' (in collaboration), <i>Bibliog.</i> 86, 1963.
	Manuscript and typescript drafts.
	Figures.
B.327, B.328	Manuscript data re calciferol 4-iodo-5-nitrobenzoate. One page dated 2 July 1953. Two folders.
B.329, B.330	'The crystal structure of a calciferol derivative' (in collaboration), <i>Bibliog.</i> 86, 1963.
B 320	22pp_typescript

B.330	27pp. typescript, with manuscript additions and corrections, not by Hodgkin.
B.331	'The structure of Calciferol - Vitamin D'.
	2pp. typescript, nd.
	Manuscript notes and data, some by J.D. Dunitz, nd.
B.332, B.333	'Calciferol. 1st 3-D Fourier Projections.'
	Contents of folder so inscribed, divided into two for ease of reference.
	Handdrawn projections and three-dimensional Fourier; manuscript data; 1p. typescript data; brief correspondence 1956, 1962.
B.334	'Calciferol'. Contents of folder so inscribed.
	Handdrawn Harker section, Patterson projection and Patterson-Fourier projection [by J.D. Dunitz], nd. One roll.
B.335	Handdrawn full three-dimensional observed Fourier, nd. One roll.
B.336	Handdrawn full three-dimensional calculated Fourier, nd. One roll.
FATTY ACIDS	1942-43
B.337, B.338	'Fatty Acids'. Contents of folder so inscribed.
B.337	'X-ray crystallographic examination of fatty acids obtained from Mona wax' (with C.H. Carlisle), nd. Not listed in <i>Bibliog.</i>
	3pp. typescript, incomplete.
	'Report on samples of Paraffin Wax Mixtures. March 31st 1943.'
	5pp. typescript.
	Correspondence 1942-43.
B.338	Manuscript notes, data, shorter drafts re fatty acids, nd.
	Two x-ray films, nd.

PENICILLIN

Early in the Second World War the successful tests with penicillin extracts on infected mice by Howard Florey and his team in Oxford led to urgent attempts to determine its chemical structure. Hodgkin and her coworkers accomplished this in three years with x-ray techniques. Since the research had been carried out under conditions of wartime secrecy, it was not until 1949 that Hodgkin and her collaborators' work was finally published in *The Chemistry of Penicillin (Bibliog.* 46). Research on penicillin refinements continued after the war.

Professor Hodgkin explained the scientific importance of the penicillin analysis in a letter to the compilers of this catalogue (July 1991): 'The usual way of establishing the structure of an organic natural product was by synthesis following experiments in degradation which suggested different possible structures. This proved impossible in the case of penicillin because the structure is unstable in the presence of the reagents needed to make β lactams. Much later routes to produce stable β lactams were discovered and put to the synthesis of penicillin. Other physical methods and particularly spectroscopic methods were inconclusive which left x-ray methods as the best evidence of the penicillin structure. There was considerable hesitation in accepting x-ray evidence at first; now it is commonly used first to find organic structures.'

The documentation of the penicillin research is of particular interest because of the importance of the molecule to medical science and the demonstration of the power of x-ray techniques in the solution of its structure by Hodgkin and her coworkers. Furthermore the enormous technical developments after the Second World War - especially the use of the electronic computer to process data - meant that the variety of methods pioneered in the analysis of penicillin were not in fact used again.

The material, which is substantial, covers the period 1942-89, although the bulk dates from the last years of the Second World War and the period immediately afterwards. There is an extensive correspondence with colleagues, drafts for reports and publications, reports of work of colleagues in other laboratories sent to Hodgkin for information or circulated officially, notebooks, data, and illustrative material probably prepared for a penicillin display at the Science Museum, London as part of an exhibition to mark the postwar International Congress of Pure and Applied Chemistry.

The material is presented as follows:

B.339-B.367	Correspondence
B.368-B.413	Reports and drafts
B.414-B.431	Notebooks
B.432-B.463	Data
B.464-B.471	Illustrative material

1942-89

Correspondence 1942	2-89	
	There is an ext was kept toget	ensive correspondence with colleagues and others which her by Hodgkin in box folders.
	The correspon	dence is presented as follows:
	B.339-B.356	Correspondence with individuals and organisations In alphabetical order
	B.357-B.367	Miscellaneous shorter correspondence In chronological order
	Corresponder	nce with individuals and organisations
	Principally lett	ers to Hodgkin.
B.339	W.T. Astbury	1943-46
B.340	W.L. Bragg	1944-45
B.341-B.344	C.W. Bunn	1942-49
	Bunn, who wor Limited, was penicillin. His monograph (B	ked in research departments of Imperial Chemical Industries one of Hodgkin's principal collaborators in her work on a letters concern the 'fly's eye' technique, preparation of <i>ibliog.</i> 46).
B.341	1942, 1944.	
B.342	1945.	
B.343	1946. Include II.	s table of the final atomic co-ordinates of sodium penicillin
B.344	1947-49. Inc patterns'.	ludes 1p. typescript on 'Intensities given by "fly's eye"
B.345	G.L. Clark	1946-47
	re preparation	of monograph (Bibliog. 46).

B.346, B.347	A.H. Cook	1943-47
	re samples sent to Hodgkin for crystallographic exami	nation.
B.346	1943.	
B.347	1944-47.	
B.348	Design Research Unit	1950
	re three-dimensional contour model of penicillin for Britain.	1951 Festival of
B.349	Imperial Chemical Industries Limited	1944-47
	Principally with I.C.I. (Dyestuffs) Limited, Manchester, Hodgkin for crystallographic examination.	re samples sent to
B.350	D. McLachlan	1946
	re research on penicillin structure and possible joint p	ublication.
B.351, B.352	Medical Research Council	1943-47, 1949
	re samples sent to Hodgkin, awarding of grants, includes 1p. manuscript draft on 'Notes for the Medical	use of equipment. Research Council'.
B.351	1943-45.	
B.352	1946-47, 1949.	
B.353	Merck and Co., Inc.	1947, 1949
B.354	Office of Scientific Research and Development, Washington, DC.	1944-48, nd.
	re provision of samples for Hodgkin, publicatio correspondent is H.T. Clarke.	n. The principal
B.355	United States Department of Agriculture	1943-44, 1946-47
	Principal correspondents are R.D. Coghill, R.T. Milner,	N.C. Schieltz.

B.356	Wellcome Chemical Research Laboratories 1943-45	
	<i>re</i> Hodgkin's x-ray examination of penicillic acid. The correspondent is S. Smith.	
	Miscellaneous shorter correspondence 1942-89	
B.357	1942-43.	
B.358	1944.	
B.359	1945.	
B.360	1946-47. Includes request for help in setting up penicillin display at the Science Museum, London, as part of an exhibition to mark the International Congress of Pure and Applied Chemistry,[?1947]. See also B.463-B.471.	
B.361	1948-49. Includes correspondence <i>re</i> publication of monograph <i>The Chemistry</i> of <i>Penicillin</i> , to which Hodgkin and her collaborators contributed a chapter (<i>Bibliog.</i> 46, 1949).	
B.362	1958-59.	
B.363	1961-63.	
B.364	1964-65, 1967.	
B.365	1970-72, 1986, 1989, nd.	
B.366, B.367	Papers and correspondence re patent case.	
	Beecham Pharmaceuticals sought a written statement from Hodgkir supporting its view on the crystallisation behaviour of ampicillin, 1977-78	
B.366	1977.	
B.367	1978. Includes 4pp. typescript, 'Report on Hydrates of Ampicillin'.	

Reports and drafts 1943-63

B.368	'Report on the crystallographic investigation of insulin and penicillin 1942-3.'
	18pp. typescript, incomplete.
B.369-B.383	'C.P.S. [Committee for Penicillin Synthesis] Reports. Penicillin. 1940s - secret. Bunn and D.C. papers and letters.' Contents of box folder so labelled.
B.369, B.370	Reports, June 1943 - April 1944.
B.369	'X-Ray Crystallographic Measurements on certain Degradation Products of Penicillin.' 'PEN.85.' (With B.W. Low).
	6pp. typescript, dated 23 June 1943.
	'Crystallographic measurements on the sodium salt of penicillin.' 'PEN.96.' (With B.W. Low).
	2pp. typescript, nd.
	'Derivatives of the aldehyde from penicillin.' 'PEN.98.' (With B.W. Low).
	1p. typescript, nd.
	'Crystallographic Comparison of Derivatives of synthetic <u>r</u> - and <u>d</u> - BB -dimethylcystine with those of penicillamine.' 'PEN.101.' (With B.W. Low).
	2pp. typescript, dated 4 October 1943.
	'Crystallographic measurements bearing on the structure of penillo-l aldehyde.' 'PEN.112.' (With B.W. Low).
	3pp. typescript, dated 18 November 1943.
B.370	'Some comparative measurements on compounds belonging to the different penicillin series.' 'PEN.117.' (With B.W. Low and G.M.J. Schmidt).
	4pp. typescript, dated 2 January 1944.
	'A Report on some samples of "penicillic" acids provided by I.C.I.'
	2pp. typescript, dated 7 January 1944.
	'Some comparative measurements on penicillic acids from various sources.' (With B.W. Low).
	3pp. typescript, dated 3 March 1944.
	'X-ray crystallographic measurements in the penicillin series. I.' (With B.W. Low and G.M.J. Schmidt).
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	2pp. typescript, dated 19 April 1944.
	'Crystallographic Comparison of Derivatives of synthetic \underline{r} and \underline{d} BB dimethyl cysteine with those of penicillamine.' (With B.W. Low).
	2pp. typescript, nd.
	5pp. manuscript draft <i>re</i> need for 'a central calculating service for the use of x-ray crystallographers', with reference to the penicillin work, nd.
B.371	'The Structure of Penicillin.' 'C.P.S. 508.' (With B.W. Low).
	10pp. typescript, dated 29 May 1945.
B.372	'The Structure of Penicillin.' (With B.W. Low).
	11pp. manuscript draft of preceding.
B.373	'The structure of penicillin' (in collaboration).
	3pp. typescript, dated 1 May 1946.
	'The structure of penicillin.'
	2pp. typescript, nd.
B.374	'X-Ray Crystallographic Measurements on certain Degradation Products of Penicillin.' (With B.W. Low).
	7pp. typescript, with manuscript additions and corrections by Hodgkin, nd.
B.375	Report of meeting, attended by Hodgkin, of the Penicillin Chemists' Conference, 29 October 1943.
	Letters from C.W. Bunn, 1945. With handdrawn maps.
	2pp. typescript on 'Nomenclature', nd.
	1p. typescript on Racemic penicillamine acetone compound, nd.
B 376	Handdrawn figures, x-ray photograph.

B.377-B.380	Duplicate copies of 'Pen' reports, not by Hodgkin, issued in a limited number by the Secretary to the Research Panel of the Penicillin Conference and Chemical Committee. The reports form part of a numbered sequence, and some are printed on standard forms, over-printed 'Property of the Therapeutic Research Corporation of Great Britain Limited'.
B.377	'Penicillic Acid, and Optically Active Acid from Penicillin.' 'PEN.69'.
	2pp. typescript, dated 15 February 1943.
	'Further Studies on the Degradation of Pencillin.' 'PEN.79.'
	6pp. typescript, dated 19 May 1943.
	'Penillic Acid.' 'PEN.81'.
	2pp. typescript, dated 9 June 1943.
	'Penicillin.' 'PEN.83.'
	8pp. typescript, dated 18 June 1943.
	'Penillic acid and Penillamine.' 'PEN.86.'
	2pp. typescript, dated 10 July 1943.
B.378	'Studies on the degradation of penicillin Part III.' 'PEN.87.'
	2pp. typescript, nd.
	'Studies on the degradation of penicillin. Part IV.' 'PEN.88.'
	3pp. typescript, dated 30 July 1943.
	'The Absorption Spectra of Penicillin and its derivatives.' 'PEN.89.'
	6pp. typescript, dated 4 August 1943, with figures.
B.379	'The Degradation of Penicillin.' 'PEN.90.'
	2pp. typescript, dated 16 August 1943.
	'A Discussion of the Structure of Penicillinic Acid and its Derivatives.' 'PEN.91.'
	9pp. typescript, dated 14 August 1943.
	'Crystalline Salts of Penicillin.' 'PEN.94.'
	3pp typescript, dated 2 September 1943.

B.380

'Further studies on the degradation of penicillin. V.' 'PEN.97.'
3pp. typescript, dated 16 September 1943.
'Penicillin.' 'PEN.99.'
7pp. typescript, dated 29 September 1943.
'Further studies on the degradation of Penicillin VI.' 'PEN.100.'
5pp. typescript, dated 4 October 1943.
'Penicillin.' 'PEN.102.'
2pp. typescript, dated 19 October 1943.
'Further studies on the degradation of penicillin VII.' 'PEN.103.'
3pp. typescript, dated 23 October 1943.
'Penicillin.' 'PEN.105.'
1p. typescript, dated 25 October 1943.
'Addendum to Pen.106'.
1p. typescript, dated 27 October 1943.
'Further Studies in the Degradation of Penicillin VIII.' 'PEN.109.'
2pp. typescript, dated 8 November 1943.
'Penicillin.' 'PEN.110.'
2pp. typescript, dated 8 November 1943.
'Further Studies in the Degradation of Penicillin IX.' 'PEN.111'.
2pp. typescript, dated 17 November 1943.
'Penicillin.' 'PEN.113'.
4pp. typescript, dated 25 November 1943.
'Penicillin'. 'PEN.114'.
5pp. typescript, dated 11 December 1943.

B.381, B.382	Typescript copies of C.P.S. reports, not by Hodgkin, 1944-45.
B.381	'Microscopic Crystallographic Properties of Crystalline Penicillin Sodium'. 'C.P.S.178'.
	2pp. typescript, dated 24 February 1944; photographs.
	'Preparation of the Potassium Salt of Penicillin G'. 'C.P.S.189'.
	1p. typescript, dated 8 May 1944.
	'Report on Penicillin'. 'Structure'. 'C.P.S.190'.
	2pp. typescript, dated 7 February 1944.
	'Penicillin. Interim Report on Structural Studies in Progress'. 'C.P.S.227'.
	5pp. typescript, dated 14 August 1944.
	'Polymorphic Forms and Hydrates of the Sodium Salt of Penicillin F'. 'C.P.S.303'.
	3pp. typescript, dated 5 October 1944.
B.382	'Monthly Progress Report'. 'C.P.S.332'.
	4pp. typescript, dated 10 November 1944.
	'Polymorphic Forms and Hydrates of Penicillin'. 'C.P.S.373'.
	11pp. typescript, dated 18 December 1944.
	'Biosynthesis of Penicillin'. 'C.P.S.377'.
	6pp. typescript, dated 6 January 1945; figures.
B.383	Typescripts by Hodgkin's colleagues in the Dunn School of Pathology Oxford (E.P. Abraham and E.B. Chain) and the Dyson Perrins Laboratory Oxford (W. Baker and R. Robinson), at ICI (C.W. Bunn and A. Turner-Jones) and at Leeds University (W.T. Astbury), 1943, 1945, 1946 and nd.
B.384	'Miscellaneous'. Contents of folder so inscribed.
	'Some comparative measurements on compounds belonging to the different penicillin series.'
	4pp. typescript, with manuscript additions and corrections by Hodgkin [21943]: tables.

'The structure of penicillin' (in collaboration).

3pp. typescript, dated 1 May 1946.

'Dihydropenillic acid.'

1p. typescript, nd.

B.385-B.391 'Penicillin Chapter. (Rockefeller copy).' Contents of folder so labelled.

B.385-B.387 'The X ray Crystallographic Investigation of the Structure of Penicillin' (in collaboration), *Bibliog.* 46, 1949.

103pp. typescript. Three folders.

- B.388-B.391 Tables; legends to figures; figures; manuscript notes; photographs, including x-ray photographs. Four folders.
- B.392-B.396 'Mss. of penicillin chapter. Spare copy'. Contents of folder so inscribed.

B.392-B.394 'The X ray Crystallographic Investigation of the Structure of Penicillin' (in collaboration), *Bibliog.* 46, 1949.

97pp. typescript, with manuscript additions and corrections by Hodgkin. Three folders.

- B.395, B.396 Typescript and manuscript tables, some with accompanying notes; legends to figures. Two folders.
- B.397-B.401 'Penicillin. Schieltz F₅ okl. Some expts. and old data. Draft of penicillin paper.' Contents of box folder so labelled.
- B.397-B.400 'The X ray Crystallographic Investigation of the Structure of Penicillin' (in collaboration), *Bibliog.* 46, 1949.

Manuscript and typescript drafts. Four folders.

B.401 Manuscript notes, manuscript notes from the literature, including Sir Alexander Fleming's paper in Brit. J. Exp. Path., 1929.

2pp. manuscript draft re Hodgkin's progress on penicillin.

B.402, B.403	'Penicillin MSS. Original Tables etc.' Contents of folder so inscribed, divided into two for ease of reference.
	Manuscript and typescript tables, legends to figures; shorter manuscript drafts.[1949].
B.404	'The X ray Analysis of the structure of penicillin', Bibliog. 55, 1952.
	22pp. manuscript draft.
B.405-B.407	Contents of untitled folder.
B.405	'The x-ray analysis of the structure of penicillin', Bibliog. 55, 1952.
	5pp. typescript, with manuscript additions and corrections by Hodgkin; figures, table.
	Letter re future publication, 1948.
	3pp. untitled manuscript draft re progress of penicillin research.
B.406	1p. manuscript notes re progress of x-ray analysis of penicillin.
	Manuscript list of names, with addresses.
	Pamphlet on 'The Story of Penicillin'.
	Reprint by E.B. Chain and H.W. Florey on 'Penicillin', sent to Hodgkin by Chain.
B.407	Shorter manuscript drafts, notes; manuscript calculations re protein crystals, nd.
B.408-B.412	'Penicillin V'. Contents of box folder so labelled.
B.408-B.411	Contents of untitled folder.
B.408	'The crystal structure of phenoxymethylpenicillin' (with S. Abrahamssor and E.N. Maslen), <i>Bibliog.</i> 83, 1963.
	27pp. typescript, with manuscript additions and corrections by Hodgkin.
	'Benort on Paper 62/119' 2nn, typescript comments.

B.409	Figures with manuscript corrections; manuscript table.
B.410, B.411	Fourier calculations. Computer printouts, 1960. Two folders.
B.412	'The crystal structure of phenoxy methyl penicillin' (with S. Abrahamsson and E.N. Maslen), <i>Bibliog.</i> 83, 1963.
	21pp. typescript, with manuscript additions and corrections by Hodgkin.
B.413	Typescripts, not by Hodgkin, 1943, 1945, nd.
Notebooks	
B.414	Exercise book, inscribed 'Rubidium Penicillin II. [010] 2nd Layer. 3rd Layer'.
	Manuscript data. One page dated '11.7.44'.
B.415	Untitled exercise book, with contents list inside front cover.
	Manuscript data <i>re</i> potassium penicillin, rubidium penicillin II, 'Final Fourier Summation Pot[assium] Penicillin II. First stages.' One page dated '2.3.45'.
B.416	Untitled exercise book, with contents list inside front cover.
	Manuscript data <i>re</i> potassium penicillin, rubidium penicillin, 'Error synthesis', 'Line synthesis'. Two pages dated '27.3.45' and '9.5.45'.
B.417	Untitled notebook.
	Manuscript data <i>re</i> potassium penicillin, rubidium penicillin, 'Structure Factor calculations.' A few pages dated between 'March 31st 1945' and 'July 18th 1946'.
B.418	Untitled exercise book, with contents list inside front cover.
	Manuscript data <i>re</i> potassium penicillin, rubidium penicillin, 'Final stage 2 dimensional Rb Penicillin Projection - Addition of Further Terms'. One page dated '8.4.45'.

B.419	Untitled exercise book, with contents list inside front cover.
	Manuscript data <i>re</i> 'Potassium Penicillin (hol) projection', 'B section of Rb Pen Projectn'. One page dated '18.10.45'.
B.420	Untitled notebook.
	Manuscript notes, data, graphs, projections <i>re</i> potassium penicillin, rubidium penicillin. One page dated '26 Oct. 1945'.
B.421	Untitled notebook.
	Manuscript data and structure factor calculations <i>re</i> potassium penicillin, rubidium penicillin, nd.
B.422	Untitled exercise book.
	Manuscript data and calculations <i>re</i> potassium penicillin, rubidium penicillin, 'Interatomic distances', 'Fourier series', nd.
B.423	Untitled exercise book.
	Manuscript data, some not by Hodgkin, <i>re</i> rubidium penicillin, 'Patterson- Harker', nd.
B.424	Untitled exercise book, with contents list inside front cover.
	Manuscript data re potassium penicillin, rubidium penicillin, sodium penicillin, 'intensity data', 'Patterson projection', nd.
B.425	Untitled exercise book, with contents list inside front cover.
	Manuscript data <i>re</i> potassium penicillin, rubidium penicillin, '2nd Patterson projection', 'Fourier', nd.
B.426	Exercise book, inscribed 'Sodium Penicillin II [010] [100]'.
	Manuscript data, nd.
B.427	Exercise book, inscribed 'Sodium Penicillin II [010]'.
	Manuscript data, nd.

B.428	Exercise book, inscribed 'Sodium Penicillin [100]'.
	Manuscript data, not by Hodgkin, nd.
B.429	Untitled exercise book.
	Manuscript data re 'amino derivative of penicillin', 'penicillamine okl reflections', lactoglobulin, nd.
B.430	Exercise book, inscribed 'Penicillin'.
	Manuscript data, not by Hodgkin, <i>re</i> rubidium penicillin, penicillamimic acid, 'Patterson-Harker', nd.
B.431	Untitled notebook.
	Manuscript data, not by Hodgkin, <i>re</i> methyl penicillin sulphuride. Some loose manuscript notes, nd.
Data	
	The material is chiefly manuscript data, projections, maps, graphs found in Hodgkin's envelopes and folders. There is also some later computer- generated material.
B.432-B.436	Contents of untitled binder divided into five for ease of reference.
	Manuscript notes and data <i>re</i> work on various penicillin-related compounds, including crystallisation. The material covers the period 1942-45 but was not found in chronological order.
B.437	'Calcs. of angles. Penicillin.' Contents of folder so inscribed.
	Handdrawn graphs; sketches; manuscript data. Includes 'Potassium Penicillin photographed for okl reflections', dated 6 September 1945, 'ß lactam ring angles', 'Thiazolidine ring angles', 'Rubidium benzyl penicillin'.
B.438-B.445	Manuscript tables, found together and divided into eight folders for ease of reference. Include tables headed 'Atomic factors', 'Structure Factor calculations', 'Scattering factors', 'hkl values', 'parameters', 'Final calculations'. A few tables are dated 1946.
B.446	'Plots of final str[ucture] Penicillin'. Contents of folder so labelled.
	Includes 'Potassium benzylpenicillin coordinates' dated 25 November 1946.

B.447	Contents of untitled folder.
	'okl reflections', figures, 'Patterson section', 'Model based on latest projections', <i>re</i> potassium benzylpenicillin, rubidium benzylpenicillin, sodium benzylpenicillin. One item dated '1.3.47'.
B.448	Computer generated P-bromo-penicillin V vector maps, 1962. One roll.
B.449, B.450	Contents of untitled folder, divided into two for ease of reference.
	Computer printouts re P-bromo penicillin V. Include 'anisotropic refinement round', 'final $ F_o $ ', 'final shifts, variances, positions'. 1964.
B.451	Manuscript data, not all in Hodgkin's hand, re potassium penicillin, nd.
B.452	'(hko) sections. Potassium penicillin'. Contents of envelope so inscribed, nd.
B.453	'(hol) sections. Potassium penicillin'. Contents of envelope so inscribed, nd.
B.454	'(okl) sections. Potassium penicillin'. Contents of envelope so inscribed, nd.
B.455, B.456	'Penicillin. Parameter curves. Calculation of bond distances.' Contents of folder so inscribed, divided into two for ease of reference.
	Manuscript data, handdrawn graphs.
B.457	'Plotting and parameter charts. Structure factor graphs'. Contents of folder so inscribed, nd.
B.458	'Experiments with Na Penicillin'. Contents of folder so inscribed.
	Handdrawn maps, manuscript data, not by Hodgkin, nd.
B.459	'P-bromo-pen V. Final ISO.' Handdrawn maps, nd. One roll.
B.460	Sodium penicillin. Handdrawn Patterson and Fourier projections, nd. One roll.

B.461	'P-bromo-penicillin V $(\rho_0 - \rho_c)_1$. Calculated at end of Iso#5.' One roll so labelled.
	Computer generated difference synthesis, nd.
B.462	Computer generated 'KPMPEN Vector Map', nd. One roll.
Illustrative material	
	This material was probably prepared for an exhibition held at the Science Museum, London, to mark the International Congress of Pure and Applied Chemistry,[?1947]. See also B.360.
B.463-B.465	'Exhibition blurbs, summaries etc.' Contents of folder so inscribed.
B.463	Miscellaneous shorter typescript and manuscript drafts re the x-ray crystallographic investigation of the structure of penicillin.
B.464	Typescript legends to figures and tables.
	Manuscript notes re history of penicillin research.
B.465	Miscellaneous illustrative material.
	Photographs, figures, diagrams, some with accompanying captions.
B.466-B.470	'Penicillin'. Contents of folder so inscribed, divided into five for ease of reference.
	X-ray photographs, miscellaneous illustrative material, captions, handdrawn projections.
B.471	Material mounted on card.
	'Stages in the X ray analysis of the salts of benzylpenicillin.'
	1p. typescript.
	X-ray powder photographs, with captions.

D.M.C. Hodgkin NCUACS 47/3/94

GRAMICIDIN	1943-67
	Crystals of gramicidin S were first brought to Hodgkin from Moscow by R.L.M. Synge.
B.472-B.474	'Gramicidin S 1940s'. Contents of folder so inscribed.
B.472, B.473	Letters from R.L.M. Synge, 1943-48.
B.472	1943-45.
B.473	1946-48, nd. Includes 3pp. typescript ' "Gramicidin S": the sequence of the amino-acid residues', by Synge et al.
B.474	Letters from F. Sanger, 1945.
	Letters from T.S. Work, 1947, nd.
B.475-B.479	'N-Acetyl Gramicidin S'. Contents of folder so inscribed.
B.475	'Proposals For Further Work On Gramicidin and Gramicidin S'.
	1p. typescript, by R.L.M. Synge,[?1944].
B.476	Three manuscript translations by R.L.M. Synge of Russian papers or gramicidin S, 1954.
B.477	'Gramicidin S sulphate'.
	1p. typescript, nd.
	'Gramicidin S flavianate'.
	1p. typescript, nd.
B.478	Untitled exercise book.
	Manuscript data and calculations, nd.

B.479	'Final List of Cell Dimensions etc.'.
	Manuscript notes and data, not by Hodgkin, nd.
	'Correlation tables'.
	Manuscript data <i>re</i> dry acetyl gramicidin S and wet iodo acetyl gramicidin S.
B.480-B.484	'Gramicidin S'. Contents of folder so inscribed.
B.480	Letters to Hodgkin, 1944-56, nd.
B.481	'Summary of information on gramicidin S and proposals for further work'.
	2pp. typescript, probably not by Hodgkin, July 1944.
	'A note on the x-ray crystallography of gramicidin S' (with G.M.J. Schmidt).
	2pp. typescript, dated 26 July 1944.
B.482, B.483	'A crystallographic study of some derivatives of gramicidin S' (with B.M. Oughton and G.M.J. Schmidt), <i>Bibliog.</i> 68, 1957.
B.482	Manuscript drafts.
B.483	16pp. typescript of earlier version of paper, with manuscript additions and corrections[?by Schmidt].
B.484	Manuscript notes, data and sketches, manuscript notes from the literature, nd.
B.485	Notebook labelled 'Gramicidin S' on front cover.
	Handdrawn projections pasted into notebook; manuscript data. A few loose notes, projections enclosed at front, one note dated 1945.
B.486	'Gramicidin S'. Contents of folder so inscribed.
	Correspondence 1945, 1965, 1968.

B.487-B.491	'Gramicidin'. Contents of box so labelled.
B.487	'Adsorption experiments with gramicidin and related substances : the heterogeneity of tyrocidine', latest bibliographical reference 1947. Not listed in <i>Bibliog</i> .
	17pp. typescript [?not by Hodgkin].
B.488	'An x-ray crystallographic study of certain peptides', Bibliog. 54, 1952.
	1p. typescript draft; 2pp. manuscript draft, 'An x-ray analytical study of certain crystalline peptides'.
B.489	'Some observations on peptide chain models in relation to crystallographic studies on gramicidin B and insulin' (with P.M. Cowan), <i>Bibliog.</i> 57, 1953.
	5pp. typescript of 'Some observations on peptide chain models in relation to crystallographic data for gramicidin B and insulin', with manuscript additions and corrections by Hodgkin and [?Cowan].
	Figures.
B.490	Manuscript notes, sketches and data, nd.
B.491	X-ray photographs, nd.
B.492	'Gramicidin S'. Contents of box so labelled.
	'Gramicidins'.
	1p. typescript, nd.
	'Derivatives of Gramicidin S'.
	1p. typescript data, nd.
	Manuscript notes and data, nd; 1p. manuscript notes from the literature, bibliographical reference 1948.
B.493, B.494	'Gramicidin S'. Contents of folder so inscribed.
B.493	Letters from R.L.M. Synge, 1951, 1954-55.
	2pp. manuscript translation by Synge of Russian paper on gramicidin S.
	Typescript copy of 'Preliminary Report on the Testing of Molecular Models for Gramicidin S with the Crystallographic Data', by E.S. Komorowski and M.M. Harding, 1967; handdrawn figures attached.

B.494	Manuscript notes and data, manuscript notes from the literature, handdrawn projections.
B.495	4pp. untitled typescript, with tables. Latest bibliographical reference 1957.
B.496	'A note on the x-ray crystallography of gramicidin S and gramicidin S flavianate' (with G.M.J. Schmidt), nd. Not listed in <i>Bibliog</i> .
	3pp. typescript; table.
B.497	Mounted x-ray photographs, typed captions probably for exhibition, nd.
B.498	Manuscript notes and data, manuscript notes from the literature, nd.
B.499	Miscellaneous handdrawn illustrative material, graphs, sketches, maps, nd. One roll.
B.500	X-ray photographs, gramicidin S, nd.
LACTOGLOBULIN 194	
	Hodgkin took the first x-ray photographs of this protein with D.P. Riley in the mid 1930s. They published the results of this work in 1938 (<i>Bibliog.</i> 25). However all the material presented here is of a later date.
B.501	'The crystal structure of B-lactoglobulin' (with D.P. Riley), latest bibliographical reference 1946. Not listed in <i>Bibliog.</i>
	19pp. typescript, with manuscript marginal comments by Hodgkin.
	Table of 'Principal crystallographic data for lactoglobulin'.
	1p. manuscript sketch by Hodgkin.
B.502	'Notes on Wet Tabular Lactoglobulin'.
	4pp. typescript, by K. Dornberger, nd.
	'Tabular lactoglobulin. F1 ² (okl) on (100)'.
	Handdrawn map, not by Hodgkin.
	Letter to Hodgkin, 1947.

FERRITIN	1948-58
	This protein was isolated in 1937. Hodgkin first published work on ferritin in 1950 (<i>Bibliog.</i> 48).
B.503, B.504	'Ferritin'. Contents of box folder so labelled.
B.503	Manuscript and typescript notes, data and sketches, 1948.
B.504	Typescript copy of 'The structures of ferritin and apoferritin : some preliminary x-ray data', by P.M. Harrison, nd. Latest bibliographical reference 1958.
	Part of the work was carried out under Hodgkin's supervision.
B.505	'Wet Ferritin'. Handdrawn map, 1957. One roll.
VITAMIN B12	1948-84
	Hodgkin's research on this topic began in 1948 when E.L. Smith of Glaxo Laboratories gave her red crystals of a newly isolated anti-pernicious anaemia factor, named vitamin B12. Hodgkin and a varying group of young crystallographers carried out their analysis by the parallel investigations of four different crystal structures, dry B12, wet B12, the selenocyanide derivative of B12 (Se CN), and a hexacarboxylic acid or the 'red fragment' of B12. The crystal structures of the four B12 derivatives were then the most complicated ones which had been solved in any detail by x-ray analysis.
	See A.184 for a record of the progress of the vitamin B12 research in Hodgkin's laboratory, July 1954 - June 1955. See B.554 for a later overview by Hodgkin of the vitamin B12 research.
	In the course of the research Hodgkin's group collaborated closely with Smith at Glaxo, J.G. White at Princeton, and A.R. Todd at Cambridge; it was Todd who announced the solution of the structure of vitamin B12 in 1955. In view of the size of the molecule and the extensive calculations involved, the use of early electronic computers at the University of California, Los Angeles (K.N. Trueblood), Manchester University and the

Hodgkin's research on vitamin B12 continued into the 1980s with work on the dimethyl-benzimidazole-cobamide (DMBC) coenzyme, factor V1a, neovitamin B12, and monocarboxylic acid.

National Physical Laboratory, Teddington proved extremely important.

The material, which is substantial, covers the period 1948-84, although the bulk dates from 1950s and the early 1960s. There is an extensive correspondence including Smith, White, Todd and Trueblood, drafts for reports and publications, notebooks, a large number of research folders, and data.

The material is presented as follows:

B.506-B.555	Correspondence
B.556-B.628	Drafts for reports and publications
B.629-B.635	Notebooks
B.636-B.792	Research folders
B.793-B.826	Data
B.827, B.828	Miscellaneous

Correspondence 1948-84

There is an extensive correspondence with colleagues and others which was kept together by Hodgkin in box folders.

The correspondence is presented as follows:

- B.506-B.545 Correspondence with individuals In alphabetical order
- B.546-B.555 Miscellaneous shorter correspondence In chronological order

Correspondence with individuals

B.506	H.A. Barker	1959-61, 1963
	re crystallisation and study of the DMBC coenzyme.	
B.507, B.508	K. Bernhauer	1958-73, nd
	re factor V1a, B12 monoacid.	
B.507	1958-59, 1961, 1964-67.	
B.508	1969, 1973, nd.	

B.509, B.510	R. Bonnett	1963-73, nd
B.509	1963-64, 1968.	
B.510	1970, 1973, nd.	
B.511	D.W.J. Cruickshank	1955-57
	re calculations performed on electronic comp Manchester. See also H.59.	uter at the University of
B.512, B.513	A. Eschenmoser	1963-75, nd
	re metal free corrin, cobalt (II) complex.	
B.512	1963-65.	
B.513	1967-72, 1974-75, nd.	
B.514	J. Fieldhouse	1969
	re construction of models of vitamin B12.	
B.515	K.A. Folkers	1958-64
	re the DMBC coenzyme. In 1948, Folkers' tear crystals of vitamin B12.	n was the first to isolate
B.516	J. Glusker (née Pickworth)	1955-56, 1979-83
	Glusker was one of Hodgkin's early collaborators	s in vitamin B12 research.
B.517	A.W. Johnson	1953-68
	Includes correspondence re publications, 1954- was working on vitamin B12 with A.R. Todd at (55. At that time Johnson Cambridge University.
B.518, B.519	P.G. Lenhert	1959-70, nd
	Lenhert came to Oxford from the USA as a postde with Hodgkin on the DMBC coenzyme.	octoral fellow and worked
B.518	1959-65.	

B.519	1966-70, nd.
B.520, B.521	F.H. Moore 1963-84, nd
	Moore collaborated with Hodgkin on the B12 monoacid and factor V1a.
B.520	1963, 1969-70, 1972-74.
B.521	1979-80, 1983-84, nd.
B.522	B.H. O'Connor 1967-71, 1979, 1984
	O'Connor collaborated with Hodgkin on the B12 monoacid and factor V1a. Includes research report, 1967.
B.523	J.H. Robertson 1952, 1954-58, 1964
	Robertson was one of Hodgkin's early collaborators in vitamin B12 research.
	Includes typescript of 'The structure of vitamin B12 : The X-ray analysis of air-dried crystals of the selenocyanate derivative.' By Hodgkin, Robertson and J.S. Rollett, 1964. Not listed in <i>Bibliog</i> .
B.524-B.531	E.L. Smith 1948-66, nd
	Smith worked on vitamin B12 from 1938 and was one of the first to isolate crystals in 1948, supplying crystals to Hodgkin for x-ray analysis. The correspondence includes reports <i>re</i> vitamin B12 nomenclature.
B.524	1948-49. Includes correspondence <i>re</i> first samples sent to Hodgkin and typescript copy of draft by Smith on 'The presence of cobalt in the anti- pernicious anaemia factor.'
B.525	1950-52.
B.526	1953-54.
B.527	1955.
B.528	1956.

B.529	1957-59. Includes typescript copy of draft by functioning of vitamin B12.'	y Smith on 'Biochemical
B.530	1960-61.	
B.531	1962-64, 1966, nd.	
B.532	A.R. Todd	1952-58, 1964
	Includes cutting from New York Times re Todo solution of the structure of vitamin B12, 1955, publication.	d's announcement of the and correspondence re
B.533-B.536	K.N. Trueblood	1953-63, 1971-72, nd
	Trueblood was an early collaborator on vitamin E where calculations for Hodgkin's work were pro computer.	312 and worked at UCLA, ocessed by an electronic
B.533	1953-54.	
B.534	1955.	
B.535	1956-59.	
B.536	1961-63, 1971-72, nd.	
B.537	K. Venkatesan	1962, 1964-65
	re factor V1a.	
B.538	F. Wagner	1961, 1964, 1967-69
B.539	T.N.M. Waters	1965-69, 1972, 1979, nd
B.540-B.543	J.G. White	1950-59
	White, who worked at Princeton University, collaborators in vitamin B12 research.	was one of the early
B.540	1950-51, 1954.	

B.541	1955. Includes typescript copy of draft by Wh Structure of Vitamin B12', dated August 1955.	ite on 'The Molecular
B.542	1956.	
B.543	1957-59.	
B.544	B.T.M. Willis	1971, 1979-80, 1983
	re the monoacid of vitamin B12.	
B.545	R.B. Woodward	1956, 1964
	Miscellaneous shorter correspondence	
B.546	1950-56.	
B.547	1957. Includes reports and correspondence re vital	min B12 nomenclature.
B.548	1958-59.	
B.549	1960-61.	
B.550	1962-63.	
B.551	1964.	
B.552	1965-69.	
B.553	1970-73.	
B.554	1974-76, 1979. Includes 5pp. typescript by Hodg vitamin B12 investigations, 1975.	gkin re progress of the
B.555	1980-84, nd.	

Drafts for reports and publications 1950-84

Drafts for research reports and publications by Hodgkin and her collaborators mostly kept together by her in box folders.

There is also some related material such as correspondence, notes and data.

B.556-B.567 'Antipernicious anaemia factor.' Contents of box folder so labelled.

B.556 'Crystallographic measurements on the antipernicious anaemia factor' (with M.W. Porter and R.C. Spiller), *Bibliog.* 49, 1950.

7pp. typescript, with manuscript additions and corrections by Hodgkin.

7pp. manuscript draft.

1p. typescript notes re 'crystal morphology'.

B.557 'On the Molecular Structure of Vitamin B12' (in collaboration), latest bibliographical reference 1953. Not listed in *Bibliog.* under this title but may be an earlier version of *Bibliog.* 59.

8pp. typescript.

'The Crystal Structure of Vitamin B12 - Part I' (with J.M. Broomhead), nd. Not listed in *Bibliog.*

2pp. typescript.

'The X-ray crystallographic study of the structure of Vitamin B12', nd. Not listed in *Bibliog*.

2pp. typescript.

Untitled 2pp. manuscript draft.

B.558 'Conversion of Vitamin B12b into Vitamin B12', by V. Petrov et al.

3pp. typescript, latest bibliographical reference 1950.

'A crystalline nucleotide-free degradation product of vitamin B12', by A.R. Todd et al.

5pp. typescript, latest bibliographical reference 1954.

B.559-B.561	Shorter manuscript and typescript drafts, manuscript notes, data and calculations, manuscript notes from the literature. Some pages dated 1948-49. Three folders.
B.562	X-ray photographs and film, 1948; photographs of crystals; figures.
B.563-B.565	Manuscript data, not all by Hodgkin. Includes 'Structure factors', 'B12 CNS', ' $F_{(hko)}$ values', 'Sign determination', 'Asymmetric synthesis', 'okl reflections', 'Density of Factor A', 'Red fragment formula', computer printout. Some pages dated 1952. Three folders.
B.566, B.567	Correspondence 1948-54.
B.566	1948-52. Includes abstract of report by Clara Brink, International Fellow 1951, <i>re</i> x-ray analysis of vitamin B12.
B.567	1953-54, nd.
B.568-B.573	'B12 publications.' Contents of folder so inscribed.
B.568	'On the Molecular Structure of Vitamin B12' (in collaboration), latest bibliographical reference 1953. Not listed in <i>Bibliog</i> .
	6pp. manuscript and typescript draft, with manuscript additions and corrections by Hodgkin and J.H. Robertson.
B.569	'The X-ray Crystallographic Study of the Structure of Vitamin B12', published in French as 'Étude cristallographique par les rayons X de la structure de la vitamine B12', <i>Bibliog.</i> 60, 1955.
	13pp. typescript.
B.570	'The structure of vitamin B12' (with A.W. Johnson and A.R. Todd), <i>Bibliog.</i> 64, 1955.
	22pp. typescript, with manuscript additions and corrections by Hodgkin.
B.571	'The structure of vitamin B12 from X-ray analysis', nd. Not listed in Bibliog.
	2pp. typescript.
	'La radiocristallochimie : formule stereochimique de la vitamine B12', by C. Stora, 1959.
	20pp. typescript, in French.

B.572	Shorter manuscript and typescript drafts, brief manuscript notes and data, manuscript notes from the literature.
B.573	Correspondence re publications 1954-56.
B.574, B.575	Contents of untitled folder.
	Typescript drafts, manuscript notes and data, one page dated 1954. Two folders.
B.576-B.578	Contents of untitled folder.
B.576	'The crystal structure of the hexacarboxylic acid derived from B12 and the molecular structure of the vitamin' (in collaboration), <i>Bibliog.</i> 61, 1955.
	6pp. typescript, with manuscript additions and corrections by Hodgkin.
	'The crystal structure of a cobalt containing degradation product of B12 and its bearing on the molecular structure of the vitamin.'
	7pp. manuscript draft.
B.577	'Some observations on the crystal structure of a chlorine substituted vitamin B12' (with M.J. Kamper), <i>Bibliog.</i> 62, 1955.
	6pp. typescript, with manuscript additions and corrections by Hodgkin.
	'X-ray analytical evidence on the structure of vitamin B12' 'Hamburg paper', latest bibliographical reference 1955. Not listed in <i>Bibliog.</i>
	7pp. typescript.
B.578	Letter from A.W. Johnson, 1955.
	Manuscript notes and data.
B.579-B.583	'The structure of vitamin B12. II. The crystal structure of a hexacarboxylic acid obtained by the degradation of vitamin B12' (in collaboration), <i>Bibliog.</i> 71, 1959.
B.579-B.582	90pp. typescript, with manuscript additions and corrections. Includes tables and appendices. Four folders.

B.583	Manuscript draft of appendix, entitled 'On the intensity anomalies on the hexacarboxylic acid photographs', by A. Vos, with manuscript additions and corrections by Hodgkin; manuscript data.
B.584	'Molecules in crystals', Bibliog. 75, 1961.
	8pp. typescript, incomplete, of Royal Society Tercentenary Lecture, 1960. See also D.126.
B.585-B.590	'B12 coenzyme.' Contents of box folder so labelled.
B.585	'The structure of the 5,6-dimethyl-benzimidazolyl-cobamide coenzyme : an x-ray crystallographic study' (with P.G. Lenhert), <i>Bibliog.</i> 77, 1961.
	8pp. typescript, with manuscript additions and corrections by Hodgkin.
	'The X-ray Crystallographic Investigation of the 5,6-Dimethyl-benzimidazole- cobamide coenzyme' (with P.G. Lenhert), <i>Bibliog.</i> 80, 1961.
	8pp. typescript, with manuscript additions and corrections by Lenhert.
B.586-B.588	Glaxo Laboratories reports sent to Hodgkin by E.L. Smith, 1960-63.
B.586	'Vitamin B12-dependent Metabolic Reactions Part 3.'
	8pp. typescript, dated 26 August 1960.
	'Partial Synthesis of B12 Coenzyme and Analogues. Isolation and Structure of B12 coenzymes.'
	9pp. typescript, dated 15 January 1962.
B.587	'Partial Synthesis of B12 Coenzyme and Analogues Part 2.'
	15pp. typescript, dated 29 June 1962.
B.588	'Partial Synthesis of B12 Coenzyme and Analogues Part 3. A Practical Synthesis of Coenzyme B12.'
	9pp. typescript, dated 29 June 1962.
	'Vitamin B12-dependent Metabolic Reactions.'
	5pp. typescript, dated 1 February 1963.

B.589	Correspondence 1959, 1961.
	X-ray film and photographs, photographs of crystals, sent to Hodgkin, 1959.
B.590	Manuscript notes, manuscript notes from the literature, manuscript data re bond lengths, handdrawn maps. One page dated 1962.
B.591	'The structure of vitamin B12. IV. The x-ray analysis of air-dried crystals of B12' (in collaboration), <i>Bibliog.</i> 81, 1962.
	38pp. typescript, with manuscript additions and corrections, not by Hodgkin.
B.592	'The structure of vitamin B12. V. The structure of the air-dried crystals of vitamin B12' (in collaboration), <i>Bibliog.</i> 82, 1962.
	38pp. typescript, with manuscript additions and corrections, not by Hodgkin.
B.593	'The determination of the crystal structure of factor V1a' (with D. Dale and K. Venkatesan), <i>Bibliog.</i> 85, 1963.
	7pp. typescript.
B.594-B.601	'Wet B12. P. Galen Lenhert.' Contents of folder so inscribed.
B.594, B.595	'The structure of vitamin B12. VI. The structure of crystals of vitamin B12 grown from and immersed in water' (in collaboration), <i>Bibliog.</i> 87, 1964.
	43pp. typescript. Two folders.
B.596, B.597	Computer printouts. Include 'Planes', 'Angles and Distances for Wet B12', 'Fourier Sections', 'Molecular Axes'. Some pages dated 1959-62. Two folders.
B.598-B.600	Manuscript data, not all by Hodgkin. Includes 'Atomic positions', 'B12 cell dimensions', 'calculation of atomic shifts', 'atomic coordinates of wet vitamin B12', 'interatomic distances', 'temperature factor graphs'. Some pages dated 1960-62. Three folders.
B.601	Letter re wet vitamin B12, nd.
	Manuscript notes.

B.602	'Notes on the Molecular Geometry and Chemical Reactivity in Connection with the B12 Vitamins', <i>Bibliog.</i> 88, 1964.
	13pp. typescript, with manuscript additions and corrections by Hodgkin.
	Tables.
B.603, B.604	'Vitamin B12 and the porphyrins', Bibliog. 89, 1964.
B.603	8pp. typescript, with manuscript additions and corrections, not by Hodgkin.
	13pp. typescript, incomplete.
B.604	16pp. manuscript draft.
	Letter re publication.
B.605	'The Structure of the Corrin Nucleus from X-ray Analysis', Bibliog. 94, 1965.
	11pp. typescript, with manuscript additions and corrections by Hodgkin.
B.606	'Vitamin B12', Bibliog. 95, 1966.
	14pp. typescript; legends to figures, references.
B.607-B.609	'Neutron Diffraction of B12.' Contents of folder so inscribed.
	The material relates to a research report on 'A neutron diffraction study of vitamin B12' submitted to the Atomic Energy Research Establishment, Harwell. The correspondence dates the submission of the report to 1966.
B.607	Two 4pp. typescripts, with manuscript additions and corrections; figures; manuscript notes.
B.608, B.609	Correspondence 1960-78.
B.608	1960, 1965-66.
B.609	1967, 1970, 1972, 1978.

B.610	'The crystal and molecular structure of 2,3,7,13,18-hexamethyl-8,12- diethylcorrole' (with H.R. Harrison and O.J.R. Hodder), <i>Bibliog.</i> 118, 1970.
	9pp. typescript.
B.611	'Cobyric acid. A.201 Paper.' Contents of folder so inscribed.
	'The structure of vitamin B12. IX. The crystal structure of cobyric acid, factor V1a' (in collaboration), <i>Bibliog.</i> 122, 1971.
	20pp. typescript, with manuscript additions and corrections by Hodgkin.
	Letter re publication.
B.612-B.615	Contents of untitled folder.
B.612	'The crystal structure of lodo-Co(II)cobyrinic acid heptamethyl ester' (by E.D. Edmond), 1971.
	16pp. typescript, with manuscript additions and corrections by Hodgkin.
B.613, B.614	Shorter manuscript drafts, manuscript notes from the literature, manuscript notes and data. Two folders.
B.615	Correspondence 1968-71, 1973, nd.
B.616	'The crystal structure of lodo-Co(II)cobyrinic acid heptamethyl ester' (with E.D. Edmond),[1971]. Not listed in <i>Bibliog</i> .
	14pp. manuscript and typescript draft, incomplete, with manuscript additions and corrections by Hodgkin; legends to figures.
B.617	'Metal Free Corrin Paper.' Contents of folder so inscribed.
	16pp. untitled typescript draft, incomplete, of 'The crystal structure of lodo-Co(II)cobyrinic acid heptamethyl ester',[1971].
	Manuscript notes, manuscript notes from the literature.

B.618	'Neovitamin B12.' Contents of folder so inscribed.
	'Results and Discussion'.
	10pp. manuscript draft. This forms part of 'Further refinement of the crystal structure of neovitamin B12' (with E.D. Edmond and H. Stoeckli-Evans), <i>Bibliog.</i> 138, 1972.
	'Crystallographic Investigation.'
	2pp. typescript, nd.
	'Neovitamin B12'.
	8pp. manuscript and typescript draft by R. Bonnett et al, nd. Latest bibliographical reference 1970.
	Hodgkin is listed as an author, but her name has been crossed out.
	Letter from R. Mason, 1968.
B.619, B.620	'Corrin bromide.' Contents of folder so inscribed.
B.619	'Crystal and molecular structure of 8,12 diethyl 2,3,7,13,17,18 hexamethylcorrole hydrobromide' (with B.F. Anderson and T.J. Bartczak), <i>Bibliog.</i> 147, 1974.
	9pp. typescript, with manuscript additions and corrections by Hodgkin; tables.
B.620	Correspondence re publication 1972-73. Includes referee's reports.
B.621-B.626	'The Structure of Vitamin B12. The neutron diffraction analysis of the predominant monocarboxylic acid isomer obtained by mild acid hydrolysis of cyanocobalamin' (in collaboration),[?1984]. Not listed in <i>Bibliog.</i> under this title but is probably a version of <i>Bibliog.</i> 169.
B.621-B.624	49pp. typescript. Includes tables, figures. Four folders.
B.625	11pp. typescript, with manuscript additions and corrections by Hodgkin.
B.626	10pp. manuscript draft, incomplete; manuscript legends to figures.

B.627	'The investigation of the structure of the O-monoacid of B12 by X-ray and neutron diffraction',[?1984]. Not listed in <i>Bibliog</i> .
	3pp. typescript, with manuscript additions and corrections by Hodgkin.
	4pp. manuscript draft; manuscript legends to figures.
	Correspondence 1980, 1983.
B.682	'B12 Nomenclature.'
	2pp. typescript, with manuscript additions by Hodgkin, nd.
Notebooks	
B.629	Untitled notebook.
	Manuscript data <i>re</i> 'hko', 'okl reflections', October 1952. 'Structure Factor Comparison - Oxford data, John White's data', August 1955.
B.630	Untitled notebook.
	Manuscript notes and data by J.H. Robertson <i>re</i> 'Interpretation of the wet B12 Fourier' and 'Interpretation of the B12-Se CN (Dry) Fourier', February 1953.
	Manuscript notes and data by Hodgkin <i>re</i> B12 Se CN co-ordinates, June-July 1956.
B.631	Notebook, inscribed 'J. Pickworth' inside front cover.
	Manuscript notes and data, mostly <i>re</i> crystals and analysis of x-ray photographs. A few pages dated between October 1953 and April 1954. There are some loose pages, with manuscript notes and data by Pickworth, Hodgkin and J.H. Robertson.
B.632	Notebook, inscribed 'J. Pickworth I' 'Thesis. Crystallographic Studies on the Structure of Vitamin B12 and Related Compounds' inside front cover.
	Manuscript notes and data, including charts, handdrawn projections and graphs pasted into notebook; loose x-ray photographs. Indexed. A few pages dated between October 1953 and April 1954.

B.633	Notebook, inscribed 'J. Pickworth IV' 'B12. $C_{63} H_{97} O_{20} N_{14} P Co 12 H_2O$ 5:6 dimethylbenzimenazole N- α -D ribofinanoxide (2 or 3)-phosphate' inside front cover.
	Manuscript notes and data <i>re</i> 'first three-dimensional Fourier', 'Three- dimensional Fourier or Cobalt Phases Alone', handdrawn sections, 'Suggested Atomic Positions from 3-dimensional Fourier', 'Cobalt Atom Parameters', 'Patterson Projection', 'Calculated 3 dimensional Patterson', 'Absorption Corrections', 'Anomalous Intensities from Weissenberg Photos <i>re</i> lack of symmetry'. Two pages dated June, July 1954.
B.634	Notebook used for manuscript 'Record of Photographic Data' re DMBC coenzyme, not by Hodgkin, August 1960 - February 1961.
B.635	Notebook, inscribed 'Eric Edmond' Linacre College Co-I Corrin' inside front cover.
	Manuscript notes and data, manuscript notes from the literature, computer printouts, x-ray film, July 1969 - December 1971.
Research folders 194	48-81
	There are a large number of research folders, usually identified on the cover by title. These titles have been used in the catalogue entries where appropriate. The folders may include notes, data, calculations, x-ray films and correspondence.
B.636	'B12 : Chemistry.' Contents of folder so inscribed.
	X-ray film, dated November 1948; manuscript notes and references by J.H. Robertson 1953-54; letter to Robertson from K. Lonsdale, 1954.
B.637	'B12 : Summary.' Contents of folder so inscribed.
	Manuscript notes and data, manuscript notes from the literature, references, mostly by J.H. Robertson. Includes 3pp. notes on 'Vitamin B12', dated '14.10.49', from Cambridge University (unidentified hand) and notes by Robertson from lecture on 'Recent Advances on Vitamins' given by K.A. Folkers, and dated '21.5.51'.
B.638	'B12 (Wet). Intensities from the b-axis.' Contents of folder so inscribed.
	Manuscript data, not by Hodgkin. One page dated February and April 1951.

B.639	Contents of untitled folder.
	'Structure Factors'. Manuscript data, not by Hodgkin, March 1951.
B.640	'B12 : General Summary.' Contents of folder so inscribed.
	Manuscript 'collected B12 data', by J.H. Robertson; typescript 'Notes for Mrs Hodgkin's paper on B12 at Stockholm', May 1951; 'Unit Cell Dimensions of B12 Derivatives'; 'Refractive Indices.'
B.641	'B12 (Wet). Correlations of b and c axis intensities.' Contents of folder so inscribed.
	Manuscript data, not by Hodgkin, May 1951.
B.642-B.644	'F hkl values Oxford and Princeton' 'B12 (dry) "Refinement" of the (hol) projection.' 'Intensity data dry B12.' Contents of folder so inscribed, divided into three for ease of reference.
	Manuscript data, not all by Hodgkin. A few pages dated between June 1951 and November 1955.
B.645	'B12 (Dry). Fourier projection.' Contents of folder so inscribed.
	Handdrawn projection; computer printout data; manuscript data, by J.H. Robertson, dated 1 October 1951.
B.646, B.647	'CN Se-B12. Oscillations : a-axis.' Contents of folder so inscribed, divided into two for ease of reference.
B.646	X-ray films. One dated December 1951.
B.647	Manuscript data, various hands.
B.648	'B12 (dry) : Miscellaneous, from June[?Broomhead]'s Notebooks. F hkl figures.' Contents of folder so inscribed.
	Manuscript notes and data, various hands, <i>re</i> three-dimensional Fourier, Weissenberg photographs, cell dimensions, structure factors; manuscript notes from the literature, latest bibliographical reference 1951.

B.649	'CN Se-B12 (dry). Correlation of the c-axis layer lines.' Contents of folder so inscribed.
	Manuscript notes and data, by J.H. Robertson. One page dated 31 May 1952.
B.650-B.653	'B12 (dry and wet). CN Se-B12 (dry and wet). Absolute scale and temp. factors.' Contents of folder so inscribed, divided into four for ease of reference.
	Manuscript notes, data and calculations, not all by Hodgkin. A few pages dated between May 1952 and November 1955.
B.654	'Absolute Intensity Scale for Anthracene.' Folder so inscribed. Pasted inside front cover is a 'Diary and Summary', by J.H. Robertson, which begins, 'about 1st July[1952] Dorothy suggested use of Anthracene crystals to check Wilson scaling on B12.'
	Manuscript notes and data, by J.H. Robertson, July 1952.
B.655	'Studies of Pleochroism.' Contents of folder so inscribed.
	Manuscript notes, by J.H. Robertson, re crystals of CN Se B12, dry B12, July 1952.
B.656	'Factor A.' Contents of folder so inscribed.
	Manuscript notes, by J.H. Robertson; x-ray film, July 1952-April 1954.
B.657, B.658	'CN Se-B12. c-axis projections.' Contents of folder so inscribed, divided into two for ease of reference.
	Manuscript notes and data, by J.H. Robertson, October 1952 - July 1953; handdrawn contours; computer printouts, October 1952.
B.659	'Benziminazoles.' Contents of folder so inscribed.
	Manuscript notes and data, not by Hodgkin; x-ray film, 1952.
B.660-B.664	Contents of untitled folder, divided into five for ease of reference.
	Computer printout data from the National Physical Laboratory, Teddingtor re CN Se three-dimensional Fourier analysis, February-March 1953.

B.665	'B12-Se CN (dry). Parameters.' Contents of folder so inscribed.
	Manuscript data and handdrawn graphs by J.H. Robertson; manuscript notes by Hodgkin. June 1953, August 1954.
B.666	Contents of untitled folder.
	Manuscript notes and data <i>re</i> recrystallisation of vitamin B12, B12 degradation products; manuscript notes from the literature; manuscript notes and data <i>re</i> penicillin, miroestrol, aureomycin, phalloidine. A few pages dated between October 1953 and March 1956.
B.667, B.668	'B12-Se CN. Results of 3-dim[ensional] F[ourier] calculation.' Contents of folder so inscribed, divided into two for ease of reference.
	Manuscript data and sketches by J.H. Robertson. One page dated November-December 1953.
B.669-B.673	Loose papers found with the preceding.
	Manuscript notes and data, mostly by J. Pickworth, <i>re</i> 'reinvestigation of intensities', 'oscillation photo measurements', 'electron distributions', 'revised co-ordinates for 26 atoms', '1st Fourier. B12 Fragment. Inner Ring', 'B12 Fragment. Additional atomic intensities', 'B12 Fragment'. A few items dated between July 1954 and February 1955. Five folders.
B.674	'B12. Red Fragment.' Contents of folder so inscribed.
	Manuscript notes and data, by J.H. Robertson; x-ray film. One page dated April 1954.
B.675-B.677	Contents of untitled folder, divided into three for ease of reference.
	Manuscript notes, data and drafts, various hands; 4pp. typescript re 'Intensity measurements', 'Selecting atomic positions'. Several items dated between August 1954 and August 1957.
B.678	'Vitamin B12 Fragment. Atomic Parameters.' Contents of folder so inscribed.
	Manuscript data, by J. Pickworth, <i>re</i> 'cobalt atom parameters', 'hol Patterson proj[ection]', 'structure from Fourier 1'; handdrawn figures. One page dated 23 September 1954.

B.679-B.687	'Co-ordinates.' Contents of folder so inscribed, divided into nine for ease of reference.
	Manuscript data, various hands, June 1955-July 1959; computer printout data, April 1958 - April 1960.
B.688, B.689	'B12 (Dry). Intensity Data.' Contents of folder so inscribed, divided into two for ease of reference.
	Manuscript notes and data, one page dated September 1955; letter from J.H. Robertson, dated 3 July 1955; letter from K.N. Trueblood, nd.
B.690, B.691	'B12 (Wet). Harker Sections.' Contents of folder so inscribed, divided into two for ease of reference.
	Manuscript notes and data, various hands; computer printout data. March 1956.
B.692-B.694	'CN Se-B12 (Dry). Collected Intensities.' Contents of folder so inscribed, divided into three for ease of reference.
	Manuscript notes and data, by J.H. Robertson. One page dated April 1957.
B.695-B.699	Loose papers found with preceding.
	Manuscript notes and data, various hands, <i>re</i> 'correlated intensities', 'measured intensities', 'B12 Fragment', 'corrected intensities', a few pages dated March 1957; two Glaxo Laboratories reports, sent to Hodgkin by E.L. Smith, <i>re</i> 'Extension of Project on Antimetabolites of Vitamin B12' and 'Vitamin B12-dependent Metabolic Reactions', 1961. Five folders.
B.700	'CN Se-B12. C-axis oscillation photos.' Contents of folder so inscribed.
	Manuscript notes and data, various hands. One page dated April 1957.
B.701-B.707	'Black cobalt correspondence'. Contents of folder so inscribed.
B.701	Correspondence April 1957 - June 1964, nd.
B.702-B.704	'The crystal structure of black nitrosyl pentammine cobalt dichloride' (with D. Dale), <i>Bibliog.</i> 91, 1965.
B.702	9pp. typescript; 8pp. manuscript and typescript draft.

B.703	12pp. manuscript draft.
B.704	Tables.
	Typescript pages, with corrections.
B.705, B.706	Handdrawn and computer generated Fourier maps, computer printout data and structure factors, <i>re</i> black cobalt, nd. Two folders.
B.707	Manuscript notes and data ?re Fourier analysis of black cobalt, nd.
B.708	Contents of untitled folder.
	Manuscript notes, data and calculations, not all by Hodgkin. Includes 'Weights of peaks in Patterson for $P2_12_12_1$ '; computer printout data <i>re</i> airdried B12; letter to K.N. Trueblood from J.G. White, May 1957; letter to Hodgkin from J.G. White, February 1959.
B.709	'B12 (dry). To find the Co position. Comparison of F's (and Fouriers) for 4 different Co positions. John White's work?' Contents of folder so inscribed.
	Computer printout data re 'Air Dried B12. Param. set for SF5 23 Oct 1957.' Photograph of 'hko projection 2 Phases from Co alone White's data.'
B.710	Contents of untitled folder.
	Manuscript data re 'water molecules', 'B12 Se CN water molecules', 'Amide groups, Spring 1959'.
B.711	'DMBC Coenzyme.' Contents of folder so inscribed.
	Computer printout data, July, October 1959; manuscript data, [by D. Dale], re 'intensities observed', 'directives tape', 'comparison between Vitamin B12 and DMBC coenzyme', October 1959; photograph of crystals.
B.712-B.715	'DMBC Coenzyme Intensity Data.' Contents of folder so inscribed, divided into four for ease of reference.
	Manuscript data, not by Hodgkin, [1960] - August 1961.
B.716	'DMBC Coenzyme F ² On A Relative Scale.' Contents of folder so inscribed.
	Computer printout data, March 1961.
B.717-B.719	'DMBC Raw Intensities.' Contents of folder so inscribed, divided into three for ease of reference.
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	Computer printout data, [March 1961].
B.720-B.723	'DMBC Coenzyme Intensity Ratios and Intensity Correlation.' Contents of folder so inscribed, divided into four for ease of reference.
	Computer printout data, March-August 1961.
B.724	'DMBC Coenzyme Sharpened F ² .' Contents of folder so inscribed.
	Computer printout data, 14 April 1961.
B.725	'First DMBC Struc[ture] Factor Calculation.' Contents of folder so inscribed.
	Computer printout data, 18 April 1961.
B.726, B.727	'DMBC Coenzyme misc. distance-angles calcs. and molecular axes calcs.' Contents of folder so inscribed, divided into two for ease of reference.
	Computer printout data, 9 June 1961 - July 1963.
B.728	'Second DMBC Structure Factor Calculation and distance-angles from SF Coordinates.' Contents of folder so inscribed.
	Computer printout data, 14 June 1961.
B.729	'DMBC Misc. Materials.' Contents of folder so inscribed.
	Computer printout data re 'adenine angles and distances', 'third DMBC structure factor calculation June 30 1961', 'DMBC Coenzyme Fourier Peak Shapes July 6 1961'.
B.730, B.731	'DMBC 3rd Structure Factor Calc. and Distance-Angles from SF Coordinates.' Contents of folder so inscribed, divided into two for ease of reference.
	Computer printout data, 3-5 July 1961; handdrawn diagrams showing distance angles.
B.732, B.733	'DMBC 4th Structure Factor Calculation and distance-angles from Si coordinates.' Contents of folder so inscribed, divided into two for ease o reference.
	Computer printout data, 11-12 July 1961.

B.734, B.735	'DMBC 5th Structure Factor Calculation and distance-angles from si coordinates.' Contents of folder so inscribed, divided into two for ease of
	reference.

Computer printout data, 25-30 July 1961; handdrawn 'plots of scalefactor analysis'.

B.736-B.739 'DMBC Intensities Unscaled But Sorted For Intensity Ratios.' Contents of folder so inscribed, divided into four for ease of reference.

Computer printout data, July-August 1961.

B.740, B.741 'Sixth DMBC Structure Factor Calculation.' Contents of folder so inscribed, divided into two for ease of reference.

Computer printout data, handdrawn diagrams from the data, 9-14 August 1961.

B.742 'DMBC.' Contents of folder so inscribed.

Computer printout data re 'DMBC distance angles', 25 October 1961; manuscript data, not by Hodgkin, re distance-angle calculations.

B.743, B.744 'Seventh DMBC Structure Factor Calculation (Amide Groups Included).' Contents of folder so inscribed, divided into two for ease of reference.

Computer printout data, handdrawn diagrams from the data, 11-23 July 1962.

B.745, B.746 'The DMBC Structure Factor Calculation (Amide Groups C₃₇-N₄₀ and C₄₉-N₅₂ Omitted). Fourier For Amide Groups and Cobalt.' Contents of folder so inscribed, divided into two for ease of reference.

Computer printout data, computer generated Fourier sections, 14-15 July 1962.

B.747-B.750 'DMBC Hydrogen Atoms.' Contents of folder so inscribed, divided into four for ease of reference.

Computer printout data, manuscript data, not by Hodgkin, *re* structure factor calculations, atomic coordinates, 'DMBC methyl groups rotated to improve inter atomic distances', 'H atoms trial calculation', 24 July - 6 August 1962.

from CE

B.751	'DMBC Coenzyme Constants and Directives.' Contents of folder so inscribed.
	Computer printout data, 14-20 August 1962.
B.752, B.753	'Adenosine removed. Fractional water removed.' Contents of folder so inscribed, divided into two for ease of reference.
	Computer printout data re structure factors, 17-20 August 1962.
B.754	'Final DMBC Dist-Angles, and Molecular Axes, also 7th and 8th coordinate shifts.' Contents of folder so inscribed.
	Computer printout data, 29-30 August 1962.
B.755-B.758	Contents of untitled folder, divided into four for ease of reference.
B.755	Letter from B.H. O'Connor, of the University of Western Australia, <i>re</i> neutron refinement of the B12 monoacid structure, 1967; photocopied manuscript notes and data, by O'Connor; letter from O'Connor, 1969.
B.756	Photographs of crystals.
B.757, B.758	Handdrawn 'Sections from Fourier UWA/F9.' Two folders.
B.759, B.760	'Papers and correspondence o monoacid.' Contents of folder so inscribed, divided into two for ease of reference.
B.759	Correspondence 1967, 1976-79, nd.
B.760	Manuscript notes and data, typescript data, handdrawn sections. One page dated 1981.
B.761	Contents of untitled folder.
	Miscellaneous correspondence 1968, 1973.
	Manuscript figures, 1969, manuscript notes from the literature.
	Manuscript notes re 'Eschenmoser's H-Corrin Hydrochloride', not by Hodgkin.

B.762, B.763	'Corroles.' Contents of folder so labelled, divided into two for ease of reference.
B.762	Correspondence 1969-70, 1972.
B.763	Manuscript data, not all by Hodgkin.
B.764-B.792	Undated research folders.
B.764, B.765	'NC Se-B12 (Dry). Co and Se Structure Amplitudes.' Contents of folder so inscribed, divided into two for ease of reference.
	Manuscript data, by J.H. Robertson.
B.766	'NC Se-B12 (Dry). Interpretation of the Patterson.' Contents of folder so inscribed.
	Manuscript data, by J.H. Robertson; handdrawn Harker Section.
B.767	'CN Se-B12 : b-axis intensities. (Weiss).' Contents of folder so inscribed.
	Manuscript notes and data, by J.H. Robertson.
B.768-B.772	'B12-Se CN (dry). F-calculations.' Contents of folder so inscribed, divided into five for ease of reference.
	Manuscript data, by J.H. Robertson.
B.773	'B12-Se CN (dry). Fourier 2.' Contents of folder so inscribed.
	Manuscript notes and data, various hands.
B.774	'B12-CN Se. Reciprocal Lattice Nets.' Contents of folder so inscribed.
	Manuscript notes, data and graphs, by J.H. Robertson.
B.775	'CN Se-B12 (dry). a-axis Weissenberg Intensity Measurements.' Contents of folder so inscribed.
	Manuscript notes and data, by J.H. Robertson.

B.776	'B12 (Wet). Harker sections at $x=\frac{1}{2}$ $y=\frac{1}{2}$ $z=\frac{1}{2}$.' Contents of folder so inscribed.
	Manuscript notes and data, various hands; computer printout data.
B.777	'CN Se-B12 (dry). C-axis Weissenberg Intensities. Measurements and Corrections.' Contents of folder so inscribed.
	Manuscript data, by J.H. Robertson.
B.778	'3-dimensional Patterson (const. x). B12 fragment.' Contents of envelope so inscribed, found with the preceding.
	Handdrawn Patterson sections.
B.779	'B12. Spectroscopy.' Contents of folder so inscribed.
	Manuscript notes, graphs and data, by Hodgkin and J.H. Robertson.
B.780, B.781	'Fourier 2.' Contents of folder so inscribed, divided into two for ease of reference.
	Photographs of projections, each bearing manuscript inscription.
B.782	'Princeton drawings.' Contents of folder so inscribed.
	Figures, some with manuscript annotations.
B.783	'B12 (Wet). Attempt to place (hol) values on Abs Scale, by Wilson Method.' Contents of folder so inscribed.
	Manuscript data, various hands.
B.784	'B12 (Wet). Intensities from the c-axis.' Contents of folder so inscribed.
	Manuscript data, various hands.
B.785, B.786	'Wet B12. Collected Intensity Data. F ² values.' Contents of folder so inscribed, divided into two for ease of reference.
	Manuscript data, by J.H. Robertson.

B.787-B.789	'Wet B12. Structure Factors.' Contents of folder so inscribed, divided into three for ease of reference.
	Manuscript data, by J.H. Robertson.
B.790	'B12 (dry). Intensity data and cell dimensions.' Contents of folder so inscribed.
	Manuscript notes and data, not by Hodgkin.
B.791	'Graphs and reciprocal lattices. Dry dichlor. B12. Comparison of F's for dry B12 Oxford and Princeton and dry dichlor. B12.' Contents of folder so inscribed.
	Manuscript data, graphs, various hands.
B.792	'B12 (Wet). a-axis intensities.' Contents of folder so inscribed.
	Manuscript data, by J.H. Robertson.
Data	
	This consists of handwritten and computer generated data, in the form of tables, maps, sections.
B.793	'CN Se-B12 (dry). Fourier Projection (hko). Signs from Co and Se. Jan. '52.' Handdrawn, by J.H. Robertson. One roll.
B.794-B.805	Loose material found together and divided into twelve folders for ease of reference. Presented in order found.
	Manuscript data, various hands, computer printout data, including 'Structure Factor Calculations', 'Absolute F ² values. Vit. B12 Fragment', 'Observed F Values', 'Sharpened F ² Values', 'Sin Θ Values', 'Maximum Values', 'hko projection', 'proposed structure', 'values of products of cos and sin values 2π hx, 2π ky, 2π lz and calculations of A _{oks} and B _{oks} '. A few pages dated February 1953, April-December 1954, August 1956.
B.806-B.811	Loose material found together and divided into six folders for ease of reference. Presented in order found.
	Manuscript data and handdrawn graphs, various hands, computer printout data, including 'Vitamin B12 Fragment. 2nd Fourier', 'Co Structure Factor Calculation', 'measured intensities', 'corrected intensities', 'correlated absolute F ² values'. A few pages dated 1954.

B.812	'Sections at constant Z. B12 Patterson -3 dimensional. Dry.' Handdrawn, various hands, [?1950s]. One roll.
B.813	'CN Se-B12 (dry). Fourier-Proj (hko).' Handdrawn, not by Hodgkin, [?1950s]. One roll.
B.814	'B12 (Wet) hko Fourier Projection. Signs from Co only.' Handdrawn, by J.H. Robertson, [?1950s]. One roll.
B.815	'B12-Se CN. V.C. Diagram, based on Co and Se positions.' Handdrawn, [?1950s]. One roll.
B.816	'Wet B12 P3 x=0.' Handdrawn map, [?1950s]. One roll.
B.817	'Molecular Axes. R. Sparks. 6.5.60.' Handdrawn, with annotation ?by K.N. Trueblood dated 29 August 1960. One roll.
B.818	Computer generated sections from three-dimensional 'DMBC Difference Fourier. Phases of 5th Structure Factor Calculation.' 25 July 1961. One roll.
B.819	Handdrawn 'I cobyric ester' sections, 1974. One roll.
B.820-B.822	Loose papers re B12 monoacid, found together and divided into three folders for ease of reference.
	Manuscript data, brief manuscript notes, computer printout data; handdrawn neutron Fourier maps, including 'plot from first neutron diffraction positions of last side chain in w.[?ater]', 'B12 monoacid from neutron map by F.H. Moore', 'old positions', 'neutron diff. diff. map'. A few pages dated July 1979 - November 1980.
B.823	Contents of untitled folder.
	Handdrawn 'O monocarboxylic acid neutron scattering', 'plot'. September 1981, September 1983.
B.824, B.825	Computer generated sections from 'B12 Difference Map from 11.92% Coords.' [?1980s]. Two folders.
B.826	'B12 Patterson sections.' Contents of folder so inscribed.
	Handdrawn sections, nd.

Miscellaneous

B.827, B.828	Loose notes and data. Two folders.	
NITROSO COMPO	DUNDS . 1949-70)
	Most of Hodgkin's work on the nitroso compounds was directed towards the solution of the structure of nitrosobenzene. This was finally achieved in 1969 by L. Brehm and O.J.R. Hodder.	5
B.829	Contents of untitled folder.	
	Letter, 1949; manuscript data, not by Hodgkin.	
B.830, B.831	'The crystal structure of the dimer of para-bromonitrosobenzene' (with C Darwin), <i>Bibliog</i> . 51, 1950.	
B.830	Two 4pp. typescripts.	
	Correspondence, nd.	
B.831	Typescript data.	
	Photographs of maps.	
B.832	'Crystal Structure Determination of the trans Dimer of Nitroso-Methane (with H. Dietrich), latest bibliographical reference 1955. Not listed i Bibliog.	e' in
	14pp. typescript. Includes tables, figures.	
B.833-B.835	'Trans-nitrosomethane dimer'. Contents of folder so inscribed.	
B.833	'Crystal structure determination of the trans dimer of 1-nitroso-2-methy propane/nitroso-iso-butane' (with H. Dietrich), latest bibliographic reference 1957. Not listed in <i>Bibliog</i> .	/l- al
	15pp. typescript; 2pp. manuscript tables.	

B.834	'The crystal structure of the trans dimer of nitroso methane' (with H. Dietrich), latest bibliographical reference 1958. Not listed in <i>Bibliog</i> .
	9pp. typescript, with manuscript additions and corrections by Hodgkin; 1p. manuscript draft.
B.835	Manuscript notes and data.
B.836-B.842	Contents of untitled folder.
B.836, B.837	'The crystal structure of the trans dimer of nitroso-iso-butane' (with H. Dietrich), latest bibliographical reference 1958. Not listed in <i>Bibliog</i> .
B.836	11pp. typescript; 11pp. typescript, with manuscript additions and corrections by Hodgkin.
B.837	Tables.
B.838	Computer printout data re 'Nitrosomethane Transdimer', 1959.
B.839	'The crystal structure of the trans dimer of nitroso methane' (with H. Dietrich), nd. Not listed in <i>Bibliog.</i>
	5pp. manuscript draft.
	'The crystal structure determination of the trans dimer of nitroso-methane', by H. Dietrich.
	5pp. manuscript draft by Hodgkin.
B.840	Shorter manuscript drafts including 'X-ray crystallographic measurements on trans 1:4 dichloro 1:4 dinitroso cyclohexane'.
B.841, B.842	Manuscript data, not by Hodgkin. Includes 'Okl Intensity Data', 'Atomic shift from difference Fourier', 'Sharpened F ² values', nd. Two folders.
B.843, B.846	'Azoxy Fenzene. Nitroso benzene.' Contents of box so labelled.
B.843	Untitled draft re the trans dimer of nitroso-iso-butane. Latest bibliographical reference 1959.
	11pp. typescript, with manuscript additions and corrections by Hodgkin and [?].

B.844	Letter, 1959; 8pp. typescript of 4-4 ¹ -dibromoazobenzene crystal data.
B.845, B.846	Manuscript notes, data; computer printout. Nd. Two folders.
B.847	'Nitrosobenzene'. Contents of folder so inscribed.
	Correspondence 1967, 1969-70; brief manuscript notes, not by Hodgkin, on the crystal structure of nitrosobenzene.
PURPUROGALLIN	1950-52
	Purpurogallin is an oxidation product of pyrogallol and work on its structure determination began in Oxford in 1948.
B.848-B.851	'Purpurogallin.' Contents of box folder so labelled.
B.848	'First Report of the work done by Clara Brink in the Laboratory of Chemical Crystallography in Oxford during her holding of the Ohio State International Fellowship 1950-51.'
	4pp. typescript.
B.849-B.851	Manuscript notes and data, handdrawn maps, not all by Hodgkin. A few pages dated 1951-52. Three folders.
LUMISTEROL	1952
	Lumisterol was selected for study as one of the group of compounds found during the photochemical transformation of ergosterol to calciferol.
B.852, B.853	'Lumisterol'. Contents of box folder so labelled.
	'A crystallographic examination of the structure of lumisterol' (with D. Sayre), <i>Bibliog.</i> 56, 1952.
B.852	14pp. typescript, with manuscript additions and corrections by Hodgkin and ?Sayre.
B.853	11pp. typescript.
	1p. manuscript draft; manuscript notes and data.

	λ -ray analysis was used to determine the structure of the plant oestrogen, miroestrol, in the form of its monobromo-derivative.
B.854-B.869	'Bromomiroestrol. Miroestrol'. Contents of box so labelled.
B.854-B.859	'Miroestrol'. Contents of folder so inscribed.
B.854	'X-ray Crystallographic Determination of the Structure of Bromomiroestrol' (with J.S. Rollett and N.E. Taylor), <i>Bibliog.</i> 73, 1960.
	11pp. typescript, incomplete, with manuscript additions and corrections by Hodgkin; letter attached, dated 19 May 1959, from N.E. Taylor.
	7pp. typescript.
	Both versions differ substantially from the published paper.
B.855-B.857	Correspondence, mostly with The National Institute for Research in Dairying (G.S. Pope) and the National Research Development Corporation (J.C. Cain), <i>re</i> miroestrol, 1956-60.
B.855	1956-57.
B.856	1958.
B.857	1959-60, nd.
B.858	Minutes of meetings, attended by Hodgkin, held at the NRDC about work on miroestrol. 31 July 1958, 11 September 1958.
B.859	Shorter manuscript notes and drafts re miroestrol, bromomiroestrol, nd.
B.860	Correspondence 1958-59, 1961, 1970-71.
B.861-B.866	'Bromomiroestrol'. Contents of folder so inscribed.

B.861-B.863 'The x-ray crystallographic determination of the structure of bromomiroestrol' (with J.S. Rollett and N.E. Taylor), *Bibliog.* 73, 1960.

B.861	22pp. typescript, with tables.
B.862	18pp. typescript and manuscript draft, with manuscript additions and corrections by Hodgkin.
B.863	17pp. typescript and manuscript draft, with manuscript additions and corrections by Hodgkin.
B.864	Correspondence 1959-60.
	Shorter typescript and manuscript drafts re bromomiroestrol, monobromomiroestrol.
B.865	Typescript notes and data <i>re</i> bond lengths and deviations, bromomiroestrol positions, nd.
B.866	Manuscript data and tables, nd.
B.867	'Comparison of observed and calculated structure amplitudes'.
	Table.
	Manuscript notes and data, nd.
B.868, B.869	X-ray films, bromomiroestrol, nd. Two folders.
B.870	'The x-ray crystallographic determination of the structure of bromomiroestrol' (with J.S. Rollett and N.E. Taylor), <i>Bibliog.</i> 73, 1960.
	27pp. typescript, with manuscript additions and corrections by Hodgkin and [?Taylor].
FERROVERDIN	1956-73
B.871	'Ferroverdin. Fourier projection along b _H -100 as zero electron density.' 1956. One roll.
B.872, B.873	'Ferroverdin'. Contents of folder so inscribed.
B.872	Correspondence 1969-70, 1973. Includes correspondence re publications on the structure of ferroverdin (<i>Bibliog.</i> 111, <i>Bibliog.</i> 142, <i>Bibliog.</i> 143).

B.873	Manuscript notes and data, manuscript notes from the literature.		
B.874, B.875	Handdrawn three-dimensional Fourier map. Incomplete. Two folders.		
AGRAVIDE	1957		
B.876	'Molecular Weight of Lagosin and Agravide'.		
	1p. typescript, dated 2 May 1957. Hodgkin's name appears at the bottom of the original typescript but has been crossed out and replaced by that of N.E. White.		
	'Agravide'.		
	1p. typescript, nd.		
	'Agravide cell dimensions'.		
	Manuscript data, not by Hodgkin, nd.		
	X-ray films, nd.		
PILOTY COMPOUND	S 1957-64		
	In 1902 O. Piloty isolated two compounds of the composition 1:4 dichloro- $1^1:4^1$ -dinitrosocyclohexane which he formulated as cis and trans isomers. Hodgkin and her collaborators began the x-ray analysis of both isomers in the 1950s, although no paper was published until 1982 (<i>Bibliog.</i> 164).		
B.877-B.880	Contents of untitled folder.		
B.877	Correspondence 1957, 1959-60.		
B.878	Manuscript and typescript drafts, nd.		
B.879	Manuscript notes and data, nd. Include 1p. headed 'cis 1:4 dichloro 1 ¹ 4 ¹ dinitroso cyclohexane'.		
B.880	Handdrawn figures, maps, various hands.		
B.881-B.883	'CC/52 Cis Piloty Compound'. Contents of folder so inscribed.		

B.881	'Cis Piloty Compound'.
	3pp. manuscript draft, not by Hodgkin, nd.
	'List of calculated and observed structure factors'.
	Manuscript and typescript data, nd.
	Letter, 1961.
B.882, B.883	Computer printouts <i>re</i> Fourier analysis of cis Piloty compound, nd. Two folders.
B.884-B.887	'CC/52 Trans Piloty Compound'. Contents of folder so inscribed.
	Manuscript notes, manuscript and typescript data, computer printouts, handdrawn Fourier projection and difference map, <i>re</i> structure factors, Fourier synthesis, difference synthesis of trans-1:4 dichloro- $1^{1}4^{1}$ -dinitrosocyclohexane, 1961. Four folders.
B.888	Contents of untitled folder.
	Handdrawn Fourier projection and difference map re trans Piloty compound, 1961.
	'A note on the Piloty compounds : cis and trans isomers of 1:4 dichloro- $1^{1}4^{1}$ -dinitrosocyclohexane' (in collaboration), latest bibliographical reference 1963. Not listed in <i>Bibliog</i> .
	10pp. manuscript draft.
B.889-B.891	'Cis Piloty Compound'. Contents of folder so inscribed.
	Manuscript notes and data; handdrawn Fourier projections and difference maps; computer printouts. 1961, 1964. Three folders.
B.892	Contents of untitled folder.
	'A Note on the Piloty Compounds : cis and trans isomers of 1:4 dichloro- 1 ¹ :4 ¹ -dinitrosocyclohexane' (in collaboration), latest bibliographical reference 1963. Not listed in <i>Bibliog.</i>
	8pp. typescript.
B.893-B.895	'Piloty'. Contents of folder so inscribed.
	Manuscript data, includes 'Bond lengths', 'hol Intensity Data'; x-ray film; handdrawn Patterson projections, Wilson plots. Nd. Three folders.

B.896	Notebook.			
	Inscribed 'Terrence J. Harper' inside front cover and 'cis 1-4 dichloro-1-4 dinitroso cyclohexane' on first page.			
SPORIDESMIN	1959			
	Crystals of sporidesmin, a substance from the fungus <i>Sporidesmium</i> bakeri, were given to Hodgkin for x-ray analysis by R.L.M. Synge.			
B.897, B.898	'Sporidesmin.' Contents of folder so inscribed.			
B.897	Manuscript notes, data, mostly not by Hodgkin, x-ray films. Includes 'Inactivated Sheep Poison from Fungus', 'Dick Synge's crystals', 'Facial Eczema Toxin'. March-November 1959.			
B.898	1p. typescript draft, probably by Hodgkin, untitled, dated 8 May 1959.			
	Letters from R.L.M. Synge, August-October 1959.			
	Reprint 1959.			
CEPHALOSPORIN C	1959-73			
	Cephalosporin C, an antibiotic related to the penicillins, was first isolated by G.G.F. Newton and E.P. Abraham in 1955. Soon after this Hodgkin made the first crystallographic measurements on the sodium salt of cephalosporin C.			
B.899-B.902	'Cephalosporin C correspondence with National Research and Development Corporation'. Contents of folder so inscribed.			
	Correspondence re funding, reports 1959-66.			
B.899	1959.			
B.900	1960-61.			
B.901	1962.			
B.902	1963, 1965-66.			

B.903-B.909	'Cephalosporin C'. Contents of box so labelled.
B.903-B.905	Patent specifications on cephalosporin C, 1960-61. Three folders.
	Include provisional and complete specifications, schedules of patents and patent applications.
B.906-B.909	Research reports for the NRDC, 1960-63. Four folders.
	Include typescript copy of 'The x-ray analysis of the structure of cephalosporin C', by Hodgkin and E.N. Maslen, <i>Bibliog.</i> 76, 1961.
B.910	'The x-ray analysis of the structure of cephalosporin C', by Hodgkin and E.N. Maslen, <i>Bibliog.</i> 76, 1961.
	18pp. typescript, with manuscript additions and corrections by Hodgkin.
	2pp. manuscript data.
B.911-B.916	'N.R.D.C. Reports on Cephalosporin C. Patents'. Contents of box so labelled.
B.911-B.913	Patent specifications on cephalosporin C, 1960-64. Three folders.
	Include provisional and complete specifications, schedule of patents and patent applications.
B.914-B.916	Research reports for the NRDC, 1961-64. Three folders.
B.917-B.925	'Cephalosporin C'. Contents of folder so inscribed.
	The contents relate to the paper 'Crystal and molecular structure of a synthetic compound related to the penicillins and cephalosporins, 3-benzyl 7-t-butyl 2,2-dimethyl-8-oxo-4-thia-1 aza- $6\alpha H$ -bicyclo[4.2.0] octane-3 β , 7 α -dicarboxylate' (with B.F. Anderson and K. Vijayan), <i>Bibliog.</i> 141, 1973.
B.917-B.920	Manuscript and typescript drafts. Four folders.
B.921	Correspondence 1969, 1972.
B 922	Manuscript notes and data, nd.

B.923	'V. Kalyani. Cephalosporin Final Co-ordinates and Mean Plane Calculations'.				
	Manuscript and typescript data, nd.				
B.924	13pp. typescript, incomplete and untitled, <i>re</i> 'the irradiation of 5-acetyl-3 <i>H</i> -pyrazole(I)', with manuscript additions and corrections by Hodgkin, nd.				
B.925	'Cephalosporin C'.				
	28pp. typescript, not by Hodgkin, nd.				
B.926, B.927	Envelopes of x-ray films, nd.				
B.926	'[001] Preliminary Weissenberg Oscillation'.				
	'[100] Preliminary Weissenbergs Oscillation Photos'.				
B.927	'okl new photos'.				
	'1kl new data'.				
	'Degradation of Ceph C 5kl'.				
B.928	1p. typescript re molecular weight of cephalosporin methyl ester, nd.				
	1p. manuscript notes, nd.				
FORMAZAN	1960				
B.929	1p. manuscript notes from the literature, 1960.				
	Manuscript data.				
	Letter from J.M. Robertson, 1960.				
	13pp. typescript, untitled, [?by D. Dale]; computer printout of 'Niformazan Final Distances', nd.				

SUPRASTEROL II	1961-63
	Suprasterol II is one of at least ten isomers ultimately produced by the ultraviolet irradiation of ergosterol. The molecular structure of suprasterol II was investigated through the x-ray analysis of a derivative supplied by J.W. Cornforth.
B.930, B.931	'Suprasterol'. Contents of box so labelled.
B.930	'The crystal structure of suprasterol II' (with C.P. Saunderson), <i>Bibliog.</i> 78, 1961.
	6pp. typescript, with manuscript additions and corrections by Hodgkin.
	5pp. typescript.
B.931	'The crystal and molecular structure of suprasteryl II 4-iodo-5 nitrobenzoate' (with C.P. Saunderson), latest bibliographical reference 1963. Not listed in <i>Bibliog</i> .
	12pp. typescript.
	1p. manuscript notes, not by Hodgkin.
THIOSTREPTON	1965-72
	The antibiotic thiostrepton was first isolated in 1954. A great part of its chemical structure was determined by Hodgkin and her collaborators by x-ray crystallographic techniques, the results of which were published in 1970 (<i>Bibliog.</i> 113).
B.932-B.937	'Thiostrepton'. Contents of folder so inscribed.
B.932	'Consolidated report of work done on Thiostrepton during the period November 1965 to February 1967 by Dr. M.A. Viswamitra, at the Chemica Crystallography Laboratory, Oxford'.
	2pp. typescript; table of crystal data.
	'Thiostrepton (monoclinic form)'.
	4pp. typescript, by B.F. Anderson, dated 20 November 1968.

B.933	'The structure of thiostrepton' (with B.F. Anderson and M.A. Viswamitra), <i>Bibliog.</i> 113, 1970.			
	'First Draft'. 7pp. typescript, with manuscript additions and corrections by Hodgkin; 7pp. typescript, with abstract.			
	3pp. manuscript draft, not by Hodgkin.			
B.934-B.936	Correspondence 1965-72.			
B.934	1965-68.			
B.935	1969.			
B.936	1970-72.			
B.937	Manuscript notes and handdrawn projections, nd.			
	'A brief summary of information on the chemistry of thiostrepton'.			
	2pp. typescript notes, nd.			
B.938	Handdrawn Pattersons and difference maps, probably for future publication, nd. One roll.			
MISCELLANEOUS				
	B.939-B.957 Research folders			
	B.958-B.974 Notebooks and binders			
	B.975-B.982 Notes and data			
Research folders				
B.939-B.945	'Wolfenden Problems.' Contents of folder so inscribed.			
B.939, B.940	'XII. Crystal Structure'.			
B.939	Proof of chapter by Hodgkin. Latest bibliographical reference 1935.			

B.940	Typescript and manuscript draft of corrections to be made, nd.[?1950s].
B.941	'The crystal structure of pentaborane. B5H9', nd. Latest bibliographical reference 1952.
	Two 3pp. typescripts of problems.
	'The Structure of Pentaborane', nd. Bibliographical reference 1952.
	Two 3pp. typescripts of problems.
	2pp. typescript of problems.
B.942	Shorter manuscript drafts re pentaborane.
B.943, B.944	Manuscript notes and data, not all by Hodgkin, <i>re</i> Patterson analysis of pentaborane. Two folders.
B.945	Computer printouts re 'DH Problem', 'Two-Dimensional Projection', 1962.
B.946	Contents of untitled folder.
	'The Crystallographic Investigation of Complex Organic Compounds', latest bibliographical reference 1945. Not listed in <i>Bibliog</i> .
	8pp. typescript and manuscript draft, with manuscript additions and corrections by Hodgkin.
B.947, B.948	Contents of untitled folder.
	'X-ray crystallographic studies of compounds of biochemical interest', Bibliog. 45, 1948.
	44pp. typescript, divided into two for ease of reference.
B.949, B.950	'Hg ₂ (NO ₃) ₂ .2H ₂ O.' Contents of folder so inscribed.
	Fourier projections, printouts, manuscript data, not by Hodgkin, for Patterson analysis, 1957-59. Two folders.
B.951	'Fourier Peak Heights and Shapes.' Contents of folder so inscribed.
	Computer printouts 1959, 1962.

	O the stand we will be a failed an			
B.952	Contents of untitled folder.			
	'Report on specimens received from Dr. F.I.G. Rawlins, The National Gallery, sent by Dr. Iv A.M. de Wild.'			
	3pp. typescript; 1p. typescript data.			
	See also H.194.			
B.953	'The error fourier file'. Contents of folder so inscribed.			
	Computer printouts, nd.			
B.954-B.957	Contents of untitled folder.			
	Tables of manuscript data, nd. Four folders.			
B.954	'Table of 1000 cos $2\pi nx$ '.			
B.955	'Table of 1000 cos 2πnx'.			
B.956	'1000 sin 2πnx'.			
B.957	'1000 sin 2πnx'.			
Notebooks and binde	ers			
B.958, B.959	Contents of untitled binder divided into two for ease of reference.			
	Manuscript notes, data, sketches re crystals and ?crystallisation of cholesterol, tribomobarbaloin, thiophthene, spartein sulphate, azoxy benzene, tetramethyl haematoporphyrin, 1933. Some notes by J.D. Bernal.			
B.960-B.962	Contents of untitled binder divided into three folders for ease of reference.			
	Manuscript notes, data, sketches <i>re</i> crystals and crystallisation. Very miscellaneous, 1935-37.			
B.963-B.965	Contents of untitled binder divided into three folders for ease of reference.			
	Manuscript notes, data, sketches <i>re</i> crystals and crystallisation of ferritin, insulin, penicillin, calciferol, sterols, 1945-50.			

B.966-B.968	Contents of untitled binder, divided into three for ease of reference.
	Manuscript notes, data, sketches, manuscript notes from the literature re crystals and crystallisation of vitamin B12, ferroverdin, cephalosporin,
	penicillin, insulin, gramicidin, 1946-66.
B.969	Exercise book.
	Manuscript data. One page dated 'June 18 th 1946'.
B.970	Notebook.
	Manuscript notes, manuscript notes from the literature, very miscellaneous. A few loose items, including x-ray film from study of acoric acid. One page dated 1962; latest bibliographical reference 1965.
B.971	Notebook.
	Manuscript notes and data, manuscript notes from the literature <i>re</i> vitamin B12, insulin, nd. Latest bibliographical reference 1965.
B.972	'Ergometrine'. Exercise book so inscribed.
	Manuscript data re ergometrine methiodide and lactoglobulin, nd.
B.973	Exercise book.
	Manuscript data [for Patterson analysis], nd.
B.974	Exercise book.
	Manuscript data, nd.
Notes and data	
B.975-B.978	Manuscript notes, manuscript notes from the literature, 1937-[?1980s]. Four folders.
B.979, B.980	Manuscript and typescript data, mostly unidentified. Two folders.
B.981	Unidentified handdrawn sections, nd. One roll.

B.982	Unidentified ?Fourier refinement, nd.		
LARGE FORMAT			
	Maps, projections etc. kept by Hodgkin (with the exception of B.990) in portfolios.		
B.983	'Dry B12.'		
	Original handdrawn Fourier maps, molecular projection plots, various hands, <i>re</i> wet and dry B12. 1955-56.		
B.984	Untitled.		
	Vitamin B12 fragment. Includes handdrawn projections, Fourier and Patterson maps. One item dated 1956.		
B.985	'Dry B12'.		
	Very miscellaneous. Includes handdrawn Fourier maps, projection of 'John White's coordinates'. Various dates 1956-62.		
B.986	'O Monoacid'. '[illegible]'. 'Red nitroso cpd.'.		
	Miscellaneous illustrative material, 1959-66.		
B.987	'Factor V1a'.		
	Computer generated difference maps, 1962-63; computer generated vector maps, 1962; 'Phase Fourier', 1962; handdrawn 'Heavy Atom Fourier', 1964; computer generated 'Factor 51a Final Map'; [?Full]'Anomalous Dispersion Fourier'.		
B.988	ʻlnsulin.'		
	Handdrawn Patterson and Fourier maps, various hands, re 4 Zn insulin and 2 Zn insulin, heavy atom positions. 1958-65.		
B.989	'2 Zn insulin (old) and UO ₂ insulin plotted on scale $1\text{\AA} = 1\text{cm.'}$		
	Handdrawn and computer generated Patterson and Fourier maps, 1958-60; diffraction data, 1966; original handdrawn L-cystine three-dimensional Patterson. Includes work by M.J. Adams ?re insulin fragment (dithizone), 1962.		

 B.990 Unlabelled ring binder. Handdrawn insulin Pattersons, various hands, May-October 1962.
B.991 'Acetyl gramicidin S.' Handdrawn Pattersons and Fouriers. Mostly the work of G.M.J. Schmidt.

C.1-C.182

SECTION C	OXFORD UNIVERSITY		C.1-C.182
	C.1-C.3	SUB-FACULTY	OF CHEMISTRY
	C.4-C.23	TEACHING	
	C.24-C.56	HODGKIN'S RE	SEARCH GROUP
		C.24-C.31	Research, technical and secretarial staff
		C.32-C.34	Accommodation
		C.35-C.52	Visitors to laboratory
		C.53-56	Miscellaneous
	C.57-C.66	WOLFSON RES	SEARCH PROFESSORSHIP OF THE ROYAL
	C.67-C.108	FUNDING AND	ADMINISTRATION OF RESEARCH
		C.67-C.82	The Rockefeller Foundation
		C.83-C.96	Department of Scientific and Industrial Research/Science Research Council
		C.97-C.100	The Nuffield Foundation
		C.101-C.104	The Squibb Institute for Medical Research
		C.105	The Wagman Foundation
		C.106-C.108	The British Diabetic Association
	C.109-C.143	EQUIPMENT	AND SUPPLIES
		C.109-C.127	Correspondence with suppliers and government ministries
		C.128-C.139	Computing
		C.140-C.143	Neutron Diffraction
	C.144-C.172	ACCOUNTS	
	C.173-C.178	SOMERVILLE	COLLEGE
	C.179-C.182	MISCELLANE	OUS

SUB-FACULTY OF CHEMISTRY

C.1	Reports by Hodgkin on periods of office as University Demonstrator in Chemical Crystallography, ?1946-50, 1950-54.
C.2, C.3	Miscellaneous papers and correspondence, includes material <i>re</i> future of crystallography department.
C.2	1969-74.
C.3	nd.
TEACHING	
	There is only a small amount of material <i>re</i> teaching. There are four binders of lectures material, probably in use in the 1940s and 1950s, although only a few items are dated. There is also duplicated material for practical classes.
	Hodgkin gave up her teaching commitments in 1960 when she became Wolfson Research Professor of the Royal Society.
C.4-C.7	Contents of binder divided into four for ease of reference. Two items are dated 1941 and 1951; latest bibliographical reference 1956.
	Manuscript notes on the literature; manuscript drafts on 'Intensity of x-ray reflections' and 'The interpretation of Weissenberg Photographs' typescript drafts on 'Crystallography', 'Crystallography in biology' and 'Crystallography in geology'.
C.8-C.11	Contents of binder divided into four for ease of reference. A few items are dated between 1946 and 1949; latest bibliographical reference 1958.
	Manuscript notes on the literature; lecture plans; manuscript draft o lecture from course on 'The structure of organic molecules'.
C.12-C.16	Contents of binder divided into five for ease of reference. A few items are dated between 1947 and 1959.
	Manuscript notes on the literature; manuscript lecture notes; manuscript drafts on 'Crystallography in biology' and 'Chemical problems'.
	Typescript draft on 'X-ray analysis and molecular structure'.

C.17 Contents of binder. One item is dated 1958.

Manuscript notes on the literature.

C.18 'Old lecture notes'. Contents of folder so inscribed. A few items are dated between 1951 and 1954.

Manuscript notes on the literature; manuscript lecture notes.

C.19-C.23 'Teaching problems in x-ray analysis'. Contents of folder so inscribed divided into five for ease of reference. A few items are dated between 1936 and 1947.

Manuscript notes; paginated duplicated typescripts of instructions for xray crystallography practical course, Part II Physics and Part II Metallurgy.

HODGKIN'S RESEARCH GROUP

The material covers the period 1945-80, although no formal research group was established until 1960 on Hodgkin's appointment as Wolfson Research Professor of the Royal Society.

Research, technical and secretarial staff

C.24-C.30	General papers and correspondence 1949-77.
C.24	1949-50, 1958.
C.25	1961-62.
C.26	1964-67.
C.27	1968-69.
C.28	1971-72.
C.29	1973-75.
C.30	1976-77, nd.

C.31	Lists of members of research group, 1959-71.			
	Manuscri	pt notes on research group, nd.		
Papers and correspo	ndence r	e accommodation of group, 1961-74		
	At the be Crystallo the Cryst Pharmac Molecula	eginning of this period the group was house graphy Laboratory. The group was then split allography Laboratory and in the Departments ology. In 1970 the group moved to the ar Biophysics.	ed in the t between s of Physic new Labo	Chemical rooms in ology and oratory of
C.32	'Equipme 1961, 19	ent, furnishings and surveying'. Contents of 966, 1970-73.	folder so	inscribed,
C.33	Architect brief cor	ts' plans for room in Pharmacology Departme respondence, 1961-62.	ent, 1961.	Includes
C.34	General	papers and correspondence, 1966-74.		
Visitors to laborator	у			
C.35-C.51	Request	s to visit/work with Hodgkin, 1945-80.		
	C.35	1945-47.	C.44	1970.
	C.36	1948-49.	C.45	1971.
	C.37	1950-55.	C.46	1972.
			0.17	4070

C.38 1956-59. C.47 1973. C.48 1974. C.39 1961-63. C.49 1975. C.40 1964-65. 1976-80. C.50 C.41 1966. C.51 nd. 1967-68. C.42 C.43 1969.

Curricula vitae, brief biographical details of visitors to laboratory.

C.52

Miscellaneous

C.53	Correspondence with University Chest, 1969-77.
C.54	Correspondence <i>re</i> use of computer at the Rutherford Laboratory, Harwell by D. Sayre, 1972-73.
C.55	Exercise book recording letters written by Hodgkin and members of her group, identified by initials, 1974-76.
C.56	Miscellaneous administrative papers and correspondence, 1945, 1971-77. Includes correspondence <i>re</i> accommodating Hodgkin in the Chemical Crystallography Laboratory following her retirement.

WOLFSON RESEARCH PROFESSORSHIP OF THE ROYAL SOCIETY

Hodgkin was appointed Wolfson Research Professor of the Royal Society in 1960. The post was funded by the Isaac Wolfson Foundation, and the Royal Society invited nominations from all Fellows (see A.68, A.69). The Royal Society provided funding for the formal establishment of Hodgkin's research group, and continued to finance research and to pay for salaries until her retirement in 1977.

- C.57-C.63 Papers and correspondence, mostly with the Royal Society, 1961-82.
- C.57 1961, 1964-68.
- C.58 1969.
- C.59 1970.
- C.60 1971.
- C.61 1972.
- C.62 1973-74.
- C.63 1975-77, 1982.

C.64	Miscellaneous accounts.
C.65, C.66	Reports.
C.65	1960-70.
C.66	1971-75, 1977.

FUNDING AND ADMINISTRATION OF RESEARCH

The Rockefeller Foundation 1941-64

The Rockefeller Foundation provided funding for Hodgkin's early work on insulin, her work on penicillin and gramicidin S, and for the purchasing of new equipment. It also helped to fund Hodgkin's group on her appointment as Wolfson Research Professor in 1960.

- C.67-C.72 General papers and correspondence 1941-64.
- C.67 1941-44.
- C.68 1945-46.
- C.69 1947-48.
- C.70 1949-50, 1955.
- C.71 1957-58.
- C.72 1959-64, nd.
- C.73-C.77 Correspondence with Gerard R. Pomerat, Assistant Director, and later Associate Director, for the Natural Sciences of The Rockefeller Foundation. 1946-63.

C.73 1946-47.

C.74	1948-49.
C.75	1952-55.
C.76	1956-58.
C.77	1959-60, 1962-63.
C.78, C.79	Correspondence with University Registry and The University Chest re Rockefeller grant 1957-64.
C.78	1957-60.
C.79	1961-64.
C.80	Accounts 1957-63.
C.81	Reports, typescripts and manuscript drafts. 1941-45, nd.
C.82	Miscellaneous unidentified manuscript notes and drafts.
Department of Scient 1948-76	tific and Industrial Research (DSIR)/Science Research Council (SRC)
	In 1965 the SRC took over functions of the DSIR in respect of university science research funding.
C.83-C.86	Correspondence and reports re DSIR funding 1948-65.
C.83	1948-56.
C.84	1957-59.

C.86 1964-65.

C.85

1960-63.

C.87-C.92	Correspondence with SRC 1965-76.	
C.87	1965-66.	
C.88	1967.	
C.89	1968-69.	
C.90	1970-71.	
C.91	1972-73.	
C.92	1974-76.	
C.93-C.95	Reports for SRC.	
C.93	1966-69, 1971.	
C.94	1972.	
C.95	1973, nd.	
C.96	Miscellaneous manuscript notes, statements of account 1967-75.	
The Nuffield Foundation 1949-59		
C.97-C.99	Papers and correspondence, mostly re support for vitamin B12 research.	
C.97	1949-51.	
C.98	1952-56.	
C.99	1957-59, nd.	
C.100	Reports 1949-56, nd.	

The Squibb Institute for Medical Research 1962-69

C.101-C.103	Correspondence re support for thiostrepton research.	
C.101	1962-64.	
C.102	1965-66.	
C.103	1967-68.	
C.104	Reports 1966, 1969.	
The Wagman Founda	ation 1969-70	
C.105	Correspondence re support for insulin research.	
The British Diabetic Association 1970-76		
C.106, C.107	Papers and correspondence re support for insulin research.	
C.106	1970-73.	
C.107	1974-76, nd.	
C.108	Reports 1972-76, nd.	
EQUIPMENT AND SUPPLIES		
Correspondence wit	th suppliers and government ministries	
C.109	Unicam Instruments Ltd.	1937-68
C.110	Organon Laboratories.	1938-39
C.111	The Solus Electrical Co. Ltd.	1940-48

C.112, C.113	Hilger and Watts Ltd.	1941-73
C.112	1941, 1956-58.	
C.113	1960-73.	
C.114	The British Drug Houses Ltd.	1942, 1950
C.115	Metropolitan-Vickers Electrical Co. Ltd.	1945
C.116	Ministry of Supply.	1945, 1949-50
C.117	Eli Lilly and Co.	1946-49, 1954
C.118	Imperial Chemical Industries Ltd.	1947-49, 1958
C.119-C.121	Board of Trade, Customs and Excise, re importing of	equipment. 1948-67
C.119	1948.	
C.120	1949, 1967.	
C.121	Correspondence re importing Weissenberg goniom	eter, 1957-58.
C.122	National Research Development Corporation.	1955-56
C.123	Joyce, Loebl and Co. Ltd.	1956-63
C.124	Research and Control Instruments Ltd.	1961-62
C.125	Labquip.	1971
C.126	Enraf-Nonius Ltd.	1973
C.127	Miscellaneous papers and correspondence.	1936-71

Computing

The material relates to Hodgkin's role in bringing an electronic computer to Oxford. She was chairman of the Computation Committee of the Board of Faculty of Physical Sciences, which revealed, in 1947, the urgent need for additional computational facilities at Oxford, and there is some correspondence *re* the search for financial support in establishing a computing unit.

There is also material *re* calculations carried out for Hodgkin in respect of her research on vitamin B12 and penicillin at the National Physical Laboratory, Teddington, at the University of California at Los Angeles and at the University of Manchester.

C.128-C.136 General papers and correspondence 1944-76.

0.120	1344 40.		
C.129	1946.	C.134	1955.
C.130	1947.	C.135	1956-59.
C.131	1948-49.	C.136	1964-76.
C.132	1950-51.		

- C.137-C.139 Appointment of Director of University Computing Unit 1956.
- C.137, C.138 Letters of application, references. 2 folders.

C.139 Miscellaneous papers and correspondence.

Neutron Diffraction

The material relates to the use of neutron diffraction facilities at the Atomic Energy Research Establishment at Harwell for Hodgkin's studies of organic crystal structures. There is material *re* funding by the SRC, and some correspondence *re* the use of facilities at the Institut Max von Laue-Paul Langevin at Grenoble.

Papers and correspondence 1967-73.

C.140 1967.

C.141 1968-69.

C.142	1970-71.
C.143	1972-73.
ACCOUNTS	
C.144-C.165	Statements of account, invoices.
C.144	1961, 1964-1965 June.
C.145	1965 July-December.
C.146	1966.
C.147	1967 January-May.
C.148	1967 June-December.
C.149	1968 January-June.
C.150	1968 July-December.
C.151	1969 January-May.
C.152	1969 June-December.
C.153	1970 January-June.
C.154	1970 July-December.
C.155	1971 January-June.
C.156	1971 July-December.
C.157	1972 January-June.
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C.158	1972 July-December.
C.159	1973 January-June.
C.160	1973 July-December.
C.161	1974 January-June.
C.162	1974 July-December.
C.163	1975.
C.164	1976.
C.165	1977, 1981.
C.166	Accounts Book, 1970-76.
C.167-C.172	Order Books November 1964 - September 1972.
C.167	November 1964 - January 1966.
C.168	February 1966 - May 1967.
C.169	February 1967 - March 1968.
C.170	June 1967 - November 1968.
C.171	December 1968 - May 1971.
C 172	June 1971 - September 1972.

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SOMERVILLE COLLEGE

Hodgkin was made a Fellow of the College in 1935 (Honorary Fellow 1977).

For lecture on 'Crystallography and chemistry in the first hundred years of Somerville College', see D.150-D.153.

- C.173-C.176 General papers and correspondence 1949-91.
- C.173 1949, 1965, 1967, 1970.
- C.174 1972-74.
- C.175 1976-77, 1985-91.
- C.176
- C.177 Somerville College Appeal.

nd.

- Papers and correspondence 1975, 1988-89.
- C.178 Miscellaneous drafts, manuscript notes. Includes 3pp typescript draft by Hodgkin, 'Janet Vaughan. The Retiring Principal of Somerville'.

MISCELLANEOUS

C.179, C.180 Oxford Enzyme Group 1970-86.

This group, of which Hodgkin was a founder member, was established in 1970 under the chairmanship of R.E. Richards in order to discuss and coordinate research in enzyme chemistry at Oxford.

- C.179 Papers and correspondence 1970-71. Includes report by Hodgkin dated June 1971.
- C.180 Papers and correspondence 1972-73, 1976, 1986.

Includes transcript of seminar held at Nuffield College, Oxford, on 'Academic Breakthroughs', dated 24 January 1986, in which R.E. Richards discusses the formation of the Enzyme Group and its function within Oxford scientific research.

Oxford University

C.181

Oxford University Independence Fund.

Papers and correspondence re fees for overseas students, 1967, 1970, nd.

C.182

Molecular Biophysics Group.

Correspondence re establishment of Molecular Biophysics Group, 1956, 1963-65.

Draft by H.A. Krebs on 'Molecular biophysics at Oxford'.

'Molecular biophysics'. Typescript of lecture given by Hodgkin to commemorate the opening of the new department.