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Catalogue of the papers of
LESLIE FLEETWOOD BATES, CBE, FRS
(1897 - 1978)

Deposited in the Manuscripts Department, University of
Nottingham Library

Compiled by: Jeannine Alton
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1982

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GENERAL INTRODUCTION

Leslie Fleetwood Bates was born at Kingswood, Bristol, in 1897. He was educated at the Merchant Venturers' School and the University of Bristol where he read physics, graduating in 1916. He spent the next four years as a radiographer with the British army in India, returning to Bristol in 1920 to pursue research. He remained at Bristol until 1922, and it was during this period that he was introduced by A.P. Chattock to the study of magnetism which became his main research interest for the rest of his life.

After what Bates described as a two years 'interlude', working under Rutherford at the Cavendish Laboratory, Cambridge, where he completed a Ph.D. thesis on the study of long range alpha particles, Bates was appointed to a lectureship at University College, London, in 1924. In 1930 he was promoted to Reader in Physics and in 1936 he became Lancashire-Spencer Professor of Physics at the University College (later University) of Nottingham.

There is very little material in the collection from Bates's pre-Nottingham career; see B.1 - B.3 for notebooks from the period at Bristol, and B.4 - B.13 for lectures delivered to undergraduates at London. However, Bates continued to retain strong links with London University, and these are well documented in the collection. In particular he acted as Visiting Examiner, 1961-77 (see F.1 - F.26), and was also invited to deliver several series of lectures on magnetism (see B.14 - B.16).

Bates remained at Nottingham University until his retirement in 1964. He established a thriving research group based on his own interest in magnetism and was most actively involved in administration and general conduct of affairs, not only in his own department but in the University as a whole. He was a member of the Association of University Teachers (President, 1938-39) and Deputy Vice-Chancellor of the University, 1953-55 (see C.11). He was also responsible for the building of a large new Physics Department (see C.14 - C.23) which he was able to direct for a short time before his retirement in 1964. Most of the material relating to Nottingham University is to be found in Section C, but there are other

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papers scattered throughout the collection - see the list of references in the introduction to Section C. Many of the correspondents in Section G are former students or colleagues of Bates at Nottingham.

Of Bates's actual scientific work very little remains, apart from the early notebooks at C.1 - C.3. There are no other notebooks or laboratory records, only drafts for lectures and publications. This may be explained by the fact that much of the collection, with the exception of a few items of personal or biographical interest, dates from the period after Bates's retirement. Thus there is a wealth of papers covering his examining activities and some of the committees on which he served, in particular the Royal Society Symbols Committee of which he was Chairman, 1968-77 (D.86 - D.106), the British Standards Institution Units and Symbols Standards Committee (D.11 - D.34), the University Grants Committee, for which Bates was an Assessor, 1965-68 (D.107 - D.118), and the University of London Academic Advisory Committee to investigate the future role of Birkbeck College (D.59 - D.73).

Bates attached great importance to public work, and the Section covering his membership of committees and societies is a large one, even though not all his activities are as well documented as those mentioned above. In particular, his work as Senior Scientific Adviser for Civil Defence, North Midland Region (1951-72, see D.39 - D.44) led to the award of the C.B.E. in 1966.

Another activity more directly connected with Bates's own research interests was his membership of the International Union of Pure and Applied Physics (IUPAP) Commission on Magnetism, of which he was Secretary, 1957-66 (see D.52 - D.57). He was thus actively involved in several international conferences held under the auspices of IUPAP, many of which are documented in Section E. One of these, held at Nottingham in September 1964, was of special concern to Bates. As Chairman of the Organising Committee he was actively involved in the administrative detail of the conference; he delivered the 47th Guthrie Lecture on this occasion, and also 'celebrated' his retirement. See E.10 - E.34 for a full record of the conference.

Section A contains a number of items of biographical interest, especially speeches and letters of congratulation, most of which were assembled and kept together by Bates as likely to be of interest to a memorialist or biographer. He also

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annotated some of his correspondence in the course of sorting it after his retirement in 1964, and his remarks have been quoted in the catalogue entries where appropriate. When Bates lost the regular service of a secretary on his retirement he would jot down the substance of his replies on his incoming letters, thus preserving the tenor of his correspondence despite the absence of carbon copies. His meticulous attention to detail and his conscientious handling of any matter that was brought to his attention are evident throughout the collection.

ACKNOWLEDGEMENTS

To Dr. E.S. Lutch, Bates's daughter, for making the material available for cataloguing, and for donating the collection to the Manuscripts Department of the University of Nottingham.

To Professor N. Kurti for advice and information .

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- SECTION A BIOGRAPHICAL AND PERSONAL A.1 - A.34
- A.1 Autobiographical article prepared for McGraw Hill, Modern Men of Science.
- Ms. and typescript drafts for article, editorial correspondence, photograph of Bates, 1966-67.
- Copy of obituary from The Times, 25 January 1978.
- A.2 Miscellaneous ms. notes by Bates on his career and main research interests.
- Copies of entries in various biographical dictionaries.
- 2 photographs of Bates taken at Nottingham, 1956.
- A.3-A.6 Appointment as Lancashire-Spencer Professor of Physics at Nottingham University, 1936.
- Letters of congratulation.
- A.3 A - C
- A.4 D - J
- A.5 L - R
- A.6 S - W and unidentified
- A.7 Award of Holweck Prize, 1949.
- Correspondence re arrangements for visit to Paris to receive the award, June 1949.
- Miscellaneous press-cuttings, programme of events, menu, etc.
- See also A.28.
- A.8-A.12 Letters of congratulation re Holweck Prize.
- A.8 A - E
- A.9 F - K
- A.10 L - R
- A.11 S - W
- A.12 Unidentified signatures and copies of Bates's replies.

Biographical and personal

- A.13 Election to Fellowship of the Royal Society, 1950.
Brief correspondence; press-cuttings.
- A.14-A.20 Letters of congratulation re Fellowship of the Royal Society (see also C.11).
- A.14 A - C
- A.15 D - G
- A.16 H - L
- A.17 M - P
- A.18 R - S
- A.19 T - Y
- A.20 Unidentified or first name signatures.
- A.21 Election as President of The Physical Society, 1950.
Brief correspondence; ms. draft of speech delivered to the Nottingham Physical Society, 3 November 1950.
- A.22-A.30 Speeches and addresses.
- These contain information and recollections of biographical interest about Bates, his career, research and colleagues, and were kept separately by him because of their personal interest.
- They are presented in the order of the episodes in Bates's career to which they principally refer.
- A.22 University of Bristol.
Speech at Convocation lunch, University of Bristol, 27 July 1963.
- A.23 University of London.
'Forty Years Association with London'.
Extensive ms. notes for speech, n.d. but c.1966. Mainly on early years 1924-30 and Bates's work for the Association of University Teachers.
Speech at dinner of Nottingham Branch of University of London Convocation, 23 March 1970.

Continued

Biographical and personal

- A.23 (continued) Speech at dinner of Nottingham Branch of University of London Convocation, 21 April 1971.
- Includes reference to work on the Ashby Committee on Birkbeck College (see D.59-D.73).
- A.24 Association of University Teachers.
- Speech at 50th Anniversary of Nottingham branch, 22 January 1970.
- Mainly recalling early connections with the Association in London. Bates joined the A.U.T. in 1924 and was its President 1938-39.
- See also A.23 above.
- A.25 University of Nottingham.
- All these speeches contain references to Bates's long connection with Nottingham, his colleagues, and the development of the University and its buildings.
- Presentation to Dr. Davy, 1962.
- Speech to new science and agriculture graduates, 5 July 1963.
- Retirement of Leslie Heath (Physics Laboratory Assistant), 27 May 1964.
- Dinner at Hugh Stewart Hall, 30 May 1964.
- Foreword to University Convocation Newsletter, Autumn 1964.
- A.26 Nottingham Physical Society.
- Speeches and toasts at annual dinners, 1952, 1953, n.d., 1957, 1961, 1964.
- Midland Branch, Institute of Physics, 1962.
- All these contain reminiscences of Bates or colleagues.
- A.27 Speeches at Magnetism Conferences (opening or closing remarks).
- | | | |
|------------|------|----------------------|
| Grenoble | 1950 | (in French) |
| Kyoto | 1961 | see E.7 - E.9 |
| Nottingham | 1964 | see E.10 - E.34 |
| Grenoble | 1970 | (in French) see E.42 |

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Biographical and personal

- A.28 Speech of thanks on award of Holweck Prize, Paris, 1949
(in French. Bates remarks in this speech that he learnt
French from the father of P.A.M. Dirac).
- For letters of congratulation, etc. see A.7 - A.12.
- Speech of congratulations to L. Néel on his Holweck
Lecture, Paris, 1952 (in French).
- A.29 Speeches at dinners of British Federation of University
Women, 1964, 1970.
- A.30 Miscellaneous speeches of biographical interest.
- | | |
|---|------------------|
| Mathematical Society | 7 May 1953 |
| Physical Society, London | 20 November 1953 |
| Permanent Magnet Association | 31 October 1963 |
| 'Ave' (Retirement dinner) | 4 July 1964 |
| Prizegiving, Barnsley Technical
Grammar School | n.d. |
- A.31 Ms. of speech thanking N. Kurti for delivering a paper
to the Physical Society, 23 April 1974.
- Ms. of undated after-dinner speech delivered at London
University.
- A.32 Visit to Nigeria, 1965.
- Bates went to West Africa in February 1965. Part of the
purpose of his visit was to acquaint himself with work at
Ahmadu Bello University, Zaria, for which he acted as
an External Examiner, 1964-69 (see F.29); he also lectured
at the Universities of Lagos, Ibadan, Ahmadu Bello and
Nigeria (Nsukka). See B.26.
- Folder includes correspondence with travel agents and
colleagues. There is also a brief journal kept by Bates
during his stay with notes of people and places visited,
lectures given, etc.
- A.33 Miscellaneous correspondence of biographical interest, in
approximate chronological order.
- A.34 Miscellaneous social correspondence - invitations, replies
to letters of congratulation sent by Bates, etc. (not indexed).

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SECTION B NOTEBOOKS, LECTURES, PUBLICATIONS B.1 - B.48

The only notebooks which have survived are from Bates's two periods at Bristol University, 1913-16 and 1920-22. These form the first 3 items in the Section.

The lectures include courses delivered to undergraduates at London University where Bates was Lecturer (1924-30) and Reader (1930-36). His association with London University continued after the move to Nottingham in 1936 and he continued to give occasional courses of lectures there as well as acting as an External Examiner until 1977. (See Section F.) Notes for all the surviving London University lectures are to be found at B.4 - B.16.

The remainder of the lectures (B.17 - B.32) were delivered at various universities and institutions in U.K. and abroad. They are presented in chronological order as far as possible, though not all of them are dated and some were delivered on more than one occasion.

Items B.33 - B.47 mainly consist of ms. drafts and related correspondence for various publications, including some unpublished material. There is an (incomplete) set of Bates's published papers at B.48.

Lectures delivered at Nottingham University are to be found at C.1 - C.9. For material relating to the Guthrie Lecture, see E.30 - E.33.

See Section G for correspondence relating to Bates's book Modern Magnetism (G.6 - G.8) and to his contributions to Contemporary Physics (G.30 - G.45). Correspondence re articles for Physics Bulletin is at D.46.

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Notebooks, lectures, publications

- B.1, B.2 Undergraduate notebooks.
- B.1 Notebook inscribed inside front cover 'Leslie F. Bates. Faculty of Science. University of Bristol. 12.10.14.'
- The first half of the book contains a series of notes and calculations headed 'Dynamics', covering the period 7 October 1914 to 6 May 1915. The second half contains notes, etc. on 'Statics', covering the same period and beginning at the back of the book. There is a single loose page of calculations inside the front cover.
- B.2 Notebook inscribed inside front cover 'Leslie F. Bates. Faculty of Science. University of Bristol. 6.5.15.'
- Notes on statics, 5 May-9 June 1915; on electricity, 4 October 1915-21 February 1916; on magnetism, 21 February-12 May 1916; and on electricity and magnetism alternately, 17 May-3 June 1916. At the back of the book are a few pages of notes on dynamics, May 1915, and several loose sheets of calculations.
- B.3 Red notebook inscribed 'Leslie F. Bates'.
- Entries start 6 October 1920 from the front and the back although the latter (on dynamics) only cover a few pages. The latest date in the book is 17 January 1921 but entries after that are undated. Many of the notes and calculations are on various aspects of magnetism and must have been taken at Bristol, where Bates was a research student until he moved to the Cavendish Laboratory in 1922.
- B.4-B.13 Lectures delivered at London University, 1924-36.
- The notes for these lectures are contained in a series of ring-binders. They are untitled and undated and are interleaved with offprints of related articles (or parts of articles), drafts for examination questions, etc. The broad subject-matter of each binder is as follows:
- B.4 Mechanics.
- B.5 Heat.
- B.6 Heat.
- B.7 Light.

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Notebooks, lectures, publications

- B.8 Light, Sound.
- B.9 Magnetism.
- B.10 Magnetism and Electricity.
- B.11 Electricity.
- B.12 Radioactivity and nuclear physics.
- B.13 Miscellaneous.
- B.14 'London University Lectures, 1952'.
Set of notes for a course of four lectures on magnetism delivered at London University in February and March 1952. Includes circular advertising the lectures.
- B.15 Notes for a series of lectures delivered to students of London University. There is no indication of the date, and titles do not correspond with those listed in B.16 for lectures delivered in 1968. Titles are as follows:
'The Kinds of Magnetic Order and their Detection'
'The Mössbauer Effect'
'The Anisotropy of Magnetic Crystals'
'Domains'
- B.16 Correspondence re a series of five lectures delivered to students at London University during March 1968.
Includes a few related ms. notes and a poster advertising the lecture.
- B.17 Ms. of lecture on 'Permanent Magnets', n.d.
- B.18 Ms. of lecture on 'X-Rays and their applications', 27 pp. n.d.
- B.19 Typescript headed 'The Permalloy Problem', n.d. Perhaps not by Bates.
- B.20 'The Nature and Implications of Atomic Energy'.
Public Lecture, 12 November 1948. 24 pp. typescript.

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Notebooks, lectures, publications

- B.21 'The Problem of Fall-Out'.

Ms. notes and typescript of lecture delivered by Bates in his capacity as Senior Scientific Adviser for Civil Defence, North Midlands Region (see D.39-D.44).
n.d., c.1956.
- B.22-B.24 Visit to Austria, May 1958.

Bates lectured in Leoben and in Vienna.
- B.22 'Über thermische Änderungen, die mit der Magnetisierung zusammenhängen'.

(On thermal changes associated with magnetization.)

Typescript of lecture in German with ms. annotations by Bates.
- B.23 'Recent Bitter Figure Studies of Magnetization Processes'.

Typescript of lecture. (1st page also has ms. heading 'Magnetization processes in Iron'.)

German version with ms. annotations by Bates.
- B.24 Brief related correspondence.
- B.25 'Magnetic Hysteresis'.

Typescript, list of slides.

Folder includes a letter from J.E. Gould, 14 September 1960, and a brief typescript re Alcomax; also ms. notes by Bates on same, n.d.
- B.26 'Some recent investigations of Magnetic Processes'.

Annotated typescript and list of slides, n.d.

Includes poster for lecture on magnetism by Bates delivered at the University of Nigeria, 12 May 1965, which was found with the typescript.

See A.32 for material relating to Bates's visit to Nigeria.

Notebooks, lectures, publications

B.27

'The Visualization of Magnetic Processes'.

Typescript of lecture delivered to:

1. Polish Academy of Sciences, November 1960.
(See E.6 for Bates's notes on colleagues met, etc. during his visit to Poland.)
2. 47th Meeting of the Indian Sciences Congress.
(Bates was representing the British Association.)

(Ms. prefaces for these two occasions appear at the front of the lecture.)

Miscellaneous notes, drafts, etc. are also included in the folder.

B.28

'Beyond Iron Filings' or 'Some Aspects of Magnetism'.

Bates recorded a talk for Granada TV's 'Discovery' series in September 1960 with the title 'Beyond Iron Filings'. At about the same time he was asked to deliver the first 'Isaac Newton Lecture' at King's School, Grantham (at which Newton had been a pupil) and he used his television talk as a basis for this lecture, delivered on 25 November 1960, under the title 'Some Aspects of Magnetism'.

Folder includes:

Typescript of 'Beyond Iron Filings'.

Brief correspondence with Granada TV, news-cutting re lecture.

Alterations and additions for the version delivered at Grantham (annotations on the typescript also relate to this version of the lecture).

Correspondence re arrangements for the lecture.

B.29

'Some experiments on the thermal changes associated with magnetization processes'.

2 (slightly different) typescripts of this lecture with some ms. annotations, list of slides, etc. n.d.

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B.30 'Some Experiments in Magnetostriction'.

Undated typescript and list of slides.

Also included here are two untitled typescripts of lectures on magnetism, one headed 'Bates and Craik' and the other 'Bates and Pacey'.

B.31 Ms. of untitled lecture on magnetism, 4 January 1967.

B.32 Lecture delivered to the Manchester Branch of the Institute of Physics and the Physical Society, 14 October 1974.

Bates was initially reluctant to accept the invitation to speak because 'my first thought [was] that my lecturing days were well and truly over', but he decided to use the lecture delivered at the Conference on 'Selected Problems in Magnetism', Bochum, in 1972 (see E.43-E.46). Bates's lecture was called 'A link between past and present in European magnetism'.

Annotated typescript of lecture.

Related notes.

Brief correspondence with C.A. Crofts, Chairman of the Manchester Branch, re arrangements.

B.33 Ms. notes by Bates on various subjects:

'Ferrimagnetism' (with annotated offprint of papers by L.R. Maxwell and J.S. Smart)

'Magnetic moment of the Proton' (with annotated offprint of papers by P. Vigoureux, J.H. Sanders and K.C. Turberfield)

'A Nuclear Resonance Oscillator, Working in the Magnetic Field of the Earth' (with typescript translation from Russian of paper with same title by F.I. Skripov)

'Thermophysics'. Notes on a book by Morse

Set of notes headed 'King-Thermophysics'

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- B.34 Bates's ms. draft for a note on E.N. da C. Andrade's work and interests written at the request of the Editors of Nature on Andrade's appointment as Director in the Royal Institution, 1949.
- Copies of the invitation to write the article and Bates's reply are also included.
- B.35-B.38 Correspondence and drafts re Bates's memoir of E.C. Stoner, published in Biographical Memoirs of Fellows of the Royal Society, 15, 1969.
- B.35 Correspondence with the Royal Society including invitation to Bates to write the Memoir, and with Mrs. Heather Stoner (widow). In several of her letters Mrs. Stoner expresses her gratitude for the sensitive understanding shown by Bates in the work.
- B.36 Correspondence with colleagues to whom Bates wrote for advice or reminiscences about Stoner.
- B.37 Ms. drafts and notes for the Memoir.
- B.38 Letters of appreciation from friends and colleagues to whom Bates sent offprints of the Memoir. Some of these contain biographical reminiscences.
- B.39 Obituary of H.T. Flint, published in Bulletin of the Hospital Physicists Association, March 1972.
- Bates's ms. notes, ms. and typescript drafts.
- Correspondence, mainly with H.T. Flint's family and the Editor of the Bulletin.
- B.40-B.44 Ms. notes and drafts of articles written by Bates for Contemporary Physics, 1966-77. For correspondence with the Editor, G.R. Noakes, see G.30-G.45.
- B.40 1966, 1968 Includes several drafts of unpublished article entitled 'Magnetic Susceptibility - M.K.S. and C.G.S. A cautionary tale'. See G.1, G.51 for related correspondence.
- B.41 1970

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- | | |
|------|------------|
| B.42 | 1972, 1973 |
| B.43 | 1973, 1974 |
| B.44 | 1976, 1977 |
-
- | | |
|------|--|
| B.45 | Exercise book with several additional loose pages containing book reviews and miscellaneous ms. notes. |
| B.46 | Ms. notes for refereeing of papers for publication. |
| B.47 | Requests for Bates to write textbooks on magnetism, from D. Ter Haar (1964) and N.F. Mott (1968). Both were declined by Bates due to pressure of other work.

For correspondence, etc. re Bates's book <u>Modern Magnetism</u> , first published in 1939, see G.6-G.8. |
| B.48 | Set of Bates's published papers. A numbered list of publications prepared by Bates is included, from which it will be seen that the set is not complete. |

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SECTION CUNIVERSITY OF NOTTINGHAM C.1 - C.27

Bates was appointed Lancashire-Spencer Professor of Physics in 1936, and he remained at Nottingham until his retirement in 1964. During that period he built up a thriving research group which won an international reputation in the field of magnetism, and towards the end of his tenure of the chair he was responsible for the building of a large new Physics Department which he directed for about eighteen months.

The collection contains few records of Bates's early years at Nottingham apart from mss. of various lectures (see C.1 - C.9). There is, however, a useful amount of documentation for the planning and execution of the new Physics Building including detailed costings, schedules of equipment, and correspondence (see C.14 - C.23).

For papers relating to the International Conference on Magnetism held at Nottingham in 1964 see E.10 - E.24; for letters of congratulation on Bates's appointment as Lancashire-Spencer Professor see A.3 - A.6.

Other material relating to Nottingham University is to be found at A.25, A.27, A.30, D.56, D.57, E.40, G.24.

- C.1 Ms. of Bates's Inaugural Lecture at Nottingham University, 1936, on 'New Ideas in Magnetism'.
- Includes brief correspondence re Bates's application for the chair at Nottingham, 1935.
- C.2-C.9 Lectures delivered to students at Nottingham University, 1936-64.
- The material is contained in a series of 8 ring-binders and consists of Bates's own ms. notes interleaved with related offprints and other printed matter. There are also drafts of examination questions. The ms. material is undated and there are very few headings. Some of the binders have an indication of contents at the front but other material has often been added.

Continued

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University of NottinghamC.2-C.9
(Continued)

Because of their miscellaneous composition, it has not been possible to itemise the contents of these binders. They do, however, show Bates's careful updating and revision of the material for his undergraduate teaching.

C.10

Report of Committee of Senate on grading of staff, etc. 1939.

Bates was Chairman of the Committee, which was appointed on 5 June 1939.

Typescript with ms. corrections, 19 pp. + 4 Tables.

In a ms. note, dated 10 October 1964, attached to the Report, Bates writes:

'I was mainly responsible for this report which created quite a stir in the College at the time; I regret that I destroyed the correspondence on which it was based. The outbreak of the 1939 War put paid to this report and unpaid to the staff for many years - because, in my view, the U.G.C. did not do its job properly in war time; e.g. it never visited us during the war.

'I think that the document gives a valuable insight into the conditions under which people worked in pre-war days. Anybody writing about the former U.C.N. [University College, Nottingham] ought to study such matters.

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C.11

Letter of congratulation to Bates from the Nottingham University Physical Society on his election to Fellowship of the Royal Society, March 1950. (For other letters of congratulation see A.14- A.20).

Correspondence and press-cutting re Bates's appointment as Deputy Vice-Chancellor of Nottingham University for two years from 1953.

Correspondence, 1961, re the extension of Bates's tenure of the Lancashire-Spencer Chair and the Headship of the Department of Physics until 31 August 1964 (i.e. two years after the date on which University Statutes required him to retire).

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- C.12 Typescript of speech delivered by Bates on the occasion of the investiture of W.G. Briggs as Pro-Chancellor of Nottingham University, December 1961.
- Letter of thanks from W.G. Briggs.
- C.13 'An enquiry into Problems Facing University Physics Departments'.
- Questionnaire from The Institute of Physics and The Physical Society with Bates's ms. answers re Nottingham University, 1961.
- C.14 Contents of folder labelled 'Quinquennium 1962-67'.
- Estimates, reports, correspondence, notes, etc.
 Bates's ordering of the papers has been retained and his list of contents appears at the back of the folder.
- C.15 Nottingham University. New Physics and Mathematics Building. Plans, estimate of costs.
- C.16 Schedules of equipment for the Physics and Mathematics Building prepared for the University Grants Committee (U.G.C.), 1961.
- C.17 Correspondence with E.C. Stoner and P.B. Moon, assessors for the U.G.C., 1961. Includes miscellaneous lists of equipment, notes, calculations, etc., and copies of the assessors' reports.
- C.18 Claims by members of Nottingham University Physics Department for equipment and apparatus, 1962.
- Includes a letter re possible provision of computing services at Nottingham (purchase of a Ferranti Mercury or Telex link to Atlas Computer at Manchester), 1962.
- C.19 Correspondence and papers re technicians, 1962.

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- C.20, C.21 Correspondence with E.R. Andrew (Bates's successor as Lancashire-Spencer Professor of Physics at Nottingham).
- C.20 1962-March 1963.
- C.21 April 1963-1964.
- C.22 University of Nottingham. New Physics Building. Second Schedule of Equipment, prepared for the U.G.C. by E.R. Andrew, 1963.
- C.23 Papers re a Special Meeting of Senate, 12 June 1963, 'to consider the recommendations of the Standing Committee of Senate ... concerning the additional new academic developments in 1963/64 arising out of the review of the quinquennial settlement for 1962/67'.
- Letter from Bates explaining that he may be unable to attend the meeting and asking the Registrar to convey a few comments to Senate on his behalf.
- C.24 2 pp. typescript obituary of Harry Watson (Physics Laboratory Technician), 1965.
- C.25 Brief correspondence, 1966, and extract from Nottingham University Gazette re award of D.Sc. to B.J. (now Sir Basil) Mason.
- Correspondence with E.R. Andrew, 1973, re award of honorary Master's degree to L. Heath (see A.25 for speech by Bates on the occasion of Heath's retirement after over 50 years' service to the Nottingham University Physics Laboratories).
- C.26 Obituaries of Norman Davy (Assistant Lecturer and Demonstrator and later Reader in Physics at Nottingham University, 1919-62).
- Ms. draft of obituary sent to The Times, 15 July 1973.
- Ms. and typescript drafts for an 'Appreciation' of Davy published in the Nottingham University Gazette. Includes typescript of a speech by Bates delivered on Davy's retirement in 1962 which he used as the basis of the Appreciation. (There is another copy of this at A.25.)
- Ms. of Appreciation of Davy for publication in Physics Bulletin, 1973.
- Related correspondence with families, friends, etc., June-August 1973.

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C.27

Miscellaneous correspondence re Nottingham University affairs or from past members of Bates's department, 1953-76 (not indexed).

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SECTION D COMMITTEES AND SOCIETIES D.1 - D.118

Bates was an active member of many important committees both before and after his retirement, but the bulk of the papers in this Section refer to his later years, and in particular to his membership of the Units and Symbols Standards Committee of the British Standards Institution (D.11 - D.34) and of the Royal Society Symbols Committee (D.86 - D.106), of which he was Chairman from 1968. There is also a considerable body of material relating to the University of London Academic Advisory Committee to investigate the future role of Birkbeck College (D.59 - D.73) and to Bates's work as Secretary of the Magnetism Commission of the International Union of Pure and Applied Physics (D.52 - D.57). Societies for which substantial material survives include The Institute of Physics and The Physical Society (D.45 - D.48) and The Royal Society (D.80 - D.106).

The material is presented in alphabetical order and the correspondence is indexed.

D.1

Admiralty Compass Observatory, Slough.

Bates served as Consultant and Adviser, May 1945-September 1955.

Correspondence, 1945, 1955, with members of the Admiralty and with the Principal of Nottingham University, re commencement and termination of the appointment.

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D.2-D.7 Admiralty Department of Research Programmes and Planning.

H.M. Underwater Countermeasures and Weapons Establishment.

Bates served as a Consultant/Adviser, May 1952-April 1965.

The appointment developed in part from Bates's participation in a Symposium on Magnetic Materials held at the University of Maryland, September 1952, under the auspices of the American Office of Naval Research (a program of the Symposium is enclosed in the sequence).

The material, presented chronologically, consists of correspondence re meetings, renewal of appointment, notes of discussions and projects in hand, and of enquiries and research undertaken by Bates.

Most of the correspondence is conducted with the Chief Scientist of the Establishment: successively I. Fagleston, B.W. Lythall, R. Benjamin.

D.2 1952.

D.3 1953.

D.4 1954-55.

D.5 1956-57, 1959

There are no documents dated 1958.

D.6 1960-63.

D.7 1964-65.

D.8 Atomic Energy Research Establishment.

Includes correspondence re Bates's appointment as ad hoc consultant, 1960, and particulars of Inter-Service Metallurgical Research Council Basic Properties Committee meeting on 'Admiralty Magnetic Problems', 1964 (related to D.7 above).

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D.9, D.10

British Association for the Advancement of Science.

D.9

East Midlands Area Committee.

Bates served as Chairman until November 1966, when he was succeeded by J.E. Parton.

Brief correspondence with officers and local secretary, August-November 1966.

D.10

Editorial Committee.

Bates served on the Committee, 1963-66.

Correspondence and committee papers, on policy, financing and content of the Association's publications, and on meetings of the committee.

The committee hoped to publish The Advancement of Science monthly, but financial difficulties made this impossible. Publication ceased as from April 1967 and was replaced by a single annual volume of proceedings.

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D.11 - D.34 British Standards Institution.

Bates represented the Royal Society on the Units and Symbols Standards Committee, Ref. USM/1.

Technical Committee USM/1, Quantities, Units and Symbols, was constituted in October 1969 and held its first meeting on 30 October. As from 18 December the Chairman was G.B.R. (now Sir Geoffrey) Feilden. Bates took the Chair, in Feilden's absence, at the meetings of 6 October 1975 and 1 October 1976.

All the papers bear annotations and comments by Bates, and some include his notes for contributions he made to meetings, or on matters discussed; some correspondence, mainly with T. J. Legg, the Secretary of the Committee, is also included. The notes are especially full for the meetings (noted above) at which he took the Chair.

Minutes and Committee papers for meetings on:

D.11	<u>1969</u>	30 October
D.12		18 December
D.13	<u>1970</u>	2 March
D.14		30 April
D.15		15 June
D.16		31 July
D.17		2 October
D.18		4 December
D.19	<u>1971</u>	19 February
D.20		11 May
D.21		9 July
D.22		25 October
D.23		1 December

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|------|-------------|--|
| D.24 | <u>1972</u> | 24 January |
| D.25 | | 20 March |
| | | [22 May - no papers remain] |
| D.26 | | 17 July |
| D.27 | | 18 December |
| D.28 | <u>1973</u> | 19 February |
| | | [7 May - no papers remain] |
| D.29 | | 2 July |
| D.30 | | 13 August |
| | | [5 November - no papers remain] |
| D.31 | <u>1974</u> | 25 January (only) |
| D.32 | <u>1975</u> | 6 October (only) |
| | | Bates took the Chair at this meeting, and the papers include briefing notes, Bates's own notes, and correspondence with the Secretary of the Committee. |
| D.33 | <u>1976</u> | 28 May |
| | | 1 October |
| | | Bates took the Chair at this meeting, and the papers include briefing notes. |
| D.34 | <u>1977</u> | 12 December (only) |
| | | Included here is a letter from G.B.R. Feilden, 13 December 1977, which opens 'At yesterday's meeting of Committee M/127 Max McGlashan was elected Chairman to succeed me, amid acclamation. Earlier in the meeting I had mentioned that I had received your letter of 5 December and given your apologies for absence to the Committee. I was particularly asked to convey the Committee's best wishes to you for your continued recovery and to say how much all members of the Committee had appreciated your immensely valuable contributions to its work'. |

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- D.35 Civil Service Commission. Selection Boards.
- Letter of invitation to serve on the Selection Boards for recruitment to the Scientific Civil Service and copy of Bates's reply, December 1945.
- D.36, D.37 East Midland Rent Assessment Panel.
- Bates served on the panel 1967-71.
- D.36 Letters of appointment and renewal.
- Correspondence re research project on the membership of tribunals, University of Birmingham, 1969-71. Includes Bates's ms. notes of his replies to questionnaire, impressions of the work of the panel, etc.
- D.37 Notices of meetings, and of careful notes taken by Bates at meetings or on visits.
- D.38 Electrical Research Association.
- Correspondence arising from meeting of Committee 3E re Mumetal and Radiometal, May 1963.
- Letter thanking Bates for his service on Committee 3B: Sheet Steel, on its disbandment, November 1963.

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D.39-D.44

Home Office Scientific Adviser's Branch.

Bates served as Senior Scientific Adviser for Civil Defence, North Midlands Region, 1951-72, and was awarded the C.B.E. in 1966 for his service to Civil Defence.

Only papers for 1965-72 survive; they consist primarily of correspondence and material relating to conferences and meetings, and include Bates's notes of papers and discussions.

Several of these conferences were held at the University of Nottingham.

See also B.21.

D.39

No. 664 Regional Staff Course, January 1965.

Programme, list of participants.

Staff Conference, September 1965.

Provisional programme, brief correspondence.

Miscellaneous press-cuttings re regional scientific advisers are also included here.

D.40

Conference of Scientific Intelligence Officers, April 1966.

Held at Nottingham; includes ms. of Bates's speech of welcome, and brief correspondence.

D.41

No. 842 Regional Staff Conference, May 1967.

Programme, list of participants, exercise-book of detailed notes by Bates on papers and lectures.

D.42

No. 954 Regional Staff Conference, September 1969.

Programme, list of participants, Bates's notes on papers and lectures.

D.43

Refresher course for Scientific Intelligence Officers, October 1971.

Held at Nottingham; the conference was proposed and organised by Bates and includes duplicated invitation, programme and list of participants; Bates's ms. speech of welcome, and drafts of letters; forms of acceptance from participants; letters of thanks after conference; Bates's correspondence with F.H. Pavry (Home Office) and F.W. Spiers re conference.

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D.44 Regional Staff Conference, September 1972.

Programme, conference papers (heavily annotated by Bates), Bates's ms. notes on papers and lectures.

Correspondence with C. J. Stephens and F. H. Pavry re arrangements for the conference and re Bates's wish to retire from the post of Chief Regional Scientific Adviser, November 1972.

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- D.45-D.48 The Institute of Physics and The Physical Society.
- D.45 Miscellaneous correspondence re the affairs of the Institute, 1964-72.
- D.46 Drafts for articles submitted for publication in Physics Bulletin with some related correspondence.
- Includes: A note by Bates on the award of the Nobel Prize to L. Néel, 1970.
- Bates's obituary of B. Hodgson with correspondence from family and friends, 1972.
- Copy of a biographical note about Bates with Bates's own emendations, 1974.
- D.47 Bates's referee's comments on papers submitted for the Institute's publications. Includes some correspondence.
- D.48 Notices of meetings of the Institute, and especially of the Magnetism Group, 1966-77. Many are annotated by Bates, or accompanied by his notes of papers and discussions, and of material suitable for publication in Contemporary Physics.
- D.49 Inter-Services Research Bureau.
- Bates was a Consultant, 1941-45.
- Letter thanking Bates for his services, September 1944.

Committees and Societies

- D.50-D.58 International Union of Pure and Applied Physics (IUPAP).
- Bates was Secretary of the IUPAP Commission on Magnetism from its formation in 1957 until 1966 (see D.52-D.57). He also attended the XIIth (1966) and XIVth (1972) General Assemblies of IUPAP as an Observer (see below).
- For material re conferences on magnetism sponsored by IUPAP see E.1, E.2, E.4, E.7- E.9, E.10-E.34, E.35-E.39, E.47, E.49.
- D.50 XIIth General Assembly of IUPAP, Basle, 25-28 September 1966.
- Programme, list of Delegates and Observers, miscellaneous circulars.
- Papers assembled by Bates for the meeting, including correspondence, reports, etc. Bates's own list of contents appears at the front of the folder.
- D.51 XIVth General Assembly of IUPAP, Washington D.C., 20-25 September 1972.
- Correspondence re travel arrangements.
- Draft Agenda and miscellaneous background material.
- Programme of the meeting, list of Delegates and Observers.
- D.52-D.57 IUPAP. Commission on Magnetism.
- D.52 Miscellaneous correspondence, 1958-66, mainly re organisation of conferences, membership of the Commission, etc.
- D.53 Reports on the activities of the Commission, submitted by Bates to the Royal Society for the information of the British National Committee for Physics, 1962, 1963, 1964, 1966. Brief correspondence with D.C. Martin is also included.
- D.54 Meeting of 'Sub Group C - Magnetism', Grenoble, 3 July 1958 (during the Colloque International de Magnétisme. See E.4).
- Agenda of meeting and brief related correspondence.

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- D.55 Meeting of the Commission on Magnetism, Kyoto, Japan, 26 September 1961 (during the Conference on Magnetism and Crystallography. See E.7-E.9).
Agenda and Minutes of meeting.
4 pp. ms. notes taken by Bates at the meeting.
Correspondence re arrangements.
- D.56, D.57 Meeting of the Commission on Magnetism, Nottingham, 8 September 1964 (during the Conference on Magnetism. See E.10-E.34).
- D.56 Various drafts of Agenda and Minutes of meeting.
- D.57 Background material assembled by Bates, numbered 1-11 to correspond with items on the Agenda. Mainly reports and correspondence.
- D.58 Miscellaneous correspondence, mainly re sponsorship of conferences by IUPAP, 1956-65, 1969.

Committees and Societies

- D.59-D.73 University of London. Academic Advisory Committee to investigate the future role of Birkbeck College, University of London. 1966.
- Papers for meetings of the Committee at Birkbeck during 1966. Agenda, Minutes, background papers and some correspondence. Most of the papers are annotated by Bates and some are interfiled with pages of his own notes. The committee made its report in December 1966 and a copy is included in D.73.
- D.59 4 March.
- Folder includes letter from the Vice-Chancellor, London University, inviting Bates to serve on the Committee, 5 February 1966.
- D.60 24 March.
- D.61 26 April.
- D.62 27 May.
- D.63 16 June.
- D.64 21 July.
- D.65 30 August.
- D.66 19 September.
- D.67 6 October.
- D.68 3 November.
- D.69 21 November.
- D.70 25 November.
- D.71 8 and 9 December.
- D.72 30 December.
- D.73 Miscellaneous papers, January 1967. Includes minutes of meeting on 30 December 1966, final copy of the Committee's report and letters of thanks from the Clerk and Master of Birkbeck and the Vice-Chancellor, London University.

Committees and Societies

D.74-D.79

Restrictive Practices Court.

Bates was asked to act as expert adviser to the Registrar on the subject of permanent magnets in proceedings before the Restrictive Practices Court in respect of an agreement between members of the Permanent Magnet Association which merited examination under the Restrictive Trade Practices Act, 1956.

Bates did not give evidence at the hearing, which began on 20 November 1961, but his advice is contained in the correspondence in D.74-D.75 below.

- D.74 Correspondence, 1959, 1960. Includes invitation to Bates to act as expert adviser and his acceptance.
- D.75 Correspondence, 1961, 1962.
- D.76, D.77 Official papers for the case.
- D.78 Background material. Mainly reprints of articles used by Bates in preparing his evidence.
- D.79 Miscellaneous ms. notes, press-cuttings, etc.

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- D.80-D.106 Royal Society.
- D.80 Miscellaneous correspondence with the Executive Secretary, 1956-77.
- D.81 Royal Society. British National Committee for Physics.

Bates served on the Committee 1961-66 as a representative of The Institute of Physics and The Physical Society. Correspondence is mainly with the Executive Secretary of the Royal Society, 1960-67.

- D.82 Royal Society. British National Committee for Physics. Subcommittee to examine the draft recommendations of the S.U.N. ('Symbols, Units and Nomenclature') Commission of IUPAP.

Bates was a member of the Subcommittee which was set up in February 1962 to report to the British National Committee before October 1962.

Correspondence, minutes of meetings, 1962-63. Includes a copy of the draft recommendations of the S.U.N. Commission with annotations by Bates.

- D.83-D.85 Royal Society. Publications Board.

Bates was Chairman of the Board 1963-65. Correspondence is with the Executive Secretary of the Royal Society re meetings to consider applications for funding by the Board.

- D.83 1962-63.
- D.84 1964. Includes a full set of papers for meeting on 6 July.
- D.85 1965.

Committees and Societies

D.86-D.106 Royal Society. Symbols Committee.

Bates was appointed to serve on the Symbols Committee in 1960 and became Chairman in 1968. The majority of the papers below relate to the various updatings of the Royal Society's publication Symbols, Signs and Abbreviations (re-named from 1971 Quantities, Units and Symbols). The material consists of committee papers and proofs, many of them heavily annotated by Bates, and extensive correspondence with other members of the Committee. The gist of Bates's replies is often recorded in the form of ms. notes on the incoming letter.

D.86 Minutes and other related papers for meetings of the Symbols Committee, July 1964-May 1965. Some papers bear Bates's annotations.

D.87 Proof of report by the Symbols Committee on 'Symbols, Signs and Abbreviations Recommended for British Scientific Publications', 1967, with annotations by Bates.

Brief correspondence, 1967, and miscellaneous ms. notes by Bates.

D.88 Correspondence and other papers, 1967-69, re 'Symbols, Signs and Abbreviations'. The items were assembled by Bates and numbered by him from 1-25, but nos. 9, 20-25 are missing from the collection. Bates's list of contents appears at the front of the folder.

D.89 Correspondence and papers, 1969.

Copy of 'Symbols, Signs and Abbreviations', 1969, with annotations and loose pages of notes by Bates.

D.90 Correspondence and papers, 1970.

Copy of 'Symbols, Signs and Abbreviations' with ms. revisions for 1971 edition, for which the title was altered to 'Quantities, Units and Symbols' (often referred to by Bates as Q.U.S.).

D.91 Correspondence and papers 1971-72.

Committees and Societies

- D.92 Correspondence and papers, 1973-74.

At a meeting of the Symbols Committee on 22 November 1973, a Subcommittee, consisting initially of Bates (as Chairman), M. L. McGlashan and P. Vigoureux, was appointed to advise on the revision of Q.U.S. Sir Andrew Huxley was appointed as the fourth member of the Subcommittee in December 1973.

Most of the papers in this folder relate to a meeting of the Subcommittee on 28 January 1974.

- D.93 2 copies of Q.U.S. with notes and annotations by Bates and others for the revised edition, 1974.
- D.94 Ms. and typescript drafts by Bates of preface and publisher's advertisement for the second edition of Q.U.S.
- D.95-D.97 Correspondence and papers re the revision of Q.U.S., assembled and listed by Bates. Bates's ordering of these papers has been retained and his list of contents appears at the front of each folder.
- D.95 Correspondence between members of the Subcommittee, February-May 1974.
- D.96 Set of papers labelled by Bates 'Pre 14.6.74.'
- Many of these relate to an ad hoc meeting at the Royal Society, 14 May 1974, to discuss matters arising from the revision of Q.U.S.; there is also some correspondence with members of the Subcommittee.
- D.97 Set of papers labelled by Bates 'Post 14.6.74.'
- Includes draft Agenda and other papers for meeting of the Symbols Committee on 30 July 1974 and some related correspondence.
- D.98 Set of papers for meeting of the Symbols Committee, 30 July 1974.
- Includes draft and final version of Minutes of the meeting.
- D.99 Notes, drafts and correspondence arising from the meeting, July-December 1974.

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- D.100 D.100 2 proof copies of the 1975 edition of Q.U.S. with annotations and loose pages of notes by Bates.
- D.101 D.101 Correspondence and comments on the proof of the 1975 edition of Q.U.S., January-August 1975.
- D.102 D.102 Copy of the second edition of Q.U.S., 1975, with annotations and loose pages of notes by Bates.
- D.103 D.103 Miscellaneous correspondence, August-December 1975.
- D.104 D.104 Miscellaneous correspondence, 1976.
- D.105 D.105 Correspondence with N. Kurti re developments in scientific terminology, 1976.
- D.106 D.106 Miscellaneous correspondence, 1977.

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D.107-D.118 University Grants Committee (U.G.C.).

Bates acted as an Assessor, 1965-68, advising on the allocation of grants to universities for scientific and technical equipment.

The papers are presented in alphabetical order of the universities concerned. Miscellaneous background material has generally been discarded leaving only the correspondence and successive drafts of reports, but a full set of papers with Bates's annotations has been retained for Bath (D.108) and Surrey (D.116).

D.107 General correspondence, 1965-68. Includes invitation to act as Assessor with Bates's draft letter of acceptance, and letter from the Committee terminating the appointment, April 1968.

D.108 Bath University of Technology. 1967

Correspondence with U.G.C., S.H. Ayliffe and J.G. Wilson (co-assessor with Bates) re arrangements for visit to Bath to discuss grant application, July 1967.

Papers collected by Bates for visit, including some correspondence. Bates's ordering of these papers has been retained.

Typescript draft and final version of report to U.G.C.

D.109 Birmingham College of Advanced Technology. 1965

Correspondence with U.G.C., S.E. Hunt and H.T. Flint (co-assessor with Bates) re arrangements for visit to Birmingham to discuss grant application, August 1965.

Ms. draft and final version of report to U.G.C.

D.110 Exeter University. 1965

Correspondence with U.G.C., G.K.T. Conn and N. Kurti (co-assessor with Bates) re arrangements for meeting in London to discuss grant application, July 1965.

Ms. drafts and final version of report to U.G.C.

Committees and Societies

- D.111 Keele University. 1965
- Correspondence with U.G.C., D.J.E. Ingram and T.G. Pickavance (co-assessor with Bates) re arrangements for meetings in London and at Keele to discuss grant application, April and May 1965.
- Ms. draft and final version of report to U.G.C.
- D.112 Keele University. 1966
- Correspondence with U.G.C., D.J.E. Ingram and J.G. Wilson (co-assessor with Bates) re arrangements for meeting at Keele to discuss grant application, August 1966.
- Typescript report to U.G.C. A copy of the grant application, amended August 1966, is also included.
- D.113 Manchester College of Science and Technology. 1965-66
- Correspondence with U.G.C., Manchester University and N. Kurti (co-assessor with Bates) re grant application.
- Typescript report to U.G.C.
- D.114 Salford Royal College of Advanced Technology. 1966-67
- Correspondence with U.G.C., R.S. Tebble and G.O. Jones (co-assessor with Bates) re visit to Salford to discuss grant application, February 1967. Includes copy of application with annotations by Bates.
- Ms. draft and final version of report to U.G.C.
- D.115-D.117 Surrey University. 1966-67
(formerly Battersea College of Technology).
- During 1968-70 the University moved from its overcrowded London buildings to a new site at Guildford.
- D.115 Correspondence with U.G.C., E.G. Neal, L.R.B. Elton and D.M.A. Leggett of Surrey University and N. Kurti (co-assessor with Bates) re meetings to discuss the grant application, November, January and February 1966-67.
- D.116 Miscellaneous background material and 2 copies of grant application, both annotated by Bates and one containing emendations by Surrey, February 1967.

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- D.117 Ms. and typescript drafts and final version of report to U.G.C.
- D.118 Stirling University. 1967
- Correspondence with U.G.C., M.F.A. Harrison and G.O. Jones (co-assessor with Bates) re grant application. Includes schedules of equipment required with Bates's annotations and copy of letter to Harrison, 7 June, which was sent to U.G.C. in lieu of a formal report.

SECTION E CONFERENCES E.1 - E.50

Bates attended several international conferences, and was Chairman of the Organising Committee for the International Conference on Magnetism held at Nottingham University in September 1964 (see E.10 - E.34). The material mainly consists of correspondence with organisers and participants, but there are some drafts for papers or speeches, notes on proceedings, etc. The material is presented in chronological order and the correspondence is indexed.

Papers relating to the 47th Guthrie Lecture, which Bates delivered at the Nottingham Conference in 1964, are at E.30 - E.33.

See also A.27 for drafts of opening or closing remarks delivered by Bates at Grenoble (1950, 1970), Kyoto (1961) and Nottingham (1964).

- E.1, E.2 Conference on Physics of Magnetic Phenomena, Moscow, 23-31 May 1956.
- Bates gave 2 papers, on heat changes and on Bitter figures; D. Shoenberg also attended.
- The conference, scheduled for Sverdlovsk, was switched to Moscow shortly before it took place.
- E.1 Invitations to participants, travel arrangements.
- Material re Royal Society Delegation visiting U.S.S.R. at same time as conference.
- 2 (different) programmes of the conference.
- Bates's ms. journal of trip, with personal and scientific material, pp.2-7.
- Typescript notes on colleagues, research in Russia and papers read, 8 pp. and 2 pp., June 1956.
- Typescript note on the conference, prepared by Bates for British Electrical & Allied Industries Research Association, September 1956.
- Brief later correspondence with Russian colleagues, 1957.

Conferences

- E.2 Conference papers delivered by Bates:
- 'Thermal Changes Associated with Magnetization'.
2 annotated copies of typescript, one with extensive alterations. List of slides, diagrams, etc.
- 'Some New Experiments with Bitter Figures'.
2 annotated copies of typescript (one lacks pp.1-3).
List of slides.
- E.3 The Institution of Electrical Engineers. Convention on Ferrites, 29 October-2 November 1956.
- 2 ms. lists of slides for paper on 'Heat changes accompanying Magnetization Processes in Ferrites', by L.F. Bates and D.A. Christoffel.
- E.4 Colloque International de Magnétisme, Grenoble, 2-6 July 1958.
- Correspondence, mainly with L. Néel, re arrangements for finance, travel, etc., 1957-58.
- List of participants.
- Ms. and typescript drafts and final version of Bates's report on the colloquium for IUPAP.
- See D.54 for meeting of IUPAP Sub Group C - Magnetism, which took place during this colloquium.
- E.5 Conference on Some Aspects of Magnetism, Sheffield, 22-24 September 1959.
- Programme and abstracts of papers with annotations and some loose pages of notes by Bates.
- Report on the conference by R.S. Tebble and D.E.G. Williams.
- E.6 Visit to Poland (Warsaw, Posnan, Cracow, Zakopane), 3-13 November 1960.
- Notes on colleagues met, and on research in progress.
- Bates gave four lectures, one of which appears at B.27. There is no surviving correspondence re this visit.

Conferences

- E.7-E.9 International Conference on Magnetism and Crystallography, Kyoto, Japan, 25-30 September 1961.
See D.55 for meeting of IUPAP Commission on Magnetism held during this conference. See also A.27.
- E.7 Correspondence with organisers and others, 1959-60.
- E.8 Programme and list of participants.
Typescript of speech by Bates delivered at the Opening Session of the Conference.
Material re a colloquium on Magnetic Materials, Tohoku University, 5-6 October 1961, which Bates also attended during his stay in Japan.
- E.9 Letter from Bates to the Registrar, Nottingham University, describing his visit to universities and laboratories in India and Hong Kong while en route for the conference in Kyoto, and also a brief tour of the U.S.A. on his way back to England.
Ms. and typescript draft and official version of Bates's report on the Kyoto conference for IUPAP.

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Conferences

E.10-E.34 International Conference on Magnetism, University of Nottingham, 7-11 September 1964.

Most of the following papers were originally kept by Bates in three large folders with a numbered list of contents on the cover. In addition there were several other folders with more miscellaneous contents. Bates's ordering of the papers in a single, roughly chronological, sequence has not been retained; instead, all the material has been interfiled and split into several smaller units grouped by subject for ease of reference.

The Conference was held at Nottingham to coincide with Bates's retirement, and it was also arranged that he should deliver the 47th Guthrie Lecture during the Conference (see E.30-E.33).

See D.56, D.57 for meeting of the IUPAP Commission on Magnetism held during this conference. See also A.27.

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|------|---|-----------------|
| E.10 | Correspondence with B. Bleaney and L. Néel <u>re</u> possibility of arranging an international conference on magnetism at Nottingham or Oxford in 1963 or 1964. | 1959 |
| E.11 | Correspondence with the Royal Society <u>re</u> preliminary organisation and financial arrangements for conference. Includes Agenda and Minutes for a Meeting of a Sub-Committee of the British National Committee for Physics to consider detailed arrangements for the conference, 29 March 1961. | 1961, 1963-64 |
| E.12 | Correspondence with The Institute of Physics and The Physical Society <u>re</u> general administration and finance. The Society was responsible for the organisation of the conference through an Organising Committee of which Bates was Chairman. | 1959, 1961-65 |
| E.13 | Agenda and Minutes of Meetings of The Institute of Physics and The Physical Society's Organising Committee for the International Conference on Magnetism. | 1962-64 |
| | 17 January 1962 | 25 April 1963 |
| | 28 May 1962 | 24 October 1963 |
| | 24 July 1962 | 18 March 1964 |
| | 19 December 1962 | |

Related ms. notes by Bates are also included. See E.12 above for correspondence re Agenda items, etc.

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Conferences

E.14	Agenda and Minutes of Meetings of the Program and Papers Sub-Committee of the Organising Committee. 25 November 1963 18 March 1964 1 April 1964 15 April 1964	1963-64
E.15	Correspondence with the Town Clerk, City of Nottingham (T.J. Owen).	1962-64
E.16	Correspondence with academic and administrative staff of Nottingham University.	1961-64
E.17	Correspondence with Secretaries-General of IUPAP (P. Fleury, C.C. Butler, L. Kerwin) <u>re</u> IUPAP's sponsorship of the conference.	1961, 1963-65
E.18-E.26	Correspondence with participants.	1962-65
E.18	A	
E.19	B	
E.20	C - F	
E.21	G - J	
E.22	K	
E.23	L - N	
E.24	O - R	
E.25	S	
E.26	T - Z	
E.27	Brief correspondence <u>re</u> financial arrangements. Includes copy of appeal letter and list of donors.	1959, 1961-63
E.28	Other miscellaneous correspondence (not indexed).	1962-64
E.29	Draft timetables, lists of participants, circular letters, etc. Includes ms. notes by Bates <u>re</u> various arrangements.	

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Conferences

- E.30-E.33 Material re 47th Guthrie Lecture delivered by Bates during the Nottingham conference.
- E.30 Correspondence with The Institute of Physics and The Physical Society, 1962-64.
Includes formal invitation to Bates to be Guthrie lecturer for 1963 with the suggestion that the delivery of the lecture should be postponed to coincide with the International Magnetism Conference at Nottingham in 1964. There is also some correspondence re the origins of the Guthrie Lecture and the founding of The Physical Society of London.
- E.31 Other related correspondence, including comments from colleagues on drafts of the lecture sent to them by Bates, and a brief résumé of Guthrie's career.
- E.32 Ms. draft and final typescript, annotated by Bates for publication, of the 47th Guthrie Lecture on 'Magnetic Processes in Weak and Moderate Fields'.
- E.33 Miscellaneous background material, notes on literature, etc.
- E.34 Ms. and typescript drafts of articles and reports on the conference by Bates, with brief related correspondence.
Includes: Report for the Royal Society.
Preface to the published Conference Proceedings.
Review for The Institute of Physics and The Physical Society.
Article for Contemporary Physics.

Conferences

- E. 35-E. 39 1967 International Congress on Magnetism, Boston, Mass., 10-16 September 1967.
- E. 35 Correspondence with organisers, 1962, 1965-67, including J.H. Van Vleck, General Chairman of the Congress.
- E. 36 Correspondence with B. Bleaney and D.C. Martin re administration of Royal Society grant towards travelling expenses for the Congress.
- E. 37 General correspondence.
Includes: Material re Third International Colloquium on Magnetic Films, Boston, Mass., 18-20 September 1967.
Correspondence with travel agents.
Requests to Bates for information re the Congress, 1965-66.
- E. 38 2 exercise books containing ms. notes by Bates on papers delivered at the Congress.
- E. 39 6 pp. ms. report on the Congress by Bates, probably written for a meeting of the Magnetism Group of The Institute of Physics and The Physical Society, 29 September 1967, a programme for which was attached and is included here.
- E. 40 Conference on High Magnetic Fields and their Applications, University of Nottingham, 17-19 September 1969.

Programme and abstracts of papers with annotations by Bates.

2 ms. drafts by Bates of a review of 'Conference Booklet no. 1. High Magnetic Fields and their Applications', published by The Institute of Physics and The Physical Society.
- E. 41 Second European Conference on Hard Magnetic Materials, Milan, 23-25 September 1969.

Bates was Chairman of Section I 'Fundamentals'.
Brief correspondence with organisers and travel agents.
Programme and abstracts of papers, annotated by Bates.
Ms. of speech delivered by Bates at the Opening Meeting of the Conference.

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- E.42 1970 International Conference on Magnetism, Grenoble, France, 14-19 September 1970
and
IV International Colloquium on Magnetic Thin Films, Prague, Czechoslovakia, 21-23 September 1970.

Correspondence with travel agents.

Programmes for both meetings.

Ms. drafts in English and French of speech delivered by Bates as Chairman of the Inaugural Meeting (see also A.27).

Correspondence with N. Kurti and the Royal Society re administration of Royal Society travel grant for participants at the Conference in Grenoble.
- E.43-E.46 Conference on 'Selected Problems in Magnetism', Bochum, W. Germany, 25-28 July 1972.

Bates was asked to deliver the opening address, the text of which was subsequently published in Contemporary Physics, 13, 601-604.
- E.43 Correspondence with organisers, travel agents and E.P. Wohlfarth re arrangements for travel and Bates's speech; programme of conference, list of participants.
- E.44 First ms. draft of Bates's opening address.
- E.45 Second ms. draft headed 'A Link between Past and Present in European Magnetism'. Includes correspondence with E.W. Lee and E.P. Wohlfarth with comments on the ms. and an alternative draft of the final section.
- E.46 Third ms. draft and typescript with corrections and annotations for publication in Contemporary Physics.
- E.47 International Conference on Magnetism, Moscow, 22-28 August 1973.

Correspondence with organisers, 1970-72. (Bates was asked to advise the Organising Committee.)

Correspondence re arrangements, 1973 (mainly with travel agents).

Preliminary announcement of conference; final programme.

New Year greetings for 1974 from N.S. Akulov and E. Kondorsky.

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- E.48 Third European Conference on Hard Magnetic Materials,
Amsterdam, 17-19 September 1974.
- Programme of conference with ms. annotations by Bates.
- E.49 Ninth International Conference on Magnetism, Amsterdam,
6-10 September 1976.
- Correspondence with B. Bleaney, J.H. Horlock and the
Royal Society re administration of Royal Society Travel
Grant for this conference.
- E.50 Miscellaneous shorter correspondence re conferences,
1965, 1976.

SECTION F EXAMINING AND EDUCATION F.1 - F.41

The first half of this Section is concerned with Bates's work as Visiting Examiner to the University of London, 1961-77 (see F.1 - F.27). The remainder contains correspondence re examining in other universities, including some overseas, for both undergraduate and higher degrees, and advice on appointments, particularly in overseas universities.

F.1-F.27 University of London, 1961-77

Bates served as Visiting Examiner to the Board of Studies in Physics.

He advised on syllabus content, commented on draft examination papers, vetted written scripts and conducted oral examinations for the Colleges of the University and for external candidates. The examinations - for Honours Degrees, Ancillary Physics, Course-Unit Physics, etc. - underwent major re-organisation in 1967, entailing alternative sets of papers and tests for several years. Some of Bates's examining was arranged directly with Colleges, some via a central board.

Bates made very careful notes on the scripts he saw and on the candidates he was to examine, and compiled lists of questions and problems to be used at orals. Samples of these have been retained in F.26, F.27.

F.1 Reports by Bates and H.T. Flint on syllabus and examinations in physics, 1961-64.

Correspondence with Flint and with members of London University, 1963-64.

F.2 Lists of candidates and detailed comments by Bates on questions and answers at oral examinations, 1963, 1964.

F.3 Comments on draft examination papers and correspondence, mainly with H.T. Flint, December 1964-February 1966.

Examining and Education

- F.4 Alternative Ancillary Examinations in Physics, 1965, 1966.

 Correspondence, comments on draft papers, Bates's draft report.
- F.5 B.Sc. (Special) in Physics (old scheme), 1967.

 Correspondence, comments on draft papers.
- F.6 Queen Mary College. New B.Sc. Degree in Physics, 1967.

 Correspondence, comments on draft papers.
- F.7 Queen Elizabeth College, 1967.

 Correspondence, comments on draft papers.
- F.8 General Ancillary Physics, 1967, 1968.

 Correspondence, Bates's draft report for 1967, comments on papers.
- F.9 B.Sc. (Special) in Physics (old scheme), 1968.

 Correspondence, comments on papers, Bates's draft report.
- F.10 B.Sc. in Physics (new scheme), 1968.

 Correspondence, comments on draft papers, Bates's report on courses.
- F.11 Queen Mary College, 1967-69.

 This college conducted examinations twice a year from 1968 since the new Degree system was run there on a 12-week semester basis.

 Correspondence, comments, reports, 1967-69.
- Bates ceased to serve as Visiting Examiner from November 1969.

Examining and Education

- F.12 B.Sc. and B.Sc. (Special) in Physics, 1969-70.
Correspondence, comments on draft papers, 1969, 1970.
- F.13 B.Sc. in Physics (new scheme), 1970.
Correspondence, reports, comments on drafts and attendance arrangements.
Includes correspondence re Granville studentship.
- F.14 Course-Unit Examinations in Physics for Internal Students, 1971.
Correspondence and reports, including correspondence re Bates's retirement as examiner for Royal Holloway College under the three-year rule.
- F.15 General Ancillary Physics, 1971.
Correspondence with Sir John Cass College (City of London Polytechnic) and Woolwich Polytechnic (Thames Polytechnic).
- F.16 B.Sc. (Special) in Physics, 1971.
Correspondence, comments on papers, Bates's report on Part I (1970), Part II (1971) and the B.Sc. (Old Regulations), 1971.
- F.17 B.Sc. (Special) in Physics, 1972.
Correspondence, comments on papers, Bates's report on Part I (1971), Part II (1972) and the B.Sc. (Old Regulations), 1972.
- F.18 Imperial College. Physics for Chemists.
Correspondence, 1971-73.
- F.19 University College, 1972.
Brief correspondence, Bates's report.
- F.20 B.Sc. Special Part II and Standard III, 1973.
Correspondence, comments on draft papers, arrangements for oral examinations.
Correspondence with J.C.E. Jennings re use of SI Units in examinations.

Examining and Education

- F.21 Imperial College. Physics for Chemists.
Correspondence, comments on papers, 1973-74.
- F.22 Miscellaneous correspondence, July-October 1973,
mainly re examining fees.
- F.23 B.Sc. Special Part II and Standard III.
Correspondence, comments on papers, 1974,
1975, 1976.
- F.24 B.Sc. Standard III, 1977.
Correspondence, copies of draft papers with
detailed comments by Bates, draft report,
Bates's ms. notes for oral examinations.
- F.25 Correspondence re examining in 1978.
Bates initially accepted the invitation to act as
External Examiner in 1978, but in July 1977 he decided
not to act again, mainly in view of the small number of
candidates for Standard III.
Correspondence includes letter of thanks from the
Chairman of Standard III.
- F.26 Miscellaneous notes for orals and examination questions,
mainly undated.
- F.27 Ms. drafts by Bates for examination questions, 1949.
These were found with the University of London material,
but they may have been written for Nottingham University
students.

Examining and Education

F.28

University of Hull.

Bates acted as External Examiner, 1965-68, for Honours, Joint, Pass and Ancillary examinations in Physics.

Correspondence with colleagues re invitation and arrangements, Bates's notes on examination papers.

F.29

Ahmadu Bello University, Zaria, Nigeria.

Bates acted as External Examiner for the B.Sc. in Physics Parts II and III, 1964-69.

Correspondence is mainly with the Professor of Physics, N.J. Skinner (a former student of Nottingham University), and includes several letters referring to the unsettled political situation in Nigeria and its effect on the University. There are also several exchanges with Ahmadu Bello University's London representative.

In addition to Bates's comments on draft papers, which occur throughout the correspondence, there is also a set of draft papers for 1969 bearing his annotations.

Bates visited Ahmadu Bello twice in connection with his work as External Examiner, in 1965 and 1968. See A.32 for other papers relating to the 1965 visit which he used as an opportunity to see other universities in West Africa.

See also F.36.

F.30

Invitations to serve as Visiting External Examiner from Brighton College of Technology (1964) and the Royal University of Malta (1965). Bates was forced to decline both these invitations because of his commitments as External Examiner for London University.

F.31-F.35

Correspondence and notes re external examining of doctoral theses in British and foreign universities, 1964-70.

F.31

A - C

F.32

G - J

F.33

M - P

F.34

R

F.35

R - W

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Examining and Education

- F.36-F.39 Advice on university appointments.
- Correspondence, including ms. notes by Bates, re applications for chairs and research posts in British and foreign universities, 1963-67.
- F.36 Ahmadu Bello University, Nigeria.
- University College of the South West (Exeter).
- University of Hong Kong.
- University of Ife, Nigeria.
- University of Lagos, Nigeria.
- F.37 University of London.
- Makerere University, Uganda.
- University of Malawi.
- Royal University of Malta.
- F.38 University College of Swansea.
- F.39 University of Warwick.
- F.40 Commonwealth Scholarship Commission.
- Letter thanking Bates for serving on the Panel of Advisers, 1962-63 and asking him to serve for 1963-64. Bates was unable to accept the invitation due to pressure of other commitments.
- F.41 Council of Europe. Committee for Higher Education and Research. Meeting of Experts on Physics Curricula, Strasbourg, 22-24 November 1966.

Bates was asked to represent the United Kingdom at this meeting.

Correspondence with colleagues and travel agents; list of participants; brief notes, not in Bates's hand.

SECTION GCORRESPONDENCE G.1 - G.71

The main sequence of correspondence with both individuals and institutions (G.1 - G.66) is presented in alphabetical order, dated and, where possible, with some indication of content. The names of all individual correspondents appear in the Index.

Miscellaneous shorter correspondence appears at the end of the Section and has not been indexed.

Exchanges are both personal and scientific, often intermixed. It is interesting to note how many letters there are from former students of Nottingham University, many of whom continued to write to Bates even when they had not been to England for several years.

G.1	Adam, G. Includes personal and scientific correspondence	1967-77
G.2	Andrade, E. N. da C. <u>and</u> Andrade M.	1940, 1967, 1970
G.3	Baqi, A.	1969-76
	Betts, D. D.	1972-73
G.4	Blackett, P. M. S.	1949, 1950, 1952, 1958
G.5	Bozorth, R. M.	1949, 1951, 1968 (Bates's carbon only for last 2 years)
	Bragg, Sir Lawrence <u>re</u> Royal Institution lectures	1954
	Brown, R. C.	1973
	Brown, S. <u>re</u> gyromagnetic ratio The final letter was annotated by Bates in September 1964 'interesting correspondence on a fundamental mistake in physical measurements'.	1954

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- G.6-G.8 Cambridge University Press 1939-72
Correspondence and papers re Bates's book Modern Magnetism, which was first published in 1939, and reprinted in 1948, 1951, 1961, 1963.
- G.6 Correspondence with C.U.P., 1939-72. Includes copy of the original agreement to publish the book, dated 18 March 1938; a lengthy exchange, mainly with F.H. Kendon, re arrangements for the publication of the 3rd edition which appeared in 1951; and a letter from C.F. Eccleshare, 23 March 1971, informing Bates that the Press were unable to undertake a further reprinting of the book.
- G.7 Royalty statements and circulars from C.U.P., 1939-73. Copies of reviews of the 1st and 2nd editions of Modern Magnetism are also included here.
- G.8 Letters from recipients of complimentary copies of the 1st edition, 1939.
- G.9 Carey R. 1967, 1971-76
- G.10 Cherwell, Lord 1951
re Cherwell's application to the Paul Instrument Fund Committee
- Cockcroft, Sir John 1950
re application of neutron beams to magnetic phenomena
Includes a brief letter from Elizabeth Cockcroft, 1967.
- G.11 Crangle, J. 1967, 1971, 1975
Includes extensive notes by Bates on conversion from CGS to SI units arising from a paper by Crangle and G.M. Goodman published in Proc.Roy.Soc. Lond., A, 321, 1971, a copy of which, annotated by Bates, is included in the folder.
- G.12 Domb, C. 1962, 1969-70
re the 'Curie point'
- Davis, J. H. 1971-77

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- | | | |
|------|--|---------------------|
| G.13 | Edmondson, A. S.
<u>re</u> SI units | 1976 |
| | Eisner, H. S.
<u>re</u> construction and operation of a
cryostat. Annotated by Bates, 19
September 1964, 'This is very interesting
for it seems to anticipate an instrument
later used and developed by Imperial
Chemical Industries'. | 1949 |
| G.14 | Flint, H. T. | 1964, 1966, 1970-71 |
| | Goodeve, Sir Charles
<u>re</u> obituary notice of H.S. Hatfield | 1966-67 |
| G.15 | Gorter, C. J. | 1950-51 |
| | Gould, J. E.
<u>re</u> Columax | 1965 |
| | Guillaud, C. | 1973 |
| G.16 | Hiltbrand, E. | 1977 |
| | Hinton of Bankside, Lord
<u>re</u> possible location of a nuclear
power station near Nottingham | 1955 |
| | Hume-Rothery, W. | 1951, 1963 |
| G.17 | Jennings, R. E. | 1972 |
| | Keeley, T. C. | 1976, 1977 |
| G.18 | King's School, Grantham
Bates was on the Board of Governors,
1955-1964. | 1955, 1963-65, 1974 |
| | Kittel, C.
<u>re</u> domain theory | 1949 |

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Correspondence

- | | | |
|------|---|------------------|
| G.19 | Koenigsberger, J. G. | 1939-40, 1946-48 |
| | <p>Correspondence <u>re</u> a paper by Koenigsberger on 'Ferromagnetic Parameters and Grain Size' which he submitted to the <u>Philosophical Magazine</u> in 1939. On being advised to abbreviate the paper, he requested some help in improving the English of it and the Editor accordingly asked Bates if he knew of a research student willing to undertake the task. Bates gave the ms. to J. C. Weston, but the outbreak of war interrupted the proceedings, and the revised draft was put into storage until it could be sent to Koenigsberger for approval.</p> <p>On 14 November 1946, Koenigsberger wrote to Bates enquiring as to the fate of his manuscript. Bates initiated arrangements for its publication, but Koenigsberger died on 3 December and the paper had to be published posthumously.</p> <p>In addition to letters from Koenigsberger, the folder includes correspondence with the publishers and Editor of the <u>Philosophical Magazine</u>, Koenigsberger's wife and daughter, and J.C. Weston.</p> | |
| G.20 | Kothari, D. S. | 1949 |
| | <p><u>re</u> spontaneous generation of magnetic fields</p> | |
| | Kurti, N. | 1974 |
| | <p>(Bates's ms. draft only)</p> | |
| G.21 | Lee, E. W. | 1967, 1970-77 |
| | <p>Scientific and personal correspondence.</p> | |
| G.22 | Lennard-Jones, Sir John | 1948 |
| | Lynch, A. C. | 1963 |
| | <p><u>re</u> spike domains in strong fields</p> | |
| | McCrea, W. H. | 1953 |
| G.23 | McGlashan, M. L. | 1971-78 |
| | <p>Includes extensive comments by Bates on a draft by McGlashan entitled 'Essay on magnetic susceptibilities and related quantities'.</p> | |

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G.24	Merton Park Studios Ltd. <u>re</u> a film of cobalt Bitter figures taken in the Nottingham University Physics Department	1950-51
G.25	Ministry of Supply <u>re</u> magnetic fluid clutches	1950
G.26	Mott, Sir Nevill	1966
	Nash, W. F.	1964, 1966
G.27	National Institute for the Blind	1950
G.28	Néel, L. E. F. Includes correspondence with The Physical Society <u>re</u> arrangements for Néel's visit to England to receive the Holweck Prize, 1952.	1951-54
G.29	Nicolaysen, L. O.	1966
	Newman, F. A.	1951
G.30-G.45	Noakes, G. R.	1963-77

G.R. Noakes was the Editor of Contemporary Physics and almost all the correspondence is about the day to day running of the journal. Bates was a member of the Editorial Board from the journal's inception in 1959 until his death, and the extent of his contribution is manifest from the bulk of the papers that follow. He sought out authors (including many from among his former students), refereed papers and also contributed many articles and reviews himself.

G.R. Noakes writes: 'He was particularly valuable in a number of ways. First, he was a willing contributor and reviewer ... Secondly, he had valuable contacts abroad, was able to get authors from Russia and Bulgaria, and was able to deal with the occasional manuscript in Russian. And he seemed to have friends all over the world'. (Private communication, 1979).

The correspondence mainly consists of letters from Noakes. Bates's replies are sometimes in the form of ms. drafts, or more often notes jotted on the incoming letters, and correspondence is interleaved with notes on papers refereed by Bates. Brief exchanges with contributors to Contemporary Physics have not been indexed.

For drafts of articles written by Bates for Contemporary Physics, see B.40-B.43.

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G.30	1963, 1964	
G.31	1965	
G.32	1966	
G.33	1967	
G.34	1968	
G.35	1969	
G.36	1970	
G.37	1971	
G.38	1972	
G.39	1973	
G.40	January-August 1974	
G.41	September-December 1974	
G.42	January-July 1975	
G.43	August-December 1975	
G.44	1976	
G.45	1977	
G.46	Pacey, A. J.	1963, 1964, 1970
G.47	Pauthenet, R.	1967, 1972
	Potter, H. H.	1951, 1955
G.48	Power Jets Ltd.	1944, 1946
	<p>Correspondence re a patent application for 'Improvements relating to temperature control systems' by Power Jets Ltd. (Bates gave some advice during the initial stage of the development of the invention.) A copy of the provisional patent specification is included in the folder.</p>	

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- | | | |
|------|---|---------------------|
| G.49 | Robinson, H. R. | 1952 |
| | Rogers, J. | 1971-77 |
| | Mainly personal correspondence. | |
| G.50 | Shankland, R. S. | 1970 |
| | Includes correspondence <u>re</u> Shankland's retirement, 1976. | |
| | Skinner, N. J. | 1971-76 |
| G.51 | Smith, D. H. | 1968-69 |
| | <u>re</u> SI units | |
| G.52 | Spivey, S. | 1964-65, 1969-77 |
| G.53 | Standley, K. J. | 1963-75 |
| G.54 | Stevens, K. W. H. | 1953-54, 1964, 1974 |
| G.55 | Stoner, E. C. | 1953 |
| | <u>re</u> magneto-thermal measurements on nickel | |
| | Sucksmith, W. | 1977 |
| | Tyndall, A. M. | 1940, 1948, 1952-54 |
| | The 1940 correspondence is annotated by Bates, 19 September 1964 'Interesting correspondence on work which eventually gained me the Holweck Prize'. The sequence includes letters from Sucksmith and Stoner as well as Tyndall. | |
| G.56 | Van Praagh, G. | 1946 |
| | (Bates's carbons only) | |
| | Van Vleck, J. H. | 1975 |
| | <u>re</u> SI units | |
| G.57 | Vigoureux, P. | 1974-76 |
| | Includes correspondence with Sir Rudolf Peierls. | |
| | Von Engel, A. H. | 1954 |

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G.58	Whiteley, W.	1943, 1948, 1951
	Wohlfarth, E. P.	1950
	Young, F. G.	1955
G.59	Correspondence with various colleagues arising from a paper by K.M. Polivanoff and A.A. Braude (translated from Russian) on 'Non-Hysteretic Magnetization and its Application to the Measurement of Small Currents and E.M.F.'s'. In a letter dated 15 December 1956, Bates describes the paper as being 'based on our work'. A typescript of the paper is included in the folder.	1956-61
G.60-G.63	References, advice on careers, research, publication of papers.	1950-76
G.60	A - G	
G.61	H - K	
G.62	L - N	
G.63	P - V	
G.64-G.66	Correspondence <u>re</u> elections and appointments. 3 folders in alphabetical order.	1960-77
G.64	L	
G.65	M - N	
G.66	S - Z	
G.67-G.71	Miscellaneous shorter correspondence (unindexed).	
G.67	Correspondence with publishers. In alphabetical order.	1960-74
G.68	Correspondence with firms - requests for data or advice, exchanges of specimens. In alphabetical order.	1960-69
G.69	Correspondence <u>re</u> exchange of reprints, requests for permission to reproduce photographs. In chronological order.	1943-76

Correspondence

- G.70 Shorter scientific correspondence - requests for advice, information, arrangements for visits, etc. In chronological order. 1951-77
- G.71 Miscellaneous personal correspondence.

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