

THE ROYAL COMMISSION ON HISTORICAL MANUSCRIPTS

Report on the correspondence and papers of
WILLIAM CHARLES EVANS FRS
(1911-1988)

deposited in University College of North Wales Library

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THE ROYAL COMMISSION ON HISTORICAL MANUSCRIPTS
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GENERAL INTRODUCTION

OUTLINE OF THE CAREER OF W C EVANS

William Charles Evans was born in Penrhos near Caernarvon on October 1, 1911. He was educated at local schools in Bethel and Caernarvon and won a scholarship to the University College of North Wales (UCNW), Bangor, in 1929. Evans received his BSc in chemistry with first class honours in 1932 and studied for a further two years at UCNW to gain his Teachers Training Diploma and his MSc in organic chemistry.

In 1934 Evans was awarded the Platt Physiological Scholarship to Manchester University. Here he studied for his PhD in physiological chemistry (on the tyrosinase-tyrosine reaction) under H S Raper, while also taking the First and Second M B courses to improve his knowledge of biology. Evans gained his doctorate in 1937.

Evans's first appointment was at Leeds University, initially as Demonstrator, later as Lecturer, in biochemistry in the Physiology Department. Following the outbreak of war Evans became Director of Plasma Production and Serology in the Leeds University-based Regional Blood Transfusion Laboratories. In 1942 he married Dr Irene Antice Woods, who had gained her doctorate in zoology at Leeds. She was to collaborate on many joint projects with her husband as well as pursuing independent research. They had four children. Evans held the Directorship for four years until 1944 when he moved to St Mary's Hospital Medical School, Paddington, to work under Professor (later Sir) Alexander Fleming on the production of diphtheria toxin in the Inoculation Department (Director Sir Almroth Wright).

In 1946 Evans returned to Wales. He was Special Lecturer in biochemistry at the University College of Wales, Aberystwyth, initiating research on the health problems of farm animals associated with certain plants, 1946-51. On the death of G W Robinson Evans was appointed to the Chair of Agricultural Chemistry at UCNW, a position he held until retirement in 1979. During this period he oversaw a considerable expansion of his Department of Agricultural Chemistry into one of Biochemistry and Soil Science.

Evans's most important research at UCNW was in two main areas: the elucidation of the biochemistry of the aerobic and anaerobic pathways of the catabolism of aromatic compounds (including agrochemicals and pesticides) in Nature, and the isolation of the toxic factors in bracken fern causing the poisoning of farm animals - this undertaken in frequent collaboration with his wife, who independently demonstrated that bracken was also carcinogenic. For his outstanding contributions in both fields Evans was elected a Fellow of the Royal Society in 1979.

Evans was of humble origins; his father worked as a stone-mason in the Dinorwig Slate Quarries. It was a Welsh-speaking environment and Evans did not begin to learn English until about ten years old. Throughout this collection are notes, drafts and letters attesting to his deep love of his homeland and pride in his native tongue. He realised the importance for the survival of the Welsh language of its being used as a medium for scientific communication and served as Honorary President of Y Gymdeithas Wyddonol Genedlaethol (the National Scientific Society), lectured and broadcast on scientific matters in Welsh and wrote for Welsh language publications. It was fitting therefore that following his death in 1988 the journal Y Gwyddonydd was to publish as his memorial an autobiographical 'Portrait of a Welsh scientist' which he had drafted for it shortly before he died.

DESCRIPTION OF THE COLLECTION

The material is presented in the order given in the List of Contents. The collection is particularly noteworthy for its full coverage of Evans's research.

Section A, Biographical, is slight but includes a number of autobiographical accounts and the many letters of congratulation Evans received on his election as Fellow of the Royal Society.

Section B, Leeds University, comprises a small amount of duplicated teaching material.

Section C, University of Wales, consists chiefly of teaching material used by Evans and colleagues at the University College of Wales, Aberystwyth and UCNW, and applications, correspondence and reports relating to the financing of Evans's research through the 1970s and early 1980s. There are also a number of drafts by Evans on the history of biochemistry in Wales with particular reference to UCNW.

Section D, Research, is the largest in the collection. Nearly all aspects of Evans's research are well documented. In addition to notebooks used by Evans as an undergraduate, postgraduate notes and material dating from Evans's wartime service in the Blood Transfusion Service, there are extensive sequences of notes on Evans's later research at Aberystwyth and Bangor on pasture plants, bracken toxicity and the breakdown of aromatic compounds. There is also material relating to a commercially funded research project on the degradation of wattle tannins.

Section E, Publications, Lectures and Broadcasts, is chiefly drafts by Evans with related correspondence. It includes much unpublished work. Also in this section is a collection of lectures and other teaching material originally belonging to A N Worden, Professor of Animal Health at Aberystwyth 1945-50. It provides fascinating documentation of the teaching of veterinary science in London and Cambridge in the 1930s. There is a complete set of reprints of Evans's publications at E.131.

Section F, Visits and Conferences, is a chronological sequence of material relating to visits made and conferences attended by Evans. This short section is dominated by the correspondence and papers from Evans's 1969 visit to the University of Khartoum, principally to give advice on the Department of Biochemistry and Soil Science there.

Section G, Correspondence, contains few extended sequences of correspondence. Much of the correspondence refers to specific research problems and many of Evans's letters therefore contain quite detailed accounts of his current research. The section also includes Evans's references and recommendations including material relating to his work as External Examiner for a number of universities.

ACKNOWLEDGEMENTS

We are very grateful to Dr I Antice Evans for making the manuscripts available and for her advice and encouragement, and to Dr G P Parry, University of Bath, for assistance with material in Welsh. A little material is retained in family hands. This includes Evans's Ph.D thesis and memorabilia relating to Sir Almroth Wright including a boxed set of calibrated glass capillary pipettes made by Wright.

Timothy E Powell
Peter Harper
Bath 1990

SECTION A

BIOGRAPHICAL

A. 1 - A.28

- A.1 The Times obituary of Evans, 29 July 1988.
- A.2 'Portreadau o Wyddonwyr o Gymru' ('Portrait of a Welsh scientist'). Written by Evans shortly before his death and published, with introductory and concluding paragraphs by I W Williams, as Evans's Memorial in Y Gwyddonydd 26 (1988).
- A.3 Curriculum vitae and list of contributions to science, 19 December 1974. Prepared for R T Williams's nomination of Evans to the Fellowship of the Royal Society.
- A.4 'Personal notes, which awakened interest in biochemistry', February 1985. Evans's account of his life to 1946.
- A.5 Autobiographical accounts, 1979, 1983 and nd, including accounts in Welsh.
- A.6 'Brilliant Bethel Brothers', a photocopy of cutting from local paper ca. 1946-50 recording the achievements of Evans and his elder brother, Harry.
- A.7 Entries for Who's Who and Who's Who in Europe, nd.
- A.8 Bibliographies arranged chronologically, 1975 (with supplementary lists 1976-78 and 1979-88) and by subject, 1975.
- A.9 Photographs of Evans, including that reproduced in 'Portreadau o Wyddonwyr o Gymru' (A.2).
- A.10 Photographs of others including H H Dale, F C Happold, F G Hopkins, K J P Orton and A E Wright.

Biographical

- A.11 - A.16 Election to Fellowship of the Royal Society, March 1979.
- A.11 Correspondence re candidature, 1974-78. See also A.3.
- A.12 Correspondence with Royal Society following election; cutting from local Welsh language paper.
- A.13 - A.16 Letters of congratulation.
- | | | | |
|------|-------|------|-----------------------------|
| A.13 | A - G | A.15 | N - Y |
| A.14 | H - M | A.16 | First name and unidentified |
- A.17 - A.19 Retirement, October 1979.
- A.17 Bangor Gazette, October 1979. Tribute to Evans at pp.15-16.
- A.18 Letters, cards etc., expressing good wishes; correspondence re retirement Dinner Party.
- A.19 Correspondence with D W Ribbons, Evans's successor as head of the Department of Biochemistry and Soil Science, and others re post-retirement activities.
- A.20 Invitation (accepted) to become Honorary President of Y Gymdeithas Wyddonol Genedlaethol (The National Scientific Society) 24 March 1980; miscellaneous programmes of events, information sheets etc., 1980-81. Also includes cutting from Y Cymro, 22 July 1980, re Evans's election to the Honorary Presidency.

Biographical

- A.21, A.22 Material re Harry Evans, elder brother.
- A.21 Correspondence 1960-83.
- A.22 Obituaries and tributes, 1983.
- A.23 - A.27 Social and personal correspondence.
- | | | | |
|------|---------|------|----------------|
| A.23 | 1969-75 | A.26 | 1981-82 |
| A.24 | 1976-79 | A.27 | 1983-87 and nd |
| A.25 | 1980 | | |
- A.28 Miscellaneous memorabilia.

SECTION B

UNIVERSITY OF LEEDS

B.1 - B.7

Evans was Demonstrator, later Lecturer, in Biochemistry in the Leeds Physiology Department 1937-40.

- B.1 - B.5 Contents of Evans's folder.
- Duplicated typescript sheets on physiology and biochemistry for physiology students, 1937-38.
- B.1 'The carbohydrates' etc., paginated 1-36.
- B.2 'Volumetric analysis' etc., paginated 37-71.
- B.3 'Histology class sheets', 'Experiments on sense organs'.
- B.4 'Blood, circulation and respiration'.
- B.5 'Estimation of blood gases', experiments on adaptation for 'Senior Practical Course Autumn Term'; figures from 'League of Nations Joint Reports' on nutrition.
- B.6, B.7 'Honours Physiology 1938 (Biochem. Practical work)'. Contents of Evans's folder so inscribed.
- B.6 Duplicated typescript sheets on 'vitamins', typescript notes on amino acid synthesis for 'B.Sc Honours Physiology ... 1938-39'.
- B.7 Physiology examination papers 1932-38, ms and typescript notes of procedures for experiments etc.

SECTION C

UNIVERSITY OF WALES

C.1 - C.53

In 1946 Evans was appointed Special Lecturer in Biochemistry in the Department of Animal Health, University College of Wales, Aberystwyth. He was appointed Professor of Agricultural Chemistry at University College of North Wales (UCNW) Bangor in 1951, succeeding G W Robinson. Under Evans the Department of Agricultural Chemistry was expanded considerably to become the Department of Biochemistry and Soil Science.

C. 1 - C.10 Aberystwyth

C.11 - C.53 Bangor

ABERYSTWYTH

- C.1 Hardback notebook containing from the front duplicated typescript sheets for 'Practical dairy bacteriology 1936-37' and 'Fungi (moulds and yeasts) of dairy products', and duplicated ms figures for 'Accredited milk producers: Wales 1935-36'. At the back is a list of biological terms in English for some of which Evans has found a Welsh equivalent. Most pages not used.
- C.2 Identical hardback notebook containing duplicated typescript sheets, principally on bacteria. The first sheet is a specimen 'Farm Inspection Report' for the University College of Wales. Most pages not used.
- C.3 Bound volume inscribed on first page '... Davies' but later stamped 'Biochemistry Section Dr W Chas Evans'. Contains typescript test techniques, almost all relating to dairying procedures, 1940-42. Examples include 'Resazurin solution', 'Catalase test on bulk or udder milk', 'Technique for the taking of churn rinsings'. Most pages not used.

University of Wales

- C.4 'Biochemical variation in the blood and milk of dairy cattle' by A W Davies. Talk to Department of Animal Health Staff Conference 28 October 1945. 8pp typescript.
- C.5 S O pocket notebook with thumb index inscribed on front cover 'W Ch. Evans'. Contains notes on experimental results, costs etc. Most pages not used. Reference on first page to '15th Annual Report of [Irish] Minister for Agriculture 1945-46'.
- C.6 'Investigations on the bacteriology of milk' by C V Chandra Sekhar, U.C.W. June 1946. Retained in original binder.
- C.7 'Programme of microbiological ... work (R.A.Evans)'. Incomplete typescript draft of proposed 'study of the B-vitamin complex and other growth factors, and of their occurrence in animal food'. Includes reference to work of the Biochemistry Section of the Department of Animal Health on analyses of strains of grasses and clovers, under W C Evans. Latest bibliographical reference 1946.
- Duplicated ms class sheets for Organic chemistry 'Final Course. Theoretical. '46-47'.
- C.8 'University College of Wales, Aberystwyth, Department of Animal Health. Report to the Standing Committee (on Research Affecting Animals) of the Agricultural Research Council', 15 November 1947. Includes report on the work of Evans's team on 'The chemical composition of herbage'.
- C.9 'Nid byd byd heb wybodaeth. Looking ahead on the 75th anniversary of University College of Wales, Aberystwyth'. Socialist Society pamphlet, 1947.

University of Wales

C.10 Typescript lecture notes for 'Subsidiary course' covering
'Elementary biochemistry & physiology with sufficient
anatomy of the farm animals, leading to animal nutrition'.

Material found with the lecture notes. Includes 'War
Food Production and The Future of British Agriculture'
by Sir George Stapledon, Dairy Farmer, December 1940.

University of Wales

BANGOR

C.11 - C.30	Teaching
C.31 - C.36	Funding of Evans's research
C.37 - C.53	General correspondence and papers

Teaching

- C.11 Ms and typescript outlines of Agricultural Chemistry course, one inscribed 'Starting 15th October 1951'; typescript text of Agricultural Chemistry lecture 1 'Biochemistry & Nutrition'; list of experiments for Soil Science practical course for 'Final Honours in Agricultural Chemistry'; typescript 'experiments'.
- C.12 'Terminal results. Biochemistry & Nutrition. Xmas 1955.' Material found in envelope so inscribed.
- C.13 Three University of Wales examination booklets containing Evans's ms notes, probably for lectures: 'Ruminant metabolism' and 'Microbiology of the Rumen'; 'Rumen bacteria'; 'Principal differences between higher animals and higher plants' and 'Bacteria'. Latest bibliographical reference 1957.
- C.14 'Courses'. University of Wales examination booklet so inscribed containing ms notes on Agricultural Chemistry courses 1959-60. At the back are loose papers re 'Proposed outline of course in biochemistry and animal physiology - part 1', 1958, typescript note on plan of Agricultural Chemistry courses at UCNW for T W Goodwin, Professor-elect of Biochemistry and Agricultural Biochemistry (c 1959).

University of Wales

- C.15 'Courses'. Contents of Evans's folder so inscribed.

Includes notes on courses offered to students at Reading University Faculty of Agriculture, 'Suggested experiments to illustrate physiology course', outline of 'Joint Honours in Psychology and Philosophy Part III', letter to J Yudkin, 21 January 1963, re courses in nutrition.
- C.16 Papers re proposed changes to Biochemistry and Soil Science syllabus, 1965-66.
- C.17 Papers re possible reorganisation of second year courses, 1969-70.
- C.18 - C.21 Duplicated typescript class notes for Biochemistry and Soil Science practicals, 1975-81.

These belonged to M C Patel and are annotated by him.
- C.18 'Notes on course I practicals (Oct - Nov 1975)'.

'Section I: introduction'.
- C.19 'Part I practicals 1975-76. Basic techniques'.

'Part I practicals 1975-76. Multi-enzyme systems'.
- C.20 'Part I (1976-77) Multi-enzyme (oxidation reduction) systems'.

'Part I practicals 1978-79 Unit 1: basic techniques'.
- C.21 'Part I (1978-79) Multi-enzyme (oxidation reduction) systems'.

'Part practicals 1978/9 Unit 2: the bio-molecules'.

'Part practicals 1980/1 Unit 2: bio-molecules'.

University of Wales

- C.22 'Forest Zoology - Insects'. Contents of a folder so inscribed.

The folder belonged to J F Jones and contains duplicated typescript class sheets on beetles, moths, bugs etc., 1975-76.
- C.23 'Biochemistry of methane formation', typescript notes for lecture to Honours Class. Probably first delivered November 1976. (The date is whited out on this draft).
- C.24 'Lectures'. Contents of Evans's folder so inscribed: 'Notes for lecture course "Introduction to microbiology" ' by P A Williams; 'The Nitrogen cycle'; miscellaneous teaching material. Nd.
- C.25 Typescript outlines of courses in Agricultural Geology and Subsidiary Soil Science, nd.
- C.26 - C.27 Duplicated typescript instructions for experiments, nd.
- C.26 'Dairy chemistry'.
- C.27 'Milk (1)', 'Organic manures'.
- C.28 - C.30 Ms and typescript notes and drafts probably used for biochemistry lectures, nd.
- C.28 'Introduction to Part I'; 'History of development of biochemistry', 8pp ms; 'Historical and philosophical aspects of biochemistry'.
- C.29 'Feeding expts & determination of digestibility'; 'Bone'; 'Mammary gland & milk secretion'; etc.

University of Wales

C.30 'Enzymes and metabolism' (two slightly different type-script versions); 'Comparative nutrition'.

Funding of Evans's research

C.31 Agricultural Research Council 1979, 1982

1979 grant was for 'Identification of the active principle in the common bracken plant which causes bright blindness in sheep'; 1982 application for grant to study 'the problem of the toxicity of bracken fern to farm animals'.

C.32 Royal Society 1980, 1986

Grants for 'research into the toxicity of bracken to animals'.

C.33 - C.36 Science Research Council (SRC) 1973 - 82

1973-76. Grant for study of 'Microbial metabolism and biochemistry of naturally occurring aromatic compounds' by Evans and D O Lunt.

Application, draft reports.

C.34, C.35 1977-81. Grant for study of 'Biochemistry of the anaerobic metabolism of aromatic compounds by micro-organisms' by Evans and R J Bryant (later M T Balba).

Application, correspondence, reports.

C.34 1976 C.35 1977-81

C.36 1978-82. Material re Physico-Chemical Measurements Unit.

University of Wales

General correspondence and papers

- C.37 1950. Obituaries of G W Robinson, Professor of Agricultural Chemistry at UCNW 1926-50. Also includes 'Round the World in five months', Robinson's account of the 7th Pacific Science Congress, NZ, February 1949, which he attended as Royal Society delegate, and of his journey to and from the Congress.
- C.38 1952-58. Hardback volume, labelled 'Department of Biochemistry and Soil Science', used to record withdrawal and return of items from the departmental library February 1952 - December 1958, and once in 1963. Most pages unused.
- C.39 1953. Report on activities of the School of Agriculture (including Department of Agricultural Chemistry) and Department of Forestry, April.
- C.40 1963. Programmes for botanical and zoological expedition to Guyana by UCNW students and staff.
- C.41 1964. Brochure for the 'Opening of the Animal Nutrition Building of the Department of Biochemistry and Soil Science', 3 December.
- C.42 1970. Includes letter from Evans to research students dissatisfied with the distribution of research grants within the department.
- C.43 1973-76. Includes brief correspondence, July 1976, re scientific services for rescue archaeology.

University of Wales

- C.44 1977-78. Includes Evans's l1pp typescript draft on history of biochemistry and agricultural chemistry in UK, particularly at UCNW, August 1977.
- C.45 1978-79.
- C.46 1980. Material re history of department assembled by Evans for J G Williams, Professor of Welsh History at UCNW. See also C.48.
- C.47 1980-84. Includes brochure for centenary of UCNW 1884-1984. A photograph of Evans with colleagues (including I A Evans) and students is at p.35.
- C.48 1985. Material re history of biochemistry at UCNW and other colleges in the University of Wales assembled by Evans for T W Goodwin's 'History of the Biochemical Society'.
- C.49 Nd. Ms notes on 'Activities of the Dept. of Biochemistry & Soil Science'; draft of 'Some initial thoughts on the future of soil science at Bangor'.
- C.50 - C.53 Correspondence re requests to study in the Department of Biochemistry and Soil Science, 1973-88.
- | | | | |
|------|---------------|------|--------------|
| C.50 | 1973-76 | C.52 | 1977 Aug-Dec |
| C.51 | 1977 Jan-July | C.53 | 1978-88 |

SECTION D

RESEARCH

D. 1 - D. 193

D. 1 - D. 14	Undergraduate and Postgraduate
D. 15 - D. 31	Blood Transfusion Service
D. 32 - D. 80	Bracken
D. 81 - D.101	Animal Nutrition
D.102 - D.169	Aromatic Ring
D.170 - D.180	Wattle
D.181 - D.188	Miscellaneous
D.189 - D.192	Bibliographical
D.193	List of theses supervised by Evans

UNDERGRADUATE AND POSTGRADUATE

Evans was an undergraduate at University College of North Wales, Bangor, 1929-33 studying chemistry (1929-32) and for his Teachers Training Diploma (1932-33). His postgraduate studies were at UCNW, 1933-34, and Manchester University, 1934-37, studying organic chemistry and physiological chemistry respectively. He was preceded at Bangor by his older brother Harry Evans (studying Botany 1925-28, Teachers Training Diploma 1928-29) who passed some of his notebooks on to his younger brother.

D.1 Notebook inscribed on front cover 'Ind Botany Notebook Harry Evans' and 'Rafflesia Arnoldi', used from the front and the back. ?1926-27.

Research

- D.2 Exercise book labelled on front cover '1st Yr physics
W. Charles Evans U.C.N.W. Electricity + Magnetism
Notes'. Contains notes on lectures given by P A
Maidstone from October 1929.
- D.3 Sketchbook used for anatomical sketches of animals,
1930. At the back are notes on experiments on casein
carried out 1938. Most pages not used.
- D.4 Loose leaf notebook labelled 'Organic Hons Stereo-
chemistry Dr Bradfield'. Contains lecture notes
and notes on the literature. Used from January 1932.
- D.5 - D.7 Three notebooks originally used by Harry Evans when
studying for the Teachers Training Diploma 1928-29.
W C Evans took the same course 1932-33.
- D.5 'History of Education'.
- D.6 'Theory of Education 1'. The book lacks a back cover.
- D.7 'Theory of Education 2'.
- D.8 - D.13 'Physiology. Evans, 1934 Manchester Univ.' Contents
of Evans's folder so inscribed: notes on lectures,
which apparently later formed the basis for lectures
at the University of Leeds (see D.13).
- D.8 - D.11 Ms notes on 'Physiology lectures 2nd M.B.course 1934'
(given by H S Raper) paginated 1-199.
- 4 folders.

Research

- D.12 Ms notes on lectures on 'Central nervous system' (given by Schlapp) paginated 1-40.
- D.13 Ms notes on 'Blood' paginated 1-6, 'Haemoglobin' paginated 1-9, 'Blood and lymph carriage of blood gases' (on Leeds University paper) paginated 1-4, unpaginated ms notes on blood and Leeds University Physiology examination paper for 11 September 1939.
- Ms notes on blood gases paginated 1-8, Evans's register of attendance at his lectures or seminars on 'Thursdays. 12 noon'.
- D.14 Notebook inscribed inside front cover 'Biochemistry Notes. W Charles Evans 1934 - Physiology Department Vict [oria] Univ. Manchester'. Leaves at front and back have been removed, most pages are unused. Contains notes on 'Bacterial growth factors' from 1934, and notes (some loose) on experiments from 1946. Loose material at back dates from Evans's service in the inoculation department of St Mary's Hospital, Paddington 1944-46.

Research

BLOOD TRANSFUSION SERVICE

Evans was Director of the Blood Transfusion Laboratories, Region No. 2, Leeds from 1940 to 1944, when he moved to the Inoculation Department of St Mary's Hospital Medical School Paddington. However, all the material appears to derive from Evans's period at Leeds.

D.15 'Human plasma for issue to Transfusion depots by W Charles Evans. Notes on routine methods - September 1940'. Material so labelled found clipped together.

Specimen 'Record of blood plasma transfusions'.

'Report on recent "cloudiness" phenomena in plasma after bacterial filtration' by Evans. 2pp typescript.

D.16 Papers for the Medical Research Council.

In his curriculum vitae at A. 3 Evans remarks 'Several papers on various aspects were submitted by me to the MRC - all of these came under "classified" information and never saw the light of day'.

'Technique for the bacterial filtration of plasma', with J H Blackburn, 18 March 1942. 4pp duplicated typescript + figures.

'Observations on Kaolin plasma', nd. 3pp duplicated typescript.

'The prevention of excessive caramelisation of glucose-sodium citrate solutions sterilised in bulk', with E Thorley and C McLeod, nd. 2pp duplicated typescript.

D.17 'Blood science and Humanity' by Evans, nd. 5pp ms draft + plan.

Research

- D.18 S.O. Notebook inscribed 'Plasma record book' and 'Notes on blood clotting W.Ch. Evans'. Used from the front for results of filtration and sterility tests 1941 and for notes on the literature and results of experiments, and from the back for notes on blood coagulation.
- D.19 S.O. Notebook inscribed 'Plasma work record', 'Sterility tests' and 'Literature notes on blood clotting'. Used from the front for 2pp of notes on the preparation of dried plasma, and from the back for notes on the literature of blood. Latest bibliographical reference 1942.
- D.20 S.O. Exercise book inscribed 'J H Blackburn Notes on coagulation of blood'. Used from the front for notes on techniques (Blackburn) and results of experiments (Evans), and from the back for notes on electrodes (Blackburn). Some material is dated 1942.
- D.21 Ms notes on 'The Nagler reaction. The breakdown of Lipo protein complexes by bacterial toxins'. Latest bibliographical reference 1942.
- D.22 Plans and photograph of automatic burette designed by Evans, with letter from Regional Blood Transfusion Service Manchester re the plans, 14 April 1943.
- The plans and photograph are retained in their original envelope.
- D.23 S.O. Book inscribed 'Serum consignment record. Serum sent each week, and serum in hand' and 'Record of consignments to the R.N. Blood Transfusion Lab... W. Charles Evans'. Contains detailed records of serum sent to the Royal Navy 22 June 1943 - 15 February 1944 and on inside of front cover a record of the total number of U.G.B.s sent in 1943. At the back are records of Kaolin-Plasma consignments sent to the MRC drying plant, 1943.

Research

- D.24 Two slightly different versions of 'Broadcast speech by Dr W S Stanbury, Regional Blood Transfusion Officer in the "Health Magazine" feature' broadcast on the BBC Home Service 11 June 1943, describing the work of the Service.
- 'Science Service' report from Washington, 2 March 1944, on the discovery of the molecular machinery involved in blood clotting by K Bailey, W T Astbury, K M Rudall and Evans.
- 'Sam's Transfusion'. Poem urging people to become Blood Volunteers, nd.
- D.25 - D.31 Miscellaneous background material.
- D.25 HMSO publications: Ministry of Health Office Regulations June 1940, MRC War Memorandum No.1 on 'The treatment of wound shock' 1940, Emergency Medical Services Memorandum No.5 on 'Oxygen Administration' 1940, and War Office instructions on resuscitation equipment, organisation etc., June 1941.
- D.26 Reprints 1940-43. Includes vol.1 of the MRC's Bulletin of War Medicine September 1940.
- D.27 Medical Research Council Blood Transfusion Research Committee papers 1941-43. Not a complete sequence.
- D.28 Blood Transfusion Service Formulary, instructions for operation of equipment etc.
- D.29, D.30 Duplicated typescript sheets on transfusion, plasma etc.
2 folders.

Research

D.31

Three Blood Transfusion Service posters issued by the Ministry of Health encouraging people to become donors.

'Your war service Blood is life donors wanted'.

'Blood donors are needed urgently to save lives'.

'On the road to recovery thanks to you blood donor'.

Research

BRACKEN

- D.32 - D.35 Papers for Agricultural Research Council Bracken Control conferences 1943-50, and associated material. The papers belonged to G W Robinson, Evans's predecessor as Professor of Agricultural Chemistry at UCNW, who died in 1950.
- 4 folders.
- D.36, D.37 'Poisoning'. Contents of Evans's folder so labelled: correspondence and papers re cattle bracken poisoning 1949-52.
- D.36 Correspondence with British Leather Manufacturers' Research Association, J C Somogyi, Roche Products Ltd (F Bergel) and others.
- D.37 Ms and typescript notes.
- D.38, D.39 Agricultural Research Council papers on bracken poisoning of animals 1950-51. D.39 is the ARC Bracken Poisoning Report by L E Hughes, E T R Evans and W C Evans, September 1951.
- 2 folders.
- D.40 - D.46 'Thiamine etc. Bracken'. Contents of Evans's box file so labelled.
- D.40 'Resume of the bracken problem, including a brief appreciation of the facts established, and contemplated programme for 1950', 5pp typescript. With ms notes found with it. Describes work done by L E Hughes, E T R Evans and W C Evans.
- D.41 'Some aspects of upland bracken control' by A C A Grenfell. Dissertation for 'Honours in Agriculture', June 1950. Retained in original binder.

Research

- D.42 Correspondence, January-February 1951, with H N Ridyard re analyses of bracken extracts.
- D.43 Correspondence, 1953, from N W Pirie, Rothamsted Experimental Station, re pig-bracken experiments; Evans's costings of experiments on pigs.
- D.44 - D.46 Notes on the literature and experiments.
3 folders.
- D.47, D.48 'Male fern data'. Contents of Evans's folder so inscribed.
- D.47 Brief correspondence 1955, 1958; typescript and ms notes (some on Leeds University paper).
- D.48 Ms and typescript notes including 'Identity of the bovine bracken poison' summarising the literature on the subject.
- D.49, D.50 'Bracken clinical'. Contents of Evans's folder so labelled.
- D.49 'Studies in bracken poisoning. April-August 1959', 5pp typescript + diagrams; 'Experiments carried out on calves since April 1959', typescript draft paginated 1-12 (pp9-12 are 'Animal experiments from September 1961'); etc.
- D.50 Ms and typescript notes on experiments carried out 1959-62.

Research

- D.51 Ms notes and graphs on 'Calf Expt. Oct 7 1959'.
- D.52 'Attempts to isolate a toxic factor from Bracken', account of experiments carried out April - August 1960, by G Threlfall.
- D.53 Ms and typescript notes on experiments to isolate the bracken factor responsible for poisoning cattle, 1960-61.
- D.54 Information on the antihistamine vetibenzamine and its use in treating cattle bracken poisoning sent to R F E Axford, May 1963.
- 'Report of D J Humphreys - work carried out [on cattle bracken poisoning] during the tenure of a University of Wales Fellowship', 1963-65.
- D.55 - D.58 'Bracken Toxin Purific. July-August 1969'. Contents of Evans's folder so inscribed: ms and typescript notes, graphs etc re experiments carried out to isolate the 'bracken factor' and determine its chemical structure, 1969-72. Includes bibliography 1949-72.
- 4 folders.
- D.59 'Alkaloids'. Contents of Evans's folder so inscribed: material re the synthesis of pyrimidine - ¹⁴C - labelled thiamine, 1971-73.
- D.60 - D.62 Typescript notes on the chemical structure of bracken toxin, January and May 1972. With ms notes, graphs and figures found with them dated 1969, 1970.
- 3 folders.

Research

D.63 'Cattle bracken poisoning expts.' Contents of Evans's folder so inscribed: ms and typescript notes and graphs, 1978.

D.64 - D.76 Papers re 'Experiments towards the isolation and chemical characterisation of cattle bracken poison', Ph.D. thesis by M C Patel.

Following undergraduate study at UCNW Patel undertook research under the supervision of Evans and R F E Axford, 1978-81. The thesis was submitted in early 1982.

The material consists of Patel's notes, results of experiments and draft chapters, with a few typescript and ms notes by Evans.

13 folders.

D.64	1978	
D.65	1979	January - June
D.66	1979	July - December
D.67	1979	'Haem[otology] graphs'
D.68	1980	January - August
D.69	1980	September - December
D.70	'1980/81	Haemotology graphical results'
D.71	1981	(1)
D.72	1981	(2)
D.73	1981	(3)
D.74	1981	(4)
D.75	1981	(5)
D.76	1982	

Research

- D.77 'Investigation on the identification of the active principle in the common bracken plant which causes bright blindness in sheep', by Evans. 4pp typescript, latest bibliographical reference 1979.
- D.78 Notebook labelled '1981. Cattle bracken poisoning principle. Laboratory notes. Em. Prof W Charles Evans'.

Contains notes on experiments, plans for experiments etc. 9 September 1981 - 13 August 1985. With loose intercalated material including haematology data on individual calves.
- D.79 'Expts on the cattle bracken-poisoning principle'. Contents of Evans's folder so inscribed: ms and typescript notes, 1982-83.
- D.80 'Material for Illudin paper'. Contents of Evans's folder so inscribed. Refers to work done with T C McMorris and K-M E Ng. See also E.66, G.29-G.32.

Material on toxicity of Illudin-S and other compounds to calves, 1984-85.

Research

ANIMAL NUTRITION

- D.81 'Recommendations with regard to methods of investigation of nutrition. Prepared by: The Standing Advisory Committee for co-ordination of methods of survey in liberated territories', August 1945.
- D.82 'Swayback investigations: the influence of ingested lead and certain other elements on the blood copper of sheep' by W S Ferguson, January 1946.
- D.83 Thumb-index notebook used from A-E principally for notes on analysis of cows' milk and from Z-S for notes on the literature of alkaloid poisoning of animals. Latest bibliographical reference 1946.
- D.84 'The composition and nutritive value of grassland herbage', 35pp typescript report on research (not by Evans). Latest bibliographical reference 1946.
- D.85 Typescript draft beginning 'Since its inception the Welsh Plant Breeding Station [Aberystwyth] has succeeded in developing pedigree strains of grasses and clovers...' detailing research carried out in association with the Biochemistry Section of the Aberystwyth Department of Animal Health under the leadership of Evans. Latest bibliographical reference 1946.
- D.86 Ms notes and figures, not all in Evans's hand, on carotene in herbage (chiefly alfalfa). Latest reference 1946.
- D.87 'Minute Book' paginated 1-260 used ppl-20 only for notes on experiments on grass, May - October 1946. Loose correspondence and notes at front and back dated 1946 and 1947.

Research

- D.88 Ms notes (not in Evans's hand) on the literature titled 'National Institute for Research in Dairying, Shinfield 15-5-47'.
- D.89 Notebook inscribed on first page 'Casual Sample Analyses' containing notes in several hands on results of analyses of samples of animal blood, faeces, liver etc., 1947-48.
- D.90 - D.92 'Leaf protein'. Contents of Evans's folder so inscribed.
- D.90 Correspondence, 1947, 1952-54, with colleagues at Rowett Research Station, Grassland Research Station, etc., chiefly re leaf protein.
- D.91 Ms notes on 'Nitrogenous components of grasses and clovers'.
- D.92 Miscellaneous typescript and ms notes and drafts on analysis of grasses and clovers, extraction of leaf protein etc., 1947, 1949 and nd.
- D.93 'Working directions for the estimation of carotene', duplicated typescript paginated 3-14 + figures. Latest bibliographical reference 1950.
- D.94 'The extraction of protein constituents from herbage plants and their nutritional significance' by W H Parr. University of Wales Ph.D. thesis 1951, retained in original folder.
- D.95 Ms notes on research in organic acids of certain grasses and clovers carried out 'since the Report submitted to the A R C in April 1951'.

Research

D.96 - D.100 Papers for Agricultural Research Council meetings on the extraction of leaf protein, 1952-53. Evans attended these meetings.

5 folders.

D.101 Miscellaneous material. Includes 'The manufacture of leaf protein at Rothamsted' 10 October 1955 and 5pp typescript draft 'The de-fiberisation of plant leaves (particularly pasture plants), and the subsequent separation of a high protein fraction'.

Research

AROMATIC RING

- D.102 Physics Notebook, inscribed on first page 'The bacterial metabolism of aromatic compounds. W H Parr and R A Evans'. Contains results of experiments 6 September 1948 - 15 July 1952. Includes intercalated graphs of results.
- D.103 - D.106 'Soil microbes and aromatic ring fission'. Contents of Evans's box file so labelled.
- D.103 - D.105 Ms and typescript notes on the metabolism of aromatic compounds (principally tyrosine) by bacteria, 1950-52. Includes results of experiments, brief correspondence and 1p typescript draft 'Homogentisic acid an intermediate in the metabolism of tyrosine by the aromatic ring splitting micro-organisms' by Evans, J D Jones and B S W Smith.
- 3 folders.
- D.106 Sketchpad used principally for notes for talks on 'Bacterial breakdown of aromatic rings' and 'Bacterial breakdown of aromatic compounds'. Many loose pages. At the front are loose unidentified paper chromatographs.
- D.107 8pp ms notes dated 17 May 1956 on 'Biological degradation of phenols III. Intermediates in the biological reduction of catechol by Oospora moulds', by S Landa and J Eliašek; 'The oxidisation of certain phenols by per acetic acid' by J Boesaken and C F Metz, nd.

Research

- D.108 'Microbial pathways A[romatic] R[ing] metabolism'. Contents of Evans's folder so labelled: includes ms draft of 'A R C Report May 1959. Breakdown of 2·4·D by soil micro-organisms' (not by Evans), incomplete typescript draft 'The oxidative metabolism of nitro-phenols by soil micro-organisms' by Evans and J R Simpson, report on visit by representatives of Monsanto Chemicals Ltd re microbial detoxification of detergents, and miscellaneous ms and typescript notes.
- D.109 Letter from A E J Pettet, Water Pollution Research Laboratory, Stevenage, re anaerobic breakdown of aromatic ring compounds, particularly phenol, 30 January 1961. With ms note and diagrams on a plant for the anaerobic digestion of sewage sludge.
- D.110 'Napthalene work Dec. 1961 - '.

Ms and typescript notes so titled, latest reference 1966.
- D.111-D.114 'H.H.B. [Hexahydrobenzoate] microbial metabolism' and 'Syntheses'. Contents of Evans's folder so inscribed.
- D.111 Correspondence, 1968, principally with Kodak Ltd re orders of chemicals.
- D.112, D.113 Miscellaneous ms and typescript notes, some dated 1967 and 1968.
- D.114 Two sets of spectrophotometric analyses, dated 1956-57 and 1959-61.
- D.115 Typescript notes on the work of P J Whittle, chiefly on the reduction of benzoate, done 1968-69.

Research

- D.116,D.117 Ms notes and graphs on shikimic acid metabolism by ruminant bacteria, not all in Evans's hand. Latest bibliographical reference 1970.
- 2 folders.
- D.118 Typescript notes principally on naphthalene oxidation. Latest reference 1970.
- D.119-D.121 Correspondence and papers re study of the degradation of polychlorinated biphenyls (PCBs), 1970-72.
- This study of the biodegradation of PCBs was undertaken in collaboration with Monsanto Chemicals Ltd., who manufactured these materials.
- D.119 Correspondence with Monsanto 1970-71; outline of proposed research May 1970; summary of work to April 1971; etc.
- D.120 Agenda for 4th meeting of PCB Discussion Group, London, 9 May 1972; photocopy of draft 'Biodegradation studies of PCBs'.
- D.121 Two different drafts of 'The degradation of polychlorinated biphenyls by micro-organisms' by H A Vodden and R A Lidgett, prepared for the PCB Discussion Group meeting.
- D.122 'Sulphate reducing bacteria (desulfovibrios) M Balba & W C Evans'. Contents of Evans's folder so inscribed: ms notes. Latest reference 1973.
- D.123 Ms notes and spectrophotometric analyses of the action of tyrosinase on tyrosine, dopa and 6-hydroxydopa, 1974. Not all in Evans's hand.

Research

- D.124 Notebook used (?by S Tewfik) for notes on experiments, the literature etc., principally on the culture of anaerobic rumen bacteria, April 1975 - November 1977.
- D.125-D.128 Ms and typescript notes and graphs on the degradation of asulam, 1975-78. The results of the research into asulam by Evans, M T Balba and M R Khan were published in Biochem. Soc. Trans. 7 (1979). 405-407.
4 folders.
- D.129 List of 'Cultures (Viable and freeze dried) October 1976'.
- D.130,D.131 'U/V spectra'. Contents of Evans's folder so inscribed: results of ultraviolet spectrophotometry 1976-77.
2 folders.
- D.132 'Phenoxyacetic acid'. Contents of Evans's folder so inscribed: ms notes and results of ultraviolet spectrophotometry 1976 and 1977.
- D.133,D.134 Notebooks kept by R J Bryant, research assistant, 1977.
- D.133 'Laboratory Notebook' used from 1 January 1977 principally for notes on experiments on Rhodopseudomonas species.
- D.134 'Laboratory diary of expts, day-to-day growing records' used from autumn 1977 principally for notes on experiments on Rhodopseudomonas palustris. Some leaves have been removed towards the back.
- D.135 Evans's typescript note on 'clearing up' experiments to be done by Balba, April 1977, and other instructions for Balba found with it.

'Enzymology of the aromatic reductive pathway', April 1977.

Research

- D.136 'Recipes' for mediums for photosynthetic bacteria sent to Evans November 1977.
- D.137 'Genetics and biochemistry of TOL plasmids in pseudomonas. A joint application to the Science Research Council by Peter A Williams and Paul Broda', 1977. Annotated by Evans 'Aromatic ring file'.
- D.138 Notebook used by M T Balba for rough draft of 'The methanogenic fermentation of aromatic substrates' published in Biochem. Soc. Trans. 5 (1977), 302-304. With many loose pages.
- D.139 Account of research on the methanogenesis of aromatic substrates, 1 February 1978.
- D.140-D.153 Evans's series of folders containing spectrophotometric analyses of the bacterial metabolism of various aromatic substrates. The material is retained in original folders which are inscribed with the title of the compound under investigation and sometimes with other information (date of experiment, source of material etc.) The graphs are dated 1978 and 1979.
- D.140 'Protocatechic acid'.
- D.141 '3, 4 - dihydroxyphenylacetic'.
- D.142 '2, 4, 6 - trihydroxybenzoic acid'.
- D.143 'Tyrosine'.
- D.144,D.145 'D - catechin'.
2 folders.

Research

- D.146 'Phenol'.
- D.147 '3, 4 - dihydroxydihydrocinnamic acid'.
- D.148 'Ferrollic acid'.
- D.149 'Shikimic acid'.
- D.150 'Benzoic acid'.
- D.151 'o hydroxybenzoic acid'.
- D.152 'p hydroxybenzoic acid'.
- D.153 'L-tryptophan'.
- D.154 Brief correspondence and notes chiefly re the conversion of benzene and other hydrocarbons to cis-dihydrodiols by Pseudomonas putida 39/D, February - September 1979.
- D.155 Notes on electrophilic aromatic substitution, including 'Points from discussion with Dr Marshall March 14th 1979'.
- D.156 'A re-investigation of the metabolic pathway of phenyl-alanine, phenylacetate, phenyl propionate'. Contents of Evans's folder so inscribed: ms and typescript notes and spectrophotometric analyses, March, April 1979.
- D.157 'Aerobic degradation of flavanoid'. Contents of Evans's folder so inscribed: ms notes 1979-80.

Research

- D.158 Microanalyses of DL-pyroglutamic acid methyl ester and C-pyroglutamic acid methyl ester, September 1982.
- D.159 A4 writing pad containing M T Balba's notes on experiments on solvent systems and photographs of the results, nd.
- D.160 'Hexanoic/hexenoic acids'. Ms notes so titled, not in Evans's hand, nd.
- 'Synthesis of intermediates which might degrade biphenyl after dihydroxylation by the "ortho" pathway'. Ms notes and graphs so titled, not in Evans's hand, nd.
- D.161 'Ideas on the anaerobic metabolism of aromatic ring compounds', 5pp typescript, nd.
- 'Methanogenesis...or anaerobic metabolism of aromatics', 5pp ms notes, nd.
- 'Isolation of micro-organism', 8pp ms notes, nd.
- D.162 'Ph.D. thesis. Mr Peter John Chapman', 11pp typescript, nd.
- 'Report on piperonylic acid metabolic system', 9pp typescript, nd.
- 'Upon β, β' dihydroxyadipic acid', 5pp typescript.
- D.163-D.166 Miscellaneous ms and typescript notes, graphs, diagrams etc., nd.
- 4 folders.

Research

D.167,D.168 Infra-red spectrograms, nd.

2 rolls.

D.169 Two graphs inscribed 'Sewage sludge on phenol', and
'Methylated acidic fraction from phenol culture' and
'Acidic fraction from P-OH benzoate sample', nd.

Research

WATTLE

Evans was asked to undertake research into the microbial metabolism of wattle tannins by the Research Advisory Committee of the African Territories Wattle Industry Fund (ATWIF) Ltd. The Committee was interested in the 'problem of the removal of the non-tans from wattle extract by fermentation, and the much more complex project of the enzymic breakdown of the tannins'. Evans agreed, seeing it as an extension of his work on the microbial metabolism of phenolic compounds of natural origin. Terms were agreed in January 1963.

- D.170-D.173 Correspondence, 1962-76.
- D.170 1962. With Monsanto Chemicals Ltd and ATWIF re terms.
- D.171 1963. Principally with ATWIF and Wattle Research Institute, University of Natal, re samples of wattle bark, wattle extract and soil.
- D.172 1966. Re fungal cultures attacking wattle tannin.
- D.173 1969-76. Principally re samples.
- D.174-D.176 Progress reports on wattle research at UCNW 1963-71. Not a complete sequence.
- D.174 July 1963, October 1963, March 1964.

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- D.175 February 1965, September 1965.
- D.176 March 1967, April 1968, May 1969, June 1970, December 1971.
- D.177 Drafts on the bacterial metabolism of taxifolin and D-catechin bearing on work on aerobic bacterial metabolism of wattle tannins, 1968, 1969.
- D.178 'RAPRA [Rubber and Plastics Research Association] and Univ. of Sheffield (Tannin separation)'. Contents of Evans's folder so inscribed: gel permeation chromatography analyses of catechin, taxifolin, tannins etc., June, November 1971.
- D.179 Background information. Includes 'Degradation of Mimosa extract into smaller molecules, especially polyphenols and polyphenol carboxylic acids', report for African Territories Wattle Industry Publicity Fund Ltd., December 1961.
- D.180 Miscellaneous graphs and analyses.

Research

MISCELLANEOUS

- D.181 'Adrenaline'. Contents of Evans's folder so inscribed: brief correspondence from H S Raper 1938, ms notes on adrenaline, last bibliographical reference 1940.
- D.182 Brief correspondence with National Coal Board, 1955-56, re 'possible research on biological attack on coal and impurities in coal'.
- D.183 'Further notes on the formation and fractionation of humic acid', 6pp typescript, latest bibliographical reference 1957.
- D.184 'Sheep biochemical genetics'. Contents of Evans's folder so labelled: typescript sheets recording 'Results of blood typing of sheep', 5-9 December 1960.
- D.185 'The electrical double layer and its effects on soil properties', 13pp typescript draft inscribed 'J Mason', latest bibliographical reference 1960.

'Fixation of nutrients in soils', 11pp typescript draft, latest bibliographical reference 1960.
- D.186 S.O. pocket notebook used principally for bibliographical references 1967-70. Most pages are unused.
- D.187 'Bright-blindness expt. Results'. Contents of Evans's folder so inscribed: results of experiments carried out 1974, not in Evans's hand.
- D.188 'Test of genetic equilibrium (Hardy-Weinberg)', 4pp typescript, nd.

12pp typescript draft (first page missing) on medieval agriculture by M Whitney, US Bureau of Soils, nd.

Research

BIBLIOGRAPHICAL

Lists of Evans's collection of reprints and unpublished papers by himself and others, organised by topic. The papers were numbered and Evans indicated on the lists whether the papers were to hand. Where they were not, a separate list of missing papers was drawn up. The set of lists is not complete.

- D.189 List of papers on aromatic rings, 1108 items.
- D.190 List of missing papers on aromatic rings.
- D.191 List of papers on pesticides, 203 items and plant phenolics, 114 items.
- D.192 Lists of missing papers on bracken, animal biochemistry, enzymology etc.

LIST OF THESES SUPERVISED BY EVANS

- D.193 List of Ph.D and M.Sc theses completed under Evans's supervision 1948-82.

SECTION E PUBLICATIONS, LECTURES AND BROADCASTS E.1 - E.131

E. 1 - E. 77	Publications
E. 78 - E. 99	Lectures
E.100 - E.102	Broadcasts
E.103 - E.130	Lectures by others
E.131	Reprints

PUBLICATIONS

E. 1 - E.72	Drafts
E.73 - E.77	Editorial correspondence

Drafts

- E.1, E.2 'Poisoning of farm animals by the Marsh Ragwort (Senecio aquaticus Huds.) - isolation of a toxic alkaloid', with E T R Evans. Nature 164 (1949), 30-31.
- E.1 4pp typescript; ms notes, chiefly on alkaloid plants.
- E.2 Papers for Ragwort Advisory Committee meeting, 4 March 1949. Includes copy of 'Ragwort Control in Pembrokeshire', a report compiled for the National Agricultural Advisory Service following trials carried out in 1948.
- E.3 'The production of "Bracken Staggers" in the Horse, and its treatment by vitamin B₁ therapy', with H E Roberts and E T R Evans. Veterinary Record 61 (27 August 1949), 549-550.
- Duplicated typescript 'extract'.

Publications, lectures and broadcasts

- E.4 'The mechanism of the anti-aneurin activity of Bracken (Pteris aquilina) a plant thiaminase', with N R Jones and R A Evans. Biochem. J. 47 (1950), xii.
2pp typescript.
- E.5 'Chemistry of the oxidative metabolism of aromatic compounds by micro-organisms', with B S W Smith, R P Linstead and J A Elvidge. Nature 168 (1951), 772-775.
Correspondence only, with Linstead, April-July 1951.
- E.6 'The biological values and digestibilities of some grasses clovers and lucerne, and protein preparations from young and mature species, by the Thomas-Mitchell method using rats', with M Davies and W H Parr, Biochem. J. 52 (1952), xxiii.
2pp typescript with ms correction; tables on the biological values and digestibilities of grasses etc; background information.
- E.7 - E.10 'The biological values and digestibilities of some pasture plants, and protein preparations prepared from them, by the Thomas-Mitchell method, using Rats', with M Davies and W H Parr. This is a longer version of the preceding paper but was not published.
- E.7 31pp ms 'first draft'
- E.8 37pp typescript + refs.
- E.9 Tables on the values and digestibility of various plants and their proteins.
- E.10 Comments on the paper, ms notes etc.

Publications, lectures and broadcasts

- E.11, E.12 'Plant thiaminases', with N R Jones. Biochem. J. 50 (1952), xxviii.
- E.11 2pp and 4pp typescript drafts. The second, with extensive ms correction, has been prepared for a lecture.
- E.12 14pp ms and 14pp typescript drafts similarly titled giving 'a fuller account of the work' but not published; notes.
- E.13 'Nitrate production during the oxidative metabolism of nitrophenols by soil bacteria', with J R Simpson. Unpublished, latest bibliographical reference 1955.

28pp typescript.
- E.14 'The oxidative metabolism of polycyclic aromatic hydrocarbons by soil micro-organisms', with H N Fernley. Unpublished but described as a 'more detailed study of this problem, the conclusions of which have already been published in summary form' (Nature 182 (1958), 373-375).

17pp typescript.
- E.15 'The metabolism of cinnamic acid by soil pseudomonads', with G T Lloyd. Unpublished, latest bibliographical reference 1959.

7pp typescript; ms and typescript notes on the metabolism of cinnamic acid.
- E.16 'The metabolism of the chlorophenoxyacetic acid herbicides by soil micro-organisms', with J K Gaunt and J I Davies. Unpublished, latest bibliographical reference 1960.

2pp typescript.

Publications, lectures and broadcasts

- E.17 'Synthesis of intermediates involved in the metabolism of the herbicide MCPA (4-chloro-2-methylphenoxyacetic acid) by a soil micro-organism', with J K Gaunt. Unpublished but related to their joint publication in Biochem. J. 79 (1961), 25P.

11pp typescript draft + figs. with ms correction.
- E.18 'Studies on bracken poisoning in cattle. VII. The toxicity of bracken rhizomes', with I A Evans et al. Veterinary Record 35 (1961), 852-853.

Correspondence with editors only.
- E.19 - E.22 Correspondence re papers for Progress in Industrial Microbiology, 1961.

Evans was asked to write a review on chemical activities of microbes used in biological purification plants, and an illustrated article on 'Breakdown of agricultural chemicals in soil'. They do not appear to have been published.
- E.19 - E.21 Biological Purification Plants. Correspondence with and information from Monsanto Chemicals Ltd., National Coal Board, Albert E Reed & Co. Ltd., and others.

3 folders.
- E.22 Breakdown of Agricultural Chemicals. Correspondence with publishers; photographs (?of micro-organisms).
- E.23 'Oxidative metabolism of protocatechuic acid by a soil Pseudomonad: a new ring-fission mechanism', with D W Ribbons. Biochem. J. 83 (1962), 482-492.

22pp typescript + legends for figs and tables; letter accepting the paper for publication.

Publications, lectures and broadcasts

- E.24 'Article on bracken poisoning for U.C.N.W. Science Magazine. Oct. 1962'.

9pp typescript.
- E.25 'Bracken poisoning of pigs', with I A Evans, D J Humphreys, L Goulden and A J Thomas. J. Comp. Path. 73 (1963), 229-243.

22pp typescript draft; correspondence with editor.
- E.26 'Oxidative metabolism of phenanthrene and anthracene by soil pseudomonads', with H N Fernley and E Griffiths. Biochem. J. 95 (1965), 819-831.

39pp typescript; correspondence with Biochem. J.
- E.27 'A cell-free perhydroxylase system from soil pseudomonads with activity on aromatic hydrocarbons', with E Griffiths. Biochem. J. 95 (1965), 51P.

2pp typescript.
- E.28 - E.33 Drafts by Evans and M S Tewfik on the metabolism of aromatic nitro-compounds by soil micro-organisms, c. 1966-68.

The drafts deal with work performed by Evans and Tewfik while the latter was researching at UCNW, briefly reported in Biochem. J. 99 (1966), 31P. All the drafts are related, those at E.29-E.31 being essentially redraftings of the same paper. None of the drafts appears to have been published.
- E.28 Correspondence from M S Tewfik, 1968 and nd., re publication of papers.
- E.29 'Degradation of 3, 5-Dinitro-o-cresol (DNOC) by soil bacteria', 33pp typescript with ms correction.

Publications, lectures and broadcasts

- E.30 'The metabolism of 3, 5-Dinitro-ortho-cresol by soil bacteria', 34pp typescript.
- E.31 'Oxidative metabolism of 3, 5-dinitro-ortho-cresol by soil bacteria', 7pp typescript (incomplete redrafting of E.30) with extensive ms correction; tables and figures.
- E.32 'The metabolism of certain aromatic nitro-herbicides and related compounds by soil micro-organisms', 22pp ms; tables.
- E.33 'The detoxication of dinitro-o-cresol (DNOC) by a soil pseudomonad'. 5pp ms and 5pp typescript drafts.

'The metabolism of 2, 4-dinitro-6-sec. butylphenol by a certain soil pseudomonad', 3pp ms and 2pp typescript drafts.
- E.34 'Studies on bacterial demethylation of aryl ethers', with M Little and P A Williams. Unpublished, latest bibliographical reference 1967.

8pp typescript.
- E.35 'The bacterial metabolism of flavonoids: hydroxylation of taxifolin', with A M Jeffrey and M Knight. J. Gen.Microbiol. 1969.

Incomplete 3pp ms draft with extensive correction.
- E.36 'Soil biochemistry'. Monograph commissioned for a series on advanced biochemistry, 1969, but not published.

Letter re arrangements; draft of 'Introduction & Preamble'; notes on the literature.

Publications, lectures and broadcasts

- E.37 'The metabolism of D-catechin by intestinal bacteria', with I M Farr. Not published, latest bibliographical reference 1969.

18pp typescript.
- E.38 'Synthesis of some intermediates involved in the bacterial metabolism of 4-chloro-2-methylphenoxyacetate (MCPA)', with J K Gaunt. Received 20 July 1970 as follow-up to Biochem. J. 122 (1971), 519-526, but not published.

17pp typescript with ms correction.
- E.39 'The metabolism of benzoate by Moraxella sp. through anaerobic nitrate respiration. Evidence for a reductive pathway', with R J Williams. Biochem. J. 148 (1975), 1-10.

26pp typescript proof with ms correction + figures.
- E.40 'The aerobic metabolism of cyclohexanecarboxylic acid by acinetobacter anitratum', with E M Rho. Biochem J. 148 (1975), 11-15.

14pp typescript proof with ms correction.
- E.41 - E.43 'David Lunt Biphenyl metabolism'. Contents of Evans's folder so inscribed.
- E.41 'The aerobic metabolism of biphenyl-type structures by soil micro-organisms', with D O Lunt. Not published, latest bibliographical reference 1975.

30pp typescript draft with ms correction.
- E.42, E.43 Miscellaneous notes, incomplete drafts and correspondence 1971-74 found with the preceding.

2 folders.

Publications, lectures and broadcasts

- E.44 'Microbial catabolism: its role in the carbon cycle and environmental significance. Introduction: anaerobic and aerobic environments'. Biochem.Soc. Trans. 4 (1976), 452-455. See F.35.

5pp typescript with ms correction + summary.
- E.45 'Anaerobic photometabolism of aromatic compounds by Rhodopseudomonas sp.', with P J Whittle and D O Lunt. Biochem. Soc. Trans. 4 (1976), 490-491.

3pp typescript.
- E.46 'The photometabolism of aromatic compounds by Rhodopseudomonas sp.', with D O Lunt. Not published but related to preceding.

?Incomplete 4pp typescript, note attached from D W Ribbons suggests Evans adds 'a sentence or two in Welsh'.
- E.47, E.48 'The metabolism of tyrosine by Microspora tyrosinatica: a new intermediate, 2, 4, 5-Trihydroxyphenylalanine (6-Hydroxydopa) in the Tyrosinase Reaction', with D O Lunt Biochem. Soc. Trans. 4 (1976), 491-492.
- E.47 10pp ms draft in Lunt's hand with indications for slides; figures; notes etc.
- E.48 Similarly titled 11pp typescript draft under the authorship of Evans, Lunt and P Larway.
- E.49, E.50 'Biochemistry of the bacterial catabolism of aromatic compounds in anaerobic environments'. Nature 270 (1977), 17-22.
- E.49 13pp typescript + references and figures.

Publications, lectures and broadcasts

- E.50 Correspondence with Nature re suggested revisions of the paper, and with H A Jones of John Wiley & Sons Ltd., who suggested 'the material would make the basis of a good book' and invited Evans to write it. Also includes 1981 invitation from Jones (by then with Open University Press) 'to consider publication'.
- E.51 'The origin of hexahydrohippurate (cyclohexanoyl-glycine) in the urine of herbivores', with M T Balba. Biochem. Soc. Trans. 5 (1977), 300-302.

3pp typescript + figure and refs, annotated 'Corrected Abstract. Jan 1977'.
- E.52 'The methanogenic fermentation of aromatic substrates', with M T Balba. Biochem. Soc. Trans. 5 (1977), 302-304.

3pp typescript + refs. and summary.
- E.53 'The methanogenic fermentation of ω -phenylalkane carboxylic acids', with M T Balba. Biochem. Soc. Trans. 7 (1979), 403-405.

4pp typescript + figure and abstract.
- E.54 'The microbial degradation of a sulphanilamide-based herbicide (asulam)', with M T Balba and M R Khan. Biochem. Soc. Trans. 7 (1979), 405-407

3pp typescript + figure; list of slides for lecture on 'The microbial degradation of asulam'.
- E.55 'The methanogenic fermentation of plant phenolics', with M T Balba and N A Clarke. Biochem. Soc. Trans. 7 (1979), 1115-1116.

3pp typescript + abstract.

Publications, lectures and broadcasts

- E.56 'The fate of substituted hydroxyl groups on the aromatic ring in methanogenic fermentations', with M T Balba. Unpublished, latest bibliographical reference 1979.
- 3pp typescript; ms notes found with it.
- E.57 'The metabolism of aromatic compounds by Rhodospirillaceae', with P L Dutton. In The Photosynthetic Bacteria eds. R K Clayton and W R Sistrom, Plenum, NY (1979), 719-726.
- 18pp typescript; correspondence principally with Sistrom and Dutton, 1974-77.
- E.58 - E.60 Unpublished drafts by Evans and J A Robertson.
- Letter from Robertson to Evans covering E.58, 12 March 1979, suggests that it is submitted to Biochem J., and that E.59 is suitable 'for publication Mutation Res[earch]'. See also G.46-G.48.
- E.58 'The application of the Ames test to investigate the carcinogenicity of the Bracken fern'.
- 11pp typescript; covering letter.
- E.59 'The effect of anaerobic pre-incubation on the mutagenicity of quercetin in the Ames test'.
- 17pp typescript.
- E.60 'Mutagenicity of bracken extracts using the Ames Salmonella strains: the activity of quercetin and the effect of different activation systems'.
- 5pp typescript + refs and figures.

Publications, lectures and broadcasts

- E.61 'Cattle bracken poisoning', with Y Koohy. 'Unpublished draft of recent work'. Latest bibliographical reference 1979.
- 13pp typescript + tables and figures.
- E.62 'The methanogenic biodegradation of catechol by a microbial consortium: evidence for the production of phenol through cis-benzenediol', with M T Balba. Biochem. Soc. Trans. 8 (1980), 452-453.
- 5pp typescript.
- E.63 'The anaerobic dissimilation of benzoate by Pseudomonas aeruginosa coupled with Desulfovibrio vulgaris, with sulphate as terminal electron acceptor', with M T Balba. Biochem. Soc. Trans. 8 (1980), 624-625.
- 10pp ms draft with similar title; ms and typescript notes.
- E.64 'Methanogenic fermentation of the naturally occurring aromatic amino-acids by a microbial consortium', with M T Balba. Biochem. Soc. Trans. 8 (1980), 625-627.
- 4pp typescript + figure and abstract.
- E.65 'Chemical and toxicological studies on bracken fern, Pteridium aquilinum var. Latiusculum. VIII. The inability of bracken extracts containing pterosins to cause cattle bracken poisoning', with T Korn et al. J. Pharm. Dyn. 6 (1983), 938-940.
- 6pp typescript + table and figure.
- E.66 'Toxicity of bracken fern and Jack O'Lantern mushroom', with T C McMorris and K-M E Ng. 'Submitted to TOXICON Nov 2, 1984' but rejected.
- 9pp typescript; letter from McMorris enclosing editor's rejection and referee's reports. See also D.80.

Publications, lectures and broadcasts

- E.67 'Toxicity to calves of illudin S, a sesquiterpene closely related to ptaquiloside', with T C McMorris and K-M E Ng. Unpublished, latest bibliographical reference 1984.

11pp typescript + refs.
- E.68 'Toxicity of some illudin and pterosin group of sesquiterpenes'. Unpublished, latest bibliographical reference 1984.

9pp typescript.

'Acute cattle bracken poisoning'. Unpublished, latest bibliographical reference 1984.

2pp typescript.
- E.69 - E.71 'Anaerobic degradation of aromatic compounds', with G Fuchs. Ann. Rev. Microbiol. 42 (1988), 289-317.
- E.69 29pp typescript draft.
- E.70 ?Incomplete typescript drafts; 10pp typescript list of references.
- E.71 Correspondence with Fuchs and L N Ornston, Editor, 1986-88.
- E.72 'Alcohol and its effects on animals (including Man)', nd.

2pp typescript.

'Variety is the spice of life', by D Lloyd, nd.

3pp typescript.

'Bracken fronds for human consumption?' Unpublished letter to The Times by W C and I A Evans stressing the dangers in eating bracken.

Publications, lectures and broadcasts

Editorial correspondence

E.73	<u>Biochemical Education</u>	1976
	<u>Biochemical Journal</u>	1977, 1980
	<u>British Journal of Nutrition</u>	1981, 1982
E.74	CRC Press Inc.	1977-78, 1985-86
E.75	<u>European Journal of Biochemistry</u>	1977
	<u>Federation of European Biochemical Societies Letters</u>	1974
	<u>Geochimica et Cosmochimica Acta</u>	1981
	<u>Journal of Agricultural Science</u>	1983
	<u>Journal of General Microbiology</u>	1981
	<u>Journal of the Science of Food and Agriculture</u>	1980, 1981
E.76	<u>Nature</u>	1968
	<u>Pharmaceutical Journal</u>	1976
	<u>Progress in Industrial Microbiology</u>	1976-78
E.77	<u>Science Progress</u>	1979-80
	<u>Soil Biology and Biochemistry</u>	1975, 1976, 1979

Publications, lectures and broadcasts

LECTURES

- E.78 'The aromatic oxidative metabolism of certain benzene ring compounds by soil organisms', c. 1951. 3pp typescript with indications for slides.
- E.79 'Bracken and Hill farming'. Lecture to Hill Sheep Farming Committee (Veterinary), Bangor, May 1953. 6pp typescript with ms correction and indications for slides.
- E.80 'The basis of life'. Introductory lecture to 'series of lectures on biological science', latest reference 1953. 13pp typescript + 'slides required' and 'dimensions used'.
- E.81 'Bracken poisoning of farm animals', 'Lect. delivered to A.E.A. 7-12-60'. 6pp duplicated typescript with indications for slides.
- 'The ruminant's place in human nutrition' by E C Owen. Lecture to Agricultural Society UCNW, November 1961. 21pp typescript.
- E.82 Address for Ossett Grammar School, Yorkshire, Speech Day 1961. Ms notes for speech returned to Evans by The Dewsbury Reporter.
- E.83 'Theories on the origin of life on Earth', series of lectures delivered at UCNW, latest bibliographical reference 1963. 14pp typescript of opening lecture with ms correction.
- E.84 Correspondence re lecture on the effects of bracken on simple stomached and ruminant animals to UCW Aberystwyth Student Biochemical Society, 19 January 1970.
- E.85 Correspondence re lectures at Dundee and Edinburgh universities, October 1976. Evans gave a seminar on 'The microbial metabolism of aromatic compounds' at Dundee and on 'The toxicology of Pteridium aquilinum' at Edinburgh.

Publications, lectures and broadcasts

- E.86 Correspondence re lecture on 'The microbial catabolism of aromatic compounds - including the aerobic and anaerobic pathways' to University of Manchester Union Biochemical Society, 9 November 1976.
- E.87 'Metabolism of quinol and resorcinol', c. 1976. 5pp typescript with indications for slides.
- E.88 Correspondence re lectures at University of St Andrews, 17-18 February 1977. Evans gave seminars on 'The toxicity of bracken to animals' and 'The fundamental biochemical cycle of nature', and I A Evans spoke on 'The cancer problem and naturally occurring carcinogens'.
- E.89 Correspondence re lecture 'Y symbyliad i fod yn Wyddonydd - pŵr neu cymhwysol?' (The symbolism of the scientist - pure or applied?) to Cymdeithas Wyddonol Clwyd (Clwyd Scientific Society), Connah's Quay, 6 October 1980.
- E.90 'The anaerobic metabolism of aromatic compounds', latest bibliographical reference 1986. 11pp typescript with indications for slides.
- E.91 'Bacterial breakdown of chemicals in soil', Fisons Chesterford Park Research Station, nd. Ms notes for lecture.
- E.92 'The biochemical aspect of animal disease with particular reference to the blood', nd. 8pp typescript.
- E.93 'The biological oxidation of aromatic compounds with special reference to the bacterial cleavage of the benzene ring', Liverpool Branch, Chemical Society, nd. 11pp typescript.
- 'Classification and mapping of soils', nd. 15pp typescript.

Publications, lectures and broadcasts

- E.94 'Comparative biochemistry of nutrition', University College Cardiff Student Biochemical Society, nd. 6pp typescript.
- 'Contribution of chemistry to agriculture', Presidential Address to unidentified society, nd. 4pp typescript with ms notes on verso.
- E.95 'Current ideas about the problem of the origin and evolution of life on Earth, and elsewhere', perhaps originally delivered to UCNW Guild of Graduates, nd. 13pp typescript with ms notes on 'The origin of life' found with it.
- E.96 'The meaninglessness of the terms Life and Living', nd. 27pp typescript with ms correction by Evans.
- 'Metabolism of pesticides (xenobiotics)', nd (but post-Viet Nam War). 2pp typescript notes + 4pp list of slides.
- 'Microbes in the service of Man', nd. 2pp typescript summary + list of slides.
- E.97 'Bacteria neu microbau ai gwaith', nd. 3pp typescript.
- 'Clwy rhedyn' (Bracken poisoning), nd. 2pp typescript notes + list of ?slides.
- E.98 'Damcaniaethau ar ddyfodiad bywyd i'r Byd' (The origin of life on Earth), nd. 5pp typescript.
- 'Yr ail ddarlith' (second lecture) on the evolution of life. 4pp typescript notes + ms annotation. Found with preceding.
- E.99 'Defnyddio'r microbyn: wneud cyffuriau prin' (The use of microbes in making scarce medicines), nd. 2pp typescript notes.

Publications, lectures and broadcasts

BROADCASTS

- E.100 'Defnyddioldeb calcium i'r corff (Usefulness of calcium in the body), talk for BBC Radio Cymru 'Llwyaid o ffisig' series, broadcast 15 September 1982. Questions on calcium, with Evans's answers; contract.
- E.101 Exchange with BBC re radio broadcast in 'Tir Newydd' (New Ground) series on 13 December 1984. The BBC asked Evans to talk on genetic engineering and suggested the title 'Datblygu bacteria i fwyta olew' (Developing oil eating bacteria). In his reply Evans gave his view of what the broadcast should cover.
- E.102 Correspondence with HTV Wales and a viewer re programme on bracken poisoning, 1982, 1984.

Publications, lectures and broadcasts

LECTURES BY OTHERS

Contents of Evans's box labelled 'Typed lectures Worden': three files of lectures and teaching material assembled by A N Worden.

Worden studied veterinary science at London University (Royal Veterinary, Birkbeck and University Colleges) in the mid-1930s. He was Research Student at the Lister Institute of Preventative Medicine and University of Cambridge 1938-41 and Research Officer 1941-45. In 1945 he was appointed Professor of Animal Health at the University College of Wales, Aberystwyth, a position he held until 1950 when he left to found the Huntingdon Research Centre.

The collection consists mainly of material for lectures given by others in London 1934-39 and duplicated typescript instructions for practical work, chiefly for the University of Cambridge Biochemistry course 1939-40. There are also a few ms notes dated 1941 and 1942 and an undated draft on 'The Welsh language in South Scotland' (E.130). Worden probably handed over the material to Evans (then lecturer in Worden's department at Aberystwyth) on his departure in 1950.

The contents of these three very bulky files have been retained in their original order but for ease of reference are divided into 28 folders.

E.103 - E.116 First file: contents divided into 14.

A sequence of Worden's typescript notes, duplicated typescript texts and notices of lectures, chiefly on veterinary subjects, delivered in London 1934-39. The material was arranged alphabetically.

E.103 E C Amoroso 'embryology (1934-5)'.
E.104

Publications, lectures and broadcasts

- E.104 J Y Bogue 'Physiology and biochemistry (1934-6)';
A Butenandt 'Chemistry of sterols and bile acids';
W H Bishop 'Epidural anaesthesia in the larger domestic
animals'; D V Balls 'The racing greyhound from the
veterinary standpoint'.
- E.105 R C Crowhurst 'Some conditions of the horse's wind';
R W Crowther 'Some aspects of infertility in cattle';
K E Cabban 'Some post-mortem diagnoses in swine'.
- E.106 V Friedenreich 'Blood groups and Genetics';
P Gerard 'Comparative histophysiology of the vertebrate
nephron'.
- E.107 A E Hamerton 'Tuberculosis among captive wild animals';
E S Horning 'The cytology of secretion in the mammary
gland as influenced by oestrin and radium radiation';
W T Harrow 'The uses of radiology in general practice';
P T Heath 'Surgical interference for teat obstruction
in the cow'.
- E.108 D K Hunt 'Hypomagnesaemia in bovines and equines' (plus
discussion by J Francis); L E Hughes 'Whence and whither
veterinary science'.
- E.109 J P James 'Sheep farming and some diseases of sheep in
New Zealand'; A Krogh 'The economy of some animal communities'
and 'The osmotic regulation in aquatic vertebrates'.
- E.110 R J Ludford 'The reaction of cells to physical and chemical
agents'; E A Leaver 'Veterinary obstetrics'; J W G Leiper
'Parasitic worms in relation to meat inspection'.
- E.111 F C Minnett 'Diseases common to Man and lower animals';
P Z Mackenzie 'Firing and blistering in light horses'.

Publications, lectures and broadcasts

- E.112 D S Rabagliati 'Diseases common to Man and lower animals';
T E G Rutter 'Low fever (etc) and acetonaemia'; J W Rainey
'Some practical observations on the surgical treatment of
infected wounds'.
- E.113 P M Sutton 'Some poultry diseases'; C C Sparke 'Hyper-
sensitivity and non-specific therapy'; T K Stephens
'Bovine mastitis and its clinical aspects'.
- E.114 K C Sellars 'Some complications of pregnancy, parturition and
of the post-parturient period in the ewe and sow'; F R Spratling
'Notes on a disease of cattle occurring in the country, strongly
resembling haemorrhagic septicaemia'; W M Swangard 'Control
of trichomoniasis in cattle'; W G Savage 'Human tuberculosis
of bovine origin'.
- E.115 D W B Taylor 'Some aspects of the part played by vitamins
A D and E in animal nutrition' (plus discussion by Worden).
- E.116 F W Withers 'Some congenital abnormalities of structure in
animals'; A N Worden 'The life and work of the veterinary
surgeon'.
- E.117 - E.121 Second file: contents divided into 5.

Duplicated typescript instructions for practical work,
c. 1936-37.
- E.117 Includes 'Dissection of the dog' and 'The double intradermal
tuberculin test in cattle'.
- E.118 Practical Chemistry of Foods, Lent Term. Papers I - XIX
(2lpp)

Publications, lectures and broadcasts

- E.119 Includes instructions for tests on milk.
- E.120 Instructions for physiology experiments by J Y Bogue dated October 1937.
- E.121 'A study of the tortoise heart', 'Smooth muscle. (Tone and movement of the isolated intestine)', 'Fragility of the red cells (haemolysis)', etc.
- E.122 - E.130 Third file: contents divided into 9.
Chiefly duplicated typescript instructions for practical work for Cambridge Biochemistry course, 1939-40.
- E.122 Practical work for Biochemistry Part I 1939-40, Michaelmas Term: classes 1-22.
- E.123 Practical work for Lent Term: Carbohydrates I - VI, Manometry I - VII.
- E.124 Practical work for Lent Term: Tissue Respiration I - II, Muscle Metabolism I - V, Pigments, Nutrition I - II.
- E.125 Practical work for Easter Term: Plant Biochemistry I - III, Metabolism of Yeast, Manometry IX, Enzymes, other experiments; lists of topics to be covered in Biochemistry Parts I and II, 1939-40; experiment sheets (annotated); ms note 'Zeissl's determination of Me groups 18.x.41'.
- E.126 Practical work for Biochemistry Part II, Lent Term. Includes ms notes dated 1941, 1942.
- E.127 'Carbohydrates 9.10.41' ms and typescript draft paginated 1-19.

Publications, lectures and broadcasts

- E.128 Biochemistry Part II. Visit of the class to Nutritional Laboratory March 1942.
- E.129 Miscellaneous ms and typescript instructions for experiments, notes etc.
- E.130 'The Welsh language in South Scotland', 11pp ms draft (not by Worden or Evans) written on the back of duplicated typescript papers from Leeds University, Prince Henry's Grammar School Otley, etc. 1938-39.

REPRINTS

- E.131 Reprints of Evans's publications. See A.8. Also includes Bracken toxicity and carcinogenicity as related to animal and human health, ed. J A Taylor, Institute of Earth Studies no.44, 1989, dedicated to the memory of Evans and including an abstract of a paper he had prepared before his death.

1 box.

SECTION F

VISITS AND CONFERENCES

F.1 - F.52

- F. 1 International Society of Soil Science Congress Tour
 through North Wales, 10 August 1935.
- Bound programme only. There is no evidence for Evans's
 participation.
- F. 2 Conference of Grassland Officers discussion meeting on
 conservation of Grass by Maceration, 29 September 1949.
- Extract from minutes summarising the contribution of
 Evans and N W Pirie.
- F. 3 - F.8 Nutrition Society 89th meeting on The Efficiency of Food
 Conversion in Farm Animals, Bangor, 23-24 July 1954.
 Evans chaired two sessions and gave the Introduction.
- F. 3 Provisional and final programmes; correspondence re
 arrangements; drafts of Evans's 'Chairman's Introduction.'
- F. 4 - F.8 Drafts of all five papers presented and of contributions
 to 'Discussions', sent to Evans as a Chairman.
- 5 folders.
- F. 9 Society of Chemical Industry meeting on The Persistence
 of Herbicides, London, 25 October 1966. Evans spoke on
 'The fate of herbicides in the environment'.
- Programme; ms notes for Evans's contribution.
- F.10 Society of Chemical Industry Symposium on Physico-chemical
 and Biophysical Factors affecting the Activity of Pesticides,
 London, 10-12 April 1967.
- Programme only.

Visits and conferences

- F.11 3rd International Fermentation Symposium, Rutgers, NJ,
2-6 September 1968. Evans spoke on 'Microbial trans-
formations of aromatic compounds'.
- Correspondence re arrangements for publication of
symposium Proceedings; ms notes on proceedings.
- F.12 - F.28 Visit to the Sudan, January-March 1969.
- From January-March 1969 Evans was Visiting Professor
in the University of Khartoum Department of Biochemistry
and Soil Science. His duties, as listed by A H Khattab,
the Head of Department, were to review the courses in
chemistry and biochemistry, assist with research on
toxicology, evaluate the role of the department, evaluate
the March 1969 examinations and deliver some lectures and
seminars. I A Evans was also invited and served as
Research Officer in the department.
- The bulk of the material is arranged according to Khattab's
list of Evans's duties given above.
- F.12 Correspondence with UCNW and Ministry of Overseas Development
re arrangements, 1968, 1969; list of duties.
- F.13 Notebook used by Evans from 9 January 1969 for notes on
university and departmental organisation, research interests
of members of staff, research facilities etc.
- F.14 Memorabilia.
- F.15, F.16 Courses
- F.15 Outlines of courses for 1968-69; Evans's ms notes on 'Teaching
commitment in the Dept of Biochemistry & Soil Science'.

Visits and conferences

- F.16 'Laboratory manual of agricultural biochemistry' prepared for students taking Part II of the B.Sc. (Agric.) degree.
- F.17 - F.19 Research
- F.17 Evans's ms notes principally relating to research in the department; duplicated typescript papers on organisation of research and research facilities.
- F.18 Duplicated typescript research papers by members of the Faculty of Agriculture.
- F.19 Reprints by Faculty staff and others.
- F.20 Role of the department
Evans's ms notes on the department. Includes drafts of 'Functions of the Department of Biochemistry and Soil Science, in the University of Khartoum'. Folder also includes papers for Faculty of Agriculture meetings, January, February 1969.
- F.21 Examinations
Notification of Evans's appointment as External Examiner in Biochemistry; annotated examination papers; Evans's ms note on 'Examination of the Honours student'.
- F.22 - F.28 Lectures and seminars
- F.22 Evans's lecture drafts: 'Microbial metabolism of aromatic structures', 10pp ms; 'Detoxification mechanisms', 12pp ms; miscellaneous ms notes.
- F.23 Symposium on Cotton Growth in the Gezira Environment, Wad Medani, 6-9 January. Programme, information on Gezira Agricultural Research Station, papers presented etc., retained in original symposium folder.

Visits and conferences

- F.24 - F.28 'Veterinary meeting Khartoum Sudan'. Contents of Evans's folder so inscribed. Refers to the 4th Veterinary Conference of the Sudan Veterinary Association, 31 January - 3 February.
- Papers presented at the meeting.
- 5 folders.
- F.29 Invitation to attend symposium on Sulphur in Agriculture, Johnstown Castle, Wexford, 7 - 8 October 1969.
- F.30 British Society of Soil Science Conference, 30-31 March 1971.
- Abstracts with a few annotations by Evans. Not otherwise documented.
- F.31 British Weed Control Conference, Brighton, November 1972. W C and I A Evans attended a Group Discussion on Asulam for Bracken Control held 13 November.
- Programme and Reports of Discussion by Evans and May & Baker Ltd.
- F.32 Brief correspondence, 1974-75, re publication of Evans's contribution to the 'Bracken symposium'. Probably refers to Symposium on The Biology of Bracken, the proceedings of which were published in Botanical Journal of the Linnean Society 73 (1976).
- F.33 British Crop Protection Council Symposium on Persistence of Insecticides and Herbicides, Reading, 22-24 March 1976.
- Programme; list of participants; correspondence arising.

Visits and conferences

- F.34 Symposium on Drug Metabolism in Honour of Professor
R T Williams FRS, Guildford, 6 - 8 April 1976. Evans
co-chaired a session.
- Invitation; information; abstracts of papers to be
 presented during Evans's chairmanship; ms notes for
 Evans's summing-up.
- F.35 Biochemical Society Meeting, Bangor, 8 - 9 April 1976.
Evans chaired and introduced the colloquium on Microbial
Catabolism: its Role in the Carbon Cycle and Significance
for Environmental Problems.
- Agenda papers; colloquium programme; copy of Evans's
 'Introduction: anaerobic and aerobic environments',
 published in Biochem. Soc. Trans. 4 (1976), 452-455
 (See E.44); correspondence arising.
- F.36 - F.38 NATO Workshop on Ecotoxicology of Persistent Chemicals,
Guildford, 11 July - 5 August 1977. Evans attended during
the second week and spoke on 'Factors affecting the
degradation of toxic chemicals by micro-organisms in Nature'.
- F.36 Correspondence re arrangements; programme.
- F.37 Transcript of Evans's contribution.
- F.38 Typescript and ms notes for Evans's contribution.
- F.39 Memo on claim for expenses incurred during 'visit to Wye
College [see G.104, G.105] + conference in London',
sent 14 March 1978. Not otherwise documented.
- F.40 Society for General Microbiology 84th Ordinary Meeting,
Cardiff, 3 - 5 January 1979. Evans spoke on 'Biodegradative
activities in anaerobic environments'.
- Programme; abstract of Evans's contribution; list of slides.

Visits and conferences

- F.41 Letter, 11 July 1980, to Biochemical Society re 'the Sheffield meeting'. Not otherwise documented.
- F.42 2nd International Symposium on Microbial Ecology, Warwick University, Coventry, 7 - 12 September 1980.

Correspondence re arrangements; final circular; programme with Evans's ms notes on back.
- F.43, F.44 Royal Society of Edinburgh Symposium on Bracken in Scotland, Edinburgh, 20 March 1981. Evans spoke on 'Acute bracken poisoning in homogastric and ruminant animals' (prepared with M C Patel) and I A Evans spoke on 'The carcinogenic, mutagenic and terratogenic toxicity of bracken'.
- F.43 Invitation; abstracts etc.
- F.44 Correspondence re publication of Evans's contribution. It was published in Proc. Roy. Soc. Edinburgh 81B (1982).
- F.45 Y Gymdeithas Wyddonol Genedlaethol Nuclear Power Group visit to Trawsfynydd Nuclear Power Station, 10 April 1982.

Programme; background information.
- F.46 3rd International Congress of Cell Biology, Tokyo, 26 - 31 August 1984. W C and I A Evans both attended and visited colleagues in research centres in Japan.

Correspondence re financial support. Evans's letter of 8 October includes brief report on visit.

Visits and conferences

- F.47, F.48 International Conference on The Bracken Fern, Leeds, 1 - 5 July 1985. Evans spoke on 'The acute diseases caused by bracken in animals' and I A Evans on 'The carcinogenic, mutagenic and terratogenic toxicity of bracken'. The Proceedings were published in Bracken. Ecology, land use and control technology, ed. R T Smith and J A Taylor (1985).
- F.47 Programme; information; typescript draft of Evans's contribution, etc.
- F.48 Correspondence arising. Includes papers re the International Bracken Group, 1987-88. This was established following the 1985 conference by a number of the delegates, including W C and I A Evans, to support bracken research.
- F.49 Invitation (accepted) from G Fuchs, 18 April 1986, to visit the University of Ulm.
- F.50 - F.52 Symposium of Microbial Metabolism and the Carbon Cycle, University of Minnesota, 13 - 16 July 1986. Evans spoke on 'Degradative metabolism of aromatic compounds in anaerobic environments'. The Proceedings were published in Microbial Metabolism and the Carbon Cycle, ed. S Hagedorn, R Hanson and D A Kunz (NY, 1988).
- F.50 Invitation; correspondence re arrangements; programme.
- F.51 Typescript draft of Evans's contribution.
- F.52 Correspondence arising.

Correspondence

- G.7 Cain, R B various dates 1960-80
- Clegg, R A 1975-78
- G.8 - G.12 Dagley, S 1958-70 and nd
- G.8 1958-59. 'New pathway' of the microbial metabolism of protocatechuic acid.
- G.9 1960. January-July. Metabolism of protocatechuic acid.
- G.10 1960. August-October. Joint publication on metabolism of protocatechuic acid. ('New pathways in the oxidative metabolism of aromatic compounds by micro-organisms' by Dagley, Evans and D W Ribbons, Nature 188 (1960) 560-566).
- G.11 1961-62.
- G.12 1964-70 and nd. 1964 correspondence is chiefly re fluorescent pseudomonads.
- G.13 Dimmock, C 1981-82
Cheilanthes sieberi
- G.14 Done, J T 1963-65
Bracken poisoning in pigs.
- G.15 Dow Chemical Company 1976-77

Correspondence

- | | | |
|------|---|-------------------------------|
| G.16 | Fewson, C A | 1977, 1980-82 |
| | 1980 correspondence arose from request from Fewson to use two figures of Evans's for a chapter on 'Biodegradation of aromatics'. Fewson had also enquired whether they 'represent your most recent thinking' and whether Evans wished any modifications to be made. | |
| G.17 | Fina, L R | 1977-78 |
| | <u>Re</u> review of work of Fina and Keith by Evans. | |
| G.18 | Fuchs, G | 1985-87 |
| | Chiefly <u>re</u> anaerobic benzoate degradation, and joint article 'Anaerobic degradation of aromatic compounds', <u>Ann. Rev. Microbiol.</u> 42 (1988), 289-317. | |
| G.19 | Grbić-Galić, D | 1986-88 |
| | Groenewoud, G | 1981-82 |
| G.20 | Gwynn, R | 1985-86 |
| | Bracken poisoning. In Welsh. | |
| G.21 | Happold, F C | various dates 1948-86 and nd. |
| | Happold was Evans's immediate superior in the Leeds University Department of Physiology, 1937-40. | |
| G.22 | Henry, K M | 1964-65 |
| | Biological value of leaf proteins. | |

Correspondence

- | | | |
|-------------|--|---------------|
| G.23 | Hirono, I | 1975, 1981-87 |
| | Isolation of cattle bracken toxin, bright-blindness in sheep. | |
| | Hodgkin, D M C | 1973, 1975 |
| | 'Bracken factor' crystals. | |
| G.24 | Hopper, D | 1980, 1987 |
| | P-cresol methylhydroxylase. | |
| G.25 | Humphreys, D | 1968-84 |
| | Research, principally on toxicology. Some correspondence in Welsh. | |
| G.26 | Jones, G W | 1977-78 |
| | Lane, A | 1978 |
| | Anaerobic catabolism of aromatic acids. | |
| G.27 | Linstead, R P | 1951 |
| | Muconic acids. | |
| G.28 | McCormick, A | 1971-74 |
| G.29 - G.32 | McMorris, T C | 1979-86 |
| | Isolation of cattle bracken toxin. Includes correspondence <u>re</u> research and planned publication on toxicity of illudin-S (See D.80, E.66). | |

Correspondence

G.29 - G.32 cont'd

G.29	1979-81	G.31	1984
G.30	1982-83	G.32	1985-86
G.33	May & Baker Ltd		1980-87
	Bracken samples. 1986-87 correspondence is <u>re</u> New Zealand bracken samples.		
G.34, G.35	Monsanto Chemicals Ltd		1955-61
	Chiefly correspondence <u>re</u> results of analyses of samples sent to Monsanto for examination.		
	G.34	1955-59	
	G.35	1960-61	
G.36	Morton, R A		1973-77
G.37 - G.39	National Collection of Industrial Bacteria		1966-85
	G.37	1966-67, 1970-71. 1966-67 correspondence <u>re clostridium</u> culture.	
	G.38	1978-80 Chiefly <u>re</u> identification of <u>desulfovibrio</u> cultures.	
	G.39	1982, 1985, nd.	

Correspondence

- G.40 - G.42 Natori, S 1979-88
Isolation of cattle bracken toxin and carcinogen.
G.40 1979-81 G.42 1983-88
G.41 1982
- G.43 Ollis, W D various dates 1959-76
Includes 'References regarding synthesis of
2-methoxy-4-chloro-6-methylphenol' sent to
Evans 28 November 1961.
Porter, H K 1977
Re Professor Meirion Thomas FRS.
- G.44 Prins, R A 1977
Anaerobic metabolism of benzoate.
- G.45 Raymond, R L 1968-70,1977
1968-70 correspondence re naphthalene oxidation
pathway.
- G.46 - G.48 Robertson, J A 1974-82
Robertson was Research Assistant in Evans's department
investigating 'Bright blindness in sheep', 1975-78.
See also E.58 - E.60.
G.46 1974-75 G.48 1978-82
G.47 1976-77
- G.49 Saito, T 1980, 1984,1986
Isolation of cattle bracken toxin.

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|-----------|---|-----------------------|
| G.50 | Schoental, R | various dates 1950-85 |
| G.51-G.54 | Stanier, R Y | 1948-53,1975,1976 |
| G.51 | 1948-1949 Feb. Oxidation of aromatic compounds by <u>Pseudomonas fluorescens</u> and vibrio O1. | |
| G.52 | 1949 Mar-Nov. Chiefly <u>re</u> benzoate oxidation. | |
| G.53 | 1951-53. Chiefly <u>re</u> tryptophan oxidation. | |
| G.54 | 1975-76. | |
| G.55 | Swan, G A
6-hydroxydopa | 1976 |
| G.56 | Taylor, B F
Chiefly <u>re</u> <u>Pseudomonas</u> PN-1 cultures. | 1975,1976,1979 |
| G.57 | Tewfik, M S | 1969,1970,1975 |
| G.58 | Trudgill, P W
1972-73 correspondence <u>re</u> metabolism of cyclohexane carboxylic acid. | 1972-83 |
| G.59 | Van der Hoeven, J C M
Isolation of cattle bracken carcinogen. | 1982-84 |
| G.60 | Walker, N | 1964,1975-78 |

Correspondence

- G.61 Williams, R T 1948-51, 1972-78
1950-51 correspondence chiefly re muconic acids.
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- G.62 Wolfe, R S 1975-79
Methanogenic fermentation of aromatic substrates.
- G.63 Young, L Y 1978-80,1984,1987
1978-79 correspondence chiefly re methanogenic
fermentation of ferulate. Letter of 14 February
1980 is Evans's account of his work on anaerobic aromatic
degradation from 1937.

Correspondence

SHORTER SCIENTIFIC CORRESPONDENCE

G.64	1949	G.80	1976 Oct-Dec
G.65	1950-53	G.81	1977 Jan-Mar
G.66	1957-59	G.82	1977 Apr-June
G.67	1960	G.83	1977 July-Dec
G.68	1961, 1963	G.84	1978
G.69	1964-67	G.85	1979
G.70	1968, 1969	G.86	1980 Mar-July
G.71	1970	G.87	1980 Aug-Dec
G.72	1971	G.88	1981 Jan-May
G.73	1972,1973	G.89	1981 July-Dec
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G.75	1975 Jan-May	G.91	1983
G.76	1975 June-Oct	G.92	1984
G.77	1975 Nov, Dec	G.93	1985, 1986
G.78	1976 Jan-Apr	G.94	1987, 1988
G.79	1976 May-Sept	G.95	Nd.

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G.107 - G.114	Appointments
G.115 - G.117	Grant applications
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Examining

G.96 - G.98	Higher degrees		
G.96	1970, 1971, 1977	G.98	1981, 1982
G.97	1978-80		
G.99 - G.103	Glasgow University		
	Evans served as External Examiner in Agricultural Chemistry.		
G. 99	1969-71, 1979		
G.100	1980		
G.101	1981		
G.102	1982		
G.103	1983		

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G.104, G.105 Wye College London

Evans served as External Examiner in Agriculture and Horticulture.

G.104 1982-83 G.105 1984-85

G.106 Miscellaneous external examining.

Appointments

G.107	1968-74	G.111	1978-80
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G.109	1976	G.113	1984
G.110	1977	G.114	1985-86

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