

THE ROYAL COMMISSION ON HISTORICAL MANUSCRIPTS

Report on the papers of
PROFESSOR IVAN DE BURGH DALY FRS
(1893-1974)

deposited in the Wellcome Institute
for the History of Medicine, London

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THE ROYAL SOCIETY

THE ROYAL COMMISSION ON HISTORICAL MANUSCRIPTS

Joint Committee on Scientific and Technological Records

CONTEMPORARY SCIENTIFIC ARCHIVES CENTRE

Papers of

PROFESSOR IVAN DE BURGH DALY, F.R.S.

(1893 - 1974)

Listed by Jeannine Alton
 Harriot Weiskittel

Deposited in the Wellcome Institute for the History of Medicine London

1976

Description of the collection

The papers cover the years 1858 - 1974 and were received from Professor Michael de Burgh Daly, elder son of Ivan de Burgh Daly, who retains some biographical material.

The collection consists primarily of Professor Daly's meticulous records of experiments (see note on page 4). Professor Michael de Burgh Daly also retains the original draft and related manuscripts, notes and correspondence of an unpublished monograph entitled 'Intrinsic Lung Mechanisms'.

The collection also includes one box of correspondence with (and biographical information regarding) several eminent physiologists.

All items are manuscript unless otherwise indicated; titles in inverted commas are those which appear on the manuscripts.

Summary of career

b. 1893

		Educated Rossall School
1914		1st Class Natural Science Tripos Part I, Gonville and Caius College, Cambridge
1918	M.B.	M.B., St. Bartholomew's Hospital
1922		M.D.
1919 - 23		Assistant in Department of Physiology, University College London
1923 - 27		Lecturer in Experimental Physiology, University of Wales, Cardiff
1927 - 33		Professor of Physiology, University of Birmingham
1933 - 47		Professor of Physiology, University of Edinburgh
1934		Fellow of the Royal Society, Edinburgh
1943		Fellow of the Royal Society
1948 - 58		Director, Institute of Animal Physiology, Babraham, Cambridge
1958 - 62		Wellcome Trust Research Fellow, Oxford

A full list of the honours and awards received by Professor Daly may be found in the obituary notices in Item A.14.

Contents of the handlist

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A. Biographical and correspondence

- A.1 5 autograph letters from Professor William Sharpey to Sir Charles Lyell 1858 - 71
- A.2 4 autograph letters from Sir Edward Sharpey-Schafer to Daly 1934 - 35
- A.3 Daly's correspondence with G.M. Sharpey-Schafer (Sir Edward's daughter) re controversy over Carleton's edition of Essentials of Histology and re the Schafer method of artificial respiration 1936, 1943
- A.4 Press cuttings re life and career of Sir Edward Sharpey-Schafer: subscription by pupils and colleagues for presentation of portrait plaque (1922), report of 11th International Congress of Physiology chaired by Sir Edward (1923), conferment of title of Emeritus Professor by University of Edinburgh (1933), obituary notices (1935) 1922 - 35
- A.5 Typescript copy of appreciation of Sharpey-Schafer with ms. note by Daly 'For General Council Report'. Announcement of subscription for commission of bust of Sharpey-Schafer. 1935 - 36
- A.6 Summary of career of Sharpey-Schafer (2 typescript copies, 1 annotated by Daly), 2 bibliographies (1 list includes all joint publications with collaborators) n.d.
- A.7 Ms. notes (by Daly?) on addresses delivered by Sharpey-Schafer and subsequently published: opening of winter session of Medical Faculty of University College, London, 1885; Address in Physiology, British Association 1895; Address to graduates, University of Edinburgh, 1902; Presidential Address to Edinburgh University Physiology Society, 1919. 1885 - 1919
- A.8 Daly's correspondence with Sir Charles Sherrington (12 autograph letters from Sir Charles; 1 ms. copy of letter by Daly) 1934 - 49
- A.9 Daly's correspondence with Sir Henry Dale (2 typescript letters from Dale dated 8 June 1937 and 17 June 1939; carbon copies of Daly's letters of 14 and 22 June 1939.) 1937, 1939
- A.10 Daly's correspondence with Dr. William Snow Miller 1932 - 36
- A.11 Daly's correspondence with Charles Singer re interpretation of the writings of Galen and Erasistratus 1942 - 43
- A.12 Daly's correspondence with Dr. K.D. Keele re description by Leonardo da Vinci of bronchial arteries and copies of correspondence with O.L. Richmond re Galen (for eventual use in Daly's monograph 'Intrinsic Mechanisms of the Lung' - unpublished) 1953 - 54, 1964, 1933
- A.13 Letter of thanks from Lord Horder 1951
- A.14 Obituary notices for Professor Daly 1974

B. Scientific notebooks and working papers

Professor Daly used the following abbreviations in his work:

NPV	Negative Pressure Ventilation
IPL	Isolated Perfused Lung
BP	Blood Pressure
PAP	Pulmonary Arterial Pressure
H-L	Heart-Lung
PLA	Perfused Living Animal
LLP	Left Lung Perfusion
IIPL	Innervated Isolated Perfused Lungs (also designated by IILP - Innervated Isolated Lung Perfusion)
CSPR	Carotid Sinus Pulmonary Resistance
VCPLA	Vasosensory Controlled Perfused Living Animal
ENB	Experimental Note-book
i op	Intrathoracic Pressure
PWA	Perfused Whole Animal

B.1 - B.13 Large box file labelled on spine 'EARLY WORK. Thermionic valves. NPV & ALLISON. BP zero' containing:

- | | | |
|-----|---|-----------|
| B.1 | 'With Shellshear. String Galvanometer & Thermionic Valves. Originals. 1919': 2 pp. ms. draft, 12 pp. typescript with ms. annotations, drawings and photographs for accompanying figures | 1919 |
| B.2 | Work for closed circuit heart-lung paper: notes of experimental results, tabular summaries of data, graphs and charts, draft notes entitled 'Factors governing the redistribution of blood in the closed circuit heart-lung preparation.' | 1924 - 25 |
| B.3 | Folder labelled 'Pulmonary arteries. guide. cannula. survival dogs' containing photographs of dogs, graphs, equipment, cross-sections, X-rays. | n.d. |
| B.4 | 'Work of Heart and Constant Diastolic Volume': 2 pp. typescript with 2 pages of ms. tabular summaries of data. 'The effect of lowering the mean respiratory pressure on the output of the heart lung preparation': 3pp. typescript | 1925 |
| B.5 | 'B - EE expts. 1930 - 1937': notes of experiments performed on animals, graphs and diagrams | 1930 - 39 |
| B.6 | 'The effect of drugs upon the lungs introduced through the bronchial arterial circulation': typescript with ms. annotations. | c.1934 |
| B.7 | Set of notes labelled 'Unfinished' followed by list of contents. See file for details of contents. | 1935 - 36 |

- B.8 'IPL. Pigs': notes and details of experiments 1937 - 38
- B.9 'Muscle Shadow Records': notes of experiments 1939 - 40
- B.10 'Cat and Dog expts.': notes and details of experiments, procedure and results 1944 - 45
- B.11 Folder labelled 'NPV. Oxford, 1960. Reverse of +^{ve} to -^{ve} chamber - electrical connections. Perspex chamber drawings': notes of experiments 1960
- B.12 Folder labelled 'Allison-Heath. Correspondence, records' containing notebooks with results of experiments, offprints, correspondence with and notes of P.R. Allison, correspondence with Donald Heath, Daly's notes (see also B.18) 1956 - 61
- B.13 Folder labelled 'Effect of BP zero on PAP, Pulm. in- and out-flow, and on respiration' containing graphs, traces, tables, notes, plans for future experiments c.1950

Professor Daly kept detailed, step-by-step notes of his laboratory experiments in large, loose-leaf notebooks. He included with this 'raw data' any diagrams, graphs, tracings, tabular summaries, photographs, typescript summaries or other material which would provide a complete record of the experimental work in progress. With the exception of B.17 and B.23, all of the following notebooks are of this description and are listed as labelled by Professor Daly. B.17 and B.23 are compilations of material gathered over a span of many years from a variety of sources; the indexes to these bound volumes are given in full in the handlist.

B.14 - B.16 are notebooks B,C, and D of a series on pulmonary circulation; notebook A is missing.

- B.14 'B. July 1926 to Jan. 1930' Labelled on cover: 1926 - 30
 'Negative pressure IPL. General pulm. circulation haemodynamics. Expts. with E.B. Verney. S series expts. Optical recording of PAP, iOp, etc. Closed circuit H-L preparation. Isolated heart & Drinker oxygenator preparation. Carotid sinus expts. Injection of bronchial circulation.'
- B.15 'C. Pulmonary circulation experiments. V - D, also 1928 - 33
 J.L. Berry, A.S. Dale. V - D = Verney-Daly. August 1928 to 1933.'
 Labelled on cover:
 1) First PLA expts. with E.B. Verney (see monograph by Catherine Hebb and self (1966) p.292.)
 2) Upper-half of animal preparation.
 3) Systematic - pulmonary circulation reflexes.
 4) Head - Thorax (HT) preparations. August 1928 to 1933, assessments of experiments.

- B.16 'D. Pulmonary circulation experiments. 30.1.30 to Jan. 33. 1930 - 33
with v. Euler and Thorpe. Bronchial + pulm. circ. perfusion.
Isolated heart + oxygenator'
Labelled on cover:
'Bronchial circulation and Pulmonary Circulation Perfusions.
Injection expts. for X-ray
Haemodynamics up to p.32.
pp.50 - 65
Nerve stimulations pp.66
Jan. 6, 1931, first expt. with Ulf v. Euler - p.84.
Summary of nerve stimulations p. 91.
Closed circuit H-L preparations pp.36.
Isolated heart + oxygenator (with Thorpe)
Sinus carodicus expts. pp.5,7.
Palmer Coil details - p.1.'
- B.17 'Perfused Living Animal. I. deBurgh Daly 1936 - 47' : brown 1936 - 47
bound volume of notes taken during experiments, graphs, charts,
photographs, tracings, descriptions of apparatus;with index
as follows:
'Pump scale outputs
Dog 52 cm. snout to rump 6.75 kg.
TA recorders. Brass cylinder
Air content of external respiratory circuit NPV, whole animal
O₂ cons. intact dog
T.A. of dog
W.L.'s expts. 31,32,34,38,39,48,50,51
S.I.P.L.
Femoral cannulae data
Raising and lowering third reservoir
Oxygenator + isolated perfused lung P.L.A. 50
Thrombin
Technique
Trypan blue
Summary
Histology
Einthovens intratracheal pressure method fitted to Ideal Starling
Temp. recording
Expt. 77 c̄ M. de B.D.
" 81 c̄ Dr. Jalon, Madrid
Filmed 77A, 78, 79, 80
Ritchie stimulator now used "floating" see E.N.B.
Perfusion of Left lung, 1
" " " " , 2
Liquemin Roche used for first time in expt. 86
Effect of respiration on pulmonary blood flow'
- B.18 'Allison' : record of IIPL experiments 23,26,28,29,39,41, 1951 - 57
52,53 carried out with P. Allison. Notebook includes a
copy of letter from Daly to P. Allison re IIPL expt. 53.
(see also B.12).
- B.19 'PLA LLP' : record of LLP experiments 1 - 25 (1947 - 54) and 1947 - 54
PLA experiments 90 - 104 (1951 - 54)

- B.20 'M.deB.D./Waites' : record of 1954 - 58
 LLP experiments 27 - 32 (1954) and IILP experiments 44 - 49
 in SCPR series carried out with Michael deBurgh Daly
 VCPLA experiments 1 - 12 (January - July 1958) by I. and M.
 deBurgh Daly (with list of assistants)
 IILP experiments 27, 30 - 32, 34 - 38, 42 - 43 (1956) with
 G.M.H. Waites. Includes typescript copy of report on
 IILP experiment 43 sent to Sir Alan Drury, October 1956
- B.21 'Rats. Expts. 39 - 139. 2 Borst expts. IILP 54' : 1956 - 58
 record of experiments as labelled, with notes and diagrams
 describing Borst technique
- B.22 'Histology' : technical record, prints, calibrations of c.1963 - 66
 photographs taken during experiments in Series C, C₁ - C₇, D.
- B.23 'E.N.B.' : volume of photographs of apparatus, notes on others' 1939 - 50
 work (with illustrations and diagrams), offprints, graphs,
 notes on technique, preparations of solutions, tabular
 summaries of data, records of experiments, calibrations,
 notes on discussion, bibliography, correspondence, instructions
 for operation of equipment. With index as follows:
- 'Air Ministry, bubble formation (discussion)
 - " " chambers
 - " " , explosive decompression
 - " " , lungs (decompression)
 - Aluminium tanks
 - Anaesthesia, spinal
 - Animal feeding
 - Animal operation technique
 - " " " CTAB
 - Animal rectal temperatures
 - Barium sulphate technique
 - Bellows, Brodie Bellows manometers
 - Bronchomotor nerves
 - Belt dressing
 - Calcium estimation
 - Calorex glass (Chance)
 - Cannulae pressure drop
 - Cement, heatproof
 - Cardiac nerves (Cunningham)
 - Chance (calorex glass)
 - Catheter (cardiac) details
 - Chylomicrons, Frazer Diet (18 pellets)
 - Distemper Prophylactics
 - Drop recorders, Electronic, Thorpe, Palmer
 - Drugs, adr. bronchoconstr.
 - Drugs, adr. (Burn)
 - " , curare
 - " , curarine
 - " , general
 - " , P.L.A.
 - Electrical air pump (Dinton)
 - " Cambridge thread recorder
 - " drop recorder
 - " " " , Bayliss
 - " electrodes
 - " " (non-polarisable)

B.23 continued

(Electrical) galv. constants
 " katharometers
 " liquid resistances
 " Palmer induction coil
 " speedometer
 " stimulator, Ashkenaz
 " " , Ritchie
 " " , " , exptl data P.L.A.
 " " , faradic
 " " , Schmidt and Schmidt
 " thermocouples
 " thermometers
 " thermoregulators
 " Velodyne circuit
 " welding transformer
 " Weston relay
 Expansion, coefficients of, of metals
 Explosive decompression
 Fan motor
 Feeding of animals
 Flow recorder Pitot tubes
 " " , drop, Bayliss
 " " , Gaddum
 " " , thermo junction
 Future experiments
 Galvanometer constants
 Gas, cadmium fumes
 Gas, CO
 Gas, CO₂ absorber
 Gas drier
 Gas mixtures constants
 Gas, phosgene absorber
 Haemodynamics
 Heatproof cement
 Heparin
 Histology technique
 Home Office returns
 Injection masses Vinylite, Paraffin
 " mass, barium sulphate
 " " , starch
 I.P.L., action of drugs
 " , blood volume changes
 " technique
 Kymo paper fixing solution
 Larvae, lung
 Lung anatomy
 Lungs, biological constants
 Lung chemistry
 Lungs, decompression
 Lung larvae
 Manometer, closed end (Starling). Bellows manometers
 Mayer pump

B.23 continued

Nimmo-Smith
 Oxyhaemoglobin photometer
 P.L.A., action of drugs oxygenator
 " , cleaning technique Cannulae (pressure drop)
 " , drugs Heparin
 " , evaluations and tests, also examples. Current consumption
 " , general details of apparatus. Vertical Piston Recorders
 " pumps.
 " temperatures
 Pulmonary vasomotor nerves
 Phosgene
 Photographic. Pitot tubes, Piston recorders
 Plastics
 Ramage technique
 Ringer solutions
 Silicone
 Saja motor
 Starch granules
 Thermometers, electrical
 Thorpe drop recorder
 Vinylate
 Trowell fixing fluid '

B.24 - B.29 Set of 6 notebooks in IIPL Series of experiments

B.24	'ENB I. 1951 - 56. 1 - 50' : record of IIPL experiments 1 - 26, 33, 40, 50 with a note on the location of records for experiments 27 - 30, 34 - 39, 41 - 49	1951 - 56
B.25	'ENB II. 1958 - 60. Expts. 55 to 115' : record of IIPL experiments 55 - 115 with Dr. B.A. Waaler	1958 - 60
B.26	'ENB III. IPL 116 - 149 with Waaler 1958 - 61. Monkeys autoperfusions'	1958 - 61
B.27	'ENB IV.' : record of IPL and IIPL experiments 150 - 184	1961 - 62
B.28	'ENB V. Transmitter. 1962 to 1963 with C.B. Ferry. Dogs 185 - 240'	1962 - 63
B.29	'ENB VI. T(ransmitter) 243 to 258'	1964 - 65

C. Index to the correspondents

ALLISON, Professor P. R.	B.12
BROWN, Sir George Lindor	B.23
DALE, Sir Henry	A.9
HEATH, Donald	B.12
HORDER, Thomas Jeeves (Baron Horder of Ashford)	A.13
KEELE, K. D.	A.12
MILLER, William Snow	A.10
RICHMOND, O. L.	A.12
RITCHIE, Anthony F.	B.23
SHARPEY, Professor William	A.1
SHARPEY-SCHAFFER, Sir Edward	A.2
SHARPEY-SCHAFFER, G. M.	A.3
SHERRINGTON, Sir Charles	A.8
SINGER, Charles	A.11