

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Professor Michael de Burgh Daly also retains the original draft and related manuscripts, notes and correspondence of an unpublished monograph entitled 'Intrinsic Lung Mechanisms'.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

		<u>Items</u>	<u>Page</u>
A.	Biographical and correspondence	A.1 - A.14	2
B.	Scientific notebooks and working papers	B.1 - B.29	3
C.	Index to the correspondents		9



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: 1922 - 35  
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)
- 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
iOp	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 + <sup>ve</sup> to - <sup>ve</sup> 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: '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.'	1926 - 30
B.15	'C. Pulmonary circulation experiments. V - D, also 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.'	1928 - 33



- 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 caroticus 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  
O<sub>2</sub> 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, C<sub>1</sub> - C<sub>7</sub>, 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, CO<sub>2</sub> 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-SCHAFER, Sir Edward	A.2
SHARPEY-SCHAFER, G. M.	A.3
SHERRINGTON, Sir Charles	A.8
SINGER, Charles	A.11