

Supplementary catalogue of papers and correspondence of

SIR GORDON BRIMS BLACK McIVOR SUTHERLAND FRS

(1907 - 1980)

Material additional to CSAC 89/7/82

Compiled by Timothy E Powell and Peter Harper

Deposited in Cambridge University Library

All rights reserved

University of Bath

1990

The work of the National Cataloguing Unit for the Archives of Contemporary Scientists, and the production of this catalogue, are made possible by the support of the following societies and organisations:

The Biochemical Society
The British Library
The Geological Society
The Institute of Physics
National Power
Pergamon Books
Rolls-Royce plc
The Royal Society
The Royal Society of Chemistry
The Society of Chemical Industry

LIST OF CONTENTS		Items	Page
INTRODUCTION			3
SECTION B	EARLY INFRARED RESEARCH	B.93 - B.137	5
SECTION C	THE NATIONAL PHYSICAL LABORATORY	C.53 - C. 58	11
SECTION D	COMMITTEES, SOCIETIES, ORGANISATIONS	D.59 - D. 73	12
SECTION E	EDUCATION AND SCIENCE POLICY	E.48 - E. 84	14
SECTION F	VISITS AND CONFERENCES	F.49 - F. 58	17
SECTION G	DRAFTS, LECTURES, PUBLICATIONS	G.66 - G. 69	19
SECTION H	GENERAL CORRESPONDENCE	H.46 - H. 48	20
INDEX OF CORRESPONDENTS			21

INTRODUCTION

PROVENANCE

The papers were found in Emmanuel College Cambridge and received from Lady Sutherland in March 1989.

PRESENTATION

The material has been arranged into sections and numbered to follow the sequence of the catalogue compiled in 1982 (CSAC 89/7/82), which should be consulted in conjunction with this Supplementary Catalogue.

DESCRIPTION

The collection is presented in the order given in the List of Contents. Material supplementary to the 1982 catalogue has been found for all sections with the exception of Section A (Biographical and Personal).

Section B, Early Infrared Research, consists of significant additional material relating to Sutherland's wartime work on hydrocarbons (B.93 - B.109), his immediate postwar work at Cambridge University (B.111-B.119) and his sojourn at the University of Michigan 1949-55 (B.120 - B.137).

Section C, The National Physical Laboratory, comprises correspondence, press-cuttings and photographs from Sutherland's period as Director, 1956 - 64.

Section D, Committees, Societies, Organisations, documents Sutherland's work for the British Association for the Advancement of Science Annual Meeting 1968, his service on the Ministry of Defence Space Review Committee and his consultancy with UNESCO on the establishment of a national institute for standards in Egypt.

Section E, Education and Science Policy, presents further material relating to Sutherland's interest in these issues. It includes a virtually complete set of papers for meetings of the Working Group on Migration of the Committee on Manpower Resources of the Council for Scientific Policy which met to consider the 'brain drain' 1966 - 67.

Section F, Visits and Conferences, consists of a little new material on some of the visits made and conferences attended by Sutherland between 1950 and 1964. Of most interest are the papers relating to Sutherland's visit to the USSR in 1958 (F.52-F.55).

Section G, Drafts, Lectures, Publications and Section H, General Correspondence, are both very slight.

ACKNOWLEDGEMENTS

We are very grateful to Lady Sutherland for making the material available, and for her advice and encouragement.

Timothy E Powell
Peter Harper
Bath 1990

SECTION B

EARLY INFRARED RESEARCH

B.93 - B.137

- B. 93 - B.104 Wartime work on hydrocarbons
B.105 - B.110 Correspondence with friends and
 colleagues, 1933-1947
B.111 - B.119 Postwar work at Cambridge University
B.120 - B.137 Postwar work at the University of
 Michigan

WARTIME WORK ON HYDROCARBONS

- B.93 'The identification and estimation of iso-octanes in
 enemy fuels from infra-red spectra' by Sutherland,
 11 July 1941. 4pp + graphs.
- B.94 'Interim report on analysis of aviation fuels by
 infra-red spectra' by Sutherland and D M Simpson,
 8 September 1941. 3pp.
- 'Third progress report on analysis of aviation fuels
 by spectroscopic means' by Sutherland, W C Price and
 S A Trivedi, 9 October 1941. 4pp (paginated 5-8).
- B.95, B.96 'Analysis of aviation fuels by spectroscopic methods.
 First General Report on researches carried out ...
 April 1941 to February 1942 by G B B M Sutherland,
 W C Price, Delia M Simpson, S A Trivedi ... for the
 Enemy Fuels Committee of the Petroleum Board and
 Ministry of Air Production', 1 March 1942.
- B.95 Part I. 21pp + figs.
- B.96 Part II. 16pp + figs.
- B.97 'Infra-red spectra of hydrocarbons (with special
 reference to aviation fuels)' by Sutherland and
 H W Thompson, April 1943 amended to August 1943.

Early infrared research

- B. 98 'The analysis of two synthetic octanes by spectroscopic methods' by Sutherland et al, 24 May 1943. 40pp.
- B. 99, B.100 'The analysis of aviation petrols by spectroscopic methods'.
- B. 99 'Part 1. Range 20^o - 100^oC, by infra-red methods' by H W Thompson et al (at Oxford), 26 May 1943. 65pp.
- B.100 'Part 2. Range above 95^oC by infra-red methods' by Sutherland et al (at Cambridge), 28 May 1943. 13pp.
- B.101 'General survey of the problems of hydrocarbon analysis with particular reference to the application of spectrographic methods' by D H Peel, 20 July 1943. 15pp + refs.
- B.102, B.103 'Report on a mission to the United States carried out for Ministry of Air Production during August and September 1943 by G B B M Sutherland ... and H W Thompson'. See B.11.
- B.102 Copy of report with ms correction and annotation and list of corrections at the back.
- B.103 Typescript draft 'Reports on visits to laboratories'.
- B.104 'The detection and estimation of aromatics in hydrocarbon mixtures' by Sutherland, H W Thompson and W C Price, latest bibliographical reference 1943. 21pp.

Early infrared research

CORRESPONDENCE WITH FRIENDS AND COLLEAGUES, 1933-1947

B.105-B.109 Garner, F H 1941-43

Garner chaired the Infra-red Panel of the Enemy Fuels Committee on which Sutherland served. The correspondence is re the analysis of enemy aviation fuels by infra-red spectrography.

B.105	1941	Aug-Oct	B.108	1942	July-Dec
B.106	1941	Nov-Dec	B.109	1943	
B.107	1942	Jan-Jun			

B.110 Johnson, R P 1935

POSTWAR WORK AT CAMBRIDGE UNIVERSITY

B.111 'Ecrans pour effet Raman'. Data received 19 October 1946

B.112,B.113 Material re the Golay Infra-red Detector 1948-49.
Includes typescript copy of 'Multi-slit spectrometry'
by M J E Golay; brochure for the Detector; photographs
and plan.

2 folders.

B.114 Sutherland's annotated copy of 'Two types of diamond' by
R Robertson, J J Fox and A E Martin Phil. Trans. Roy. Soc.
Lond. A, 232 (1934), 463-535. At the back are loose
notes by D E Blackwell on 'Difficulties in Raman's theory
of diamond' 1 April 1948 and on 'Diamond Spectra', and
notice of Society of Chemical Industry meeting 3 January
1949.

Early infrared research

- B.115 Correspondence and notes re Perkin-Elmer spectrometer thermopile, 1949.
- B.116-B.119 Miscellaneous notes, calculations and drafts found with B.115, principally re infrared spectrometry.
4 folders.

POSTWAR WORK AT THE UNIVERSITY OF MICHIGAN

Public Lectures

- B.120 Brief ms notes for public lectures and talks delivered while in USA:
- 'Talk on Diamond AA 18/7/49'.
- 'Talk to Optical Society of America, New York 9/3/50. Recent work on two types of diamond'.
- '2nd Talk to Biophysics Group 17th Oct 1950'.
- 'Notes for 2nd Talk to ?Fajan's Seminar (Nov 20 1950)'.
- 'Talk to Evening Symp. AA 1950. Infra red of proteins'.
- 'Summary of Talk MSC [Michigan State College] 11/11/53'.
With related correspondence.

University Teaching

- B.121-B.126 Contents of Sutherland's folder: ms notes for course on Molecular Spectra.

Early infrared research

- B.121-B.124 Numbered list of 'Distribution of 40 lectures'
February-June 1950; notes for 'Lecture I'; ms notes
for lectures 2-40, paginated 1-102 but with many extra
pages interleaved.
- 4 folders.
- B.125 Numbered list of lecture dates and topics 1950-51.
- Course outline, numbered list of lecture dates and
topics, etc. 1954-55.
- B.126 Miscellaneous notes and calculations.
- B.127 Ms notes on course on Selected Problems in Biophysics,
February-June 1951.
- Ms notes on 'Contents of Lectures 1952'.
- B.128 Ms notes for lectures on 'Application [of ultra-violet
spectra] in the biological field' and 'Amino acids and
proteins and the future', paginated 42-51. Nd.
- B.129 'Biophysics course 178'. Contents of Sutherland's
folder so inscribed. Includes ms notes, chiefly on
the application of ultra-violet spectra to biological
problems, and draft examination questions for course 178
for 1951, 1952, 1953 and 1955.
- B.130 Miscellaneous ms notes chiefly on amino acids and
proteins.
- B.131 'New books in the Physics Library January 1955'.

Early infrared research

W G Simeral

Simeral was a National Science Foundation predoctoral Fellow at the University of Michigan completing work on his doctorate under the supervision of Sutherland 1952-53.

The material, contents of Sutherland's folder, is principally Simeral's Progress Reports April 1951-October 1952.

B.132-B.135 Progress Reports.

4 folders.

B.136 Miscellaneous notes and drafts. Includes 'The infrared absorption spectra of diamond, silicon and germanium' by Simeral and Sutherland, and 'Note concerning the purchase of a large elliptical mirror' by Simeral.

B.137 Correspondence re Fellowship and post-Fellowship employment, 1952-54.

SECTION C THE NATIONAL PHYSICAL LABORATORY C.53 - C.58

- C.53 Correspondence, February-March 1957, with US National Bureau of Standards re their 'revolving capital fund' (Sutherland intended to establish a similar fund at NPL) and the gyromagnetic ratio of the proton; ms notes; etc.
- C.54 Press-cuttings 1959-63 and nd. 1961 cuttings are re the building of three new research laboratories at NPL.
- C.55 Correspondence 1962, 1963.
- C.56 'What about making more use of NPL' by E G Stanford. Lecture delivered 8 January 1964. 15pp typescript.
- C.57, C.58 Photographs taken at NPL occasions. Most have notes on verso by Sir Gordon or Lady Sutherland identifying the subjects and, sometimes, the date. Nearly all have an NPL 'Negative No.' which has been used to arrange the sequence.
- C.57 Sutherland with Sir Lawrence Bragg, Sir Charles Darwin and Sir Edward Bullard, the three previous Directors of the NPL.
- Dame Kathleen Lonsdale and Sir David Martin, Secretary of the Royal Society; J H van Vleck.
- Group photograph (with key) 'taken Dec 1961'. Those featured include Sutherland, Sir Lawrence Bragg, F P Bowden, Sir Arnold Hall, A J S Pippard and J D Bernal.
- C.58 Guests and NPL officers at Open Day May 1963.
- Guests and NPL officers at ?Open Day 1964.
- Photograph of presentation of the Department of Scientific and Industrial Research Wolfe Award, May 1964. Includes Sutherland and Sir Harry Melville.

SECTION D COMMITTEES, SOCIETIES, ORGANISATIONS D.59 - D.73

D.59-D.63 BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

Sutherland was President of Section X (General) at the British Association Annual Meeting, Dundee, August 1968 at which he delivered an Address on 'The Migration of Scientists' (See E.9). He also spoke on 'Student Power' to the Rotary Club of Dundee.

The material is retained in its original folders.

D.59 'Correspondence'. Re arrangements.

D.60 'Presidential Address Press summaries Student Power'

Includes annotated copy of Sutherland's Presidential Address.

D.61 Drafts of papers delivered at Section X session on Migration of Scientists, with related correspondence.

D.62 Papers for General and Section X committee meetings, 21 and 22 August 1968.

D.63 'Social engagements'.

D.64-D.67 MINISTRY OF DEFENCE

Correspondence and papers re meetings and reports of Space Review Committee (chairman H Bondi) to examine British defence interests in Space, 1964-66.

D.64	1964	D.66	1965	June-Dec
D.65	1965	D.67	1966	and nd.

Committees, societies, organisations

D.68 - D.73 UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION

Sutherland served as a consultant to UNESCO on the project to establish the Egyptian National Physical Laboratory of Metrology in Cairo, 1961-63, and subsequently gave advice on recruitment of suitable staff. In connection with this work he visited Cairo 6 - 12 January 1964 (see F.26, F.27).

The material is principally correspondence and papers re the formulation and revision of the plan of operation of the Laboratory.

D.68	1961	June-Aug	D.71	1963
D.69	1961	Sept-Nov	D.72	1964 Mar-July
D.70	1962		D.73	1964 Aug-Dec, 1965

SECTION E

EDUCATION AND SCIENCE POLICY

E.48 - E.84

- E.48 - E.50 The Scientific Civil Service
- E.51 - E.53 University expansion and related topics
- E.54 - E.84 The Brain Drain

As Director of the National Physical Laboratory Sutherland had become aware of the difficulties facing scientists working for the government within the structure of the Civil Service. He expressed his concerns to two government committees: the Committee on the Management of Research chaired by Sir Solly (later Lord) Zuckerman 1960 (E.48), and the Committee to Review Certain Aspects of the Work and Organisation of the Scientific Civil Service chaired by Sir Mark Tennant 1964 (E.50).

In 1961 Sutherland was asked to submit his views on the organisation and development of higher education in science and technology and, in particular, on the relationship of institutions of higher education to government research establishments and industry (E.52, E.53). He supported Sir Nevill Mott's proposal for the establishment of technological universities adjacent to research establishments.

The Brain Drain was one of Sutherland's chief preoccupations. The material at E.54 - E.83 relates to his service on a Council for Scientific Policy Working Group on Migration considering the implications of the exodus of scientific and technological talent from UK and the ways in which it might be countered.

Education and science policy

THE SCIENTIFIC CIVIL SERVICE

- E.48 'Some comments on frustrations encountered in running a scientific research establishment within the civil service', Sutherland's paper 'prepared for the Committee on the Management of Research at the request of the Chairman', with related correspondence, 1960.
- E.49 'Civil Service Restrictions': miscellaneous material 1959-60, found with preceding.
- E.50 Correspondence re arrangements to meet the Committee to Review Certain Aspects of the Work and Organisation of the Scientific Civil Service, 1964.

UNIVERSITY EXPANSION AND RELATED TOPICS

- E.51 Brief correspondence from N F Mott on collaboration between universities and government research establishments, 1960. Includes his draft of 'Too few academic eggs; where should the eggs be laid?' submitted to the Universities Quarterly.
- E.52, E.53 Robbins Committee on Higher Education.
- E.52 Invitation to Sutherland to submit his views, with correspondence and papers arising 1961-62. Includes draft memoranda by Mott and drafts of Sutherland's submission 'A technological university adjacent to the National Physical Laboratory'.
- E.53 Copies of submissions by the Cranfield College of Aeronautics and the Institute of Physics; miscellaneous press-cuttings on the reception of the Robbins Report assembled by Sutherland.

Education and science policy

THE BRAIN DRAIN

E.54-E.83 'Working Group on Migration'. Contents of Sutherland's box files so labelled: chiefly papers for meetings of the Working Group on Migration of the Committee on Manpower Resources for Science and Technology, November 1966 - July 1967.

The question of the migration of scientific and technological manpower was raised by Sutherland with the Council for Scientific Policy. A special Working Group chaired by F E Jones was established to consider the matter and Sutherland was invited to serve. For a printed copy of the Working Group's Report see E.2.

30 folders.

E.54	15 Nov 1966	E.70	18 Apr 1967 (3)
E.55	13 Dec 1966 (1)	E.71	9 May 1967 (1)
E.56	13 Dec 1966 (2)	E.72	9 May 1967 (2)
E.57	5 Jan 1967 (1)	E.73	17 May 1967
E.58	5 Jan 1967 (2)	E.74	8 June 1967 (1)
E.59	5 Jan 1967 (3)	E.75	8 June 1967 (2)
E.60	19 Jan 1967	E.76	9-11 June 1967 (1)
E.61	2 Mar 1967 (1)	E.77	9-11 June 1967 (2)
E.62	2 Mar 1967 (2)	E.78	9-11 June 1967 (3)
E.63	2 Mar 1967 (3)	E.79	9-11 June 1967 (4)
E.64	15 Mar 1967	E.80	3 July 1967
E.65	31 Mar 1967 (1)	E.81	18 July 1967 (1)
E.66	31 Mar 1967 (2)	E.82	18 July 1967 (2)
E.67	31 Mar 1967 (3)	E.83	18 July 1967 (3)
E.68	18 Apr 1967 (1)		
E.69	18 Apr 1967 (2)		

E.84

Miscellaneous press-cuttings on the brain drain assembled by Sutherland (see also E.11)

SECTION F

VISITS AND CONFERENCES

F.49 - F.58

- F.49 Meeting of American Association for the Advancement of Science, New Hampton, NH, 28 August 1950.
- Group photograph (with key) of participants; photograph of Sutherland with D O Jordan, T Caspersson and S Ranzi probably taken at the same occasion.
- F.50, F.51 Visit to Europe, June - August 1955.
- Sutherland attended a number of meetings and conferences and visited colleagues at several research establishments both in UK and in Europe. The surviving material is principally re Sutherland's participation in the Oxford Diamond Conference, 30 June - 2 July, at which he spoke on 'Infrared studies of Type I and Type II diamonds'.
- F.50 Annotated itinerary for visit to Europe.
- F.51 Correspondence with Sir Francis Simon re Diamond Conference; annotated provisional lecture list; notes for Sutherland's contribution etc.
- F.52 - F.55 Visit to USSR, August 1958.
- Sutherland visited the Soviet Union to attend meetings of the International Council of Scientific Unions Joint Commission for Spectroscopy (see F.6), including a meeting held simultaneously with the 10th General Assembly of the International Astronomical Union, meeting in Moscow at the same time. While in the USSR he visited a number of research establishments in Moscow and Leningrad.
- F.52 Notebook containing from the front and from the back Sutherland's notes on his visit. Most pages not used.
- F.53 Material found loose at the back of F.52: circular for IAU General Assembly containing information on meetings of Commission for Spectroscopy; 'Some new trends in infrared', ms notes for Sutherland's 'paper at Moscow'; ms notes on Soviet research establishments and research interests of Russian colleagues.

Visits and conferences

- F.54 'Notes for talk on Visit to Russia 1958'; greetings from Soviet colleagues received Christmas 1958.
- F.55 Miscellaneous memorabilia.
- F.56, F.57 1st International Congress on Diamonds in Industry, Paris, 25 May - 3 June 1962. Sutherland was Chairman of the Scientific Committee and of the Technological Session of the Congress Symposium.
- F.56 Congress brochure; brief curricula vitae of some of those presenting papers in the Technological Session; photograph of Sutherland addressing the Congress.
- F.57 List of invitees to Inaugural Lunch.
- F.58 Visit to India, January - February 1964.
- Sutherland visited India to attend the 15th Pugwash Conference at Udaipur (see F.28). Following the Conference he visited research centres at Delhi, New Delhi, Madras, Bangalore and Bombay.
- Itinerary; information and notes on Indian research centres and research interests of Indian colleagues; photographs.

SECTION G

DRAFTS, LECTURES, PUBLICATIONS

G.66 - G.69

- G.66 Ms and typescript drafts of review by Sutherland of 'Spectre infrarouge et structure moleculaire' Conferences Rapports sur les Recherches Recentes en Physique xii (1947) by R Freymann. With copy of Freymann's article.
- G.67 - G.69 'Units of time and frequency', lecture delivered in Germany. Nd. but correspondence found with it is dated 1962.
- G.67 Typescript drafts + figs.
- G.68 Correspondence from L Essen and H Smith found with the drafts, 1962. Includes Smith's comments on the draft sent to him.
- G.69 Background material; comments on the drafts (by L Essen); ms notes.

SECTION H	GENERAL CORRESPONDENCE	H.46 - H.48
H.46	Blackwell, D E	1949, 1952
	Irradiation of diamonds	
	Bresler, S	1958
	Champion, F C	1954
	Darwin, K	1963
	Goulden, J D S	1960
	Hirschfelder, J O	1951
H.47	Isakson, F B	1952
	Krohn, A	1951
	Lonsdale, K and Milledge, H J	1962
	Nitrogen in diamonds	
	Mehl, L	1958
H.48	Ratcliffe, J A	1964
	Robertson, R H S	1951
	Seal, M	1955
	Silverman, S	1951
	Thewlis, J	1955
	Wilks, J	1967

INDEX OF CORRESPONDENTS

ANDERSON, Roy	B.113
ASTIN, Allen Varley	C.53
BILLIG, K	D.72
BLACKWELL, Donald Eustace	H.46
BONDI, Sir Hermann	D.64 - D.66
BRESLER, S	H.46
CHAMPION, Frank Clive	H.46
CHERIF, A S	D.72
COOK, Sir William (Richard Joseph)	D.66
DARWIN, Katharine	H.46
EASTWOOD, Sir Eric	D.59, D.61
ESSEN, Louis	G.68, G.69
GARNER, Frederic Horace	B.105-B.109
GOULDEN, John Desmond Spencer	H.46
HASLETT, A W	D.59
HAUSE, Clarence Duane	B.120

Index of correspondents

HIRSCHFELDER, Joseph Oakland	H.46
HOLROYD, R	B.105,B.106
HUNTOON, Robert D	C.53
ISAKSON, Frank Bernhard	H.47
JACKSON, Willis, Baron	E.54
JOHNSON, R P	B.110
JONES, Francis Edgar	E.81
KIDWAI, A J	D.61
KING, A	B.105
LONSDALE, Dame Kathleen	H.47
MAHEU, Rene	D.71
MASSEY, Sir Harrie (Stewart Wilson)	E.54
MEHL, Lucien	H.47
MELVILLE, Sir Harry (Work)	D.70-D.72
MILLEDGE, H Judith	H.47
MOTT, Sir Nevill (Francis)	E.51,E.52

Index of correspondents

OSBORN, A	B.107
PEEL, D H	B.107
PERKIN-ELMER CORPORATION	B.115
RATCLIFFE, John Ashworth	H.48
RIDLER, K E W	B.105
ROBERTSON, Robert Hugh Stannus	H.47
ROSENHEAD, Louis	D.59
RUDD, Ernest	D.60, D.61
SEAL, M	H.47
SILVERMAN, Shirleigh	H.48
SIMERAL, William Goodrich	See B.132-B.137
SMITH, Humphry Montague	G.68
SWENSSON, B O Torsten	D.71
TENNANT, Sir Mark (Dalcour)	E.50
THEWLIS, James	H.48
VON HIPPEL, A R	B.137

Index of correspondents

WHITTAKER, Stephen	D.61
WILKS, J	H.48
WIMBERLEY, Major-General Douglas	D.62
ZANOBETTI, Dino	D.68-B.73
ZUCKERMAN, Solly, Baron	D.64,D.67,E.48

THE ROYAL COMMISSION ON HISTORICAL MANUSCRIPTS

Report on correspondence and papers of
SIR GORDON BRIMS BLACK McIVOR SUTHERLAND

(1907-1980)

Physicist

deposited in the
Cambridge University Library

Reproduced for the Contemporary Scientific Archives Centre
(CSAC 89/7/82)

by

THE ROYAL COMMISSION ON HISTORICAL MANUSCRIPTS
Quality House, Quality Court, Chancery Lane,
London WC2 1HP

1982

All rights reserved

No 82/ 40

CONTEMPORARY SCIENTIFIC ARCHIVES CENTRE

under the guidance of the Royal Society's

British National Committee for the History of Science, Medicine and Technology

Catalogue of the papers and correspondence of

SIR GORDON BRIMS BLACK McIVOR SUTHERLAND, FRS

(1907 - 1980)

Deposited in Cambridge University Library

Compiled by: Jeannine Alton

Julia Latham-Jackson

1982

All rights reserved