

Catalogue of the papers and correspondence of

**Cedric Austen Bardell Smith**

(1917-2002)

by Timothy E. Powell and Peter Harper  
NCUACS catalogue no. 155/5/07



Title: Catalogue of the papers and correspondence of Cedric Austen  
Bardell Smith (1917-2002), geneticist and mathematician

Compiled by: Timothy E. Powell and Peter Harper

Description level: Fonds

Date of material: [1934]-2003

Extent of material: 6 boxes, ca 175 items

Deposited in: Special Collections, University College London

Reference code: GB 0103 C.A.B. Smith

© 2007 National Cataloguing Unit for the Archives of Contemporary Scientists,  
University of Bath.

NCUACS catalogue no. 155/5/07

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

Biochemical Society

Institute of Physics

Royal Society

Royal Society of Chemistry

Trinity College Cambridge

Wellcome Trust

NOT ALL THE MATERIAL IN THIS COLLECTION  
MAY YET BE AVAILABLE FOR CONSULTATION.  
ENQUIRIES SHOULD BE ADDRESSED IN THE  
FIRST INSTANCE TO:

HEAD OF SPECIAL COLLECTIONS AND ARCHIVIST  
SPECIAL COLLECTIONS  
THE LIBRARY  
UNIVERSITY COLLEGE LONDON  
GOWER STREET  
LONDON WC1E 6BT



## LIST OF CONTENTS

	Items	Page
GENERAL INTRODUCTION		5
SECTION A	BIOGRAPHICAL	A.1-A.19
		9
SECTION B	PUBLICATIONS	B.1-B.95
		13
SECTION C	TALKS AND LECTURES	C.1-C.25
		32
SECTION D	BLANCHE DESCARTES	D.1-D.20
		35
SECTION E	RESEARCH FRAGMENTS	E.1-E.10
		39
SECTION F	CORRESPONDENCE	F.1-F.5
		40
INDEX OF CORRESPONDENTS		41

## GENERAL INTRODUCTION

### PROVENANCE

The archive was received for cataloguing from Professor Sue Povey, Haldane Professor of Human Genetics, University College London, in May 2007.

### OUTLINE OF THE CAREER OF CEDRIC AUSTEN BARDELL SMITH

Cedric Austen Bardell Smith was born in Leicester on 5 February 1917. He was educated at Wyggeston Boys School and University College School London. In 1935, having failed his Higher School Certificate, he was awarded an exhibition to Trinity College Cambridge. He graduated in the Mathematical Tripos, with a First in Part II and a Distinction in Part III. Following graduation Smith began postgraduate research, taking his Ph.D. in 1942.

While a student at Cambridge, Smith became close friends with three other mathematics students at Trinity College, R.L. Brooks, A.H. Stone and W.T. Tutte. Together they tackled a number of problems in the mathematical field of 'Combinatorics' and devised an imaginary mathematician, 'Blanche Descartes', under which name to publish their work. The group devised the 'squared square', a square that is divided into a number of smaller squares, no two of which are the same size. Publications under the name of 'Blanche Descartes' or 'F. de Carteblanche' continued to appear into the 1980s. The group also published more mainstream articles under their own names, the final one being R.L. Brooks, C.A.B. Smith, A.H. Stone and W.T. Tutte, 'Determinants and current flows in electric networks', *Discrete Math.* vol 100 (1992).

During the Second World War, as a Quaker, Smith joined the Friends Relief Service. He worked as a Porter at Addenbrooke's Hospital in Cambridge. Smith's pacifist views saw him develop an interest in peace studies. Among other responsibilities for the Society of Friends, he was a member of the Quaker Peace Studies Trust which established the chair of Peace Studies at the University of Bradford. Smith was also a founder member (and Chairman) of the Conflict Research Society.

In 1946 he was appointed Assistant Lecturer at the Galton Laboratory at University College London. He remained at UCL for the rest of his career, becoming successively Lecturer and Reader, before appointment as Weldon Professor of Biometrics in 1964. On his arrival at UCL Smith was influenced by J.B.S. Haldane, who introduced him to problems of linkage in human genetics in which field he was able to bring his skills as a statistician to bear.



At the Galton Smith was to make many significant contributions to genetics. They were set out by N.E. Morton in his obituary in the International Statistical Institute Newsletter (volume 26, no. 2, 2002) as follows:

'Among Smith's achievements is the most powerful test for mimic loci, which produce what appears to be the same disease but are located in different chromosome regions and act in different ways. With James Renwick he pioneered sex-specific analysis based on the observation that chromosomes recombine at different points in male and female meiosis. Smith's 1953 paper introduced autozygosity mapping based on co-inheritance of a rare disease gene and close markers in relatives. The method lay fallow for thirty years, waiting for the molecular markers that have made it invaluable.

Smith's work was especially influential in the United States, which at the time he joined the Galton Laboratory had begun to develop the computers of which Charles Babbage had dreamed a century earlier. This stimulated applications that were unthinkable to Smith's predecessors in Britain, who dominated statistical genetics in the pre-computer era. Smith generously attributed the successes of the early computer period to his American competitors, who less characteristically gave him precedence. The truth is that the two currents were so intermixed and the rivalry so friendly as to baffle a historian of science. Smith's best ideas were incorporated into genetic mapping whereby hundreds of disease genes were localised as a necessary first step to sequencing, characterisation, and attempts to ameliorate their effects. This has been a precious tool for clinical genetics and the impetus for the Human Genome Project.

Although these contributions are best known, they are only a part of Smith's scholarship. He contributed to many of the classical topics in statistical genetics, including segregation ratios in family data, kinship, population structure, assortative mating, genetic correlation, and estimation of gene frequencies. The latter had wide application, but Smith's role has not been recognised by mathematicians. With Ceppellini and Siniscalco he introduced the method of gene counting in 1955. It gives maximum likelihood estimates that converge more slowly but more reliably than methods requiring an information matrix. This principle was presented at the Royal Statistical Society in 1976 by Dempster and others as the EM algorithm. Characteristically Smith contributed to the discussion without mentioning that he had priority of more than 20 years. The method is now used to advantage for many missing-data problems in which some of the observations are mixtures of discrete probabilities'.

Smith was elected a Fellow of the Royal Statistical Society in 1945. He was a member of the Genetical Society (serving as Treasurer), the Biometric Society (British Region), serving as President 1971-1972, and the International Statistical Institute. He died in 2002.



## DESCRIPTION OF THE COLLECTION

The surviving archival record is scanty both in terms of extent and coverage. There is little documentation of Smith's genetics research (apart from published papers), correspondence with colleagues, membership of professional societies, attendance at conferences etc. It is somewhat fuller in its coverage of mathematical work, although even here it is weighted towards his less mainstream interests.

Section A, Biographical, includes obituaries and tributes. There is a copy of Smith's inaugural lecture as Weldon Professor, *Life, Form, and Number*. The largest component of this section is concerned with Smith's interests in peace studies, including his articles on the subject published in *The Friend*.

Section B, Publications, is the largest in the archive and makes up over half of the material. It includes a good, though not comprehensive, record of Smith's publications, nearly entirely in the form of offprints from 1934 to a posthumous paper published in 2003. There are a number of book reviews and the draft of an unpublished book on genetics. The section also presents a full record of Smith's co-editorship of *Colson News*, a small circulation journal devoted to reverse (or two-way) numbers, including editorial board meetings, correspondence and the master copies of all the issues.

Section C, Talks and lectures, is chiefly sets of transparencies to illustrate presentations. Most of these sets are undated, with no indication of occasion, audience or place of lecture. Furthermore many of the sets appear highly miscellaneous in content, and may include transparencies on astrology, linguistics and place-names alongside others on genetics and statistical analysis.

Section D, Blanche Descartes, documents some of the output of the mathematician(s) 'Blanche Descartes' and 'F. de Carteblanche', from 'The coloured cubes problem', *Eureka* 9 (1947) to two clerihews appearing in *Eureka* 46 (January 1986). An account of 'The story of Blanche Descartes' in the *Mathematical Gazette* (2003) is presented at A.5.

Section E, Research fragments, is slight. Virtually nothing of Smith's research as a geneticist and statistician remains and this section presents the three random survivals found in the Galton Laboratory. The two main components relate to computer calculations related to statistical studies by M. Gauquelin on astrology, and to the analysis of language.

Section F, Correspondence, is very small. It presents a few letters 1966-1993 in chronological order.

There is also an index of correspondents.



#### ACKNOWLEDGEMENTS

We are grateful to Professor Sue Povey for making the material available.

T.E. Powell  
Bath 2007



SECTION A	BIOGRAPHICAL, A.1-A.19	1966-2003
-----------	------------------------	-----------

A.1-A.6	OBITUARIES AND TRIBUTES
---------	-------------------------

A.7-A.10	AUTOBIOGRAPHICAL
----------	------------------

A.11-A.19	QUAKER INTERESTS
-----------	------------------

A.1-A.6	OBITUARIES AND TRIBUTES	2002-2003
---------	-------------------------	-----------

A.1	'Cedric Smith 1917-2002'	2003
-----	--------------------------	------

Photocopy compilation of biographical information on Smith.

Includes email from W.T. Tutte; copies of key articles; obituary from the Royal Statistical Society (by A.W.F. Edwards, see A.3); and bibliography.

This was compiled for the 'Day Conference Devoted to the Contributions of CAB Smith to Linkage Analysis', University College London, 6 April 2003 (see A.6).

A.2	'View from the lab: a mastermind for a number of reasons' by Professor S. Jones ( <i>Daily Telegraph</i> 23 January 2002).	2002
-----	--	------

Print-out.

A.3	'Professor Cedric B. Smith, Pioneer in Statistical Genetics: Died January 10, 2002, at the age of 84' by N.E. Morton, <i>Genetic Epidemiology</i> vol 22 (2002); 'Professor C.A.B. Smith, 1917-2002', by A.W.F. Edwards, <i>The Statistician</i> vol 51 (2002); 'Cedric Smith (1917-2002)' by N.E. Morton, <i>International Statistical Institute Newsletter</i> vol 26 (2002).	2002
-----	---	------

Print-outs.

A.4	'Cedric Smith - a mathematical castaway' by T. Crilly, <i>Mathematical Gazette</i> vol 87 (March 2003)	2003
-----	--	------

Photocopy.



**Biographical, A.1-A.19**

- |                 |   |                  |
|-----------------|---|------------------|
| A.5             | 'The story of Blanche Descartes' by C.A.B. Smith and S. Abbot, <i>Mathematical Gazette</i> vol 87 (March 2003)  | 2003             |
|                 | Photocopy.  |                  |
|                 | See section D.  |                  |
|                 |   |                  |
| A.6             | 'Day Conference Devoted to the Contributions of CAB Smith to Linkage Analysis' organised by J.H. Edwards and S. Povey, University College London, 6 April 2003  | 2003             |
|                 | Programme.  |                  |
|                 |   |                  |
| <b>A.7-A.10</b> | <b>AUTOBIOGRAPHICAL</b>   | <b>1966-1994</b> |
|                 |   |                  |
| A.7             | 'Life, Form, and Number', Inaugural Lecture as Weldon Professor of Biometry, University College London, delivered 17 May 1965   | 1966             |
|                 | Bound copy.   |                  |
|                 |   |                  |
| A.8             | 'Early Reminiscences', in <i>Graph Theory and Related Topics</i> , ed. J.A. Bondy and U.S.R. Murty, Academic Press 1979   | 1979             |
|                 | Photocopy.  |                  |
|                 |   |                  |
| A.9             | 'Memories of Haldane and other founders of mathematical genetics', contribution to Biometric Society (British Region) and Galton Laboratory joint Haldane Centenary Meeting, University College London, 6 November 1992 | 1992             |
|                 |   |                  |
| A.10            | New Year 1995 and Christmas 1994 circular letter  | 1994             |
|                 | The bulk of the letter is anecdotes and curious reports from the press for the past year.   |                  |



**Biographical, A.1-A.19**

<b>A.11-A.19</b>	<b>QUAKER INTERESTS</b>	<b>1972-1993</b>
	Smith was a lifelong Quaker.	
<b>A.11-A.18</b>	<b>Peace Studies</b>	<b>1972-1993</b>
	Smith was particularly interested in the subject of Peace Studies. He was a member of the Friends Peace Committee, the Quaker Peace Studies Trust (which established the chair of Peace Studies at the University of Bradford) and a founder member (and chairman) of the Conflict Research Society.	
<b>A.11</b>	Articles on peace studies by Smith published in <i>The Friend</i>	<b>1972, 1978</b>
	'Peace Studies - 2: Why?' by Smith, 14 April 1972; Progress in Peace Research', 3 February 1978.	
<b>A.12</b>	<b>Conflict Research Society</b>	<b>1985-1993</b>
	Miscellaneous papers, including drafts of promotional material.	
<b>A.13</b>	<b>Quaker Peace Studies Trust</b>	<b>1992-1993</b>
	Papers for meetings.	
<b>A.14</b>	<b>Nobel Peace Prize nomination</b>	<b>1991</b>
	Correspondence and papers.	
	Quaker Peace & Service asked for suggestions for their nomination for the 1992 Peace Prize.	
<b>A.15, A.16</b>	'Nuclear': contents of folder so inscribed divided into two for ease of reference	<b>1980s</b>
<b>A.15</b>	'Three Mile Island factor that ridicules East-West politics', letter by Smith in <i>The Guardian</i> , 12 May 1983; 'War by Mistake?' by Smith, <i>The Friend</i> , 29 May 1987	<b>1983, 1987</b>



**Biographical, A.1-A.19**

A.16	Newspaper cuttings <i>re</i> nuclear war etc	1980s
A.17	Correspondence	1990-1992
A.18	Miscellaneous papers  Includes introduction to Conflict Resolution Society 'Conference on New Approaches to Arms Reduction'; English, French and Russian language versions of 'Multi-lateral nuclear disarmament: a new approach' by S. Salter.	N.d..
A.19	Other  Articles by Smith in <i>The Friend</i> : 'Spiceland Reunion', 13 June 1980; Commentary, 11 December 1987; 'Kenneth Boulding (1910-1993)', 21 May 1993.  Typescript draft of advertisement for Quaker meeting at Rectory Lane, Edgware, London.	1980, 1987, 1993



<b>SECTION B</b>	<b>PUBLICATIONS, B.1-B.95</b>	<b>[1934]-2003</b>
------------------	-------------------------------	--------------------

B.1	BIBLIOGRAPHY
-----	--------------

B.2-B.63	PUBLICATIONS AND DRAFTS
----------	-------------------------

B.64-B.95	COLSON NEWS
-----------	-------------

<b>B.1</b>	<b>BIBLIOGRAPHY</b>
------------	---------------------

Lists of publications and related correspondence.

<b>B.2-B.63</b>	<b>PUBLICATIONS AND DRAFTS</b>	<b>[1934]-2003, n.d.</b>
-----------------	--------------------------------	------------------------------

Chiefly photocopies and offprints of published papers on genetics and mathematics. At B.48-B.63 is draft of unpublished book on genetics. Some of Smith's articles on peace research and other subjects are presented in section A.

B.2	1930s
	'Negatrons', <i>The Gower</i> (University College School magazine), July 1934, 305-306.

'Note on the Gamma Function', *Mathematical Gazette* 23 (1939), 479.

B.3	1940, 1941
	The dissection of rectangles into squares', (with R.L. Brooks, A.H. Stone and W.T. Tutte), <i>Duke Math. J.</i> 7 (1940), 312-340.

'On unicursal paths in a network of degree 4', (with W.T. Tutte), *Amer. Math. Monthly* 48 (1941), 233-237.



**Publications, B.1-B.95**

- B.4                      1944
- 'Linear equations in integers', (with V.E. Gumbrell), *Mathematical Gazette* 28 (1944), 22-25.
- 'On the definitions of elliptic functions', *Mathematical Gazette* 28 (1944) 41-45.
- B.5                      1947
- 'Some examples of discrimination', *Annals Eugen. Lond.* 13 (1947) 272-282.
- 'Note on the mathematical treatment', in 'The incidence of placenta praevia and antepartum haemorrhage according to maternal age and parity' by H. Kalmus, *Annals Eugen. Lond.* 13 (1947), 289-290.
- 'The counterfeit coin problem', *Mathematical Gazette* 31 (1947), 31-39.
- 'On the definition of logarithms', *Mathematical Gazette* 31 (1947), 246-247.
- 'A simple perfect square', (with R.L. Brooks, A.H. Stone and W.T. Tutte), *Proc. Ned. Akad. Wet.* 50 (1947), 3-4.
- B.6                      1948
- 'A simple exact test for birth-order effect', (with J.B.S. Haldane), *Annals Eugen. Lond.* 14 (1948), 117-124.
- 'Production of pure lines in bees', (with H. Kalmus) *J. Genet.* 49 (1948), 153-158.
- 'The construction of Youden Squares', (with H.O. Hartley) *J. Roy. Statist. Soc. B* 10 (1948), 262-263.
- B.7                      1949
- 'The sib sib age of onset correlation among individuals suffering from a hereditary syndrome produced by more than one gene', (with H. Harris), *Annals Eugen. Lond.* 14 (1949), 309-318.
- 'On the distances between the elements of a subset of a group', (with H. Kestelman) *J. Lond. Math. Soc.* 24 (1949), 131-135.



Publications, B.1-B.95

- B.8 1950
- 'Fitness and survival', *Eugenics Review* 42 (1950), 16-23.
- 'A class of self dual maps', (with W.T. Tutte), *Canad. J. Math.* 2 (1950), 179-196.
- B.9 1951-1952
- 'A test for heterogeneity of proportions', *Annals Eugen. Lond.* 16 (1951), 16-25; and 'A simplified heterogeneity test', *Annals Eugen. Lond.* 17 (1952), 35-36.
- 'Note on the analysis of variance and intraclass correlation', (with E.C. Fieller), *Annals Eugen. Lond.* 16 (1951), 97-104.
- B.10 1953-1954
- 'The detection of linkage in human genetics', *J. Roy. Statist. Soc. B* 15 (1953), 153-192.
- 'The separation of the sexes of parents in the detection of linkage in man', *Annals Eugen. Lond.* 18 (1954), 278-301.
- 'The separation of recombinations in the male and female in the detection of linkage in man', *Atti del IX Congresso Internazionale di Genetica* (1954), 927; and 'A comparison of the results of various methods of detecting human linkage, applied to microcythaemia (thalassaemia minor) and different blood groups', (with M. Siniscalco) *Atti del IX Congresso Internazionale di Genetica* (1954), 1190-1192.
- B.11 1955
- 'The statistical comparison of two groups of animals with regard to a character which may affect either or both sides', *J. Genet.* 53 (1955), 534-535.
- 'Funzioni discriminanti e loro applicazioni alla biometria', *Convegno di Genetica: Atti della I Riunione dell'Associazione Genetica Italiana* (1955), 1-4; and 'Il calcolo delle frequenze geniche dai dati familiari' (with R. Ceppellini and M. Siniscalco), *Atti della I Riunione dell'Associazione Genetica Italiana* (1955), 3-9.
- 'The estimation of gene frequencies in a random mating



**Publications, B.1-B.95**

population', (with R. Ceppellini and M. Siniscalco), *Annals of Human Genetics* 20 (1955), 97-115.

'The discrimination between normals and microcythaemics as a statistical problem', (with M. Siniscalco), *Comptes Rendus du Ve Congres International de Transfusion Sanguine* (1955), 483-490.

B.12

1956

'A test for segregation ratios in family data', *Annals of Human Genetics* 20 (1956), 257-265.

'Note on the estimation of linkage', in 'Colour-Blindness and the Duchenne-type muscular dystrophy' by U. Philip and J.N. Walton, *Annals of Human Genetics* 21 (1956), 156-158.

'The G-values of various games', (with R.K. Guy) *Proc. Camb. Phil. Soc.* 52 (1956), 514-526; and 'Disjunctive games with the last player losing', (with P.M. Grundy), *Proc. Camb. Phil. Soc.* 52 (1956), 527-533.

B.13

1957

'Relazione fra i valori reali e quelli osservati di cellule a forma di sferoide', *Convegno di Genetica: Atti della III Riunione dell' Associazione Genetica Italiana* (1957), 3-7.

'Counting methods in genetical statistics', *Annals of Human Genetics* 21 (1957), 254-276.

'On the estimation of intraclass correlation', *Annals of Human Genetics* 21 (1957), 363-373.

B.14

1958

'The sex ratio of mutation rates of sex linked recessive genes in man, with particular reference to Duchenne type muscular dystrophy', (with E.A. Cheeseman, S.J. Kilpatrick and A.C. Stevenson), *Annals of Human Genetics* 22 (1958), 235-243; and 'Estimates of the sex-ratio of mutation rates in sex-linked conditions by the method of maximum likelihood', (with S.J. Kilpatrick), *Annals of Human Genetics* 22 (1958), 244-249.

'Homogeneity test for linkage data', *Proceedings of 2nd International Congress of Human Genetics*, (1958), 212-213.



Publications, B.1-B.95

- B.15                      1959
- 'A note on the effects of methods of ascertainment on segregation ratios', *Annals of Human Genetics* 23 (1959), 311-323, with 1p typescript corrections.
- 'An inequality arising in genetical theory', (with H.P. Mulholland) *Amer. Math. Month.* 66 (1959), 673-683.
- 'Some comments on the statistical methods used in linkage investigations', *Amer. J. Human Genet.* 11 (1959), 289-304.
- 
- B.16                      1960
- 'Evolutionary origin of sexual differentiation and the sex ratio', (with H. Kalmus) *Nature* 186 (1960), 1004-1006.
- 
- B.17                      1961, 1966
- 'Methodology in human genetics', *Amer. J. Human Genet.* 13 (1961), 128-136.
- 'Consistency in statistical inference and decision', *J. Roy. Statist. Soc. B* 23 (1961), 1-37; and 'Correction: Consistency in statistical inference and decision', *J. Roy. Statist. Soc. B* 28 (1966), 252.
- 'Estimation of linkage using Tweedie's method', (with C.C. Li), *Excerpta Medica*, Internat. Cong. series No. 32 (1961) E, 146-147'.
- 
- B.18                      1962
- 'Non-random distribution of certain homologous pairs of normal human chromosomes in metaphase', (with L.J. Schneiderman), *Nature* 195 (1962), 1229-1230.
- 'An extension of a theorem of König on Graphs', (with J.W. Archbold), *Mathematika* 9 (1962), 9-10.
- 
- B.19                      1963-1964
- 'Testing for heterogeneity of recombination fraction values in human genetics', *Annals of Human Genetics* 27 (1963), 175-182.



**Publications, B.1-B.95**

- I... Contribution to the discussion of J. Hajnal's paper on 'Concepts of random mating and the frequency of consanguineous marriages', *Proc. Roy. Soc. B* 159 (1963) 176-177.
- 'Linkage in blood group genetics', *Proc. 10th Congr. Int. Soc. Blood Transf.*, Stockholm (1964) 263-267.
- B.20 1965
- 'Personal probability and statistical analysis', *J. Roy. Statist. Soc. A* 128 (1965), 469-494.
- 'Obituary: Professor J.B.S. Haldane', *AScW Journal* 11 (March 1965), 3-4.
- B.21 1966 (1)
- 'A note on the estimation of gene frequencies by maximum likelihood in systems similar to Rhesus', (with C. Cannings), *Annals of Human Genetics* 29 (1966), 277-279.
- 'Graphs and Composite Games', *J. Combin. Theory* 1 (1966), 51-58.
- 'A search for genetic effects of high natural radioactivity in South India', (with H. Gruneberg et al), Medical Research Council Special Report no. 307 (1966).
- B.22 1966 (2)
- 'Commentary on R.A. Fisher's paper on The correlation between relatives on the supposition of Mendelian inheritance', (with P.A.P. Moran), *Eugenics Laboratory Memoirs*, Galton Laboratory, London 41 (1966).
- B.23 1967
- 'Notes on gene frequency estimation with multiple alleles', *Annals of Human Genetics* 31 (1967), 99-107.
- 'Which graphs have only self converse orientation?', (with F. Harary and E. Palmer), *Canad. Math. Bull.* 10 (1967), 425-429.
- 'Note on paper by S. Kumar, R.A. Pai and M.S.



**Publications, B.1-B.95**

Swaminathan (on consanguineous marriages and the genetic load due to lethal genes in Kerala)', *Annals of Human Genetics* 31 (1967), 146-147.

B.24

1968

'Linkage scores and corrections in simple two and three generation families', *Annals of Human Genetics* 32 (1968), 127-150.

'Mathematics and evolution', *Eureka* 31 (October 1968), 5-7.

'Compound games with counters', *J. Rec. Math.* 1 (1968) 67-77.

B.25

1969

'Local fluctuations in gene frequencies', *Annals of Human Genetics* 32 (1969), 251-260.

'The linkage relations of the loci for benign (Becker type) X borne muscular dystrophy, colour blindness and the Xg blood locus', (with A.E.H. Emery and R. Sanger), *Annals of Human Genetics* 32 (1969), 261-264.

'Further linkage scores and corrections in two and three generation families', *Annals of Human Genetics* 33 (1969), 207-223.

'Vermes Pál élete és munkássága', *Matematikai Lapok* 20 (1969), 235-239.

B.26

1970

'Relative influence of genes and micro environment on human chromosome length', (with F. Giannelli and B. Herreros), *Annals of Human Genetics* 33 (1970), 337-342.

'A note on testing the Hardy Weinberg Law', *Annals of Human Genetics* 33 (1970), 377-383.

B.27

1971

'Gonadal growth in chick embryos', (with U. Mittwoch, T.L. Narayanan and J.D.A. Delhanty), *Nature New Biology* 231 (1971), 197-200.

/...



**Publications, B.1-B.95**

- I... 'Simple game theory and its applications', *Bulletin Inst. Math. Appl.* 7 (1971) 352-357.
- 'Map colourings and linear mappings', in *Combinatorial Mathematics and Its Applications*. Ed. D.J.A. Welsh. Academic Press, London, 1971.
- B.28 1972
- 'Note on the estimation of parental age effects', *Annals of Human Genetics* 35 (1972), 337-342.
- 'Programming the human computer', *Math. in School* 1 (1972), 8-9.
- 'Fisher's Malthusian parameter and reproductive value', (with G.R. Price), *Annals of Human Genetics* 36 (1972), 1-7.
- 'Electric currents in regular matroids', in *Combinatorics*, Eds. D.J.A. Welsh and D.R. Woodall. Institute of Mathematics and its Applications, Southend-on-Sea, 1972.
- B.29 1973
- 'Programming the Human Computer. Part Two', *Math. in School* 2 (1973), 20-21.
- B.30 1974
- 'The Hardy Weinberg law and inbreeding', (with J. Morissette), *Adv. Appl. Prob.* 6 (Mar 1974), 15-17.
- 'The teacher who didn't Playfair', *Mathematical Gazette* 58 (1974), 57.
- 'Patroids', *J. Combin. Theory* 16 (1974), 64-76.
- 'Measures of homozygosity and inbreeding in populations', *Annals of Human Genetics* 37 (1974), 377-391.
- 'Looking-glass numbers', *J. Rec. Math.* 7 (1974), 299-305.
- 'Comments on Fisher's theory of assortative mating', (with A. Vetta), *Annals of Human Genetics* 38 (1974), 243-248.
- Comments on Tversky's and Suppes's papers. *J. Roy.*

I...



**Publications, B.1-B.95**

- I...                      Comments on Tversky's and Suppes's papers. *J. Roy. Statist. Soc.* (1974).
- B.31                      1975
- 'Leaky electricity and triangulated triangles', (with R.L. Brooks, A.H. Stone and W.T. Tutte), *Philips Research Reports* 30 (1975), 205-219.
- 'Prime factors and recurring duodecimals', *Mathematical Gazette* 59 (1975), 106-109.
- 'A non parametric test for linkage with a quantitative character', *Annals of Human Genetics* 38 (1975), 451-460.
- 'Discriminant functions and 21 trisomy mosacism', (with D. Loesch), *Annals of Human Genetics* 39 (1975), 127-140.
- 'Assortative mating', (with A. Vetta), *Adv. Appl. Prob.* 7 (1975), 21-23.
- B.32                      1976
- 'The relationship between chromatid interference and the mapping function', (with E. Sturt) *Cytogenet. Cell Genet.* 17 (1976), 212-220.
- 'The peak of the likelihood curve in linkage testing', (with E. Sturt), *Annals of Human Genetics* 39 (1976), 423-426.
- 'Matrix calculations of genetic probabilities', *Adv. Appl. Prob.* 8 (1976), 641-643.
- 'The use of matrices in calculating Mendelian probabilities', *Annals of Human Genetics* 40 (1976), 37-54.
- B.33                      1977
- 'A note on genetic distance', *Annals of Human Genetics* 40 (1977), 463-479.
- 'The analogy between decision and inference', *Synthese* 36 (1977), 71-85.



Publications, B.1-B.95

- B.34 1978
- 'Hardy', *New Scientist* 80 (26 October 1978), 301.
- 'On Tutte's dichromate polynomial', *Annals Discrete Math.* 3 (1978), 247-257.
- 'Simple projections', *Mathematical Gazette* 62 (1978), 19-25.
- 'Alcune osservazioni sull'inferenza', *I Fondamenti dell'Inferenza Statistica, Atti del Convegno tenuto a Firenze nei giorni 28-30 aprile 1977*. Firenze, 1978, 209-215.
- 'Comments on C.C. Li's paper on measuring genetic distance', *Annals of Human Genetics* 41 (1978), 505.
- 'Data presentation', *Roy. Statist. Soc. News and Notes* 4 (1978), 6.
- B.35 1979
- 'Searching for heterozygotes in quantitative characters', *Adv. Appl. Prob.* 11 (1974), 8-9.
- 'Note on the forms of dermatoglyphic patterns', in *Birth Defects: Original Article Series*, 15 (1979), 43-52.
- B.36 1980
- 'Simplified formulas for detecting linkage with a quantitative character', (with A. Bener and D. Loesch), *Annals of Human Genetics* 43 (1980), 249-254.
- 'Estimating genetic correlations', *Annals of Human Genetics* 43 (1980), 265-284.
- 'Estimating the frequencies of origins of trisomics', *Adv. Appl. Prob.* 12 (1980), 9-10.
- 'Further remarks on estimating genetic correlations', *Annals of Human Genetics* 44 (1980), 95-105.
- B.37 1981-1982
- 'A quadratic mapping with an invariant cubic curve', (with R. Penrose), *Math. Proc. Camb. Phil. Soc.* 89 (1981), 89-105.

/...



**Publications, B.1-B.95**

- I... 'Correlations and regressions in "family" data', *Adv. Appl. Prob.* 19A (1982), 45-57.
- 'Discussion of paper by D.V. Lindley', *International Statistical Review* 50 (1982), 21-23.
- 'Iteration near a fixed point', in *Perspectives in Probability and Statistics*, Ed. J. Gani (1982), 157-193.
- 'Easy numbers', *New Scientist*, 5 August 1982, 387.
- B.38 1983
- 'Galton, Francis', 'Haldane-Smith test' and 'Human genetics, statistics in', *Encycl. Stat. Sci.*, vol 3, 1983.
- 'Heterogeneity in human linkage estimation', in *Contributions to Statistics: Essays in Honour of Norman L. Johnson*. Ed. P.K. Sen. North-Holland, 1983.
- Foreword to *Quantitative Dermatoglyphics* by D.Z. Lorsch, 1983.
- B.39 1986
- 'Chi squared tests with small numbers', *Annals of Human Genetics* 50 (1986) 163-167.
- 'The development of human linkage analysis', *Annals of Human Genetics* 50 (1986), 293-311.
- B.40 1987
- 'Genetic heterogeneity of X linked mental retardation with fragile X', (with A.H. Morris, C. Garrett, M. Daner and C. Thurston), *Annals of Human Genetics* 51 (1987), 107-124.
- 'Personal reminiscences of Dr S. B. Holt', *Coll. Anthropol.* 11 (1987), 283-286.
- B.41 1988
- 'Level of probability in antibody identification', (with P. Tippett), *Transfusion* 28 (1988), 85. Includes 2pp typescript draft.
- 'Flash in the pan', *New Scientist*, 3 March 1988.

I...



**Publications, B.1-B.95**

- I... 'Estimation of inbreeding from population samples', (with R. Thomson), *Adv. Appl. Prob.* (1988), 127-135.
- B.42 1989
- 'Some simple methods for linkage analysis', *Annals of Human Genetics* 53 (1989), 277-283.
- 'Genetics since Mendel', *Social Inventions* 16 (1989), 13-14.
- 'Obituary: Pat Moran, 1917-1988', *J. Roy. Statist. Soc. A* 152 (1989), 419.
- 'New 3-set Venn diagram', (with A.W.F. Edwards), *Nature* 339 (1989), 263.
- 'Hans Kalmus', *UCL Bulletin* (June 1989), 22.
- B.43 1990, 1992
- 'Self-interest and profit are glorified', *Stanmore Observer* 18 January 1990.
- 'Customers and coaches', *Modern Railways* 47 (1990), 366.
- 'Probabilities of orders in linkage calculations', *Annals of Human Genetics* 54 (1990), 339-363.
- 'Determinants and current flows in electric networks', (with R.L. Brooks, A.H. Stone and W.T. Tutte), *Discrete Math.* 100 (1992), 291-301.
- B.44 1993, 1994
- Foreword to *Collected Papers of Louis Fry Richardson, Volume 2: Quantitative Psychology and the Study of Conflict*. Ed. O.A. Ashford, et al. CUP, 1993.
- 'Simultaneous symmetric equations' (with A.H. Stone), *James Cook Mathematical Notes* 62 (1994), 6278. 1p typescript with annotations at top.
- B.45 1994, 1995
- 'Estimating multipoint recombination fractions', (with D.A.



**Publications, B.1-B.95**

Stephens) *Annals of Human Genetics* 59 (1995), 307-321.  
Two different proofs.

'Did Erdős save Western civilization?', in *The Mathematics of Paul Erdős*. Ed. J. Nešetřil, 1996

B.46

2003

'The number of ways of grading examination candidates',  
(with W.T. Tutte), *Mathematical Gazette* 87 (2003), 34-35.

Published posthumously.

B.47

Book reviews

[1949]-1987

Smith wrote many reviews of books on mathematical,  
genetical and general scientific subjects.

*Integration in Finite Terms* by J. F. Ritt. *Science Progress*  
(January 1949), 141.

*Outline of Biometry & Statistics* by C.I. Bliss and D.W.  
Calhoun. *Annals of Human Genetics* (1954).

*Theorie des Graphes et ses Applications* by C. Berge.  
*Annals of Human Genetics* (1958).

*Russian-English Biological and Medical Dictionary* by  
Eugene A. Carpovich. *Annals of Human Genetics* 23  
(1959).

*String Figures and Other Monographs* by W. W. R. Ball, J.  
Petersen, H. S. Carslaw and F. Cajori. *Annals of Human  
Genetics* (1960).

*Mathematical Biophysics* by N. Rashevsky, *Mathematical  
Gazette* 46 (1962).

*The Analysis of Biological Populations* by M. Williamson.  
*British Book News* (July 1972).

*The Mathematical Theory of the Dynamics of Biological  
Populations*, ed. M. S. Bartlett and R. W. Hiorns. *Annals  
of Human Genetics* (1973).

*Statistical Ecology*, vols. 2 and 3, ed. G.P. Patil et al.  
*Population Studies* (1974).

*Space, Time and Life* by V.V. Nalimov. ca 1985

/...



**Publications, B.1-B.95**

- I...*                      *On Competition* by C.T. de Wit. *Genet. Res. Camb.* 50 (1987).
- B.48-B.63                Draft of unidentified book on genetics  
Typescript draft chapters found in folders.
- B.48                      'Chapter 1'  
  
Begins '1.2 Species and populations'. Paginated 1/4-1/19.
- B.49                      'Chapter 2'  
  
Begins '2.1 Sexual reproduction'. Paginated 2/1-2/50.
- B.50                      'Chapter 3'  
  
Begins '3 Population frequencies'. Paginated 3/1-3/22.
- B.51                      'Chapter 4'  
  
Begins '4.1 Calculation of genetic probabilities'. Paginated 4/1-4/42.
- B.52-B.54                'Chapter 5'  
  
Begins '5. Estimation problems in genetics'. Paginated 5/1-5/129.  
  
3 folders.
- B.55-B.57                'Chapter 6'  
  
Begins 'Genetic linkage in human mendelian characters'. Paginated 6/1-6/86.  
  
3 folders.
- B.58                      'Chapter 7'

*I...*



**Publications, B.1-B.95**

/... Begins 'Segregation tests and ascertainment problems'.  
Paginated [7/1]-7/60.

B.59-B.62 'Chapter 8'

Begins 'Relationships and inbreeding'. Paginated 8/1-8/166.

4 folders.

B.63 'Artist's copies of diagrams'

**B.64-B.95**

**COLSON NEWS**

**1967-1990**

*Colson News* was a small circulation journal founded by Smith, Ellis Hillman and Alvin Paul in 1984. It took its name from the mathematician John Colson FRS (1680-1760), who discovered reverse numbers in 1726.

The journal was devoted to properties of reverse (or two-way) numbers and other unusual types of numbers, number notation and related topics. It ran to 16 issues between 1984 and 1990. Paul resigned in 1987 and Malcolm Smithers joining for the third volume (leaving in 1990).

Paul had made the initial suggestion for starting the journal but Smith was the leading light. He had an interest in reverse numbers from the 1960s when he had advocated their use in his book *Biomathematics*. The journal's address was Smith's house, subscription cheques were paid to him, the typing was done on Smith's typewriter and most of the more mathematical items were by Smith.

**B.64-B.70**

**Editorial Board**

**1982-1989**

B.64

Information about John Colson; correspondence *re* reproduction of his image for the journal

1985-1986



**Publications, B.1-B.95**

B.65	Correspondence with fellow editors	1982-1986
B.66, B.67	Minutes of editorial board meetings 2 folders.	1983-1986
B.68	Correspondence with Charity Commission	1983-1985
B.69, B.70	Subscriptions 2 folders.	1984-1989
<b>B.71-B.76</b>	<b>Correspondence</b>	<b>1967-1989</b>
	Correspondence with subscribers and contributors. Includes some contributions to the journal.  In alphabetical order.	
B.71	A.-C.	1984-1989
B.72	D.-F.	1985-1986
B.73	G.-J.  Includes earlier letters found with <i>Colson News</i> correspondence.	1967-1985
B.74	L.-O.  Includes earlier letter found with <i>Colson News</i> correspondence.	1975-1989
B.75	P.-Z.	1984-1989



**Publications, B.1-B.95**

B.76	Manuscript notes on correspondence received after first issues	1984
<b>B.77-B.95</b>	<b>Issues of <i>Colson News</i></b>	<b>1984-1990</b>
B.77	Volume 1, number 1, January (New Year's Day) 1984 Master copy; solution to puzzle.	
B.78	Volume 1, number 2, April 1984 Master copy.	
B.79	Volume 1, number 3, July 1984 Master copy; published copy; manuscript draft puzzle.	
B.80	Volume 1, number 4, December 1984 Master copy.	
B.81	Volume 2, number 1, March 1985 Master copy.	
B.82	Volume 2, number 2, June 1985 Master copy.	
B.83	Volume 2, number 3, June 1985 Master copy.	
B.84	Volume 2, number 4, December 1985 Master copy; manuscript drafts of 'Review of a "Dictionary of the Holy Bible..." by Samuel D'Oyley...and John Colson'	

**Publications, B.1-B.95**

and the 'Sheep-counting Song'.

- |            |   |
|------------|---|
| B.85       | Volume 3, number 1, April 1986<br><br>Master copy.  |
| B.86       | Volume 3, number 2, August 1986<br><br>Master copy; manuscript notes.   |
| B.87       | Volume 3, number 3, April 1987<br><br>Master copy; earlier pages; computer print-out.   |
| B.88       | Volume 3, number 3, April 1988<br><br>Master copy.  |
| B.89       | Volume 4, number 1, September 1988<br><br>Master copy; published copy.  |
| B.90, B.91 | Volume 4, number 2, July 1989<br><br>Master copy; published copy; drafts of articles on Lewis Carroll.<br><br>2 folders.<br><br>This issue was a Lewis Carroll special. |
| B.92       | Volume 4, number 3, August 1989<br><br>Master copy; published copy.   |
| B.93       | Volume 4, number 4, October 1990<br><br>Master copy.  |



**Publications, B.1-B.95**

This number announced the resignation of M. Smithers from the editorial board but it was not envisaged at the time that this would be the last issue.

B.94, B.95

Copies of contributions by Smith (some in collaboration)

2 folders.

SECTION C	TALKS AND LECTURES, C.1-C.25	1986-1994, n.d.
-----------	------------------------------	-----------------

The bulk of this material is the contents of Smith's envelopes and folders of transparencies. Most of these sets are undated with no indication of occasion, audience or place of lecture. Furthermore many of the sets appear highly miscellaneous in content, and may include transparencies featuring astrology, linguistics and place-names alongside others on genetics and statistical analysis.

C.1	'Mathematics and statistics in biology'	1986
-----	---	------

Contents of folder: programme for British Society for History of Mathematics Conference, Pembroke College Oxford, 12-14 September 1986; 4pp manuscript notes for lecture; notes of slides; transparencies.

C.2	Lecture on modified geometric distribution of progeny	ca 1988
-----	---	---------

Transparencies; card from Sewall Wright, December 1987, to which the lecture refers; manuscript notes.

C.3, C.4	Contents of envelope: transparencies for mathematical lecture, possibly on the construction of a perfect squared square	post 1990
----------	---	-----------

2 folders.

C.5	'This mysterious universe', University College London Science Society, 3 November 1992	1992
-----	--	------

Notice; transparencies; notes.

C.6	Contents of envelope: programme for Astrological Association Kepler Research Day, London, 12 November 1994; transparencies for lecture, possibly on 'combinatorialists'	1994
-----	---	------

Smith is not listed as a lecturer but the programme includes an open session.



**Talks and lectures, C.1-C.25**

C.7	'Proposal of vote of thanks to Dr Alun Thomas on this paper on "Gene hunting with gradients of likelihood" '  2pp typescript.	N.d.
C.8	'Seconding of the vote of thanks to Peter Walley'  2pp typescript.	N.d
C.9-C.11	'Loesch data key'. Contents of folder so inscribed divided into three for ease of reference.	N.d.
C.9	33pp typescript on human genetics	
C.10	Manuscript notes	
C.11	Transparencies	
C.12	'Contractions Colourings + Nets'. Contents of folder so inscribed  Transparencies.	N.d.
C.13	'Correlations'. Contents of folder so inscribed  Transparencies.	N.d.
C.14	'Variance of variance'. Contents of folder so inscribed  Transparencies.	N.d.
C.15	'Voting'. Contents of folder so inscribed.  Transparencies.	N.d.

**Talks and lectures, C.1-C.25**

C.16	'X2 etc'. Contents of folder so inscribed.  Transparencies.	N.d.
C.17-C.19	'Two way no.'. Contents of folder so inscribed divided into three for ease of reference  Transparencies etc.	N.d.
C.20-C.22	'Transparencies'. Contents of folder so inscribed divided into three for ease of reference. Appear to be for talk/s on genetics.	N.d.
C.23	Contents of untitled envelope.  Transparencies.	N.d.
C.24, C.25	Contents of untitled envelope divided into two for ease of reference.  Transparencies.	N.d.



## SECTION D

## BLANCHE DESCARTES, D.1-D.20

As a mathematics student at Trinity College Cambridge Smith became close friends with three other mathematics students at Trinity, R. Leonard Brooks, Arthur H. Stone and William T. Tutte. Together they tackled a number of problems in mathematics and devised an imaginary mathematician, 'Blanche Descartes', under which name to publish their work, in a manner somewhat analogous to the more well-known imaginary French mathematician 'Nicholas Bourbaki'.

The origins of the name Blanche Descartes appear two-fold. The name 'Blanche' seems have initially been chosen as containing the initials of the first names of the four (B, L, A and C) but the full name 'UR Blanche Descartes Limit'd', was an anagram of Cedric Austen Bardell Smith. An alternative to Blanche Descartes was 'F. de Carteblanche', and Rose Descartes also appeared.

See also A.5 for a history of the name.

The four also published more mainstream articles under their own names (see section B).

D.1-D.15 PUBLICATIONS

D.16 CORRESPONDENCE

D.17-D.20 TRANSPARENCIES

### D.1-D.15

### PUBLICATIONS

[1947]-[1986],  
n.d.

#### D.1

de Carteblanche, F., 'The coloured cubes problem', *Eureka* 9 (April 1947), 9-11; and Descartes, Blanche, 'A three colour problem', *Eureka* 9 (April 1947), 21, and *Eureka* 10 (March 1948), 24

Photocopies.

#### D.2

Descartes, Blanche, 'Network colourings', *Math. Gaz.* 32 (1948), 67-69

Photocopy.

**Blanche Descartes, D.1-D.20**

- D.3 Descartes, Blanche, 'Why are series musical?', *Eureka* 16 (October 1953), 18-20; and Descartes, Blanche, 'Hymne to Hymen', *Eureka* 17 (October 1954), 5-7
- Photocopies.
- D.4 Descartes, Blanche, 'Solution to problem 4526', *Amer. Math. Monthly* 61 (1954), 352
- Photocopy.
- D.5 Descartes, Blanche, 'Enumerational'
- Poem presented to the NATO Summer School on Graph Theory and Theoretical Physics, Frascati, June 1964.
- 1p typescript.
- D.6 Descartes, Blanche and Rose, 'La coloration des cartes', *Eureka* 31 (October 1968), 29-31
- Photocopy.
- D.7 Descartes, Blanche, 'Bourbaki in reverse', *J. Rec. Math.* 2 (October 1969), 206-211
- Photocopy.
- D.8 Descartes, Blanche, 'Song of the subgraph hunter' and 'Enumerator's song', in *Combinatorial Structures and Their Applications (Proc. Internat. Conf., Calgary, 1969)*; Gordon and Breach, New York, 1970
- Photocopy.
- D.9 de Carteblanche, F, 'The princess and the roses', *J. Rec. Math.* 3:4 (October 1970), 238-239; 'The roses and the princes', *J. Rec. Math.* 7:4 (Fall 1974) 295-298
- 3pp typescript; offprint.



**Blanche Descartes, D.1-D.20**

- D.10 Descartes, Blanche, 'Division of a square into rectangles',  
*Eureka* 34 (October 1971), 31-35

Photocopy.

- D.11 Brooks, R.L.; Smith, C.A.B.; Stone, A.H. and Tutte, W.T.  
Letter to the editor: 'Proof of existence?', *J. Rec. Math.*  
4:4 (October 1971) 294-295

Photocopy.

- D.12 Descartes, Blanche, Letter to the editor, *J. Rec. Math.* 7:1  
(Winter 1974), 60

Photocopy.

- D.13 Descartes, Blanche, 'On a theorem of Kuratowski',  
*Discrete Math.*, Master Index Issue for vols 1-10, 1975

Photocopy.

- D.14 Descartes, Blanche, [Two clerihews]. In: Editorial, *Eureka*  
46 (January 1986), 1-2.

Photocopy.

- D.15 Descartes, Blanche, 'Reductio ad absurdum'

1p typescript.

Possibly published in *James Cook Mathematical Notes*.

- D.16 **CORRESPONDENCE**

**1973, 1979,  
1980**

Correspondence between Blanche Descartes and D.G.  
Kendall (1973), and to E. Palmer (1979) and M. Gardner  
(1980).

**Blanche Descartes, D.1-D.20**

**D.17-D.20**

**TRANSPARENCIES**

**N.d.**

4 folders.

Some of the transparencies in section C also refer to  
Blanche Descartes.



SECTION E	RESEARCH FRAGMENTS, E.1-E.10	1968-1980, n.d.
-----------	------------------------------	-----------------

Virtually nothing of Smith's research as a geneticist or a mathematician survives. This section presents the three random survivals found in the Galton Laboratory which document three different interests.

E.1-E.5	'GAUQUELIN'	1968, 1976
---------	-------------	------------

Contents of Smith's folder so labelled divided into five for ease of reference: chiefly computer print-outs, punched cards, analysis of figures.

Michel Gauquelin was a French statistician who, with his wife Francoise, undertook a study of astrology by analysing correlations between date of birth and subsequent profession. He is particularly well-known for the 'Mars Effect' which correlated the rising and culminating of the planet Mars with the birth of successful athletes. Smith is known to have developed an interest in this area and the material in the folder appears to relate to this.

E.6-E.9	'RECORDINGS'	1979-1980
---------	--------------	-----------

Contents of Smith's folder so labelled divided into four for ease of reference: translations of set phrases in a variety of languages.

This relates to Smith's interest in the analysis of language. A 'conversation' beginning 'Good morning! Can I talk to you a minute?' was translated, possibly by students at UCL, into different languages, ranging from the main Indo-European and Oriental tongues to Basque and Hungarian. The translation may have been recorded as well as being written out. Some of the translations also include lists of numbers and common words.

E.10	'Linkage'	N.d.
------	-----------	------

Manuscript notes.

SECTION F	CORRESPONDENCE, F.1-F.5	1966-1993
F.1	1966-1969	
	Includes exchange with S. Ferguson on 'reverse notation' (Colson numbers).	
F.2	1979	
F.3	1982-1988	
	Includes Smith's written remarks on I.D. Hill's talk to the Royal Statistical Society on voting methods, December 1987; and print-out of copy of letter to P. Taylor, editor of <i>Eureka</i> , August 1983, in which Smith sets out his views on the journal and the importance of mathematics.	
F.4	1990	
	Letter from J.D. Skinner II enclosing typescript of 'Note. Uniquely squared squares of common reduced side and order', with Smith's material (includes transparencies) found attached.	
F.5	1993	
	Correspondence relating to 'An antimatter comet?' by K. Bullough. With copy of the draft.	



## INDEX OF CORRESPONDENTS

AHLIN, Bengt	B.71
<i>AMERICAN MATHEMATICAL MONTHLY</i>	B.71
ANUVRAT GLOBAL ORGANIZATION (ANUVIBHA)	A.17
ASSOCIATION OF TEACHERS OF MATHEMATICS	B.75
AWNI, Safa	B.71
BEASLEY, John D.	B.71
BOULDING, Kenneth and Elise	A.14
BRADLEY, Morris	A.14
BULLOUGH, Ken	F.5
BULLOUGH, Ronald	F.5
CHARLES GRIFFIN & CO. LTD	B.73
<i>COLSON NEWS</i>	B.64-B.95
COPLEY, George N.	B.71
'DESCARTES, Blanche'	D.16
DEVLIN, Keith	F.3
DOZENAL SOCIETY OF AMERICA	B.71
DUNN, Ted	A.17
EDWARDS, Anthony William Fairbank	B.72
<i>EUREKA</i>	B.72
FERGUSON, Shaun	F.1
FOX, Wendy	B.72
GANI, Joe	B.73
GARDNER, M.	D.16

Index of correspondents

GAWAD, F.A. Shewika	F.2
GREEN, P.J.H.	B.73
HILLMAN, Ellis	B.65, B.73
HITCHCOCK, Mavis	B.73
HUNTER, J.A.H.	B.73
JOHNSTON, Hugh Halcro	B.73
KENDALL, David George	D.16
KLEIN, Hans R.	B.74
KNUTH, Donald E.	B.74
LEVENSON, Gerard I.P.	B.74
LEWIS CARROLL SOCIETY	B.74
<i>MATHEMATICAL GAZETTE</i>	B.74
MAWER, Chris	B.74
MIALL, Hugh	A.14
MORGAN, Dylan	B.74
NELSON, Harry L.	B.74
NIXON, W.L. Benedict	B.74
OPEN UNIVERSITY	B.74
OWEN, John R.	B.74
PALMER, E.	D.16
PAUL, Alvin	B.65
PIWOWAR, Tom	B.75
QUAKER PEACE & SERVICE	A.14



**Index of correspondents**

RANSOM, P.H.	B.75
RENNIE, Basil C.	B.75, F.3
RICHARDS, Mark	B.75
ROBERTS, Sir Derek Harry	A.17
ROYAL STATISTICAL SOCIETY	F.3
SKINNER II, Jasper Dale	F.4
SMITHERS, Malcolm K.	B.65
SMOKER, Paul L.	See A.14
TAYLOR, Paul	F.3
TUTTE, William Thomas	A.1, F.1, F.3
TWEEDIE, McKenneth	B.75
ÚLEHLA, Jozef	F.2
UPTON, Leslie J.	B.75
VÁVRA, Jan	F.3
WAKELING, Edward	B.75
WRIGHT, Sewall	C.2
ZIRKEL, Gene	B.72, B.75