



THE UNIVERSITY OF MELBOURNE ARCHIVES

NAME OF COLLECTION	Dr. James Kenneth Mackenzie
ACCESSION NO	1985.0023
CATEGORY ACTIVITY	University, individuals Physicists
DATE RANGE	1921-1984
SIZE OF COLLECTION	17 boxes, 2 metres
HISTORICAL NOTE	Dr. Mackenzie was born 14 June 1920 in Melbourne, educated at Malvern Church of England Grammar School, Scotch College and the University of Melbourne, where he graduated B.A.(Hons) and B.Sc. He worked at the A.W.A. Research Laboratories in Sydney from 1942 to 1945; with the CSIR Division 1945 to 1947, and then took a Ph.D. at the University of Bristol in 1949. From 1950 Mackenzie worked at CSIRO in the Division of Tribophysics, then in the Division of Chemical Physics, where he was Senior Principal Research Scientist until his retirement in 1985.
ACCESS CONDITIONS	Access: Access Not Set

NAME: James Kenneth Mackenzie

ADDRESS: (Home) 15 Ronald Street
Box Hill North, 3129
Victoria, Australia Tel. (03) 890 7458

(Business) Division of Chemical Physics
Commonwealth Scientific & Industrial Research
Organization
David Rivett Laboratory *retired 10/6/85*
Box 160, Clayton, 3168
Victoria, Australia Tel. (03) 544 0633

DATE_of_BIRTH: 14 - 6 - 20 at Melbourne, Australia

MARITAL_STATUS: Married Zara (Lennard) 17 - 12 - 48
at Bristol, England

CHILDREN 1 daughter;
Terri Anne born 16 - 10 - 58 at Melbourne

PARENTS Robert Kenneth Mackenzie (Deceased)
Alice Edith Mackenzie (Nee Beavis) (Deceased)

EDUCATION (School) Malvern Church of England Grammar School
Melbourne 1925 - 1931
Scotch College, Melbourne, 1932 - 1937
Dux of school in 1937 (aeq. with C.S.Martin)

Senior Government Scholarship
Non-resident scholarship to Ormond College

(University) University of Melbourne 1938 - 1941
B.A.(Hons), B.Sc.
Dixon Research Scholarship in Mathematics 1940

CSIR Science and Industry Studentship 1947
for study at the University of Bristol

University of Bristol, England 1947 - 1949
Ph.D. under N.F.Mott with a thesis entitled
"A theory of sintering and the theoretical
yield strength of solids"

EMPLOYMENT

AWA Research Laboratories Sydney 1942 - 1945
 CSIR Division of Physics 1945 - 1947
 CSIRO Division of Tribophysics 1950 - 1962
 Visiting scientist Research Institute for
 Advanced Study (RIAS), Baltimore, 1963
 Honorary "Visiting fellow" Johns Hopkins
 University, Baltimore, 1963
 Visiting lecturer MIT, Boston 1963
 Visiting professor University of Illinois at
 Urbana, 1963
 CSIRO Division of Chemical Physics 1964 -
 (As at 1984, Senior Principal Research
 Scientist)

PUBLIC_SERVICE

Honorary Secretary, Australian Branch of the
 Institute of Physics (Lond) 1958 -1959
 Honorary Treasurer, Australian Institute of
 Physics 1969 - 1976
 Honorary Treasurer, Victorian Branch of the
 Statistical Society of Australia 196? - 1970
 President, Victorian Branch of the Statistical
 Society of Australia 1971 - 1972

MEMBERSHIP_OF
PROFESSIONAL
SOCIETIES

Institute of Physics (Fellow)
 Australian Institute of Physics (Fellow)
 Australian Mathematical Society
 Statistical Society of Australia
 Australian & New Zealand Association for the
 Advancement of Science (ANZAAS)

RESEARCH
INTERESTS

The application of mathematics to scientific
 problems.

The geometrical relations arising when a
 crystalline solid undergoes a change of phase
 from one crystal structure to another such as
 in a martensite transformation in steels.

The theoretical yield strength of solids.

The theory of sintering.

Geometrical probability

The crystallography of surfaces.

Data analysis of X-ray intensities.

Design of methods for testing precision
 optical components during manufacture.

PUBLICATIONS

1. Healy, R.H. and Mackenzie, J.K. (1943).
"A note on the evaluation of Riemann's Zeta function".
A.W.A. Tech. Rev. 6, 125-141.
2. Mackenzie, J.K. (1945).
"The design of isolating pads".
A.W.A. Tech. Rev. 6, 351-368.
3. Mackenzie, J.K. and Shuttleworth, R. (1949).
"A phenomenological theory of sintering".
Proc. Phys. Soc. 62B, 833-852.
4. Mackenzie, J.K. (1950).
"The elastic constants of a solid containing holes".
Proc. Phys. Soc. 63B, 2-11.
5. Mackenzie, J.K. and Mott, N.F. (1950).
"A note on the theory of melting".
Proc. Phys. Soc. 63A, 411-412
6. Mackenzie, J.K. and Sondheimer, E.H. (1950).
"The theory of the change in the conductivity of metals
produced by cold work".
Phys. Rev. 77, 264-270.
7. Mackenzie, J.K. (1950).
"The stresses and energies associated with inter-crystalline
boundaries".
Proc. Phys. Soc. 63A, 1370.
8. Boas, W. and Mackenzie, J.K. (1950).
"Anisotropy in metals".
Chap. 3 in "Progress in Metal Physics" 2, 90-120.
Edited by Bruce Chalmers. Butterworth: London.
9. Bowles, J.S. and Mackenzie, J.K. (1952).
"Discussion on 'Habit phenomenon in martensitic
transformation' by E.S. Machlin & Morris Cohen".
J. Metals 4, 1201-1203.
10. Bowles, J.S. and Mackenzie, J.K. (1954).
"The crystallography of martensitic transformations I".
Acta Met. 2, 129-137.
11. Mackenzie, J.K. and Bowles, J.S. (1954).
"The crystallography of martensitic transformations II".
Acta Met. 2, 138-147.
12. Bowles, J.S. and Mackenzie, J.K. (1954).
"The crystallography of martensitic transformations
III Face-centred cubic to body-centred tetragonal
transformations".
Acta Met. 2, 224-234.

13. Mackenzie, J.K. and Bowles, J.S. (1957).
"The crystallography of martensitic transformations
IV Body-centred cubic to orthorhombic transformations".
Acta Met. 5, 137-149.
14. Mackenzie, J.K. (1957).
"A least squares solution of linear equations with
coefficients subject to a special type of error".
Aust. J. Phys. 10, 103-109.
15. Mackenzie, J.K. (1957).
"General relation between lattice sums".
J. Chem. Phys. 26, 1769.
16. Mackenzie, J.K. (1957).
"A simple formula for evaluating the Madelung constant of an
NaCl-type crystal".
Can. J. Phys. 35, 500-501.
17. Mackenzie, J.K. (1957).
"The estimation of an orientation relationship".
Acta Cryst. 10, 61-62.
18. Mackenzie, J.K. and Thomson, M.J. (1957).
"Some statistics associated with the random disorientation
of cubes".
Biometrika 44, 205-210.
19. Mackenzie, J.K. (1958).
"Second paper on statistics associated with the random
disorientation of cubes".
Biometrika 45, 229-240.
20. Mackenzie, J.K. (1960).
"The crystallography of martensitic transformations".
J. Aust. Inst. Metals 5, 90-105.
21. Bowles, J.S. and Mackenzie, J.K. (1962).
"The crystallography of the (225) -transformation in steels".
Acta Met. 10, 625-636.
22. Mackenzie, J.K., Moore, J.W. and Nicholas, J.F. (1962).
"Bonds broken at atomically flat crystal surfaces
I - Face-centred and body-centred cubic crystals".
J. Phys. Chem. Solids 23, 185-196.
23. Mackenzie, J.K. and Nicholas, J.F. (1962).
"Bonds broken at atomically flat crystal surfaces
II - Crystals containing many atoms in a primitive
unit-cell".
J. Phys. Chem Solids 23, 197-205.

24. Mackenzie, J.K. (1962).
"Sequential filling of a line by intervals placed at random and its application to linear adsorption".
J. Chem. Phys. 37, 723-728.
25. Mackenzie, J.K. (1962).
"The estimation of an orientation relationship from traces of known planes".
Acta Cryst. 15, 979-982.
26. Mackenzie, J.K. (1964).
"The distribution of rotation axes in a random aggregate of cubic crystals".
Acta Met. 12, 223-225.
27. Mackenzie, J.K. (1967).
"Evaluation of a Fourier transform".
SIAM Review 9, 219-222.
28. Mackenzie, J.K. and Maslen, V.W. (1968).
"Reproducibility of intensity measurements by X-ray diffractometers.
A new assessment of data from the single-crystal project of the American Crystallographic Association".
Acta Cryst. A24, 628-639.
29. Mackenzie, J.K. (1971).
"Comparison of data as a problem in two-way classification".
Presented to 'The Australian Statistical Conference'
24-26 August 1971 in Sydney.
30. Mackenzie, J.K. and Williams, E.J. (1973).
"The optimum distribution of counting times for determining integrated intensities with a diffractometer".
Acta Cryst. A29, 201-204.
31. Mackenzie, J.K. (1974).
"Systematic intensity-dependent differences in structure factors derived from the single crystal intensity measurement project of the International Union of Crystallography".
Acta Cryst. A30, 607-616.
32. Mackenzie, J.K. (1978/1979).
"Partitions of sets of integers"
Mathematical Spectrum 11, 25-26.
33. Mackenzie, J.K. and Mathieson, A. McL. (1979).
"The absolute measured value of $f(220)$ for Cu--
The importance of extrapolation to zero extinction".
Acta Cryst. A35, 45-50.

34. Mackenzie, J.K. (1980).
"Materializing ghosts from random noise".
Micron 11, 391-392.
35. Humble, P., Olsen, A. and Mackenzie, J.K. (1983).
"Platelet defects in natural diamonds".
Inst. Phys. Conf. Ser. No. 68: Chapter 11, 445-447.
Paper presented at EMAG, Guildford, 30 Aug. - 2 Sept. 1983.
36. Mackenzie, J.K. and Mair, S.L. (1985)
"Anharmonic temperature factors:
The limitations of perturbation-theory expressions".
Acta Cryst. 41, 81-85.
37. Mackenzie, J.K. and Mathieson, A. McL. (1984)
"The experimental value of $f(220)$ for Copper".
Aust. J. Phys. 37A, 651-6.
38. Brown, T.C. and Mackenzie, J.K. (1985)
"Dead time correction for a position sensitive detector".
Aust. J. Phys. In the press.
39. Humble, P., Olsen, A. and Mackenzie, J.K. (198~~3~~⁵).
"Platelet defects in natural diamond
1. Measurement of Displacement".
Phil. Mag. In the press.

Lecture and other Notes

School

I attended Scotch College Melbourne from 1932 to 1937. In 1937 I did Leaving Honours (IXth Form) and came under the influence of A.D. ("Stonk") Ross who had a profound influence on my mathematical education. He and F.J.D.Syer at University (Melb?) High School were the premier teachers of mathematics at the time since between them their students took the majority of first places in the final examinations. As a result of his teaching and encouragement I gained first place in Maths III, first class honours in maths I and IV and second class honours in maths II; I was equal (with C.S.Martin) dux of the school.

The note books in the collection are as follows.

Unit 1
Mathematics I. (Algebra) 3 vols
Text book: C.Smith "Algebra"
Mathematics II. (Geometry) 2 vols
Text books: Loney "Coordinate Geometry" I
Todhunter's "Plane Trigonometry"
Godfrey & Siddons "Modern Geometry"
Mathematics III. (Calculus) Vol I is missing Vol II present
Mathematics IV. (Mechanics) 2 vols

To counter the cultural bias of a diet of unadulterated mathematics I was made, in the previous year (1936), to attend the class (but not do the exam) in European History conducted by R.G. ("Forty five") Clayton. The text book was "History of Modern Europe" by S.H.Roberts.

1 vol of notes

With the help of my cousin Bob Kidgell I constructed several radio sets and decided that I would embark on a career of radio engineering. As a beginning I read extensively in the Public Library and made notes.

1 vol of notes

1 vol of notes on various matters

- (a) Lecture by E.H.S.Burhop 18/5/37 "Atomic Nuclei"
- (b) 3 Lectures by H.S.W.Massey Aug '37 "Atomic Theory?"
- (c) Lecture by T.M.Cherry Nov '37 "Relativity"

Unidentified

- (d) Existence of Heavy Electrons
- (f) Determination of Electronic Charge
- (g) Reflection of Waves from Ionosphere
- (h) Systems of Units
- (i) High Frequency Measurements (R.C.Boswell)
- (j) Radio Fade Outs (Berkner & Wells)

Melbourne University

My interest in radio engineering determined that I should enrol as an Engineering student. At the end of first year it became apparent that there was no viable course in communication engineering at Melbourne University and that the only such course was the combined BSc-BE degree at Sydney University. Investigation at Sydney University revealed that I would lose some credit for what I had already done at Melbourne and I was advised by Prof J.P.V.Madsen and Dr D.M.Myers that a course in mathematics and physics at Melbourne would be a very suitable substitute. This advice together with my success in mathematics determined that I should change over to a combined honours arts and science course at Melbourne

Unit 2 First Year (1938)

- BOX
2
- Pure I Lecturer M.H.Belz
Calculus 1 vol of notes
Algebra 2 vols of notes 1 set of example sheets
Analytical Conics 1 vol of notes
- Mixed I Lecturer T.M.Cherry
Vector algebra, Dynamics of systems of particles,
Rigid bodies, Gyroscopes, Impulsive motion,
Small oscillations, Statics, Flexible systems
3 vols of notes
- Graphics Engineering History Lecturer A.F.Burstall
Graphical Construction Lecturer G.Alexander
2 vols of notes
- Chem. I Lecturer E.J.Hartung No notes extant
Chemistry was a vehicle for Hartung's showmanship

Unit 3

- BOX
3
- Natural Philosophy I
Departmental lecture notes 1 set
General Physics Lecturer E.H.S.Burhop 2 vols
2nd vol contains notes on Wave Motion lecturer unknown
Practical Work Departmental Text + 2 lab note books
- Sundry Lecture Notes (Not for a degree)
Quantum Theory of Radiation Lecturer E.H.S.Burhop
High Frequency Transmission Line Characteristics
Lecturer R.C.Boswell (PMG Research Labs)

Second Year (1939)

- Natural Philosophy II
General Physics Lecturer E.O.Hercus 1 vol
Electricity Lecturer E.O.Hercus? 1 vol
Optics Lecturer E.O.Hercus? 1 vol
Modern Physics Lecturer T.H.Laby 1 vol
Practical Work Departmental text + 1 Lab Notebook

Honours Mathematics: Like Part II of the Cambridge Tripos the course was spread over two years and there was no formal exam at the end of the first year. At this point in time (1985) I have some difficulty in assigning series of lectures to their correct year and it seems certain that some of the sets of notes have been rearranged roughly into like subject groupings rather than continuous lecture series

Unit 4

4

Pure II Lecturer T.M.Cherry
Mathematical Analysis (Real Variable)
1 set of Departmental Notes with addenda #1-8 pp1-64
Functions of a Complex Variable
1 set of Notes. Departmental Notes #9 pp65-67
Linear Differential Equations & Differential Geometry
1 set of notes
Problems set for solution for Analysis course 1 vol

Mixed II Lecturer M.L.Urquhart
Vols 1-3 covering Calculus of Variations, General Dynamics including Lagrange's Equations, Vector Calculus Hamilton's Equations, Small Vibrations, Electro- and Magnetostatics, Electromagnetic Fields

Third Year (1940)

Units 4 & 5 Pure III Lecturer T.M.Cherry
Function Transforms with application to D.E.'s 1 vol
Projective Geometry + Departmental Notes pp1-49 1 vol
Series Solution of Linear Differential Equations
1 set of Departmental Notes with addenda #10 p69-77
This probably relates to 1939 The volume also has Linear Differential Equations with applications to Legendre and Bessel functions Lecturer E.R.love

30
5

Unit 5 Mixed III Lecturer M.L.Urquhart
Vols 3,4 contain Electromagnetic & Radiation Theory
Electromagnetic Theory of Mass. Hamilton-Jacobi Theory and in vol 5 Stackels Method
Vol 5 also has K.E.Bullen's lectures on Hydrodynamics

Practical Mathematics
Departmental Notes + Worked examples

Theory of Statistics I (Not for a degree)
Lecturer M.H.Belz My original notes were used as a basis for the Departmental Notes which are of later date <1950 + original practice examples + Engineering Statistics Examples dating sometime in the 50's

Unit 6 Fourth Year (1941)

303
6
Natural Philosophy III

Modern Physics Lecturer T.H.Laby?
Thermodynamics Lecturer E.O.Hercus

The concurrent course in Physical Chemistry also made extensive use of thermodynamics and I tried to consolidate the two versions. This led to outside reading and in particular the material on pp19-33 on the conditions for equilibrium. Included also is the version due to K.E.Bullen which of about the same date

Optics Lecturer E.O.Hercus

By this time during world war II it was painfully apparent that Australia had to develop its own expertise in optical design and manufacture (The Optical Munitions Panel was set up to consider such matters) As a result my third year physics course was seriously biased towards optical design. I did not like the traditional approach to the Seidel aberration and so learned the material from J.L.Synge's Cambridge Tract

1 vol of notes
Practical work 1 lab note book

In the usual fourth year of a BA(Hons)-BSc course students did Nat. Phil. II and either Logic or Theory of Statistics I. I was not attracted towards Logic and had already attended the lectures on Statistics so on the advice of a family friend Mr Holden who worked at the Walter and Eliza Hall Institute I took Chemistry II His final comment was that some knowledge of Chemistry would never go amiss and if I did not learn it now I probably never would

303
7
Unit 7 Chemistry II

Physical Chemistry Lecturer E.Heymann
1 vol of notes
Organic Chemistry Lecturer D.E.White
1 vol of notes

Record of passes and honours obtained

- 1937 I gained a Senior Scholarship to attend Melbourne University and also a Non-resident Scholarship to Ormond College
- 1938 Exhibition in Pure I
First class honours in Mixed I & Nat. Phil. I
Pass in Chemistry I & Graphics
- 1939 Exhibitions in Nat. Phil. II, (shared) Pure & Mixed II
- 1940 Exhibition in Pure & Mixed III (2nd Class Honours)
Dixon Research Scholarship (Never proceeded with because of the war)
- 1941 First class honours in Nat. Phil. II Pass in Chem II

Lectures and Exams set at Melbourne University

Applied Mathematics I (Standard Grade) 1951

Vector Analysis
Particle Dynamics
Particle Systems: Rigid Dynamics
Bullen Examples
Misc. Ex.: Progress of Lectures
Exam Papers

Tutorials and Practice Classes 1950-c1960

Applied I, II 1950
Pure I Examples
Pure I Practice Class: Examples and Notes

Engineering Mathematics III 1954; I-IV 1955. Examⁿ Papers.
College Scholarship Exams

Ormond	Calculus; & Applied	1952
Newman	Calculus & Applied, Pure	1954
		1955
		1956
		1957

Miscellaneous Scholarship Questions

University of Melbourne Faculty of Science Handbook 1941

University of Melbourne Union Handbook 1941

University of Melbourne Faculty of Arts Handbook 1941

University of Melbourne Faculty of Arts Handbook 1951

Miscellaneous Pamphlets

Unit
9

"Handbook of Symposium on Radar" Presented by members of the Division of Radiophysics CSIR on 5th, 6th and 7th December 1945 Copy No. 34. Four volumes of cyclostyled notes

"Concerning Establishment of The Groth Institute for the revision of Groth's Chemische Krystallographie" by Ray Pepinsky X-Ray and Crystal Structure Laboratory, Penn. State Uni. 15/11/57.

Unit
10

Melbourne University Student Publications

1. "Cranks and Nuts" (Engineering Students Club)
1938
1939
1941
2. "The Science Review" (Science Club)
1937
1938
1939
1941
1945
3. "MUM" (SRC)
1947
4. "Dust" (Mildura Branch of the Melbourne University)
1947

Examination Papers

Unit 10

1. Examination Papers for Scholarships and Exhibitions in the Colleges of the University of Cambridge

Mathematics and Mechanical Sciences

Dec 1925 - March 1926
Dec 1927 - March 1928
Dec 1928 - March 1929
Dec 1929 - March 1930
Dec 1931 - March 1931
Dec 1931 - March 1932

2. Examination papers in Mathematics from various British Universities

University of Bristol 1933 & 1934

University of Glasgow 1934 & 1935

The Scottish Universities Entrance Board 1934 & 1935

The University of Wales 1936

The University College of South Wales & Monmouthshire 1935

3. University of Melbourne

Mathematics papers from 1923 to 1929 in sheets torn from a handbook

All the above examination papers were assembled by M.H. Belz

Engineering Mathematics Parts I, II, III and IV 1956 & 1957

With a greeting from Fred Syer

Engineering Mathematics Part III 1954

Engineering Mathematics Parts I, II, III and IV 1955

Documents Relating to Professional Societies

Unit 11

BOX
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Australian Mathematical Society

General Meetings

1956 15-18/7/56 Inaugural Meeting Melbourne
1957 Sydney
1958 Adelaide
1959 Perth
1960 Armidale
1961 Brisbane
1962 Sydney
1965 Hobart
1970 Melbourne
1971 Treasurer's Report+

Constitution Lists of Members and Publications

Rules, Constitutions of 1965 and 1974
Lists of Members 1972
(See also Gazette 1/4,1974: 3/4,1976: 6/4,1979)
Research Register 1958

Newsletters

1. 1957 Jan
2. 1957 Dec
4. 1959 Nov
5. 1960 Feb
7. 1960 Aug
8. 1960 Nov
9. 1961 May
10. 1961 Aug
11. 1962 Mar?
13. 1963 >Aug
14. 1963 <May
15. 1964 <May
17. 1965 <May
18. 1965 Oct
24. 1968 Jan
25. 1968 April
30. 1970 Aug

Reports of the Summer Research Institutes

2. 1962 Australian National University
3. 1963 Australian National University
4. 1964 University of Sydney
5. 1965 Australian National University
6. 1966 University of Melbourne
7. 1967 Australian National University
9. 1969 Australian National University
10. 1970 University of Tasmania
11. 1971 University of Sydney
12. 1972 University of New South Wales
1975 University of New South Wales

Statistical Society of Australia

AGM Victorian Branch

2 / 4/64 Inaugural meeting: Constitution
 27/ 4/65 Council members for 1965
 21/ 3/67 AGM :JKM elected to Council
 18/ 4/67 Council members for 1967
 26/ 3/68 AGM :JKM becomes Hon. Treasurer
 ? /69 Treasurer's Report only
 24/ 3/70 Treasurer's Report only
 23/ 3/71 AGM :JKM becomes President after R.Langley
 28/ 3/72 AGM :JKM gives Presidential Address
 "Exploratory Analysis of Data"
 27/ 3/73 AGM :JKM Immed. Past President to S.Maritz
 26/ 3/74 AGM :JKM Immediate Past President
 1975 - 1984 AGM meetings

Victorian Branch Council Minutes

1967	27: 16/3	28: 4/4	29: 23/5	30: 4/7	31: 25/7
	32: 15/8	33: 12/9	34: 24/10	35: 28/11	
1968	36: 27/2	37: 21/3			
1970	58: 12/8	59: 1/9		61: 27/10	62: 24/11
1971	63: 16/2	64: 23/3	65: 1/4	66: 15/4	67: 1/6
	68: 22/6	69: 27/7	70: 28/9	71: 12/10	72: 26/10
1972	73: 22/2	74: 2/5	75: 9/5	76: 30/5	77: 27/6
	78: 18/7	79: 1/8	Extraordinary Meeting 3/8		
	80: 26/9	81: 24/10	82: 5/12		
1973	83: 13/2		85: 17/4	86: 29/5	87: 26/6
	88: 24/7	89: 31/7	89: 4/9	90: 25/9	
	92: 30/10				
1974	93: 5/3	94: 26/3	95: 30/4		97: 25/6
	98: 30/7	99: 27/8			102: 25/3/75

Membership List for 1971

File on National Statistics Conferences

File on the aborted course for accountants

Central Council

Minutes & Annual Reports

1968	19/2/68	x
1969	11/2/69*	x
	27/8/69	
1970	3/3/70*	x
	26/8/70	
1971	25/2/71	x
	25/8/71*	
1972	18/2/72*	x
1973	23/2/73*	x
1974	1/3/74*	x

Unit 12

	M. H. Belz	Lectures	(correspondence & notices re - not texts)
1.			No record
2.	24/11/70	P.A.F. Moran	Maximum Likelihood Estimates under Anomalous Conditions
*3.	23/11/71	E.J. Williams	Whither Statistical Principles
*4.	28/11/72	J.B. Douglas	Contagion isn't Catching (MHB present)
5.	28/11/73	C.R. Heathcote	The Statistician & Nuclear Proliferation
*6.	26/11/74	P.J. Brockwell	Probability: Past and Present
7.	9/12/75	J. Gani	Some Aspects of the Development of Statistics in Australia
8.	23/11/76	P.D. Finch	On the Crude Analysis of Survivorship Data
9.	22/11/77	N.G. Becker	Models and Designs for Experiments with Mixtures
10.	28/11/78	G.A. Watterson	Testing for Selection in Genetic Evolution
*11.	27/11/79	J.S. Maritz	Standard Errors: Some Thoughts on an Old Problem
*12.	25/11/80	C.C. Heyde	Trends in the Statistical Sciences
*13.	24/11/81	E.J. Hanan	Is Theory Practically Useless
14.	22/ 6/82	G.S. Watson	Statistical Problems in the Earth Sciences
*15.	22/11/83	D.J. Daley	Ranking Individuals
16.	/11/84		

The Institute of Physics (London)

Proceedings of the Inaugural Meeting 27/4/1921
 Formation of the Australian Branch 27/ 8/24
 Notes on the Amalgamation of The Institute of Physics and
 The Physical Society 1/12/59

The Institute of Physics (Australian Branch)

General Meetings (Xerox of originals in Basser Library)

8: 18/ 8/33 9: 22/ 1/35 10: 28/ 5/36
 11: 22/ 8/39 This meeting was adjourned to 24/8 and
 again to 26/8 to draft a letter to the
 Prime Minister concerning the International situation
 and offering the co-operation of the Branch in
 directing physicists. Though not a member I believe
 I was present. In any case, Laby was a patriot and
 very emotional about it. On several occasions he
 exhorted us during lectures to support the war effort

12: 26/ 2/41 13: 25/ 2/42 14: 12/ 2/43 15: 8/ 2/44
 16: 5/ 7/44 17: 30/ 5/45 18: 7/11/45 19: 22/ 8/46
 20: 25/ 8/47 21: 14/ 1/49 22: 19/ 7/49 23: 24/ 5/51
 24: 22/ 8/52 25: 18/ 6/53 26: 16/ 1/54 27: 18/ 8/55
 28: 30/ 5/61 29: 12/ 6/62 30: 21/ 8/62 The final AGM

Minutes of the Inaugural Meeting of the Australian
 Institute of Physics 21/ 8/62

Annual Reports

Branch 1957,1958,1959,1960 & 1961,1962
 Vic. Div. for 1958,1959,1960 & 1961 AGM for 1961

List of Members for 1953

Australian Branch Committee Meetings (Xerox of originals)

30/11/43 9/ 2/44 9/ 5/44 4/ 7/44 6/12/44
 29/ 5/45 22/ 8/45 6/11/45 22/ 8/46 12/ 1/47
 22/ 8/47 16/ 4/48 9/12/48 Jan 49? 21/ 3/50
 21/ 2/51 The first discussion of an Australian body
 6/ 4/51 27/ 3/52 6/ 6/52 Opposition from Vic
 10/ 3 53 Ballot against independence 15/ 1/54
 18/ 3/54 18/ 8/55 4/ 6/ 57 Discussion of AIP again
 The Hon. Sec. J.C. Bower died suddenly on 12/ 8/57 and
 was replaced by JKM on 3/10/57
 14/11/58 Discussed membership qualifications and
 removal of the Branch to Sydney
 10/12/59 Membership qualifications again
 Formal removal to Sydney on 1/ 1/60
 1/ 5/61 Membership qualifications unsatisfactory
 for Australian conditions. AIP considered
 14/ 6/62 Discussion of the formation of AIP
 20/ 8/62 Meeting prior to the formation of AIP 21/8
 16/11/62 Winding up meeting
 Minutes of the first Council Meeting of AIP 16/11/62

Unit 13

Working Papers for the Branch Committee Meeting on 1/ 5/61
Includes files on
(a) Prohibition of Publication
(b) A proposed Australian Organization for Physicists
(c) Employment of Physicists
 Dep. of Labour & National Service Rep. Dec 60
 M.U. Appointments Board "Careers for Graduates
 No. 16 Physics" Oct 60

Australian Institute of Physics

I was Honorary Treasurer from the AGM on 27/ 2/69 to the
AGM on 10/ 2/77. The office transferred to Sydney
later in the year

Annual Reports and AGM Minutes

Folder containing a complete set of Annual Reports,
AGM Minutes and published reports of Council Mtgs
from No.1 1963 to No. 14 1976 inclusive

Index of Meeting Dates to C20 (18/ 5/72), E51 (25/ 7/72)
Policy & Procedure to C23 (1/11/73)

~~XXXX~~ Unit 13 Executive Minutes (First few pages only) E34 to E81
~~XX~~
E34: 12/11/68 My 1st meeting as Treasurer elect
E37: 16/ 4/69 My 1st meeting as Treasurer
E81: 30/11/76 My last as Treasurer?
Arrangements for transfer to Sydney

Unit 14 Council Minutes (C13: 3/10/68 to C29: 25/10/76)
Extracts relating to (odd numbered) Budget Meetings
and to subscription levels in general.

Financial Policies and Subscription rises

File relating to move from Melbourne to Sydney

Reports on the Employment of Physics

See also Working Papers for the IoP Branch Committee
Meeting on 1/ 5/61
List of Members for 1974

Second File on the Employment of Physicists

(contains inter alia)

Address by F.Argy (DLNS) to ANZAAS 18/ 8/69

Dep. of Labour Res. Study Paper No. 9 (July 1973)

Supply of, demand for and experience of Physicists

Professional Incomes (1970) by K.Gravell (MU Appts Bd)

Science and Technology in the Service of Society

Aust. Govt. White Paper 17/ 1/75

Physics in Australia (1/3/75) Committee on Overseas

Professional Qualifications

National Science Policies Australia (OECD Report 1973)

Also Box 14. CSIRAC input Tapes; Output tapes in small
metal canisters labeled "12 Hole CSIRAC Tapes".
Martensite ¹²Computation.

List continues on next page

Addendum to page 4:

Comment on the uncertainties of student life at Melbourne University in 1940

The war was in an uncertain state and it was rumoured first that the University might close and then that courses, particularly Medicine, would be run continuously without vacations so as to maximize output. As far as Honours Mathematics was concerned this meant that the Final Examinations were held with all the other Examinations in November at not as was customary in the following March. This threw all our plans for several months study into disarray and together with the general uncertainties of the times resulted, I believe, in a poorer performance than might otherwise have been expected. In any event, though I topped the year, I only achieved second class honours; I was disappointed in this result and so also, I believe, was my rival R.C.T. Smith

The war also affected my tenure of the Dixon Research Scholarship. There were two components: to do some research and to assist with tutoring in the department. The research component was delayed a year because I had to complete my BSc course. However, I did tutor in the department in 1941 while I was doing this. At the end of 1941 I was "manpowered" to do warwork in industry so the research was put into abeyance. Later in about 1946 I contacted ^{Mr} Cherry about the research and although he was a little luke warm he suggested that I might like to think about his current interest in eigenvalue expansions. However, as I was in Sydney while he was in Melbourne, we were somewhat disconnected and it all came to nothing since I took up a CSIR Studentship to study for a PhD at the University of Bristol. My relations with Cherry though in no way strained became thereafter vaguely distant. For example, when I asked him for support in a job application he pointed out that since I had only obtained second class honours he could not make as generous a recommendation as might otherwise be the case. Needless to say I let the matter rest. There were other examples which though trivial in themselves made me feel that I did not have his support.

Sundry Books and Pamphlets

Unit 16 Books

- (1) Technological Trends and National Policy 1937 Washington
Report of the subcommittee on technology to the
National Resources Committee
- (2) Introduction to the Laplace Transform J.C.Jaeger 1946
Original cyclostyled notes reproduced by CSIR
- (3) Elastic Creep Properties of Filamentous Materials and other
High Polymers H.Leaderman 1943 Textile Fondation: DC
- (4) British Universities S.C.Roberts 1947 Collins: London
- (5) The Radio Amateur's Handbook 1933 American Radio Relay
League: Conn

Unit 15 Government Reports

- (1) Social Insurance and Allied Services Sir William Beveridge
HMSO 1942
- (2) Working Conditions in the Civil Service Treasury Study Group
HMSO 1947
- (3) House Construction Post-War Building Studies No.1 HMSO 1944
- (4) Heating and Ventilation Post-War Building Studies No.19
HMSO 1945
- (5) Royal Commission on Population Report HMSO 1949
- (6) Post-War Reconstruction: A case for greater Commonwealth
Fowers Prepared for the Constitutional Convention
at Canberra 1942

Unit 16 Reports of Conferences

- (1) Abstracts of papers presented at the IUCR conference held
in Melbourne 19-23 August 1974 "Real Atoms in Crystals
- (2) Handbook for the same
- (3) Abstracts of papers presented at the IUCR conference held
in Melbourne 16-21 August 1965 "Electron Diffraction
- (4) The Teaching of Physics Melbourne August 1954 Vic Br IoP
- (5) Applications of Isotopes in Scientific Research Melbourne
August 1950 CSIRO & MU Chemistry Department
- (6) Vacuum Physics Symposium held in Birmingham June 1950 by IoP
- (7) Lectures by J.W.Mitchell on The Physics of the Solid State
at the University of Sydney Oct & Nov 1947

Unit 16 Professional Matters

- (1) Scientific and Tecnological Manpower: Supply and Demand in
Australia Academy of Science Canberra 1957
- (2) The Education and Training of Technologists IoP London 1948
- (3) Research in Industry O.W.Humphreys IoP (Aust Br) 1953
- (4) Mathematics in the Australian Universities J. Gani &
A.L. Blakers Reprint from Universities Quatrterly Feb '59
- (5) Observatories in Australia D.Ia. Martynov ANU 1965
Report of a Russian exchange visitor to Australia

Unit 16

Miscellaneous

- (1) A Report on the International Control of Atomic Energy
Prepared for the U.S. Secretary of State 1946
- (2) Science and Responsibility Sir David Rivett Delivered at
the 18th Annual Commencement Ceremony of the Canberra
University College 25/ 3/47
- (3) The Birth of the Nuclear Atom E.N.daC. Andrade Rutherford
Memorial Lecture in Melbourne 4/10/57
- (4) Chemical Progress Handbook of an Exhibition held at the
Science Museum July-September 1947
- (5) Handbook for the National Standards Laboratory Open Day
3-5 May 1961

- (6) Programming Manual for CSIRAC December 1956
- (7) Programming Manual for CSIRAC August 1959
- (8) Description of the Routines Available for use on CSIRAC
- (9) Programming examples from a computing course
- (10) Program tape for CSIRAC