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scientific research in British universities 1959-60

DEPARTMENT OF
SCIENTIFIC AND INDUSTRIAL RESEARCH

Scientific Research in British Universities 1959-60

LONDON
HER MAJESTY'S STATIONERY OFFICE
1960

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Introduction

THIS volume provides brief notes on scientific research in progress in British universities, university colleges and associated institutions during the academic year 1959-60. It describes the nature of the projects in sufficient detail to indicate the scope of the research done by the various science departments and individual teams of investigators.

The entries are arranged in alphabetical order of university, each university, college, or institution being numbered to facilitate reference according to the code listed on page vi-xii. The numbered sections within each organization are arranged alphabetically by subject. These headings may not necessarily coincide with the titles of administrative departments. In previous editions these headings were not uniform throughout, and an attempt to rectify this has been made in the 1959-60 edition. The work of each department or administrative group has been kept together as far as possible but has been entered under the appropriate conforming subject heading. Any special subject within a more general one has been made into a sub-section.

Alphabetical name and subject indexes are included. The numbers quoted in both indexes refer to the institution and subject concerned—in that order, e.g. 14-12, Leeds, Geography.

The head of each department is named together with members of the permanent staff actually engaged in supervising research. Temporary staff, or staff too junior to supervise research students are not mentioned; nor are the research students themselves. In previous editions the prefix "Dr." has been used where appropriate, but in the 1959–60 edition the appropriate initials are put after the name. Degrees other than doctorates are not included.

As in previous years the material has been collected by the British Council from the heads of the departments of the universities, colleges and institutions, which alone are responsibe for the entries. Publication continues to be sponsored by the Department of Scientific and Industrial Research under an arrangement with the British Council.

Department of Scientific and Industrial Research,
Charles House, 5–11 *Regent House*,
*London, S.W.*1
April 1960

List of Universities

Code No.		*Page*
1	**Aberdeen University** . . . . . Aberdeen, Scotland *Telephone:* Aberdeen 24367	1
2	**Belfast: Queen's University** . . . . . Belfast, Northern Ireland. *Telephone:* Belfast 30111.	7
3	**Birmingham University** . . . . . Edgbaston, Birmingham 15. *Telephone:* Selly Oak 1301	15
4	**Bristol University** . . . . . Bristol 8. *Telephone:* Bristol 24161	33
5	**Cambridge University** . . . . . Cambridge. *Telephone* Cambridge 54451	46
6	**Durham University** . . . . . 46, North Bailey, Durham. *Telephone:* Durham 3355-6	63
7	Durham Colleges	63
8	King's College, Newcastle upon Tyne.	65
9	**Edinburgh University** . . . . . Edinburgh, Scotland. *Telephone:* Edinburgh 41001	80
10	**Exeter University** . . . . . Exeter. *Telephone:* Exeter 74141	95
11	**Glasgow University** . . . . . Glasgow W.2., Scotland. *Telephone:* Glasgow. Kelvin 2231	97

Code No. *Page*

12 Glasgow: Royal College of Science and Technology . . . 111
George Street, Glasgow C.1.
Telephone: Bell 4400-9

13 Hull University 115
Hull, England.
Telephone: Hull 18960

14 Leeds University 117
Leeds 2.
Telephone: Leeds 31751

15 Leicester University 133
University Road, Leicester.
Telephone Leicester 24211

16 Liverpool University 135
Brownlow Hill, Liverpool 3.
Telephone: Royal 6022

17 Liverpool School of Tropical Medicine 147

London University
Senate House, London, W.C.1.
Telephone. Museum 8000

Colleges

18 Bedford College 148
Regent's Park, London, N.W.1.
Telephone: Welbeck 5743

19 Birkbeck College 150
Malet Street, London, W.C.1.
Telephone: Langham 7941

20 Imperial College 154
Prince Consort Road, London, S.W.7.
Telephone: Kensington 5111

21 King's College 171
Strand, London, W.C.2.
Telephone: Temple Bar 5454

Code No. *Page*

22 Queen Elizabeth College 175
61-67 Campden Hill Road, London, W.8.
Telephone: Western 3704

23 Queen Mary College 177
Mile End Road, London, E.1.
Telephone: Advance 4811

24 Royal Holloway College 181
Englefield Green, Surrey.
Telephone: Egham, 114, 414

25 Royal Veterinary College 182
Royal College Street, London, N.W.1.
Telephone: Euston 5321

26 School of Pharmacy 184
29-39 Brunswick Square, London, W.C.1.
Telephone. Terminus 7651

27 University College 185
Gower Street, London, W.C.1.
Telephone: Euston 7050

28 Westfield College 194
Kidderpore Avenue, London, N.W.3.
Telephone. Hampstead 7601

29 Wye College 194
Ashford, Kent.
Telephone: Wye 401

Medical Colleges Schools and Institutes

30 Charing Cross Hospital Medical School 196
62-65 Chandos Place, London, W.C.2.
Telephone: Temple Bar 0581-4

31 Guy's Hospital Medical School 198
St. Thomas's Street, London, S.E.1.
Telephone: Hop 3500

Code No. *Page*

32 Institute of Basic Medical Sciences 204
Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C.2.
Telephone: Holborn 3474

33 Institute of Cancer Research 205
Royal Cancer Hospital, Fulham Road, London, S.W.3.
Telephone: Flaxman 8171

34 Institute of Cardiology 209
35 Wimpole Street, London, W.1.
Telephone: Welbeck 1896

35 Institute of Child Health 209
The Hospital for Sick Children, Great Ormond Street, London, W.C.1.
Telephone. Holborn 2196

36 Institute of Dental Surgery 211
Eastman Dental Hospital, Gray's Inn Road, London, W.C.2.
Telephone: Terminus 7251

37 Institute of Dermatology 213
St. John's Hospital for Diseases of the Skin, Lisle Street, London, W.C.2.
Telephone: Gerrard 8383

38 Institute of Diseases of the Chest 214
Brompton Hospital, London, S.W.3.
Telephone: Flaxman 3707

39 Institute of Laryngology and Otology 214
Royal National Throat, Nose and Ear Hospital, Gray's Inn Road, London, W.C.1.
Telephone: Terminus 8855

40 Institute of Neurology 216
National Hospital, Queen Square, London, W.C.1.
Telephone: Terminus 3611

41 Institute of Obstetrics and Gynaecology 220
The Chelsea Hospital for Women, Dovehouse Street, London, S.W.3.
Telephone: Flaxman 9509

42 Institute of Ophthalmology 223
Judd Street, London, W.C.1.
Telephone: Euston 2543

Code No. *Page*

43 Institute of Orthopaedics 226
Royal National Orthopaedic Hospital, Great Portland Street, London, W.1.
Telephone: Euston 5070

44 Institute of Psychiatry 226
Maudsley Hospital, Denmark Hill, London, S.E.5.
Telephone: Rodney 6333

45 Institute of Urology 228
10 Henrietta Street, London, W.C.2.
Telephone: Temple Bar 5361

46 King's College Hospital Medical School 229
Denmark Hill, London, S.E.5.
Telephone: Brixton 1731, 5739

47 Lister Institute of Preventive Medicine 232
Chelsea Bridge Road, London, S.W.1.
Telephone: Sloane 2181

48 London Hospital Medical School 235
Turner Street, London, E.1.
Telephone: Bishopsgate 0644-8

49 London School of Hygiene and Tropical Medicine . . . 239
Keppel Street, London, W.C.1.
Telephone. Museum 3041 and Langham 7621

50 Middlesex Hospital Medical School 242
Mortimer Street, London, W.1.
Telephone: Museum 8333

51 Postgraduate Medical School of London 246
Ducane Road, London, W.12.
Telephone: Shepherd's Bush 2030

52 Royal Dental Hospital of London School of Dental Surgery 249
32 Leicester Square, London, W.C.2.
Telephone: Whitehall 6427

Code No. *Page*

53 Royal Free Hospital School of Medicine 250
Hunter Street, Brunswick Square, London, W.C.1.
Telephone: Terminus 5385

54 St. Bartholomew's Hospital Medical School 254
West Smithfield, London, E.C.1.
Telephone: Monarch 7404

55 St. George's Hospital Medical School 262
Hyde Park Corner, London, S.W.1.
Telephone: Sloane 1716

56 St. Mary's Hospital Medical School 264
Norfolk Place, London, W.2.
Telephone: Paddington 3612

57 St. Thomas's Hospital Medical School 268
Albert Embankment, London, S.E.1.
Telephone: Waterloo 5656, Exts. 23 and 356

58 University College Hospital Medical School 269
University Street, London, W.C.1.
Telephone: Euston 5861.

59 Westminster Medical School 272
Horseferry Road, London, S.W.1.
Telephone: Victoria 6041-2

60 **Manchester University** 273
Oxford Road, Manchester 13.
Telephone: Manchester, Ardwick 3333

61 Faculty of Technology 286

62 **North Staffordshire University College** 293
Keele, Staffordshire.
Telephone: Keele Park 371

63 **Nottingham University** 295
University Park, Nottingham.
Telephone: Nottingham 45511

64 **Oxford University** 302
Oxford.
Telephone: Oxford 48491

65 **Reading University** 317
Reading, Berkshire.
Telephone: Reading 81771

Code No. *Page*

66 National Institute for Research in Dairying 322
Shinfield, Reading.
Telephone: Reading 83103.

St. Andrews University
St. Andrews, Scotland.
Telephone: St. Andrews 1211

67 St. Salvator's College, St. Andrews 324

68 Queen's College, Dundee 327
Telephone: Dundee 3131.

69 **Sheffield University** 332
Sheffield 10.
Telephone: Sheffield 27451

70 **Southampton University** 334
Highfield, Southampton.
Telephone: Southampton 54011

University of Wales
University Registry,
Cathays Park,
Cardiff, Wales.
Telephone: Cardiff 22656-7

71 University College of Wales, Aberystwyth 348
Telephone: Aberystwyth 346-8

72 University College of Wales, Aberystwyth: Welsh Plant Breeding Station 351
Plas Gogerddan, Bow Street,
Aberystwyth.
Telephone: Bow Street 255-7.

73 University College of North Wales, Bangor 353
Telephone Bangor 2501

74 University College of South Wales and Monmouthshire, Cardiff 356
Cathays Park, Cardiff.
Telephone: Cardiff 20781

75 University College of Swansea 359
Singleton Park, Swansea.
Telephone: Swansea 56172

76 The Welsh National School of Medicine, Cardiff . . . 362
34 Newport Road, Cardiff.
Telephone: Cardiff 28434

Research Work in Universities

1 Aberdeen University

1. Agriculture

Professor J.R. Raeburn	No information this year
Agricultural Biochemistry:	
H.A. Robertson, Ph.D.	Endocrinology in relation to reproductive processes Purification and biological assay of pituitary hormones

2. Anatomy

Professor R.D. Lockhart, M.D.	Action of muscles Form and function of the foot
G.F. Hamilton	Anatomy of the larynx
J. McKenzie, M.D.	Anthropology of the N.E. of Scotland Structure and comparative anatomy of the central nervous system Structure and function of the peripheral extension of the autonomic nervous system Congenital abnormalities of head and neck and skeleton Congenital deaf-mutism The structure of the hair-bearing and non hair-bearing areas of the skin at different ages
D. Bulmer, M.D.	Development and histochemistry of female genital tract
A.D. Dickson, M.D.	Development of cardiovascular system Histochemistry of placentation

3. Biochemistry

Professor W.O. Kermack, F.R.S.	Complexes of metals with polypeptides Constituents and metabolism of invertebrate tissue
J.E. Fothergill, Ph.D.	Studies with antibodies and other proteins labelled with fluorescent tracers
J.W. Porteous, Ph.D.	Studies on invertase; purification and kinetics Culture and metabolism of *Actinomyces israeli*
P.T. Grant, Ph.D.	The intermediary metabolism of certain parasitic protozoa of mammals
J.L. Simkin, Ph.D.	Biosynthesis of proteins in mammalian tissues

4. Botany

Professor P.E. Weatherley	The uptake and redistribution of ions by roots Sieve tube translocation Soil: plant: atmosphere water relations
D.G. Downie, (Miss) Ph.D.	Mycorrhiza of orchids and nutrition of fungal symbionts
C.H. Gimingham, Ph.D.	Growth form of mosses in relation to habitat factors and other aspects of the ecology of mosses Ecology of heathland with special reference to *Calluna*
P.J. Faulks	Economic botany; biometry
J. Stirling, D.Sc.	Respiration of roots
D. Burns, Ph.D.	Cytoplasmic particles in root cells
F. Cusick, Ph.D.	Morphogenesis in flowers and developmental anatomy of woody stems •
N.M. Pritchard, D. Phil.	Taxonomic and biometric studies
A.H. Sommerville (Mrs.)	Flora of Kincardineshire

5. Chemistry

Inorganic and Physical:

Professor G.M. Burnett, Ph.D., D.Sc., and colleagues	Kinetics of polymerization and oxidation Solution properties of high polymers
P. Meares, Ph.D., D.Sc., and colleagues	Diffusion of ions through polyelectrolyte membranes Thermochemistry of ion exchange in resins Diffusion of gases through polymers in the transition region
H.F.W. Taylor, Ph.D., D.Sc., and colleagues	Chemistry and crystallography of calcium silicates Studies in the chemistry of cement
B.J. Aylett, Ph.D.	Derivatives of the silicon hydrides
D.C. McKean, D.Phil.	Infra-red spectroscopy of silicon and boron compounds
R.A. Chalmers, Ph.D.	Analytical chemistry
W.A.J. Bryce, Ph.D.	Polymer solutions and molecular weight measurements

Organic:

R.H. Thomson, D.Sc., Ph.D., and colleagues	The chemistry of natural and synthetic quinones. Free radical reactions in solution Chemical effects of hydrogen bonding
K.W. Bentley, D.Phil., and colleagues	Structural studies and synthesis of alkaloids, bacterial pigments, and extractives from certain medicinal plants of central and southern Africa The study of certain trans-annular reactions and oxidation processes The synthesis of new O: N heterocyclic systems
O.C. Musgrave, Ph.D., and colleagues	Organoboron chemistry: aromatic chemistry
D.R. Hogg, Ph.D., and colleagues	The chemistry of sulphenyl halides and related kinetic studies

6. Engineering

Professor J. Allen, D.Sc. G.A. Taylor, Ph.D. K.C. Imrie G.D. Matthew	Hydraulics: studies of open channel flow and of wave-motion; scale models of rivers, harbours, spillways and various features of hydro-electric projects
J.C. Grassie, D.Sc. E.J. Fair R.G. Smith A. Coull	Analytical and experimental studies of reinforced and prestressed concrete and of other structural members
H. Hampson W.M. Ogston	Heat transfer; condensation of vapours on tubes with extended surfaces
E. Wilkinson, Ph.D. A.M. Hardie, Ph.D.	Discharge over dielectric surfaces; instruments for measurement of symmetrical component quantities; servo-mechanisms; non-linear dynamical systems

7. Forestry

Professor H.M. Steven, C.B.E., Ph.D.	Silvicultural and ecological study of native pinewoods of Scotland
E.V. Laing, D.Sc.	Morphological variations of larch and other conifers
W.M. McNeill, M.B.E.	Natural regeneration studies
P.W. Davis	Costing investigations in private forestry
S.D. Richardson, D.Phil.	Tree physiology
J.W. Dinwoodie	Tracheid length in Sitka spruce

8. Geography

Professor A.C. O'Dell	Scotland; Scandinavia; geography of transport
K. Walton, Ph.D.	Pacific area; coastline geomorphology
R.E.H. Mellor	Europe and northern Asia; demography
A.S. Fraser	Northern Europe; air photography, soils

9. Geology

Professor T.C. Phemister, D.Sc., Ph.D., D. de l'Univ. W.E. Fraser, Ph.D. M. Munro, Ph.D. G. Downie	Application of experimental studies to the conditions determining physical and chemical equilibrium in crystalline rocks with special reference to the Scottish Highlands and Canada
A.K. Pringle	The geology and mineralogy of the Oil Shales Group, Midlothian Geophysical interpretation of sub-surface structures
G.M. Bennison	Variation in non-marine lamellibranch communities of Upper and Lower Carboniferous age
F.F. Tocher, Ph.D.	Petrology and structure of Dalradian rocks

10. History and Philosophy of Science

W.P.D.Wightman,Ph.D.	Science in the Renaissance William Cullen and the problem of combustion The library of Dr. Duncan Liddel (c. 1580-1612) History of the Royal Society

11. Mathematics

Professor E.M. Wright, D.Phil.	Theory of numbers Difference-differential equations Asymptotic expansions
H.S.A. Potter, D.Phil.	Abstract algebra
N.A. Bowen, Ph.D.	Power series Integral functions
E.M. Patterson, Ph.D.	Algebra
F.W. Ponting, Ph.D.	Algebra of matrices
A.J. White, Ph.D.	Multiple Fourier series
C.St.J.A. Nash Williams, Ph.D.	Theory of graphs
M.M. Robertson	Partition theory

12. Medicine

Professor H.W. Fullerton, M.D., and staff	Lipaemia and thrombosis Fibrinolysis Treatment of coronary thrombosis
K.N.V. Palmer, M.D.	Viscosity of bronchial secretion
M.Macleod	Renal function Hepatic and renal biopsy

13. Microbiology

Bacteriology :

Professor A. Macdonald, M.D.	Growth of viruses in tissue culture
R. Menzies	Epidemiology of *Erysipelothrix* infection
K.B. Fraser, M.D.	Genetics of influenza virus
M.G. McEntegart, M.D.	Fluorescent tracers in immunology
H.G. Smylie	Epidemiology of staphylococcal infection
A.M. Paton, Ph.D.	Bacterial diseases of plants
T.M. Bell	Adenovirus infection of tissue cells

14. Obstetrics and Gynaecology

Professor Sir D. Baird, K.B., M.D., Ll.D.	Epidemiology in obstetrics Causes and prevention of stillbirths and neonatal deaths
A.M. Thomson	Nutrition in pregnancy
I. MacGillivray, M.D.	Epidemiology of pre-eclampsia Hypertension in pregnancy Electrolytes and fluids in pre-eclampsia
*F.E. Hytten, Ph.D.	Physiology of pregnancy and lactation
*A. Klopper, Ph.D.	Endocrinology in obstetrics and gynaecology
*R. Illsley, Ph.D.	Sociology in obstetrics
*W.Z. Billewicz	Statistical aspects of obstetric medicine

15. Paediatrics and Child Health

Professor J. Craig	Incidence of disease in the N.E. region of Scotland
M.S. Fraser J. Wilks	Late results of anoxia ofthe newborn
N.S. Clark, M.D.	Bronchiectasis
W.H. Galloway	Late results of meningitis
H. Thom (Mrs.), Ph. D.	Liver function in the newborn
E. McKay	Amino acids in mental deficiency

16. Pathology

Professor J.S. Young, M.D.	Dissemination of malignant tumours with special reference to physical factors
A.L. Stalker	Immunological factors in the growth of the Brown-Pearce carcinoma of the rabbit The use of the Sandison-Clark ear chamber in investigation of spread of tumours
R.C. Nairn, M.D., Ph.D.	Fluorescent tracers in experimental pathology
A.W. Branwood, M.D.	Histochemical and enzymic studies of arterial intima in coronary atherosclerosis
H.G. Richmond	Experimental production of tumours of the reticulo-endothelial system

17. Pharmacology and Therapeutics

Professor A.G. Macgregor, M.D.	Therapeutic techniques in hyperthyroidism Electrolyte disorders in diabetes
J. Crooks, M.D.	Reference standards for total exchangeable body electrolytes Statistical techniques in the diagnosis of disease
T.M. Forrester	Mode of action and clinical use of diuretics

18. **Physics

Professor R.V. Jones, C.B., C.B.E., D.Phil.	Optics Infra-red spectroscopy Design Crystal growth
F. Ansbacher, Ph.D. A.H. McIlwraith, Ph.D.	Solid state physics
D.M. Finlayson, Ph.D.	Semi-conductors
H.D. Griffith T.J. Buchanan, Ph.D. D.D. Lindsay	Medical physics

*Obstetric Medicine Research Unit, Medical Research Council.

**In Scotland these departments use the title Natural Philosophy.

18. Physics (*continued*)

D.A. Jones, Ph.D.	Crystal growth
R.W.H.Stevenson,Ph.D.	
A. Duncanson	Crystal chemistry
S. Davidson, Ph.D.	
A.H.S. Holbourn, D.Phil.	Grating engine
P.T. Landsberg, Ph.D.	Rectifiers
	Statistical mechanics
C.W. McCombie, Ph.D.	Thermal fluctuations
J.C.S. Richards, Ph.D.	Electronics
	Radiation
T. Smith, Ph.D.	Magnetism
E.W. Elcock, Ph.D.	Order-disorder phenomena
C. Strachan, Ph.D.	Beta-radioactivity
A. Ward, Ph.D.	Fluorescence
A.E.M. Geddes, O.B.E., D.Sc.	Seismology

19. Physiology

Professor J.L. Malcolm	Conditioned reflexes and the electrical activity of the central nervous system in relationship to behaviour
	Pharmacology of the central nervous system
H.W. Kosterlitz, M.D., D.Sc.	
with R.K. Dutta, Ph.D.	Analysis of the peristaltic reflex in the isolated ileum
with D.W. Taylor, M.D.	Action of morphine on nervous transmission
D.W. Taylor, M.D.	Cardiac and respiratory effects of oxygen under high pressure
B.F. Matthews	Renal function in the pregnant rat
A.B. Cairnie, Ph.D.	Pharmacology of the central nervous system

20. Psychiatry

Professor W.M. Millar, M.D.	
G. Innes	Epidemiological studies of psychiatric breakdown in N.E. Scotland
*G. Sharp	
J.G. Henderson	Psycho-social investigation of delaying factors in cancer diagnosis
A.H.C. Sinclair-Gieben, M.D.	Psychological studies in peptic ulcer
	Studies in hypnosis

21. Psychology

Professor R. Knight	Motivation
	Applied (including occupational) psychology
A.E. Bursill	Psychoneurology of attentive processes in normal, stressful and pathological conditions
E.D. Fraser (Miss), Ph.D.	Model psychoses
	Personality factors in perception
	Child development and educational psychology
R.L. Reid	Perception
	Animal and human learning
J.R. Symons, Ph.D.	Psychophysiology of learning

*Grant from Nuffield Provincial Hospitals Trust.

22. Public Health and Social Medicine

Professor E.M. Backett I.M. Richardson, M.D., Ph.D.	A socio-medical follow-up study of hospital patients with special reference to the part played in recovery by the personal and social services
R.D. Weir	A medical and sociological sample survey of old people in N.E. Scotland Epidemiology of accidents—particularly road accidents Various studies in the epidemiology of chronic disease

23. Soil Science

J. Tinsley, Ph.D.	Studies of soil structure
J.R.H. Coutts, Ph.D.	Studies of moisture and temperature variations in soils
E.A. FitzPatrick, Ph.D.	The nature and properties of indurated soil horizons The effect of periglacial climate on soil formation The soluble silica content of soils and its relationship to other constituents Chemical composition of soil organic matter Biochemical aspects of the transformation of organic substances in soils
with the Department of Geography	Pedological factors affecting land utilization

24. Statistics

*D.J. Finney, Sc.D., F.R.S.	Experimental planning and design Theory of selection Maximum likelihood problems Biological assay Statistical genetics
W. Brass	Medical statistics Models of birth distributions for human populations Demographic statistics Fertility and mortality of human populations Distribution of characteristics in households
R.M. Cormack	Equilibria of genetic systems Biometric analysis Mathematical statistics
P.R. Fisk	Economic and econometric statistics Family budget analysis Estimation of parameters of demand curves
M.C. Pike	Mathematical statistics
*A.A. Rutherford	Agricultural experimentation and survey Statistical problems of milk Fertilizer use and requirements
*M.R. Sampford, D.Phil.	Design and analysis of experiments Grassland experimentation Animal feeding trials Truncated distributions Biological assay
*R.N. Curnow, Ph.D.	No information this year

25. Surgery

Professor W.C. Wilson	Blood clotting Biological actions of peptides
H.A.F. Dudley	Water and mineral metabolism
J. Kyle	Gastroenterology

*A.R.C. Unit of Statistics, Director Dr. Finney.

26. Zoology

Natural History:

Professor V.C. Wynne-Edwards	Vertebrate ecology
G.M. Dunnet, Ph.D.	Ecology
R.M. Neill, D.Sc.	Zoology of freshwater fishes History of zoology
J.R.T. Short, D.Phil., D.Sc.	Insect morphology
S. Symmons (Miss), Ph.D.	
C.M.M. Begg, Ph.D.	Nutritional requirements and gene expression in *Drosophila:* tissue culture
P.A. Orkin, Ph.D.	Physiology of fishes
B. Forman, Ph.D.	Regeneration in Coelenterata
L.L. de Kock (Mrs.), Ph.D.	Histology and cytology of the carotid body
D. Jenkins, D.Phil.	Ecology of the red grouse
A. Watson, Ph.D.	

2 Belfast—Queen's University

1. Agriculture

Agricultural Botany:

Professor P.A. Linehan, D.Sc.	Biology of plants of economic importance in improvement of grassland
H. Dales (Mrs.)	Methods of measuring output of plants under grazing conditions
J. Lowe	
R.H. Stewart	Yield measurement of grassland under controlled conditions of fertility and management Comparison of white clover with synthetic fertilizers as sources of plant nutrient nitrogen Maintenance of varietal purity in pedigree herbage seed production Enquiries into seed testing methods

Agricultural Chemistry:

Professor J. Houston, D.Sc.	Pedological studies and assessment of soil fertility levels in N. Ireland
K.L. Robinson	Fertilizer requirements of farm crops
S. McConaghy	Investigation of factors affecting the utilization of the major constituents in the diets of pigs and poultry with special reference to vitamins and hormones
J.S.V. McAllister, D.F.C., D.F.M.	
J.W. Jordan	Study of variations in composition of cow's milk
W.O. Brown, Ph.D.	
A.M. Raven, Ph.D.	
J.W.B. Stewart	

Agricultural Economics:

V. Liversage	Studies of financial results of N. Ireland farms and factors contributing thereto
J.C. McWhinney	

Agricultural Microbiology:

P. Clerkin	Microbiology of milk and milk products
J.G. Murray, Ph.D.	The flora of heat treated milk frozen and stored at low temperatures
J. Patton	
J.T. Patterson	Study of the factors affecting the manufacture of cultured milk Improvement in the techniques of washing and sterilizing milk bottles and farm dairy equipment

1. Agriculture (*continued*)

Agricultural Microbiology (*continued*)

P. Clerkin	The incidence of pathogenic serotype *Escherichia coli* in bottled pasteurized milk
J.G. Murray, Ph.D.	
J. Patton	Subclinical staphylococcal mastitis and its affect on the official tests for graded milk
J.T. Patterson (*continued*)	Manufacture of egg melange with reference to the bacteriological quality of the product through progressive stages of processing and storage
	Influence of nesting materials on the bacterial deterioration of eggs
	Studies of the mode of penetration of spoilage organisms through the shell and membrane
	Studies on the flora of bacon curing brines

Agricultural Zoology:

R. Chamberlain	Field and laboratory studies on the biology and economic importance of crop pests
R.J. Willis	
A.R. Edwards	Evaluation of the relative effectiveness of newly developed insecticides under N. Ireland conditions
	Investigations on plant parasitic nematodes with special reference to potato root eelworm

Comparative Pathology of Animals.

Professor H.G. Lamont, O.B.E., D.Sc.	Local and general immunity
	Desensitization
W.R. Kerr, Ph.D.	Skin reactions
J.K.L. Pearson, Ph.D.	Control of *Corynebacterium pyogenes* mastitis
D. Luke, Ph.D.	*E. coli* infections in pigs
W.A.M. Gordon	Diagnostic tests for Johne's disease
J.F. Gracey	*Salmonella* survey
J.T. Baxter	Pig housing investigation
	Brucellosis
	Parasitism and animal production
	Anaerobic disease in sheep

Crop and Animal Husbandry:

Professor J. Morrison	Pig breeding: heredity-environment interactions in the fattening of bacon pigs; the practical use of performance records in breeding an elite herd
R.W. Hale	
W.E. Coey, Ph.D.	
	Poultry breeding: genetic interactions and heredity-environment interactions in laying stock; the practical use of reciprocal recurrent selection
	Studies concerning nutrition and management of pigs and poultry for commercial production
	Studies of practical problems in the conservation of grassland herbage and green crops, and in drying and storage of grain
	Value of silage for winter feeding of cattle
	Intensive grazing of sheep
	Practical trials with selective weedkillers

Mycology and Plant Pathology:

Professor A.E. Muskett, O.B.E., D.Sc.	Investigations of seed-borne fungi which behave as crop parasites; control of crop diseases caused by seed-borne parasites; diseases of potato (blight, dry rot, virus diseases), flax (seedling blight, stem-break and browning, rust, wilt), fruit (apple scab, strawberry root rots and virus diseases), vegetables (club root of Brassicae), grasses (blind seed disease of ryegrass), rose diseases, dahlia diseases, diseases of glasshouse crops (tomato leaf mould), the fungus flora of N. Ireland
J. Colhoun, Ph.D., D.Sc.	
J.C. Taylor	
E.L. Calvert	
C.W.R. McCreary	
J.P. Malone, Ph.D.	

1. Agriculture (*continued*)

Plant Genetics and Plant Breeding:

E.V.B. Wilson (Head of Department)	Breeding studies of oats, grasses, and potatoes
D.J. Hodges	Methods of evaluating single plants and strains in herbage grasses
C.E. Wright, Ph.D.	Field and laboratory studies of methods of infection with disease organisms in *Lolium perenne*
K.G. Proudfoot	

2. Anaesthetics

J.W. Dundee, M.D., Ph.D.	Investigation of new intravenous anaesthetics
	Relief of chronic pain
R. King	Adrenocortical insufficiency
	New intravenous barbiturates
G.W. Black, M.D.	Cardiovascular effects of halothane

3. Anatomy

Professor J.J. Pritchard, D.M.	Bone growth and repair
	The foetal membranes
W.R.M. Morton, M.D.	Mammalian embryology
J.H. Scott, M.D., D.Sc.	Studies in facial growth and tooth eruption
	Classification of cranial and facial form
	Development of sterno-clavicular joint
	Developmental horizons in foetal jaws
	Studies in cleft palate
T.J. Harrison, M.D., Ph.D.	Growth of pelvis
J.B. Bridges, M.D.	Heterotopic bone formation
	Radiation biology

4. Biochemistry

Professor D.C. Harrison, D.Sc., Ph.D.	Enzymes and blood pigments
F.H. Malpress, Ph.D.	Intermediary metabolism in the mammary gland
I. Leslie, Ph.D.	Nucleoprotein synthesis and the changes in enzyme activity in cells growing under tissue culture conditions
D.T. Elmore, Ph.D.	Kinetic studies with proteolytic enzymes
	Synthesis of peptides
	Studies on antithyroid drugs

5. Botany

Professor J. Heslop-Harrison, Ph.D., D.Sc.	Experimental morphology and taxonomy of angiosperms; cytogenetics
R.E. Parker	Afforestation problems in N. Ireland
A.G. Smith, Ph.D.	Ecological and palynological studies of N. Irish bogs and archaeological sites
B.E.S. Gunning	Plant growth-substances and morphogenesis

6. Chemistry

Inorganic and Physical:

Professor C. Kemball, Ph.D.	Adsorption and catalysis
	Mass spectrometric studies of catalytic reactions
	Gas and vapour chromatography
Professor C.L. Wilson, D.Sc.	Structure and analytical behaviour of organometallic compounds
	Micro- and ultramicro-chemistry
	The inorganic and analytical chemistry of the less familiar elements

6. Chemistry (*continued*)

Inorganic and Physical (*continued*)

R.C. Pink, D.Sc.	Colloidal solutions in organic solvents Magnetochemical and dielectric studies
H.G. Heal, Ph.D.	Reactions in fused salts Chemistry of hydrides
F.A. Lewis, Ph.D.	Solid solution chemistry
H. Mackle, D.Phil.	Evaluations of bond strengths
R.J. Magee, Ph.D.	Radiation chemistry studies Ion-exchange separations employing radiochemical techniques Inorganic chromatography Tesla-luminescence spectra
A.D.E. Pullin, Ph.D.	Infra-red spectroscopy
M.W. Roberts, Ph.D.	Adsorption and surface chemistry
I. Woodward (Miss)	X-ray crystallography

Organic

Professor H.B. Henbest, D.Sc.	Reaction mechanisms and stereochemistry Oxidation reactions
R.G.R. Bacon, Ph.D.	Chemistry of organic sulphur compounds, including pseudohalogens Organic reactions and their mechanisms, and particularly oxidation and reduction processes
M.F. Grundon, Ph.D.	Studies in heterocyclic chemistry Structure and synthesis of alkaloids
C.J.M. Stirling, Ph.D.	Studies of intramolecular reactions

7. Dental Studies

Professor P.J. Stoy	Variations in the dentitions of monozygotic twins
W.A.S. Alldritt	The formation of the epithelial attachment and the effects on bone of various cutting instruments The structure of the epithelial attachment in the albino rat
P. Saunsbury	The value of induction heating in casting dental alloys
I.A. Findlay	Sound records of joint movement, in particular temporomandibular joint Electromyographic studies of the oro-facial musculature
C.P. Adams	Studies in the development of the dentition
J.D. Eccles	Tooth eruption
W.A.B. Brown	The relation of the oral soft tissues to the underlying bone An analysis of bone growth in cattle by means of metallic implants

8. Engineering

Aeronautical:

Professor A.V. Stephens	Simplification of manual control
T.R.F. Nonweiler	Stability and control of submarines Problem of atmospheric re-entry Behaviour of artificial satellites
J.L. Horne	The Coanda effect Ground effects upon V.T.O.L. aircraft

Civil:

Professor A.H. Naylor	Stability of filled embankments
W.G. Godden, Ph.D.	Buckling of straight and curved beams in bending and torsion Inelastic buckling of variable section columns Analysis of the Stabbogen arch

8. Engineering (*continued*)

Civil (*continued*)

D.M. McDowell, Ph.D.	Tidal streams in natural and artificial channels Pressure distribution due to flow over regular roughnesses Instrumentation for turbulence measurement in water Stability of radial flow
J.G. Stuart	The bearing capacity of pile groups Settlement studies of foundations in sand
M. Gurr	Programming the matrix force method

Light Electrical:

Professor T.P. Allen	Radio frequency-multipliers
J.M.W. McBride P.J.B. Clarricoats, Ph.D.	Investigation of the properties of microwave devices containing ferrites and dielectrics
W.D. Ryan	Transistor applications in radio astronomy

Mechanical

Professor B. Crossland, Ph.D. W.F.K. Kerr, Ph.D.	Strength of materials:—properties of materials under high ambient pressures, failure of thick walled cylinders subjected to internal pressure, effect of surface treatment on fatigue, cumulative fatigue, cavitation, erosion Design of equipment for high pressure service.
F.J. Wallace, Ph.D. J.M. Gilchrist	Effect of air flow pulsations on heat transfer coefficients of flow in pipes Pressure wave propagation in turbo-charging systems—pressure wave reflection characteristics of turbines

9. Geography

Professor E.E. Evans, D.Sc.	Folk studies Rural settlement Prehistoric archaelogy
N.C. Mitchel	Urban morphology, W. Africa Social geography
V.C.R. Ford	Land use in Uganda
N. Stephens	Coastal evolution and denudation chronology Peri-glacial and glacial phenomena Climatology and drainage (N. Ireland)
L.J. Symons, Ph.D.	Land use in N. Ireland Climatology of upland areas
R.H. Buchanan, Ph.D.	Rural settlement and technology
J.C. Cruickshank	Soils and glacial drifts in N. Ireland

10. Geology

Professor A. Williams	Lower Palaeozoic stratigraphy in Britain and Eire including the Arenig-Bala district, Anglesey, Loch Mask, County Down and Balbriggan regions S. Upland fault complex Brachiopoda
J. Preston, Ph.D.	Petrological and geochemical study of the dolerite plug, Slemish Mountain, Co. Antrim, and related Tertiary igneous rocks
W. Schwarzacher, Ph.D.	Stratigraphy of Carboniferous of Spitsbergen General sedimentary petrology including the Limestone facies of the Pennine and Irish Carboniferous
R.E.H. Reid	Cretaceous, Carbohiferous and Recent sponges Mesozoics of Ulster
R. Tavener-Smith	Sedimentary tectonics of Karroo system in Mid-Zambezi region of Rhodesia Visean Bryozoa of N.W. Ireland

10. Geology (*continued*)

K.A. Jones, Ph.D.	General structural petrology with particular reference to rocks of S.W. Highlands, Scotland
A.D. Wright	Ashgillian stratigraphy and faunas in Kildare, Portraine, Wales and Lake District Brachiopoda

11. Mathematics

Applied and Geophysics:

Professor D.R. Bates, D.Sc., F.R.S. A. Dalgarno, Ph.D. B.L. Moiseiwitsch, Ph.D.	The use of quantum mechanics in the determination of the properties of atoms and molecules and in the determination of reaction rates. The earth's upper atmosphere
E.B. Armstrong, Ph.D.	Observational work on airglow and aurorae Exploration of upper atmosphere using rocket-borne instruments

Engineering Mathematics:

S.C.R. Dennis, Ph.D.	Heat transfer in laminar motion through ducts
A.M. Arthurs, Ph.D.	Viscous fluid motion past cylinders and flat plates
A.McD. Mercer, Ph.D.	Stability of laminar motion through ducts Numerical methods of stress analysis Finite-difference methods of numerical analysis

Pure:

Professor S. Verblunsky, Ph.D.	Analysis
R. Cooper, Ph.D.	Analysis
D.C.J. Burgess, Ph.D.	Functional analysis

12. Medicine

Professor G.M. Bull, M.D., and others	Control of body water
R.A. Womersley, M.D.	Magnesium metabolism
M.G. McGeown, (Miss), M.D., Ph.D., and others	Studies on renal calculi and aspects of calcium metabolism
S.D. Roberts	Auto-immunal disease

Clinical:

Professor O.L. Wade P.C. Elmes, M.D.	Studies of pulmonary function and chronic pulmonary disease in man Physical properties of sputum Experimental bronchitis in rats

13. Microbiology

Bacteriology:

E.O. Bartley (Miss) M.D.	Hospital cross infection

Mycology:

D.W.R. Mackenzie, Ph.D.	Ringworm and its epidemiology

13. Microbiology (*continued*)

Virology:

Professor G.W.A. Dick, M.D., D.Sc.	Poliovirus vaccines Poliovirus vaccines and louping ill virus
D.S. Dane	Diagnostic techniques
J.R.L. Forsyth	Fluorescent antibody techniques
G.S.M. Murray	Enteric viruses of cattle
J.B. McFerran	Human enteric viruses
E.M. Briggs (Miss)	

14. Obstetrics and Gynaecology

Professor C.H.G. Macafee, with Professor J.H. Biggart, D.Sc.	Chorionepithelioma
H.L. Hardy Greer with T.J.M. Myles	Investigation into endometriosis
W.G. Millar	Electolyte studies in pre-eclampsia Investigation of pre-eclampsia
T.J.M. Myles with G. Harley	The relationship of body type to the development of pre-eclamptic toxaemia
G. Harley	Essential hypertension in pregnancy

15. Paediatrics and Child Health

Professor F.M.B. Allen, M.D., with I.J. Carre, D.Ch.	Gastro-oesophageal incompetence in children as a cause of clinical disturbances Investigation of possible causes of adverse reactions and death during exchange transfusion
with S. L. Campbell (Miss), M.D.	Studies of long-acting sulphonamides
with W.I. Forsythe and I. Wallace	Studies in enuresis, investigation, treatment and prognosis Pyelonephritis—relation to ascending infection incidence of pyelonephritis in infancy in relation to congenital urinary tract abnormalities: surgical procedures to prevent recurrent ascending urinary infections in children

16. Pathology

Professor J.H. Biggart, C.B.E., D.Sc., M.D.	Studies in neuropathology The pathology of old age
F. McKeown (Miss), M.D.	The mechanisms of formation of ascites Experimental hypothermia
J.B. Gibson, M.D.	Studies of vascular degeneration
J. Willis	Serological tests for cancer
J. Macafee	Congenital hearts
F. Vint	Experimental thyroid carcinoma Erythroblastosis

17. Physics

Professor K.G. Emeleus, Ph.D., Sc.D.	Spectroscopic and electronic research on gaseous conductors; quantal calculations
R.H. Sloane, D.Sc.	
C.S. Watt, Ph.D.	
A.L. Stewart, Ph.D.	
L.W. Kerr, Ph.D.	
G.S. Higginson, Ph.D.	

18. Physiology

Professor A.D.M. Greenfield, D.Sc.	Circulation in man Placental circulation
D.H. Strangeways (Miss), Ph.D.	Histological study of the effects of anoxia on the brain
I.C. Roddie, M.D.	Circulation in man
E.W. Clarke	Microcalorimetry
W.E. Glover D.A. Blair	Circulation in man

19. Psychiatry

J. Graham White, Ph.D.	A study of the effects of age on learning and memory in people of over 60, suffering from no known cerebral lesions The effects of personality and emotional stress upon peripheral blood supply (with Department of Physiology)

20. Psychology

Professor G. Seth, Ph.D.	Educational and clinical psychology Learning: reminiscence
P. McEwen, Ph.D.	Language in relation to psychiatric and neuropathological conditions
J.R. Beloff, Ph.D.	Personality: social conformity: introversion-extraversion
R.S. Rodger	Perception: figural after-effects Intellectual subnormality Child development, especially the development of language

21. Public Health and Social Medicine

J. Pemberton, M.D. G.C.R. Carey, M.D.	Air pollution in relation to respiratory disease
E.A. Cheeseman, Ph.D. S.J. Kilpatrick	Design and analysis of experiments and application of statistical methods in all fields of medical research
J.D. Merrett	The social class distribution of respiratory tuberculosis
P. Froggatt, M.D.	Investigation into accidents amongst bus drivers and investigation into short-term absenteeism in industry

22. Surgery

Professor H.W. Rodgers, O.B.E.	Liver disease with particular reference to portal hypertension
Professor R.B. Welbourn, M.D.	Results and metabolic effects of gastric operations
I.D.A. Johnston	Effects of the pituitary and adrenal glands on gastric secretion
D.M. Hancock	Hormonal aspects and treatment of metastatic carcinoma
A. McCalister	Adrenocortical disease and analysis of urinary steroids
J.B. Lowry	Leukoplakia of the tongue
R.M. Hackett	Auto-immune disease
A. Adesola R. Chenneour	Tissue transplantation with particular reference to the kidney
S. Martin	Effects of glucagon on gastric secretion

23. Technology

Chemical:

D. Hamer, Ph.D.	Nucleoprotein structure
E. Tyrrall	Cyclic polymers of formaldehyde
H.S. Blair	Interactions of amino-acids and ketones
	Synthesis and properties of acetylenic and sterically-hindered carboxylic acids
	Course of Perkin coumarin reaction
	Kinetics of polymerization of substituted olefines
	Entropy of vaporization
	Bonding of resins and cellulose
	Chemistry of peat wax

Textile Industries:

H.J. Dorman with J. Calvert	The frictional properties of textile materials
H.J. Dorman with F.W. Cox	The drying of wet spun flax yarns

24. Zoology

Professor R.A.R. Gresson, Ph.D., D.Sc.	Cytology of helminths
G. Williams	Marine ecology
R.V. Gotto	Parasitic Crustacea
E.M. Pantelouris, Ph.D.	Role of plasma proteins in the growth of tumours
	Studies on the nutrition of the mammalian foetus
A.W.C. Blackler, Ph.D.	Cytology of vertebrate gonocytes
A. Scott, Ph.D.	Osmoregulation and excretion in Crustacea
	Fauna of sandy beaches

3 Birmingham University

1. Anaesthetics

B.L.S. Murtagh	Anaesthesia for open-heart surgery
M. Green (Miss)	Use of halothane with nitrous oxide and oxygen in cystoscopy for outpatients
J.W. Woodward	Development of safe general anaesthesia for electrical pallidectomy (by stereoscopic techniques)
	Investigation into use of hypnosis in anaesthesia
J.McN. Inglis	Use of halothane/ether mixture with nitrous oxide and oxygen for general surgical procedures
	Role of halothane with nitrous oxide for outpatient dental anaesthesia
	Tests of explosibility of halothane/ether mixtures with nitrous oxide and oxygen
B.H. Smith	Evaluation of controlled respiration with negative phase in neurosurgery

2. Anatomy

Professor Sir S. Zuckerman, C.B., F.R.S. with E.H. Ashton, Ph.D.	The morphology and relationships of the Primates
with P. Eckstein, M.D.	Reproductive physiology of Primates and other mammals
with R.L. Holmes, Ph.D.	The control of pituitary function
with A.P.D. Thomson, M.B.E.	The environmental control of reproduction

2. Anatomy (*continued*)

A.M. Mandl (Miss), Ph.D.	X-irradiation and endocrine function of the gonads
S.H. Green	Quantitative aspects of gametogenesis
A.W. Rogers	Isotopic study of oogenesis
L.L. Franchi, Ph.D.	Ultrastructure and histochemistry of normal and atretic oocytes
A.Glass	Electroencephalography and neural function
Professor P.L. Krohn	The process of ageing especially in relation to the endocrine organs and the female reproductive tract The immunology of tissue transplantation
D. Darlington	Morphological factors in growth of the mammalian skull and biometrics
J.T. Eayrs, Ph.D., D.Sc.	The inter-relation of hormonal and neural factors in reproduction and in morphological and behavioural maturation
Sir F. Knowles, Bart., D.Phil.	Neuro secretion in invertebrates and vertebrates
F.P. Lisowski	Physical anthropology and biometrics
G.H. Thomas, Ph.D.	Steroid metabolism

3. Bacteriology

Professor J.F.D. Shrewsbury, M.D.	A study of the flora of human biliary and renal calculi A historical survey of certain microbial diseases of man in their epidemic manifestations, with special reference to their behaviour in England
N. Laughton (Miss), M.D.	An investigation into the presence of latent virus infections of the human vagina and cervix, and a study of *Corynebacterium cervicis*
K.A. Bisset, D.Sc.	The systematics of nitrogen-fixing bacteria, with special reference to fusiform bacilli, Actinomycetes and spiral bacteria
N.J. Cartwright, Ph.D.	Studies of metabolic pathways involved in the breakdown of aromatic nitro-compounds by bacteria, partly in relation to the survival in the soil of substances of this nature which are used in agriculture
M.B. Conran	A study of macrophages and skin cells in tissue culture, comprising time-lapse serial studies of pigmented and non-pigmented dendritic cells, and serial cultivation of cells from several sources, mainly skin
F.W. Moore	The utilization of organic compounds by soil bacteria. The nitrogen metabolism of anaerobic bacteria
P.E. Pease (Miss), Ph.D.	Electronmicroscopy of L-forms and gonidial forms in various bacteria and spirochaetes
M.H. Jeynes, Ph.D.	Studies of the properties and structures of bacterial subcellular forms, including the behaviour of these organisms in tissue culture, together with an investigation of *Eperythrozoon coccoides* in mice
G.H.G. Davis, Ph.D.	A study of the natural relationships of the oral filamentous bacteria

4. Biochemistry

Malting and Brewing:	
Professor S.V. Perry	Biochemistry of muscle and brain Certain aspects of nitrogen metabolism

4. Biochemistry *(continued)*

Malting and Brewing (continued)

F.W. Norris, D.Sc.	Microbiological assay of vitamins and amino acids in general Studies on vitamins B, particularly inositol, in the germination of cereals and pulses, in the processes of malting and brewing and in yeast
S. W. Challinor, D.Sc.	Metabolic studies on yeasts and bacteria when growing separately and in mixed culture The effects of nutritional deficiencies (in particular growth factor deficiencies) upon the metabolism of micro-organisms
C. Rainbow	The nutrition and metabolism of lactic acid bacteria and of brewers' yeast
R.G.O. Kekwick	Rubber latex proteins
D. Kulka (Miss)	Studies on a trisaccharide derived by enzymatic degradation from amylopectin β limit dextrin The mechanism of the antibacterial activities of humulone
R.N. Greenshields	The distribution, metabolism and enzymology of free saccharides and nitrogenous substances of *Phaseolus vulgaris* during germination

Medical

Professor A.C. Frazer, M.D., D.Sc.	Lipid absorption and metabolism Small intestinal physiology Composition of food and its effects on the body
with M. Sharratt	Effects of food additives and food processing Toxicology
with O.C. Forbes, Ph.D.	Functional, structural and ultrastructural changes in the tissues resulting from long-term toxicity, or from deficiency states
with J.H. Jones	Steatorrhoea and malabsorption syndrome Gluten-induced enteropathy (coeliac disease and idiopathic steatorrhoea) Tropical sprue Disorders of calcium and phosphorus metabolism Folic acid metabolism
R. Schneider, M.D.	Pharmacology of the gastrointestinal tract
with H.S.A. Sherratt, Ph.D.	Pharmacological studies on natural products of tropical origin
M.R.A. Chance, D.Sc., Ph.D.	Environmental factors in biological responses
J.B. Finean, D.Sc., Ph.D.	Ultrastructure of nerve myelin
with P.F. Millington	Electron microscope studies of the small intestine
H.G. Sammons, Ph.D.	The nature and origin of faecal fat Methodological development in clinical biochemistry
W.F.R. Pover, Ph.D.	Radio-isotope studies in lipid absorption and metabolism Radiobiology Development of isotopic methods in clinical biochemistry
J.N. Hawthorne, Ph.D.	Structure and metabolism of phosphatides
G. Hübscher, M.D., Ph.D.	Intracellular enzymes concerned in lipid metabolism Biosynthesis of glycerides and phosphatides

5. Botany

Professor J. Heslop-Harrison, Ph.D., D.Sc.	Experimental morphology and taxonomy of angiosperms; cytogenetics

5. Botany (*continued*)

C.J. Hickman, Ph.D.	Plant pathology and mycology; biological studies of plant pathogens
J.G. Hawkes, Ph.D., Sc.D.	Experimental taxonomy of wild potato species; serology in relation to taxonomy Revision of the flora of Warwickshire
L.W. Poel, Ph.D.	Carbon dioxide fixation by roots in relation to ion uptake. Soil aeration
C.E. Harrold, Ph.D.	Physiology of fungi with special reference to sporulation
S.W. Greene	Taxonomy, biology and ecology of bryophytes
D.B. Idle, Ph.D.	Periodic phenomena in extension growth
M.E. Davies, Ph.D.	Physiology of fungi with special reference to *Phytophthora* species
N. Montgomery (Miss), Ph.D.	Plant pathology; fungal attack on seedlings
G.M. Butler (Miss), Ph.D.	Mycology; interrelationship of hyphae in fungal strands

6. Chemistry

Analytical:

Professor M. Stacey, Ph.D., D.Sc., F.R.S.	
R. Belcher, Ph.D., D.Sc.	Micro-organic and inorganic analysis
W.I. Stephen, Ph.D.	Physical methods in analytical chemistry
T.S. West, Ph.D.	Sub-micro analysis
A. MacDonald (Miss), Ph.D.	Organic reagents for metals Halogen analysis

Biological and Bacterial:

Professor M. Stacey, Ph.D., D.Sc., F.R.S.	
A.S. Jones, Ph.D., D.Sc.	Chemistry in relation to medicine, with specific reference to cancer, tuberculosis, pneumonia, blood transfusions, etc. General chemistry and biochemistry of micro-organisms and enzymes Bacterial polysaccharides Radiochemistry
M.H. Benn, Ph.D.	Radiation chemistry Immuno-chemistry

Inorganic:

R.D. Peacock, Ph.D.	Fluorine compounds
F.W. Pinkard	Chemistry of the rare metals Organo-metallics Atomic structures

Organic:

Professor M. Stacey, Ph.D., D.Sc., F.R.S.	Fundamental chemistry of the carbohydrates, with special reference to their structure, function and synthesis
Professor J.C. Tatlow, Ph.D., D.Sc.	Transformation of sugars and starches into products of use in general synthesis
S.A. Barker, Ph.D., D.Sc.	The effects of γ radiations
A.B. Foster, Ph.D., D.Sc.	Chemistry of proteins and mucoproteins
E.J. Forbes, D.Phil.	Organic fluorine compounds
R. Stephens, Ph.D.	Sterols in relation to new products of therapeutic value
C.R. Patrick, Ph.D.	Heterocyclic compounds

6. Chemistry (*continued*)

Organic (*continued*)

G.H. Whitham, Ph.D.	Alkaloids
K. Morgan, D.Phil.	Organic reactions
J.D. Hobson, Ph.D.	Iodine compounds
J. Webber, Ph.D.	Natural polymers
N. Rogers, D.Phil.	
A. Wormell, Ph.D.	

Physical:

Professor J.C. Robb, D.Sc.	Mechanism and kinetics of reactions in the gas phase and liquid phase: reactions of excited molecules, oxidation reactions, polymerization reactions, electrode reactions.
P.E. Allen, Ph.D.	
J. Bevington, D.Sc.	Use of physical techniques such as mass spectrometry,
G.A. Gilbert, Ph.D.	radioactive tracer methods, electron magnetic reson-
B.G. Gowenlock, Ph.D.	ance spectroscopy
R. Lehrle, Ph.D.	Molecular size and structure of synthetic and natural poly-
J.R. Majer, Ph.D.	mers using osmometry, light scattering, electrophoresis.
F.W. Peaker, Ph.D.	Biosynthesis studies
J.E.B. Randles, D.Sc.	Molecular structure by X-ray diffraction: infra-red, mic-
J. Sheridan, D.Sc.	rowave and nuclear magnetic resonance spectroscopy
R.W.H. Small, Ph.D.	
L.F. Thomas, Ph.D.	

7. Dental Studies

Clinical Surgery:

Professor A.B. MacGregor, M.D.	A clinical and histological investigation into the penetration of fissures of the teeth by different types of foodstuffs
	Bacteriological study of the results of conservative treatment of dental caries
	The blood supply of the gingival tissues
Professor A.B. MacGregor with E.A. Marsland, Ph.D., I. Whitehead and D.A. Sidaway (Miss)	Histological and bacteriological investigation of carious softening of the dentine
J.L. Hardwick, Ph.D.	A study of fluoride absorption on the surface of the enamel, using radioactive isotopes
D.S. Shovelton	A survey of the bacteriology of the infected root canal
D.S. Shovelton with E.A. Marsland, Ph.D.	The effects of high speed cavity preparation on the dental pulp
E.C. Fox, M.D.	The nerve supply of the gingival tissues. Silicosis in the oral cavity

Pathology:

E.A. Marsland, Ph.D.	The histopathology of enamel caries using different optical systems to study normal and carious occlusal fissures
	The structure of normal human enamel with particular reference to the distribution and composition of enamel lamellae in unerupted teeth
	The peripheral innervation of the oral soft tissues
	An investigation into the effect of high speed cavity preparation on the human dental pulp

7. Dental Studies (*continued*)

Pathology (*continued*)

S.L. Rowles, Ph.D.	Biochemistry of saliva and dental calculus in man Investigation of chemical changes in dental enamel associated with the early stages of caries
M.E. Corbett	The reaction of the dental pulp to caries with special reference to the formation of secondary dentine

Prosthetics:

Professor J. Osborne	Cine-radiographic assessment of temporo-mandibular movement
T.C. Graty	Assessment of different melting methods on the structure of chromium cobalt alloys
H.R. Tomlin	Aesthetics in full dentures Production of chrome-cobalt alloys by alumino-thermic reactions

8. Endocrinology

Clinical:

A.C. Crooke, M.D. (Director of Department) W.R. Butt, Ph.D. P.S. Brown F.J. Cunningham	The development of new assay techniques especially for the gonadotrophic substances in urine Their application to patients in various physiological and pathological states and their use in biochemical investigations of the gonadotrophins The study of physicochemical and immunological properties of urinary gonadotrophins The development of new techniques for the measurement of steroid hormones and their clinical application

9. Engineering

Chemical:

Professor F.H. Garner, O.B.E., Ph.D.	Entrainment in evaporators
F.M. Mohtadi, Ph.D.	Mechanism of filtration of fine dust particles
K.E. Porter	Combustion mechanism of fuels in diesel engines
M.H. Cardew, Ph.D.	Diffusion from solid spheres in free and forced convection Diffusion from drops with reference to vortices present both inside the drop and in the wake Mass transfer from bubbles in the presence of surface active agents Diffusion from bubble and droplet streams Surface ageing, in the presence of surface active agents Diffusion from drops suspended in gas streams Diffusion from horizontal surfaces Liquid diffusivities
Professor S.R.M. Ellis, Ph.D.	Vapour-liquid equilibria for binary and ternary systems at atmospheric, reduced and high pressure
P.E. Barker L. Miskin	Plate efficiency, foam formation and holdup studies for Oldershaw, sieve and bubble cap trays
M.H. Cardew, Ph.D.	Mass transfer in " spraypak " and in wire-mesh packed columns Spinning band, brush and horizontal vacuum distillation units Sieve tray and mixer settler liquid-liquid extraction apparatus Entrainment in evaporators Hydrazine-oxygen reaction
P.E. Barker	Continous chromatography columns

9. Engineering (*continued*)

Chemical (*continued*)

W.M. Crooks T.R. Bott	Catalytic ozonic oxidation of hydrocarbons and other compounds
H.W. Gilmour	Combined miscible flooding
R. Long, Ph.D.	Vapour phase oxidation of hydrocarbons "Hydrocracking" of hydrocarbons in gas production Equilibrium of carbon dioxide and hydrogen sulphide in potassium carbonate solutions Rates of absorption of carbon dioxide and hydrogen sulphide in carbonate solutions under pressure Hydrocracking of cresols and xylenols Carbon formation in flames
C.W. Nutt, Ph.D.	Heat transfer to gases in packed beds Froth flotation P.V.T. determinations on mixtures of ethylene, propane and carbon dioxide Reaction of hydrocarbons with atomic oxygen.
N. Blakebrough, Ph.D.	Scale-up of electrophoresis Agitation and aeration in submerged fermentation Biological oxidation of phenol Measurement of heats of fermentation
S.H. Bransom, Ph.D.	Continuous crystallization Dynamics of fluidization Catalytic oxidation of hydrocarbons Flame spectra
W.H. Husband, Ph.D.	Adsorption equilibria
E.J. Charles, Ph.D.	Corrosion of titanium
C.R. Porter, Ph.D.	Synthesis and properties of cyclopentane derivatives
J.S.M. Botterill, Ph.D.	Mechanism of heat transfer in fluidized beds Dynamics of gaseous fluidized systems
R.W. Snell	Three-phase relative permeabilities in porous media
D.R. Oliver, Ph.D.	Heat transfer to non-Newtonian fluids
G.V. Jeffreys	Batch-operated solvent extraction
J.W. Carter	Transport of vapours in adsorbents
M.B. King, Ph.D.	P.V.T. and phase relationships of condensed gases Mass transfer over a flat gas/liquid interface Phase equilibria of aqueous systems

Civil:

Professor S.C. Redshaw	Structural: experimental investigation of the strength of ship brackets and web corners Electrical analogies: Solution of problems concerning flexure and extension of plates Solution of temperature and thermal stress equations Stresses in slab/column bridges Analysis of stresses in arch dams Solution of certain problems in fluid motion concerning aircraft wings
with Professor J. Kolbuszewski and G.C-Y. Hu	Measurement of pressures in soils under flexible pavements
Professor J. Kolbuszewski	Deposition and vibration of sand Bearing capacity of pile groups in sand Influence of particle shape on mechanical properties of sand Mechanics of beach sands

9. Engineering (*continued*)

Civil (*continued*)

T.K. Chaplin	Consolidation test: edge losses in large and standard sizes of sample, and electrical analogy of soil with secondary consolidation
F.D. Hobbs, B.D. Richardson and R.F. Will	Research associated with route locations, traffic engineering, road construction and surface water drainage
I.T.S. Essery	Hydraulics: problems concerned with air entrainment in siphons
T.H. Richards	Elasticity: experimental and theoretical determination of stresses in plates subjected to flexure and extension including the moire method of analysis Elasticity and fluid motion: solution of problems in elasticity and fluid motion by means of electrical analogies
J.B. Dwight	Strength of rivetted and bolted alumiuium tension members Tests on model girders
G. Brock, Ph.D.	Models for investigating reinforced and prestressed concrete structures
R.F. Wills	Sedimentation of sewage: investigation of flow distribution in a full scale rectangular sedimentation tank, and associated model tests

Electrical

Professor D.G. Tucker, D.Sc. with V.G. Welsby, Ph.D.	Electronic scanning in radio and acoustic echo-ranging systems Directivity problems of arrays Spectrum of underwater acoustic reverberation
Professor D.G. Tucker, D.Sc. with J.M. Layton D.P. Howson	Circuits with time-varying parameters (modulators, etc.)
D.A. Bell, Ph.D.	Electromagnetic machines Noise in valves and semi-conductors Bandwidth compression in television Automatic recognition of printed characters Data processing
J.T. Allanson	Properties of neural networks Synthesis of electrical networks Microwave radar systems Psychological acoustics
J.C. Cluley	Electronic digital and analogue computers
J.W.R. Griffiths, Ph.D.	Detection of pulse signals in noise on visual displays Synchronous detection of A.M. signals
J.G. Henderson	Transfer function of an industrial process determined from statistical input and output data Losses in end-windings of machines Stabilization of ship-borne equipment
L. Kay	Ultrasonic testing of materials
J.M. Layton	Automatic control systems
E.E. Ward, Ph.D.	Transistor circuits
G.T. Wright, Ph.D.	Electric breakdown in liquid dielectrics Solid state devices Ferro-electric heater
J. Hudson	Field studies with electrolytic tank

Engineering Production:

Professor N.A. Dudley	Work measurement: paced and unpaced work

9. Engineering (*continued*)

Engineering Production (*continued*)

W.G. Ainslie	Production planning
F. Benson, Ph.D.	Machine interference (mathematical study of congestion problems in industry)
E.N. Corlett	Machine tool control
F. Edmondson	Pre-determined motion times
H. Grisbrook	Precision grinding Horizontal milling
K.B. Haley	Linear programming

Mechanical

Professor S.A. Tobias, D.Sc.	
Professor F.K. Bannister, Ph.D.	Wave-action in gases
E.H. Wright	Application of wave-action to charging and scavenging of two-stroke engines
B.M. Cole, Ph.D.	Application of Archimedian screw to amphibious propulsion
J.W. Railly, Ph.D.	Fluid flow in axial turbo-machinery
J. Mannam, Ph.D.	Hydraulic lock
W. Carnegie, Ph.D.	Vibration characteristics of pre-twisted turbine and compressor blading
B. Mills, Ph.D.	Electrical analogies of systems in mechanical vibration
J. Patterson, Ph.D.	Tip leakage in multi-lobe displacement type air-motors
S.V. Hayes	Photoelastic investigation of stresses in elliptic pressure vessels

10. Genetics

Professor K. Mather, C.B.E., F.R.S.	Organization, properties and analysisof polygenic systems
*J.L. Jinks, Ph.D.	Heritable variation in wild fungi
B. John, Ph.D.	Chromosome variation in wild and cultured populations
*R.M. Jones	Mathematical aspects of biometrical genetics
*M.J. Lawrence, Ph.D.	Biometrical genetics
L.G. Wigan	Variation in *Drosophila*

11. Geography

Professor D.L. Linton, D.Sc.	Aspects of glacial morphology and landscape evolution in Great Britain The geomorphology of Graham Land and South Shetlands Regional contributions to world population growth
R.A. Donkin, Ph.D.	The contribution of the Cistercians to the geography of England and Wales in the 12th and 13th centuries The Spanish phase of the historical geography of California
B.L.C. Johnson	Agricultural geography of E. Pakistan Regional geography of Monsoon Asia
I.E. Jones	Settlement studies in Radnorshire
W.B. Morgan, Ph.D.	Geography of W. Africa
M.B. Stedman	The urban geography of Birmingham and the W. Midland conurbation The printed maps of Birmingham

* Members of the A.R.C. Unit of Biometrical Genetics.

11. Geography (*continued*)

E.T. Stringer, Ph.D.	Climatology and hydrology of the W. Midlands Atmospheric circulation patterns in relation to the weather and climate of the British Isles
P.D. Tilley, Ph.D.	The brickearths of S.E. England: their possible loessic origin Soil variations in the Börde of the Lower Rhine Embayment
H. Thorpe, Ph.D.	The growth and function of Warwick The historical geography of Warwickshire
G.T. Warwick, M.B.E., Ph.D.	Geomorphology of limestone regions and caves Ice caves and cave ice Geomorphological studies in S. Devon and the W. Midlands

12. Geology

Professor F.W. Shotton, M.B.E., F.R.S.	Stratigraphical:
R.J. Adie, Ph.D. D.J. Blundell, Ph.D.	The succession and structure of the Borrowdale Volcanics and Skiddaw Slates around Ullswater (Lake District)
G.R. Coope P.A. Garrett	Stratigraphy of the Hagshaw Hills (Scotland) and Blawith (Lake District) areas of Silurian rocks
D.H. Griffiths, Ph.D. W.G. Hardie	The classification and correlation of the Ludlovian rocks of Britain and the mainland of Europe
R.F. King, Ph.D. E.D. Lacy	Directional features in the Ludlovian sediments of south-central Wales
J.D. Lawson, Ph.D. F. Moseley, Ph.D.	Stratigraphy of the Carboniferous rocks of the Sykes anticline, Bowland
I. Strachan, Ph.D.	The stratigraphy and structure of the Permo-Carboniferous and Triassic rocks of W. Spitsbergen The Pleistocene sequence of the Avon/Tame watershed and the Tame valley
	Palaeontological: Phyllocarid Crustacea from the Silurian of Scotland The morphology of *Eurypterus fischeri* from the Silurian rocks of Ösel Cyrtograptidae and Retiolitidae from Britain and Central Europe Structure and organization of British Coal Measure scorpions Pleistocene insects from numerous localities in England Macroscopic plant remains and pollen from the Pleistocene of the Midlands
	Petrological: Theoretical studies upon alumino-silicate glasses and melts The effect of water on the physical properties of purified igneous glasses The behaviour in nature of melts of granitic composition The petrology of the Land's End granite aureole Dolerite intrusions of the Midlands The petrology of the Glencoe fault intrusion Field relations of the Water Swallows basalt (Derbyshire) The sedimentary petrology of the Downton Castle sandstone The pebble orientation of Pleistocene gravels in the Tame valley The petrology of prehistoric stone axes from the W. Midlands and the Peak District

12. Geology (*continued*)

Professor F.W. Shotton, M.B.E., F.R.S.	Geophysical:
R.J. Adie, Ph.D.	The remanent magnetism and susceptibility anisotropy of recent sediments and of certain metamorphic and igneous rocks from Scotland and Ireland
D.J. Blundell, Ph.D.	
G.R. Coope	The remanent magnetism of igneous rocks from the Falkland Islands Dependencies
P.A. Garrett	
D.H. Griffiths, Ph.D.	The geological structure of the Abberley and Malvern Hills using gravity, magnetic and seismic methods
W.G. Hardie	
R.F. King, Ph.D.	Falkland Islands Dependencies Survey:
E.D. Lacy	Petrological and structural studies on Deception Island and Anvers Island
J.D. Lawson Ph.D.	
F. Moseley, Ph.D.	The geology of the Graham, Danco and Loubet Coasts
I. Strachan, Ph.D. (*continued*)	Glaciological observations at South Georgia during the International Geophysical Year

13. Mathematics

Pure:

Professor P.J. Hilton, D.Phil., Ph.D.	Algebraic topology Homological algebra
Professor H.E. Daniels, Ph.D.	Stochastic processes Approximation techniques
B. Kuttner, Ph.D.	Summability
G.C. Shephard, Ph.D.	Convex bodies Polytopes
S.J. Taylor, Ph.D.	Measure theory
H.P. Rogosinski	Integral equations Moment problems
D.M.G. Wishart	Theory of queues and related problems
D.E. Cohen, D.Phil.	Algebraic topology

14. Medicine

Professor W.M. Arnott, T.D., M.D.	Cardiorespiratory function in health and disease, in particular the haemodynamics of adaptation to exercise in normals and in those suffering from cardiac diseases
J.M. Bishop, M.D.	
P.C. Harris, Ph.D., M.D.	Peripheral vascular adjustments to exercise
S.H. Taylor	Changes in haemodynamics after mitral valvotomy and other operations on the heart and aorta
L.A.G. Davidson	
G. Cumming, Ph.D.	The blood flow to exercising limbs in health and disease
	Lactic acid production during exercise in health and disease
	Effect of acetyl choline on the haemodynamics of the pulmonary circulation and on ventilation/perfusion ratios
	Temperatures in various parts of the body under varying circumstances in health and disease
	Development of electrochemical methods of measuring O_2 and CO_2 tensions in blood
	Measurement of various components of respiratory work in health and disease
W.T. Cooke, M.D.	Intestinal function in health and disease, in particular, the biochemical abnormalities associated with disease of the small intestine, e.g. idiopathic steatorrhoea, regional ileitis and jejunitis
J.M. French, Ph.D., M.D.	
C.F. Hawkins, M.D.	
W.C. Crane	
A.C. Crooke, M.D.	Development of techniques for the assay of gonadotrophic substances in urine and the application of these in various physiological and pathological states

14. Medicine (*continued*)

A.C. Crooke, M.D. (*continued*)	The study of physicochemical and immunological properties of urinary gonadotrophins
A.G.W. Whitfield, M.D. J.N.M. Chalmers, M.D.	The prophylaxis of recurrent myocardial infraction by anticoagulants

15. Metallurgy

Industrial:

Professor E.C. Rollason, Ph.D.	Gas absorption in arc welding Kinetics of reactions in arc atmospheres
D.V. Wilson, Ph.D.	Solid phase bonding of metals
V. Kondic, Ph.D.	The arc melting of metals
M.G. Cockcroft, Ph.D.	Pressure welding of metals
T. Broom, Ph.D.	The vacuum brazing of metals
J. Wilcock, Ph.D.	Study of graphites during solidification and annealing
D.R. Milner	Mechanical properties of sand cast grey iron Gases in liquid metals Feeding of ingots The strain-ageing of mild steel Influence of strain-ageing on deep drawing properties Hot working of metals Warm working of steel Working of hexagonal metals The hardening and softening of metals by fatigue Fatigue and fracture phenomena in light alloys Fatigue damage in high-strength light alloys Fatigue processes in high-strength light alloys Fatigue of single crystals Fatigue of strain-ageing alloys Crystal growth in electrodeposited copper Electron microscope study of electrodeposited surfaces Electrode potential measurements on single crystals of copper Crystal growth on single crystals of zinc

Physical:

Professor G.V. Raynor, F.R.S.	The theory of alloy formation, and of the structures of intermediate phases and intermetallic compounds
Professor A.D. McQuillan, Ph.D.	Physical metallurgy of titanium The physical properties of the titanium-hydrogen system Study of the physical and alloying properties of the early transition elements
T. Wright, Ph.D.	The kinetics of the recrystallization of metals and alloys
W.T. Pell-Walpole, D.Sc.	Fundamental factors affecting the properties and development of new tin-base alloys
R.W. Cahn, Ph.D.	Recrystallization, deformation and twinning in metals X-ray and metallographic investigation of ordering and precipitation in Fe-Al alloys
S.G. Glover, Ph.D.	The decomposition of austenite and martensite by metallographic, resistometric and magnetic methods with special reference to the thermal stabilization of austenite
J.D. Eshelby, Ph.D.	Interaction of lattice defects; theory of internal strains in crystals, and of fundamental deformation processes
J.N. Pratt, Ph.D.	Measurement of activities, free-energies and heats of formation in metallic systems by electromotive force and vapour-pressure methods

15. Metallurgy (*continued*)

Physical (*continued*)

G. Bullock, Ph.D.	Investigation of interactions between solute metals in complex alloys by specific heat measurements of ordering processes
	Study of early transition metals
D.J. Evans, Ph.D.	Factors affecting thermal expansion coefficients in metals and alloys
R.E. Smallman, Ph.D.	Study of fundamental factors involved in the deformation of metals and alloys
R.W. Smith, Ph.D.	Study of solid-state transformations in non-ferrous metals and alloys
J.A. Brown	Thermodynamic properties of metals and alloys
A.T. Aldred	Measurement of vapour pressures of metals and alloys
D.W. Jones	Magnetic susceptibilities of alloys of the early transition metals
L.M. Brown	Imperfections in ionic and metallic crystals

16. Microbiology

Professor D.G. Catcheside, D.Sc., F.R.S.	Genetics and cytology of micro-organisms, particularly *Neurospora*
	Genetical organization of biochemical function
J.W. Hopton, Ph.D.	Adaptive enzyme systems
R.B. Drysdale	Biochemical genetics of yeasts

Bacteriology:

See Bacteriology

17. Mining

Professor S.G. Ward	Properties of suspensions
J.K.L. Graham	Sedimentation
B.B.B. Burrows	Methane emission from coals
W.G. Thomas	Impact breakage of rocks and mechanism of rock breakdown
G.F. Eveson, Ph.D.	
N.G.T. Ludlow	Dust precipitation
A.J.W. Rozelaar	Coal cleaning
R.B. Hoole	Close gravity fractionation of coals and coal petrography
G.J. Lawson, Ph.D.	Froth flotation of coals
R.D. Hartley, Ph.D.	Flocculation and filtration
	Mineral dressing
	Contact and frictional electrification of dielectrics and of coals
	Contact potentials of coals
	Incendivity of sparks
	Chemical constitution of coal and humic acids
	Oxidation of coal

18. Neurosurgery

Professor B. Hughes	Enzyme activity and amino acid excretion in the cerebrospinal fluid after surgical and traumatic injury
	An electroencephalographic and biochemical investigation into states of unconsciousness
	Stereotaxic lesions in the globus pallidus for involuntary movements including an investigation into the use of ultra-sound for producing lesions in the brain
E.A. Turner	The treatment of psychomotor epilepsy by bilateral temporal lobotomy
	The mechanism of feed-back systems from cortex to reticular substance in the Rhesus monkey

19. Obstetrics and Gynaecology

Professor H.C. McLaren, M.D.	The value of radioactive isotopes in the treatment of uterine bleeding
	Fascial slings for female stress incontinence
	The value of cytology in the early diagnosis of cancer
C.W. Taylor M.E. Taylor (Miss)	An assay of the value of ring biopsy in therapy in carcinoma *in situ*
M.J.D. Noble M.E. Attwood (Miss)	Detection of cancer in diabetics
C.W. Taylor	Mesenchymal tumours of the ovary
E.M. Little	Cell culture studies in relation to carcinoma *in situ* and related pathology
	Study of the lymph drainage of the vulva using radioactive isotopes as tracers
A.C. Cooke, M.D.	Researches in clinical endocrinology
A. Butt	Assessment of gonadotrophin hormones in the urine
B.M.W. Dobbie (Mrs.)	The evaluation of radium therapy in genital cancer
M. Sim, M.D.	The prognosis of psychological disorders in childbirth
W.G. Mills	The treatment of ovarian cancer

20. Otolaryngology

W. Stirk Adams	Factors responsible for chronicity in middle ear disease and mastoid infection, and the aetiology of cholesteatosis of the mastoid
	The transverse dimensions of the nasopharynx at various ages
	The evaluation of clinical tests in the diagnosis of the site and nature of different lesions responsible for facial paralysis
A.J. Moffett, T.D.	The clinical problems of malignant disease of the accessory nasal sinuses, and of larynx and pharynx
R.S. Strang	The clinical problems of otolaryngology and the evaluation of surgical measures for the relief of deafness by fenestration
	The problems of upper respiratory tract infections and their relation to the allergic response of the nasal mucosa
N.L. Crabtree	The clinical assessment of audiological patterns in the selection of cases for the operative treatment of deafness
	The problems of aural vertigo and the otological diagnosis of lesions affecting the function of the eighth cranial nerve
	The aetiology and ascertainment of deafness in children, and the development of communication by maximal use of residual hearing

21. Paediatrics and Child Health

D.V. Hubble, M.D.	Endocrine disease in childhood
	Cocliac disease
	Adolescence
O.H. Wolff, M.D.	Serum lipoproteins
	Diabetes
	Vitamin D-resistant rickets
B.D. Bower, M.D.	Convulsive disorders in infancy and childhood
	Electroencephalography
J.K. Lloyd (Miss)	Diabetes
	Obesity
C.G. Parsons, M.D.	Congenital heart disease

21. Paediatrics and Child Health (*continued*)

A.L. d'Abreu, O.B.E.	Congenital heart disease
R. Astley, M.D.	Cine-angiocardiography
K.B. Rogers, M.D.	Cross infection in hospital
A.H. Cameron, M.D.	Congenital heart and respiratory disease
V.M. Crosse (Miss), O.B.E., M.D.	Prematurity
A. Innes, M.B.E.	Cerebral palsy
N.L. Crabtree	Hearing defects in early childhood
B.S.B. Wood, D.M.	Neurological disorders in childhood
H.M. Cohen, M.D.	Statutory and voluntary services
P. Jameson Evans, M.D.	Ocular signs of metabolic disease in children
K.D. Roberts	Tracheo-oesophageal fistula
H.B. Salt	Electrophoretic separation of proteins, lipoproteins and protein-bound carbohydrate

22. Pathology

Professor J.W. Orr	Morbid anatomy of disease processes Histogenesis of cancer Experimental carcinogenesis, with special reference to skin, breast, ovary and liver
D.B. Brewer, M.D.	Pathology of thyroid gland Vascular changes in lungs in pulmonary hypertension Polarization microscopy of reticulin and collagen
C.W. Taylor	Pathology of ovarian tumours Histological control of radiotherapy of cervix uteri
W.T. Smith, M.D.	Neuropathology. Effects of tumour dissemination on the central nervous system. Angiomata and other vascular abnormalities of the central nervous system
R. Lannigan, M.D.	Histopathology of myocardium; changes seen in stenotic valvular lesions Experimental study of nephritis
*D.L. Woodhouse, Ph.D.	Experimental carcinogenesis. Chemotherapy of cancer. Relative activity of carcinogenic oils and their fractions Chemistry of nucleoproteins
B.T. Davis	Tumours of upper respiratory tract and ear Amyloid goitre
J.B.W. Halley	Testicular tumours
D.A. Heath, M.D., Ph.D.	Cardiorespiratory pathology
*J.S. Howell, M.D.	Chemical carcinogenesis, with special reference to liver, breast and ovary
D.J. Parish	Problems of cardiac and mammary pathology
H.A. Ellis	Effects of sulphated polysaccharides on body fluids and tissues
S.C. Dyke, D.M.	Histology of cancer
A.H. Cameron, M.D.	Paediatric pathology
*J. Marchant (Miss) Ph.D.	Experimental carcinogenesis of skin and ovary Skin grafting Tumour studies in homozygous mice
*C.E. Searle, Ph.D.	Biochemistry of cancer
A.T. Spencer	Experimental carcinogenesis

Experimental:

Professor J.R. Squire, M.D.	Allergic diseases, biochemistry and physiology of skin Metabolic studies of renal and hepatic disease

*Supported by the Birmingham Committee of the British Empire Cancer Campaign

22. Pathology (*continued*)

Experimental (*continued*)

P.G.H. Gell	Experimental basis of types of hypersensitivity reaction Immunochemical analysis of serum and tissue proteins including use of fluorescent antibodies
K.W. Walton, M.D., Ph.D.	Plasma protein changes in disease, especially in fibrinogen, anti-haemophilic globulin, complement, iso-agglutinins, glycoproteins and lipoproteins
J. Hardwicke, M.D.	Diagnosis, pathogenesis and control of nephrotic syndrome; renal glomerular changes in relation to proteinuria and response to steroid therapy
D.S. Rowe	Combination of haemoglobin and haem pigments with plasma proteins. Colloid osmotic pressure and ultrafiltration studies
J.F. Soothill	Immunochemical and other studies of renal and metabolic diseases, including hypogammaglobulinaemia
D.R. Stanworth, Ph.D.	Ultracentrifugal studies on macroglobulins and other abnormal serum proteins Physicochemical studies of horse-dandruff allergen-antibody system
*J.D. Blainey, M.D.	Metabolic studies particularly in renal disease and amino-acid disorders
P.W. Dykes	Protein metabolism and distribution using I^{131}-labelled albumin and gamma-globulin
D. Felix-Davies, M.D.	Serological and plasma protein changes in rheumatoid arthritis
G. Leyton, M.D.	Indoles in urine and mental disorders
D.R. Campbell (Mrs.)	Metabolic problems related to glaucoma and retinitis pigmentosa
†C.N.D. Cruickshank, M.D.	Metabolic and cytological studies of skin tissue cultures
†M.D. Trotter, Ph.D.	Antigenic polysaccharides of dermatophytic fungi
†S.R. Wood	Studies on *Trichophytin* sensitivity
‡J.P. Bull, M.D.	Mortality of burns
‡J.W.L. Davies, Ph.D. ‡E.J.L. Lowbury, M.D.	Transfusion of plasma and protein fractions, turn-over studies with I^{131}-labelled proteins
‡C.R. Ricketts, Ph.D.	Dextrans and poly-electrolyte derivatives Epidemiology and effects of infection of burns and wounds; operating theatre hygiene Skin metabolism in relation to drugs, deoxy sugars, toxins and thermal damage
E. Topley (Miss), M.D. W. Weiner, M.D.	Anaemia of burns Blood transfusion problems Haemolytic and haemorrhagic diseases

23. Physics

Professor P.B. Moon, F.R.S.
Professor W.E. Burcham, F.R.S.

*Supported by the Clinical Research Board

†Members of the Medical Research Council Unit (Research on the Experimental Pathology of the Skin)

‡Members of the Medical Research Council Burns and Industrial Injuries Research Unit

23. Physics (*continued*)

J.H. Fremlin, D.Sc. G.W. Hutchinson, Ph.D. L. Riddiford, Ph.D. G.W. Greenlees, Ph.D. and other members of staff	Nuclear physics, including the acceleration of particles to high energies with cyclotrons and a 1000 MeV proton synchrotron
J. Walker, Ph.D.	Nuclear reactor physics
M.C. Johnson, D.Sc.	Astrophysics, including the study of sunspots
K.A. Macfadyen	Breakdown in liquid dielectrics
K.F. Chackett, Ph.D.	Radiochemistry
P.J. Black, Ph.D.	Structure of liquid metals
J.W. Glen, Ph.D.	Glaciology
Electron Physics:	
Professor J. Sayers with G.R. Court	Ionization phenomena in gases with particular reference to the ionosphere and gas filled electrical devices Mass spectrograph analysis of gas discharge afterglows Electron and ionic collision cross sections
G.F. Alfrey, D.Phil.	Semiconductors of wide band gap, particularly compounds with the zinc blende crystal structure. Radiative recombination and luminescence in semiconductors. The application of luminescence to the study of dislocations and other crystal defects
Professor J. Sayers with E.C. MacKenzie	Investigation of the electrical properties of the high atmosphere by means of automatic recording instruments carried up in rockets
Mathematical:	
Professor R.E. Peierls, C.B.E., D.Phil., F.R.S.	Theory of nuclei Theory of solids including superconductivity
with G.E. Brown, D.Sc., Ph.D.	Statistical mechanics Field theory and mesons
L. Castillejo	High-energy physics
G.V. Chester, Ph.D.	Relativistic electron theory
J.G. Valatin, D.Ing., D.Sc.	
J.B. Woodward Ph.D.	

24. Physiology

Professor H.P. Gilding	Blood tissue, fluid and lymph exchange
M.E. Nutt (Miss), Ph.D.	Haematology
J.A. Barclay	Renal function in health and disease
K. Hall (Miss), Ph.D.	Endocrine control of mammalian pelvis
I.C. Whitfield, Ph.D. H.G. Clarke	Transmission of auditory impulses
E.J. Hamley, Ph.D.	Effects of ionic imbalance on cardiac activity
H. Asher	Physiology of vision
W.V. Thorpe, Ph.D. H.G. Bray, Ph.D. S. James (Mrs.), Ph.D. K. White, Ph.D.	Metabolism of foreign organic compounds
E.H.L. Harries, Ph.D.	Gastric secretion
H.A. Salmon	Cytochrome C and anaemia
K. Brown-Grant, M.D.	Physiology of thyroid gland
J.D. Cumming	Bone marrow physiology
A.L. Haigh, Ph.D.	Muscle blood flow

25. Psychiatry

Experimental:

P.B. Bradley, D.Sc. (Head of Department)	Electrophysiological studies of the action of drugs on the central nervous system. The effects of drugs on the electroencephalogram in man
G.B. Ansell, Ph.D.	The effects of drugs on brain phospholipid metabolism *in vivo*
A.J. Hance, Ph.D.	The effects of drugs on conduction within specific and non-specific pathways in the brain
*B.J. Key, Ph.D.	The effects of drugs on conditioned responses in animals

26. Public Health and Social Medicine

Professor T. McKeown, Ph.D., D.Phil., M.D.	The aetiology of congenital malformations
R.G. Record, Ph.D., M.D.	Reproduction: observations related to the menstrual cycle, pregnancy, lactation and obesity
C.R. Lowe, Ph.D., M.D.	Growth and development: the influence of inheritance and environment on pre-natal and post-natal growth
J.M. Mackintosh (Miss), C.B.E., M.D.	Epidemiology of tuberculosis
I.M. Leck	Evaluation of medical achievement through consideration of the death rate and population growth
	The design of contemporary medical services
	Medical fitness in relation to age

27. Statistics

Medical:

Professor L. Hogben, F.R.S.	Statistical theory
	Linguistic analysis of taxonomic problems
J.A.H. Waterhouse, Ph.D.	Twins and twinning
	Human genetics
	Cancer statistics
	Analysis of animal behaviour patterns
K.W. Cross, Ph.D.	Mental health statistics
	Hospital morbidity statistics
	Design and analysis of medical documents
R.F. Wrighton, Ph.D.	Statistical theory

28. Surgery

Professor F.A.R. Stammers, C.B.E., T.D.	Studies on post-gastrectomy syndromes
	Carcinoma of stomach
	Stenosing cholangitis
	Peripheral arterial disease
B.N. Brooke	The intestinal granulomata
	The surgical management of ulcerative colitis
	Ileostomy chemistry
with G. Slaney	Portal bacteriology and chemistry
G. Slaney	Experimental intestinal granulomata
	Arterial surgery
G.T. Watts	Wound healing
	Collagen in surgery
F. Ashton	The treatment of surgical heart block
	The bundle of His
D. Oakland	Exfoliative cytology of the large bowel
G.H. Baines	Transplantation of ureters
with P. Dawson-Edwards and D. Oakland	An assessment of serum calcium and phosphorus levels in nephro-lithiasis

* Member of the Medical Research Council Neuropharmacology Research Group.

29. Zoology

Professor O.E. Lowenstein, D.Phil., Ph.D., D.Sc., F.R.S.	Comparative physiology of the central nervous system and sense organs
R.W. Murray, D.Phil.	
L.H. Finlayson, Ph.D.	Developmental physiology of insects
J. Llewellyn, Ph.D.	Helminthology
B. Manley (Miss), Ph.D.	Low-temperature adaptation in mammals
J. Cohen, Ph.D.	Development and pigmentation of hair
F.J. Pepper (Miss), Ph.D.	Physiology of mammalian skin, and immunity to tissue transplants
W.T.W. Potts, Ph.D.	Salt and water balance in invertebrates
W.B. Yapp	Bird ecology
D.H. Paul, Ph.D.	Muscle physiology

4 Bristol University

1. Agriculture

Agricultural Economics:

BRISTOL I PROVINCE

C.V. Dawe, O.B.E., Ph.D.	Special local surveys
R.R. Jeffrey	Economics of sheep rearing
G.F.C. Mitchell	Survey of Mid Somerset
V. Baker T.E. Godsell	Efficiency standards in farm management
S.R. Wragg	Economics of beef production
W.J.G. Cowie A.K. Giles	Accommodation of farm workers
E.B. Fekete, LL.D.	Production and marketing of fruit and vegetables in the Vale of Evesham
L.J. Hewett	Analysis and interpretation of farm accounting data

BRISTOL II PROVINCE

S.T. Morris (Head of Department)	Farm management and organization—a continuing study of farm organization in eight "type of farming" areas
V.H. Beynon H.W.B. Luxton J.E. Harrison	Studies in farm planning; a detailed investigation into farm organization and planning on certain selected successful farms in Devon and Dorset
G.D.D. Davies J.A. Langley	A continuing economic survey of a group of horticultural holdings
E.T. Davies	The economics of certain farm enterprises
H.M. Cole (Miss)	Farm mechanization – the economics of tractor operation
R.C. Rickard	Study of farm finance and capital investment
W.J. Dunford	An economic and social study of a poor land problem area in N. Devon
	Methodology in measuring efficiency of resources used for farm management advisory purposes
	Investigation into economics of milk production in the south west with special reference to the use of grass and grassland products
	The production and utilization of grass and grass products in the economy of south west farming
	Scale in farming with particular reference to the problems of small farms

1. Agriculture (*continued*)

Agricultural Economics (*continued*)

AGRICULTURAL AND HORTICULTURAL RESEARCH STATION, LONG ASHTON

Professor H.G.H. Kearns, O.B.E., Ph.D.	
C. Bould, Ph.D.	Nutrition of fruit crops:
R.A. Webb, D.Phil.	Traceelements in fruit crops
D.G. Hill-Cottingham, Ph.D.	Nitrogen metabolism of fruit crops
E.J. Hewit, Ph.D.	Mineral nutrition of higher plants:
A.J. Abbott	Micro-element nutrition of excised tissues
D.J.D. Nicholas, D.Sc., Ph.D.	Nitrogen metabolism of micro-organisms: Nitrifying organisms
J.A. Anderson, Ph.D.	
H.E. Davenport, Ph.D.	Enzymes of higher plants in relation to photosynthesis
L.C. Luckwill, Ph.D.	Pomology and fruit breeding:
D.L. Abbott	Plant physiology; growth-substances
R.R. Williams	Cider and perry fruit growing
D. Wilson, Ph.D.	Breeding of cider-apples, currants and rootstocks
B.A. Rake (Miss)	Gooseberry culture
E.W. Hobbis, M.B.E.	Plantations management
J.T. Martin, D.Sc., Ph.D.	Chemistry of insecticides and fungicides:
D. Woodcock, D.Sc., Ph.D.	Organic chemistry
W.D.E. Thomas, Ph.D.	Physical chemistry
E.J. Skerrett, Ph.D.	Analytical methods
E. Somers, Ph.D.	Mode of action of fungicides
C.P. Lloyd-Jones	Use of radioactive tracers
Professor H.G.H. Kearns, O.B.E., Ph.D.	Fruit pest control:
S.H. Bennett, Ph.D.	Biology and ecology of insect pests
N.G. Morgan, Ph.D.	Techniques of spray application
A. Stringer	Insect ecology and physiology
C.G.L. Furmidge, Ph.D.	Physical chemistry of spray materials
H.R. Mapother	Spray materials for tropical crops
T.E. Cobbald	Spraying techniques
R.W. Marsh	Fruit disease control:
R.J.W. Byrde, Ph.D.	Bio-assay of fungicides
A.T.K. Corke, Ph.D.	Perennation of fruit-disease fungi
A. Pollard, Ph.D.	Cider, perry and fruit juices:
G.C. Whiting, Ph.D.	Biochemistry of fermentation
F.W. Beech, Ph.D.	Microbiology of cider yeasts
L.F. Burroughs, Ph.D.	Chemistry of fermentation
M.E. Kieser (Miss)	Chemistry of fruit juices
J.G. Carr, Ph.D.	Microbiology of cider bacteria
C.F. Timberlake, Ph.D.	Metallic complexes in fruit products
A.H. Williams	Organic constituents of plants
B.A. Crang (Miss)	Nutritional and microbiological aspects of the domestic preservation of fruit, vegetables, meat and poultry
M. Leach (Miss)	
K.G. Stott	Culture, utilization, pests and diseases of basket and cricket bat willows
G.M. Clarke	Statistics: design and analysis of experiments

2. Anaesthetics

J. Clutton-Brock (Head of Department)	Application of electroencephalography to anaesthesia The effect of anaesthesia on the significance of sensory stimuli
G.W. Burton	Autonomic activity during anaesthesia
J.H. Challenger	Nerve block in the treatment of intractable pain

3. Anatomy

Professor J.M. Yoffey, M.D.	Quantitative studies of blood formation, and factors controlling it
W.K. Metcalf	Studies of blood cells by special microscopic techniques
G. Hudson	Volume of bone marrow and factors which may influence it
D.G. Osmond	Studies of the circulation in the bone marrow

4. Botany

Professor E.W. Yemm, D.Phil.	Metabolism of amino-acids and proteins in plants
L.E. Hawker (Miss), D.Sc.	Physiology of fungi. The hypogaeous fungi
J.F. Hope-Simpson, D.Phil.	Ecology of the vegetation of chalk and limestone soils
B.F. Folkes, Ph.D.	Respiration in plants and micro-organisms Plant biochemistry
A.J. Willis, Ph.D.	Physiology of stomata Physiological ecology of sand dunes
F.E. Round, Ph.D.	Freshwater algae and limnology
L.C. Frost, Ph.D.	Cytology and genetics including genetics of micro-organisms
M.J. Carlile, Ph.D.	Effects of light on the growth and physiology of fungi

5. Chemistry

Biological:

Professor W. Baker, D.Sc., F.R.S. (a joint school under the auspices of the departments named)	
Professor E.W. Yemm, D.Phil. (Botany) B.F. Folkes, Ph.D. (Botany)	Nitrogen metabolism in plants; plant respiration and Pasteur effect
C.A. Ashford, Ph.D. (Physiology)	Respiratory pigments
S.J. Bach, Ph.D. (Physiology)	Intermediate protein metabolism; enzyme studies
A.R. Battersby, Ph.D. (Organic Chemistry)	Biogenesis of alkaloids
A. Coupen, Ph.D. (Physical Chemistry)	Hydrogen-activating enzymes and absorption of water by proteins
L. Hough, Ph.D. (Organic Chemistry)	Carbohydrate biochemistry
J.A. Kitching, Sc.D., Ph.D. (Zoology)	Osmotic and ionic relations of living cells and animals (including tracer work), effects of high hydrostatic pressure on cells, physiology of protozoa

Inorganic and Physical

Professor D.H. Everett, M.B.E.	Thermodynamics of hydrocarbon solutions and of aqueous solutions, especially of polar organic molecules Thermodynamics of acid-base equilibria Sorption of gases by solids and the structure of porous solids Surface tension of solids General study of hysteresis phenomena

5. Chemistry (*continued*)

Inorganic and Physical (*continued*)

F.H. Pollard, D.Sc. with P. Woodward, E.W. Abel, Ph.D. G. Nickless Ph.D.	Binary compounds of metals with carbon, boron, silicon, sulphur and phosphorus formed at high temperature Application of X-ray and other physical methods to structural and analytical problems of inorganic co-ordination compounds and inorganic polymers Organo-metallic compounds Paper, ion-exchange and gas chromatographic studies in the chemistry of sulphur, nitrogen and phosphorus
W.J. Dunning, M.B.E., Ph.D.	Mass spectrometric studies of intermediates in chemical reactions, and of bond energies Nucleation and rates of growth of crystals
E.B. Maxted, D.Sc., Ph.D.	Activation and poisoning of metallic hydrogenation catalysts
K.W. Dunning (Mrs.), Ph.D.	Heat of formation of metallic complexes Kinetics of deposition of crystals from the vapour onto surfaces Homogeneous hydrogenation reactions
R.C. Seymour	Spectrophotometric studies of the kinetics of gas phase reactions Structure and energy of surface oxides of carbon Adsorption of vapours on ionic solids
A. Couper, Ph.D.	Hydrogen-activating enzymes Heterogeneous hydrogen peroxide decomposition and isotope exchange reactions Adsorption and diffusion of polymers at metal-solution interfaces
F.S. Stone, Ph.D.	Adsorption and catalysis on metallic oxides Measurement of heats of adsorption, semi-conductivity and magnetic susceptibility Solid reactions
N.S. Hush, D.Sc.	Kinetics of electrode processes Spectra of hydrocarbon ions Electronic structure of inorganic complexes
R. Parsons, Ph.D.	Electrode processes Adsorption of ions at metal-solution interfaces Electrochemistry of solutions
T.H.K. Barron, D.Phil.	Theory of thermodynamic and vibrational properties of crystals
A.J.B. Cruickshank	Thermodynamics of solutions Precision calorimetry Studies of thermometric control systems Thermodynamics of gas chromatography
A.J. Leadbetter, Ph.D.	Thermodynamic and vibrational properties of solids

Organic:

Professor W. Baker, D.Sc., F.R.S. J.F.W. McOmie, D.Phil. W.D. Ollis, Ph.D. J.W. Barton, Ph.D.	Non-benzenoid aromatic substances, especially derivatives of cyclobutadiene; organic inclusion compounds; structural and synthetic studies of naturally occurring oxygen heterocyclic compounds; condensation products of phenols and ketones; dimerides of propenylphenols
T. Malkin, D.Sc., Ph.D.	X-ray and thermal studies of long-chain compounds Synthesis of phospholipids, lecithin, cephalin, sphingomyelin, plasmalogens and inositides
J.F.W. McOmie, D.Phil.	Pyrimidines; natural products

5. Chemistry (*continued*)

Organic (*continued*)

W.D. Ollis, Ph.D.	The structure and synthesis of natural antibiotics, insecticides, lichen products (depsidones) and terpenoids Chemical taxonomy; biflavonyls
L. Hough, Ph.D.	Carbohydrate chemistry and biochemistry
A.R. Battersby, Ph.D.	Structure and synthesis of natural alkaloids and peptides; studies on alkaloid biogenesis using tracer techniques; chemistry of isoquinoline and indole

6. Dental Studies

Medicine.

Professor A.I. Darling, D.Sc.	The pathology of caries of the dental enamel The nature of structural faults of the teeth including hypoplasia, fluorosis and aurelogenesis imperfecta
J.P. Fletcher	Variations in keratinization with age of the buccal mucous membrane
M.V. Stack, Ph.D.	Growth rates of deciduous teeth Biochemistry of developing enamel
D.F.G. Poole, Ph.D.	Fine structure of tooth tissues

Surgery.

Professor E.W. Bradford	The structure and pathology of dentine, with special reference to the development of the carious lesions
H.S.M. Crabb, Ph.D.	Development and calcification of normal dental enamel
D.C. Lyon, Ph.D.	Crystallite arrangement in normal dental enamel
D.C. Berry, Ph.D.	Anatomy of the temporomandibular joint as shown by radiography Problems of mandibular rest position and soft tissues behaviour
D.C. Berry, Ph.D. D.G. Lyon, Ph.D.	Relationship between periodontal disease and interocclusal clearance

7. Engineering

Aeronautical:

Professor A.R. Collar, D.Sc.	Electro-mechanical simulation of flutter; methods of flutter prevention by damping
J. Black, Ph.D.	Experimental studies of diffusion
T.V. Lawson R.P. Boswell	Induction effects of high pressure blowing, including energization of the boundary layer
J. Tinkler, Ph.D.	Theoretical and experimental studies of helicopter rotors Preliminary studies of the stability of systems governed by linear differential equations with variable coefficients Experimental studies of oscillating pressures in boundary layers Thrust from annular nozzles and performances of air intakes Studies of hypersonic flow and flow at very low density

Civil:

Professor Sir Alfred Pugsley, O.B.E., F.R.S.	Structures: fundamental problems in connection with suspension bridges; behaviour of aluminium alloy struts, particularly in trusses; impact problems concerning plates and tubes; wind loads
E.F. Gibbs, Ph.D.	Flow in rivers and open channels
M.S.G. Cullimore, Ph.D.	Battened struts; steelwork joints with high strength bolts
M. Holmes, Ph.D.	Stiffened plates and slabs under transverse loads

7. Engineering (*continued*)

Civil (*continued*)

W.J. Larnach	Fatigue tests on reinforced and pre-stressed concrete beams
R.T. Severn, Ph.D.	Irregular slabs on elastic foundations; stresses in dams
M.C. Quick	Behaviour of fluid vortices

Electrical:

Professor G.H. Rawcliffe, D.Sc. J.E. Brown, Ph.D.	Problems in medium and small electrical machinery and plant; and in electrical measurement. In particular, problems related to machinery for control purposes, unbalanced machine analysis; saturable core devices, and rectifiers The department specializes in theoretical and experimental investigations into many types of dynamo-electric equipment (up to 15 kilowatts rating and 2000 cycles/second); and in electrical measurements at power frequencies
F. de la C. Chard	Use of model techniques and calculating boards in power system analysis and transient stability studies
H. Sutcliffe	Application of semiconductor devices

Mechanical:

Professor J.L.M. Morrison, C.B.E., D.Sc. W.H. Dearden	Strength of materials: yielding and fracture of metals; criteria under various stress conditions; stress-strain relations in post-yield state: effects of fluid pressure; effects of rate of strain
J.S.C. Parry, Ph.D. J.A. Bones	Fatigue of ferrous materials: effects of surface finish and treatments: axial loading under reversed and repeated stresses: thick cylinders exposed to internal pressure; torsional fatigue under reversed and repeated stresses on solid and tubular specimens; effects of high static fluid pressure on the torsional and direct fatigue properties
G.F.C. Rogers Y.R. Mayhew M.A. Hollingsworth, Ph.D.	Heat transfer: free convection from plates in different configurations; deflection of hot gas jets; forced convection in tubes including effects of entrance length, high surface temperature, and secondary flow as in a coil; thermal contact resistance between different metals

Theoretical Mechanics:

Professor W.M. Shepherd, D.Sc.	Theories of elasticity and plasticity
F.A. Gaydon	Theory of plasticity
H. Nuttall, Ph.D.	Upper and lower bounds of collapse loads
L. Sowerby	Boundary layer theory
G. Poots, Ph.D.	Laminar flow, heat transfer

8. Geography

Professor R.F. Peel, M.B.E.	Physiography of arid lands Geomorphology of N. England Geomorphology of Ruwenzori Mountains, Uganda-Congo
F. Walker	Historical geography of Britain Geographical applications of air photographs
F.G. Hannell, Ph.D.	Climatic fluctuations and glacier recession Meteorological, topo-climatological and snowfield studies in Iceland and N. Sweden Graphical representation of climatic time-series
A.M. Graves	Studies in regional geography

8. Geography (*continued*)

J.W. Birch, Ph.D.	Geography of agriculture and tourism; related problems of methodology (Britain and Canada)
A.E. Frey	Geomorphology of the Bristol area Industrial location, settlement and geomorphology of Exmoor
L.F. Curtis	Soil mapping from air photographs Soil studies on Exmoor
M.A. Morgan, Ph.D.	Urban geography, with special reference to S.W. England Political geography
D.I. Smith	Geomorphology of Bristol region and Mendips Geomorphology and geography of Arctic Canada

9. Geology

Professor W.F. Whittard, D.Sc., Ph.D., F.R.S.	Stratigraphy and structure of Shelve Inlier; of Pre-Cambrian of Longmynd, Shropshire Morphology and stratigraphical importance of Ordovician trilobites and Valentian brachiopods from Shropshire Geology of the Western Approaches, English Channel
F.C. Phillips, Ph.D.	Structural petrology of Scottish Highlands; Start Point area, S. Devon; slates of N. Cornwall; Funzie Conglomerate, Fetlar, Shetland Islands Geochemistry of greenstones of Devon and Cornwall
F.C. Phillips, Ph.D. R. Bradshaw	X-ray study of preferred orientation in tectonites
D.T. Donovan, Ph.D.	Submerged erosion features around S.W. England Mesozoic rocks of E. Greenland. Bathonian stratigraphy of Bath area. Palaeontology of Liassic ammonites Pleistocene of Bristol district Geology of the sea-floor south of Dorset and of the Bristol Channel
I.H. Ford	Radioactivity of zircons and nuclear emulsion methods Submarine geology Ore microscopy
J.W. Cowie, Ph.D.	Pre-Cambrian and Lower Palaeozoic geology of E. and N. Greenland Cambro-Ordovician rocks of N.W. Scotland Cambrian stratigraphy of Wales
R.J.G. Savage, Ph.D.	Miocene carnivores of E. Africa Faunas of the Rhaetic Bone Bed Pleistocene mammals of Great Britain Geology of Borkou-Ennedi district, Chad Republic
B.E. Leake, Ph.D.	Metamorphic and igneous petrology and a detailed study of the chemistry and mineralogy of the South Connemara basement complex, County Galway, Eire
F.S. Wallis, Ph.D., D.Sc.	Petrology and provenance of stone axes
R. Bradshaw	Metamorphic and igneous geology in East Connemara, Co. Galway, Eire Structural and metamorphic studies in the Caledonides of N. Norway Petrology of the Bartica District, British Guiana
D.L. Dineley, Ph.D.	Stratigraphy and structure of the Lower Old Red Sandstone of the Anglo-Welsh Cuvette; of Dartmouth Slates of S.W. Devon; of Devonian and Carboniferous of Brendon Hills and Callington Stratigraphy and structure of Upper Palaeozoic rocks and Pleistocene deposits of N.W. Vestspitsbergen Devonian conodonts and fishes

10. Horticulture

T.E.T. Bond, D.Sc.	Morphology, diseases, and social history of horticultural plants (especially ornamentals) Parasitism of the Taphrinales
V.W. Fowler	Biology and control of certain pests of horticultural plants

11. Mathematics

Applied:

Professor L. Howorth, O.B.E., F.R.S. W. Chester, Ph.D. M.H. Rogers, Ph.D. J.B.L. Powell, Ph.D. D.W. Moore, Ph.D.	Fluid mechanics

Pure:

Professor H.A. Heilbronn, F.R.S. C. Hooley, Ph.D. D.A. Burgess, Ph.D.	Theory of numbers
J.C. Shepherdson	Mathematical logic
H.B. Griffiths, Ph.D.	Topology
R.E. Reifenberg J.M. Marstrand, D.Phil. R. Henstock, Ph.D.	Analysis

12. Medicine

C.B. Perry, M.D.	Natural history and aetiology of acute rheumatism Rheumatic heart disease
J.E. Cates, M.D.	Diabetes mellitus Antidiuretic substances
D.W. Barritt, M.D.	Congenital heart disease Plasma lipoids in vascular disease
D.R. Coles, M.D.	Peripheral vascular disease with special reference to diabetes mellitus

13. Microbiology

Bacteriology:

Professor K.E. Cooper, Ph.D.	Studies in the activity of antibiotics and antiseptics Morphological changes under different conditions
A. Mayr-Harting (Mrs.), M.D., Ph.D. A.H. Linton, Ph.D. G.C. Ware, Ph.D. E.A.van Horn (Miss)	Studies in growth of bacteria Phages and colicines
A.J. Hedges	Penicillinases
H.R. Cayton P.A. Adams (Miss) M.E. Thompson (Miss)	Public health laboratory methods in the control of disease
S.K.R. Clarke (Miss), M.D. L.W. Greenham D.B. Peacock	Diagnostic methods in virology
A.H. Linton, Ph.D.	Bacteriology of infections in animals
W.A. Gillespie, M.D.	Epidemiology of wound and urinary tract infection Operation of hospital sterilizing plant Antibiotic sensitivity of anaerobes in peritonitis
M.P. English (Miss)	Mycology of human and animal diseases

14. Obstetrics and Gynaecology

Professor G.G. Lennon	Aetiology and treatment of toxaemia of pregnancy Aetiology of congenital abnormalities
T.M. Abbas, M.D.	Proteins of the liquor amnii Vasa praevia Hazards of child bearing in the patient over 40 Physiological and pathological changes in vaginal pH
E.M. Edwards	Causes of intra-uterine death Cyclical changes in female genital tract Transfer of radioactive sodium across the placenta

15. Ophthalmology

A.G. Palin (Head of Department) with R.C. Tudway	Investigation of radioactive phosphorus in the detection of ocular malignancy
P. Jardine	Anterior chamber acrylic implants
C.A. Brown	Diseases of the eye in the premature infant
C.I. Phillips	"Low-tension" glaucoma Retinal detachment

16. Otorhinolaryngology

J.A. James, M.D.	Treatment of lymphoid hyperplasia of the nasal pharynx with radiation Aetiological factors in nasal allergy The action of ultrasonic radiation on the inner ear

17. Paediatrics and Child Health

A.V. Neale, M.D. with G. Woods (Mrs.) M.D.	Perceptional and educational problems in cerebral palsy
with T.E. Oppe I. Gibbs (Mrs.)	Metabolic studies of liver function in the newborn
B. Corner (Miss), M.D.	Growth and development in prematurity Metabolic problems in prematurity Prophylactic exchange transfusion
J. Apley, M.D.	Long-term prognosis of recurrent abdominal pain in childhood Family patterns in response to stress Psychosomatic syndromes in childhood
T.E. Oppe	Psycho-social and clinical studies in encopresis Poisoning in childhood Accidents in childhood A study of perinatal mortality to determine the potential value of resuscitation procedures
with G.K. McGowan C.K. Milner	The metabolism of amino acids and peptides in blood plasma
with N. Brown	Clinico-pathological studies in hyaline membrane syndrome
with G. Tovey, M.D. I. Fraser B. Webb, M.D.	An investigation of haemolytic disease of the newborn with special reference to cases requiring multiple exchange transfusion and into the course of the postnatal anaemia

17. Paediatrics and Child Health *(continued)*

T. E. Oppe with R.F. Barbour, M.D. A. Miller, M.D. E. Borland (Miss)	A study of nocturnal enuresis, being a five year follow-up of a series of fully investigated enuretic children
with W. Barnes (Miss)	A study of the emotional factors associated with premature birth and their relationship to disturbances in the early mother-child relationship
with B. Arora (Miss)	A follow-up study of coeliac disease with special reference to physical growth, development and nutritional status
K. Simpson, M.D.	Bilirubinaemia in prematurity Hepatic enzyme factors
G.R. Airth	Uses of image-intensifier radiology in infants and children Radiological studies on the alimentary tract of newborns and prematures
R. Harris	Respiratory function studies in infants and children
B. Donnison (Miss)	Infantile convulsions and hypoglycaemia
I. Westmacott (Miss)	Psycho-social paediatric problems

18. Pathology

Professor T.F. Hewer O.C. Lloyd, M.D. E.S. Meek, M.D.	A study of normal and tumour melanoblasts by "dopa" and fat stains, to elucidate the relationship between melanomas and other naevoid tumours
C.H.G. Price, M.D. G.M. Jeffree (Miss) Ph.D.	A study of tumours of bone derived from the Bristol Bone Tumour Register
K.B. Taylor	The relationship of skeletal growth and development to bone forming tumours, both benign and malignant The protection of prostatic acid phosphatase by polypeptides and polyamines The protective and inhibitory effects of acid and neutral polysaccharides on prostatic acid phosphatase The physicochemical basis of the interactions of thiazine dyes with acid mucopolysaccharides An experimental study of the nucleic acids and nucleoproteins in malignant cells

19. Pharmacology and Therapeutics

Professor H. Heller, M.D., Ph.D.	Neurohypophysial hormones Pharmacologically active substances in the hypothalamus
M. Ginsburg, Ph.D.	Metabolism of neurohypophysial hormones
R.J. Fitzpatrick, Ph.D.	Oxytocin Adrenal function in ruminants

20. Physics

Professor M.H.L. Pryce, F.R.S.	Theoretical physics, mainly of the solid state and magnetism
Professor C.F. Powell, F.R.S.	Cosmic rays, mesons and nuclear physics
Professor F.C. Frank, O.B.E., F.R.S.	Crystallization and dissolution; structure and defects of solids
N. Thompson, Ph.D.	Creep and fatigue in metals
C.R. Burch, C.B.E., Ph.D., F.R.S.	Mineral dressing and applied optics
D. Bohm, Ph.D.	Basic quantum theory. Theory of electron plasmas

20. Physics (*continued*)

P.H. Fowler, D.Sc.	Nuclear physics at extremely high energies
D.H. Perkins, Ph.D.	High altitude cosmic ray experiments with balloons
C.J. Waddington, Ph.D.	Primary cosmic radiation
R.G. Chambers, Ph.D. J.G. Park, D.Phil.	Low temperature physics; magnetoacoustic effect in pure metals
D.F. Gibbs	Dielectric and semiconducting properties of crystals: high pressure physics
H.F. Kay, Ph.D.	X-ray crystallography
A.R. Lang, Ph.D.	X-ray crystallography
A.F. Devonshire, Ph.D.	Theory of ferroelectrics
J.F. Nye, Ph.D.	Plastic deformation of crystals
W.J. Bates, Ph.D.	Reflecting microscopes
G.N. Fowler, Ph.D.	Theoretical physics (mesons; field theory; many body problems)
P.M. Llewellyn, D.Phil.	Magnetic resonance
A.J. Forty, Ph.D.	Stress corrosion
A. Keller, Ph.D.	Crystallization of long-chain polymers

21. Physiology

Professor R.J. Brocklehurst, D.M.	
S.J. Bach, Ph.D.	Intermediate metabolism of nitrogenous compounds Role of arginase and histidase in tumour metabolism Bovine ketosis
E.H. Batten, Ph.D.	Cranial nerve embryology
J.M.N. Boss, Ph.D.	Experimental modification of cell contacts Studies on human chromosomes
R.St.J. Buxton, Ph.D.	Sensitivity and electrolytes
A. Carlyle	Reproductive cycle
S.B. Carter (Miss), Ph.D. T.D. Williams, M.D.	Functional development of neonatal cortex
A.F. Rogers, M.D.	Energy expenditure and acclimatization in the Antarctic.

22. Psychiatry

R.E. Hemphill, M.D. (Head of Department)	Mental illness in child-bearing Studies of disturbances in sleep
R.E. Hemphill, M.D. A. Leitch, M.D.	Studies in homosexuality
R.E. Hemphill, M.D. B. Cooper	Investigation of the rehabilitation of chronic psychotics and problems of day hospital theory
A. Leitch, M.D. C.P. Seager	Controlled trials of drugs in psychiatry
C.P. Seager	Investigation of sedation threshholds
E.C. Turton, M.D. P.K.G. Warren	Electroencephalograph changes associated with old age
P.K.G. Warren	Evaluation of intensive reserpine therapy in chronic schizophrenia with physiological observations
V.O.G. Smyth	Study into perceptual differences associated with right and left parietal lobe lesions
M. Piercy	Autonomic concomitance of emotional reaction The use of hypnotic drugs in distinguishing between organic and emotional impairment of intellect
W. Wedell	Variations of the intellectual effects of electroconvulsive therapy with age and intelligence
F.G. Spear	Delayed auditory feed back in the study of speech function in psychotic disorders

22. Psychiatry *(continued)*

R.F. Barbour W.L. Walker	Serial electroencephalograms on premature children with definite anoxia at birth compared with premature children not anoxic at birth and full-time children not anoxic at birth
R.F. Barbour G. Woods (Mrs.)	Serial electroencephalograms on cerebral spastics, the electroencephalograph findings being correlated with specialized intelligence tests and non-motor sensory and co-ordination defects
R.F. Barbour T.E. Oppé	Follow-up enuretics
W.L. Walker G. Woods (Mrs.)	Studies of abnormalities of amino acid metabolism in mental defectives and their families
W.A. Heaton Ward	The effect of new drugs on behaviour disorders in mental defectives
W.A. Heaton Ward H. Darcus	The effect of muscle relaxants on muscle performance in spastics

23. Psychology

Professor K.R.L. Hall	Pain and stress. Animal behaviour
L.R. Bowyer (Miss)	Child development. Thinking and perception studied by projective techniques
F.H. George, Ph.D.	Cybernetics and its application to learning and perception; logic
M. Piercy	Experimental studies in abnormal psychology
I.W. Pleydell-Pearce, Ph.D.	Conflict, fatigue and stress
K.F.H. Murrell S. Griew, Ph.D.	Occupational psychology, with especial reference to skilled activity related to age

24. Public Health and Social Medicine

Professor R.C. Wofinden, M.D.	Problems of public health administration
P.W. Bothwell	Epidemiology, including investigation into uncooperative ambulant tuberculosis cases, lung cancer, road accidents, twins in school population, and children with speech defects
E.H.L. Duncan (Miss)	Medical statistics
M.D. Gibson (Miss)	Investigations into causes of "athlete's foot", other than fungus infections
G. Herdan, Ph.D., Ll.D.	Statistics of lung cancer in relation to those of other bronchial diseases
	Comparison of occupational mortality on the basis of the 1931 and 1951 censuses
with P.W. Bothwell	Comparison of mortality from certain cardiovascular and neoplastic diseases in mental hospital residents and the general population
A.M. McFarlan	Epidemiology of poliomyelitis, infectious hepatitis, measles and dysentery
H.T. Phillips, M.D.	Mental health
S. Walker (Miss), M.D.	Study of illegitimacy

25. Radiodiagnosis

J.H. Middlemiss, M.D.	Diagnostic radiology of tropical diseases
F.G.M. Ross	The technique of cine-radiography

26. Radiotherapy

R.C. Tudway and B. Hale	Investigation of time variation in uptake of radioactive phosphorus in carcinoma of the breast with, and without treatment of the carcinoma by radiotherapy or hormones
R.C. Tudway and H.F. Freundlich	Statistic analysis of results of radiotherapeutic treatment of carcinoma of the larynx, breast and cervix, using the method of Boag

27. Surgery

Professor R. Milnes Walker, and C. Shaldon	The portal circulation and portal venous obstruction
J.H. Peacock	Endocrinological aspects of vaso-spastic disorders
R. Belsey	Clinical research into diseases of the oesophagus and chiefly congenital atresia of the oesophagus and benign oesophageal strictures of the oesophagus
G.L. Alexander	Cerebral vascular conditions
K.H. Pridie	The aetiology of osteo-arthritis of the hip
W.M. Capper	Post-gastrectomy syndromes

28. Veterinary Studies

Anatomy:

Professor C.W. Ottaway, Ph.D.	Functional anatomy of locomotion in animals
A.S. King, Ph.D.	The respiratory tract of the bird
A.S. King, Ph.D., and R.N. Smith, Ph.D.	Functional anatomy of the intervertebral disc
R.N. Smith, Ph.D.	Development of the colon in domestic ruminants Skeletal development in the domestic animals
A.W. Marrable	Early embryology of a teleost fish
R.R. Ashdown, Ph.D.	Anatomy of the reproductive tract in domestic animals

Medicine and Animal Husbandry:

Professor C.S.G. Grunsell	Pathology of helminth parasitism
J.R. Holmes, Ph.D.	Bone pathology. Diseases of the circulatory system in domestic animals
D.E. Kidder, Ph.D.	Blood chemistry of the baby pig
A.D. Osborne	Diseases of the young pig
L.N. Payne	Normal lymphoid and haemopoietic tissue in relation to leucosis in the domestic chicken
A.I. Wright	Variola in the pig
W.P. Jaffe, Ph.D.	Genetics and nutrition in relation to poultry production
M.J. Manners, Ph.D.	The nutritional requirements of the baby pig
M.R. McCrea	The nutritional requirements of the baby pig
P. Radford	Artificial insemination of pigs
R.H.C. Penny	Post-parturient syndromes in the sow Metabolic disorders

Surgery:

A. Messervy	Improved surgical techniques
J.J. Yeats	Osteo-arthritic conditions in the horse
H. Pearson	Study of ovarian function in the donkey
B.M.Q. Weaver (Miss)	Anaesthesia of the horse

29. Zoology

Professor J.E. Harris, Ph.D., F.R.S.	Experimental cytology; neurophysiology; animal locomotion
H.E. Hinton, Ph.D., Sc.D.	Insect physiology and evolution
J.A. Kitching, O.B.E., Ph.D., Sc.D.	Protozoan physiology; experimental cytology; marine ecology
R. Bassindale	Cirripede biology
R.B. Clark, Ph.D.	Morphology and physiology of the Annelid nervous system
H.D. Crofton, Ph.D.	Helminthology; parasitic population problems
P.M. Jenkin (Miss), D.Sc.	Biology of flamingoes
H.P. Whiting, Ph.D.	Anatomy and physiology of the nervous system

5. Cambridge University

1. Agriculture

Professor Sir J.B. Hutchinson, C.M.G., Sc.D., F.R.S.	Crop plant evolution
A.J. Brookes (Director of University Farm)	Experimental studies in animal husbandry
B.W. Bache	The reactions between phosphates and the hydrous oxides in acid soils
M.G. Barker	The use of cultivating equipment
R.C. Campbell, Ph.D.	Biometrical problems in animal experimentation
K.J. Carpenter, Ph.D.	Protein quality and amino-acids in processed foods
E.C. Childs, Sc.D. (Director, A.R.C. Unit of Soil Physics)	Soil physics, with special reference to water movement
S. Dickinson, Ph.D.	The nature of resistance to disease in plants: obligate parasitism
R.E. Evans, Ph.D.	The protein requirements of pigs as influenced by the biological value of the protein supply Factors influencing the rate of growth andnit rogen reten tion in bacon pigs
D.G. Gilmour, Ph.D. K.F. Kirkham, Ph.D.	Antigens of the red blood cells of poultry, and their application to problems of inbreeding Physiological analysis of the annual life-cycle in poultry
J. Hammond	Ovulation endocrinology, fertility, photoperiodicity
F. Hanley, O.B.E. W.J. Ridgman	Experimental studies in crop husbandry
E.J.M. Kirby, Ph.D.	Physiology of the flowering of grasses
A. Lazenby, Ph.D.	Studies of various weeds in relation to their control by agricultural practices
D.G. Morgan	The influence of phytohormones and plant growth regulators on crop growth and development
W.M.F. Leat, Ph.D.	Vitamin studies in the pig with particular reference to the requirement and metabolism
T. Lewis, Ph.D.	The distribution and dispersal of thysanopteran populations on cereals and grasses
P.H. Lowings, Ph.D.	Root diseases of cereal crops
J. Palmer	Investigations of soil and metal friction

1. Agriculture (*continued*)

R.M.S. Perrin, Ph.D.	Geochemistry and mineralogy of chalk Chalk drifts and the soil derived from them
R.W. Pomeroy, Ph.D.	Beef carcass quality
C.R. Ribbands, Sc.D.	Ecology and behaviour of sugar beet pests: honeybees
F.G. Sturrock R.A. Mackness	Economics of production of milk, pigs, cattle, sheep and cash crops
D.B. Wallace	Farm management surveys
C.S. Barnard	Measurements of farm efficiency The use of labour and mechanization Capital requirements of agriculture
H.T. Tribe, Ph.D.	Soil microbiology; problems of decomposition of organic matter and humus formation in soils Parasitism of sclerotia of *Sclerotinia trifolium* in soil
E.H. Whetham (Miss)	Research on British agricultural economics

2. Anatomy

Professor J.D. Boyd M.D.	Human embryology and placentation Development of nervous system
J.W. Millen, M.D., D.Sc.	Cerebrospinal fluid and experimental teratology
M.M. Bull, M.D.	Placentation and post-partum uterine changes
H.L.H.H. Green, M.D.	Vertebrate morphology
A.F.W. Hughes, Sc.D.	Cytology, tissue culture, experimental embryology
J.D. Lever, M.D.	Endocrine glands and electron microscopy
P.A.G. Monro, M.D.	Autonomic nervous system Micro-circulation in transparent chambers, etc.
C.W.M. Pratt	Development and structure of bone
C.C.D. Shute, M.D.	Vertebrate central nervous system
B. Towers	Embryology and respiratory tract
D.H.M. Woollam, M.D.	Cerebrospinal fluid and experimental teratology
G.H. Wright, M.D.	Neurology of perception and language
E.H.R. Ford, M.D.	Growth
G. Horn	Neurology and endocrinology
R.T. Sims	Vascularization of nervous system
P.R. Lewis, D.Phil.	Histochemistry

Veterinary Anatomy

R.A. Green, Ph.D.	Locomotion in mammals
B.A. Cross, Ph.D.	Central nervous and endocrine regulation in reproduction and lactation
A. Alcester	Movement studies in the male mammalian genital tract; photomicrography
I.A. Silver	Histo-physiology of the mammary gland
N.P. Gordon (Miss)	Veterinary anatomy

3. Anthropology

Professor M. Fortes	Social anthropology, with special reference to W. Africa
E.R. Leach	Anthropology of S.E. Asia
R.F. Fortune	Anthropology of New Guinea
G.I. Jones	Colonial anthropology of British Africa
J.C. Trevor, Ph.D.	Anthropometry and the physical anthropology of race
J.R. Goody, Ph.D.	Ethnography of W. Africa
D.J. Stenning, Ph.D.	Social anthropology of pastoral peoples of Africa

4. Archaeology

Professor J.G.D. Clark	Prehistoric economy in its ecological context Mesolithic cultures of Europe
G.E. Daniel, Ph.D.	European prehistory with special reference to megalithic tombs
C. McBurney, Ph.D.	Old Stone Age with special reference to Europe and N. Africa
R.R. Inskeep	Stone Age of S. Africa British prehistory

5. Astronomy and Astrophysics

Professor R.O. Redman, F.R.S.	Stellar spectrophotometry
E.H. Linfoot, Sc.D.	Optics of aspherical surfaces, especially Schmidt and related systems
D.E. Blackwell, Ph.D.	Solar corona and zodiacal light
H. von Klüber, Ph.D.	Photometry of solar corona Magnetic fields on sun
A. Beer, Ph.D.	Stellar spectra
D.W. Dewhirst, Ph.D.	Applications of Schmidt telescopes Optical identifications of discrete radio sources
A.N. Argue	Stellar photometry

6. Biochemistry

Professor F.G. Young, D.Sc., F.R.S.	Mechanism of hormone action, especially pituitary growth hormone and insulin Insulin and protein biosynthesis
P.J. Randle, Ph.D. G.H. Smith, Ph.D.	Mechanism of action of insulin on carbohydrate metabolism
A. Korner, Ph.D.	Hormonal control of protein synthesis in cellular particles
H.B.F. Dixon, Ph.D.	Corticotropic and melanocyte-stimulating hormones
M. Dixon, Sc.D., F.R.S. E.C. Webb, Ph.D.	Enzyme biochemistry
*E.F. Gale, Sc.D., F.R.S.	Chemical microbiology. Mechanism of synthesis of protein and nucleic acids by bacteria
*R. Davies, Ph.D.	Enzyme formation in yeasts
*D. Kerridge, Ph.D.	Synthesis of bacterial flagella
K. McQuillen, Ph.D.	Biochemistry of bacterial protoplasts
B.A. Newton, Ph.D.	Nucleic acid and protein synthesis in flagellates
G.D. Greville, Ph.D. J.B. Chappell, Ph.D.	Biochemical and osmotic properties of mitochondria
K. Bailey, Sc.D., F.R.S.	Biochemistry of myosin; structure of peptides liberated in the clotting of fibrinogen
A.A. Newton (Mrs.) Ph.D.	Biochemistry of growth of animal viruses
D.H. Northcote, Ph.D.	Structure of plant cell wall
N.R. Lawrie, Ph.D.	Copper and peptide excretion in hepatic disease
†R. Hill, Sc.D., F.R.S.	Hydrogen transport in photosynthetic tissue
‡D.S. Bendall, Ph.D.	Biochemistry of tea fermentation
‡D.M. Needham (Mrs.) Sc.D., F.R.S.	Biochemistry of uterine muscle

*M.R.C. Research Unit for Chemical Microbiology: Director Dr. Gale.
†On staff of A.R.C.
‡Financed by A.R.C.

6. Biochemistry (*continued*)

*F. Sanger, Ph.D., F.R.S.	Methods for the determination of protein structure
*J.I. Harris, Ph.D.	Chemistry of corticotropic and melanocyte-stimulating hormones. Chemistry of virus protein

7. Biology and Parasitology

MOLTENO INSTITUTE

P. Tate, Sc.D.	Parasitic protozoa and parasitic insects
Professor D. Keilin, F.R.S.	Cellular biology, especially metalloprotein catalysis
†A. Bishop (Miss), Sc.D., F.R.S.	Chemotherapy of avian malaria
†E.W. McConnachie (Miss), Ph.D.	Drug resistance in protozoa Parasitic amoebae
*H. Laser, Sc.D.	Tissue metabolism and radiobiology
‡T. Mann, Sc.D., F.R.S. ‡E.F. Hartree, Ph.D. ‡C. Lutwak-Mann (Mrs.) Ph.D.	Biochemistry of spermatozoa and accessory glands of reproduction

8. Botany

Professor G.E. Briggs, F.R.S.	Uptake of solutes Carbohydrate and respiratory metabolism in plants
J. Barker, Ph.D., F.R.S. G.C. Evans, Ph.D. M.G. Pitman, Ph.D. M.J.P. Canny, Ph.D.	Quantitative analysis of plant growth Translocation
S.D. Garrett, Sc.D. J. Rishbeth, Ph.D.	Fungal and bacterial plant diseases
K.R. Sporne, Ph.D.	Phylogeny of vascular plants Morphology of dicotyledon flowers Palaeobotany
H. Godwin, Ph.D., Sc.D., F.R.S. D. Walker, Ph.D. R.G. West, Ph.D.	Quaternary research (pollen analysis, vegetational history and geology)
E.H. Willis, Ph.D.	Radiocarbon dating
R.G. Pearson	Quaternary zoology
D.E. Coombe, Ph.D.	Plant ecology
E.J.H. Corner, F.R.S.	General systematics
S.M. Walters, Ph.D.	Experimental taxonomy of European flowering plants Work on the 'Flora Europaea'
H.L.K. Whitehouse, Ph.D. D.A. Hopwood, Ph.D.	Genetics and cytology, including genetics of micro-organisms
E.A. George	Cultural and taxonomic studies of algae and protozoa
J.S.L. Gilmour	History and philosophy of taxonomy
P.F. Yeo	Plant names Experimental taxonomy of *Euphrasia* Taxonomy of garden plants

*On M.R.C. staff
†M.R.C. Group for Research in Chemotherapy.
‡A.R.C.

9. Chemistry

Chemical Spectroscopy:

N. Sheppard, Ph.D.	Infra-red and nuclear magnetic resonance spectroscopy as applied to the study of molecular structure

Inorganic:

Professor H.J. Emeléus, C.B.E., F.R.S.	Chemistry of fluorine compounds, volatile hydrides and other inorganic substances. Reaction of liquid ammonia
W.G. Palmer, Sc.D.	Chemistry of phosphates
A.G. Maddock, Sc.D.	Radiochemistry
A.G. Sharpe, Ph.D.	Chemistry of complex salts
H. Prince, Ph.D.	Kinetics of fast inorganic reactions
T.C. Waddington, Ph.D.	Physical aspects of inorganic chemistry. Lattice energies and studies of non-aqueous solvents
E. Ebsworth, Ph.D.	Chemistry of hydrides, Spectroscopic studies

Organic:

Professor Sir A.R. Todd, F.R.S.	Synthesis of nucleotides and nucleotide coenzymes
C.B. Reese, Ph.D.	
D.M. Brown, Ph.D.	Studies in phospholipids
V.M. Clark, Ph.D.	Structure and synthesis of vitamin B_{12} and organic phosphorus compounds
B.C. Saunders, Sc.D., Ph.D.	Mechanism of peroxidase action
R.I.T. Cromartie, Ph.D.	Chemical aspects of insect physiology
A.R. Katritzky, Ph.D.	Tautomerism and relationships between structure and absorption spectrum in heterocyclic compounds
P. Sykes, Ph.D.	Intermediates in biosynthesis
P. Maitland, Ph.D.	Organic reactions in aqueous solution at room temperature
J. Harley-Mason	Other natural products
F.B. Kipping, Ph.D.	
F.G. Mann, Ph.D., F.R.S.	Chemotherapeutic investigations Heterocyclic compounds, including organo-metallic derivatives

Physical:

Professor R.G.W. Norrish, Sc.D., Ph.D., F.R.S.	Reaction kinetics and photochemistry including combustion and polymerization
E.A. Moelwyn-Hughes, Sc.D., D.Phil, Ph.D., D.Sc.	Chemical statics and dynamics of sulutions
T.M. Sugden, Ph.D.	The thermodynamics of inorganic compounds in flame gases
J.N. Agar, Ph.D.	Electrochemistry
P.G. Ashmore, Ph.D.	Reaction kinetics
B.A. Thrush, Ph.D.	Spectroscopy of reactions
J.H. Purnell, Ph.D.	Reaction kinetics and chromatography
A.B. Callear, Ph.D.	Photochemical kinetics
D.R. Jenkins, Ph.D.	Mass spectrometric study of flames
G.G. Yates	Application of electronics to chemical problems

Theoretical:

Professor H.C. Longuet-Higgins, F.R.S.	Wave mechanics and its application to atomic and molecular structure and chemical reactivity

9. Chemistry (*continued*)

Theoretical (*continued*)

S.F. Boys, Ph.D. J.S. Griffith	The electronic structure of inorganic molecules and complex compounds
S.F.A. Kettle, Ph.D. J.N. Murrell, Ph.D.	Statistical mechanics and its application to the physical properties of liquids and gases
L.E. Orgel, D.Phil.	The development of automatic computation methods for the solution of problems in theoretical chemistry
A. Carrington	The study of paramagnetic molecules by electron resonance spectroscopy

10. Colloid Science

Professor F.J.W. Roughton, F.R.S.	Physical chemistry of proteins and enzymes. Kinetics and equilibria of rapid reactions in solution and in gas/liquid systems
P. Johnson, Ph.D.	The examination by physico-chemical methods of macromolecules, biological and non biological, and colloids in solution
R.H. Ottewill, Ph.D.	Physico-chemical investigations of hydrophobic colloids with special reference to coagulation and investigations on properties of surface activation and their mode of interaction on solid liquid interfaces
D.A. Haydon, Ph.D.	Fundamentals of electrophoresis, particularly as applied to biological systems. Coalescence phenomena. Stability of non aqueous media

11. Engineering

Professor J. F. Baker, O.B.E., F.R.S.

Aeronautical.

Professor W.A. Mair	Boundary layers with distributed suction
M.R. Head, Ph.D.	Hot wire anemometry
E.P. Sutton	Turbulent boundary layers and separated flows
D.J. Maull	Supersonic flow

Applied Mechanics:

K.L. Johnson	Surface contact stresses; effects of friction and lubrication
H.S.L. Harris	Dynamic stresses in gear teeth
D.B. Welbourn	Dynamics of control systems, and control system components, including hydraulic servomechanisms
R.W. Gregory	
J.M. Prentis	Vibrations; non-linear effects, isolation
F.A. Leckie	Gyroscopic problems
F. Fallside	Automatic controls
R.P.N. Jones, Ph.D.	

Applied Thermodynamics:

Professor W.R. Hawthorne, F.R.S.	Flow of air in compressors, turbines and cascades of compressor and turbine blades, including vibration effects
H.G. Rhoden	Problems in heat transfer
P. de K. Dykes	Gas and oil leakage past piston rings
R.W. Haywood	A study of boiler circulation theory
F.D. Robinson	Magnetohydrodynamics
H. Cohen	Combustion
J.A. Shercliff, Ph.D.	Flexible ships
D.S. Whitehead, Ph.D.	
M.G. Cooper	
M.D. Wood, Ph.D.	
J.T.B. Oxford	

11. Engineering (*continued*)

Chemical:

Professor P.V. Danckwerts, G.C., M.B.E.	Fluidization
W.D. Armstrong, Ph.D.	Automatic process control
J.F. Davidson, Ph.D.	Liquid flow in packed towers; gas absorption; behaviour of bubbles in liquids
J.T. Davies, D.Sc.	Mass transfer across liquid interfaces
H.P. Hutchison	Distillation; kinetics of reactor systems
G.A. Ratcliff, Ph.D.	Gas absorption with chemical reaction; diffusion coefficients; liquid-liquid mass transfer
J.C.R. Turner, Ph.D.	Thermal diffusion in solutions
D. Harrison, Ph.D.	Thermodynamic properties of liquids; fluidization
J.O. Wilkes	Two-phase gas-liquid flow

Control:

J.F. Coales, O.B.E. C.M. Burrell A.T. Fuller	Development of generally applicable methods of analysis of non-linear control systems and filters with random inputs
P.E.W. Grensted, Ph.D. J.K. Lubbock	The use of functionals and the application of the methods of statistical mechanics to control system analysis and synthesis Theoretical and experimental investigation of methods of analysis and optimization of non-linear control systems and filters Investigation of important classes of control systems such as relay (ON/OFF) and saturating systems, multi-loop systems (self-optimizing systems) The recording and analysis of random processes The analysis and optimization of control systems with randomly varying loads The use of analogue and digital computors in control system design and the preparation of universally applicable design charts in non-dimensional form

Electrical:

Professor E.B. Moullin	Mathematical investigation of problems concerning radio aerials
C.W. Oatley	Applications of the scanning electron microscope
G.E. Middleton	Problems of ferromagnetism including non-linearities
J.C.S. Shaw	Investigation of arc discharges with large currents
K.F. Sander, Ph.D.	Electron trajectory problems and the design of electron guns Network theory
P. Hammond	Electromagnetic problems in electrical machines
A.H. Beck	The design of microwave valves Studies of thermionic emission
C.W.B. Grigson, Ph.D.	Electron diffraction studies of non-metallic films Properties of sheets and films of magnetic material

Hydromechanics:

A.M. Binnie	Swirling flow in nozzles; turbulent dispersion in a pipe
T.B. Benjamin, Ph.D.	Experiments on cavitation bubbles; the formation of bores in channels

11. Engineering (*continued*)

Industrial Management:

F.J. Willett	Industrial training of graduate engineers
D.L. Marples	The organization of design teams
J.L. Reddaway	Problem solving in technical organizations
	Small group behaviour

Soil Mechanics:

K.H. Roscoe	Shear strength of soils and stability of footings subjected
A.N. Schofield	to highly eccentric loads

Structure and Materials:

Professor J.F. Baker, O.B.E., F.R.S.	Brittle fracture of mild steel
	Dynamic properties of materials
C.F. Tipper (Mrs.), Sc.D.	Load carrying capacity and design of framed structures
R.D. Davies, Ph.D.	Strength and rigidity of welded structural connections
E.N. Fox, Sc.D.	The compacting of concrete by vibration
M.R. Horne, Sc.D.	Behaviour of pressed steel sections
E.W. Parkes, Ph.D.	Stress analysis
A.M.P. Brookes	Shell theory
K.J. Pascoe	
T.M. Charlton	
A.H. Chilver	
R.K. Livesley	
J.L. Reddaway	
D.B.C. Taylor	
L.G. Jaeger	
H.S.L. Harris	
W.D. Biggs	
J. Heyman, Ph.D.	
E.K. Frankl	
R.P. Johnson	
F.A. Leckie	
A.N. Sherbourne	

12. Genetics

Professor J.M. Thoday	Effects of disruptive selection, accelerated responses to
A.R.G. Owen, Ph.D.	selection
M.E. Wallace (Mrs), Ph.D.	Mathematical and statistical genetics
	Affinity
	Linkage in the mouse
	Population genetics of skuas, and *Primula*
	Genetics of heteromorphic plants, *Matthiola*, and *Malcomia marittima*
	Human genetics
	Differentiation in *Antirrhinum* and in *Meconopsis*

13. Geodesy and Geophysics

B.C. Browne (Head of Department)	Gravimetry
R. Stoneley, Sc.D., F.R.S.	Theoretical seismology
M.N. Hill, Ph.D.	Ocean structure and seismographs
Sir E. Bullard, Sc.D., F.R.S.	Magnetism and geothermal work
	Mass spectroscopy
J.E. Jackson	Pendulum measurements
J.C. Belshé, Ph.D.	Palaeomagnetism
F. Gray	Crombie Seismological Laboratory

14. Geography

Professor J.A. Steers	Coastal research
W.W. Williams	Beach problems: cliff erosion
W.V. Lewis	Glacier action Beach profiles
J.B. Mitchell (Miss)	Historical geography of E. Anglia
A.A.L. Caesar	Economic geography
B.H. Farmer	Regional and agrarian studies in S. Asia
H.G. Steers (Mrs.)	Biographical and bibliographical study of Friedrich Ratzel
B.W. Sparks	Geomorphology of parts of E. Anglia: interpretation of non-marine Mollusca of Quaternary deposits
A.T. Grove	Land use in relation to geomorphology in Africa, especially in the Sudan zone of N.E. Nigeria
C.T. Smith	Historical geography of E. Anglia. S. American studies with special reference to Peru
J.E. Jackson	Atmospheric refraction of terrestrial rays
C. Board	Land use in S. Africa
E.A. Wrigley	Rates of industrial growth and demographic problems in coalfield areas of N. Europe 1850-1914
P. Haggett	Luso-Brazilian studies
R.J. Chorley	Comparative morphometry

15. Geology

Professor O.M.B. Bulman, Ph.D., Sc.D., F.R.S.	Morphological palaeontology (particularly graptolites and trilobites) Stratigraphy and palaeontology of Lower Palaeozoic rocks
M. Black	Sedimentary petrology especially studies of limestones
W.W. Black, Ph.D.	Stratigraphy and petrology of Carboniferous limestones Differential thermal analysis of limestone and clay minerals
A.G. Brighton	Echinodermata
C.L. Forbes, Ph.D.	Palaeozoic corals and fusulinid foraminifera
P.F. Friend	Geological studies in Spitsbergen Devonian stratigraphy
W.B. Harland	Structural geology Geological and palaeomagnetic studies in Spitsbergen and Greenland
R.W. Hey, Ph.D.	Geological studies in the Mediterranean Pleistocene stratigraphy
J.D. Hudson	Sedimentary petrology Jurassic rocks of Scotland
N.F. Hughes	Mesozoic stratigraphical palaeontology Palaeobotany (including palynology) Palaeoclimatology
G. Larwood, Ph.D.	Cretaceous polyzoa Lower Cretaceous of Norfolk

16. Human Ecology

Professor A.L. Banks, M.D. J.A. Hislop, M.D.	Social aspects of disease and its prevention; health and welfare of man in relation to his environment; population trends
L.H.H. May	The University Health Service and statistical investigations arising therefrom
R.G. Carpenter B.G. Pye (Miss)	Vital statistics

17. Mathematics

Professor P. Hall, F.R.S. D.R. Taunt, Ph.D.	Algebra
Professor Sir W.V.D. Hodge, F.R.S. D.W. Babbage, Ph.D. J.A. Todd, Ph.D., F.R.S. F.P. White M.F. Atiyah, Ph. D.	Algebraic and differential geometry
A.J. Ward, Ph.D. E.C. Zeeman, Ph.D. J.F. Adams, Ph.D.	Topology
J.C. Burkill, Sc.D., F.R.S.	Theory of functions, particularly of a real variable
M.L. Cartwright (Miss), Sc.D., F.R.S.	Complex variable and non-linear differential equations
F. Smithies, Ph.D. M.E. Grimshaw (Miss) J.H. Williamson, Ph.D.	Functional analysis
Professor H. Davenport, F.R.S. A.E. Ingham, F.R.S. J.W.S. Cassels, Ph.D.	Theory of numbers
S.W.P. Steen L.A. Pars D.V. Lindley A.G. Walker P. Whittle, M.D.	Mathematical logic Dynamics and calculus of variations Statistics
Professor P.A.M. Dirac, F.R.S.	Quantum mechanics Field theory
O. Buneman J. Hamilton F.C. Powell, Ph.D. J.A. Polkinghorne, Ph.D. R.J. Eden, Ph.D. J.G. Taylor, Ph.D.	Plasma physics Theoretical physics
G.K. Batchelor, Ph.D., F.R.S. F. Ursell, Sc.D. I. Proudman, Ph.D. P.G. Saffman, Ph.D.	Theory of real fluids
E.R. Lapwood, Ph.D. F.G. Friedlander, Ph.D. Professor F. Hoyle, F.R.S. R.A. Lyttleton, Ph.D., F.R.S. L. Mestel, Ph.D.	Geophysics Methods of mathematical physics Cosmology and astrophysics
M.V. Wilkes, Ph.D., F.R.S. J.C.P. Miller, Sc.D. D.J. Wheeler, Ph.D. H.P.F. Swinnerton-Dyer	Design and operation of automatic computing machines

18. Medicine

F.G.J. Hayhoe, M.D.	Functions of the spleen in health and in blood disorders
D'A. Kok, Ph.D.	Chemotherapy of leukaemias and allied diseases
F. Wild, Ph.D.	Histochemistry of blood and bone marrow
	Tissue culture techniques in haematology
	Studies of haemorrhagic states and the coagulation mechanism
	Chemical investigation of factors active in thromboplastin generation
Experimental:	
Professor R.A. McCance, C.B.E., F.R.S.	Undernutrition and various aspects of the physiology of infancy
*E.M. Widdowson (Miss), D.Sc.	The effect of accelerated and retarded development on chemical structure and ageing
	Food, growth and homoeostasis in the newborn period
*G.C. Kennedy, Ph.D.	Hypothalamic regulation of water and energy expenditure and hormone production
J.M. Walshe	Copper metabolism in man
*M. Stanier (Miss), D.Phil.	Renal function of the foetus
*L. Hill (Mrs.), M.D.	Pyruvate levels of the blood in diabetes
W.R. Keatinge	The control of body temperature under water and the effect of work and clothing upon it
	The effect of chilling on the cardiovascular system
*J.W.T. Dickerson	Effect of development, undernutrition, and rehabilitation on the composition of the body, its tissues and its cells
*D.A.T. Southgate	Chemical composition of foods
†D.M. Nutbourne (Miss)	Excretion of hydrogen ions in the urine

19. Metallurgy

Professor A.H. Cottrell, F.R.S.	Theory of dislocations, lattice defects, and cracks, in solids
	Mechanisms of brittle, ductile, creep, and fatigue, fractures
	Effects of irradiation on solids
	The bombardment of metal surfaces with atomic particles
	Development of materials with improved resistance to heat, stress, and nuclear radiation
T.P. Hoar, Sc.D.	Stress corrosion cracking of austenitic steels, iron-nickel alloys and brass, the effects of cold work and radiation damage on electrode mechanisms in systems based on iron and nickel, anodic polishing of metals, high temperature oxidation of stainless steel by steam
G.C. Smith	Mechanism of fatigue in aluminium alloys and beta brass, fatigue of metals at high temperatures and high stresses, the fracture of ductile metals in tension and compression, fracture mechanisms in sintered metal compacts, creep failures in magnesium and its alloys, elastic and plastic properties of electrodeposited chromium, influence of hydrogen upon the fracture of metals, the hardening of metals by internal oxidation
J. Nutting, Ph.D.	Martensitic transformations, precipitation in aluminium alloys, 475 embrittlement of iron chromium alloys, influence of stacking fault energy upon the modes of plastio deformation, the metallography of iron-uranium alloys and austenitic creep-resistant steels, the plastic

*M.R.C. staff
†M.R.C. Clinical Research Fellow

19. Metallurgy (*continued*)

J. Nutting, Ph.D. (*continued*)	deformation and fracture of α-iron, field emission microscopy and its application to radiation damage of metals
A. Kelly, Ph.D.	Tensile properties of magnesium alloys, the plastic deformation and fracture of aluminium alloys, brittle fracture in ionic solids, climb of dislocations in ionic crystals, deformation of graphite, radiation damage in graphite
J.P. Chilton, Ph.D.	Solidification processes in metals and alloys
J.E.O. Mayne, Ph.D.	Mechanism of corrosion inhibition by paint films, inhibitive effect of the degradation products of drying oils, inhibition of the corrosion of iron and steel

20. Mineralogy

Professor C.E. Tilley, F.R.S.	Regional petrology, alkali rock genesis
W.A. Wooster, Sc.D.	Crystal physics
S.R. Nockolds, F.R.S.	Geochemistry Trace element distribution in igneous rock series
N.F.M. Henry, Ph.D.	Ore microscopy
S.O. Agrell, Ph.D.	Regional petrology
P. Gay, Ph.D. C.H. Kelsy (Miss), Ph.D.	X-ray crystallography, investigation of feldspars, pyroxene series, calcium silicate hydrates
I.D. Muir, Ph.D.	Regional petrology
M.J. Le Bas, Ph.D.	Petrology
J.V.P. Long, Ph.D.	X-ray absorption microspectroscopy
J.H. Scoon	Mineral and rock analysis

21. Pathology

Professor H.R. Dean, M.D.	Serum reactions
R.I.N. Greaves, M.D.	Freeze-drying of bacterial cultures and proteins
K.C. Dixon, M.D., Ph.D.	Cytochemistry of cellular injury
G.R.E. Naylor, M.D.	Serum precipitation reaction
B.M. Herbertson, M.D.	Experimental morbid histology Studies on hypersensitiveness and cardiovascular and renal disease
G. Fulton Roberts, M.D.	Haemolytic disease of the newborn
G.A. Gresham, M.D.	Factors affecting the virulence of staphylococci obtained from human infections. Atherosclerosis in the rat
A.P. Waterson, M.D. with T.D. Kellaway	Biological and electron microscopic studies of the structure and replication of the myxoviruses and adenoviruses
R.W. Ainsworth	Histochemical examination of tissues exposed to various injurious agents
J.G. Cruickshank	Studies on antibody and antigen localization in cells in tissue culture and in sections by the fluorescence technique
R.R.A. Coombs, Ph.D.	Studies on immunity
A.M. Barrett	The structure and dimensions of arteries in health and disease Hypophosphatasia
M.H. Gleeson-White	Post-mortem bacteriology and resistance to antibiotics
R.A. Parker, M.D.	The effects of potassium deficiency
D.G. Chalmers	Investigation of leucocyte antibodies
J. Rack	Cytology of tumour cells

21. Pathology (*continued*)

J. Rack with J.N. Harcourt-Webster	Changes in the hearts of patients who have died from pulmonary embolism
R.M. Fry	Investigation of the factors involved in the survival of bacteria after freeze-drying
J.M. Boissard (Miss)	The epidemiology of streptococcal infections
J. Nagington, M.D.	The structure and development of poliomyelitis virus
Sir A. Drury, C.B.E., M.D., F.R.S.	Observations upon foetal and adult haemoglobin in the sheep red blood cell
Professor J.R. Marrack, D.S.O., M.C., M.D.	Chemical aspects of serology

22. Pharmacology and Therapeutics

Professor E.B. Verney, F.R.S.	Antidiuretic hormone; suprarenal function
F. Howarth, M.D. H.F. Grundy	Cerebrospinal fluid
C.V. Greenway	Suprarenal function

23. Physics

Professor N.F. Mott, F.R.S.	Physics of the solid state
Professor O.R. Frisch, O.B.E., F.R.S.	Nuclear physics: analysis of bubble chamber measurements
E.S. Shire	Energy levels in light nuclei
G.L. Squires, Ph.D.	Neutron diffraction (A.E.R.E. equipment)
K.F. Smith, Ph.D.	Molecular beams
J.M.C. Scott	Theory of nuclear properties
W.H. Taylor, Ph.D. H. Megaw (Miss), Ph.D. W. Cochran, Ph.D.	Development of methods of analysis of crystal structure, applications to complex metallic phases, minerals and ferroelectric materials
P.B. Hirsch, Ph.D.	Applications of electron microscopy and crystallography, study of deformation and defects in metals
J.M. Ziman, Ph.D.	Theory of transport phenomena in metals
P.C. Clemmow, Ph.D. K.G. Budden, Ph.D.	Theoretical electrodynamics and radio
J.A. Ratcliffe, C.B.E., F.R.S. K. Weekes, Ph.D. B.H. Briggs, Ph.D. J.O. Thomas	Physics of the upper atmosphere: propagation of radio waves through the ionosphere, and their use to study its structure and movements
Professor M. Ryle, F.R.S. F.G. Smith, Ph.D. A. Hewish, Ph.D. J.E. Baldwin, Ph.D.	Radioastronomy: radio frequency radiations from the sun and galaxy
T.W. Wormell, Ph.D.	Meteorological physics: atmospheric electricity and thunderstorms; physics of rain clouds (radar studies); radiation problems in the stratosphere
D. Shoenberg, Ph.D., F.R.S. J. Ashmead, Ph.D. A.B. Pippard, Ph.D., F.R.S. T.E. Faber, Ph.D. W.F. Vinen, Ph.D. V. Heine, Ph.D.	Low temperature physics; electrical, magnetic and thermal properties of metals including superconductivity; properties of liquid metals; theory of metals

23. Physics (*continued*)

V.E. Cosslett, Ph.D. R.W. Horne	Electron microscopy; optics of electron lenses; development of the instruments and techniques of specimen preparation; microscopy and microanalysis with X-rays Biophysical studies of the effects of electron microscope procedures on micro-organisms
Sir G.I. Taylor A.A. Townsend, Ph.D.	Laminar and turbulent motion of fluids
F.P. Bowden, Sc.D., F.R.S. D. Tabor, Sc.D. A.D. Yoffe, Ph.D. A. Bailey (Miss), Ph.D.	Physics and chemistry of solids, particularly surfaces, friction, decomposition in the solid state, mechanical properties of materials at high temperatures
*M.F. Perutz, Ph.D., F.R.S. J.C. Kendrew, Ph.D. F.H.C. Crick, Ph.D., F.R.S. S. Brenner, Ph.D.	The structure of crystalline proteins, including the structure of haemoglobin and myoglobin

24. Physiology

Professor Sir B. Matthews, C.B.E., F.R.S.	Neurophysiology: sense organs; electrical aspects of reflex activity
Lord Adrian, O.M., F.R.S.	Neurophysiology: central nervous system
G.S. Adair, F.R.S.	Proteins: studies of physico-chemical properties
W.A.H. Rushton, Sc.D., F.R.S.	Neurophysiology: peripheral nerve and retinal physiology
H.E. Tunnicliffe	Transport of hormones
E.N. Willmer, Sc.D.	Histology: physiology of vision; tissue culture
Professor A.L. Hodgkin, F.R.S. A.F. Huxley, F.R.S. R.D. Keynes, Ph.D., F.R.S. R.H. Adrian	Physico-chemical studies of single cells with particular reference to nerve and muscle
I.M. Glynn, Ph.D. R.S. Comline, Ph.D. D.A. Titchen, Ph.D. W.E. Balfour, Ph.D. M. Silver (Mrs.), Ph.D.	Physiology of the ruminant and young animal
F.W. Campbell, Ph.D.	Physiology of vision
P.A. Merton	Physiology of the nervous control of muscle in man and animals
H.B. Barlow, M.D. G.S. Brindley, M.D.	Retinal physiology
T. Vickers, Ph.D.	Histology
J.T. Fitzsimons	Water balance and water intake
M.B. Walker (Miss)	Cellular physiology

25. Psychology

Professor O.L. Zangwill	Psychological changes associated with cerebral lesions; cutaneous sensibility; higher mental processes
W.E. Hick, M.D.	Information theory in relation to experimental psychology

*M.R.C. unit for molecular biology.

25. Psychology (*continued*)

A.T. Welford	Studies in human skill with special reference to "automation" and to ageing
G.C. Grindley	Problems of human learning; nature of binocular vision
R.L. Gregory	Estimation of probabilities Psychology of special senses Design of equipment for biological research
A. Heim (Miss), Ph.D.	Assessment of human abilities
M. Vince (Miss)	Learning mechanisms in birds
A.J. Watson	Discrimination and learning
L. Weiskrantz, Ph.D.	Effects of cerebral ablations and certain drugs on primate behaviour
E.G. Chambers	Industrial psychology Psychological statistics
D.F. Hooper	Applied social psychology
*D.E. Broadbent	Perception and communication Applied experimental psychology

26. Radiotherapy

Professor J.S. Mitchell, C.B.E., M.D., F.R.S.	Clinical trials and laboratory studies of chemical radiosensitizers and of oxygen in conjunction with X-ray therapy
C.L. Smith, M.B.E., Ph.D.	Design of clinical trials
D.H. Marrian, Ph.D. I. Simon-Reuss (Mrs.) B.E. Holmes (Mrs.), Ph.D.	Studies of cellular metabolic disturbances, especially those involving the synthesis of the nucleic acids produced by therapeutic doses of ionizing radiations and various chemical agents
E.M. Kingsley-Pillers (Miss), M.D.	Tissue culture techniques
D.B. Cater, M.D. J. Seed, Ph.D.	Metabolism of compounds of therapeutic interest labelled with carbon-14 and tritium
D. Heard (Mrs.), Ph.D.	Techniques of ultra-violet photomicrography with quantitative photometry
	The techniques of autoradiography and ultra-thin sectioning
	Irradiation of parts of living cells in tissue culture by a microbeam of α-particles and of X-rays
	Electrode potential studies of the influence of radiations, oxygen and various chemical agents on tumours and normal tissues
	Measurement of oxygen tension in tumours and normal tissues before and after radiotherapy
	Experiments on the mechanism of radiation carcinogenesis
	Radiochemical studies of compounds of biological interest
	Irradiation of enzymes in solution
	Applications of radioactive isotopes in radiotherapy with special reference to the development of isotopic X-ray sources in therapy units with intermediate source skin distance
	The application to radiotherapy of 30 MeVp X-rays produced by the synchrotron and related biological and physical experiments
	Development of methods including examination of the sternal bone marrow for the early detection of tumour metastases
	Immunohaematological studies

*M.R.C. Applied Psychology Research Unit.

27. Veterinary Studies

Anatomy

See Anatomy

Veterinary Anatomy

Animal Pathology:

Professor W.I.B. Beveridge	Virus diseases
A.O. Betts, Ph.D.	The study of virus diseases using tissue culture methods and pathogen-free animals
H.P. Chu, Ph.D.	Respiratory diseases of poultry
A.R. Jennings	Diseases of the pig and diseases of wild birds
P. Whittlestone, Ph.D.	Aetiology of enzootic (virus) pneumonia in pigs, and pleuro-pneumonia-like organisms isolated from the respiratory tract of pigs
S.D. Elliott, M.D.	Streptococcal infections in animals
M.A. Soltys, Ph.D.	Bacterial diseases of domestic animals Immunity in trypanosomiasis
E.J.L. Soulsby, Ph.D.	Parasitological diseases of domestic animals, especially immunity to animal parasites
A.A. Wilson	The metabolism of magnesium and calcium and renal function in animals and their relation to metabolic disorders

Clinical:

Professor L.P. Pugh	
T.R.R. Mann, Sc.D., M.D., F.R.S.	Physiology and biochemistry of reproduction
P.S. Bridge	Observations on normal Ayrshire calves from birth to first calving Environment studies in pig housing Kale anaemia
J.T. Abrams, Ph.D.	The biochemistry of blood in relation to nutrition and environment with special reference to dairy cattle The relationship of vitamin D to bovine fertility
D.W.B. Sainsbury, Ph.D.	Environmental studies in relation to animal health, with particular reference to pigs and poultry
J. Hickman	Environmental lathyrism in dogs Vascular pattern in bone and joints diseases
R.G. Walker	Surgical relief of disorders of prostate gland in the dog The use of heterografts in blood vessel surgery
L.W. Hall, Ph.D.	The effects of anaesthetic agents on the cardiovascular system Metabolic response to anaesthesia and surgery
M.C.G. Littlewort	Cardiovascular system
R.F.W. Goodwin, Ph.D.	Pathology of the pig Blood groups of the pig Physiology of the new born
P.D.S. Pugh, Ph.D.	Fasting metabolism in pregnancy
F.R. Spratling	Infections of the urinary tract of the pig
S.W. Douglas	Radiography Clinical investigation into protrusion of the intervertebral disc
E.T. Rees Evans	Animal haematology • Endocarditis in cattle Toxicology Kale anaemia

27. Veterinary Studies (*continued*)

Clinical (*continued*)

J. Keilin (Miss), Ph.D.	Haemoglobin and haematin compounds Copper metabolism in farm animals
D.E. Stevenson, Ph.D.	Biochemical changes in diseases in animals
L.N. Owen	Cancer diagnosis and therapy
A.C. Palmer, Ph.D.	Study of clinical manifestations and pathology of nervous diseases of animals
R.V. Short, Ph.D.	Chemical determination of sex hormones in the peripheral blood of man and animals

28. Zoology

Professor C.F.A. Pantin, Sc.D., F.R.S.	Nervous system of coelenterates; systematics of Platyhelminthes and nemertines
Professor Sir J. Gray, C.B.E., M.C., F.R.S.	Mechanics of animal locomotion; movements of flagella and spermatozoa
R.H.J. Brown, Ph.D.	Animal locomotion; flash photography and cinematography
F.S.J. Hollick, Ph.D.	Insect flight
G.M. Hughes, Ph.D.	Gill ventilation in fishes; arthropod neurophysiology
H.W. Lissmann, Ph.D., F.R.S.	Animal locomotion; electric organs of fish
L.E.R. Picken, Sc.D., Ph.D.	Fine structure
Lord Rothschild, Sc.D., Ph.D., F.R.S.	Physiology of fertilization and the gametes
J.W.S. Pringle, Sc.D., F.R.S.	Nerve physiology and animal behaviour
J.A. Ramsay, M.B.E., Ph.D., F.R.S.	Salt and water balance in invertebrates
G. Salt, Sc.D., F.R.S.	Ecology; insect parasitism
G.S. Carter, Ph.D.	Ecology of tropical swamps
D.A. Parry, Ph.D.	Functional morphology and responses of spiders
S. Smith, Ph.D.	Experimental and chemical embryology
R.A. Hinde, D.Phil.	Reproductive behaviour of passerines Behaviour of primates
M.J. Wells	Brain function of cephalopods
E.A. Robson (Miss), Ph.D.	Neuromuscular and sensory physiology of sea-anemones

Entomology:

*Professor V.B. Wigglesworth, C.B.E. F.R.S.	Insect physiology
W.H. Thorpe, Ph.D., Sc.D., F.R.S.	Animal behaviour, special reference to birds
M.G.M. Pryor, Ph.D.	Insect cuticle
*J.W.L. Beament, Ph.D.	Wax secretion and water transport; microtechniques of surface chemistry; physiology of eggs
*W.A.L. David, Ph.D.	Action of systematic insecticides
*J.S. Kennedy, Ph.D.	Behaviour and nutrition of greenfly (Aphididae)
*A.D. Lees, Ph.D.	Polymorphism in aphids; plant growth cabinets
*J.E. Treherne, Ph.D.	Insect neurochemistry; the absorption and metabolism of nutrient substances in insects
J.E. Harker (Miss), Ph.D.	Diurnal rhythms

*A.R.C. Unit of Insect Physiology, Director Professor Wigglesworth.

28. Zoology (*continued*)

The Museum:

F.R. Parrington, Sc.D. (Director)	Vertebrate palaeontology, special reference to reptiles
H.B. Cott, Sc.D.	Animal colouration and palatability
C.B. Goodhart, Ph.D.	Evolutionary studies; deep sea fishing nets
K.A. Joysey, Ph.D.	Variation and relative growth in blastoids and echinoids Extinction rates of invertebrates
J. Smart, Ph.D., D.Sc.	Systematics of Diptera; wing venation
C.E. Tottenham	Systematics of Coleoptera

6 Durham University

1. Mathematics

E.S. Page, Ph.D.	Numerical analysis Operational research
H.I. Scoins, D.Phil. P.A. Samet, Ph.D. J. Eve, Ph.D.	Commercial application of automatic computers

7 Durham University, Durham Colleges

1. Botany

Professor D.H. Valentine	Experimental taxonomy of flowering plants Cytotaxonomy of the Teesdale flora Genetics of seed incompatibility in *Primula*
J.L. Crosby, Ph.D.	Population genetics of outbreeding systems, especially *Primula*. Genetics of seed germination Application of electronic computation to theoretical studies of evolution Genetics of behaviour in blowflies
G.H. Banbury	Growth regulation and tropisms in fungi, with special reference to the Mucorales
P. Watson (Miss), Ph.D.	Specialized parasites of larger fungi, especially *Calcarisporium*

2. Chemistry

Professor G.E. Coates, D.Sc. F. Glockling, Ph.D.	Organo-metallic and co-ordination compounds
C.W. Gibby, Ph.D.	Adsorption at fluid interfaces Activity measurements in phenol solution
W.K.R. Musgrave, D.Sc.	The halogen fluorides and organic compounds containing fluorine
G. Kohnstam, Ph.D.	Kinetics of reactions in solution
H.M.M. Shearer, Ph.D.	Crystal structure by X-ray diffraction

Radiochemistry:

LONDONDERRY LABORATORY

G.R. Martin M. Weston, Ph.D. S.J. Lyle, Ph.D.	Tracer studies of reaction mechanisms (especially photochemical and free radical reactions) Properties of isotopic substances Tracer studies of diffusion Neutrometry Chemical effects of nuclear recoil Radiochemical and micro-gas-analytical investigation of nuclear reactions

3. Geography

Professor W.B. Fisher, D. de l'Univ.	Atmospheric deposition Local climate Social geography of the Mediterranean and S. Asia
H. Bowen-Jones	Peasant agriculture in Asia Minor
J.C. Dewdney	Historical geography of Fife Economic geography of Co. Durham
J.I. Clarke, Ph.D.	Human geography of N. Africa and S.W. Asia Population studies
S.G. Willimott, Ph.D.	Soil character in N. England and the Mediterranean
V.B. Proudfoot, Ph.D.	Palaeoclimates, geomorphology

4. Geology

Professor K.C. Dunham, D.Sc., F.R.S.	Stratigraphy, structure and mineralization of the Pennines Petrology of ultrabasics with special reference to Oman Petrology of N. Skye Petrography and geochemistry of the magnesian limestone of N.E. England
W. Hopkins, D.Sc.	Stratigraphy, palaeontology and palaeoecology of the Coal Measures The pre-glacial channel of the Wear
T. Whitworth, D.Phil.	Palaeontology of Miocene and Pleistocene deposits of N. Kenya
R. Phillips	Opaque minerals of basic and intermediate igneous rocks Reflectivity of opaque minerals Chrome and manganese ores
M.R. House, Ph.D.	Devonian faunas of England, N. America and the Continent Stratigraphy and palaeontology of Malta
M.H.P. Bott, Ph.D.	Gravity and magnetic surveys in England, the North Sea, Sierra Leone and Scottish igneous complexes Structure of Lower Palaeozoic rocks, Furness and S. Wales
C.H. Emeleus, Ph.D.	Petrology and structure of ringdyke complexes of Slieve Gullion and the Mourne Mountains Petrology and structure of some of the "younger intrusions" of S.W. Greenland Petrology of lavas, N. Kenya
G.A.L. Johnson, Ph.D.	Stratigraphy, palaeontology and weathering of sediments of Yoredale facies
R.P. Hollingworth	Geochemistry of fluorine

5. Mathematics

Professor G.E.H. Reuter	Stochastic processes Number theory
J.V. Whitworth, Ph.D.	
A.O.L. Atkin, Ph.D.	
J.V. Armitage, Ph.D.	
R.A. Smith, Ph.D.	Analysis
Professor K. Stewartson	Fluid dynamics
D.H. Wilson	
E.F. Baxter	Seismology
J. Hawgood, Ph.D.	Wave mechanics

6. Physics

Professor G.D. Rochester, F.R.S., Ph.D.	Cosmic ray research, using photographic emulsions and magnet cloud chambers
A. Apostolakis, Ph.D. J.V. Major A.W. Wolfendale, Ph.D.	
J.A. Chalmers, Ph.D. W.C.A. Hutchinson, Ph.D.	Atmospheric electricity
W.A. Prowse, Ph.D.	Gas breakdown at ultra high frequencies
W.D. Corner, Ph.D.	Magnetostriction of ferromagnetic materials; behaviour of ferromagnetic domains under stress
E.M. Williamson (Miss), Ph.D.	Theoretical physics

7. Psychology

Professor F.V. Smith, Ph.D.	Systems of psychology Kinaesthetic aspects of perception Aspects of imprinting
D. Graham	Test construction, social factors in test results
W. Sluckin, Ph.D.	Attitudes to work Absolute judgements of multi-dimensional stimuli Imprinting in hens and ducks
I.P. Howard	Colour vision Binocular vision
E.A. Salzen, Ph.D.	Imprinting and development of behaviour Implanted electrode studies in birds
R. Thomson	Thinking Theories of learning Conceptual analysis

8. Zoology

Professor J.B. Cragg	The ecology of moorlands
K.R. Ashby, Ph.D.	Sexual differentiation in teleosts Ecology of small woodland mammals
J.C. Coulson, Ph.D.	Biological investigations on kittiwakes The ecology of Tipulidae
M.W. Holdgate, Ph.D.	Biology of oceanic islands Physiology of insect cuticle
J. Phillipson, Ph.D.	Biological studies on Simuliidae General biology of Phalangida
D.W. Wood, Ph.D.	Neurophysiology of insects

8 Durham University
King's College, Newcastle upon Tyne

1. Agriculture

Professor M.McG. Cooper

Agricultural Botany:

Professor M. Jones H.H. Clark (Mrs.) J.H.W. Holden F. Blackburn	Management of herbage plants for persistency and production Ecological variation of herbage plants with reference to selection of improved types Origin and evolution of cultivated plants Biological aspects of humus formation and breakdown under different management conditions

1. Agriculture (*continued*)

Agricultural Chemistry:	
B. Thomas, D.Sc.	Nutritive value of certain moorland plants
F. Hunter	Effect of lime and fertilizers on the composition of common heather
J. Pringle (Miss), Ph.D.	Restoration problems on opencast coal sites, with special reference to soil structure
A. Thompson	Moorland reclamation
E. Crompton	Phosphorus hybrides as fertilizers
	Calcium and phosphorous metabolism studies in animals using conventional and radioactive isotopic techniques
	Methods of determining the digestibility of foods for poultry
	Soil drainage studies with particular reference to the morphology and properties of poorly drained soils
	The effects of certain soils of Kielder Forest on root systems of conifers
	Pedology of hill soils in relation to reclamation
Agricultural Economics:	
E.M. Carpenter	Farm management studies; business analysis; budgeting methods and advisory aids
R.F. Lord	Economics of hill sheep farming
S. Robson	Labour productivity studies; work study techniques; building and farm lay-outs
E.A. Tyson (Miss)	Economics of beef, mutton, dairy, poultry and pig production
T. Winter	Variance analysis of fluctuations in farm profits
G.H. Brayshaw	Income and investment in relation to farmers' business expectations
W.G.R. Weeks	International trade in farm products
A.W. Tansey	
W.G. Blake	
Agricultural Engineering:	
H. Fail	Rotary cultivation: eradication of rhizomatous weeds (*Agropyron*, *Agrostis* and *Pteridium* spp.)
A.R. Reece	Land reclamation
	Soil tillage
	Herbicidal spraying in the eradication of bracken (*Pteridium aquilinum*)
	Over-sowing of grassland
	Tractor and implement dynamics: impact loading; lateral motion of mounted implements; automatic control of mounted implements; tractor-soil relationship
	Centrifugal fertilizer distribution: analysis of the motion of particles on a spinning disc and in flight through the air
	In-barn drying of hay
Agricultural Entomology:	
G. Heslop-Harrison, Ph.D.	Disease transmission, world distribution, evolution, phylogeny and fossil history of the jumping plant lice (Homoptera: family Psyllidae). The ancestry and evolution of the Insecta, with special reference to their fossil record
A. Ibbotson	The ecology and bionomics of grassland insects with special reference to the fruit fly and its relatives
*A. Milne, Ph.D.	Biology and ecology (particularly population problems) of selected agricultural pests, e.g. sheep tick (*Ixodes recinus* L.), garden chafer (*Phyllopertha horticola* L.), leatherjacket (*Tipula oleracea* group), and swede midge (*Contarinia nasturtii* Kieffer). Physiology (relevant to biology and ecology) of selected agricultural pests, e.g. garden chafer (*Phyllopertha horticola* L.), leatherjacket (*Tipula oleracea* group)
*R. Laughlin	

*Members of the A.R.C. Unit of Insect Physiology

1. Agriculture (*continued*)

COCKLE PARK EXPERIMENTAL STATION

Professor T.W. Walker	Studies of the effect of fertilizer treatments and animal excrements on leys
A. Main	
M.R. Patchell	Cultural and manurial experiments with farm crops
D.S. MacLusky, Ph.D.	Effects of autumn and spring defoliation on subsequent productivity of leys
W. Smith	Progeny testing of Clun sheep
	Selection in poultry
	Calf rearing studies
	Dairy cow nutrition studies
	Nematodirus investigations with sheep
	Progeny testing of Friesians for beef
	Farrowing accommodation studies
	Effects of shelter on livestock

2. Anaesthetics

Professor E.A. Pask, O.B.E., M.D.	Effectiveness of methods of artificial respiration
E.A. Cooper, Ph.D.	Effects of anaesthetics on the peripheral circulation
H. Smith, Ph.D.	Estimation of plasma oxygen concentrations in the presence of nitrous oxide

3. Anatomy

Professor J. Short	
Professor R.B. Green, D.C.L.	
C.H. Tonge, T.D., D.D.Sc.	Development and structure of oral cavity, including teeth
N. Cauna, M.D.	Receptors of the skin and mucous membranes and evolution of limbs
T.E. Barlow, M.D.	Vascular supply in muscle and bone
J.E. Gray	Sex differentiation and development and foetal rubella
R.S. Snell, Ph.D.	Distribution of cholinesterase in the central nervous system
	The influence of sex hormones on the activity of melanocytes and melanin in skin

4. Anthropology

H.H. Meinhard, D.Phil. (Head of Department)	Social and political systems of E. Africa
V.G. Sheddick, Ph.D.	The study of groups and groupings: its theoretical and methodological organization
H.A. Powell, Ph.D.	Social structure of Trobriand Islands
	Theory of kinship, with special reference to social structure in small scale societies

5. Botany

Professor M. Thomas, F.R.S.	Respiration, zymasis, fat and acid metabolism in plants
W.A. Clark, Ph.D.	Plant ecology
P.G. Fothergill, Ph.D.	Nutrition of fungi
	History of thought concerning evolution
B.L. Moss (Miss), Ph.D.	The structure, chemical composition and ecology of brown seaweeds
S.L. Ranson, Ph.D.	The use of C^{14} and chromatography in metabolic studies
	Investigations on enzymes and mitochondria
J.A. Richardson, Ph.D.	Physiological ecology
T.G. Walker, Ph.D.	Cytotaxonomy of *Pteris*

6. Chemistry

Inorganic and Radiation:

Professor J. Weiss, D.Eng., Ph.D.	Electron transfer reactions in solution
	Chemical action of ionizing radiations
G. Scholes, Ph.D.	Photochemistry
	Mechanism of biochemical oxidations
	Radiation chemistry of organic systems
	Radiation chemistry of steroids
	Radiation chemistry of nucleic acids and related compounds
E.E. Aynsley, Ph.D.	Inorganic chemistry of fluorine and fluorine compounds
A.B. Littlewood	Gas chromatography

Organic:

Professor J. Baddiley, D.Sc., Ph.D.	The chemistry of coenzyme A.
R. Raper, Ph.D.	The synthesis and structure of natural nucleotide precursors
G.A. Swan, D.Sc., Ph.D.	The isolation and structure of nucleotide coenzymes from
F.J. McQuillin, D.Phil.	micro-organisms
J.G. Buchanan, Ph.D.	The structure of bacterial cell walls
N.A. Hughes, Ph.D.	Enzymic processes in bacterial wall formation
	Phosphorylation techniques
	Interconversions and steric effects in carbohydrates
	The isolation, structure, and synthesis of alkaloids and terpenes
	Stereochemistry of terpene substances
	Mechanism of reactions
	The use of isotopes in determining the mechanism of organic reactions
	The influence of γ-radiation on organic reactions
	The biogenesis of alkaloids
	Natural porphyrin precursors

Physical:

Professor W.F.K. Wynne-Jones, D.Sc.	The mechanism of chemical reactions
H.R. Thirsk, Ph.D.	Mechanism of ionization in solution and catalytic activity of acids and bases
W.H. Beck	Use of isotopes in studying chemical reactions
M. Fleischmann, Ph.D.	Thermodynamics of solutions
K.B. Oldham, Ph.D.	Electrode processes; mechanism of electrode reactions and
A.K. Covington, Ph.D.	over-voltage; electrochemistry of solutions in hydrogen
R.E. Dodd	peroxide
	Spectroscopic studies of molecular interaction

NORTHERN COKE RESEARCH LABORATORY

Professor W.F.K. Wynne-Jones, D.Sc.	Molecular mechanism of carbonization
	X-ray study of carbonization of single crystals
H.P. Stadler, Ph.D.	Crystallographic character of various forms of carbon
H. Marsh, Ph.D.	Reactions and surface properties of carbon
H. Harker, Ph.D.	Magnetic susceptibility and electron resonance studies of carbon

7. Dental Studies

Professor G.E.M. Hallett	Tissue repair in the periodontal membrane, cementum and pulp of subluxed teeth in children and monkeys
	Fluorine content of water in relation to early loss of teeth and malocclusion
Professor R.W. Lovel	Effect of vacuum firing porcelain on the permanence of ceramic restorations

7. Dental Studies (*continued*)

Professor A.O. Mack	Investigation of sub-periosteal implants Tissue tolerance with acrylic dentures
Professor G.L. Howe	Operative impairment of labial sensation Oral surgery related to prosthetics
D.N. Allan	Durability of conservative restorations Electroforming of metal matrices for dental ceramics
H.E. Simpson	Erosive lesions of the oral mucosa Non-carious diseases of the teeth
J.H. Farrell	The digestibility of food Colour vision and shade of matching in dentistry Flexible denture base materials
R.A. Howell	Materials for cavity linings
D.R. McMillan	Denture sore mouth; aetiology and treatment The cytology of the oral mucous membrane
L.W. Kay	The incidence, aetiology, diagnosis and treatment of pericoronitis
P.H. Burke	Serial data on eruptive tooth movements Effects upon the occlusion of the early loss of the first permanent molars
J.B. Masterton	Response of the dental pulp to trauma Effect of high speed cutting on the dental pulp

8. Dermatology

Professor J.T. Ingram, M.D.	No information

9. Engineering

Chemical:

Professor J.M. Coulson	Heat transfer to boiling liquids Heat transfer to fluidized beds Some problems in studying continuous mixing Development of thin film evaporators Separation of organic acids
W.S. Patterson, D.Sc.	Corrosion characteristics of mud from river estuaries Measurement of reactivity of solid fuels
J.D. Thornton, Ph.D.	Study of the heat transfer characteristics of two-phase gas-liquid systems Heat transfer between solid surfaces and liquid drops Droplet size studies in liquid-liquid extraction columns in the presence of mass transfer Hydrodynamic and mass transfer studies of two-phase liquid-liquid systems in agitated vessels Measurement of individual film coefficients in liquid-liquid extraction systems
F. Goodridge, Ph.D.	Mechanism of gas absorption processes Measurement of liquid film transfer coefficient

Civil:

Professor W. Fisher Cassie, Ph.D.	
P.C.G. Isaac	Bacterial breakdown of sugar-based detergents in sewage treatment Estimation of smoke by filter stains Recovery of coagulant from waterworks sludge Production of hydrocarbons from sewage sludge The ecology of bacteria-bed films

9. Engineering (*continued*)

Civil (*continued*)

J.R. Simpson	Comparison of B.O.D. and direct oxygen uptake rates
D.W. Cooper	Joints and construction in glued timber structures Modulus of rupture in beams with plywood flanges Ultimate strength in bending of closed reinforced concrete frames Ultimate strength of axially loaded timber box columns Strength of continuous frames in post-stressed concrete Strength of post-stressed brickwork Deflection characteristics of continuous beams of reinforced concrete
T.E.H. Williams, Ph.D.	Traffic capacity of urban intersections Saturation flows at light controlled intersections
E. Miller	Estuarine tidal hydraulics, River Tyne River sediment hydraulics, River Tyne
J. Wright	Distribution methods of analysis of structures Use of electronic digital computer in structural analysis
J.D. Geddes, Ph.D.	Properties of lateritic soils Soil mechanics aspects of mining subsidence Properties of grout for use in prestressed concrete

Electrical:

Professor R.L. Russell	Development and application of symmetrical component measurement techniques and the asynchronous performance of special salient pole devices
F.J.U. Ritson	Automatic control systems and analogue computers
C.A. Walley, Ph.D.	Vacuum breakdown. High power radio frequency sources
P. Short	Portable bridges for wide-range resistance measurement at 50 c/s
J.T. Kennair	Automatic plotting of electron trajectories
A.G.J. Holt, Ph.D.	Investigation of circuit noise in oscillators
J.L. Dineley	The limitations of current transformers in power system protection

Mechanical:

Professor A.F. Burstall and others	Factors affecting performance of diesel engines Experiments on the reciprocating hot air engine Experimental investigation of the performance of regenerators
F.J. Bayley, Ph.D., and others	Effects of flow pulsations on form drag and heat transfer. Natural convection in liquid metals Heat transfer by natural convection in the closed thermosyphon and effect of Coriolis forces Heat transfer in thermal regenerators under pulsating flow conditions
B.S. Owen	Photoelastic investigation of flange stresses
A.J. Bartley	Performance characteristics of universal joints
G. Walker	Study of the reversed stirling cycle

Mining:

Professor E.L.J. Potts J.D. Jenkins G.M. Pearson N. Tomlin H.Y. Robinson W.B. Bell	Mechanical properties of coal and allied rocks Investigations into the design of pressure measuring instruments for hard rocks and their application to deep mining Sonic location of pressure zones around mining excavations

9. Engineering (*continued*)

Mining (*continued*)

Professor E.L.J. Potts	Photoelastic analysis of stress distribution around underground excavations
J.D. Jenkins	
G.M. Pearson	Measurement of the loads on mine supports
N. Tomlin	Study of the effect of bolting reinforcements on the stress distribution around mining excavations
H.Y. Robinson	
W.B. Bell (*continued*)	Study of the face conditions for coal-getting with particular reference to ploughs
	Subsidence and the measurement of strain in undermined strata
	Application of physical techniques to strata control problems
	Study of the factors affecting the filtration of shale tailings
	Study of the movement of fine particles in water currents using a radioactive tracer technique
	Illumination surveying underground and a study of the design of mine lighting installations

Naval Architecture:

Professor L.C. Burrill	Propeller cavitation:
A. Emerson	Systematic-series tests with model propellers in cavitation tunnel
W. Robson	
R.L. Townsin	Vibration:
F. Leathard	Effect of entrained water on vibration frequencies of long bars of different cross-sectional shape
P. Mars	
	Ship resistance:
	Application of wave-resistance calculations to ship-hull design
	Ship-model towing tests
E.J. Glover	Application of low aspect-ratio lifting-surface theory to propellers
J.F. Wellicome	Study of the wake pattern behind axi-symmetrical bodies
F. Taylor	Application of computer to naval architecture and shipbuilding
J.E. Turner	Pressure measurements around ship models in still water and in waves

10. Geography

Professor G.H.J. Daysh	Economic geography of N. England
	The geography of ports
	The geography of Egypt
W.W. Anson	Denudation chronology of N. England
with J.I. Sharp E. Miller (Dept. of Civil Engineering)	Rainfall and run off in the Tyne Basin
J.W. House	Geography of rural problems
	Population movements in N. E. England
	Size and pattern of cities
with B. Fullerton	A survey of Teesside
M.R.G. Conzen	Urban morphology of towns in Britain and Western Europe
J.I. Sharp	Hydrology of certain drainage basins of N. E. England
with W.W. Anson	Sub-drift topography of parts of E. Northumberland

10. Geography *(continued)*

B. Fullerton	Distribution of characteristic patterns of occupation
H. Lister, Ph.D.	Morphology, climate and regimen in Greenland and in Antarctica
D.H. Fryer	Investigations of tidal streams and currents off Sunderland

11. Geology

Professor T.S. Westoll, F.R.S.	Old Red Sandstone stratigraphy and sedimentary problems in Scotland
	Old Red Sandstone fishes
	Studies in growth and form in fossils
	Carboniferous stratigraphy and biostratigraphy in Northumberland and adjoining areas
with Research Unit (D.G. Murchison)	Correlation of physical properties, chemical composition and petrographic components of coal
Emeritus-Professor S.I. Tomkeieff, D.Sc.	Petrology of Tertiary igneous rocks of W. Scotland and N.E. Ireland
	Petrology of Carboniferous igneous rocks of the Scottish borders
	Application of the Periodic Table of the elements to geochemistry
	Aspects of history of geology
	Compilation of a dictionary of petrology
J. Shirley, D.Sc.	Carboniferous Limestone of Derbyshire
	Silurian and Lower Devonian stratigraphy and faunas, Devon and N. Spain
	Trilobites (*Calymene* and *Pharostoma*)
D.A. Robson, Ph.D.	The Fell Sandstone Group in Northumberland
	Lower Old Red Sandstone lavas around Cheviot and in Scotland
	Structural geology in the Cheviot Hills
	The structure of the African Rift Valley in the Gulf of Suez region of Egypt
B.A.O. Randall, Ph.D.	The Great Whin Sill and its associated rocks
	Geology of Lyngen peninsula, N. Norway
M.H. Battey, Ph.D.	Ultra basic rocks of Jotunheim, Norway, and Dun Mountain, New Zealand
	Spilites and keratophyres
	Meteorites
A.D. Walker, Ph.D.	Permian and Triassic reptiles of the Elgin area
	Old Red Sandstone of the Black Isle and Strathpeffer regions
W.R. Dearman, Ph.D.	Structural geology and pneumatolytic mineralization of northern border of Dartmoor and associated areas to S.W.
	The geology of the Altarnum district, Bodmin Moor
	Structures of the Lower Palaeozoic rocks from Siccar Point to Burnmouth, Berwickshire
W. Hodgson (Miss)	The stratigraphy and palaeontology of the Lower Carboniferous of Northumberland
W.E. Elders	Norwegian Pre-Cambrian granites and gneisses

12. Mathematics

Applied:

Professor A.E. Green, Sc.D., F.R.S.	Non-linear continuum mechanics
	Elasticity

12. Mathematics (*continued*)

Applied (*continued*)

W.D. Collins, Ph.D.	Elasticity and hydrodynamics
J.W. Craggs, Ph.D.	Mechanics of solids and fluids
G. Eason, Ph.D.	Elasticity and plasticity
C. Gilbert, Ph.D.	Theory of relativity

Pure:

Professor F.F. Bonsall	Functional analysis
N. Du Plessis, Ph.D.	Theory of functions
D.A. Edwards, D.Phil	Functional analysis
A.W. Goldie	Theory of rings
R. Harrop, Ph.D.	Mathematical logic
H. Reiter, Ph.D.	Harmonic analysis
J.R. Ringrose, Ph.D.	Functional analysis
J.D. Weston, Ph.D.	Functional analysis

Statistics:

D.A. Evans, Ph.D.	Mathematical statistics

13. Medicine

Professor G.A. Smart, M.D. S.G. Owen, M.D.	Estimation of circulating antibodies to thyroid protein in Hashimoto's disease, primary myxoedema and other thyroid disorders by means of tannic acid haemagglutination technique
Professor G.A. Smart, M.D.	Follow-up of gastrectomy and gastro-enterostomy with vagotomy for duodenal ulcer
R.B. Thompson, M.D.	Trial of oral vitamin B_{12} in pernicious anaemia: long-term study
W.E. Mills (Miss)	Study of pyridoxine deficiency in pregnancy
R.B. Thompson, M.D.	Clinical study of acute leukaemia in childhood
C.N. Armstrong, M.D.	Nuclear chromatin studies as applied to the diagnosis of sex
H.A. Dewar, M.D.	Clinical trials of coronary vaso-dilator drugs
A.G. Ogilvie, M.D.	An inquiry into the incidence of bronchospasm in chronic bronchitis
	An inquiry into the frequency of bronchitis at home and abroad
	A study of the bronchographic change in chronic bronchitis
A.G. Ogilvie, M.D. D.J. Newell	A trial of maintenance treatment by the combined use of steroid and antibiotic remedies in a series of patients with persistent asthma and chronic bronchitis
T.H. Boon, M.D. Professor G.A. Smart, M.D. S.G. Owen, M.D.	Anti-cholinergic drug trial in peptic ulceration
H.G. Miller, M.D.	Demyelinating diseases, clinical and experimental, including epidemiological and immunological studies of multiple sclerosis and study of experimental "allergic" encephalitis in animals
J.N. Walton, M.D.	Clinical and experimental research into muscular dystrophy and other muscle diseases including biochemical studies of families of patients with dystrophies, and tissue-culture of dystrophic muscle from man and mice with a view to histological and biochemical studies

14. Metallurgy

Professor N.J. Petch, Ph.D., D.Met.	Dislocation theory of yield and fracture of metals
R.N. Parkins, Ph.D.	The stress-corrosion cracking of mild steels in various corrosive media Hardening of aluminium by precipitated particles Tertiary creep in metals Relation of creep resistance to structure in aluminium alloys Influence of residual elements on brittle fracture
J.D. Gilchrist, Ph.D.	Distribution of sulphur between iron and blast furnace type slags
R.F. Tylecote, Ph.D.	Adherence of oxide films on metals Principles of solid phase welding Techniques of primitive metallurgy
D. Maxwell	Structure and metallography of alloys of iron, carbon and nitrogen
D. Hardie, Ph.D.	Effect of hydrogen on zirconium alloys The kinetics of superlattice formation

15. Microbiology

Bacteriology:

Professor C.A. Green	Staphylococcal cross-infection in hospitals in N.E. region
with H.G. Miller, M.D.	Immunological investigation of patients with acute multiple sclerosis and other demyelinating diseases
with Department of Child Health	Bacteriological and virological investigation of acute respiratory tract infection in children
with C.A.H. Trench	Tissue culture
A.H. Emslie-Smith, M.D.	Colicines
I.A. Porter	Staphylococcal enzymes
M. Emslie-Smith (Mrs.)	Aspects of bacterial variation

16. Obstetrics and Gynaecology

Professor J.K. Russell, M.D. with D.V.I. Fairweather D. Miller G.S. Anderson	Birth wastage in the city of Newcastle-upon-Tyne
with W. Walker, M.D.	Various aspects of Rh. iso-immunization
with D.V.I. Fairweather	Endrocrine studies in hyperemesis gravidarum Obstetric and sociological factors in handicapped children
H.E. Hughes (Miss)	A study of exfoliative cytology in certain obstetric conditions

17. Occupational Health

Industrial:

Professor R.C. Browne, D.M. R.I. McCallum, M.D.	Human response to machine indicator displays: application of physiological principles to design of indicators
G.L. Leathart	Experimental and social study of aetiology of miners' nystagmus
N.E. Loveless J. Steel, Ph.D.	Investigation of form of teaching best suited to combine the clinical, social and industrial aspects of disease
D.J. Newell D.H. Holding	Investigation into the relationship between occupation, health and the social effects of both Investigation into the problem of the number of hospital beds to be reserved for emergencies

17. Occupational Health *(continued)*

Industrial (continued)

J. Lion (Mrs.)	Respiratory disability and its relation to the X-ray picture in coal miners and others
J.M. Oakey (Mrs.)	*Investigation of the chemistry of diesel engine exhausts New methods of estimating lead in urine Estimation of organic contaminants in gas-works' atmospheres Psychology of coal miners' nystagmus †Organization of industrial health service on Tyneside †Provision of hospital facilities in an industrial area

18. Orthopaedics

J.K. Stanger (Head of Department)	
J.V. Todd	Late results in excision of patella
P.N. Robson	Co^{60} in the treatment of osteo-arthritis of the hips
P.J. van Miert (Radiotherapy Department)	
P.N. Robson	Pathology of haematomyelia Vertical compression injuries of cervical spine
J.K. Stanger P.N. Robson	Scoliosis

19. Otorhinolaryngology

F. McGuckin (Head of Department)	Clinical study of chronic otitis media, including reconstructive tympanoplastic surgery Study of certain etiological factors in chronic otitis media
J.I.M. Black	A clinical study of chronic suppuration of the upper respiratory tract in children (with Department of Child Health)
J.D.K. Dawes	Management of intracranial complications of otitis media Preservation and restoration of hearing in chronic otitis media Clinical study of perforation of the pharynx and oesophagus

20. Paediatrics and Child Health

Professor S.D.M. Court, M.D. F.J.W. Miller, M.D. Professor S.D.M. Court, M.D. E.G. Knox, M.D. S. Mitchell (Miss)	A study of a thousand families in Newcastle upon Tyne. This began in May 1947 and will continue until the children leave school at 15. It is concerned with illness and with educational achievement and attitudes in relation to the family
W. Walker, M.D. G.A. Neligan, D.M. Professor J.K. Russell, M.D.	The management and outcome of haemolytic disease in the N.E. region of England
G.A. Neligan, D.M. G.S. Anderson	A clinical and pathological study of the respiratory distress syndrome in the newborn
G.A. Neligan, D.M.	Measurement of the blood pressure in newborn infants
W. Walker, M.D. M.E. Barton (Miss)	Studies in neonatal hyperbilirubinaemia

*Under the auspices of the M.R.C.

†Under the auspices of the Nuffield Provincial Hospitals Trust

20. Paediatrics and Child Health *(continued)*

F.J.W. Miller, M.D. M.D. Taylor (Miss)	Continuing observation of the clinical course and outcome in 600 children in whom the exact time of primary tuberculous infection was known. This is part of a comprehensive study of the natural history of tuberculosis in childhood
M.E. Morley (Miss), D.Sc. Professor S.D.M. Court, M.D. H.G. Miller, M.D.	A continuing study of speech disorders in childhood with a view to rational classifications and in relation to prognosis and management
Professor S.D.M. Court, M.D. J. Platt	Respiratory function testing in normal children and children with chronic respiratory disease
E.G. Knox, M.D.	Epidemiological and genetic aspects of children's diseases

21. Pathology

Professor J.B. Duguid, M.D.	Pathogenesis of atherosclerosis A method of measuring the respiratory surfaces of the lungs Pneumokoniosis in coal miners
I. Rannie	The pathogenesis of brown induration of the lungs Arterial changes in pulmonary hypertension Experimental atherosclerosis
R.O.K. Schade, M.D.	Vascular changes in neurofibromata Cytology of carcinoma of stomach Chronic gastritis and its relation to carcinoma Gastritis and its relation to peptic ulceration The cytology and morbid anatomy of pernicious anaemia
J.H. Mercer	Various pediatric conditions
M.W. Lambert (Miss)	Pneumokoniosis in coal miners
G.S. Anderson, M.D.	Pathogenesis of intra-uterine infection Pathogenesis of pulmonary hyaline membranes in the newborn Various aspects of peri-natal mortality
A.S. Todd	Fibrinolysis
R.E. Wetherly	Mechanical factors in atherosclerosis
A.J. Wort	Histochemical aspects of fibrin formation
J.K. Todd	Atheroma of the cerebral arteries
S.M. Murray	Aspects of renal tubular damage
Chemical:	
A.L. Latner, M.D., D.Sc.	Castle's intrinsic factor and vitamin B_{12} Clinical applications of the various types of zone electrophoresis Diagnosis and treatment of severe hepatic disorders
L.C.D.P. Raine (Mrs.), Ph.D.	The absorption of vitamin B_{12} from the intestine. Uptake of B_{12} by tissues. Clinical applications of serum B_{12} levels Studies of auto-immunity
A.J. Smith, M.D.	Trace elements in the serum; clinical applications of serum enzyme levels
R.J. Pennington, Ph.D.	Biochemical studies related to muscular dystrophy

22. Pharmacology and Therapeutics

Professor A.A. Harper, M.D., F.R.S.E.

22. Pharmacology and Therapeutics (*continued*)

N.A. Wynne	Anti-serotonin agents Chelating agents Hypothermia Excretion of sympathins in hypertension Anti-arrhythmic drugs

23. Physics

Professor S.K. Runcorn	Geophysics
K.M. Creer, Ph.D.	Palaeomagnetism
F.J. Lowes, Ph.D.	Origin of geomagnetic field and its secular change
R. Hide, Ph.D.	Plasma physics and experimental hydrodynamics
J.H. Parry, Ph.D.	Magnetic properties of minerals
P.H. Roberts, Ph.D.	Hydrodynamics and hydromagnetics
A.E.M. Nairn, Ph.D.	Palaeomagnetism and palaeoclimates
D.W. Collinson	Palaeomagnetic measurements
D.C. Tozer, Ph.D.	Electrical and thermal properties of the earth's interior
G.S. Rushbrooke, Ph.D.	Theory of phase changes. Many-electron problems of quantum mechanics
H.C. Bolton, Ph.D.	Quantum theory of solids
I.D.C. Gurney, Ph.D.	Statistical mechanics and solid state theory
P.J. Wood, Ph.D.	Many body problem
E.C. Richardson, Ph.D., D.Sc.	Sound, especially propagation of ultrasonics in fluids. Turbulent flow
O. Darbyshire	Optical and mechanical properties of thin films
R. Roscoe, Ph.D.	Elasticity, viscosity and plasticity
E.E. Schneider, Dr. phil. nat.	Electron spin and nuclear resonance in ionic solids and semiconductors. Optical and electrical properties of ionic solids
T.A. Littlefield, Ph.D.	Interferometry, hyperfine structures and accurate wavelengths
N. Thorley, Ph.D.	Precision mass spectroscopy applied to palaeo-temperatures. Structures of minerals by X-rays
L. Molyneux, Ph.D.	Research into the measurement of physical phenomena by electronic means

24. Physiology

Professor A.A. Harper, M.D., F.R.S.E. T. Scratcherd H.J. Lake, Ph.D. E.L. Blair	Physiology of digestion: Hormonal control of gastric and pancreatic secretion
B. Schofield, M.D.	Control of gastric secretion
J.A. Saunders, Ph.D.	Fat digestion
W.T. Catton	Physiology of locust eye Study of sensory endings
W. Taylor, Ph.D. M.G. Forster (Miss), Ph.D.	Steroid metabolism
G.N. Jenkins, Ph.D.	Anti-caries action of fluorine Composition of dental plaque
D.E. Wright, Ph.D.	Cytology of human saliva
R. Keeler, Ph.D.	Renal function

25. Psychiatry

Professor M. Roth, M.D. with L.G. Kiloh, M.D. R. McDonald P.J.G. Quinn G. Fitzpatrick	Social and hereditary factors associated with mental illness in Northumberland and Durham

25. Psychiatry (*continued*)

Professor M. Roth, M.D. with C. Merrills, Ph.D.	Physiopathology and natural history of the phobic anxiety depersonalization syndrome
Professor M. Roth, M.D. with J.R.B. Ball	Biological and psychological factors associated with transvestism and transexualism
Professor M. Roth, M.D. with J.W. Osselton	Quantitative assessment of the effects of convulsive treatment
D.W. Kay Professor M. Roth, M.D. J. Blackburn	Natural history and aetiology of paraphrenia in late life
L.G. Kiloh, M.D. Professor M. Roth, M.D. D.W. Kay C.F. Lascelles P.J.G. Quinn D. Irwin	Clinical effects of anti-depressive drugs
L.G. Kiloh, M.D. with K. Davison	The effects of imipramine on the electroencephalogram
D.W. Kay	Genetic factors in mental disorder of old age
R.F. Garside	Premorbid intelligence of patients with mental illness
J. Liggett	The non-verbal evaluation of the phenomenal self
J.W. Osselton with W. Stanton	Stabilization of low frequency wave analyser
J.W. Osselton with W. Stanton	Integration of cerebral responses to peripheral stimuli
J.W. Osselton with L.P. Lassman H. Majoram	Electrocorticography in the treatment of focal epilepsy
J.W. Osselton with K. Davison	Electroencephalographic investigation of the effects of intravenous tofranil

26. Psychology

Professor F.V. Smith, Ph.D.	Systems of psychology Kinaesthetic aspects of perception Aspects of imprinting
D. Graham	Test construction Social factors in test results
W. Sluckin, Ph.D.	Attitudes to work Absolute judgements of multi-dimensional stimuli Imprinting in hens and ducks
I.P. Howard	Colour vision Binocular vision
E.A. Salzen, Ph.D.	Imprinting and development of behaviour Implanted electrode studies in birds
R. Thomson	Thinking Theories of learning Conceptual analysis

27. Public Health

R.C.M. Pearson, M.D.	No information this year

28. Statistics

Mathematical:

See **Mathematics**
Statistics

29. Surgery

Professor A.G.R. Lowdon, O.B.E.	Social and economic results after operations for peptic ulcer
D.J. Tibbs, M.C.	Experimental and clinical assessment of blood flow in
D.N. Walder, M.D.	muscles
G.A. Mason	Study of reactive hyperaemia in skin associated with
G.F. Rowbotham	injury
F. Braithwaite, O.B.E.	Study of fundamental surgical techniques especially in
J. Swinney, M.C., M.D.	arterial surgery
J. Hankinson	Clinical study of results of arterial grafting and the effects
P.H. Dickinson	of longterm anticoagulants
D.B. Leaming	Neurovascular changes in fatal head injuries
I.F. McNeill	Study of tumours from bone forming elements of the skull
	Stereotaxic investigation of basal ganglia
	Studies in the use of fibrinolysin
	Use of treated skin in hernial repair
	Study of lymphatics
	Study of liver blood flow
	Clinical study of hand injuries and infections
	Investigation of the distribution of autonomic nerves in the stomach wall
	Problems of bladder replacement by grafts
	The problem of cortical circulation
	A study of recurrences following operation for nodular goitre
	Problems associated with the arrested heart

30. Venereology

W.V. Macfarlane, M.D. (Head of Department) with W.G.A. Swan M.D.	Cardiovascular syphilis—clinical assessment following penicillin-heavy metal therapy
with B.E. Tomlinson, M.D.	Cardiovascular syphilis—pathological evaluation following penicillin-heavy metal therapy
with W.G.A. Swan, M.D.	Quinquennial survey. Five yearly cardiovascular follow-up of early and early latent syphilis cases
with C.B.S. Schofield, M.D.	Lightning painse—valuation of treatment
with C.B.S. Schofield, M.D.	Behaviour of the blood sedimentation rate in syphilitic aortitis

31. Zoology

DOVE MARINE LABORATORY

Professor A.D. Hobson	Parasitology, especially physiology of nematode worms parasitic in animals. Free living nematodes. Marine ecology
H.O. Bull, D.Sc., Ph.D.	Fish and crustacean behaviour in relation to marine environment
E.T. Burtt, Ph.D.	Physiology of nervous system and sense organs in insects
C. Ellenby, D.Sc., Ph.D.	Physiology and sex-determination of the potato root eelworm and related parasitic nematodes
J.A. Allen, Ph.D.	Molluscan biology and population studies of Crustacea
J.B. Buchanan, Ph.D.	Benthic marine ecology
Lord Richard Percy	Comparative anatomy of vertebrates
U.A. Philip (Miss), Dr. Phil.	Genetics of *Coelopa frigida*
G.N. Philipson, Ph.D.	Ecology of aquatic insect larvae
J. Shaw	Experimental cytology. Ionic and osmo-regulation. Cytochemistry

9 Edinburgh University

1. Agriculture

Professor S.J. Watson, C.B.E., D.Sc. with M.J. Nash, Ph.D.	The conservation of grass and other forage crops
J. Evans Gordon, O.B.E., Ph.D.	Establishment of grassland
M.A. Knox	Land, labour and capital applied to agriculture Business management of the farm
S.F. Hayes	Horticultural crops Physical structure of soils in relation to crop growth
J.M.M. Cunningham	Feeding of grass and grass products to sheep The housing of pigs
J.C. Holmes	Nitrogen manuring of grassland for beef production The statistical lay-out of field experiments
K.V. Runcie	Zero grazing of dairy animals Systems of housing for dairy cattle Rearing of young dairy stock Production and utilization of grass for dairy cows
R.M. MacIver	Closed flock pure breeding of poultry based on family merit Genetics of feather loss in pullets at point of lay
J. Harkins	A study of calf rearing for beef production Standards of efficiency in farm management
Agricultural Botany:	
R.G. Heddle	Utilization of herbage species
J.B.D. Herriott, Ph.D.	Response of pasture to fertiliser treatments Nitrogenous manuring of grassland
L.S. Cobley	Performance of grass species on different soils
P.C. Harper, Ph.D.	Seed germination investigations Relation of plant distribution to soil factors
D.S.C. Erskine	Studies on weeds and weed control
A.E.W. Boyd, Ph.D.	Diseases of potato tubers and sugar beet seedlings
J.H. Lennard, Ph.D.	Skin spot disease of potatoes and herbage diseases
W.A. Hughes	Club root disease of Brassicae
Agricultural Chemistry:	
A.M. Smith, Ph.D., D.Sc. K. Simpson	Soil analysis, responses to fertilizers, radioactive phosphorus; plant nutrition and deficiency diseases; spectrochemical analyses of soils and plants
D. Purves, Ph.D. P. McDonald, Ph.D	Digestibility of foodstuffs, nitrogen metabolism; hypomagnesaemia; chemical changes in ensilage
R.A. Edwards H. Tod, Ph.D. P. Crooks J.F.D. Greenhalgh, Ph.D.	Factors involved in variations in chemical composition of milk
Agricultural Engineering:	
	No information
Agricultural Microbiology:	
T. Gibson, D.Sc.	Bacteriology of silage, milk, eggs, the rhizosphere of crops and plant diseases
Agricultural Zoology:	
J.W. McHardy	Agricultural pests
W.J. Guild, Ph.D.	Lumbricidae as affecting soil fertility

2. Anatomy

Professor G.J. Romanes, Ph.D.	Motor localization in spinal cord
A.R. Muir, M.D.	Electron microscopy of developing tissues
J. King, M.D. A. Peters	The development of motor nerve fibres and motor nerve endings The distribution of motor nerve endings in muscles The development of myelin, central and peripheral The development of bone structure during foetal life

3. Archaeology

No information

4. Astronomy

Professor H.A. Brück	Stellar spectroscopy. Galactic structure
M.J. Smyth, Ph.D.	Photographic and photoelectric stellar photometry

5. Biochemistry

Professor R.B. Fisher, D.Phil. and others	Mechanism of penetration of sugars into surviving cells and the action on it of insulin Problems of cardiac energy metabolism Mechanism of absorption of organic solutes from the small intestine of mammals
E. Stedman, F.R.S. and others	Problems of the cell nucleus
J.K. Grant, Ph.D. and others	Biochemistry of the adrenal cortex
J.H. Ottaway, Ph.D. and others	Effects of hormones on carbohydrate metabolism
W.N.M. Ramsay, Ph.D. and others	Iron metabolism
G.S. Boyd, Ph.D. and others	Cholesterol metabolism and arteriosclerosis
H.J. Cruft, Ph.D. and others	The nature of histones
J.W. Minnis, Ph.D.	Organic micro-analytical techniques
A.P. Ryle, Ph.D.	Proteolytic enzymes related to pepsin

6. Biophysics

J. Dainty, D.Sc.	Permeability of plant cell membranes to ions and water Uptake of salts by plant tissues
E.J. Williams, Ph.D. R.J. Johnston, Ph.D.	Electrophysiology of single plant cells
P.C. Croghan, Ph.D.	Osmotic relations in animals
R. Scott, Ph.D.	Uptake of fission products by seaweeds Photosynthesis in seaweeds
B.R. Malcolm, Ph.D.	Structure of plant cells Protoplasmic streaming

7. Botany

Professor R. Brown, D.Sc., F.R.S.	Cell division and cell growth
A. Nelson, Ph.D., D.Sc.	Germination
W. Blyth, Ph.D.	Fungal infections of the animal body
P.H. Davis, Ph.D.	The flora of Turkey
J.G. Dodds, Ph.D.	The influence of salinity on vegetation
J. Roberts	The physiology of grafting
A.J. Brook, Ph.D.	The biology of desmids
J.K. Heyes, Ph.D.	The biochemistry of nucleic acids

8. Chemistry

Clinical:

C.P. Stewart, D.Sc., Ph.D.	Metabolism following trauma Metabolism of ascorbic acid Electrolyte metabolism in disease Renal function
S.L. Tompsett, D.Sc., Ph.D.	Inorganic metabolism; urinary phenols
S.C. Frazer, Ph.D.	Enzymes in relation to disease
R. Kapeller-Adler (Mrs.), D.Sc., Ph.D.	Histaminase and related enzymes
P.C. Jocelyn, Ph.D.	Metabolism of sulphydryl-containing substances

Inorganic and Physical:

Professor T.L. Cottrell, D.Sc.	Molecular energy transfer in gases
M. Ritchie, D.Sc.	Solid state photochemical reactions
T.R. Bolam, D.Sc.	Surface and colloid chemistry: chemisorption of oxygen on charcoal: colloidal electrolytes
C.C. Miller (Miss), D.Sc.	Newer methods of analysis for metals
C.A. Beevers, D.Sc.	The structure of crystals by X-ray diffraction and the improvement of methods employed
D. Taylor, D.Sc.	Thermal decomposition of solids: studies on the electronic factor in heterogeneous catalysis
C.T. Greenwood, Ph.D.	Studies on the physical properties of solutions of natural high polymers
J.H. Knox, Ph.D.	Kinetics of gas phase free radical reactions: hydrocarbon oxidation: gas chromatography
A.F. Trotman-Dickenson, D.Sc.	Gas kinetics: energy transfer: free radicals
D.M.W. Anderson, Ph.D.	Infra-red spectroscopy: development of analytical methods
F.J.C. Rossotti, D.Phil.	Complex ions in solutions
H.W.W. Ehrlich, Ph.D.	X-ray diffraction studies
D.R. Kennedy, Ph.D.	The effect of gas adsorption on the electrical conductance of solids
R. Foon (Miss), Ph.D.	Gas kinetics: free radicals
G.J.O. Verbeke, Ph.D.	Vinyl radicals

Organic:

Professor E.L. Hirst, C.B.E., LL.D., F.R.S. G.O. Aspinall, D.Sc. E.E. Percival (Mrs.), Ph.D. C.T. Greenwood, Ph.D. D.J. Manners, Ph.D. D.M.W. Anderson, Ph.D. J.C.P. Schwarz, Ph.D. M. Rennie (Mrs.), Ph.D.	Chemistry of the carbohydrates: determination of the molecular structures of polysaccharides; studies of the size and shape of macromolecules; enzymic synthesis and degradation of carbohydrates; studies of reaction mechanisms in the carbohydrate group; the chemistry of the carbohydrate components of grasses and algae
N. Campbell, D.Sc.	Chemistry of aromatic polycyclic compounds and heterocyclic compounds
D. Leaver, Ph.D.	Chemistry of cationic heterocyclic compounds; radiation chemistry of non-aqueous solutions

8. Chemistry (*continued*)

Organic (*continued*)

*H.T. Macpherson, Ph.D.	The chemistry of fodder conservation with special reference to ensilage
*H.B. Wright, Ph.D.	
†I.D.E. Storey, Ph.D.	Biochemistry of nucleotides and uronic acids

9. Dental Studies

Professor J. Boyes	Early dental cyst formation
G.B. Hopkin	A study of mesio-occlusion (relative mandibular protrusion) as regards its incidence, diagnosis, aetiology, treatment and prognosis
D.A. Dixon	A study of cleft palate with special reference to the teeth Oral pressures Submerging deciduous molars
D.M. Watt	Oral changes following the loss of teeth
M. Geddes	Strains in acrylic resin
A.R. MacGregor	Facial changes following the loss of anterior teeth Electromyography of facial and masticatory muscles
J.N. Mansbridge, Ph.D.	The epidemiology of dental caries Methods for the prevention and control of dental caries
C.P. Wallis	Reaction of enamel with fluoride
A.R. Bradshaw	Studies of the dental tissues using the electron microscope

10. Dermatology

Professor G.H. Percival, M.D.	Research has continued on pemphigus vegetans A study of cutaneous myxoedema has been completed, and a study of cutaneous reticulosis is in progress in collaboration with the Department of Pathology

11. Engineering

Professor R.N. Arnold, D.Sc., Ph.D.	Dynamics Ground vibration
G.B. Warburton, Ph.D.	Vibration of beams, plates and shells
J.D. Robson, Ph.D.	Vibration of turbine blades
L. Maunder, Sc.D., Ph.D.	Buckling of thin tubes in bending Non-linear vibration
A.D.S. Barr, Ph.D.	Vibration of gyroscopes
M. Davidson, Ph.D.	Boiling heat transfer
T.D. Patten, Ph.D.	Free convection heat transfer Compact heat exchanger surfaces
W.B. Hunter	Hydrodynamic lubrication in parallel films
S.R. Davies	Stresses in arch dams
I.F. Christie	Consolidation of soils and settlement of structures
A.L. Florence, Ph.D.	Thermal stresses around inclusions and cavities
W.E.J. Farvis	Glow and arc discharges
T.S.M. Maclean	Aerials
C.W. Davidson	Noise Ionospheric absorption Non-linear control systems
B. Meltzer, Ph.D.	Electron dynamics Space-charge-limited currents in insulators
H.M. Melvin, Ph.D.	Linear networks Linear analysis

*A.R.C. Staff
†M.R.C. Staff

11. Engineering (*continued*)

Chemical:

Professor K.G. Denbigh, D.Sc.	Applied chemical kinetics and thermodynamics Gas-solid reactions Theory of continuous reaction processes
D.M. Wilson, Ph.D.	Mass transfer in slurry phase and similar systems Studies of surfaces during mass transfer Diffusion measurements
N. Macleod, Ph.D.	Distillation Mass transfer

12. Forensic Medicine

Professor D. Kerr, M.D.	Investigation of certain post-mortem changes Investigation into barbiturate poisoning Investigation into certain aspects of alcohol intoxication

13. Forestry

Professor M.L. Anderson, D.Sc.	Study of the history of Scottish forests and forestry
W.A. Fairbairn, D.Sc.	Studies concerned with certain aspects of forest ecology including light measurement and climatic zonations
C.J. Taylor, Ph.D.	Problems in the management and treatment of irregular forests
W.E.S. Mutch, Ph.D.	Accounting studies with special reference to the economic effects of varying exploitable size
W. Finlayson	Ecological and silvicultural studies concerned with oak in Scotland
J.M. Caborn, Ph.D.	Effect of shelterbelts on the micro-climate. Structure, establishment and tending of shelterbelts

14. Genetics

Animal:

Professor C.H. Waddington, C.B.E., Sc.D., F.R.S.	Evolutionary importance of environmentally produced modifications Transplantation of nuclei in embryonic tissues Tracer studies in embryology
B. Woolf, Ph.D.	Human genetics; statistics
G.H. Beale, M.B.E., Ph.D., F.R.S.	Inheritance of antigens in *Paramecium*
Sir A.D.B. Smith, C.B.E., D.Sc.	Cattle breeding
C. Auerbach (Miss), D.Sc., F.R.S.	Chemical mutagenesis
R.M. Clayton (Mrs.)	Immunological studies in embryogenesis
G.G. Selman, Ph.D.	Biophysics of development; cytology
H. Kacser, Ph.D.	Theoretical biology
R.A. Beatty, Ph.D.	Heteroploidy in mammals; experiments on mammalian ova
*D.S. Falconer, Ph.D.	Selection in mice
*E.C.R. Reeve, D.Phil.	Quantitative inheritance in *Drosophila*
*F.W. Robertson, D.Sc.	Physiological genetics of size in *Drosophila*
*A. Robertson, D.Sc.	Dairy cattle breeding; evolutionary and selection genetics in *Drosophila*
*I.L. Mason	Dual purpose cattle and sheep breeding
G.A. Clayton, Ph.D.	Selection genetics, *Drosophila*
*A.R.C. Staff	

14. Genetics (*continued*)

Animal (*continued*)

*B. Slizynski, Ph.D.	Cytology of mouse and *Drosophila*
†A. McLaren (Miss), D.Phil.	Parent-offspring interactions

15. Geography

Professor J.W. Watson, Ph.D.	Urban geography of Canadian Maritimes
N.R. Elliott, Ph.D.	The development of industrial seaports The interpretation of aerial photographs
A. Geddes, Ph.D.	Regional and medical geography of India and Pakistan Population change in Britain, Norway and N. America
G. Humphrys	Aspects of mineral production and mining areas Bauxite mining in the Caribbean Mining activity in Labrador-Ungava Evolution of mining activity in the central S. Wales coal-field
R. Jones, Ph.D.	Aspects of urban sociology in Hereford The ecology of the British town
with Professor J.W. Watson	Social areas in Edinburgh
J.J. Klawe	Problems of photo-reproduction in atlas cartography Cartography expression in atlas work History of linear scale Relief representation for young children
D.R. Macgregor	Land use in Central Scotland Modern cartographic trends
A. MacPherson	Climate classification and applied climatology Regional geography of Scotland
C.J. Robertson, Ph.D.	Agricultural exports of S.E. Asia Industrial development in Edinburgh Economic geography of Italy Scope and method in economic geography
J.B. Sissons, Ph.D.	Deglaciation of parts of Scotland Subglacial drainage Morphological mapping
J.D. Wood	Historical geography of the Scottish Border Country, 1800-1850, and a comparison of this with the Scottish settlement of Dumfries Township, Upper Canada Principles and patterns of the pioneer urban development in N. America

16. Geology

Professor F.H. Stewart, Ph.D.	Petrology of evaporites Geology of Strath, Skye
G.Y. Craig, Ph.D.	Palaeoecology Southern Uplands geology
G.P. Black Ph.D.	Petrology of parts of Rhum, Mull and Ardnamurchan Petrology of the Scamadale dyke swarm, Argyllshire Structure and petrology of mid-County Down Petrology of the N. bank of the River Dee from Ballater to Crathie
P. McL. D. Duff	Petrological study of parts of Centre 1, Ardnamurchan Ore microscopy Cleat in the Midlothian coalfield

***M.R.C. Staff**
†A.R.C. Staff

16. Geology (*continued*)

E.K. Walton, Ph.D.	Southern Uplands geology The Lesmahagow inlier The Old Red Sandstone of Berwickshire and East Lothian Cambrian rocks in N. Wales
M.R.W. Johnson, Ph.D.	Structure and metamorphism of Moine rocks in Moidart, Sunart and Ardgour Moine thrust—Lochcarron to Kinlochewe
E.L.P. Mercy, Ph.D.	Geochemical studies in Co. Donegal, Ireland, and in W. Scotland
A. Hallam	Cyclic sedimentation and palaeoecology in the Lias

Other research being carried out in the Department includes:
Eclogites
Metamorphism of the basic igneous rocks of the N.W. Highlands and related localities

17. Mathematics

Professor A.C. Aitken, D.Sc., F.R.S.	Modern linear algebra Statistical mathematics Numerical analysis
L.M. Brown, Ph.D.	Algebraic geometry
J. Cossar, Ph.D.	Function theory of real variable Fourier series and integrals Summability
W.L. Edge, Sc.D.	Algebraic geometry Theory of finite fields
I.M.H. Etherington, D.Sc.	Non-associative algebra
P. Heywood, D.Phil.	Fourier series and Tauberian theorems
J.B. McLeod	Eigenfunction expansions

18. Medicine

Professor K.W. Donald, D.S.C., M.D., D.Sc.	Cardiorespiratory function in health and disease Arterial hypertension, haemodynamic and pharmacological studies
E.A. Harris, Ph.D.	
S.H. Taylor	Factors controlling myocardial efficiency and the cardiac output
A. Doig	Circulatory and respiratory behaviour during exercise in health and disease Renal haemodynamics in health and disease
R.H. Girdwood, Ph.D., M.D.	Clinical and biochemical studies of disorders of the small intestine Metabolic studies concerning vitamins and amino acids Studies with radioactive iron, chromium and cyanocobalamin The clotting mechanism of the blood
W.I. Card, M.D.	Peptic ulceration
with W. Sircus, Ph.D., M.D.	Physiology and pathophysiology of gastric and pancreatic secretion Gastro-enterology The mechanism of insulin-induced gastric secretion in dogs and humans
R.W.D. Turner, O.B.E., M.D.	Haemodynamics of the heart and circulation Assessment of drug treatment for hypertension and radioiodine treatment for ischaemic and anoxic heart disease
with M.B. Matthews, M.D.	Value of renal biopsy in hypertension and other diseases

18. Medicine (*continued*)

J.A. Strong, M.B.E.	Radioiodine in the study of thyroid disorders Hormones in breast cancer Studies with human growth hormones Studies of inter-sexes Metabolism in obesity
J.J.R. Duthie	Series of clinical and laboratory studies in relation to rheumatoid arthritis and other locomotor diseases
J. Simpson	Applied electrophysiology Neuropharmacology

19. Microbiology

Bacteriology:

Professor R. Cruickshank, M.D.	Epidemiology of infectious diseases in man and animals
R.H.A. Swain, M.D.	Virus studies; electronmicroscopy
J.P. Duguid, M.D.	Bacterial cytology
J.H. Bowie	Hospital infection; sterilization
J.F. Wilkinson, Ph.D.	Chemical bacteriology
J.C. Gould, M.D.	Studies on staphylococci
R.R. Gillies, M.D.	Epidemiology of streptococcal and *Shigella* infections

20. Mining

Professor R. McAdam	Geophysical exploration Mine rescue apparatus and recovery work Environmental conditions in mines Mining explosives

21. Neurology

Surgical:

Professor N.M. Dott, C.B.E., F.R.S. and staff	Continued observations on the cerebrospinal fluid circulation and its pathology, with special reference to arterial propulsion of the fluid The role of arterial distortion and arterial spasm in the production of cerebral lesions in brain tumour, in spontaneous intracranial haemorrhage from aneurysms, and in head injuries
F.J. Gillingham, M.B.E. P. Harris A.A. Donaldson W.S. Watson, M.D. J. Naughton	An investigation of the physiological and pathological mechanism of Parkinsonism and of surgical lesions of the globus pallidus and thalamus by stereotaxic methods
F.J. Gillingham, M.B.E. P. Harris, and staff	Trial and assessment of various methods of internal drainage in the management of infantile hydrocephalus
W.S. Watson	Investigation into mechanisms underlying disturbances of consciousness and memory
J. Naughton	Relationship of psychological disturbances to site of ruptured cerebral aneurysms Psychological aspects of chronic Parkinsonism
J. Naughton and K. Hermann (Miss), M.D.	Dysphasias and kindred derangements of intellectual functions
E.G. Walsh, M.D., and staff	Electroencephalography in elucidation of cerebral function and dysfunction
with A. Brown	Electroencephalogram alterations during anaesthesia and their interpretation

21. Neurology (*continued*)

Surgical (*continued*)

A.A. Donaldson	Neuro-radio diagnostic techniques and interpretation
J. McLelland	Neuro-radiotherapy techniques and follow-up
A. Brown	Investigation into treatment of severe intractable pain, the peripheral pain pathways and chemical means of selectively interrupting these pathways
A.A. Donaldson and J.J. Maccabe	Intracranial haemorrhage. Review of results of treatment
Professor P.B. Ascroft and J.J. Maccabe	Investigation and follow-up of 100 cases of patients in whom radioactive thorotrast was used, covering period from 1933 to present time

22. Obstetrics and Gynaecology

Professor R.J. Kellar, M.B.E.	The haemodynamics of pregnancy
G.D. Matthew	Fluid and electrolyte balance in pregnancy in relation to adrenal function
F.J. Scandrett, Ph.D.	Placental function in relation to metabolism, enzyme function and blood supply
R. Mackay (Miss), M.D.	
P.R. Myerscough	The excretion of gonadotrophins, oestrogens and progesterone in various obstetrical and gynaecological disorders
	Studies on uterine activity in relation to anaesthesia
	Problems in blood clotting in obstetrics
	Fat metabolism in pregnancy with special reference to spiral arteriolar degeneration

23. Orthopaedics

Professor J.I.P. James	Scoliosis and congenital dislocation of the hip
J.C. Chalmers and others	

24. Paediatrics and Child Health

Professor R.W.B. Ellis, O.B.E., M.D., and others	Studies of growth and development
C.M. Drillien, M.D.	Prematurity
J.W. Farquhar, M.D.	Offspring of diabetic mothers
	Endocrine studies
J.O. Forfar, M.D.	Idiopathic hypercalcaemia
	Rhesus incompatibility
T.T.S. Ingram	Cerebral palsy
	Development aphasia
A. Morgan (Mrs.)	Aminoaciduria
J. Thomson, M.D.	Growth of infants
M. Wakefield	Paediatric haematology

25. Pathology

Professor G.L. Montgomery, Ph.D., M.D.	Studies in pathology of arterial disease
R.F. Ogilvie, M.D.	Pancreas: various aspects of experimental diabetes
J.D. McGregor	Tumour pathology
A.R. Macgregor (Miss), M.D.	Pathology of disease in infancy and childhood
A.D. Bain, M.D.	
A.F.J. Maloney	Neuropathology
A. Wynn Williams, M.D.	Experimental peptic ulceration

25. Pathology *(continued)*

W.F. Coulson	Studies in pathology of bone
A. Stuart, Ph.D. W.S. Allan	Immunology of thyroid disease
A. Shivas, M.D.	Studies in tumour pathology
M. Robson (Mrs.)	Electron microscopy
D.L. Gardner, M.D.	Experimental hypertension

26. Pharmacology and Therapeutics

	The department is largely concerned with the use of pharmacological methods to assay active substances in tissues, and with the study of the mode of action of synthetic drugs affecting junctional transmission
Professor W.L.M. Perry, O.B.E., D.Sc.	Junctional transmission
M. Vogt (Miss), Dr.Med., Dr.Phil., Ph.D., F.R.S.	Adrenal cortex
H.M. Adam	Histamine
T.B.B. Crawford, Ph.D.	Sympathomimetic amines
R.P. Stephenson	Mode of action of drugs
R.B. Barlow, D.Phil.	Synthesis of drugs
K.A. Scott	Synthesis of drugs

Therapeutics:

Professor D.M. Dunlop, M.D.	Clinical endocrinology Clinical trials of drugs
J.S. Robson, M.D. and A.T. Lambie (Miss)	Studies of the nature of the metabolic response to injury Electron microscope studies of the protein-losing kidney Clinical evaluation of the methods used in the treatment of acute renal failure Endocrine factors influencing the renal excretion of water
L.J.P. Duncan	Studies in man and laboratory animals relating to the mode of action and metabolic effects of insulin and other hypoglycaemic agents Instigation of a long-term epidemiological study in diabetes mellitus
J.McC. Murdoch	Studies in the natural history of pyelonephritis and the effect of treatment with various antibiotics Studies on new antibiotics

27. Physics

Professor N. Feather, F.R.S.	
J. Paton	Morphology and spectra of aurora and studies of noctilucent cloud
M.A.S. Ross (Miss), Ph.D.	Radioactive disintegration modes and disintegrations produced by cosmic rays using nuclear emulsions Studies of fluorescent X-rays and γ-rays, using a curved crystal spectroscope Studies of boundary layers using a low-velocity air tunnel
G.R. Evans, Ph.D.	High-pressure cloud chamber studies
P.S. Farago, Dr.Phil.	Studies in parity non-conservation; electron g-factor
H.C. Sutton, Ph.D.	Radiation chemistry
A.F. Brown, Ph.D.	Deformation of solids using radioactive tracers and other methods
J. Kyles	β- and γ-ray spectrometry; parity non-conservation
R.M. Sillitto	Fast neutron studies (energy range 1-10 MeV)
D.H McIntosh	Mathematical meteorology

27. Physics (*continued*)

Mathematical:

Professor N. Kemmer, Dr.Phil., F.R.S.	Quantum theory of fields Theory of elementary particles
with D.J. Candlin, Ph.D.	
D.L. Pursey, Ph.D.	
G.R. Screaton, Ph.D.	

28. Physiology

Professor D. Whitteridge, D.M., F.R.S.	Visual and postural mechanisms in the mid-brain
L.M. Pickford (Miss), D.Sc.	Hypothalamic mechanisms. Water diuresis
M.H. Draper	Metabolic aspects of ion transport in voluntary and cardiac muscle cells
E.G. Walsh, M.D.	Electroencephalography. Special senses
A.D. Dewar, Ph.D.	Water metabolism in the mouse
A. Iggo, Ph.D.	Afferent nerves from viscera, single unmyelinated nerve fibres
K.B. Roberts, D.Phil.	Lymphocytes and immunity: foetal haemoglobin
R.M. Gaze, D.Phil.	Regeneration of the optic nerve
G.H. Begbie, Ph.D.	Eye movements
R. Passmore, D.M.	Variations in individual energy expenditure in relation to caloric requirement and the problem of obesity

29. Psychiatry

Professor A. Kennedy, M.D.	Relation of organic disorders of attention to the selective inattention of neurosis
with N.V. Clarke	Experimental suppression of auditory stimuli
with E.L.R. Macpherson	Capillary and vasomotor conditioning in psychiatric disorders
with J.A. Hodgson	Retinal pigmentation in animals and men working underground—its relation to miners' nystagmus
with H.C. Bethune	Physical changes induced under hypnosis
J.A. Hodgson	Effects of salts of lithium and strontium on the nervous system and in mood
F.J. Fish	Syndromes of thought disorder and perceptual change in schizophrenia Perceptual changes in schizophrenia and depression and their response to drugs A long-term follow up of paranoid states
with Professor A. Kennedy, M.D.	Psychology of intractable obesity
A.D. Forrest, M.D.	Urinary excretion of indoles in relation to drug treatment Disturbed liver function in schizophrenia and in experimental psychoses
J. Drewery	Variations in pain threshold and their significance The causes of drug induced hallucinations
I. Oswald, M.D.	Studies of sleep with eyes open Electroencephalogram studies of the effects of drugs

30. Psychology

Professor J. Drever	Psychological theory
M. Collins (Miss), Ph.D.	Child psychology and individual testing
D. MacMahon	Vocational guidance and selection

30. Psychology (*continued*)

B. Semeonoff, Ph.D.	Projective techniques and the diagnostic use of performance tests, particularly in relation to academic success
R.M. MacKenzie	Inspection in industry
J. Cookson (Miss)	The selection of nurses
I.M.L. Hunter D.Phil.	Remembering and thinking
	Development of visual perception in children
M. Donaldson (Miss), Ph.D.	The development of thinking in young children
R. Lakowski	The relation between colour vision and age

31. Public Health and Social Medicine

Prof. J.H.F. Brotherston, M.D., Dr.P.H., F.R.S.E.	Inquiry into accidental injuries in Edinburgh
	Evaluation of experimental student nurse training course in Glasgow Royal Infirmary
D. Cameron with G.D. Forwell, Ph.D.	Epidemiology of epilepsy and diabetes
J.W.B. Douglas with M. Blomfield (Miss)	National survey of health and growth of children (born 3-9 March 1946)
C. Gordon, O.B.E., Ph.D., F.R.S.E. with K. Lévy (Mrs.)	Genetics of some neurological conditions in man
	Pilot survey of congenital dislocation of hip
B.M. Hobson, Ph.D.	Estimation of gonadotrophin, pituitary and chorionic, in urine and tissue
J.N. Mansbridge, Ph.D.	Epidemiology of dental caries
A. Cartwright (Miss) with R. Scott, M.D., and F.M. Martin, Ph.D.	Job analysis and morbidity study at Edinburgh University General Practice Teaching Unit
	Study of the distribution and natural history of smoking habits and evaluation of an anti-smoking campaign
F.M. Martin, Ph.D.	Factors affecting the social rehabilitation of discharged mental hospital patients
S.A. Sklaroff	Introduction and spread of staphylococcal infections in households
	Family follow-up studies of chronic diseases in general practice
B.G. Townsend with B.M. Hobson, Ph.D.	The pituitary gonad relationship in *Xenopus laevis*
M.S. Wright (Miss)	Inquiry into characteristics of successful and unsuccessful student nurses in Scotland (excluding mental hospitals)
with Professor Brotherston	Evaluation of experimental nurse training course in Glasgow Royal Infirmary
A.R. Mills	Effects of urbanization on health of peoples in developing countries (Sierra Leone)

32. Radiotherapy

Professor R. McWhirter	The value of radiotherapy in the treatment of secondarily involved lymph nodes in the axilla, supraclavicular region and internal mammary region in patients suffering from breast carcinoma
K.A. Mackenzie M. Douglas (Miss), M.D. J.G. Pearson J. Newall J. McLelland	The value of supervoltage radiotherapy in the treatment of brain tumours, carcinoma of the mouth and pharynx, carcinoma of the bronchus and oesophagus, carcinoma of the bladder, carcinoma of the cervix uteri and in osteogenic sarcoma
M. Douglas (Miss), M.D.	The value of hormone therapy in the treatment of carcinoma of the breast

33. Surgery

Clinical:

Professor J. Bruce, C.B.E., T.D.	Hormonal aspects of breast cancer Gastric secretion in relation to peptic ulcer Pathology of benign lesions of the small and large intestine
I.S.R. Sinclair	Studies on the pancreas
A.N. Smith and T.J. McNair	Measurement of intestinal mobility and pressure Intrabiliary pressures Histamine and gastric secretion
J.R. Cameron	Clinical studies on malignant melanoma
A.I.S. Macpherson	Arterial replacement Clinical research on portal hypertension and diseases of the spleen
C.W.A. Falconer	Hormonal aspects of breast cancer Clinical studies on ulcerative colitis Chemotherapy of cancer
A. Logan	Clinical studies on mitral stenosis
A.B. Wallace and A.B. Sutherland (Miss)	Accident prevention Nutritional problems in surgical patients
J. Gillies, C.V.O., M.C. with J.D. Robertson, M.D. H.W. Griffiths and others	Efficiency of new anaesthetic agents Analgesia in labour Cardio-pulmonary function in severe chest injury and after operation
D. Band, F.R.S.E.	Clinical study of bladder cancer Urinary glucuronidase in bladder cancer
G.F. Murnaghan	Haemodynamics of urinary tract

WILKIE LABORATORY FOR SURGICAL RESEARCH :

Professor M.F.A. Woodruff	Transplantation and storage of tissues and organs Transplantation immunity and immunological tolerance Peripheral vascular disease Investigation of methods of restoring haematopoietic activity in animals and man following total body irradiation
E.J. Delorme, M.D.	Prevention of gastro-intestinal injury following whole body irradiation The special role of the lymphocyte in restoring haematopoietic activity following irradiation Further investigations into modification of the immune response in inbred rat and mouse strains
B. Nolan	Studies in urolithiasis
D. Michie, D.Phil.	Genetic aspects of the transplantation of tissues and organs
J.G. Howard, Ph.D.	Studies on changes in reticuloendothelial function in relation to the homograft reaction

34. Tuberculosis and Chest Diseases

Professor J.W. Crofton, M.D.	Clinical and bacteriological aspects of the chemotherapy of tuberculosis

35. Veterinary Studies

ROYAL (DICK) SCHOOL OF VETERINARY STUDIES

Veterinary Anatomy :

T. Grahame, T.D., F.R.S.E.	The evolution of the ox and sheep in Britain

35. Veterinary Studies (*continued*)

Veterinary Anatomy (*continued*)

J.A. Taylor	The regional and applied anatomy of the domestic animals
J.G. Speed	The evolution of the horse in Britain
P.G.D. Morris	Development of the freeze substitution technique with a view to subsequent histochemical work
	Histological changes in the skin during the phases of the sexual cycle
W.M. Stokoe, Ph.D.	The development course, structure, and functional significance of the adrenal gland of the sheep
P.H. Hutton	A comparative study of the regional distribution of blood vessels in domesticated animals

Veterinary Hygiene and Preventive Medicine:

Professor A. Robertson, Ph.D., F.R.S.E.	Metabolic diseases of ruminants
G.S. Ferguson	Bovine brucellosis and mastitis
H. Paver, Ph.D.	Digestion in herbivores
I.S. Robertson	Factors affecting hatchability in poultry
E.W. Moodie, Ph.D.	Mineral metabolism in ruminants
T.G. Marr	Staphylococcal infections in cattle
P. Barden	Copper metabolism in ruminants
A.I.T. Walker	Intermediary metabolism in the ruminant

Veterinary Medicine:

Professor G.F. Boddie, F.R.S.E.	Fluorosis in ruminants, with particular reference to fluorine alleviators
E.A. McPherson	Dermatophytes of domesticated animals
H.S. McTaggart	Parasites of mink
	Metabolism of ruminants in relation to disease
P. Imlah	The role of ascorbic acid in bovine ketosis

Veterinary Microbiology and Poultry Diseases:

A. Wilson Taylor, D.Sc., Ph.D.	Mycobacterial infections in animals and birds
J.E. Phillips	Actinobacillosis
R. Burrows G. Fraser, Ph.D.	Tissue cultures: general study of animal viruses
M.E. Davies (Miss), Ph.D.	Leptospirosis in animals and birds

Veterinary Pathology:

I.S. Beattie	Pneumonia in pigs
K.W. Head	Neoplasia in domesticated animals
J.B.M. Gellatly	The causes of mortality in young piglets
J.C. Whitney	Ovarian dysfunction in the bitch

Veterinary Pharmacology:

F. Alexander, D.Sc., Ph.D.	Pharmacological and physiological studies on the digestive tracts of horses and other herbivores
	The pharmacology of anthelmintics
	Studies on anaesthesia in domestic animals

Veterinary Physiology:

F.J. Elliott, Ph.D., F.R.S.E.	Electrocardiographic investigations on domestic animals

35. Veterinary Studies (*continued*)

Veterinary Physiology (*continued*)

H. Lundy	Studies on stretch receptors
J. Lamb	Intracellular recording from cardiac cells
M. Jacobson	Studies on the process of regeneration of the optic nerve of the frog

36. Zoology

Professor M.M. Swann, Ph.D.	Cell physiology, particularly problems of fertilization, cell division and growth
K.M.G. Adam (Mrs.)	Nutrition, and effect of temperature on growth of free-living amoebae
D.C. Barker	Ultrastructure of cells with particular reference to microsomal particles in unusual forms
M. Bastock, D.Phil.	Changes in behaviour caused by gene mutations in *Drosophila*
B.C. Clarke	Population genetics
D.W. Dresser	Immunological mechanisms
M.J.W. Faed, Ph.D.	Inter-relations of cell division and growth
G.F. Friend	Speciation of Salmonid fish; ecological, morphometric and parasitological studies
L.J. Hale, Ph.D.	The activities of cells during morphogenesis, with particular reference to the hydroids
B.M. Jones, D.Sc.	Growth of cell-types *in vivo* and in culture
D.S. Kettle, D.Sc.	Bionomics and control of biting midges, *Culicoides*
R.A. Kille, Ph.D.	Fertilization
A.H. Maddy, Ph.D.	Biochemical cytology of microorganisms and tissue cells. The labelling of the proteins of cell membranes
A.W.G. Manning, D.Phil.	Genetics of behaviour in *Drosophila*
P.D. Mitchell, Ph.D.	Biochemical cytology of microorganisms and tissue cells. Control of cell behaviour by spatial organization of enzymes in membranes
J.M. Mitchison, Ph.D.	Cell growth
N.A. Mitchison, D.Phil.	Antigen persistence in immunological tolerance
J.M. Moyle (Miss), Ph.D.	Biochemical cytology of microorganisms and tissue cells. Control of cell behaviour by spatial organization of enzymes in membranes
C. Rayski, Ph.D.	Helminths and protozoa in domestic animals
D.S. Saunders, Ph.D.	Ovulation cycles in blowflies and tsetse flies
W. Sinclair	Differentiation between melanization and sclerotization in insects
P.H. Tuft, Ph.D.	Movement and distribution of water in embryos and formation of embryonic cavities
P.M.B. Walker, Ph.D.	Cytochemistry of nucleic acids
T. Warwick	Hydrobiid and Lymnaeid snails, spawning habits of frogs and toads
P.A.G. Wilson, Ph.D.	Hatching mechanism, egg membrane chemistry and permeability, and larval nutrition of trichostrongyle nematodes

10 Exeter University

1. Astronomy

NORMAN LOCKYER OBSERVATORY

D.R. Barber (Superintendent)	Colour temperatures of early-type stars Emission line stars Emission-absorption pattern of the twilight sodium airglow
S. Archer	Photoelectric observations of variable stars

2. Botany

Professor J. Caldwell, D.S.c., Ph.D. J. Wilkinson, Ph.D. S.M. Robb (Miss)	Virus diseases in plants; associated nuclear aberrations; the nature of the virus, movement and general physiology
M.C.F. Proctor, Ph.D.	Taxonomy and ecology of flowering plants and bryophytes
S.A.J. Tarr, Ph.D.	Microfungi Plant pathology
R.B. Ivimey-Cook, Ph.D.	Ecology of heaths and heath species

3. Cancer Research

J.W. Cook, D.Sc., Sc.D., Ph.D., F.R.S. (Honorary Director of Department)	Isolation and indentification of cancer-producing constituents of mineral lubricating oils
W. Carruthers, Ph.D. R.A.W. Johnstone, Ph.D. D.A.M. Watkins, Ph.D. B.L. Tonge, Ph.D.	The chemistry of tobacco smoke in relation to cancer of the lung

4. Chemistry

Professor H.N. Rydon, D.Sc., Ph.D., D.Phil.	Chemistry of polypeptides Chemistry of polyazanaphthalenes Synthesis of high polymers related to coal
S.J. Gregg, D.Sc., Ph.D.	Surface chemistry: properties of adsorbed films on solids Study of active solids, including coal and carbon High temperature oxidation of metals
K. Schofield, D.Sc., Ph.D.	Chemistry of nitrogen heteroaromatic systems Stereochemistry of reduced cyclic bases Naturally occurring quinones Chemistry of tropolones
L.H. Long, Ph.D.	Heats of formation Bond and valence-state energies Volatile boron compounds Kinetics of thermal decomposition of metal alkyls
J.S. Whitehurst, Ph.D.	Stereochemistry of alicyclic ketones Chemistry of steroids
E. Bishop	Physical, electrical and instrumental methods of analysis; titrimetric inorganic analysis
S.F. Mason, D.Phil.	Ultra-violet and infra-red spectra; kinetic and ionization constants
R.J. Williams, Ph.D.	Photochemistry of inorganic complex ions

5. Geography

Professor A. Davies	The discovery of America Portuguese African exploration Historical cartography of the fifteenth and sixteenth centuries
A.H. Shorter, Ph.D.	Historical geography of the paper-making industry in the British Isles Field patterns in England Historical geography of S.W. England
E. Patterson (Mrs.), Ph.D.	Politico-geographical aspects of the government in the British Commonwealth Mechanization of agriculture in England
W. Ravenhill, Ph.D.	Domesday geography of Cornwall
R.S. Waters	The geomorphology of Dartmoor and adjacent areas Periglacial erosion
E.M. Johns	Experiments in descriptive geography Landscape and painting
T. Revesz, Ph.D.	Microclimatic measurements in standing crops for determination of heat balance Measurements for the determination of the heat balance of the human body

6. Geology

Professor S. Simpson	Stratigraphy and structure of areas in N. Devon and W. Somerset Stratigraphy and structure of country between Dartmoor and Bodmin Moor Trace fossils
K. Coe, Ph.D.	The structure and petrology of the south part of the Leinster granite and its aureole Structure and petrology of Upper Palaeozoic sediments and intruded rocks in W. Cork, Ireland Studies of Pre-Cambrian rocks in S.W. Greenland
M. Stone	Methods of mineral and rock analysis Geochemistry and petrology of the Godolphin and Carnmenellis granites and associated rocks, W. Cornwall Tectonic style in W. Cornwall
E.B. Selwood, Ph.D.	Stratigraphy and palaeontology of the Upper Devonian and Carboniferous rocks of N. Cornwall

7. Mathematics

Applied:

Professor A.T. Price, D.Sc.	Mathematical investigations in theoretical geophysics, especially geomagnetism
J. Williams, Ph.D.	Hydrodynamics
D.J. Stone	Mathematical statistics
G.A. Duller	Hydrodynamics
L. Marder, Ph.D.	General relativity
G. Klein, D.Sc., Ph.D.	Statistical mechanics; flame theory

Pure:

Professor D. Rees, Sc.D.	Commutative algebra
J. Herszberg, Ph.D.	Algebraic geometry
D. Hammond Smith, Ph.D.	Analytic topology
H.P. Mulholland, Ph.D.	Theory of functions of a real variable

8. Physics

Professor G.K.T. Conn, Ph.D.	Measurement of optical constants of metals and semi-conductors in the infra-red region
J.E. Cousins	Mechanism of conduction in metals and semi-conductors
N.A Portman	Behaviour of solids at microwave frequencies
K.E. Grew, Ph.D., D.Sc.	Thermal diffusion of gases
G.F. Lothian	Scattering of optical radiations by small particles Raman spectroscopy Examination of phototropic materials
F.C. Flack, Ph.D.	Spectroscopy and angular correlation of β- and γ-rays
W.G.V. Rosser, Ph.D.	Spectroscopy of β- and γ-rays Studies in internal Bremsstrahlung

9. Psychology

R. Lynn, Ph.D.	Anxiety and educational attainments in school children
A.C. Staniland	Decision processes in perception
J. Szafran, Ph.D.	Analysis of human skill (with special reference to ageing) Correlation of inferences from psychophysical and neuro-physiological studies of sensory systems
J.M. Brebner	Changes of human performance with age

10. Zoology

Professor L.A. Harvey	Field studies of populations of Orthoptera Terrestial and marine ecological survey of the fauna of Lundy Comparative study of the faunas associated with littoral algae
R.S.J. Hawes, Ph.D.	Parasitic protozoology
G.G. Vickers	Ecology and bionomics of ticks
I.J. Linn	Small mammal populations Vertebrate chromatophore responses
C.C. Harvey (Mrs.)	Problems of human fertility
M.A. Sleigh, Ph.D.	Structure and behaviour of cilia

11 Glasgow University

1. Agriculture

Agricultural Botany:

A.M.M. Berrie, Ph.D.	Host-endophyte relationship in legumes Physiology of seeds and seed germination
C.G. Elliott, Ph.D.	Genetics

Agricultural Chemistry:

W.R. Rees, Ph.D.	Plant biochemistry
R.G. Hemingway, Ph.D.	The availability of plant nutrients in the soil

Agricultural Zoology:

A.R. Hill, Ph.D.	Biology and systematics of aphids Studies on the Anthocoridae: Hemiptera Heteroptera
A. Fraser, Ph.D.	Neurosecretion in insects Diapause in *Lucilia caesar L.* Digestion in Calliphoridae
R.M. Dobson, Ph.D.	Insect ecology

2. Anatomy

Professor G.M. Wyburn, D.Sc.	The fine structure of nuclear membranes
P. Bacsich, D.Sc.	Further investigations on improving the staining qualities of toluidin blue Micro-incineration studies of cells and tissues under normal and experimental conditions
R.J. Scothorne, M.D.	Histochemistry and tissue culture
A.D. Hally	The fine structure of gastric mucosa
A. Young	Embryology
J.G. Warbrick	Studies on the post partum uterus

3. Astronomy

Professor P.A. Sweet, Ph.D.	Stellar structure Cosmical electrodynamics
M.W. Ovenden, Ph.D.	Celestial mechanics History of astronomy
A.E. Roy, Ph.D.	Celestial mechanics Methods of information storage

4. Bacteriology

Professor J.W. Howie, M.D.	Bacterial infections in hospital Properties of bacterial spores relevant to their resistance to heat
I.R.W. Lominski, M.D.	The enzymes and toxins of *Staphylococcus aureus* Immunity to staphylococci
J.G.P. Hutchison, M.D.	Maternity hospital infections
R.J. Fallon, M.D.	Problems of sterilization of surgical and medical equipment and materials
R.B. Morrison, Ph.D.	The life and death of the bacterial cell
J.R. Norris, Ph.D.	Bacillaceae pathogenic to insects
J.C. Gentles, Ph.D.	Fungi of medical importance

5. Biochemistry

Professor J.N. Davidson, M.D., D.Sc. R.M.S. Smellie, Ph.D. R.Y. Thomson, Ph.D. H.M. Keir, Ph.D. E.D. Gray, Ph.D. J. Mackenzie (Miss) R. Burdon	Nucleic acid metabolism and cytochemistry
H.N. Munro, D.Sc.	Protein metabolism and nutrition
G. Leaf, Ph.D.	Plant biochemistry
W.C. Hutchison, Ph.D.	Biochemistry of the adrenal gland
E.A. Dawes, Ph.D. T. Bauchop	Microbiological biochemistry
G. Crosbie, Ph.D. G.D. Birnie	Biosynthesis of pyrimidines
J. Paul, Ph.D.	Biochemical aspects of tissue culture
Clinical:	
E.B. Hendry, Ph.D.	Applications of clinical biochemistry Osmotic properties of body fluids
W.H.S. Thomson, Ph.D. M. Fletcher, Ph.D.	Muscular dystrophies and studies of serum enzymes
S.K. Bisset, Ph.D.	Metabolism of leucocytes
A.E. Cameron (Mrs.)	Applications of clinical biochemistry

6. Botany

Professor J. Walton, D.Sc., Sc.D., F.R.S.E.	Palaeobotany (Palaeozoic)
S. Williams, Ph.D., D.Sc., F.R.S.E.	Pteridophyta; experimental morphology Symbiotic nitrogen fixation
G. Bond, Ph.D., D.Sc.	Antagonism and antibiotics in nature
S.A. Hutchinson, Ph.D.	Physiology of parasitism Sporulation in Basidiomycetes
E. Conway (Mrs.), Ph.D.	Marine ecology; autecological studies of northern species Experimental ecology of *Pteridium aquilinum*
A.C. Crundwell	Ecology and taxonomy of British bryophytes
B.W. Ribbons	Studies on the British flora
G.D. Scott, Ph.D.	Nitrogen metabolism and synthesis of lichens
D.W. Brett	Palaeobotany: Devonian, Tertiary angiosperms: leaf architecture; ontogeny of stomata
G. Hadley, Ph.D.	Physiology of sporulation in fungi

7. Chemistry

Professor J.M. Robertson, D.Sc., F.R.S.
Professor R.A. Raphael, D.Sc.

Inorganic:

J.A. Mair, Ph.D.	Investigation of 10- and 11- heteropoltungstic acids with metallic, central atoms and their molybdenum analogues
D.S. Payne, Ph.D.	Study of the mixed halides of phosphorus and of complex halides involving phosphorus Phosphite chemistry
G.S. Harris, Ph.D.	Study of organo-derivatives of the halides of phosphorus, arsenic, antimony and bismuth Investigation of (Group V element)—nitrogen compounds

Organic:

Professor R.A. Raphael, D.Sc.	Acetylene chemistry
J.D. Loudon, D.Sc.	Synthesis of natural products
G.L. Buchanan, Ph.D. K.H. Overton, Ph.D.	Structural investigations of natural products
R.P.A. Sneeden, D.Phil.	Heterocyclic chemistry
A.I. Scott, Ph.D. R. Hodges, Ph.D.	Reactions involving sulphur extrusion
G. Eglinton, Ph.D.	Seven-membered ring compounds
C. Buchanan, Ph.D.	Stereochemical studies
E. Clar, Dr.Ing.	Spectroscopy and fine structure of polycyclic aromatic hydrocarbons
J.C.D. Brand, D.Sc.	Properties and reactions of solutions in sulphuric acid: kinetics of aromatic sulphonation: molecular spectra: free radical reactions
R.I. Reed, Ph.D.	Mass spectrometry of organic compounds

7. Chemistry (*continued*)

Physical:

Professor J.M. Robertson, D.Sc., F.R.S. J.C. Speakman, D.Sc. G.A. Sim, Ph.D. T.A. Hamor, Ph.D. J. Trotter, Ph.D.	X-ray diffraction methods applied to problems of crysta and molecular structure
T.H. Goodwin, Ph.D.	Theoretical calculations
I.M. Dawson, D.Sc. D.H. Watson, Ph.D.	Electron microscopy and electron diffraction applied to molecular and biological structures: studies of the mechanism of crystal growth
S.T.R.S. Mitchell, D.Sc.	Photolysis of chloronitroso compounds: studies in circular dichroism
N. Grassie, Ph.D.	High polymer kinetics
J. Bell, D.Sc. S.J. Thomson, Ph.D. R.I. Reed, Ph.D.	Chemical studies using stable and radioactive isotopes; mass spectrometry
J.C. Speakman, D.Sc. G.H. Nancollas, Ph.D. H.S. Dunsmore (Miss), Ph.D.	Electrochemistry, including the use of potentiometric, conductivity, solubility and polarographic methods
E. Gelles, D.Phil.	Mechanism of chemical reactions
G. Eglinton, Ph.D.	Infra-red spectroscopy
K.D. Warren, Ph.D.	Thermodynamic studies of hydrogen bonding in solution
A.G. Cairns Smith, Ph.D.	Proton transfer reactions

8. Dental Studies

Professor J. Aitchison	Study of sex differences in human teeth Epipteric bones Hypertelorism and associated dental anomalies
with J. Houston	Effect of premature birth on the dental tissues
J. Campbell, Ph.D.	Trigeminal neuralgia and temporo-mandibular joint syndromes
C.K. McNeil, Ph.D.	Non-surgical closure of cleft palates
J. Ireland	Pathology of dental pulps
G.S. Nixon, Ph.D.	Radioactive investigation of effect of materials on dental tissues
G.D.C. Kennedy and J.S. Kennedy	Study of the mechanism of calcification of the dental tissues
H. Clark, Ph.D.	Radiation hazards in dental radiography
H.W. Noble	Innervation of dental tissues
D.A. Lunt (Miss)	Study of prehistoric and early mediaeval Scottish skulls

9. Dermatology

J. Sommerville	The pathogenesis of photosensitization in the human, with regard to dermatological, spectrometric and climatic conditions

10. Engineering

Aeronautics and Fluid Mechanics:

Professor W.J. Duncan, C.B.E., F.R.S.	The general theory of the response of systems Kinematics
A.S. Thom, Ph.D.	Theory of oscillations Theory of stability

10. Engineering (*continued*)

Aeronautics and Fluid Mechanics (*continued*)

A.W. Babister, Ph.D.	Thermodynamic method of determining the efficiency of hydraulic machines
T.H. Cain	Cavitation in centrifugal pumps Reabsorption of cavitation nuclei
P.H. Tanner	Influence of entrained water on vibration of ships Measurement of aerodynamic derivatives

Civil:

Professor W.T. Marshall	The measurement of stresses in reinforcement of concrete columns in framed structure during and after construction. Concrete mix design incorporating fly-ash Plastic design of eccentrically loaded stanchions
H.B. Sutherland	Flow properties in cohesive soils Measurement of stresses in tunnel linings and cofferdam struts of new vehicular tunnel under River Clyde
P.D. Arthur	Shear failure in pre-stressed concrete I beams
H.M. Nelson	The strength of aluminium alloy angle struts

Electrical:

Professor B. Hague	Bridge methods of alternating current measurement
A.J. Small, Ph.D.	Measurement of small temperature differences
D.S. Gordon, Ph.D.	Instrument transformers
T.R. Foord, Ph.D.	Electrical measurement and recording of mechanical vibrations
J.H. Shankland	
P.A.V. Thomas	Electrical breakdown in compressed gases
J.H. Collins	Design of small surge generators and Van de Graaf machines
O.K. Gashus	Theory of a.c. commutator motor Harmonic generation in induction machines Parametric theory of electrical circuits and machines Theory of phase converters Servomechanisms Methods of measuring symmetrical components in unbalanced systems Microwave aerials and measurements Ferromagnetic amplifiers Digital and analogue computers

Mechanical:

Professor J. Small	The construction of an experimental supercritical steam generator, and associated development research
E.A. Bruges, Ph.D.	
B.E.L. Deckker, Ph.D.	Thermodynamic properties of high pressure steam
W.W. Mackie	Measurements on viscosity of steam
W.L. Taylor	The measurement of oxygen and the behaviour of hydrazine in boiler feedwater
N.R.L. Maccallum, Ph.D.	Stress corrosion phenomena Behaviour of materials in high temperature steam Combustion time experiments Forced flame vibrations Self excited flame vibrations Flame spreading in high speed gas streams Flame structure Second law analyses

Mining:

Professor G. Hibberd	Resistance to air flow in mine shafts and roadways
A.W.K. Stewart	Dust suppression
F.P. Gardner	Subsidence. Transference of ground stress to surface structures

10. Engineering (*continued*)

Mining (*continued*)

R. Stewart	Shock waves in ventilation circuits
I.O. Jones	Migration and layering of mine gases

Naval Architecture:

Professor J.F.C. Conn	Ship bending moments
M. Livingstone	Pressure effects in waves
N.S. Miller	Computational methods

11. Forensic Medicine

Professor J. Glaister, D.S.c., M.D. J.A. Imrie, M.D. E. Rentoul, M.B.E.	Research in the application of scientific methods to criminal investigation

12. Genetics

Professor G. Pontecorvo, Ph.D., F.R.S.	Genetics of micro-organisms: human genetics in cell cultures
J. Lilly (Miss), Ph.D.	Mutation
G.L. Le Bouvier, Ph.D.	Immunology of human cell cultures
J.H. Renwick, Ph.D.	Protein variation in human cell cultures
J.S. Gale	Genetics of *Aspergillus nidulans*
B.L. Cohen	Genetics of mouse haemoglobins

13. Geography

Professor R. Miller, Ph.D.	Africa: especially Nigeria Scotland
H. Fairhurst, Ph.D.	Early settlement of Clyde basin
H.A. Moiseley	Glasgow and region Crofting survey
C.A. Halstead	Scotland: geomorphology, hydrography
J.B. Caird, D.U.	Evolution of the cultural landscape of Scotland, crofting survey
J. Tivy (Miss), Ph.D.	Scotland: biogeography
D. Diamond	Glasgow: urban geography

14. Geology

Professor T.N. George	Carboniferous stratigraphy Carboniferous invertebrate fossils Spiriferacean brachiopods Theoretical palaeontology
J. Weir	Carboniferous non-marine mollusca
D.R. Bowes	Metamorphics and structures in the Scottish Highlands Petrochemistry of metamorphic rocks
E.D. Currie (Miss)	Scottish *Goniatites*
N. Holgate	Petrochemistry of igneous magmas
R.H. Cummings	Carboniferous foraminifera Bottom microfauna of Clyde estuary
D.A. Bassett	Lower Palaeozoic rocks and structures Pleistocene sediments in Scotland
A.C. McLean	Geophysical surveys in Scotland
W.E. Tremlett	Structure and petrology in Leinster and N. Wales
D.S. Weedon	Igneous rocks of the Scottish Highlands
D.W. Powell	Geophysical surveys in Scotland
A.T.V. Rothstein	Petrology of serpentine rocks
I.B. Paterson	Carboniferous stratigraphy in Ireland

15. Infectious Diseases

T. Anderson	Epidemiological problems, especially those involving virus infections: chemotherapy of acute infections with particular reference to pneumonia, meningitis and dysentery

16. Mathematics

Professor R.A. Rankin, Sc.D.	Theory of numbers and automorphic functions
Professor I.N. Sneddon, D.Sc.	Boundary value problems of mathematical physics Propagation of waves in elastic and visco-elastic solids
R.A. Robb, D.Sc.	Experimental statistics
J. Aitchison	Mathematical statistics
J.L. Britton, Ph.D.	Group theory
A. Geddes, Ph.D.	Ideal theory
J. Hunter, Ph.D.	Theory of numbers
S. Moran, Ph.D.	Group theory
W.D. Munn, Ph.D.	Algebra
A.P. Robertson, Ph.D.	Functional analysis
S.D. Silvey, Ph.D.	Mathematical statistics

COMPUTING LABORATORY

D.C. Gilles, Ph.D.	Numerical analysis (particularly partial differential equations)
J. Leech	Applications of computers in problems in pure mathematics
D.G. Williams	Mathematical logic, theory of automata

17. Medicine

ROYAL INFIRMARY

Professor L.J. Davis, M.D.	Various problems in clinical haematology
E.M. McGirr	Application of radioactive isotopes in the study of thyroid disorders and blood diseases
T. McEwan, M.D.	Respiratory diseases
A.S. Douglas, M.D.	Haemophilia and other disorders of blood coagulation
A.C. Kennedy, M.D.	Renal diseases

WESTERN INFIRMARY

Professor E.J. Wayne, M.D. J. Crooks, M.D.	Investigation of thyroid and other endocrine disorders and electrolyte disorders using radioactive isotopes
R.L. Richards, M.D.	Peripheral vascular disease and hypertension
A.J.V. Cameron, M.D.	Ballistocardiography
B.E.C. Nordin, M.D.	Calcium metabolism and diseases of bone. Radioactive calcium studies. Action of parathyroid hormone
A. Goldberg, M.D.	Studies of the biosynthesis of haem and the metabolism of iron Studies of leukaemia, myelofibrosis and haemolytic anaemia using radioactive isotopes
W.D. Alexander	Metabolic effects of the thyroid hormones

18. Microbiology

Bacteriology:	
	See Bacteriology

19. Obstetrics and Gynaecology

Professor I. Donald, M.B.E., M.D.	Respiratory disorders in newborn Ultrasonic echo studies in abdominal tumour masses Continuous sphygmomanometry Foetal cephalometry in utero by ultrasonic echo sounding
A.D.T. Govan, Ph.D.	Hormonal factors in toxaemia of pregnancy
J. McBride, M.D.	Oestrogen metabolism in post-menopausal states
M.L. Paterson, M.D.	Antidiuretic hormone studies in pre-eclamptic toxaemia of pregnancy
W. Barr	Post-operative urinary infection

20. Ophthalmology

Professor W.J.B. Riddell	Clinical research in ophthalmology and human heredity
M.W. Paterson	Clinical perimetry
R. Leishman, M.D.	Vascular diseases affecting the eye

21. Paediatrics and Child Health

Professor S.G. Graham	Fat balances in coeliac disease and fibrocystic disease of the pancreas Calcium balances in hypercalcaemia
J.H. Hutchison, O.B.E.	Radioactive iodine in goitrous children
R.A. Shanks	Electroencephalography in infantile febrile convulsions
J.O. Craig	Somatotyping in children
A.M. MacDonald	Nephrocalcinosis
F.H. Stone	Effects of hospitalization on children of varying ages
G.C. Arneil H.E. Wilson W.M. Fyfe	Studies in nephrosis: long-term results
E.N. Coleman	Electrocardiographic changes in electrolyte disturbances

22. Pathology

ROYAL HOSPITAL FOR SICK CHILDREN

A.M. MacDonald, M.D.	Pathology of infancy and childhood Renal calcinosis Staphylococcal lesions Muscular dystrophies

ROYAL INFIRMARY

Professor T. Symington	Morphological, histochemical and enzyme studies on the adrenal gland, with particular reference to Cushing's and adreno-genital syndrome and carcinoma of breast
B. Cruickshank, M.D.	Antigen-antibody: site of reaction, by method of fluorescence Pathology of rheumatoid disease
R.S. Patrick	Experimental aspects of liver necrosis
P. Pullar	Experimental investigations of skin and pituitary tumours
J.S. Kennedy	Radioactive isotopes in connective tissue pathology, experimental carcinogenesis, and pathology of thyroid gland
W.P. Duguid	Effect of hypothermia on the lesion of complete renal ischaemia in rats
I.A. Carr	The electron microscopy of the human adrenal cortex
G. Studzinski	The effect of ACTH on the dehydrogenase enzyme systems of the pentose phosphate and Krebs' cycles

22. Pathology (*continued*)

WESTERN INFIRMARY

D.F. Cappell, C.B.E., M.D.	Researches on blood groups Pathology of vascular disease Human siderosis
H.E. Hutchison, M.D.	Pathology of iron metabolism 5 HT in pathological mechanisms Haematological disorders
B. Lennox, M.D.	Skin tumours (histopathology and carcinogenesis) Nuclear sexing Human chromosomal abnormalities
J.R. Anderson, M.D.	Red cell and tissue antigens and antibodies Experimental erythroblastosis foetalis Autoimmunization
G.B.S. Roberts, M.D.	Pathology of infectious diseases in childhood Fibrocystic disease of the pancreas
A.T. Sandison, M.D.	Pathology of the mamma Pituitary ablation for carcinoma
J.A. Milne	Histopathology of the skin
A.J. Watson	Experimental fat embolism Mesenchymomata Ulcerative colitis
R.B. Goudie	Tissue antigens and antibodies in human disease Autoimmunization
J.F. Boyd	Hypofibrinogenaemia in stillbirths and neonates The role of a histamine releasing agent on wound healing and in the survival of skin grafts The study of lingular biopsies in congenital and acquired heart disease
M.E. Catto	Bone tumours Pathology of orthopaedic lesions
J.S. Beck	Human anti-antibody Osteoporosis

23. Pharmacology and Therapeutics

Professor S. Alstead, M.D.	
J.G. Macarthur	Clinical application of hypotensive drugs
W.F.M. Fulton	Clinical and pathological enquiry into coronary artery disease
T.J. Thomson	Clinical evaluation of diuretics
J.C. Brocklehurst, M.D. G. Onuaguluchi	Studies on the natural history of post-encephalitic Parkinsonism and effect of anti-Parkinsonism drugs
B.R. Hillis, M.D.	Respiratory function in relation to the pre-operative and post-operative states Aetiological factors in bronchial carcinoma

Experimental:

Professor R.C. Garry (Department of Physiology)	
J.J. Lewis	Studies on the mode of action of muscle relaxants, antipsychotics and antidepressives
J.J. Lewis with F. Stothers (Mrs)	Influence of inter-onium distance on curariform activity
with F.MacL. Carey (Miss)	Influence of alkyl group size on curariform activity

23. Pharmacology and Therapeutics (*continued*)

Experimental (*continued*)

with T. Muir	Influence of the ether function on curariform activity
with G.R. Van Petten	Influence of antipsychotics and antidepressives on brain enzyme systems
with B. Mir (Mrs.)	Mode of action of antihypertensive drugs
with K. Ahmad	Actions of petalin, a convulsant alkaloid Influence of membrane-active drugs on curariform activity
with S. Nanjappa	Influence of the ether function on curariform activity Mode of action of 5-hydroxytryptamine analogues
with R. Sur	Drug-induced antibody formation in man and animals
N.G. Waton, Ph.D.	Studies on the metabolism of histamine
M. Martin-Smith, Ph.D. with S. Reid	Preparation of thionaphthen isosteres of biologically active indole compounds
with I. Brown	Investigation of two plants used in Hindu medicine—*Herpestes monniera* and *Withania somnifera*
with M. Alauddin	Preparation of rigid poly-quaternary ammonium salts for curare-like properties and the utilization of the saponins of *Acokanthera longiflora*

24. Physics, Natural Philosophy

Professor P.I. Dee, C.B.E., F.R.S. (Experimental Physics) Professor J.C. Gunn (Theoretical Physics)	
W. McFarlane, D.Sc. J.G. Rutherglen, Ph.D. E.H. Bellamy, Ph.D. W.R. Hogg, Ph.D. D.T. Stewart, Ph.D. P. Swinbank, Ph.D. W.S.C. Williams, Ph.D.	Experiments upon photomeson production and photodisintegration using 300 MeV and 30 MeV electron synchrotrons
A.L. Cockroft G.M. Lewis, Ph.D. R.E. Azuma, Ph.D.	Experiments on radioactive isotopes with proportional and fluorescent counters
W. Jack	Experiments on artificial disintegration and excited states of light nuclei using 1 MeV D.C. accelerator
J.M. Reid I.S. Hughes, Ph.D. D. Dixon J. McNeill	Cloud and bubble chamber experiments on photodisintegration and mesons
P.V. March, Ph.D.	Nuclear emulsion experiments on scattering and disintegration using high energy particles
G.A.P. Wyllie, Ph.D. H. Mykura, Ph.D.	Solid state physics Surface self diffusion
W.K. Burton, Ph.D. R. Giles	Quantum field theory
R.G. Moorhouse, Ph.D. B.H. Bransden, Ph.D.	Theory of nuclei and mesons
K.M. Guggenheimer, Dr.Phil.	Theoretical chemical physics

25. Physiology

Professor R.C. Garry	Innervation of gut and of abdominal viscera: nutrition
H.S.D. Garven, M.D. F.W. Gairns	Staining of nerve and of nerve endings with the silver diamine ion (Bielschowsky-Gros) method
T.D.M. Roberts, Ph.D. M.R. Davey (Miss), Ph.D.	Neurophysiology of postural mechanisms
S.D. Morrison, Ph.D. with P. Baillie	Central and peripheral control of food and water intake in rats: total metabolism of rats over long periods
A.B. McNaught (Miss), Ph.D.	Histology of absorption from the gut and of humoral transmission in the gut: pre-menstrual syndrome
I.A. Boyd, Ph.D. with C.L. Pathak, M.D.	Structure and function of mammalian neuromuscular spindles: action of substances at great dilution
J.S. Gillespie, Ph.D.	Chemical transmission at adrenergic nerve endings: innervation of smooth muscle
M. Holmes	Humoral factors influencing blood supply to, and activities of, visceral muscle
B.R. Mackenna	Humoral transmission in the gut
J.R. Greer, Ph.D.	Control of respiration in animals and man
J.V.G.A. Durnin with J.M. Brockway M.K. Allen (Miss) S. Blair (Miss) E.C. Blake (Miss) E.S. Shaw (Miss)	Studies of expenditure and intake of energy, and of respiratory function, in human beings at different ages
J.K. Todd	Nervous control of pelvic viscera
G.R. Sharp	Hypothermia

26. Psychiatry

Professor T.F. Rodger	Survey of psychiatric illnesses in general practice Preventive psychiatry and its implications for public health
F. Stone, M.D.	Infantile autism Psychopathology of the brain-damaged child
R.M. Mowbray, Ph.D.	Psychophysiological implications of arousal mechanisms Recovery of consciousness after electroconvulsive therapy Huntington's chorea

27. Psychology

Professor R.W. Pickford, Ph.D., D.Litt.	Differences in colour vision due to age, sex and race Tests of colour blindness; and its inheritance Neurosis, personality, and child psychotherapy Psychotic art and experimental aesthetics
G. Jahoda, Ph.D.	Psychological problems of cultural change in Ghana Development of the perception of social differences in children "Animistic" thinking
D.H. Stott, Ph.D.	Diagnosis of maladjustment and delinquency in children, and of types of family situation conducive thereto Causes and treatment of scholastic backwardness Effects of disturbed pregnancy Etiology of mongoloid mental defect
A.J. Weir, D.Phil.	Differentiation between factual judgments and evaluations as a measure of developmental level of functioning The problems of adaptation to retirement, especially in unskilled workers

28. Surgery

ROYAL HOSPITAL FOR SICK CHILDREN

W.M. Dennison, M.D.	The effects of surgery in the newborn
J.F.R. Bentley	Hypothermia in neonatal surgery
C.K. McNeil, Ph.D.	Infection in the newborn
W. Auld	Normal and abnormal anatomy of the ano-rectal region
G. France	Duplication of the alimentary tract
J.C. Grant	Alignment of the dental arch and related problems in cleft palate surgery
H. Adamson (Miss)	Burns in childhood
	Malignant disease in childhood

ROYAL INFIRMARY

Professor W.A. Mackey with W.H. Bain	Clinical research in the surgery of the cardiovascular system
	Profound body cooling using an extra-corporeal circuit
	Experimental surgery of the coronary arteries
A.L. Goodall, M.D.	Experimental breast carcinoma in rats
D.W. Short	The relationship of amylase levels in the blood to disease
A.C. Forrester (Department of Anaesthetics)	Hypothermia using air cooling

WESTERN INFIRMARY

Professor C.F.W. Illingworth, C.B.E., M.D.	
G. Smith, M.B.E., M.D.	Researches on cardiovascular surgery; studies of effect of high pressure oxygen on experimental coronary artery occlusion and carbon monoxide poisoning
A.P.M. Forrest, M.D.	Hormonal approach to breast cancer—destruction of the pituitary by radioactive implants; adrenalectomy; oophorectomy; adrenal physiology; tests of adrenal and pituitary function; electron microscopy of breast cancer
	Studies in gastric secretion—effect of antihistamines, atropine, adrenal inhibitors; physiology of the pyloric antrum
W. Burnett	Studies of liver and bile duct function; cholangiography; formation of gallstones. Experimental shock. Gastric cytology. Seromucoprotein estimations in breast cancer
H.L. Duthie	Studies of post-gastrectomy syndrome changes in blood volume; iron absorption; small bowel motility; fat absorption and steatorrhoea
E.G. Brewin	Cardiovascular research
A.W. Sim	Urinary ketosteroid and oestrogen estimations in breast cancer

29. Veterinary Studies

Professor W.L. Weipers	
W.F.H. Jarrett, Ph.D.	Pathological and immunological studies on helminth diseases, in particular vaccination by irradiated infective larvae
F.W. Jennings	
W.I.M. McIntyre, Ph.D.	
W. Mulligan, Ph.D.	
C. Dow, Ph.D.	
N.C. Sharp	
H. Hein	
H. Pirie	

29. Veterinary Studies *(continued)*

F.W. Jennings W. Mulligan, Ph.D.	Immunological tolerance in the domestic fowl to simple protein antigens
I.D. Aitken	Antibody production in the domestic fowl to simple protein and chemically altered protein antigens
I.M. Lauder	Blood volume measurements in domestic animals, determinations of exchangeable body sodium on domestic animals Treatment of disease caused by external parasites Epidemiology of *Filaroides osleri* infestation Diagnosis of tuberculosis in dogs and cats
I.M. Lauder V. Hawthorne	Relation of canine and feline tuberculosis to human tuberculosis
R.N.C. Aitken	Comparative studies of the accessary reproductive organs of the male from the point of view of histology, histochemistry and ontogeny
L. Kellas, Ph.D.	Comparative placentation with reference to domestic and wild ruminants Globule leucocytes and reproductive tract
R.S. Anderson E. Pickering D. Robertshaw	Renal control of acid-base regulation in the dairy cow
W.I.M. McIntyre R.G. Dalton E.W. Fisher	Factors affecting absorption of water and electrolytes
H. Pirie W.F.H. Jarrett, Ph.D.	Pathology of pneumonia in pigs
C. Dow, Ph.D.	Pathological and endocrinological studies on the prostate ovaries and testes
W.A. Greig, Ph.D.	Aetiology and treatment of bovine ketosis Toxicity of vitamin 'D' in cattle Mineral interrelationships in the diet of fattening pigs Ataxia in lambs
W.F.H. Jarrett, Ph.D. W.I.M. McIntyre, Ph.D.	Studies in Johne's disease
R.G. Dalton E.W. Fisher W.F.H. Jarrett, Ph.D. W.I.M. McIntyre, Ph.D.	Calf diarrhoea—an electrolyte and bacteriological study
E.M. Harper Professor W.L. Weipers	Intestinal obstruction in the dog
D.D. Lawson G.S. Nixon H.W. Noble	Correlation of clinical, radiographic and pathologic features of dental disease in the dog
D.D. Lawson P. Leahy	Veterinary radiology
D.D. Lawson G. Smith, M.B.E.	Effects of hypothermia in acute coronary occlusion in the dog. Effects of high pressure oxygen in acute coronary occlusion in the dog. Effects of high pressure oxygen in experimental carbon monoxide poisoning
D.D. Lawson J.M. Cameron	Experimental study of the effects of sterilization by different methods on autogenous and homologous bone grafts Investigation into the nature of Perthe's disease in the dog
I.M. Lauder J.G. O'Sullivan	Dermatomycosis in animals

29. Veterinary Studies *(continued)*

S. Jennings	Study in bovine ovarian cystic degeneration
P.G. Hignett	Studies in vibriosis in cattle
C. Dow, Ph.D.	Studies in infertility in cattle
T.A. Douglas, Ph.D. P.G. Hignett C. Dow, Ph.D.	Studies in foetal fluids
J.R. Campbell	Studies in abnormalities in the bones of the dog
S. Jennings E.W. Fisher	Development of closed circuit anaesthesia in horses and farm animals
D.D. Lawson T.A. Douglas, Ph.D.	Studies in use of bovine serum albumin as plasma expander in dogs
T.A. Douglas, Ph.D.	Veterinary aspects of clinical biochemistry
T.A. Douglas, Ph.D. P.G. Hignett	Studies in pregnancy toxaemia
H.J. Smith F.E.F. Lindsay	Circulation of the blood in the coronary vessels in heart of the fowl
J. Sanford	Factors affecting the motility of the ruminant stomach. The distribution of histamine in sheep and cattle

Animal Husbandry and Preventive Veterinary Medicine:

Professor J.S.S. Inglis	
Professor J.S.S. Inglis P.J. Pearce M. Weipers (Mrs.)	Studies on pregnancy toxaemia in sheep and ketosis in dairy cattle
Professor J.S.S. Inglis P.J. Pearce M. Weipers (Mrs.)	Copper poisoning in indoor sheep
Professor J.S.S. Inglis P.J. Pearce M. Weipers (Mrs.)	Hypomagnesaemia in sheep
Professor J.S.S. Inglis M. Weipers (Mrs.)	Studies on the effect of Johne's disease vaccination on the reliability of the tuberculin test
A.J.D. Campbell	Studies on problems of deep litter in poultry husbandry

Pathology:

Professor J.W. Emslie	
J.G. O'Sullivan	Dermatomycosis
R.S.F. Campbell and T.D.V. Lawrie, M.D.	Experimental atherosclerosis of poultry, with special reference to treatment
R.S.F. Campbell	Study of neuropathology of canine distemper
S.W. Michna	Serological studies in canine distemper, contagious hepatitis and leptospirosis Natural and experimental leptospirosis in pigs Serological studies in Johne's disease
M. Grindlay	A study of the pleuropneumonia-like organisms of the respiratory tract of domestic animals
H.B. McCusker	Investigations into diseases of the skin of domestic animals
A.M. Dunn, Ph.D.	Epidemiology of helminth parasitism in British fauna
J.M. Hamilton	A study of feline pneumonitis
J.T. Vantsis, Ph.D.	A study of natural and experimental toxoplasmosis The isolation and identification of animal viruses by the method of tissue culture

30. Zoology

Professor C.M. Yonge, C.B.E., D.Sc., F.R.S.	Marine biology: functional morphology of Mollusca
G. Owen, D.Sc.	
J. Bowden, Ph.D.	
H.D. Slack, Ph.D.	Freshwater biology
J.D. Robertson, Ph.D.	Composition of body fluids and tissues of animals
H.F. Steedman, Ph.D.	Histological and technical methods
S.A. Barnett	Stress. Behaviour. Selection
A.E. Miller (Miss)	Vertebrate zoology; embryology of fish
R.A. Crowson	Taxonomy and biology of the Coleoptera
C.A. Hopkins, Ph.D.	The *in vivo* and *in vitro* development of cestodes and strigeid trematodes
W.R. Hunter, Ph.D.	Ecology and physiology of non-marine Mollusca
J.W.H. Lawson, Ph.D.	Insect behaviour
G. Hoyle, D.Sc.	Neurophysiological basis of insect behaviour
J.B. Cowey	Cell physiology of protozoa
A.F.G. Dixon, Ph.D.	Behaviour of aphidophagous insects and their prey
Agricultural Zoology:	

See **Agriculture,** *Agricultural Zoology*

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1. Building Studies

Professor F. Fielden	Condensation in industrial roofs
A. MacLean	Hollow blocks as resonators
E. Morris	Studies on timber structures
J. Wilson	

2. Chemistry

Professor F.S. Spring, F.R.S.

Inorganic:

A.B. Crawford, Ph.D.	Reaction of metal salts with semicarbazides
W.A. Alexander	Interaction of nitrite with sulphites and selenites
D.H. Brown, Ph.D.	Tungsten complexes
T.D. Smith	Formation of complex ions in solution Reactions of alkyl phosphites Hydrides of aluminium

Organic:

Professor P.L. Pauson	Organo-metallic compounds Non-benzenoid aromatic systems Natural products
J. McLean, Ph.D.	Structure and transformations of triterpenoids and steroids Metallic carbides as a source of organic compounds
A.C. Syme, Ph.D.	Microanalytical methods
W. Sharp, Ph.D.	Antibiotics and chemotherapeutics
H.C.S. Wood, Ph.D.,	Chemical studies on the biosynthesis of pteridines and related topics
P. Bladon, Ph.D.	Chemistry of steroids and alkaloids
W. Lawrie, Ph.D.	Chemistry of triterpenes and steroids

2. Chemistry (*continued*)

Organic (*continued*)

G.R. Proctor, Ph.D.	Synthesis of azatropolones
D.K. Nonhebel, Ph.D.	Reactions of metal chelates of β-diketones
J.A.D. Jeffreys, Ph.D.	Alkaloids and natural quinones

Physical:

W. Good, D.Sc.	Amphipathic electrolytes Catalysis in iron solutions
A.B. Hart, Ph.D.	Catalytic properties of solid oxides
A.J. Hyde, Ph.D.	Light scattering by polymer molecules
F.L. Swinton, Ph.D.	Kinetics of crystallization of polymers
B. Shillaker	Kinetics of solvolysis reactions of organic compounds

3. Engineering

Electrical:

Professor F.M. Bruce	High-voltage discharge phenomena: Power system transient investigations Sparkover in uniform and non-uniform fields Impulse, a.c. and d.c. calibrations for uniform field spark gaps
J.E. Matthews	Characteristics of power-follow current arcs
A. Aked	Sparkover under controlled atmosphere conditions
D.J. Tedford, Ph.D.	Irradiation phenomena
J.T. Pender A. Douglas	Heavy current phenomena: arc control devices
E.S. Fairley, Ph.D.	Measurements: Precision electrical measurements High voltage measurements
Z.Z. Jelonek I. Cochrane, Ph.D. P.L.V. Pomella	Electronics: Synchronization of oscillatory systems Transient response of servomechanisms Effect of non-linear torque in servomotors Servomechanisms with backlash Sampling servomechanisms
W.S. Wood	Machines: Transient characteristics of d.c. machines

Mechanical, Civil and Chemical:

Professor A.S.T. Thomson	Civil engineering hydraulics: Traction of stream bed material
Professor A.W. Scott	Wave actions in channels
Professor W. Frazer	Simulation of density currents in hydraulic models
Professor J.C. Orkney	River models
A.M. Laird	Soil mechanics:
H.L. McBroom	Behaviour of granular materials
C.M. Moir	Behaviour of clay soils under consolidation pressure
R.M. Kenedi	Behaviour of clay soils under shear
W. Ferguson	Cement and concrete:
G.V. Stabler	Effect of curing conditions on concrete strength
W.B. McHutchison	Workability of concrete mixes
R. Hendry D.B. Swinbanks	Testing of concrete—effect of various factors on indicated strength
J.F.T. MacLaren	The pressure of concrete on formwork
R.G. Tudhope	Water tube boilers:
D.G. McKinlay	Natural circulation in water tube boilers
J.M. Harvey	General thermodynamics:
R. White	Refrigeration. Heat transfer in compressor cylinders
T. Allan and others	Heat transfer with finned tubes Nozzle erosion

3. Engineering (*continued*)

Mechanical, Civil and Chemical (*continued*)

Professor A.S.T. Thomson	Fluids:
Professor A.W. Scott	Transportation of solids by fluids
Professor W. Frazer	Performance of ventilator heads
Professor J.C. Orkney	Lubrication:
A.M. Laird	Varying loads on sleeve bearings
H.L. McBroom	Safe bearing pressures
C.M. Moir	Bearing metal failure
R.M. Kenedi	Strength and durability of gear teeth
W. Ferguson	Materials and structures:
G.V. Stabler	Built-up engine crankshafts
W.B. McHutchison	Load carrying capacity of thin-walled structures
R. Hendry	Buckling of flat plates due to non-uniform heating
D.B. Swinbanks	Photoelastic investigation of stress concentration effects
J.F.T. MacLaren	Stress and stability investigation of thin steel shells
R.G. Tudhope	Dynamic effects in crane structures
D.G. McKinlay	Concrete slab and shell structures
J.M. Harvey	Shrink fits
R. White	Mild steel frames subjected to combined bending and torsion
T. Allan and others (*continued*)	Technical dynamics:
	Transient vibrations
	Shaft whirling
	Gyroscope nutation
	Production engineering:
	Investigation of honing characteristics
	Cutting tool fundamentals
	Chemical engineering:
	Disc atomizers
	Transients in heat transfer
	Vacuum filtration
	Mixing
	Distillation
	Boiling heat transfer

Naval Architecture:

I.C. Bridge (Head of Department)	Propulsion by paddle wheels
	Design of mooring buoys

4. Food Science

Professor J. Hawthorn, Ph.D.	The oxidation of natural fats by enzymic mechanisms
	The auto-oxidation of wheat proteins
	Strontium-90 in foodstuffs
R.B. Duckworth, Ph.D.	Uptake of alkaline earth metals by plant roots

5. Mathematics

Professor D.C. Pack, D.Sc.	Theory of viscous and inviscid jets
M.D. Carter (Miss)	Hodograph methods in transonic flow
L.J. Crane, Ph.D.	Initiation of explosions
J.B. Helliwell, Ph.D.	
J.L. Smyrl, Ph.D.	
F.J. Warner	
R.D. Lord	The application of Hankel transforms
B. Noble	Integral equations
C.C. Bartlett	Numerical methods for boundary-value problems
W.W. Muir, Ph.D.	Diffraction theory
A.J. Sharples	
S.B.L. Wilson	

5. Mathematics *(continued)*

J.G. Fraser	Applications of electronic computers
A.J. Howie, Ph.D.	Applied statistics

6. Metallurgy

Professor E.C. Ellwood, Ph.D.	Structure of alloys
J. Taylor, Ph.D.	Thermodynamic properties of silicon and silica in slag/metal systems. Thermodynamic properties of CaS in slags
H.B. Bell, Ph.D.	Constitution of liquid slags Deoxidation of steel
J.M. McLeod, Ph.D.	Damping capacity of metals and alloys
A.H. Cooper, Ph.D.	Thermodynamics of oxide compounds
R. Kennedy, Ph.D.	Radioactive techniques applied to studies of carbon in ferrous systems
D.B. Downie	Thermodynamic properties of alloys

7. Microbiology

Applied:

E.O. Morris, Ph.D.	Acetic acid bacteria Characteristicsof *Pseudomonas* spp. Sulphur-oxidizing bacteria and their relation to acid mine waters Marine yeasts
J.A. Blain, Ph.D.	Lipoxidase and other fat oxidase systems Effect of moisture levels on enzyme activity

8. Pharmacy

Professor J.P. Todd, Ph.D.	Bacterial polysaccharides, isolation and examination
D.H.O. Gemmell	Percutaneous absorption of medicaments
J.L. Paterson	Pharmacological effects of bacterial lipopolysaccharides
F. Fish, Ph.D.	Pharmacognostical and chemical studies on *Leontice leontopetalum* and on some plants of the Apocynaceae The effect of giberellic acid on the growth and alkaloidal content of *Datura stramonium*
J.B. Stenlake, Ph.D.	Chemotherapeutic compounds for tuberculosis Active principles of crude drugs The physical properties of piperidine derivatives related to ergot alkaloids Organo-selenium compounds Neuromuscular blocking agents

9. Physics

Natural Philosophy:

Professor J.S. Rankin	
J.W. Sharpe	Electron microscopy
L. Jacob, D.Sc.	Field emission microscopy Semi-conductors Electron-optical lens modulators
A.S.V. McKenzie	Acoustics
A.S. McLaren	Photoelasticity
L.G. Griffiths, Ph.D.	Cavitation

9. Physics (*continued*)

Natural Philosophy (*continued*)

C. Weaver	Thin films—optical, electrical and dielectric properties; intermetallic reactions; adhesion Diffusion in solids
T.S. Wylie	Radiography and X-ray crystallography

10. Technology

Chemical:

Professor P.D. Ritchie	Physicochemical studies on dusts, particularly siliceous dusts. Pyrolysis of organic compounds, particularly esters and polyesters
F. Rumford, Ph.D.	Studies in industrial crystallization Mass transfer phenomena
C.H. Giles, D.Sc.	Mechanism of fading of dyestuffs Mode of attachment of dyestuffs to natural and synthetic substrates
T.J. Mitchell, Ph.D. C.G.M. Slesser, Ph.D.	The drying of fibrous and granular materials (e.g. seaweed, textile fibres, etc.) and the extraction of such materials with liquid media
W. Gibb, Ph.D.	Physicochemical studies on dusts, particularly siliceous dusts. Deterioration of lubricating oils
W.I. Bengough, Ph.D.	Mechanism and kinetics of vinyl polymerizations
R.G. Gardner, Ph.D.	Mass transfer studies in packed absorption columns

Textile:

Professor R. Meredith, D.Sc.	Dynamic mechanical properties of fibres Relaxation of stress in yarns and monofils
N. Peacock, Ph.D.	X-ray and electron microscope studies of keratin and cellulose
H.M. Elder	Fabric evaluation

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1. Botany

Professor N.E. Robertson, Ph.D.	Fungi: morphogenetic problems Plant pathology: analysis of pathogenicity
B.T. Cromwell, Ph.D.	The nitrogen metabolism of plants, especially the biosynthesis of alkaloids
H. Stenton, Ph.D.	Mycology: the ecology of soil fungi Myxomycetes
D.J. Boatman, Ph.D.	Plant ecology, especially physiological aspects
M. Roberts (Mrs.), Ph.D.	Algology, especially marine
A.J. Peel, Ph.D.	Plant physiology: transport of organic solutes

2. Chemistry

Professor N.B. Chapman	Kinetics of organic reactions in solution Synthesis and properties of pharmacologically active substances
R.R. Baldwin, Ph.D.	The effect of vessel surface on the kinetics of hydrogen and carbon monoxide oxidation Inhibition of the hydrogen-oxygen reaction by aldehydes, paraffins, and olefines

2. Chemistry *(continued)*

R.R. Baldwin, Ph.D. *(continued)*	Oxidation of formaldehyde Homogeneous gas phase decomposition of hydrogen peroxide
C.C. Barker, Ph.D.	Adsorption spectra and stereochemistry of hindered di- and tri-phenylmethane dyes The formation of polycyclic aromatic hydrocarbons by cyclodehydrogenation reactions
P.M.G. Bavin, Ph.D.	The aliphatic chemistry of fluorene and its homologues
G.C. Bond, Ph.D.	Heterogeneous catalysis: the kinetics of the catalytic hydrogenation of acetylene and diolefins The kinetics of the dissolution of metals in aqueous systems
K. Clarke, Ph.D.	Study of di-hydroxy-indoles and related compounds The efficiency of phenolic germicides against certain bacteria Synthesis and properties of pharmacologically active substances
G.W. Gray, Ph.D.	The effect of substituents and in particular of steric hindrance on the mesomorphic behaviour of diphenyl derivatives The chemistry and substitution of *p*-terphenyl The efficiency of phenolic germicides against certain bacteria
B.J. Hathaway, Ph.D.	The preparation and properties of anhydrous transition metal perchlorates
J.J. Kipling, D.Phil.	Adsorption from the liquid phase on (a) carbon adsorbents, (b) oxide adsorbents Carbonization and graphitization of polymeric materials Examination of surface area, pore structure and "molecular sieve" properties of active charcoals
A.D. Norris, D.Phil.	Electrochemical measurements on (a) kinetics of reactions in solution (b) size of ions in relation to Stokes's law, (c) equilibrium of complex ions and ion pairs in solution
J. Shorter, D.Phil.	Kinetics and mechanism of organic reactions
D.E. Webster, Ph.D.	Reactions and infra-red spectra of organo-silicon and organo-tin compounds

3. Geography

Professor H.R. Wilkinson	Cartographic techniques The geography of Yugoslavia Methodology in human geography Coastal geomorphology of Holderness
J.H. Appleton	The geography of communications in Britain Aspects of historical geography of the British Isles
G. de Boer	Geomorphology of the Yorkshire Wolds Development of cirques and troughs Coastal geomorphology of Holderness
A. Harris	Agricultural geography of the E. Riding, 1550-1880
D.P. Brachi	Hydrological investigation in E. Yorkshire
D.G. Symes	The economic and social geography of peasant societies in W. Europe—with particular reference to W. Norway
L.R. Latham (Miss)	Mining landscapes Aspects of the regional geography of Yugoslavia
A. Lathbury (Miss)	Coastal geomorphology of Holderness

4. Geology

L.F. Penny	Pleistocene deposits of E. Yorkshire

4. Geology (*continued*)

J.W. Neale	Micropalaeontology of: (a) Speeton clay (b) Eocene at Barton (Hants.) (c) Pleistocene clays at Dimlington (d) Tertiary Ostracoda of the Hampshire Basin Upper Ordovician between Ambleside and Ribblesdale with particular reference to the Trilobita
M.A.J. Piasecki	Studies in the geology of the Findhorn granodiorite pluton, Inverness-shire Studies in the Rogart migmatite complex and part of the Lairg-Rogart granodiorite, Sutherland
N.S. Angus, Ph.D.	Petrological studies of Lower Palaeozoic igneous rocks in Wicklow mountains and Co. Tyrone

5. Mathematics

Professor G.C. Steward, Sc.D., D.Sc.	Kinematics and mechanisms
H.W. Parsons, Ph.D.	Theory of elasticity
R. Shaw, Ph.D.	Quantum field theory
S. Sankaran	Functional analysis
V.W.D. Hale, Ph.D.	Quasi-group theory
D. Monk, Ph.D.	Algebraic geometry
M.B. Zarrop	Fluid dynamics

6. Physics

Professor G.F.J. Garlick	Luminescence in solids, radiation damage in solids
J.I. Jones, Ph.D.	Recombination emission in semiconductors
F.J. Bryant, Ph.D.	Radiation damage in semiconductors
I.S. Robertson, Ph.D.	Electroluminescence
A. Cunliffe, Ph.D.	Centimetre wave techniques, paramagnetic resonance
J.M. Hough	Infra-red microscopy and crystal growing techniques
M. Springford	Photoconductivity
C.E. Reed	Surface studies of phosphors and photoconductors
J. Goodyear, Ph.D. W.J. Duffin, Ph.D.	X-ray study of minerals and single crystals

7. Zoology

Professor P.G. 'Espinasse with D. Stenhouse Stewart	Development and pigmentation of feathers Regeneration of the lens of the eye
E.R. Trueman	Studies in the lamellibranch shell
N.W. Nowell, Ph.D.	The control of pituitary hormone secretion in mammals
J.H. Sudd, Ph.D.	Communication in ants
I.C. Williams, Ph.D.	Helminth parasites of wild birds

14 Leeds University

1. Agriculture

Professor T.L. Bywater Professor J. McGregor T.G. Boaz, M.B.E. R. Holliday J.R. Barrowman J. Dalley D.R. Hodgson	Cattle: study of milk and meat production in a Red Poll herd; appetite in the dairy cow Sheep: cross-breeding for fat lamb production; breeding from ewe lambs; winter feeding of sheep on silage; intensive grassland fat lamb production Pigs: nutrition of the pregnant sow; significance of growth rate and body composition of the young bacon pig

1. Agriculture (*continued*)

Professor T.L. Bywater Professor J. McGregor	Mice: study of response to selection at two levels of feeding
T.G. Boaz, M.B.E. R. Holliday	The effect of plant population on yield and quality of crops
J.R. Barrowman J. Dalley	Organic manuring: the interaction with nitrogenous fertilizers
D.R. Hodgson (*continued*)	Investigations into some soil profile effects upon crop production
	Investigations into some of the factors affecting yield in the grass crop
	Restoration of land covered with ash from pulverized fuel furnaces
Agricultural Botany:	
Professor J.H. Western, Ph.D.	Diseases of herbage plants especially the rot diseases caused by *Sclerotinia trifoliorum*
A.P. Jones	*Streptomyces scabies* on root crops
	Root-inhibiting Chytridiaceae
D.M. Turner (Miss)	Seed-borne diseases
Agricultural Chemistry:	
J.S. Willcox	Animal nutrition—crude fibre utilization by poultry
W.N. Townsend	Soil chemistry—studies on the iron compounds in soils and of the phosphate status of soils
	Plant toxicity factors associated with pulverized fuel ash
D.A. Swann	Animal nutrition—*in vitro* studies on ruminant carbohydrate metabolism
Agricultural Economics:	
W.H. Long	The economic organization and relative profitableness of farming systems in Yorkshire
A.G. Jeffrey	Capital and labour in farming
J.B. Butler	The economics of dairy farming
G.B. Clarke	Yorkshire farming in the 17th century
C.J. Black	A statistical study of the determinants of management earnings in farming
I.G. Simpson	Mechanization and machinery depreciation
A.J. Wynne	
E.M. Wright (Miss)	
M.C. Mathieson (Miss)	
A.A. Marsh	
E. Dawson	
Agricultural Microbiology:	
J. Wolf	Germination, sporulation and metabolic requirements of aerobic bacilli
A.N. Barker, Ph.D.	Physiology, distribution and classification of thermophilic bacteria
	Antigenic structure of aerobic and anaerobic spore-forming bacteria
	Bacteriology of metabisulphate-treated silage
Agricultural Zoology:	
N.H.E. Gibson, Ph.D.	The effects of environmental and biological factors on the incidence of bacterial disease in insects
	Ecology of soil arthropods
B. Whittington, Ph.D.	Sense organs and ingestive mechanisms of arthropods
	Structure and life cycles of parasitic nematodes

2. Anaesthetics

R.P. Harbord, M.D. E.P. Fitton P.W. Ramwell, Ph.D.	Measurements of intrapulmonary mixing, alveolar dead space and the mechanical properties of the lungs during anaesthesia
D.S. Young	Investigation of buthalitone sodium in dental anaesthesia Investigation of fluothane in dental anaesthesia
J.J.L. Ablett	Scope of therapeutic blocks with local anaesthetics Problems in the treatment of tetanus

3. Anatomy

Professor A. Durward	Growth studies
G.I. Boyd, M.D.	Anthropometry
W.K.J. Walls	Surgical anatomy
J.A. Sharp, Ph.D.	Cerebral morphology and embryology Tissue culture
R.G. Burwell, M.D.	Fate and effects of grafted tissue

4. Biochemistry

Professor F.C. Happold, Ph.D., D.Sc.	Enzymological and immunological studies in bacteria metabolism *The biological treatment of industrial effluents
S. Dagley, D.Sc.	†Physical chemical aspects of biochemistry with special reference to the analysis of cell-free extracts of bacteria by means of the ultra-centrifuge Bacterial metabolism
B.A. Kilby, Ph.D.	‡Insect biochemistry, with particular reference to the biochemistry of trehalose in locusts and the role of the locust fat body in intermediary metabolism
F.W. Chattaway,	†§ Metabolic studies with pathogenic fungi and biochemical aspects of the host parasite relationship in infections caused by dermatophytes
R.P. Hullin, Ph.D.	The metabolic variations in psychiatric disorders The metabolism of acetoin and butane-2:3-diol
A.J. Kenny, Ph.D. Ph.D.	Biochemical aspects of glucagon Exopeptidases in mammalian liver
T.J. Bowen	Application of physical techniques to biochemical problems
D.G. Wild, D.Phil.	Yeast metabolism
R.B. Cain, Ph.D.	Microbial metabolism of nitro- and halogeno-aromatic compounds in relation to effluent detoxication

5. Biomolecular Structure

Professor W.T. Astbury, Sc.D., D.Sc., F.R.S. I. MacArthur, Ph.D. K.M. Rudall, Ph.D., D.Sc. E. Beighton, Ph.D. A. Millard K.D. Parker, Ph.D. J. Tibbs, Ph.D. F.G.E. Pautard, Ph.D. G.N. Graham, Ph.D.	Studies, by X-ray diffraction, electron microscopy, infrared spectroscopy, and supporting physico-chemical and chemical analytical techniques, of the structure of biological tissues and macromolecules

*Gas Council grant
†M.R.C. grant
‡A.R.C. grant
§Wellcome Trust grant

6. Botany

Professor I. Manton (Miss), D.Sc.	Cytology of ferns Electron microscopy of plant cells
Professor R.D. Preston, Ph.D., D.Sc., F.R.S.	Molecular structure of plant cell walls (X-rays, polarizing microscope, electron microscope, etc.) Tensile properties of plant cell walls Sap ascent Salt translocation
E. Frei (Miss), Dr.Sc.Nat.	Molecular structure of algal cell walls
A.D. Greenwood	Biology and physiology of angiospermous root parasites Electron microscopy of plant cells Growth and asexual reproduction of water moulds
E. Robinson (Mrs.), Ph.D.	Metabolic relationships in cell growth concerning particularly the development of enzyme complements Cytochemical investigation of cell components
W.A. Sledge, Ph.D.	Pteridophytes of Ceylon
A. Wesley	Fossil flora of the Grey Limestones of Veneto (Italy)
J. Lovis, Ph.D.	Cytotaxonomy of *Asplenium trichomanes* and related Pteridophyta
D.D. Bartley, Ph.D.	Ecology and pollen analysis

7. Chemistry

Colour Chemistry and Dyeing:

Professor W. Bradley, Ph.D., D.Sc.	Mechanism of formation of natural and synthetic colouring matters Chemistry of aromatic substitution by anions and other bases Chlorination of anthraquinone Chemistry of diazonium salts Elimination of groups from quinones in reduction processes
A.T. Peters, Ph.D., D.Sc.	Chemistry of acenaphthene Azoic dyes from substituted alkylanilines Cellulose acetate and nylon dyes from 2-alkyl anthraquinones
F.K. Sutcliffe, Ph.D.	Chemistry of polycyclic ketones Chemistry of O-quinones
C.L. Bird	Mechanism of dyeing
C.B. Stevens, Ph.D.	Dyeing properties of fibres Influence of solvents on dyeing from aqueous media
F. Jones, Ph.D.	Mechanism of vapour phase dyeing
D. Patterson, Ph.D.	Optical properties of pigments Diffusion of dyes in fibres

Inorganic and Structural:

Professor E.G. Cox, T.D., D.Sc., F.R.S. D.W.J. Cruickshank, Ph.D. G.E. Pringle, Ph.D. J.H. Robertson, Ph.D. M.R. Truter (Mrs.), Ph.D.	Studies of stereochemistry, molecular structure and valency by X-ray analysis; development of computational techniques for X-ray analysis; lattice vibrations Co-ordination compounds
R.S. Bradley, Sc.D.	Kinetics of evaporation and condensation The measurement of low vapour pressures Chemistry at high pressures

7. Chemistry (*continued*)

Inorganic and Structural (*continued*)

N.H. Hartshorne, Ph.D.	Chemical microscopy. Kinetics of polymorphic transformations in molecular solids
J.A.S. Smith, D.Phil.	Nuclear magnetic resonance
D.C. Munro, D.Phil.	Chemistry at high pressures

Organic:

Professor B. Lythgoe, F.R.S. D.I. Davies, Ph.D. W. Rigby, Ph.D. J.E. Saxton, D.Phil. S. Trippett, Ph.D.	Chemistry of natural products
E. Rothstein, Ph.D., D.Sc.	Chemistry of organic derivatives of sulphur and phosphorus and mechanism of the Friedel-Crafts reaction
P.A. Briscoe, Ph.D.	Aspects of the chemistry of organic sulphur compounds
A.T. Austin, Ph.D.	Chemistry of the nitrosation reaction

Physical:

Professor F.S. Dainton, Sc.D., F.R.S. E. Collinson, Ph.D. K.J. Ivin, Ph.D.	Kinetics and thermodynamics of atomic, free radical and polymerization reactions in gas phase and solution, initiated by light, ionic and free radical catalysts, or nuclear radiations
P. Gray, Ph.D.	Flame propagation and thermal explosions; reactivity and thermochemistry of free radicals; transport properties of gases; rotational isomerism
G.F. Smith, Ph.D.	Activities of electrolytes
J.W. Belton, Ph.D., D.Sc.	Thermodynamics of surfaces
E.F. Caldin, D.Phil.	Fast reactions and reactions at low temperatures; kinetics of proton transfer and molecular complex formation; history and philosophy of science
D. Bunn, Ph.D.	Electron transfer processes in solution
A.S. Carson, Ph.D.	Thermochemical determinations of bond energies
D.R. Stranks, Ph.D.	Radiochemistry: isotopic exchange
P.B. Ayscough, Ph.D.	Electron spin resonance; photochlorination; gas chromatography

8. Dental Studies

Professor T. Talmage Read	Clinical and pathological investigations of oral conditions
S.M. Weidmann, Ph.D.	Mineral metabolism of bone
J. Copland	A study of dysfunction of the mandibular joint Facial asymmetry An investigation into the origin, structure and fate of the dental follicle
D. Jackson, D.D.S.	Regional survey of fluorine concentration in bone and teeth Field survey of the incidence of dental ill health
R.T. Heylings	Periodontal studies Parathormone effects on alveolar bone
J.A. Weatherell	The role of the mucopolysaccharide present in the ground substance of bone and dentine
R.G. Whitehead	Significance of fluorine in dental tissue formation Parathormone studies on bone

9. Dermatology

F.F. Hellier, O.B.E., M.D. (Head of Department)	Auto-immune reactions in the skin
S.T. Anning	Actinal ulceration of the legs
C.J.P. LaTouche	Studies in pathogenic fungi
A. Charles	Electron microscope studies in skin diseases
A. MacLennan	Studies in epidermal metabolism in relation to psoriasis
N.R. Rowell	Systemic manifestations of chronic discoid lupus erythematosus Studies in systemic sclerosis Excretion of 5-hydroxyindole acetic acid in rosacea and menopausal women
G.K. Hargreaves	Investigation into the treatment of fungus infection of the nails

10. Engineering

Chemical:

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K.L. Butcher F.H. Cass	Heat transfer; use of Ferranti digital computer to solve transient time-temperature position relationship in (a) counter current heat exchangers; (b) coke ovens; (c) nature of boundary sub-layer in fluid flow accompanied by heat transfer Sulphation of alpha olefins, energetics and kinetics Precision bomb calorimetry—organic sulphates Efficiency of distillation columns Equilibria SO_2-water at high pressures Silver on alumina as adsorbent for oxygen from air Transient response of liquid-liquid extraction systems Heat and free energy of mixing organic liquids (azeotrope formation)

Civil:

Professor R.H. Evans, C.B.E., D.Sc., Ph.D.	The ultimate strength of prestressed beams in shear Bond stress distribution in prestressed concrete Bond stress distribution in lightweight aggregate concrete members Use of cold-worked steels as shear reinforcement in reinforced concrete beams
E. Lightfoot, Ph.D.	Photoelastic and theoretical determination of stress distributions in beams and slabs Analysis of circular and rectangular tanks and bunkers Structural analysis and design of spandrel-braced arches Dynamic stresses in jib cranes
E.W. Bennett	Flexural strength of prestressed concrete beams Moment redistribution in continuous prestressed concrete beams Composite prestressed concrete beams under sustained loading
R.D. Mackey	Angle of internal friction and particle shape Length and direction of the flow path in the consolidation of clays Chemical stabilization of clays Application of the vane shear test to sands Pressure distribution in bunkers, bins and silos
R. Sutcliffe	Spring flow and sedimentation in rivers
A. Chronowicz	Effect of shear reinforcement along boundary beams on the load carrying capacity of shells Behaviour and stability of perforated shells

10. Engineering (*continued*)

Civil (*continued*)

A.L. Yettram	Diffusion of loads into panels Experimental investigations of vibrations in structural assemblies

Electrical:

Professor G.W. Carter	Electromagnetic field problems; electromagnetic aspects of rotating machines
G.S. Brayshaw, Ph.D.	The synthesis of electrical networks to satisfy prescribed conditions
P.H. Walker, Ph.D.	The application of electronics to instrumentation and control
B.F. Salvage, Ph.D. T. Wilson	Electrical discharges in gaseous voids in solid dielectrics, with particular reference to direct voltage conditions
L.M. Stephenson, Ph.D.	Measurements on semi-conductor materials at microwave frequencies

Mechanical:

Professor D.C. Johnson	Vibration, particularly in connection with toothed gearing
A.S. Leah, Ph.D.	Combustion, including flame temperatures and general study of gas combustion
D. Bradley, Ph.D.	Thermodynamic properties of gases
D. Dowson, Ph.D.	Lubrication
G.R. Higginson, Ph.D.	Elasto-hydrodynamic effects
L.H. Tanner	Supersonic flow experiments using a shock tube
F.R. Mobbs	Taylor vortex flow in a plain bearing

11. Forensic Medicine

Professor C.J. Polson D. Hainsworth D.J. Gee	Problems related to forensic medicine

12. Geography

Professor R.E. Dickinson	Problems of urban geography in W. Europe and U.S.A.
F.J. Fowler, Ph.D.	Irrigation in N. India Economic geography of W. Yorkshire
M. Kirk	Settlement patterns of N. Yorkshire in 15th and 16th centuries Aspects of urban geography in S. Devon
G.R.J. Jones	Settlement, tenure and land utilization in N. Wales and W. Yorkshire
F.A. Leeming	Economic geography of tertiary production Economic geography of major cities
S.R. Eyre, Ph.D.	Factors limiting settlement and land improvement in N. Derbyshire
J. Palmer	Geomorphology of N. E. and E. Yorkshire
G.C. Dickinson	Geography of transport in the north of England
I.B. Thompson	Demographic problems in the U.S.A.

13. Geology

Professor W.Q. Kennedy, D.Sc., F.R.S.	Problems in connection with structure, petrology and ore deposition in African territories Structure and petrology of the Ruwenzori Range, Uganda-Congo

13. Geology (*continued*)

J.E. Hemingway, Ph.D.	The provenance and sedimentation of the Torridonian Series of N.W. Scotland Sedimentational problems in the M. Jurassic of Yorkshire
D.H. Rayner (Miss), Ph.D.	The Mey beds of the Caithness Flags
J. Hartley	The mineralization of Cornwall, the Lake District and N.W. Yorkshire
J.S. Turner	Carboniferous nautiloids Carboniferous Limestone Series of N.W. England Tournaisin-Visean boundary problems
R.L. Johnson, Ph.D.	Structure and petrology of Karroo igneous complexes in Central Africa
A.R.J. Gaskin	The structure and genesis of the Tonkolili iron ores, Sierra Leone
P.G. Harris, Ph.D.	Phase composition in glassy volcanic rocks High temperature experimental work on selective refusion and the generation of magmas, and on zone refining in relation to magmatic evolution
O. von Knörring, Ph.D.	Mineralogy and geochemistry of thorium-bearing granites in Uganda The geochemistry and mineral paragenesis of African pegmatites
T.N. Clifford, Ph.D.	The mineralization problem in S.W. Africa The correlation, structure, and metamorphism of the Katanga System (presumed) in that territory
W.C. Gregory	Petrology of igneous and floor rocks of the Bushveld Igneous Complex and their contact relationships, in part of East Transvaal

RESEARCH INSTITUTE OF AFRICAN GEOLOGY

Professor W.Q. Kennedy, D.Sc., F.R.S.	Investigation of a wide field of problems of structural geology, petrology, mineralogy, and geochemistry in the continent of Africa

14. Mathematics

Professor H.S. Ruse, D.Sc.	Differential geometry
Professor T.G. Cowling, D.Phil., F.R.S.	Astrophysics; atmospheric problems
R.O. Gandy, Ph.D. M.H. Löb, Ph.D.	Mathematical logic
B.L. Welch, Ph.D. G.S. James	Mathematical statistics
D. Kirby, Ph.D.	Algebraic geometry
H.L. Price, Ph.D.	Aerodynamics
N.B. Slater, Ph.D.	Chemical kinetics: Eddingtonian physics
H.D. Ursell	Analysis

ELECTRONIC COMPUTING LABORATORY

A.S. Douglas, Ph.D. G.B. Cook, Ph.D. A. Ralston, Ph.D.	Computational techniques and theory of computing

15. Medicine

Professor R.E. Tunbridge, O.B.E., M.D.	Clinical and experimental problems of diabetes mellitus
with C.R. Blagg (jointly with Urological Department)	Clinical and experimental work with various forms of artificial kidney Serological studies in thyroiditis

15. Medicine (*continued*)

Professor R.E. Tunbridge O.B.E., M.D. with D.A. Hall, Ph.D. and J.W. Czerkawski	Chemical enzymatic and morphological studies of connective tissue—including electron microscopy of connective tissue—particularly elastic tissue with special reference to ageing and disease
with C.R. Blagg	The use of radioactive isotopes in the diagnosis and treatment of thyroid disease
D. Taverner, M.D., M.B.E.	Clinical electromyography Clinical and pharmacological aspects of the action of drugs on the spinal nerves and cerebral cortex
G. Watkinson, M.D.	Experimental studies relating to the control of gastric secretion Clinical and pathological studies of peptic ulcer and ulcerative colitis
M. Atkinson, M.D., with M.L. Losowsky	Motor disorders of the gastro-intestinal tract Portal hypertension
J.R. Fountain, M.D.	Chemotherapeutic studies in leukaemia and polycythaemia
Clinical:	
Professor S.J. Hartfall, M.D. R.A.H. Morison	Pilot study on small group of gout cases using a new uricosuric agent
A. Woodmansey	Investigations on salicylates, gentisic acid Protein polysaccharides
Professor S.J. Hartfall C.N. Watson	Rose-Waaler differential agglutination test Latex slide test
Professor S.J. Hartfall A. Woodmansey	Sodium gentisate trial
K. Swinburne	Problem of disseminated lupus erythematosus Anti-streptolysin O titres
Professor S.J. Hartfall	Nitrogen balance studies in steroid therapy
Medical Physics:	*See* **Physics** *Medical*

16. Metallurgy

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Professor N.J. Petch, Ph.D.	Dislocation theory of the yield, fracture and creep of metals
W.R. Berry, Ph.D.	Atom movement and interaction within solids
R. Shuttleworth, Ph.D. P.A. Feltham, Ph.D. I. Codd, Ph.D. R.M. Douthwaite P.R. Beeley, Ph.D.	Influence of shot peening on the fatigue properties of steel springs and of aluminium alloys

17. Microbiology

Bacteriology:	
Professor C.L. Oakley, M.D., D.Sc., F.R.S.	Sites of formation of antibodies Bacterial toxins Immunological tolerance
K.I. Johnstone, Ph.D.	Micro-manipulative techniques and design of apparatus
K. Zinnemann, M.D.	Differentiation, pathogenicity, antigens and toxins of haemophili, corynebacteria and vibrios The infective factor in chronic bronchitis and bronchiectasis

17. Microbiology (*continued*)

Bacteriology (*continued*)

G.M. Williamson, M.D.	Studies in the mode of action of streptomycin Antigens of haemophili The infective factor in chronic bronchitis and bronchiectasis
D.E. Nicholson, Ph.D.	Enzymatic activities of clostridial filtrates Fluorescent antibody reactions
J.W. Czekalowski, M.D.	Virus and rickettsial diseases Tissue cultures and their application to virology Physico-chemical studies of Leptospirae
G.C. Turner, M.D.	Nutritional requirements and diagnosis of Haemophilus; toxins of *Cl. welchii* Hospital cross-infection
C.J.P. La Touche	Fungus infections in man and animals
A.T. Willis, Ph.D.	The differentiation of clostridia Bacterial toxins Hospital cross-infection
S.I. Jacobs	Antigenic analysis of *Cl. botulinum* Staphylococcal carriage

18. Mining

Professor J.T. Whetton, D.S.O., O.B.E., M.C., T.D.	Pneumatic transport of particles in pipelines Design of apparatus for improving performance of pneumatic stowage plants
with N. Brook	Measurement of flow of suspensions through venturis
J.O. Myers	Investigation of magnetic anomalies Gravity investigations into concealed structures in coalfields Gravity survey over the Craven Fault system and Grassington mineral field Depth estimates of resistivity measurements and investigation of superficial deposits
H.J. King, Ph.D.	The general behaviour of undermined strata
J. McFarlane	Stress measurements in steel props
W.L.J. Potts	Photographic analysis of air flow
A. Jowett, Ph.D.	The action of flotation reagents on coal and mineral surfaces Flotation as a rate process Adsorption of cresols by coal Induction time in froth flotation Beneficiation of fluorite ores
C.C. Dell	Flotation cell design Filtration on fine porous media Conditioning of coal for flotation
C.C. Harris, Ph.D.	Micromeritics in coal preparation and mineral dressing; small particle statistics; sedimentation of suspensions Moisture retention properties of fine coal Fundamentals of water concentration processes Analysis of processes, correlation and scale-up

19. Obstetrics and Gynaecology

Professor A.M. Claye, M.D.	
U.M. Lister (Miss), M.D. D. Keith	Biochemical and electrolyte changes in normal and abnormal pregnancy, labour and puerperium

20. Ophthalmology

G.W. Black	Research into the treatment of simple detachment of the retina with particular reference to the effects of light coagulation

21. Paediatrics and Child Health

Professor W.S. Craig, M.D.	Clinical problems in the neonate Social paediatric problems in out-patient practice Varieties of convalescence
with W. Goldie	Neonatal tetany
with M. Owen (Mrs.)	The almoner's contribution in social paediatrics
M.F.G. Buchanan with W. Goldie	Clinical problems in the neonate Haemophilia
A. Bogdan, M.D.	Iron deficiency anaemia
G. Lewis	Recurrent haemorrhagic nephritis Variations in the clinical pattern of acute respiratory infections in infancy
with Department of Obstetrics and Gynaecology	Combined study of prematurity

22. Pathology

Professor C.E. Lumsden, M.D.	Myelination and demyelinating processes Intracellular mechanisms in cell pathology
W. Goldie	Auto-immune diseases of the thyroid gland and other organs
N. Lissimore, M.D.	Pathology and erosion of uterine cervix Cytology
T.W. Sutherland, M.D.	Disease of peripheral arteries
D.G.F. Harriman, M.D. with D. Taverner, M.B.E., M.D.	Correlation of electromyographic and histological changes in diseases of muscle
C.J.E. Wright, M.D.	Pathology of lymphoid tissue
H. Thompson, M.D.	Exfoliative cytology Studies in colonic pathology
C.K. Anderson	Renal calcification and stone formation
F.A. O'M. Shiel	Pathology of coronary atheroma
R. Blight	Experimental work in connection with the problem of multiple sclerosis

Chemical:

Professor G.H. Lathe, M.D., Ph.D. with J.B. Holton	Metabolism of bile pigments
Professor G.H. Lathe with H.R. Cross	Metabolism in anoxia
R.W. Spencer	Interrelations of carbohydrate and fat metabolism
M. Walker (Miss), Ph.D. and T.R. Ricketts	Development of liver enzymes during the neonatal period

Experimental Pathology and Cancer Research:

Professor H.N. Green, M.D.	Mechanism of carcinogenesis Tumour chemotherapy Immunological theory of cancer
T.D. Day, M.D.	The experimental production of lung cancer, and experimental study of the spread of cancer
G.M. Bonser (Mrs.) M.D.	Aromatic amine cancer and endocrine aspects of cancer

22. Pathology (*continued*)

Experimental Pathology and Cancer Research (*continued*)

D.B. Clayson, Ph.D.	Aromatic amine cancer
J.W. Jull, Ph.D.	Endocrines and cancer
L.R.A. Bradshaw	Endocrines and cancer
L.H. Stickland, Ph.D.	Biochemical problems in cancer
J.O. Laws, Ph.D.	Regeneration and carcinogenesis in the liver
G.M. Thomas (Mrs.), M.D.	Statistical survey of human lung cancer
M.R. Anderson (Miss)	Study of carcinogenic action of mineral oils
G. Eaves, Ph.D.	Electron microscopy
H.M. Anthony (Mrs.)	Immunology
M. Parsons (Mrs.)	Chemotherapy

23. Pharmacology

The department is largely concerned with the quantitative approach to pharmacological problems, and with the relations between chemical structure and pharmacological activity

G.A. Mogey	*Amanita muscaria*
D.A. Cahal, T.D., M.D.	Analgesics
E.R. Clark, Ph.D.	Chemistry of steroid analogues
J.G. Dare, Ph.D.	Bacterial pyrogens
K.A. Exley, M.D.	Neuropharmacology
G.A. Nelson, Ph.D.	Plant constituents

24. Physics

Professor E.C. Stoner, Sc.D., F.R.S. P. Rhodes, Ph.D. D.E. Moody	Theoretical physics: magnetic, thermal and electrical properties of solids; application of electronic computer in theoretical problems and analysis of experimental results
Professor J.G. Wilson, Ph.D.	Cosmic ray physics
E.W. Kellermann, Ph.D. R.M. Tennent, Ph.D.	Structure of extensive showers
P.L. Marsden, Ph.D.	Time variation of the nucleonic component
A.L. Hodson, Ph.D. A.M. Hillas, Ph.D.	Unstable particles from nuclear processes
F.E. Hoare, Ph.D. E.F.W. Seymour, Ph.D. L. Mackinnon, Ph.D. A.J. Manuel, Ph.D.	Physics of metals and alloys at low temperatures: thermal, elastic and magnetic properties; nuclear resonance
C. Curry, Ph.D.	Soft X-ray spectroscopy
R.F. Youell, Ph.D. M.J. Purton	X-ray crystallography: layer lattice minerals, urinary calculi, binary alloys

**Medical:*

Professor F.W. Spiers, Ph.D., D.Sc.	Physical aspects of the use of ionizing radiations in clinical medicine Dosimetry of radioactive isotopes in bone †Measurement of ionizing radiation in the environment
G.W. Reed	Radioactive tracer studies in clinical medicine Studies of the mineral content of bone by *in vivo* methods

*Including Environmental Radiation Research Group of the M.R.C., Honorary Director Professor F.W. Spiers, Deputy Director, Dr. P.R.J. Burch

†Supported by M.R.C. grants

24. Physics (*continued*)

Medical (*continued*)

G.A. Hay	Application of electronic techniques to clinical medicine *Investigations on X-ray image intensification
P.R.J. Burch, Ph.D.	†Measurements of small amounts of radioactivity in living subjects †Theoretical studies of the chemical and carcinogenic action of radiation
J.B. Dawson, Ph.D.	†Spectrographic detection of some elements in biological materials

25. Physiology

Professor A. Hemingway	Dynamics of heart beat and heart reflexes
J.C.G. Coleridge R.J. Linden, Ph.D. C. Kidd, Ph.D.	Pulmonary vascular baroreceptors
H.R. Noltie	Factors affecting capacity for severe muscular exercise
W.J. O'Connor, M.D.	Control of renal activity Renal excretion of sodium and chloride
P.P. Newman, M.D.	Cortical representation of autonomic afferents
J.H. Wolstencroft, Ph.D.	Regulation of breathing

26. Psychiatry

Professor G.R. Hargreaves, O.B.E. R.E.D. Markillie	Aspects of thought disorder in schizophrenia (in collaboration with the Department of Psychology)
J.M. Roberts, M.D.	Clinical studies of hypochondriasis
W.M. Burbury (Miss)	Item analysis of the clinical history and present state of patients referred to child psychiatric O.P. Department
D.G. Brown A.J. Young	Psychosomatic correlates in contact dermatitis: further studies
A.J. Young	A comparison of some psychological tests of brain damage Personality characteristics of placeboreactors
M. Frieze	Blood pressure response to sodium amytal sedation in certain psychiatric disorders

27. Psychology

Professor G.P. Meredith, Ph.D.	Semantic mechanisms Mathematical logic applied to concept formation
R. Harper, Ph.D.	Sensory qualities and their objective correlates Psychological aspects of laboratory work
P.P. Daws, Ph.D.	Learning processes in children
E.E. Bernard	Studies in perceptual filtering mechanisms
Postgraduate researches supervised by the above staff:	The selection of salesmen

28. Public Health and Preventive Medicine

R. Sutherland, M.D.	Random survey of the nature and origins of public attitude to disease in general, to cancer and to the medical services

*Supported by grants from the Nuffield Foundation
†Supported by M.R.C. grants

29. Radiodiagnosis

Professor A.S. Johnstone, M.D.	Study of neuromuscular disorders
P.G. Keates, M.D.	Pyeloscopy and cineradiography of the urinary tract using image amplification
	Intravenous pyelography in renal colic
A.E. Hugh, M.D.	Study of chronic pericarditis
	Small bowel radiology
J.N. Glanville, M.D.	Simple tumours of the oesophagus

30. Surgery

Professor J.C. Goligher	Investigation of secretory activity of stomach before and after operations for duodenal ulcer
F.G. Smiddy	
A.V. Pollock	Controlled clinical trial of vagotomy and other operations for duodenal ulcer
G. Watkinson, M.D.	
G. Wilson	Study of the incidence and mechanism of staphylococcal invasion of the stomach after gastric operations
D. Pratt	
	Experimental studies in mechanism of the cardia in the dog
	Studies of pathological, clinical and therapeutic aspects of segmental forms of ulcerative colitis
	Studies of long-term results of surgery in ulcerative colitis and malignant disease of the large intestine
	Studies of functional results after operations for anal fissures and fistulae
	Follow-up studies of results of operations for rectal prolapse
	Studies of the influence of uraemia on the reaction of the tissues of the rabbit to skin homografts

31. Surgery

Thoracic:

G.H. Wooler, M.D.	Open cardiac surgery, using an extra-corporeal circulation with or without hypothermia
	Various methods of investigating cardiac cases
	The causation and treatment of peptic oesophagitis

32. Technology

Ceramics:

THE HOULDSWORTH SCHOOL OF APPLIED SCIENCE

T.G. Carruthers	Constitution of fire-clays and siliceous refractories, studies of recrystallization and the properties of sintered oxides
J.P. Roberts, Ph.D.	
W.E. Worrall, Ph.D.	The development of ceramic metal mixtures and the study of bonding between metals and ceramics
	The mechanical properties of refractories at high temperatures
	Electrochemical properties of clay-water suspensions
	Plastic flow of clay-water pastes
	Structural significance of cation exchange in kaolin-type clays
	The permeability of pure oxide ceramics to gas at high temperatures
	The mechanical properties of magnesium oxide single crystals
	The solubility and diffusion of water in silica glass

Gas Engineering and General Fuel Science:

THE HOULDSWORTH SCHOOL OF APPLIED SCIENCE

Professor A.L. Roberts, Ph.D.	The properties of coal and coke
	The packing of granular solids
J.E. Garside, Ph.D.	Factors affecting the formation of tar emulsions
J.C. Macrae	The detergent properties of lubricating oils
S.C. Mitchell	The properties of burner flames
	Factors affecting gas cleaning
	Transformation of hydrocarbons by thermal and catalytic means

32. Technology *(continued)*

Gas Engineering and General Fuel Science (continued)

JOINT RESEARCH COMMITTEE OF THE GAS COUNCIL AND THE UNIVERSITY

W.H. Blackburn, Ph.D. G. Dixon-Lewis, D.Phil. J.K. Kilham, Ph.D. J.H. Towler, Ph.D. D. White, Ph.D.	Investigations on the disposal of liquor effluents from the gas and coking industries Analysis of gases and liquids by chromatography, infra-red and ultra-violet spectroscopy, flame stability and heat transfer mechanisms between flames and solids Fundamental studies of flame processes Combustion noise Adsorption by activated clays

Leather Industries:

Professor A.G. Ward, O.B.E.	Physical studies of skin and leather Gelation of natural organic macromolecules
R. Reed, Ph.D.	Electron microscope studies of skin proteins and leather The tanning properties of metallic salts Investigation of leather of historical and archaeological interest
F.O. Flint (Miss), Ph.D.	Histochemistry of skin
H.E. Nursten, Ph.D.	Chemistry of vegetable tannins Dyestuffs and their interaction with leather
C.H. Pearson	The application of analytical methods to leather research The chemical constitution of skin
J. Scholtz	Experimental and semi-scale tannages Dyeing and finishing practice
G. Stainsby, Ph.D.	The preparation and properties of solubilized collagens The surface chemistry of leather

Textile Industries:

Professor J.B. Speakman, D.Sc. P.T. Speakman, D.Phil. A.R. Mathieson, Ph.D.	Structure and reactivity of natura and synthetic fibres; polymerization on and within fibres
N.H. Chamberlain, Ph.D. P. Grosberg, Ph.D. D.L. Munden G.F. Raper P.A. Smith D.C. Snowden P.P. Townend, Ph.D.	Engineering studies of textile machinery and methods of processing
G. Brook, Ph.D.	Mathematical analysis of the movement of fibres in drafting processes
W.J. Onions	Textile testing and quality control
L. Peters, Ph.D.	Applied thermodynamics; physical chemistry of dyeing processes
E.V. Truter, Ph.D.	Chemistry of wool wax
Professor C.S. Whewell, Ph.D. J.W. Bell Ph.D.	The chemistry of finishing processes in the wool textile and man-made fibres industries
H.J. Woods J. Sikorski, Ph.D. A. Skertchly	X-ray, electron microscope, ultracentrifuge, and infra-red studies of fibre structure

3. Urology

Professor L.N. Pyrah F.P. Raper	Work connected with renal calcification in particular the diagnosis of hyperparathyroidism and idiopathic hypercalciuria, and other stones associated with excess output of calcium in the urine Clinical surgical research into the incorporation of the ileum into the urinary tract for various clinical conditions; study of other types of artificial bladder is also being carried out
C.K. Anderson	Calcification in the kidneys as occurring in normal kidneys, stone-containing kidneys and kidneys associated with parenchymal calcific deposits Experimental renal calcification in animals, and effect of chelating agents such as Calgon in the prevention of bladder stones in the rat Anatomical changes in bladder neck obstruction
J.B. Dawson, Ph.D. with the Department of Medical Physics	Preparation of a new spectrophotometer for the estimation of small quantities of magnesium, calcium and other elements

UNIT FOR RESEARCH ON METABOLIC DISTURBANCES IN SURGERY

Professor L.N. Pyrah F.M. Parsons	A study of renal failure in surgical conditions with specia reference to electrolyte imbalance Metabolic studies in cases of surgical renal failure and following cases of uretero-colic anastomosis with special reference to potassium deficiency Assessment of the artificial kidney as a mode of treatment in cases of renal failure. Studies of the efficiency of existing models of the artificial kidney
A. Hodgkinson, Ph.D.	Calcium and phosphorus metabolism in cases of urinary calculus, in particular calcium balance and calcium clearance studies Studies of urinary oxalates and citrates with special reference to hyperoxaluria
F.W. Heaton, Ph.D.	Magnesium metabolism in cases of urinary calculus and renal failure
M.J. Holdsworth (Miss)	Study of mucopolysaccharides and mucoproteins in urine in normal patients and in patients suffering from calculus disease of the kidney
M.J. Purton	Crystallographic investigations into urinary calculus using X-ray diffraction techniques, polarized light and microfocus X-ray techniques

4. Veterinary Studies

K.G. Towers	Research in veterinary science Experimental production of fluorosis and field surveys Collaboration in animal husbandry experiments with colleagues

5. Zoology

Professor E.A. Spaul, D.Sc., Ph.D.	Hormones in relation to colour change and water regulation in the frog and *Xenopus*
T. Kerr, D.Sc.	The development of teeth in fish and amphibians
H. Henson, D.Sc., Ph.D.	Growth and metamorphosis in insects
E. Broadhead, D.Phil.	The ecology of psocids
J. Brust (Miss), Ph.D.	The cycle of the flank gland and histochemistry of the skin in the golden hamster
I. Werth (Miss)	Flocking in birds

35. Zoology (*continued*)

R.W. Owen, Ph.D.	The ecology and distribution of helminth parasites in birds and fishes
J.R. Lewis, Ph.D.	Ecology of rocky shores of the British Isles
J.B. Jennings, Ph.D.	Helminth physiology

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1. Botany

Professor T.G. Tutin G. Halliday	European flora, experimental taxonomy
A.P. Conolly (Miss)	Post-glacial history of British vegetation
J.R.S. Fincham, Ph.D.	Biochemical genetics of *Neurospora*
E. Wangermann (Miss), Ph.D.	Morphogenesis in *Lemna*
W. Tutin (Mrs.), Ph.D.	Lake sediments

2. Chemistry

Professor L. Hunter, D.Sc.	The hydrogen bond as applied to organic chemistry Mesohydric tautomerism
C. Eaborn, D.Sc.	Mechanisms of reactions of organo-silicon compounds Properties of carbon-metal bonds Reactivity of aromatic compounds towards electrophilic substitution Mechanisms of reactions of fluorene derivatives
S.H. Harvey, Ph.D.	Structure and reactions of organic nitramines
E.R.A. Peeling, Ph.D.	The kinetics of the low-pressure catalytic hydrogenation of aromatic compounds Physico-chemical measurements on cyclohexane derivatives

3. Genetics

J.R.S. Fincham, Ph.D.	Genetics and biochemistry of *Neurospora*, particularly amino-acid metabolism, effects of gene mutation on enzyme formation, and the structure and function of genetic loci

4. Geography

Professor N. Pye	Geomorphological relations of soil associations in Leicestershire and in the Isle of Man Arid regions Cartographic method and techniques
W. Kirk	Indian Ocean area Environmental archaeology of Scotland Geographical methodology
R. Millward	Historical geography of Lancashire Europe—historical geography
A.H.W. Robinson	Coastal research including shallow water morphology
K. Warren	Economic geography of the British and American iron and steel industries
K.L. Wallwork	Historical and economic geography of N.E. Lancashire Industrial land use and subsidence in the Mid-Cheshire saltfield
F. Oldfield	Pollen analysis and the Quaternary history of S.W. France
R.J. Rice	Problems concerning the final glacial phases in Angus and N.E. Fifeshire

5. Geology

Professor P.C. Sylvester-Bradley	Jurassic stratigraphy Micropalaeontology, especially of Ostracoda Stratigraphical, morphological and evolutionary palaeontology of Mesozoic oysters (Ostreidae) Jurassic ammonites (Dactylioceratidae) and Jurassic brachiopods (Zeilleriidae)
J.H. McD. Whitaker	Stratigraphy, sedimentary petrology and geochemistry of the shelf facies of the Silurian in the Welsh Borderland Field mapping of the Wigmore Rolls area (North Herefordshire)
T.D. Ford, Ph.D.	Carboniferous stratigraphy, palaeontology and micropalaeontology, especially the Lower Carboniferous of Derbyshire and Leicestershire Geological aspects of speleology Quaternary stratigraphy of Leicestershire
A.M. Evans	Economic geology of mineral deposits; ore microscopy Geology of Charnwood Forest Metamorphic and structural geology, especially of Grenville Series in S.E. Ontario, Canada Geology of the Bicroft Uranium mine, Ontario, Canada

6. Mathematics

Professor R.L. Goodstein, Ph.D., D.Litt.	Mathematical logic Recursive number and function theory
E.V. Whitfield	Classical mechanics
H.F. Downton	Mathematical statistics
E.J.F. Primrose, Ph.D.	Algebraic geometry
R.O. Davies, Ph.D.	Theory of measure
Z.P. Dienes, Ph.D.	Mathematical concepts
A. Weinmann, Ph.D.	Mathematical physics

7. Physics

E. Matsukawa, Ph.D.	Photonuclear reactions
Professor Stewardson, Ph.D.	X-ray spectroscopy
J.E. Wilson and P.C. Russell, Ph.D.	
C.A. Haywood	Interaction between low energy protons and atoms
A.N. Hunter, Ph.D.	Propagation of supersonic waves
W.E. Spear, Ph.D.	Conduction processes in semi-conductors and insulators
K.E. Banyard, Ph.D.	Molecular orbitals

8. Zoology

Professor H.P. Moon with J. Moody (Miss)	Ecology and systematics of *Asellus* General limnology
M.G. Webb (Miss), Ph.D.	Encystment in the protozoa and ciliate ecology of lake muds
D.M. Guthrie, Ph.D.	Development of polymorphism in *Gerris* and studies of nerve regeneration in the cockroach

16 Liverpool University

1. Anaesthetics

Professor C. Gray, M.D.	Effects of deep hypothermia Effects of CO_2 imbalance during anaesthesia and on relaxant agents Reactions of patients under light anaesthesia
I.C. Geddes, M.D.	Metabolism of lignocaine C^{14} and carbocaine C^{14} *in vivo* and *in vitro* Electroencephalographic studies during anaesthesia Studies with tritium labelled local anaesthetics Blood volume studies during anaesthesia
F. Wilson	Effects of deep hypothermia The therapeutic application of anaesthesia with special reference to pneumonia
J.S. Robinson	The effects of alterations of ventilation on anaesthesia
J.R. Riding	Post-operative vomiting Clinical study of thiobarbiturates

2. Anatomy

Professor R.G. Harrison, D.M.	The vascularization of endocrine glands Factors influencing spermatogenesis Experimental morphology of the adrenal cortex
J.L. Braithwaite, M.D., Ph.D.	Splenic circulation The vascularization of tumours in experimental animals
E.W. Macmillan, M.B.E., M.D.	Epididymal function in relation to testicular cytology The effect of ductulectomy on the cytology of the rat testis The rate of passage of radiopaque medium along the ductus epididymis The effect of vital dyes on the epididymis
E.J. Clegg, Ph.D.	The effects of chronic decompression on the experimental animal Age changes in the histology of the rat coagulating gland
D. Bowsher	The manner and location of formation and absorption of cerebro-spinal fluid in normal and abnormal animals; the problem of hydrocephalus The distribution and function of central pain pathways in man
G.A. Harrison, D.Phil.	Heat acclimatization and heat shock Inheritance of human skin colour Functional taxonomy
M. Brookes	The relationship of the vascularization of bone to its growth, age and disease The vascularization of bone in relation to genotypic and phenotypic variations
A. Patterson	Effect of ischaemia on spermatogenesis
D. Sykes	Renal circulation

3. Biochemistry

Professor R.A. Morton, Ph.D., D.Sc. F.R.S.	Mode of action of fat-soluble vitamins, ubiquinones, etc. Lipid metabolism; nutrition Chemistry of vision Biochemical spectroscopy
J. Glover, Ph.D.	Tracer techniques in vitamin research, especially vitamin A Sterol metabolism
H.K. King, Ph.D.	Microbiological studies; metabolic processes

3. Biochemistry (*continued*)

G.A.J. Pitt, Ph.D.	Chemistry of vision Metabolism of long-chain alcohols and unsaturated acids
E.R. Redfearn, Ph.D.	Mode of action of vitamin A Lipids in enzyme systems Electron transport systems
C. Green, Ph.D.	Lipoproteins
F.W. Hemming, Ph.D.	Lipid metabolism

4. Botany

Professor N.A. Burges, Ph.D.	Soil microbiology and the decomposition of humus
P.M. Latter (Miss)	
D.A. Coult	Gas exchange in aquatic plants
E.M. Burrows (Mrs.), Ph.D.	Culture of algae in relation to problems of marine ecology
S. Walker, Ph.D.	Cytogenetics of pteridophytes and angiosperms
J.A. Ratter	Cytogenetics of the genus *Spergularia*
P.S. Dixon, Ph.D.	Cytotaxonomy of red algae
M. Hurst, Ph.D.	Physiology of fungi and general nitrogen metabolism
V.H. Heywood, Ph.D.	Taxonomy of European flora and biosystematics
P.W. Ball	Flora of Europe and cytotaxonomy of *Salicornia*
D. Parkinson, Ph.D.	Soil mycology with special reference to rhizosphere and physiology of sand dune fungi
D. Boulter, D.Phil.	Physiology of fungi and general nitrogen metabolism
A.R. Cook	Amino-acid metabolism

5. Building Studies

Professor A.W. Hendry	The analysis and load bearing capacity of grid structures Comparative study of timber building types
J.K. Page	Radiation exchanges on inclined surfaces under various meteorological conditions
P. Manning	Survey of factory roof design with special reference to the economics of natural lighting

6. Chemistry

Inorganic and Physical:

Professor C.E.H. Bawn, C.B.E., F.R.S.	Kinetics of polymerization and oxidation reactions, with particular reference to the reaction of the free radicals in the gas phase and in solution Molecular size and structure of high polymers Thermodynamic and kinematic properties of high polymer solutions
R.O. Griffith, D.Sc.	Thermal and photochemical reactions in solution
A. Hickling, D.Sc., Ph.D.	Electrochemistry: Overpotential, glow discharge electrolysis Anodic behaviour of metals
F.D.S. Butement, Ph.D.	Radiochemistry
A.K. Holliday, Ph.D.	Study of inorganic hydrides
H.W. Douglas, D.Sc., Ph.D.	Colloid chemistry Electrophoresis
J.E. Spice, D.Phil.	Thermochemistry and phase equilibria at low temperatures
T.B. Grimley, Ph.D.	Theoretical work on properties of solids and solutions
C.F.H. Tipper, D.Sc., Ph.D. G. Skirrow, Ph.D.	Chemical kinetics: Thermal oxidation of hydrocarbons in gas phase and in solution

6. Chemistry (*continued*)

Inorganic and Physical (*continued*)

L.H. Sutcliffe, Ph.D.	Electron transfer reactions in solution; nuclear magnetic resonance
D. Brennan, Ph.D.	Heterogeneous catalysis; thermochemistry
D. Margerison, Ph.D.	Polymerization kinetics
A.P. Prosser, Ph.D.	Surface chemistry of inorganic solids
A. Ledwith, Ph.D.	Ionic polymerization

Organic:

Professor G.W. Kenner, Sc.D., Ph.D.	Analytical and synthetical investigations of natural products and related compounds, particularly peptides,
W.B. Whalley, D.Sc., Ph.D.	porphyrins, fungal metabolites, bacterial metabolites
R.J.S. Beer, D. Phil.	and terpenoids
F.M. Dean, Ph.D.	Physical organic chemistry of alicyclic compounds
J.S.E. Holker, Ph.D.	Mechanisms of organic reactions
A.H. Jackson, Ph.D.	
M.J.T. Robinson, D.Phil.	
R.C. Sheppard, Ph.D.	
D. Bethell, Ph.D.	
D.F. Shaw, Ph.D.	

7. Dental Studies

Professor E.D. Farmer	Virus investigation, laboratory and clinical, of herpes simplex and aphthous ulcers
W.R. Burston, Ph.D.	The pre-natal development of the mammalian skull The early dental orthopaedic treatment of cleft palate infants
R.L. Hartles, D.Sc.	The biochemistry and microbiology of saliva Dental caries in experimental animals An investigation of the minor organic fractions of the teeth
C.C. Knowles	The post-natal development of the cranial base in man
T.H. Melville	Metabolic processes of oral actinomycetes
Professor F.E. Lawton	Dental caries in experimental animals
H.W. Ferguson	Histopathology of the dental pulp
J.M. Mumford	Electrical properties of human teeth Clinical evaluation of new local anaesthetic agents
R. Storer	Clinical and laboratory study of resilient denture base materials

8. Engineering

Civil:

Professor J.B.B. Owen, D.Sc.	Development of pulsating load testing techniques Geometric considerations in structural design
H. Waters	Transmission of vibration Study of plate girder webs Edge stresses in metal domes
C.D. Reed	Comparative strength of brick arches
J.A. Proudlove	Wave pressures on sea-walls—full scale measurements Traffic flow studies
A. Bolton, Ph.D.	Relation between critical, limit and failure loads of structures
R.B. Whittington, Ph.D.	Viscosity of Newtonian and anomalous liquids Generation of tides in hydraulic models
D.A. Turabi, Ph.D.	Stresses in steel dock gates Grids and slabs with edge moments

8. Engineering *(continued)*

Electrical:

Professor J.M. Meek, D.Eng. Professor J.D. Craggs, Ph.D. H. Edels, Ph.D. J.H. Leck, Ph.D. J. Durnford J.A. Harrison, Ph.D. J.J. Lennon A.B. Parker, Ph.D. A.N. Prasad D. Whittaker, Ph.D.	Electrical discharges in gases comprising:— Collision processes in gases, in single collision and swarm conditions. Physical properties of arc, high pressure glow and spark discharges High current discharges Vacuum physics
A.S. Aldred, Ph.D. J.W. Lynn, Ph.D. T.I. Canning	Power system analysis. Analogue computer studies of power systems including nuclear reactors
C.V. Jones, Ph.D.	Unified electromagnetic field and circuit theory

Fluid Mechanics:

Professor J.H. Preston	Turbulent boundary layers and turbulent skin friction
J.F. Norbury, Ph.D.	Study of diffusers
J.C. Gibbings, Ph.D.	Electrolytic tank technique
R. Shaw	Accuracy of static pressure measurements

Mechanical:

Professor J.H. Horlock R. Shaw	Flows in compressors, turbines and cascades of compressor and turbine blades
S.L. Dixon	Magneto-gas dynamics studies using shock tubes
K. Ball	Turbulent heat transfer
R.A. Phillipps	Coupling between non-uniform heat transfer and vorticity
H. Barrow G.B. Bishop	Boiling heat transfer
R.S. Benson, Ph.D. W.A. Woods, Ph.D.	Transient gas flow in internal combustion exhaust systems
N.G. Calvert, Ph.D.	The Gibson method of flow metering
J. Halling	Friction and wear in rolling contacts
P.B. Mellor, Ph.D.	Multi-hole extrusion using wax as a model material
D.J. Ryley	Supersaturation in steam nozzles Centrifugal atomization of liquids
W.J. Sutcliffe	Plastic and elastic design of structures

9. Geography

Professor R.W. Steel	Problems of land and population in tropical Africa
M.M. Bower (Miss)	Blanket peat bog development; salt marshes in the Dee estuary
E. Brooks, Ph.D.	Development areas; economic geography of Poland
E.M. Driscoll	Geomorphology of the N.W. Pennines Geomorphology of S. Wales
S. Gregory, Ph.D.	Climatology of the British Isles and of parts of the tropics Rainfall and water supply in the British Isles and W. Europe
R.K. Gresswell	Geomorphology of N.W. England and of the Isle of Man; fluvio-glacial deposits; coastal deposition, erosion and control

9. Geography (*continued*)

J.B. Harley	Medieval historical geography of Warwickshire
B.M.C. Husain	Historical geography of Delamere Forest
A.T.A. Learmonth Ph.D.	Medical geography, population distribution and regional planning in India
R. Lawton	Historical geography of population change and movement in Britain
J.A. Patmore	Urban geography of N.W. Yorkshire; canals
R.M. Prothero	Population movements in Africa south of the Sahara; land and population in Nigeria
E.S. Simpson	Economic geography of the British Isles

10. Geology

Professor R.M. Shackleton, Ph.D.	Structural geology of metamorphic rock complexes (Eire, Scotland, Anglesey, Kenya); Variscan structures of N.W. Spain; Rift Valley structures (E. Africa)
J.C. Harper, Ph.D.	Lower Palaeozoic faunas (Eire, N. Wales)
C.D.V. Wilson, Ph.D.	Seismology (field and marine); magnetism (marine)
D. Flinn, Ph.D.	Metamorphic and structural petrology of the eastern half of Mainland and associated islands, Shetland. Partitioning of elements between co-existing materials in metamorphic rocks
R.G.C. Bathurst	Sedimentology (Carboniferous Limestone; Namurian; Purbeck; Wealden): sedimentation in the Irish Sea
N. Rast, Ph.D.	Structural and metamorphic studies in the Central Highlands (Ven Vrackie to Taynuilt) Structural, petrological and stratigraphic studies in N. Wales (Portmadoc to Conway) Problems of crystal growth and geochemistry in metamorphic rocks

11. Marine Biology

MARINE BIOLOGICAL STATION, PORT ERIN, ISLE OF MAN

J.S. Colman (Director)	Chaetognatha
J.R. Bruce	Marine fauna of the Isle of Man
N.S. Jones, Ph.D.	Bottom faunas Taxonomy of cumaceans and tanaids
D.I. Williamson, Ph.D.	Zooplankton of the Irish Sea Decapod larvae Plankton methods and technique
A.B. Bowers	Biology of fish Manx herring fishery Scallop fishery
D.J. Slinn	Chemical hydrography of Irish Sea Parasites of fish Ecology of brackish water
T.M. Kain (Miss), Ph.D.	Culture of microscopic marine algae Ecology of sub-tidal seaweeds

12. Mathematics

Applied:

Professor L. Rosenhead, C.B.E., F.R.S.	Fluid dynamics Bibliography of mathematical tables
A. Fletcher, Ph.D.	Tabulation of mathematical functions Bibliography of mathematical tables
S.D. Daymond, Ph.D.	Conformal mapping with approximately circular boundaries

12. Mathematics (*continued*)

Applied (*continued*)

F. Booth	Elecktrokinetic effects Fluid dynamics
T.A.S. Jackson, Ph.D.	Cartesian tensors Integral harmonics
G.R. Baldock, Ph.D.	Molecular and crystal structure
P.E. Doak	Aerodynamic noise Acoustics
S. Brenner (Miss), Ph.D.	Atomic and nuclear physics
G.L. Sewell, Ph.D.	Quantum field theory Solid state theory
W.E. Williams, Ph.D.	Diffraction theory Radio propagation
D.G. Drake, Ph.D.	Fluid dynamics
R.L. Plackett	Mathematical statistics, with applications
M.C.K. Tweedie	Mathematical statistics, with applications
A. Young	Variations in the length of the day Variation of latitude Numerical analysis
A. Kirk	Numerical analysis and logical design of automatic computers

Pure:

Professor A.G. Walker, D.S.c., F.R.S.	Differential geometry; Lie group theory
T.J. Willmore, Ph.D.	Differential geometry in the large
B.J. Maitland (Miss), Ph.D.	Topology; homotopy theory
T.M. Flett, Ph.D.	Theory of functions
W.F. Newns, Ph.D.	Analytic topology
A.J. Ledger, Ph.D.	Differential geometry
M.C.R. Butler, Ph.D.	Algebra
G. Horrocks, Ph.D.	Algebraic geometry
F. Rayner, Dr.Phil.	Algebra; ideal theory
S. Robertson, Ph.D.	Differential topology
R. Brown	Algebraic topology

13. Medicine

Professor Lord Cohen of Birkenhead, M.D.	Lipoidoses Collagen diseases Fundamental concepts in medicine
C.A. Clarke, M.D. R.B. McConnel, M.D.	Human genetics
E.S. Jones, Ph.D.	Electrolyte disturbances Blood chemistry
E.F.B. Cadman, Ph.D.	Cortisone and ACTH therapy The metabolism of carotene
K. Slatter, Ph.D.	Electroencephalography

14. Metallurgy

Professor W.S. Owen, Ph.D.	Isothermal transformation characteristics of iron-carbon and iron-carbon-manganese alloys Kinetics of bainite formation in Fe-Mn-C Alloys The stability of ε-carbide and Fe_3C in some low alloy steels The variation of Ms with solute concentration in alloys with a restricted gamma-field An experimental study of time-dependent strain in pure iron at sub-zero temperatures The nature of the carbides in high-silicon low-carbon iron-carbon-silicon alloys
S.J. Kennett, Ph.D.	Creep and rupture in silver-copper alloys
C. Bodsworth, Ph.D.	Oxygen potentials of simple slag systems Measurement of the activity of carbon in ternary alloys of iron by gas equilibria methods Kinetics of tempering chromium steels
J. Burke, Ph.D.	Kinetics of graphitization of white irons Kinetics of isothermal transformations in uranium-chromium and related alloys Lattice defects in pure iron
J.M. Silcock (Miss)	The age-hardening of aluminium base alloys Decomposition of the γ-phase in certain binary uranium alloys
J. Stringer, Ph.D.	Oxidation of titanium, tantalum and niobium

15. Microbiology

Bacteriology:

Professor A.W. Downie, F.R.S.	The pox group of viruses Viriation in viruses
K.R. Dumbell, M.D.	Measles, varicella-zoster
K. McCarthy, M.D.	Antigenic analysis of viruses by agar diffusion
A. Caunt (Miss)	
C.J.M. Rondle, Ph.D.	
H. Bedson	

16. Obstetrics and Gynaecology

Professor T.N.A. Jeffcoate	Stress incontinence of urine Adreno-genital syndrome
H.H. Francis	The Otto pelvis *Trichomonas* vaginitis
J.K. Wilson	Uterine causes of abortion and premature labour
J.S. Scott	Circumvallate placenta. Pregnancy toxaemia
W. Francis (Mrs.)	Bladder disturbance in relation to pregnancy
B.M. Hibbard	Blood changes during the puerperium Localization of placenta by radioactive isotopes

17. Oceanography

Professor K.F. Bowden, D.Sc.	Circulation in estuaries and coastal seas. Turbulence
J.P. Riley, D.Sc.	The spectrophotometric determination of trace elements in sea water and in marine sediments
L.A. Fairbairn	Turbulent flow in tidal currents
P. Hughes	Mixing processes in a tidal estuary Influence of wind on water movements

17. Oceanography (*continued*)

LIVERPOOL OBSERVATORY AND TIDAL INSTITUTE

A.T. Doodson, C.B.E., D.Sc., F.R.S., Hon. F.R.S.E.	Tide models Design and construction of tidegauges, current meters, and tide-predicting machines
with J.R. Rossiter	Methods of analysis and prediction of tides
G.W. Lennon	Storm-surges in British waters Tidal charts in seas and oceans
J.R. Rossiter	Variations of mean sea level
G.W. Lennon	Earthtides

18. Ophthalmology

J.A. McCann	Clinical research into lamellar keratoplasty Statistical research into congenital ocular defects occurring in children Clinical research into various aspects of treatment of amblyopia Clinical research into action of a-chymotrypsin in cataract extraction Clinical research into naso-lacrymal obstruction in infants and young children Clinical research into muscle operative procedures in ptosis of the upper eye-lid Research into the formation of cataracts in atopic eczema Research into malignant growths of the eye lid

19. Paediatrics and Child Health

Professor J.D. Hay, M.D. H.G. Farquhar O. Scott (Mrs.), M.D.	Congenital cardiovascular disorders
H.G. Farquhar	Migraine
F.P. Hudson	Investigation of oral therapy for diabetes in childhood
S.E. Keidan	Investigations on the newer forms of therapy in leukaemia in childhood
R.M. Todd, M.D. S.E. Keidan	The use of hydrocortisone in the treatment of primary tuberculosis
R.M. Todd, M.D.	Electrophoretic pattern of serum proteins in paediatric disorders Cortico-steroids in the treatment of nephrotic syndrome Pseudohypertrophic muscular dystrophy: Investigation of serum aldolase and transaminases Treatment with gastric mucopolysaccharide
I. Forshall (Miss) Professor R.G. Harrison E.G. Hall	Investigation into the aetiology, frequency and histology of undescended testicles
I. Forshall (Miss) K. Richards W.R. Burston and others	Follow-up and investigations into the late complications of hare lip and cleft palate cases
I. Forshall (Miss) P.P. Rickham	Clinical assessment of intestinal duplications
I. Forshall (Miss)	Survey of malignant disease of the genital tract in children, excluding ovarian tumours Review of neoplasms of ovaries in children
P.P. Rickham	Investigations into the aetiology of congenital malformations
P.P. Rickham I. Forshall (Miss)	Statistical survey of newborn infants admitted during the first six years of the Neonatal Surgical Unit

19. Paediatrics and Child Health *(continued)*

P.P. Rickham	Metabolic studies on the effect of intravenous fat emulsion
E.G. Hall	in newborn infants following operation
J.H. Johnston	Clinical research into hiatus hernia: Analysis of weight records, blood groups, etc.
	Study of healing in burns

20. Pathology

Professor H.L. Sheehan, M.D., D.Sc.	Pathology of kidney
A.H. Cruickshank, M.D., Ph.D.	Carcinogenesis
J. Watt, M.D.	Studies on gastric secretion in the guinea-pig
J.C. Davis, M.D.	Relation of pituitary and adrenal
W.I. Horne	Precancerous lesions of the breast
C.H. Jones, M.D.	Histochemistry of testis

21. Pharmacology and Therapeutics

Professor A. Wilson, M.D., Ph.D.	The natural history, causation and treatment of myasthenia gravis
J.B. Roberts	Studies of the thymus gland in rats
H. Wilson, M.D., Ph.D.	Hypothermia and drug action
	A study of the hemi-choliniums
	Urinary catechol amines in normal and hypertensive subjects
C.W.M. Wilson, M.D., Ph.D.	The effect of ionizing radiation and the metabolism of histamine
	Gastric secretion
P.T. Nowell, Ph.D.	The thymus gland
	Metabolism of drugs

22. Physics

Experimental:

Professor H.W.B. Skinner, F.R.S.	
J.R. Holt, Ph.D.	Experimental work on protons and mesons using the
J.R. Wormald, Ph.D.	380 Mev cyclotron
W.R.H.W. Muirhead Ph.D.	
S.G.F. Frank, Ph.D.	
D.N. Edwards, Ph.D.	
R.T. Taylor, Ph.D.	
B. Collinge, Ph.D.	
W.H. Evans, Ph.D.	Liquid hydrogen bubble chambers
R.A. Donald	
L.L. Green, Ph.D.	p, γ reactions at 1 Mev with protons
J.C. Willmott, Ph.D.	
G. Parry, Ph.D.	Analysis of particles produced in nuclear reactions using
B. Hird, Ph.D.	37 in. cyclotron
D.G.E. Martin	β-ray spectra
H.D. Parbrook, Ph.D.	Acoustics
M.G. Davies, Ph.D.	
W. Tempest Ph.D.	
H.C. Newns, Ph.D.	Theoretical physics
G. Rickhayzen	

22. Physics (*continued*)

Theoretical:

Professor H. Fröhlich, D.Sc., Dr.Phil., F.R.S.	Theory of superconductivity Theory of solids
R. Huby, Ph.D.	Nuclear physics
B. Szigeti, Ph.D.	Theory of dielectrics
G.R. Allcock, Ph.D.	Quantum field theory

23. Physiology

Professor R.A. Gregory, D.Sc., Ph.D.	Gastric secretion
T.G. Richards, M.D., Ph.D. G.B. Riley A.E. Goetzee	Circulation in special regions of the body
I. Calma, M.D. G. Kidd D.V. Roberts R.A. Yorke	Neurophysiology
H.J. Tracy (Miss)	Gastric secretion
N.M. Hancox, M.D.	Tissue culture
J. Kruszynski, M.D. A. Wright, Ph.D. E.B. Beckett (Miss), Ph.D.	Histochemistry
A.G. Singleton	Ruminant physiology
A.H. Sykes, Ph.D.	Avian renal function

24. Psychiatry

S.B. Hall, M.D. (Director of Department)	Comparison of responses to treatment by electroplexy and anti-depressant drugs
H.F. Jarvie, M.D.	Psychological effects of brain injury Physiological and psychological effects of electroconvulsive therapy Projective tests
R.R. Hetherington, Ph.D.	Effects of electroconvulsive therapy, alcoholism, tests for psychological deficit
B. Petrovskaia (Miss), Ph.D.	Personality and motivation in attempted suicide

25. Psychology

Professor L.S. Hearnshaw	Conceptual thinking History of British psychology
A. Crawford (Miss), Ph.D.	Ability and achievement in Junior Schools. Colour vision
D. Straker	Vocational guidance: industrial training
D.B. Bromley	Psychological aspects of ageing with special reference to higher mental processes
G.W.H. Leytham	Perceptual thresholds. Conditions affecting animal learning
A. Heron, Ph.D.	Occupational aspects of ageing
S. Chown (Mrs.), Ph.D.	Rigidity with special reference to ageing

26. Public Health and Social Medicine

Professor A.B. Semple, M.D.	Health aspects of ionizing radiations Public health administration with special reference to prevention of atmospheric pollution and the influence of housing on health Social aspects of disease
J.B. Meredith Davies, M.D.	Vital statistics in relation to trends of tuberculosis Domiciliary and occupational therapy services of handicapped persons

27. Radiodiagnosis

P.H. Whitaker, M.D. A.J. Robertson, M.D.	Radiological changes in pneumoconiosis associated with smelters in tin oxide
G. Ansell, M.D.	Complications of cortisone therapy demonstrated radiologically
R. Green, M.D.	Radiological assessment of palatal repair following cleft palate operation
J.A. Ross	Urethro-cystography in paraplegic by cine-radiography with image intensifier
R. Grainger	Co-ordination of radiology of heart with the vector electrocardiograph
G. Row, M.D.	Radiological examination of post-nasal space

28. Surgery

Professor C.A. Wells	Post-gastrectomy syndromes Oesophageal hiatus hernia Ileus
I.W. MacPhee, M.D.	Measurements of adreno-cortical steroids in health and disease Ischaemia and cell energy
D. Annis, M.D.	Physiology of micturition
C.R. Helsby	Experimental urolithiasis
L.J. Temple	Operations on the open heart
A. Marsden	Results of herniorrhaphy
H. Johnston	Treatment of burns
F.R. Edwards, M.D. C. Miller	Operations on the open heart
I. Forshall (Miss)	Investigation into the aetiology, frequency and histology of undescended testicles Follow-up and investigations into the late complications of hare lip and cleft palate cases
P.P. Rickham	Investigation into the aetiology of congenital malformations Biochemical changes in muscles of newborn infants undergoing surgery Changes in blood volume and body fluids produced by operation in newly born babies
A.V. Forage	Studies in dermal burns
P. Lynch	Sterilization of surgical gloves
L.F. Tinckler K. Rawlinson J.H. Jones R. Silberman	Intestinal activity following surgery
A. Tumarkin	Dynamics of the Eustachian tube

29. Venereology

E.E. Prebble, M.D. C.D. Alergant, M.D.	Action of new drugs in the treatment of the various venereal and non-venereal diseases normally seen in the clinics
E. Rees (Mrs.), M.D.	Investigation into sensitivity of the *Gonococcus* to penicillin

30. Veterinary Studies

Anatomy:

H.V. Hughes J.W. Dransfield	The blood supply to the skin of the dog
T.D. Glover, Ph.D.	Nervous and vascular mechanisms associated with the reproductive system

Animal Husbandry:

J.O.L. King, Ph.D.	Studies on the influence of environmental conditions on the growth rate of fattening pigs
T.J. Forbes	A study of conditions predisposing to the onset of pregnancy toxaemia in sheep, with special reference to feeding standards during pregnancy

Clinical:

Professor J.G. Wright and P.A. Neal	Surgical techniques in horses and cattle Infertility in bovines
P.J.N. Pinsent, P.A. Neal and H.E. Ritchie	Anaesthesia in horses and cattle The diagnosis of disease in the bovine abdomen The blood picture as an aid to diagnosis in the bovine species
H.E. Ritchie	Sedation and anaesthesia in pigs
A.C. Shuttleworth	Surgical techniques in dogs
L. Arnall	Dental development in the dog Diseases of cage birds

Pathology:

Professor D.L. Hughes	Bovine mastitis
A. Buxton, Ph.D.	Immunological studies on salmonellosis in animals
J. R. Thomlinson	Diagnostic problems in veterinary clinical pathology Pig diseases
J.B. Dixon (Mrs.), Ph.D.	Inflammation in the foetus
D. Allan	Food hygiene—The relation of ante mortem status to post mortem change
J. McC. Howell	The response of central nervous system white matter to injury

Preventive Medicine:

Professor E.G. White	Urinary calculi in dogs
F.T.W. Jordan, Ph.D.	Respiratory diseases of poultry
A.G. Singleton	Physiology of ruminant digestion
R.L. Cornwell	Helminthiasis in farm animals

31. Zoology

Professor R.J. Pumphrey, Sc.D., F.R.S.	Comparative physiology of special senses
P.M. Sheppard, Ph.D.	Population and clinical genetics

31. Zoology (*continued*)

C.L. Smith, Ph.D.	Seasonal variation and control of sympathemimetic activities in the frog
J.W. Jones, D.Sc.	Growth and reproduction of fish Limnology of Lake Bala
H.B.N. Hynes, D.Sc.	Freshwater Amphipoda Limnology of Lake Bala Ecology of mountain stream Plecoptera
M.G.C. Fordham (Miss)	Predators, parasites and hyperparasites of aphids
W.L. Nicholas, Ph.D.	Nematoda
J.N. Ball, Ph.D.	The biology of the brown trout in Llyn Tegid (Lake Bala)
R.O. Brinkhurst, Ph.D.	Alary polymorphism and population studies in Gerroidea General limnology
C.J. Duncan, Ph.D.	Mollusca. Taste in birds
J.C. Chubb	Parasites of fish

17 Liverpool University, School of Tropical Medicine

1. Entomology and Parasitology

Professor W.E. Kershaw, M.D., D.Sc.	Pathogenicity of parasites, particularly in intelligence and physical fitness Population dynamics of parasitism
Professor (Emeritus) R.M. Gordon, O.B.E. M.D., Sc.D.	Culture of trypanosomes
J.B. Edeson, M.D.	Malayan filariasis and immunity
M.J. Clarkson	Coccidiosis and blackhead in turkeys
A.P. Ridges (Mrs.), Ph.D.	Biochemistry of immunity
R.G.A. Stretch	Intelligence and parasitism
S. Stretch (Mrs.)	Physical fitness and parasitism
T.R. Williams	Crabs and *Simulium*
C.P. Ramachandran	Vectors of malayan filariasis
R.F. Phillipson	*Trichinella spiralis*

2. Tropical Medicine

Professor B.G. Maegraith, D.Phil.	Pathogenesis of lesions in malaria, etc. Response of the body to malaria, etc., with special regard to liver and kidneys Anatomy and physiology of liver circulation. Effects of administration of pharmacological drugs on liver vessels Shock
R. Juramilinta (Mrs.)	Enzyme systems of *Entamoeba histolytica*
M.V. Riley	Metabolism of malaria parasites and host tissues in malaria
T. Deegan, Ph.D.	Iron balance in malaria Composition of malaria pigment Adrenal cortical hormones
C.S. Leithead K.A. Fletcher M.A. Pallister	Physiological adjustment and maladjustment to heat

2. Tropical Medicine (*continued*)

C.S. McKendrick, M.D. M.B. Skirrow A. Godfrey (Miss)	Physiological basis of cardiac arrhythmias and shock
A.J. Robertson, M.D.	Effects of inhalation of tin dust
A.R.D. Adams, M.D.	Chemotherapy of malaria and leprosy, etc.
D.R. Seaton	Clinical research
D. Mellersh	*Babesia canis* infections
R.F. Phillipson	Chemotherapy of helminth infections

18 London University, Bedford College

1. Botany

Professor L.J. Audus, Ph.D.	The physiology of plant growth with particular reference to its hormone relationships The microbial breakdown of the "hormonal" herbicides in soils
D.C. Spanner, Ph.D.	Translocation and transport processes in plants Electron microscopy
B.C. Sharman, Ph.D.	Leaf development in grasses and cereals
F. Rose, Ph.D.	British plant distribution and ecology with particular reference to Bryophyta
L.E. Bentley (Miss), Ph.D.	Acid metabolism
L.P. Turnbull	Fresh water algae, especially problems of sexuality and motility in unicellular forms
E.G. Duncan	Intersterile races in diapharomictic fungi Nuclear division in vegetative hyphae
I. Levisohn (Miss), Ph.D.	Mycorrhiza problems, especially in relation to forest trees and crop plants The phytopathology of crop plants

2. Chemistry

Professor E.E. Turner, F.R.S.	Optical stability of bridged diaryls Intra-molecular stereospecificity in flexible molecules Cholesteryl esters of racemic acids
J.W. Smith, Ph.D., D.Sc.	The application of molecular polarization measurements to the study of some problems of molecular dynamics The electrode processes occurring during the electrodeposition of metals The kinetics of reactions involving multivalent ions
D.M. Hall (Miss), Ph.D.	The configuration of partially reduced polycyclic compounds The influence of substituents on conjugation in diphenyls as revealed by ultra-violet absorption spectra
M.S. Lesslie (Miss), Ph.D., D.Sc.	Stereochemistry of diphenyl compounds
V.C.G. Trew (Miss), Ph.D., D.Sc.	The dependence of the magnetic susceptibilities of inorganic salts on their crystalline form The application of magnetic measurements to the study of ions in solution
M.M. Harris (Mrs.), Ph.D., D.Sc.	Factors influencing the racemization rate of certain classes of optically labile compounds Equilibria involving optically labile compounds
K.E. Howlett, Ph.D., D.Sc.	The application of dissociation constant measurements to some problems of molecular structure and of rates of reaction The calculation of potential barriers to rotation
J.G. Tillett, Ph.D.	The kinetics and mechanism of organic reactions

3. Geography

Professor G. Manley	Post-glacial climatic fluctuations
D.K. Smee (Miss), Ph.D.	Historico-geographical aspects of British agricultural practice
A.B. Mountjoy	Economic geography and demography of Egypt and the Middle East
E.C. Vollans (Miss)	Historical geography: English Midlands
C. Embleton	Geomorphology: N. Wales

4. Geology

Professor B.C. King	Structural geology of the Braemar area of Aberdeenshire The Semarule Syenite Complex of the Bechuanaland Protectorate Correlation of problems in the Pre-Cambrian of Uganda
C.H. Holland, Ph.D.	Stratigraphy and palaeontology of Silurian rocks of the Dingle Peninsula, Co. Kerry
G.M. Dunlop (Miss), Ph.D.	Stratigraphy and palaeontology of the Clew Bay area, Mayo, Eire
R. Nicholson	Structural and metamorphic geology in N. Norway
B.A. Sturt, Ph.D.	Metamorphic and igneous rocks of the islands of Söröy and Sieland, N. Norway
D.S. Sutherland (Miss)	The alkaline complexes of E. Uganda

5. Mathematics

Professor H.G. Eggleston, Sc.D.	Convexity. Measure theory
G.L. Clark, Ph.D.	Relativity
W.L.C. Sargent (Miss), Sc.D.	Divergent series and conditionally convergent integrals
G.T. Kneebone, Ph.D.	Foundation of mathematics

6. Physics

Professor H.O.W. Richardson	Investigation of nuclear radiations and energy levels by magnetic spectrometry and other methods
B. Donovan, Ph.D.	Theory of metals and semiconductors
D.L. Hurd	Theory of nuclear reactions
R. Mansfield, Ph.D.	Transport phenomena in semiconductors and their magnetic properties
N.E. Hill (Miss), Ph.D.	Measurement of dielectric constants and absorptions Micro-friction in liquids
V.I. Little, Ph.D.	Properties of dielectrics especially at high frequencies Structure of liquids
L. Pincherle, Dott.Fis.	Theory of metals and semiconductors
M.W. Williams (Mrs.)	Galvanomagnetic and thermomagnetic effects in semiconductors

7. Physiology

D.F. Cheesman, Ph.D.	Chemistry of muscular contraction Carotenoid-protein complexes
G. Darlow, Ph.D.	Histamine-releasing drugs
E.L. Hilton (Mrs.)	Neuromuscular transmission
A.M. Bond (Miss), Ph.D.	Fluorosis
D.A. Norden (Miss)	Glycoproteins
P.L. Chambers	Smooth-muscle stimulants in endometrium

8. Psychology

Professor D.W. Harding	The study of personality in complex societies Psychological aspects of literature
J.W. Reeves (Miss), Ph.D.	Body-mind relation; theoretical principles and experimental enquiry into psychosomatic conditions Psychological aspects of aesthetics
M.M. Lawlor (Miss), Ph.D.	Social behaviour of animals Genetic factors in animal behaviour Comparative study of aesthetic preference Developmental processes in childhood
D.W. Forrest, Ph.D.	Electromyographic studies of behaviour Personality and perceptual thresholds

9. Zoology

Professor N. Millott, Ph.D.	Sensitivity to light and associated pigments Histochemistry of echinoderms
E.G. Healey, D.Phil., Ph.D.	Physiology of colour change and chromatophores
F.E. Ince (Miss)	Development of embryonal membranes
B.M. Gilchrist (Miss), Ph.D.	Biology of freshwater fauna Biology of *Artemia*
J. Green, Ph.D.	Biology of Crustacea and estuarine fauna
R.P. Dales, Ph.D.	Taxonomy and biology of polychaetes
A.J. Pontin, Ph.D.	Behaviour in ants
R.M. Oldroyd (Miss)	Physiology and ecology of Rotifera

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1. Botany

Professor C.T. Ingold, D.Sc.	Spore dispersal in fungi Aquatic fungi
K. Wilson, Ph.D.	Fine structure of cellwalls and other aspects of plant anatomy
B.E. Plunkett, Ph.D.	Morphogenesis in hymenomycete sporophores
G.J. Cunnell, Ph.D.	Fungi (Sphaeropsidales) Aestivation in flowers
P.A. Dixon	Fungi (Lower Ascomycetes)
P.J. Casselton	Respiration in algae
J.D. Dodge	Cytology of peridinians

2. Chemistry

Inorganic and Physical

D.J.G. Ives, D.Sc.	Thermodynamic galvanic cells Hydrogen overpotentials Anodic processes Corrosion Interfacial tension Properties of liquid mixtures
R.W. Pittman, Ph.D.	Photochemical studies with selenium Studies of some fields of selenium chemistry Thermodynamic galvanic cells
R.A. Shaw, Ph.D.	Chemistry of silicon compounds Studies in the field of phosphorus nitrogen chemistry and in particular of phosphonitrilic halides Other inorganic aromatic systems Symmetrical triazines Chemical reactions under the influences of electrical discharges

2. Chemistry (*continued*)

Inorganic and Physical (*continued*)

D. Feakins, Ph.D.	Electrochemistry in liquid mixtures
B. Capon, Ph.D.	Mechanisms of carbohydrate reactions
B.C. Smith, Ph.D.	Organic compounds of boron

Organic:

Professor W.G. Overend, D.Sc.	Carbohydrates Nucleic acids
N.R. Williams, Ph.D.	Carbohydrates
E.J. Hedgley, Ph.D.	Carbohydrates Heterocyclic compounds
R.J. Ferrier, Ph.D.	Carbohydrates
M.F. Bacon	Bacterial nucleic acids

3. Geography

Professor W.G. East	Political geography Historical geography
H.C.K. Henderson, Ph.D.	Agricultural geography of the British Isles
G.H. Dury, Ph.D.	Geomorphology of the British Isles
E.M.J. Campbell (Miss)	Domesday geography of England
J.F. Davis, Ph.D.	Industrial geography of the British Isles
P.G. Hall, Ph.D.	Industrial geography of London
B.T. Bunting	Crop geography of Denmark; pedology

4. Geology

A.T.J. Dollar, Ph.D.	Vulcanology Thermal and hydrothermal studies of silicates and silicate systems Structural and model studies of British igneous and metamorphic rocks British earthquakes Geomorphological studies in Sutherland, Devon and Cornwall
A.F. Seager, Ph.D.	Crystal morphology Structures of crystal faces Petrological studies in the Lizard area, Cornwall
A. Simpson	Structure and stratigraphy of the Manx Slate Series, Isle of Man, and associated intrusive rocks
F.J. Fitch	Petrological and structural studies in the Central Lleyn and Snowdonia (N. Wales) Petrological and geomorphological studies in N. Jan Mayen
J.T. Temple, Ph.D.	Trilobite morphology and systematics

5. Mathematics

Professor A.C. Offord, Ph. D., D.Sc., F.R.S.	Theory of probability and its applications to analysis
R.G. Cooke, D.Sc.	Infinite matrices, sequence spaces, linear operations
C.H. Dowker, Ph.D.	Algebraic topology
P. Vermes, D.Sc.	Summation of series and transformation of series by infinite matrices
R.W. Tiffen, Ph.D.	Theory of elasticity and hydrodynamics
A.W. Ingleton, Ph.D.	Functional analysis
E.H. Kronheimer, Ph.D.	Quantum mechanics

5. Mathematics (*continued*)

D.A. Greenwood, Ph.D.	Solid state theory
D.R. Cox, Ph.D.	Mathematical statistics
G.B. Wetherill, Ph.D.	Mathematical statistics
M.R. Mehdi, Ph.D.	Functional analysis

6. Physics

Professor J.D. Bernal, F.R.S.	Theory of solids and liquids
R. Furth, Dr.Phil	Theory of solids and liquids Theory of stochastic processes and fluctuation phenomena Problems of Brownian movement and random walk Theory of plasma oscillations Dielectric properties of crystals Photoelectric Fourier transformer
with S.P.F. Humphreys-Owen, Ph.D.	Scattering of light in crystals
W. Ehrenberg, Ph.D., D.Sc.	Electrical properties of semi-conductors and dielectrics including the effect on them of electron beams Barrier layer problems
with J. Hirsch, Ph.D.	Electron bombardment conductivity
J.C.E. Jennings, Ph.D.	Optics of magnetic lenses and prisms used in electron spectroscopy Application of numerical analysis to electron optics Characteristic energy losses of electrons
with D.K. Butt, Ph.D.	Absolute determination of β-ray momenta
D.K. Butt, Ph.D.	High resolution electron spectroscopy, its application to measurements of γ line spectra Development and use of low-energy lens β spectrometer Study of γ- γ and β-γ angular correlations
N.E. Cusack, Ph.D.	Electrical properties of metals in the liquid state
P.T. Trent, Ph.D.	Cosmic rays: investigation into the behaviour of mu-mesons at various depths below ground
M.N. Moore, Ph.D.	Theory of stochastic processes and fluctuation phenomena Fluctuation fields in linear multiplying media Neutron transport and thermalization theory Reactor kinetic theory

Crystallography:

Professor J.D. Bernal, F.R.S.	Structure of crystalline and fibrous proteins
with C.H. Carlisle, D.Phil. M.A. Rosemeyer	Structure and properties of components of cereal flours Structure of organic crystals and crystalline proteins
with J.W. Jeffery, Ph.D. A.L. Mackay, Ph.D.	Structures of inorganic crystals and minerals Development of X-ray crystallographic apparatus, particularly micro-apparatus
with J.W. Jeffery, Ph.D.	Methods of measurement of X-ray intensity Research on biological fibres Research into mineralogical composition and properties of boiler corrosion products
with A.L. Mackay, Ph.D. D.R. Dasgupta, D.Phil.	Crystal-physical investigations Research on structure of magnetic minerals

6. Physics (*continued*)

Crystallography (*continued*)

with G.J. Bullen, Ph.D.	Crystal and molecular structures of metal-chelate complexes formed by acetylacetone, and of phosphonitrilic compounds
with A. Klug, Ph.D. J.T. Finch, Ph.D.	*X-ray and physical studies of plant and animal viruses and related substances
K.C. Holmes, Ph.D.	†X-ray and physical studies of poliomyelitis virus and turnip yellow mosaic virus
	†X-ray and physical studies of tobacco mosaic virus
A. Klug, Ph.D.	Investigations concerning the probability distribution of structure factors and the phase problem

Numerical Automation:

A.D. Booth, Ph.D., D.Sc. (Head of Department)	Logical principles in computation Design of electronic computers and the application of these to problems of crystal structure analysis and of mathematical physics Design of magnetic systems Mechanical translation Ferro-electricity Analysis of spoken words Theory of games Pattern recognition
K.H.V. Booth (Mrs.)	Programming of physical problems for digital computers

7. Psychology

Professor C.A. Mace, D.Lit.	General theoretical psychology Borderline problems of psychology and the philosophy of science General principles of applied psychology with special reference to problems of human motivation
A. Rodger	Vocational guidance Management selection Industrial rehabilitation Youth employment Job analysis
B. Foss	Perception and thought
T. Veness (Miss)	Problems of motivation Aspirations of school leavers
H. Hurwitz	Effects of rewards, punishment and frustration on learning Activity cycles Experimental extinction of acquired responses Learning theory
J. Brown, Ph.D.	Problems of forgetting
R.S. Peters, Ph.D.	History of psychology Methodological problems in psychology and the social sciences, and conceptual problems connected with motivation Relationship between psychology and ethics
P. Cavanagh	Vocational guidance of the handicapped Test construction Operator training Improvement of methods of work Apprentice selection Visual inspection

*Financed by U.S. Public Health Service Grant
†Partially financed by the A.R.C.

7. Psychology (*continued*)

P. Cavanagh (*continued*)	Consistency of time-study men Variations in work output Incentive payment systems
G.A. Randell	Selection of computer programmers Training of punched card operators

8. Zoology

Professor W.S. Bullough with E.B. Laurence (Mrs.), Ph.D.	Physiology of cell division and comparative endocrinology
T.E. Hughes	Functional morphology and physiology of *Acarina*
I. Griffiths, Ph.D.	Developmental physiology in Salientia
S.M. McGee-Russell, Ph.D.	Studies in cell structure—histochemistry and electron microscopy
R.F. Chapman, Ph.D.	The effects of changing environmental conditions on insect behaviour
J. Attridge	S. African Triassic dinosaurs
U. Weidmann, D.Phil.	Reproductive and social behaviour of animals

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1. Aeronautics

Aerodynamics:

Professor H.B. Squire, F.R.S.	Fluid mechanics
F.G. Irving	Supersonic flow
L.E. Fraenkel	Supersonic flow theory
J.L. Stollery	Hypersonic flow
A.J. Taylor-Russell, Ph.D.	Heat transfer in supersonic flow

Structures:

Professor J.H. Argyris, D.Sc.	General static and dynamic analysis of complex structures by the matrix force and displacement methods Non-linear theory of deformable bodies
with S. Kelsey H. Kamel K. Thomas, Ph.D.	Static and dynamic analysis of fuselages and wing of arbitrary planform; theory and experiment
with S.L. Kochanski	Effects of kinetic heating on thin wings
S. Kelsey	Fatigue investigations under random loading
with K.Thomas,Ph.D.	Instability of sandwich panels with honeycomb cores

2. Botany and Plant Technology

Professor W.O. James, Ph.D., D.Phil., F.R.S.	Plant respiration and cellular organization
K.L. Alvin, Ph.D.	Palaeobotany: the Wealden flora of Belgium

Biochemistry:

H.W. Buston, D.Sc.	Fungal decomposition of plant fibres Chemical stimulation of growth and sporulation of fungi Action of simple unsaturated lactones on enzyme systems in plants and micro-organisms
J. Russell, Ph.D.	Studies on α-amylases and protein structure

2. Botany and Plant Technology (*continued*)

Ecology:

A.J. Rutter, Ph.D.	Growth and water relations of conifers, especially *Pinus sylvestris* Growth of grasses in relation to soil water Nutrition of calcifuges
K.A. Kershaw, Ph.D.	Dynamics and aspects of non-randomness in homogeneous plant communities

Microbiology, Bacteriology:

S.E. Jacobs, D.Sc. A.H. Dadd, Ph.D. J.L. Gay, Ph.D.	Antibiotics—their formation and action in the soil, their decomposition by micro-organisms Antiseptics—their mode of action, and the laws governing their rate of action Interactions in the rhizosphere Bacterial plant diseases—*Corynebacterium fascians*, its metabolism and mode of action on the host Adaptation

Mycology and Plant Pathology:

R.K.S. Wood, Ph.D.	Physiology of soft-rot diseases, *Verticillium* wilt of tomatoes, and "chocolate spot" of beans (*Botrytis fabae*) Seed-borne diseases of peas and celery and control by fumigation Adaption to fungicides especially the chlorinated nitrobenzenes
C.C.V. Batts, Ph.D.	Obligate parasites
M.F. Madelin, Ph.D.	Physiology of entomogenous fungi, particularly of their fruiting
R.J. Threlfall, Ph.D.	Genetics of plant pathogens
M.J. Smieton (Miss)	Diseases of lettuce and tomato

**Plant Physiology:*

Professor H.K. Porter (Mrs.), D.Sc., F.R.S. R.V. Martin I.F. Bird	Carbohydrate metabolism of leaf tissue using radioactive carbon
J. Edelman, Ph.D.	Enzymes concerned with fructose metabolism in the artichoke
J.W. Hannay, Ph.D.	Photoinduction and dark CO_2 fixation in *Kalanchoe*
C.L. Mer, Ph.D.	The effect of sugar and nitrogen supply on growth of the coleoptile and mesocotyl of oat and wheat seedlings in the presence and absence of carbon dioxide
O.N. Purvis (Miss), D.Sc.	Comparative study of wheat varieties in their reactions to vernalization, de-vernalization, and variation in day length
A.J. Keys, Ph.D.	Nucleotide metabolism in cereal seedlings

Taxonomy:

F.H. Whitehead, D.Phil.	Experimental taxonomy Experimental autecology Investigation of the effects of wind on plant growth and anatomy and their physiological significance

*Including A.R.C. Unit of Plant Physiology

3. Chemistry

Agricultural Chemistry and Food and Drugs:

A.G. Pollard	Chemistry of soil and soil solutions Soil physics and use of "conditioners" Chemistry of soil phosphates Chemistry of water-logged soils Electrodialysis as a method of soil examination
J.T. Hannen	Soil cultivation methods Composition of food materials Drying of vegetables Analytical methods
A.H. Cornfield, Ph.D.	Metabolism of nitrogen in soils and composts

Inorganic:

Professor G. Wilkinson, Ph.D.	Cyclopentadiene and other organo-compounds of transitional metals High-resolution nuclear magnetic resonance studies Transitional metal complexes Carbonyls Nitrosyls Structural studies Rhenium and technetium chemistry
L.S. Theobald	Direct determination of alumina in chromite and chrome refractories Determination of Cr_2O_3 in chromite and chrome refractories Determination of lime in magnesite
A.J.E. Welch, Ph.D.	Chemistry and structure of mixed metal oxide systems Structural chemistry of inorganic solids with special magnetic and electrical properties
E.R. Roberts, Ph.D.	Mechanism of fixation of nitrogen by micro-organisms, investigated by means of isotope tracing techniques Mechanism of enzyme action with a view to identifying active sites using isotopic tracers Role of ribose nucleic acid in the biosynthesis of protein
J.F. Herringshaw, Ph.D.	Analytical chemistry of vanadium
D.F. Evans, D.Phil.	Spectroscopic studies of molecular complexes—especially at low temperatures and high pressures Magnetic perturbation of singlet-triplet transitions by O_2 and other paramagnetic substances
J.A.W. Dalziel, Ph.D.	The analysis of trace elements involving the use of microchemical techniques and radiochemical methods
A.J. Poë	Kinetic and equilibrium behaviour of inorganic complexes
L. Pratt, D.Phil.	Nuclear magnetic resonance studies of organo-metallic compounds, metal hydrides, complex ions, exchange equilibria, and related topics
D.W.A. Sharp, Ph.D.	Complex fluorides Fluorides of non-metallic elements Molybdenum and tungsten chemistry

Organic:

Professor D.H.R. Barton, D.Sc., F.R.S.	Theoretical and natural product chemistry
L.N. Owen, D.Sc.	Synthesis and reactions of dithiols and hydroxy-thiols Chemistry and reactivity of alicyclic glycols Derivatives of nitrogen mustards for cancer chemotherapy
B.C.L. Weedon, D.Sc.	Researches on carotenoids and other polyenes Studies with acetylenes Synthesis and reactions of fatty acids Electro-organic chemistry; anodic syntheses Reactions in molten alkali

3. Chemistry (*continued*)

Organic (*continued*)

J.A. Elvidge, Ph.D.	Conjugated macrocycles Dipyrrole derivatives Imidines and derived heterocycles
L.M. Jackman, Ph.D.	Kinetics and thermochemistry of hydrogen transfer Nuclear magnetic resonance spectroscopy
E.S. Waight, Ph.D.	Anionotropic systems Radiation chemistry Ultra-violet and infra-red absorption spectroscopy
D.W. Turner, Ph.D.	Vacuum ultra-violet spectroscopy Radioactive tracer studies of hydrocarbon combustion Electrical conductivity in aprotic solvents
J.K. Sutherland, Ph.D.	Structural determination of a natural product

Physical:

Professor R.M. Barrer, D.Sc., Sc.D., F.R.S. (Head of Department)	Hydrothermal chemistry of mineral-type compounds Heats of ion exchange in crystals Cation interchange and solid state reactions of alumino-silicates Crystals as molecular and ion sieves and semi-permeable membranes Molecular complexes of clays, zeolites and organic crystals; intracrystalline and multilayer sorption Properties of clathrate compounds Volume and surface diffusion in micropore systems Self-diffusion in ionic crystals Electrical properties of some aluminosilicates Solubility and diffusion in high polymers
Professor F.C. Tompkins, D.Sc., F.R.S.	Gas-metal systems (work functions and surface potentials, rates of activated adsorption on films and powders, equilibrium adsorption, sintering in films) Physical adsorption on ionic crystals; adsorption of inert gases on metallic films Mechanism of decomposition of solids, e.g. oxalates, oxides, permanganates, fulminates. (The researches include measurement of ionic conductance and photo-conductance, adsorption (reflection) spectra; prolonged photolysis and effect of pre-irradiation and slow electron bombardment on the decomposition)
with P.W.M. Jacobs, Ph.D.	Field emission microscopy; application to the interaction of gases with metals and simple catalytic processes
G.L. Kington, Ph.D.	Surface chemistry, the nature of physically adsorbed and chemisorbed hydrogen Intracrystalline sorption, heats of sorption and heat capacities of sorbed materials Cryogenics, low temperature scales, experimental thermo-chemistry, precision calorimetry
J.A. Kitchener, D.Sc.	The physical chemistry of ion-exchange resins Surface chemistry of colloidal suspensions Mechanical properties of interfaces
B. Atkinson, Ph.D.	Kinetics of the thermal reactions of fluoro-olefines and cyclic fluorine compounds Photochemical oxidation reactions of quinones and dyes
P.W.M. Jacobs, Ph.D.	Optical and electrical properties of ionic crystals, especially alkali halides Study of thermal and photochemical decomposition of solids, especially perchlorates, nitrates and oxalates Application of the thermodynamics of irreversible processes to membrane phenomena and to ionic crystals

3. Chemistry (*continued*)

Physical (*continued*)

G.J. Hills, Ph.D.	Ionic conductance at high pressures The electrochemistry of high temperature systems Electrode processes in fused-salt systems Electrode processes in liquid ammonia Ionic migration and electro-osmosis in membranes
J.A. Barrie, Ph.D.	Diffusion and sorption of vapours and gases in polymer films
L.V.C. Rees, Ph.D.	Self-diffusion in ionic crystals Heats of formation of and heats of ionexchange in zeolites
I.S. Kerr, Ph.D.	Study of aluminosilicate crystals by electron microscopy and X-ray methods
R. Ash	Experimental and theoretical studies of flow in capillaries and in micropore systems

4. Engineering, Chemical

Professor D.M. Newitt, F.R.S. and S. Angus	Measurement of thermodynamic properties of steam
Professor D.M. Newitt, F.R.S.	Hydraulic conveying, granulation, pelletizing
Professor P.V. Danckwerts, G.C., M.B.E. G.H. Anderson W. Smith, Ph.D. R.W.H. Sargent, Ph.D. H. Sawistowski, Ph.D.	Mass transfer Sedimentation, pneumatic conveying, fluidization Drying Distillation Process control
Professor A.R. Ubbelohde, D.Sc., F.R.S.	Hydrogen in metals Hydrogen bonds in crystals Crystallographic transformations Crystal vibrations Chemical physics of aromatic and conjugated systems Graphite and its crystal compounds Properties of ionic melts at moderate and at high temperatures Melting parameters and structure of melts Transport processes in liquids Transport properties of gases Energy exchange in gases Detonation and combustion
J.C. McCoubrey, Ph.D., D.Phil.	Equilibrium and transport properties of gases Inelastic collision processes in gases Critical properties of liquids
G.S. Parry, Ph.D.	Crystal vibrations Crystallographic transformations X-ray diffraction and general crystallography Structure analysis by X-ray diffraction techniques
E. McLaughlin, Ph.D.	Melting parameters and the structure of melts Transport properties of liquids Thermodynamics of solutions Calorimetry
H. Wilman, Ph.D., D.Sc.	Surface chemistry and physics

4. Engineering, Chemical *(continued)*

H.I. Matthews, O.B.E., M.C., E.D.	Electron diffraction Electron microscopy Electrodeposition Anodic oxidation Crystal growth in deposits; epitaxy Deformation of crystals Metal and other crystal physics Mechanical wear, friction and surface structure; lubrication Structure and other properties of fibres and plastics Corrosion of metals Structure of clays and layer-lattice minerals Molecular structure Heat motion in crystals
G.R. Hall	Applications of radioisotopes in chemical engineering processes Applied radiation chemistry Effects of radiation on ion exchange resins
A.J. Swallow, Ph.D.	Radiation studies on acetylene systems Radiation-induced halogenation of aromatic compounds
S. Hartland	Dissolution of uranium reactor fuels Design features of critically safe chemical plant
K.E. Weale, Ph.D.	Chemical kinetics at high pressures Polymerization reactions at high pressures Modification of coal structure by pressure Effect of pressure on gas-liquid equilibria
K.E. Bett, Ph.D.	Design of high pressure plant Accurate measurement of high pressures Properties of lubricating oils under pressure
J.H. Burgoyne, D.Sc., Ph.D.	Combustion and oxidation Ignition and flame propagation Explosion and fire prevention
C.F. Cullis, D. Phil.	Formation of peroxides in combustion reactions Inhibition of oxidation processes Use of radioactive tracers in combustion processes Pyrolysis of organic compounds Reactions of carbon at high temperatures
F.J. Weinberg, Ph.D.	Flame propagation and structure in laminar and turbulent gases and dust suspensions Physical properties of flames; flame optics, electrical properties, ignition criteria Mechanisms of smouldering under fixed convection
A.G. Gaydon, Ph.D., D.Sc., F.R.S.	Spectroscopy, especially of flames and shock tubes Temperature measurements in shock tubes and flames Relaxation times for vibration and dissociation in gases
L.R. Barrett	Sintering and diffusion in refractories Bonding of super-refractories Attack of refractories by slags
M.J.G. Wilson, Ph.D.	Constitution and properties of coal Atmospheric pollution Impurities in compressed air

4. Engineering, Chemical (*continued*)

G.G. Haselden, Ph.D.	Low temperature technology; refrigeration and liquefaction Phase equilibria in liquid/vapour systems Process of heat transfer in condensation and evaporation Thermal properties of mixtures Fractionation of liquefied gases
R.F. Strickland-Constable, Ph.D.	Crystal growth and evaporation, and nucleation Heterogeneous reaction under electronic excitation Carbon oxidation
E.W. Voice	Preparation and smelting of iron ores
R.P. Fraser, O.B.E.	Properties of high-speed jets and sprays
P. Eisenklam, Ph.D.	High intensity combustion Combustion characteristics of atomized fuel Supersonic gas flow through nozzles Heat transfer and flow through fixed beds Filtration Liquid fuel firing Partical technology Atomization Heat and momentum transfer in fixed beds Heat and mass transfer to drops Filtration of suspensions
N. Dombrowski, Ph.D.	Flow and disintegration of liquid sheets Rotary cup atomizers High-speed photography
L.C.F. Blackman, Ph.D.	Graphite and its crystal compounds Magnetic oxides Non-stoichiometric oxides
M.J.G. Wilson, Ph.D.	Atmospheric pollution Impurities in compressed air Suspensions of particles in gases

5. Engineering, Civil

Concrete Technology:

Professor A.L.L. Baker, D.Sc.	Elastic and rupture theories for the design of continuous shells
A.J. Ashdown J.C. de C. Henderson	Concrete stress distribution in the plastic range by use of a bending simulation machine
K. Newman A. Edwards	The shear strength of reinforced concrete and prestressed concrete beams
J. Munro	Experimental methods of mix design Crack characteristics of smooth and deformed bar reinforcement and the influence of a temperature gradient The deformation of members of reinforced concrete frames The applications of electronic digital computers to structural analysis Study of the influences of the choice of parameters for the solution of statically and kinematically indeterminate structures, with special reference to the ill-conditioning of the governing equations

5. Engineering, Civil (*continued*)

Fluid Mechanics and Hydraulics:

Professor C.M. White, D.Sc., Ph.D. J.R.D. Francis P.O. Wolf H.W. Underhill P. Minton	Investigation of particular structures using models of flow-control arrangements and spillways for water-supply, hydro-power and irrigation projects Transport of sand grains by a stream and the influence of solids transported upon the dimensions of rivers. Sand ripples and their dependence on the physical properties of the sand Secondary flows and their effects in a curved open channel Dissipation and motions in greatly roughened channels, in pipes and non-circular cross-section Wave forms in open channels River flow in relation to rainfall Stability of interface between liquids of different densities and the generation of vortices of ideal type with free surface Cavitation and its effect on concrete The motion downstream of sluices and associated scour problems The behaviour of curved walls in relation to cavitation and separation

Highways:

B.G. Manton	The heat of hydration of soil-cement mixes The effect of particle size distribution on the compressive strength of soil-cement

Public Health:

F.E. Bruce G.T.J. Fox	The design and efficiency of rectangular sedimentation tanks The mechanics of sand filtration Limnological studies on a shallow impounding reservoir The design of a variable-gap strainer for liquids

Soil Mechanics:

Professor A.W. Skempton, D.Sc.	Fundamental research on the shear strength and deformation characteristics of sand and clays
A.W. Bishop, D.Sc., Ph.D.	Theoretical and experimental studies on the stability of earth dams and natural slopes
D.J. Henkel, Ph.D.	Computation of data on settlements of foundations
R.E. Gibson, Ph.D.	Theoretical and field studies of settlements of foundation embankments

Structural:

Professor S.R. Sparkes, Ph.D. R.J. Ashby E.H. Brown, Ph.D.	Theoretical and experimental analysis of problems in ships' structures
A.C. Cassell J.C. Chapman, Ph.D.	Loading tests on building structures
L. Chitty (Miss) A.R. Gent, Ph.D.	Arch dam theory
Z.S. Makowski, Ph.D. A.R. Flint, Ph.D.	Braced domes and barrel vaults Plated grids Problems in elastic and plastic stability Composite construction Electrical analogues Gravity stresses

6. Engineering, Electrical

Professor A. Tustin	
Professor E.C. Cherry	Studies in binaural perception, especially of simultaneous voices
	Stereophonic hearing
	Bandwidth compression of television channels by variable velocity scanning
	Bandwidth compression of television channels by automatic variable delays using "elastic coding"
	Ternary pulse-code modulation
	The development of machines for solving logical problems
J. Roberts	Non-reciprocal slow wave structures
	Study of propagation in helically-threaded wave guides
	Investigation of zero permeability in ferrites
Professor D. Gabor	Production of high temperature in an arc
	Flat television tube development
	Learning filters, predictors and recognizers
	Television compression
B. Adkins, D.Sc. with R.R. Birss, Ph.D.	Feed-back methods for improving the stability of synchronous machines
	Asynchronous operation of synchronous machines and conditions for resynchronization
	Simulation of a prime mover driving a generator and its governor
	Electromagnetic phenomena involved in commutation in direct current machines
	The use of controlled rectifiers to provide a variable speed commutatorless motor
	The production of large current pulses by means of electromagnetic machines
	A study of the permanent-magnet synchronous motor
J.H. Westcott, Ph.D.	Estimation of the parameters of a model specifying the dynamic relationship between quantities in a system from records of the fluctuation of the quantities
	Study of methods for approximate calculation of probability distributions of feed-back control system responses
	Analysis of sampling and quantising operations in data reduction
with P.F. Blackman, Ph.D.	Analysis of human operator characteristics in a tracking task under varying conditions of load
with B.M. Sayers, Ph.D.	Parameter estimation for physiological processes
P.F. Blackman, Ph.D.	Mechanization of correlation analysis of random fluctations by digital and analogue means
B.M. Sayers, Ph.D.	An investigation of logarithmic amplifiers for nuclear reactor period meter
J.R. Barker, Ph.D.	Application of new stationary value theorems for the solution of non-linear network problems
	Studies in operations research with the aid of computers
A.P. Roberts	The synthesis of sample data control systems
	Theory of self-optimizing systems and extremum controllers
J. Lamb, D.Sc. with A.J. Barlow, Ph.D.	Study of the visco-elastic properties of liquids at high pressure under cyclic shearing stresses
	Electrical methods for measuring the viscosity of liquids
	Absorption of sound waves in liquids up to 200 Mc/s
	Study of the absorption of high frequency compressional and shear waves in single cystals up to 1000 Mc/s
	Dielectric and ultrasonic relaxation

6. Engineering, Electrical (*continued*)

with E.L. Heasell, Ph.D.	Measurement of short lifetimes in semi-conductors by high frequency light modulation Study of the diffusion of impurities into germanium and silicon The production of shallow metal contacts on germanium and silicon Investigation of junctions in intermetallic semi-conductors
A.R. Boothroyd, Ph.D. with R.A. King	High frequency transistor oscillators Measurement of transistor properties at very high frequency High speed transistor switching circuits for application to digital computers Design of optimized high frequency transistor amplifiers including consideration of stability definition Study and circuit application of transistor avalanche breakdown Application of computing techniques to traffic flow problems Parametric amplifiers Switching properties of transistors operating at high current level Transistor noise studies Study of electronic processes in transistors in terms of their analogue representations
D.G.O. Morris, D.Sc. with K.W. Wardrop and with B.J. Cory	Analogues of electric machines and power systems Operation of power systems by logical analysers Application of computers to the economic operation of power systems The characteristics of power system load centres Control systems for rectifier-inverter sets

7. Engineering, Mechanical

Applied Mechanics

Professor H. Ford, D.Sc., Ph.D.	Theroretical and experimental studies in stress analysis, plasticity and vibrations
J.M. Alexander, Ph.D.	Plastic deformation of metals in plane strain
R.D. Hoyle, Ph.D.	Theory of cold rolling with strip tension
C.E. Turner, Ph.D.	Experimental determination of the stresses in cold rolling
F. Ellis	Friction in metal working processes
P. Grootenhuis, Ph.D.	Anisotropy and the Bauchinger effect in cold worked metals
A. Shelton, Ph.D.	Thermal and rotational stresses in turbine rotors
P. Benham	Computation of temperature distribution in axially symmetrical objects
L.E. Culver	Investigation of slip line fields for hot and cold rolling
P.J.B. Solomon	Expanding of tubes in water tube boilers Stresses and deflections in steam mains Fatigue of metals at very high frequencies Vibration of twisted cantilevers and turbine blades Photoplasticity Plastic deformation in plane strain with notched test pieces Stresses and deflections of expansion bellows and mitre bends Fatigue of springs coated with plastics and ceramics Fatigue at relatively few cycles of high stress intensity
A. Cameron, Ph.D.	
R.M. Ogorkiewicz	

7. Engineering, Mechanical (*continued*)

Applied Mechanics (*continued*)

Professor H. Ford, D.Sc., Ph.D.	Symmetrically loaded plates and shells
	Instability in journal bearings
J.M. Alexander, Ph.D.	Heat balance for machining process
R.D. Hoyle, Ph.D.	Creep buckling of thermal reactor fuel elements
C.E. Turner, Ph.D.	Studies in the mechanism of metal cutting
F. Ellis	Oil whirl in fluid film bearings
P. Grootenhuis, Ph.D.	Thin film lubrication applied to oil seals, gears and ball bearings
A. Shelton, Ph.D.	
P. Benham	Pitting of gear steels and bronzes
L.E. Culver	Mechanism of running in of bearing metals and their seizure
P.J.B. Solomon	
A. Cameron, Ph.D.	Brittle fracture in mild steel
R.M. Ogorkiewicz (*continued*)	Fracture mechanism in aluminium alloys
	Impact properties of plastic sheet and film
	Gear ripple
Professor D.G. Christopherson	Study of the effect of mean stress on the internal damping capacity of materials
W.G. Wood, Ph.D.	Theoretical work on hydrodynamics of a viscous fluid
	The elastic stability of thin cylinders under internal pressure

Heat Transfer and Combustion:

Professor O.A. Saunders, D.Sc., F.R.S.	Theoretical and experimental studies of convection from rotating surfaces
	Thermal conductance of metal surfaces in contact
	Heat transfer and friction between a lubricated piston and cylinder wall
	Heat transfer under sweat cooling conditions including case of porous cylinder with combustion near surface
	Flow in laminar boundary layers with injection through the surface
N.P.W. Moore	Flame propagation and quenching in narrow gaps
	Controlled combustion in compression-ignition engines
	Production of synthesis gas in an engine
	Slow oxidation reactions leading to knock in engines
	Pre-flame oxidation of benzene-air mixtures
	Rapid quenching of exhaust gases
Professor D.B. Spalding	One-dimensional flame propagation theory; combustion in rockets
J.R. Singham, Ph.D.	
D.G. Martin	One-dimensional unsteady compressible flow
B.J. Hill	Turbulent flame study by electric analogue
	Laminar boundary layer heat and mass transfer
	Heat transfer in turbulent boundary layers with large density differences
	Theory of burning of rocket propellants
	Heat transfer with variable wall temperature
	Perforated-sleeve oil burners
	Turbulent jet mixing
	Development of non-linear electrical network computers
	The performance of pressure exchangers
	Laminar flame study by electric analogue

Nuclear Power:

Professor J.M. Kay, Ph.D.	Exponential experiments with subcritical natural uranium /graphite assemblies
P.J. Grant, Ph.D.	Nuclear reactor transient and control problems
C.G. James, Ph.D.	Heat transfer investigations relating to gas-cooled reactors
R.E. Strickland	Investigation into stress distribution in pressure vessels
R. Vaux	High-speed gas bearings
	Theoretical studies in neutron transport theory

8. Geology

Professor D. Williams	
Professor J Sutton	Metamorphism, stratigraphy and tectonics of the Moines and Moine thrust region in Wester Ross and N.W. Inverness-shire
J. Watson (Miss), Ph.D.	Geology of Marungudzi, S. Rhodesia
J.G. Ramsay, Ph.D.	
Professor H.H. Read, F.R.S.	Gabbros of N.E. Scotland Metamorphic rocks of N.E. Scotland Petrology, petrochemistry, stratigraphy and structure of the Dalradian and granitic rocks of N.W. Donegal
G. Wilson, Ph.D.	Tectonics of the Moine Series in the Ross of Mull and in N. Sutherland Structure of the Moine Series in the neighbourhood of Carn Chuinnaig, Easter Ross Structural study of the rocks in the vicinity of the 'Loch Skerrol's Thrust', Isle of Islay Structure and geology of the area between Strome Ferry and Attadale, Ross-shire
F.G.H. Blyth, Ph.D.	Structure of eastern and northern margin of the Dartmoor granite Correlation between physical properties and petrological features in road-stones (dolerite group) Pre-Cambrian petrology in the Malvern Hills
G.P.L. Walker, Ph.D.	Tertiary volcanic geology, petrology and mineralogy of E. Iceland
D.J. Shearman	Petrology and structure of the Devonian sediments of part of N. Devon Brickearths of S.E. England Petrography and sedimentation of the Yoredale Series of Yorkshire Recent sedimentation in the Wash
W. Skiba, Ph.D.	Some basic intrusives in Somaliland Geology of the basement rocks (Wainimala Series) in Fiji Petrology of volcanic rocks from Pitcairn Island
J.R. Butler, Ph.D.	Geochemistry of the rare earths Geochemistry of Newer Granites, Nigeria
G. Thomas, Ph.D.	Palaeo-ecology of Upper Devonian and Lower Carboniferous fossils in S. Wales Sub Upper Devonian unconformity, S.W. Breconshire Lower Palaeozoic rocks, Mayo, Eire
D.J. Carter	Distribution and palaeo-ecology of the Foraminifera of the Coralline Crag, E. Anglia, and the Recent Foraminifera of the Wash The distribution of pelagic Foraminifera of the Rakhi Nala section of Pakistan Recent Foraminifera of the Wash, England
D.V. Ager, Ph.D.	Palaeo-ecology of Jurassic Brachiopoda in Europe and adjacent areas Morphology and classification of Mesozoic rhynchonellids Morphology and distribution of non-marine Mollusca in the British Pleistocene The geology of the Southern Juras, with special reference to sedimentation and faunas Ecology of Upper Carboniferous spores
F.J.W. Holwill	Coral fauna from the Ilfracombe Beds, N. Devon
P. Yates (Miss)	Carboniferous *Goniatites*, W. Ireland

8. Geology *(continued)*

Geophysics:

Professor J.M. Bruckshaw	Magnetic properties of rocks Elastic properties of rocks Small-scale electromagnetic prospecting studies Nuclear magnetometry Interpretation of seismic records
R.G. Mason, Ph.D.	Geophysical investigations of crustal structure, particularly through magnetic surveys over the oceans and continental margins
D.T. Smith	Propagation of elastic waves in rocks Interpretation of electrical resistivity measurements
S.H. Hall, Ph.D.	Rocket-borne geomagnetic measurements Model seismic experiments

Mining:

Professor D. Williams, D.Sc., Ph.D.	Pyritic deposits of Huelva, Spain; leached outcrops near Mt. Isa, Queensland; tin mineralization at Geevor, Cornwall; cupriferous pyrites deposits of Avoca, Eire; pegmatites of N. Rhodesia; structure and mineralization of the Skiddaw Hills, Cumberland
A.P. Millman Ph.D.	Ore microscopy; indentation microhardness; reflectivity of opaque minerals in monochromatic light Geology and mineralogy of lithium-bearing pegmatites of S. Rhodesia; Cerro de Pasco, Peru; Greenside, Cumberland
C.J. Dixon	Studies on replacement of rocks using radioactive isotope tracers
J.S. Webb J.S. Toms, Ph.D. A.L. Mather, Ph.D. R.E. Stanton	Principles and practice of geochemical prospecting and the development of new analytical procedures

Oil:

G.D. Hobson, Ph.D.	Detailed analysis of Schlumberger logs to provide data on structure and geological history of a sedimentary area in Venezuela Reviewing data on composition of oilfield brines in connection with theories of their origin Study of organic matter in oil source rocks Gas solubilities in relation to some gas accumulations
S.E. Coomber	Clays in relation to oil production
C.A. Fothergill, Ph.D.	An investigation into the nature and origin of pressure cementation in deeply buried rocks Analyses of stratigraphical patterns in sand-shale series in E. Venezuela

9. Mathematics

Professor H. Jones, Ph.D., F.R.S. (Head of Department)	Theory of metals. Shock waves and detonation
Professor G.A. Barnard	The theory of statistical inference and the applications of mathematical statistics to technology
Professor W.K. Hayman, Sc.D., F.R.S.	Theory of functions of a complex variable

9. Mathematics (*continued*)

Professor A. Salam, Ph.D., F.R.S.	Quantum mechanics. Theory of fields and elementary particles
J. Adler	Flame theory
M.C. Austin	Analysis
D.G. Burnett-Hall	Numerical analysis and computing machines
J.G. Clunie, Ph.D.	Theory of functions
Y.N. Dowker (Mrs.), Ph.D.	Abstract ergodic theory and dynamical systems
G. Gordon, Ph.D.	Classical applied mathematics
G.G. Hall, Ph.D.	Quantum theory of atoms, molecules and solids
W.A. Hepner, Ph.D.	Quantum theory of fields and elementary particles
S. Hochberg, Ph.D.	Nuclear theory and field theory
J.N. Hunt, Ph.D.	Fluid dynamics
M.A. Jaswon, Ph.D.	Structural properties of crystals
G.M. Jenkins, Ph.D.	Statistics and spectral analysis of time series
C.W. Jones, Ph.D.	Fluid dynamics
T. Kovari, Ph.D.	Theory of functions of a complex variable
E.H. Lloyd, Ph.D.	Applications of statistical methods
P.T. Matthews, Ph.D.	Relativistic quantum mechanics and elementary particles
A. Mautner	Evaluation of certain integrals
S. Michaelson	Applied analysis and computing machines
O. Penrose, Ph.D.	Statistical mechanics of fluids
S. Raimes, Ph.D.	Electron theory of metals
L. Roth	Algebraic geometry, rationality and allied problems concerning algebraic manifolds
R.S. Scorer, Ph.D.	Dynamics of stratified and turbulent fluids
G. Stephenson, Ph.D.	Relativity and theoretical astrophysics
A. Talbot, Ph.D.	Analysis and synthesis of electrical networks
J.C. Taylor, Ph.D.	Relativistic quantum mechanics and elementary particles
A. Wagner, Ph.D.	Projective planes, finite groups, collineation groups
G.J. Whitrow, D.Phil.	Relativity and cosmology
C.B. Winsten	Statistical problems concerned with the operation and economics of industry
E.P. Wohlfarth, D.Sc.,	Electron theory of ferromagnetism and the domain theory as applied to magnetically hard materials

10. Metallurgy

Professor J.G. Ball	Crystal defects and plastic deformation in metals and semi-conductors
A.R. Bailey, Ph.D.	Cracking phenomena in metals
R.L. Bell, Ph.D.	Fracture in creep
M.S. Fisher, D.Sc.	Radiation embrittlement and lattice defects in body-centred cubic metals
A.A. Johnson	Yield-point phenomena and brittle fracture in molybdenum
J.S. Llewelyn-Leach, Ph.D.	Electrical properties of body-centred cubic metals at liquid helium temperatures
P.L. Pratt, Ph.D.	Theoretical study of Peierls-Nabarro force in body-centred cubic metals
D.L. Thomas, Ph.D.	Type and strength of bonds in liquid and solid alloys
D.R.F. West, Ph.D.	Corrosion mechanisms of the reactive metals, Al, Zr, V, etc.

10. Metallurgy (*continued*)

Professor J.G. Ball	Plastic deformation and physical properties of ionic and ceramic crystals, including NaCl, CaF_2, MgO.
A.R. Bailey, Ph.D.	
R.L. Bell, Ph.D.	Structure and mechanical properties of self-bonded ceramics.
M.S. Fisher, D.Sc.	
A.A. Johnson	Special metallographic techniques
J.S. Llewelyn-Leach, Ph.D.	Constitution, age-hardening and electron microscopy of aluminium alloys
P.L. Pratt, Ph.D.	Transformation phenomena and kinetics in aluminium bronzes and uranium alloys
D.L. Thomas, Ph.D.	
D.R.F. West, Ph.D.	Effect of stress on the martensite transformation in steel
(*continued*)	Constitution of thorium alloys
Professor E.N. da C. Andrade, F.R.S.	Creep of metals under pure shear
Professor F.D. Richardson	Thermodynamics of sulphide, halide, oxide, silicate, phosphate and metal solutions, with particular reference to metal extraction and refining
C.B. Alcock, Ph.D.	
D.A. Pantony, Ph.D.	
H.D. Sawyer	
J.W. Tomlinson, Ph.D.	Physical chemistry of slag-gas reactions
	Thermodynamics of borides, silicides, and uranium compounds
	Diffusion of cations in fluorite lattices
	Electrochemical measurements of ozygen potentials
	Physical chemistry of solutions of metals in molten salts
	Properties of metal oxychlorides
	Development of new techniques for studying reactions at temperatures above 2000°C and pressures up to 300 atmospheres
	Physical chemistry of sulphating roasting
	Application of physical chemistry to slag control in open-hearth steel making
	Pressure leaching of wolfram, columbite, scheelite and pyrochlore
	Separation of cations by chromatography of their organic complexes

11. Meteorology

Cloud Physics:

F.H. Ludlam	The physics and dynamics of clouds and of cloud systems
B.J. Mason, D.Sc.	Study of microphysics of clouds and precipitation, including use of radar
J. Hallett, Ph.D.	Thunderstorm electricity
	The physical properties of water substance

Dynamical Meteorology and Climatology:

Professor P.A. Sheppard	Atmospheric turbulence
	Atmospheric spectroscopy
	Experimental studies of convection in fluids and their application to atmospheric problems
E.T. Eady, Ph.D.	Study of large-scale motions with reference to numerical weather prediction and the general circulation of the atmosphere and oceans
J.S.A. Green	

12. Mining

Professor J.C. Mitcheson	
H.N. Blyth	Improvements to shaking tables
J.W. Bray, Ph.D.	Analysis of ventilation networks by numerical, graphical and analogue methods

12. Mining (*continued*)

A.R. Burkin, Ph.D.	Kinetics of heterogeneous reactions occurring on leaching minerals The behaviour of some anions containing heavy metals in alkaline solutions obtained by pressure leaching minerals Study of the factors influencing the degree of adsorption of molecules and ions at the surfaces of compounds of metals Heterocoagulation phenomena
E. Cohen, Ph.D.	The application of thin section radiography to the study of non-ferrous ores and mill products The nature of conoscopic interference figures in incident light microscopy The fundamental principles of gravity separation in cyclones and other centrifugal systems involving the use of heavy suspensions and heavy liquids The concentration characteristics of chromite The removal of iron from chromite to produce high chrome/iron ratios
M.G. Fleming, Ph.D.	Flotation characteristics of certain metal oxide minerals Factors influencing flotation rate Flotation conditioning in gaseous suspensions Concentration of niobium-bearing ores
A. Grierson	Rock stresses in the vicinity of shotholes
O. Mellgren, Sc.D.	Adsorption of xanthate on galena Fatty acid flotation
E.J. Pryor	Flotation of non-sulphide minerals Anion balance in malachite flotation
J.S. Sheppard, O.B.E.	Correlation of mining surveys
D. Sutton	Propagation of ultrasonics through non-homogenous materials
T.L. Thomas, M.B.E. Ph.D.	Programming digital computer for calculation of ships' coordinates offshore Field astronomy; latitude, longitude and azimuth

13. Physics

Professor P.M.S. Blackett, F.R.S.	
Professor C.C. Butler	The study of V-particles using accelerators and at the Pic-du-Midi in the French Pyrenees
O. Klemperer, Ph.D.	Electron physics Electron optics
J.A. Clegg, Ph.D.	The history of the earth's magnetic field by measuring the remanent magnetism of sedimentary and igneous rocks
H. Elliot, Ph.D.	Time variations of cosmic ray intensity and large air showers
Professor M. Blackman	Properties of surface layers of crystals by electron diffraction methods and associated theoretical problems
R.W.B. Stephens, Ph.D.	Vibrational physics and ultrasonics
H.R. Allan, Ph.D.	Large cosmic ray air showers
N.C. Barford	Experiments on bubble chamber techniques
J.A. Newth	Study of V-particles
J. Aharoni, Ph.D.	Theoretical physics
J.P. Astbury, Ph.D.	Bubble chamber track analysis

13. Physics (*continued*)

I. Butterworth, Ph.D.	Bubble chamber techniques
B.R. Coles, D.Phil.	Electrical and magnetic properties of metals and alloys
C. Kellner, (Mrs), Ph.D.	Nuclear moments (microwave spectrometer)
N.D. Lisgarten, Ph.D.	Properties of surface layers of crystals by electron diffraction methods
G.G. Parfitt, Ph.D.	Vibrational physics and ultrasonics
P.H.S. Stubbs R.L. Wilson	The history of the earth's magnetic field by measuring the remanent magnetism of sedimentary and igneous rocks

High Temperature Physics:

R. Latham, Ph.D.	High temperature plasma physics
H.J. Pain	Study of shock waves
A. Folkierski, Ph.D. C.B. Wheeler	High temperature plasma physics

Instrument Technology:

Professor J.D. McGee, O.B.E.	Instrument technology Photo-electronics
W.L. Wilcock, Ph.D.	Astronomical optics Photo-electronics
L. Mandel, Ph.D.	Photon beams Photo-electronics
E.H. Carman, Ph.D. N.D. Twiddy, Ph.D.	Photo-electronics

Technical Optics:

Professor W.D. Wright	Colour vision Stereoscopic vision Spectrophotometry
B.K. Johnson	Microscopy Infra-red and ultra-violet microscopy Use of new optical materials
H.H. Hopkins, D.Sc.	Lens design Optical instruments and techniques Image assessment Coherence properties of light Theory of diffraction
W.T. Welford, D.Sc.	Interferometry, thin film optics Lens theory

Spectroscopy:

R.W.B. Pearse, D.Sc.	Production and analysis of atomic and molecular spectra Applications to astrophysical problems
W.R.S. Garton, D.Sc.	Atomic and molecular spectra in the vacuum region
Lady Anne Thorne, D.Phil.	Construction of a Jaman type of interferometer for work in the vacuum ultra-violet

14. Zoology and Applied Entomology

Professor O.W. Richards, F.R.S.	Taxonomy of Hymenoptera Population problems in insects
Professor, B.G. Peters	Parasitology
H.R. Hewer, O.B.E.	Field studies of British mammals
W.F. Jepson, O.B.E., Ph.D.	Insect pests of crops, especially stem borers
A.B.P. Page, Ph.D.	Insecticides, especially fumigation

14. Zoology and Applied Entomology (*continued*)

K. Boratynski, Ph.D.	Coccoidea (scale insects)
R.G. Davies	Insect morphology
H.E. Goto	Collembola
C.T. Lewis, Ph.D. D.R.P. Murray, Ph.D.	Insect physiology
T.R.E. Southwood, Ph.D.	Biology of Heteroptera
N. Waloff (Miss), Ph.D.	Behaviour of insects, especially in relation to population problems

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1. Anatomy

Professor T. Nicol L. Charles P. McKelvie I.A. Sewell	The effect of hormones and other substances on the reticulo-endothelial system as a defence against infection and tumour growth
I.L. MacKinnon	Seasonal and menstrual variations in the endocrine system with especial reference to the suprarenal gland

2. Biochemistry

Professor W. Robson, D.Sc., Ph.D.	Intermediate metabolism of amino acids in plants and animals The biogenic formation of amines, isoquinolines, etc. The isolation of amino acids from natural sources and hydrolysed proteins
E.A. Bell, Ph.D.	Isolation of basic amino acids from natural sources
A. Darbre, Ph.D.	Metabolism of isolated muscle preparations
K.H.F. Blau, Ph.D.	The isolation and identification of urinary amines
N. Spencer, Ph.D.	Intermediate metabolism of carbohydrates in moulds

3. Botany

Professor T.A. Bennet-Clark, Ph.D., F.R.S.	Chromatographic analysis of plant hormones in relation to growth and tropisms Change in cell wall composition with age of cells
M. Wilkins, Ph.D.	Endogenous rhythms in growth and metabolism
G. Metcalfe, Ph.D.	Ecology of nitrogen-fixing organisms
D.D. Davies, Ph.D.	Serine biosynthesis in plants Transaminases in plants Aromatic biosyntheses
K.V. Symonds (Miss), Ph.D.	Bacterial decomposition of dichlorophenoxyacetic acid
J.F. Sutcliffe, Ph.D.	Ion uptake by tissues and tissue cultures

4. Chemistry

Professor D.H. Hey, F.R.S.	Free radical reactions in solution Heterocyclic compounds
Professor D.W.G. Style	Thermal and photochemical reaction kinetics and molecular spectroscopy
V. Gold, D.Sc.	Reaction kinetics in solution Isotope exchange and kinetic isotope effects
A.J.B. Robertson, Ph.D.	Processes at the gas-solid interface Mass spectrometry

4. Chemistry *(continued)*

L. Crombie, D.Sc.	Natural fatty acids Natural *o*-heterocyclic compounds Terpenic cyclization New reactions of acetylenic substances
C.H. Williams, Ph.D.	Reaction mechanisms Free radical reactions
I.R. Beattie, Ph.D.	Diffusion in silicates Study of dinitrogen trioxide
J.I.G. Cadogan, Ph.D.	Reaction mechanisms Free radical reactions Organo-phosphorus compounds
D.P.N. Satchell, Ph.D.	Acid catalysis in mixed solvents Isotope exchange reactions
C.W. Rees, Ph.D.	Heterocyclic chemistry
R. Hulme	X-ray structure analysis of complex inorganic compounds

5. Engineering

Chemical:

S.B. Watkins (Director of Studies)	Absorption in scrubber towers Absorption of carbon monoxide in organo-metallic solvents Foam absorption
D.R. Morris, Ph.D.	Fluidization and fluidized beds Investigation of the mechanics of fluidization and the laws governing this phenomenon

Civil:

Professor A.D. Ross, Ph.D.	Studies in reinforced and prestressed concrete. The creep of concrete under elevated temperature and thermal stresses in reinforced concrete
K.L. Nash	The shearing resistance of soil subjected to transient stresses. The swelling of clay in contact with free water
J.M. Zarek, Ph.D.	Biomechanics: application of metals to the human body, and kinesiology Measurement of the pulsating flow of gases
M.J. Kenn	Fluid mechanics: studies of air entrainment in flowing water
W.M. Jenkins, Ph.D.	Studies in the elastic and plastic behaviour of some steel structures

Electrical:

Professor J. Greig	Theoretical and experimental investigations of tooth flux pulsations and losses in alternators
Professor A.H.M. Arnold	A study of certain polyphase oscillator circuits
H.M. Clarke	The solution of partial differential equations by analogue techniques
W. Fraser	
G.H. Platt	Development of an analogue method of multiplication
E.M.S. Deeley, Ph.D.	A study of certain magnetic amplifier circuits
N.S. Japolsky, D.Eng.	Development of a new analogue integrator Theoretical and experimental investigation of eddy current losses in single layer cylindrical coils Study of resistance-capacitance oscillators

Mechanical:

Professor L.J. Kastner	Gas flow in reciprocating engines; unsteady flow measurement

5. Engineering (*continued*)

Mechanical (*continued*)

H.E. Rose, Ph.D., D.Sc.	Studies in powder science
T.J. Williams, Ph.D.	Unsteady flow measurement; charging of engine cylinders
W.B. Gosney	Flow of refrigerant fluids
E.J. Powell	Ejector pump phenomena
A.A. Smith, Ph.D.	Liquid metal alloy systems

6. Geography

Professor S.W. Wooldridge, C.B.E., D.Sc., F.R.S.	Geomorphology of S.E. England
J.C. Pugh, Ph.D.	Geomorphology of tropical areas, with special reference to W. Africa
A.M. Coleman (Miss)	Land use survey of England and Wales
T.H. Elkins	Development of industrial towns; economic geography of Europe
E.M. Yates, Ph.D.	Glacial geology of Cheshire; development of settlement forms in England
J.H. Bird, Ph.D.	Major ports of Britain

7. Geology

Professor J.H. Taylor	Sedimentary petrology—especially with reference to origin of phosphorites and bedded iron ores and problems of Pre-Cambrian sedimentation Stratigraphy and structure of the west-central Weald Origin of the lead-zinc-vanadium ores at Rhodesian Broken Hill
W.S. Pitcher, Ph.D.	Petrology, petrochemistry, stratigraphy and structure of the Dalradian and granitic rocks of N.W. Donegal Newer granite ring complexes in N. Nigeria The Port Askaig Boulder Bed in Scotland and Ireland
J.E. Prentice, Ph.D.	Carboniferous stratigraphy and structure in N. Devon Studies in the genus *Gigantoproductus* Sedimentation of the Flysch facies Sedimentation of the Weald Clay
R.W.D. Elwell, Ph.D.	Investigation of certain pipe structures in N. Ireland and the Channel Islands Petrofabric studies on the Briska Boulder Bed, Co. Mayo Moinian—Dalradian problems in Donegal
J.M. Hancock, Ph.D.	Cretaceous sedimentation Cenomanian ammonites of England and France
O. Bradley (Mrs.), Ph.D.	Relationship between optical characters and conditions of formation of the plagioclase feldspars
D.G. Jones	Carboniferous Limestone-Millstone Grit stratigraphy of S. Wales Namurian marine and non-marine faunas
R.W. Le Maitre	Oceanic volcanic provinces with special reference to their petrochemistry and mineralogy The problem of the "iddingsitization" of olivine
J.B. Richardson	British Devonian microfloras with special reference to stratigraphic utilization of these fossils

8. Mathematics

Professor J.G. Semple, Ph.D.	Algebraic geometry; theory of representations and enumerative geometry

8. Mathematics (*continued*)

Professor H. Bondi, F.R.S.	Astrophysics; cosmology
D.M.A. Leggett, Ph.D.	Plasticity problems
D.B. Scott, D.Sc.	Algebraic geometry; combinatorial topology and correspondences
A. Fröhlich, Ph.D.	Abstract algebra and algebraic number fields; mathematical logic
C.W. Kilmister, Ph.D.	Foundations of relativity
F.A.E. Pirani, D.Sc.	Relativity; foundations of mechanics
S.R. Tims, Ph.D.	Complex variables
S. Rosenblat, Ph.D.	Mechanics of continuous media
J.E. Reeve	Algebraic geometry

9. Pharmacology

Professor G. Brownlee, Ph.D., D.Sc.	Redox buffers Mode of action of central nervous system stimulants
G. Paterson, Ph.D.	Nerve-effector cell junctions with special interests in electropharmacology
G.D.H. Leach, Ph.D.	Action of drugs and transmural stimulation on smooth muscle

10. Physics*

Atmospherics:

F.W. Chapman, Ph.D.	Radio physics. Atmospheric electricity and terrestrial radio noise research, influence of the ionosphere on radio wave propagation at very low frequencies

Biophysics:

Professor J.T. Randall, Ph.D., D.Sc., F.R.S. M.B. M'Ewen (Miss), Ph.D. A.R. Stokes, Ph.D. C.D. Curling R.E. Burge, Ph.D. J.D. Coombes, Ph.D. G.F. Elliott	Many physical and biochemical techniques are used to study the part played by proteins and nucleic acids in the development and functioning of cells and tissues. These include X-ray diffraction analysis, electron microscopy, interference microscopy, microspectrometry and fractionation procedures

Information Systems.

D.M. MacKay, Ph.D.	Information processing in the human visual system Electronic-analogue computation applied to the analysis of electroencephalographic data

Infra-red and Ultra-violet Spectroscopy:

Professor W.C. Price, F.R.S	High resolution absorption and emission spectroscopy; microspectrometry; macromolecular investigations Absorption and photoionization in the vacuum ultra-violet

*Houses the Biophysics Research Unit of the M.R.C. The staff of the Unit includes Professor J.T. Randall, F.R.S., M.H.F. Wilkins, Ph.D., F.R.S., S.R. Pelc, Ph.D., E.J. Hanson (Miss), Ph.D., A.V.W. Brown (Mrs.), Ph.D., G.L. Brown, Ph.D., H.G. Davies, Ph.D., M. Spencer, Ph.D., C.R. Worthington, Ph.D., B.M. Richards, Ph.D., and J. Lowy, Ph.D. The Director of the Strangeways Laboratory, Cambridge, H.B. Fell (Miss), Ph.D., D.Sc., F.R.S., is Senior Biological Advisor to the Unit

10. Physics (*continued*)

Nuclear and Solid State Physics:

F.C. Champion, Ph.D.	Crystal conduction and scintillation counters; electrical and optical properties of diamonds, sulphur, and other crystals, β-ray spectrometry
E.J. Burge, Ph.D.	Nuclear emulsion techniques: scattering by counter techniques; total reaction cross-sections; polarization effects

Theoretical:

Professor C. Domb, Ph.D.	Theory of co-operative phenomena and phase transitions
	Theory of liquids and solutions
M.E. Fisher, Ph.D.	Theory of the solid state: problems in statistical mechanics
A. Danielian, Ph.D.	Polymers and polyelectrolytes

11. Physiology

J.L. D'Silva, Ph.D.	The mechanics of breathing studied by electromyography of respiratory muscles and by animal plethysmography
	Studies on interstitial fluid
W.F. Widdas, Ph.D.	Membrane permeability to sugars
	Interstitial fluid in the heart
	Renal function in the foetus
R.L. Speirs, Ph.D.	Saliva in relation to dental caries

12. Zoology

Professor J.F. Danielli, Ph.D., D.Sc., F.R.S.	Inheritance mechanisms
	Cell physiology
	Cancer
B. Dawes, D.Sc.	Parasitology
D.R. Arthur, Ph.D.	Ticks in relation to disease
L.G.E. Bell, Ph.D.	Cytology
	Cytochemistry
E.A. Barnard, Ph.D.	Cytochemistry and protein chemistry
J.L. Cloudsley-Thompson, Ph.D.	Physiology and ecology of terrestrial arthropods
	Diurnal rhythms
C.B. Cox, Ph.D.	Vertebrate palaeontology
F.E. Cox	Parasitic Protozoa
S.E. Hawkins (Miss)	Nucleo-cytoplasmic relationships in *Amoeba*
L. Wolpert	Embryology
	Cell division

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1. Biology

Professor G. Chapman (Head of Department)	The movements and hydrostatics of invertebrate animals
	Mesogloea of coelenterates
P.C. Gardiner (Miss)	Morphology and biology of anobiid wood beetles
D.O. Rawson (Mrs.)	Functional anatomy of cestode genitalia
J.E. Rigby (Miss)	Functional anatomy of pulmonate gastropods
B.G. Gardiner, Ph.D.	Origins and affinities of holostean fishes
J.G. Vaughan, Ph.D.	Testa structure of *Brassica* spp
	Anatomy of *Acrocomia* fruits
S.R. Rogers (Miss)	Experimental taxonomy of *Papaver rhoeas*

2. Chemistry

Professor H. Burton	Reactions of organic cations with reference to acylation and alkylation
M.K. Hargreaves, Ph.D.	The relation of optical rotatory power to chemical constitution
P.F.G. Praill, Ph.D.	Reactions of (a) organic perchlorates, (b) pyrans and related compounds Kinetics of acylatcn
G.W.H. Cheeseman, Ph.D.	Reactions of (a) organic nitrates, (b) quinoxalines and related compounds
F.G. Smith (Miss), Ph.D.	Kinetics of the thermal decomposition of organic compounds: determination of bond dissociation energies
A.J. Banister, Ph.D.	Metal chelate complexes
R.C. Poller, Ph.D.	The stereochemistry of organo-arsenic compounds

3. Mathematics

W.B. Bonnor, Ph.D. (Head of Department)	Relativity; astrophysics
R.L. Perry, Ph.D.	Analysis

4. Microbiology

H.R.B. White (Miss), Ph.D.	Intestinal flora of small animals in relation to diet and age The resistance of various micro-organisms in disinfecting agents (including particularly the effect of heat, cold and drying) The genus *Pediococcus* Microbiology of frozen vegetables
P.M. Scholes (Miss), Ph.D.	Microbiological assays

5. Nutrition

Professor J. Yudkin	Identification of new nutritional growth factor Search for oral contraceptive Vitamin-sparing action of sorbitol
A.M. Copping (Miss)	Effects of vitamin B_6 deficiency
T.B. Morgan	Factors affecting choice of diet

6. Physics

T.J. Dillon (Miss), (Head of Department)	Photosensitive neon indicator tubes as photoemissive cells
U. Andrewes (Miss), Ph.D.	Photoelectric spectrophotometry and visual tricolorimetry
J.J. Parsons	Structure of liquids
M.T. Browne	Vibration damping by visco-and visco-elastic substances
N. Brennan (Miss)	Visual colorimetry

7. Physiology

Professor J.A.C. Knox, M.D.	Effect of vitamin deficiencies on neuromuscular transmission
E.M. Cheesman (Mrs.) A.D. Blunt (Mrs.)	Effect of vitamin deficiencies on the blood-picture in the rat

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1. Botany

Professor C.P. Whittingham, Ph.D.	Physiology and biochemical mechanisms of photosynthesis Physiology of higher plants
M.B.E. Godward (Miss), Ph.D.	Cytology and taxonomy of algae and angiosperms Radiobiology
H.V. Newby	Physiology of aquatic fungi Habitat relations of aquatic fungi
D.A. Walker, Ph.D.	Carbohydrate metabolism and photosynthesis Enzymic carboxylation
P.J. Wanstall	Ecology of *Polytrichum* Bryophyte flora of Scilly Isles Bryophyte ecology of the Azores
B.M.G. Jones	Experimental taxonomy of *Arabis* Classification of the Coniferae

2. Chemistry

Professor K.W. Sykes	The structure and reactivity of inorganic complexions in solution The solution chemistry of neptunium The reaction of carbon filaments with atomic oxygen The nature and reactivity of the surfaces of reduced metals
D.C. Jones, D.Sc.	Adsorption from solution Heats of wetting Adsorption on water-surfaces of insoluble vapours
W.J. Hickinbottom, D.Sc.	The mechanisms of oxidation of hydrocarbons Synthesis of highly branched paraffins Molecular rearrangements by free radical mechanisms Alkylation of aromatic systems by the alkylesters of thermal decomposition of sulphonic acids Homolytic substitution in saturated systems
C.M. French (Miss), D.Sc.	Conductivity in, and electrodeposition from, solutions in organic solvents Stability constants and other physical properties of metal complexes of some chemical carcinogens and of some proteins Preparation and examination of some organic compounds of boron Kinetic and other measurements in enzyme-carcinogen systems
R.F. Garwood, Ph.D.	Synthesis of substances promoting dropwise condensation on metal surfaces
R.F. Hudson, Ph.D.	The mechanism of substitution reactions particularly of organic derivatives of non-metallic halides, and of phosphonic and sulphonic esters The influence of solvent structure on reaction velocity and mechanism Optically active compounds of phosphorus, and similar non-metallic elements
D.M. Grove (Miss), Ph.D.	Adsorption and permeability methods of investigating pore structure Investigation of changes in the pore structure of graphite during gasification
M.F. Ansell, Ph.D.	The preparation of reduced cyclic systems and related studies

2. Chemistry *(continued)*

G.M. Waind (Mrs.), Ph.D.	Low valence stabilization of transition metals Solution chemistry of thallium
E.A.C. Lucken, Ph.D.	The application of electron-spin resonance to some problems in organic chemistry A study of organic radical intermediates by electron-spin resonance
M.A. Whitehead	Nuclear quadrupole resonance spectroscopy of certain organic and pseudo-organic substances and some theoretical calculations concerning them
M.H.B. Stiddard, Ph.D.	Spectroscopic studies of ionic solutions Reactions of Group 6 carbonyls
P.M. Maitlis, Ph.D.	The mechanisms of molecular rearrangements Substituent effects in aromatic systems Synthesis of new polymers Aromatic boron chemistry

3. Engineering

Aeronautical:

Professor A.D. Young	Boundary layers in incompressible and compressible flow Stability and control of high-speed aircraft
L.G. Whithead, Ph.D.	Hodograph methods for subsonic flow The development of the stall on a thin aerofoil Torsion of solid sections with end constraint
L.A. McQuillin	The torsion and flexure of cylinders of aerofoil cross-section
G.J. Hancock, Ph.D.	Oscillating wings at supersonic speeds Stability of plate aerofoils at supersonic speeds Deformation of wings during flight Jet flap aerofoils
R.D. Milne	Aeroelastic problems of high-speed aircraft

Civil:

Professor J.W.H. King	Studies in plain and reinforced concrete, using ultrasonic methods Methods of compacting concrete Standardization of an accelerated test for site concrete Studies related to concrete used in nuclear reactor shields Photoelastic research Plastic collapse of structures
A.W.T. Daniel, Ph.D.	Soil mechanics of granular materials
D. Gadd	Photoelastic research

Electrical:

Professor M.W. Humphrey-Davies	Application of digital computers to problems in the design of transformers and electrical machines, and in the design and control of power systems Synthesis of all-pass equaliser networks Behaviour of electric arcs in magnetic fields
H. Tropper, Ph.D.	The electric breakdown of transformer oil under direct and impulse voltages The role of dissolved gases in the electrical breakdown of transformer oil Electric flashover along oil surfaces and the effect of barriers Electrical conduction processes in liquid dielectrics

3. Engineering (*continued*)

Electrical (*continued*)

T.J. Lewis, Ph.D.	The statistics of impulse testing Electron energy distribution functions in gas discharges The electric strength and conductivity of liquified gases Studies of breakdown time lags in pure liquids The electrical properties of mixed solid/liquid insulating systems The electric strength and conductivity of hydrocarbon gases Theoretical calculation of the ionization coefficients of gases
J.S. Seeley, Ph.D.	Investigation of the transmission properties of interfering dielectric layers Microwave measurements of the properties of ceramic materials in the Q and X bands at high temperature
R.F. Thumwood, Ph.D.	Investigation of the mechanism of flash X-ray production
A.J. Ellison	Electron multiplication in image tubes Heat flow in electrical plant Mechanical noise Asynchronous operation of synchronous machines
A.G.J. MacFarlane	Application of digital computers to the design of control systems
Mechanical:	No information
Nuclear:	
Professor W. Murgatroyd, Ph.D.	The dynamics of heat generating fluids The stability of nuclear power plants
with W.K. Mansfield	Experimental study of uranium and water reactor lattices High voltage insulation in high-vacuum systems
with R.F. Saxe, Ph.D.	The initiation mechanism of the spark discharge Development of a new type of pulsed-ion source Investigation of the ion-cyclotron resonance in a gas discharge

4. Geography

Professor A.E. Smailes	Urban geography Survey of urban spheres of influence in Great Britain Urban geography of Wolverton, a railway town A study of central places and their services in the London area Urban geography of Tunbridge Wells Urban geography of S.E. London Urban geography of Croydon Urban geography of New Delhi Urban geography of the Cinque Ports
E.M. Rawstron	Industrial location Industrial geography of Great Britain
A.F.A. Mutton (Miss), Ph.D.	Hydro-electric power development in Europe Aspects of historical geography of S.W. Essex
C.E. Everard	Geomorphology of W. Cornwall Geomorphology of N.W. Devon
J.A. Sheppard (Miss), Ph.D.	Aspects of the historical and settlement geography of E. Yorkshire
D.R. Harris	Plant geography of the Leeward Islands

5. Geology

J.F. Kirkaldy, D.Sc. (Head of Department)	Lower and Upper Cretaceous stratigraphy and earth movements
F.A. Middlemiss, Ph.D.	Lower Cretaceous terebratulids. Lower Greensand stratigraphy structure and petrology in the Western Weald
J.T. Greensmith, Ph.D.	Sedimentary petrology of Oil Shale Group of the Lothians and Calciferous Sandstone Series of E. Fife
A.C. Bishop, Ph.D.	Petrology and structure of granites and minor intrusions of Jersey, Channel Islands
E.V. Tucker, Ph.D.	Palaeoecology of the *Dayia* Beds of Welsh Borderland. Variation in *Dayia navicula*. Structural analysis of Welsh Borderland

6. Mathematics

Professor V.C.A. Ferraro	Geomagnetism and astrophysics
K.A. Hirsch	Theory of groups and modern algebra
Professor E.H. Sondheimer, Ph.D.	Theory of metals
H.S. Allen, Ph.D.	Theory of infinite matrices and allied topics
M. Tropper (Mrs.), Ph.D.	
B.H. Chirgwin, Ph.D.	Wave mechanics
C. Plumpton, Ph.D.	Astrophysics
A.J. Weir, Ph.D.	Algebra and algebraic geometry
K.W. Gruenberg, Ph.D.	Theory of groups
P.J. Higgins, Ph.D.	Theory of groups and universal algebra

7. Physics

Professor G.O. Jones	Properties of solids and liquids at liquid helium and liquid hydrogen temperatures Superconductivity and superconducting instruments High pressure physics Crystal dynamics
Professor R.K. Eisenschitz	Theoretical physics, with special reference to the theory of liquids
J.G. Powles, Ph.D., D.ès Sc.	Nuclear magnetic resonance absorption in solids and liquids
A. Ashmore, Ph.D.	Nuclear physics
E.J. Irons, D.Sc.	Acoustics
J.W. Leech, Ph.D.	Theoretical problems in atomic physics
R. Heastie, Ph.D.	Solid-liquid phase equilibria at low temperatures
E.R. Dobbs, Ph.D.	Solid and liquid state investigations using ultrasonics and X-rays
R.O. Davies, Ph.D.	Thermodynamics of relaxation phenomena
J.C. Burfoot, Ph.D.	Elements for digital electronic computers
D.H. Martin, Ph.D.	Superconductivity and spectroscopy in the sub-millimetre range

8. Zoology

Professor J.E. Smith, F.R.S.	Nervous anatomy and behaviour of invertebrates
Professor G.E. Newell	Behaviour of intertidal animals
J.E. Forrest, Ph.D.	Biology and functional morphology of opisthobranchiate gastropods Biological problems in connection with pollution of freshwaters and estuaries Biology and distribution of heteropod molluscs Marine zoology of the Azores

8. Zoology (*continued*)

J.D. Carthy, Ph.D.	Behaviour of shore Crustacea and insects
J.E. Morton, Ph.D.	Functional and evolutionary morphology of molluscs
R.F.H. Freeman	Physiology of lamellibranchs Helminth parasites in invertebrate hosts
K. Simkiss, Ph.D.	Cytology, cytochemistry Calcifying mechanisms

24 London University, Royal Holloway College

1. Botany

Professor F.W. Jane	Taxonomy and ecology of freshwater algae, with special reference to phytoflagellates and protista Structure of wood in relation to taxonomy and utilization Variability of wood and abnormal structure; reaction wood Decay in wood
M.A.P. Madge (Miss), Ph.D.	Growth and development in the Chlorophyceae
P.M. Topping (Mrs.), Ph.D.	Soil fungi Ecology of disturbed heathland
R.G. Paxton	Physiology of growth in Hepaticae
J.H. Evans, Ph.D.	Algal ecology, especially in reference to drought resistance

2. Chemistry

Professor E.J. Bourne, Ph.D., D.Sc.	Chemistry of carbohydrates Enzymic syntheses of higher saccharides Mechanisms of acylation reactions
A.G. Foster, Ph.D.	Adsorption by porous solids New analytical methods
K. Singer, Ph.D.	Statistical mechanics Radioactive tracers
T.G. Bonner, Ph.D.	Cyclization reactions giving heterocyclic rings Action of Lewis acids on cyclic acetals and related compounds Nitration, denitration mechanisms and acidity functions in strong acids
H. Weigel	Chemistry and biochemistry of carbohydrates Radiation chemistry of carbohydrates
D. Peters, Ph.D.	Quantum mechanics of large organic molecules Syntheses of mesomeric hydrocarbons
J.B. Pridham, Ph.D.	Chemistry and metabolism of low molecular carbohydrates and their derivatives

3. Mathematics

Professor W.H. McCrea, Sc.D., F.R.S.	Astrophysics Relativity
H. Halberstam, Ph.D.	Theory of numbers
M. Bradburn (Miss), Ph.D.	Functions of mathematical physics
B.G. Yates (Miss), Ph.D.	Analysis
J.W. Reed	Theory of complex variable
M.R.C. McDowell, Ph.D.	Quantum theory

4. Physics

Professor S. Tolansky, Ph.D., D.Sc., F.R.S.	Development of new multiple-beam interference and optical techniques Application of multiple-beam interference and other optical techniques to the study of thin films, crystal surfaces, metallic surfaces, diamonds and crystal oscillations Hyperfine structure investigations in line spectra with high resolution instruments Interferometric studies on organic films and crystals
O.S. Heavens, Ph.D.	Development of methods for studying the structure, density, magnetic and optical properties of thin films Study of epitaxial growth of films formed by condensation *in vacuo* Examination of the composition and magnetic behaviour of thin films of ferromagnetic alloys
E.H. Hutten, Ph.D.	Philosophy and history of science Non-linear theories of quantum physics

5. Zoology

P.M. Butler, Ph.D.	Palaeontology and comparative anatomy of mammals Function and development of teeth Ecology of terrestrial vertebrates
J.G. Thomas (Miss), Ph.D.	Functional morphology of insects, especially locusts Ecology and behaviour of soil Collembola
A. Duncan (Miss), Ph.D.	Pigment in *Arenicola* Freshwater ecology

25 London University, Royal Veterinary College

1. Anatomy

Professor J. McCunn	Applied anatomy Radiological anatomy
D.M. Dyce,	Autonomic nervous system (horse) Functional anatomy gastro-intestinal tract Radiological anatomy
R.H.A. Merlen	Applied anatomy Veterinary history
F.S. Drury	Periosteum Radiological anatomy
J.H. Jackson	Mammalian embryology Plant toxicology
R.D. Nisbet, Ph.D.	Neuromuscular activity in Mollusca
R.F.S. Creed	Reproduction in *Vulpes*
J.H. Austin (Miss)	Epitrichia Development in gastrotheca Tissue grafting
M.G.A.D. Scott	Nutrition and reproduction in the male cat
I.L. Owen	Helminths of freshwater teleosts
B. Bowes	Growth and histogenesis in angiosperms

2. Chemistry

E.G.C. Clarke, Ph.D.	Properties of phytotoxins Microidentification of alkaloids Chemistry of steroids

3. Hygiene and Animal Husbandry

Professor J.A. Laing, Ph.D.	Animal reproduction
D.A. Green	Artificial insemination in pigs Growth rate in horses
A.E. Harrop	Sperm physiology, canine reproduction, infertility and artificial insemination in the dog Artificial insemination in pigs
P.A. Jewell, Ph.D.	The physiology of very small mammals The breeding behaviour of species of *Apodemus*. Faunal remains from archaeological sites Productivity of sheep
E.C. Olford	Environmental studies of poultry houses
H.Ll. Williams	Taste thresholds and palatability tests Productivity of sheep

4. Medicine

Professor H. Burrow	
H.R. Allen	Bacteriological methods in mastitis diagnosis
J.C. Greatorex	Haematology of cattle
E.F. Lewis	Dermatology of the pig
E.K. Price	Dermatology of the dog and cat
J. Stratton	Otology of the dog and cat Laboratory aids to clinical diagnosis

5. Pathology

Professor T.J. Bosworth	Clostridial infections, actinomycosis and nocardiosis
Professor R. Lovell, D.S.c., Ph.D.	Diseases associated with Bacteriaceae, Corynebacteria, *Pasteurella* and *Listeria:* their epidemiology and pathogenesis
J.N. Oldham, Ph.D.	
D.G. Harvey, Ph.D.	Pathology of white scour in calves
E. Cotchin, D.Sc.	Neoplasia in animals; its occurrence, histopathology and experimental production
P.L. Ingram	
J.E. Smith	Abnormalities of the prostate gland of the dog
W.P. Beresford-Jones	Parasites of mammals and birds
E.C. Appleby, Ph.D.	Diseases of cage birds
J.S. Wilkinson, Ph.D.	Comparative toxicology, bio-assay of new toxic chemicals Development of analytical techniques Biochemistry of pathogens

6. Physiology

Professor E.C. Amoroso, Ph.D., F.R.S.	Reproductive physiology Physiology of the foetus Endocrinology
H. Rosenberg, Ph.D.	Neurophysiology: peripheral nerves
F.R. Bell, Ph.D.	Rumination Taste perception in ruminants
B. Schofield (Miss), Ph.D.	Myometrial function and its endocrine control
A.M. Lawn	Control of oesophageal motor activity
R.H. Marchant, Ph.D.	Comparative studies on the metabolism of tryptophan and related substances
P.A. Mayes, Ph.D.	The metabolism of fat with special reference to ketone bodies
A.E. Hawkins, Ph.D.	Animal calorimetry and activity
M.W.H. Bishop, Ph.D.	Physiology of eggs and sperm

7. Surgery

Professor C. Formston	Blindness in cattle Opacities and degenerations of the crystalline lens Vascular permeability and shock
G.H. Arthur, D.V.Sc.	Ovarian dysfunction in cattle Testicular descent and cryptorchidism Anaesthesia of horses and cattle Diseases of the bovine abomasum
G.C. Knight	Intra-ocular surgical techniques in the dog, particularly those related to the total extraction of the undislocated cataractous lens and anterior chamber lens prostheses Orthopaedic surgery in general, especially the internal fixation of fractures
L.C. Vaughan	Diseases of the foot in the horse Lameness in cattle Joint injuries in the dog
R.C. Frost	Feline urology The relation of oestrus and pregnancy to certain clinica diseases in the bitch
W.D. Tavernor	Anaesthesia in all species Muscle relaxants in the horse
K.C. Barnett	Ophthalmic abnormalities in the dog and cat with particular reference to the retina

26 London University, School of Pharmacy

1. Chemistry

Pharmaceutical:

Professor W.H. Linnell, D.Sc.	Preparation of clinical analogues of the adrenal cortex hormones based upon fragments of the cyclopentenophenanthrene nucleus Synthesis of derivatives of adrenochrome Hypnotics
L. Saunders, D.Sc.	Physico-chemical studies with phosphatides
A.L. Glenn, Ph.D.	Effect of salts on the ultra-violet absorption of simple aromatic chromophores The accuracy and precision of spectrophotometric methods of pharmaceutical analysis
D.W. Mathieson, Ph.D.	The use of acetylene in the synthesis of heterocyclic compounds Examination of some constituents of Cucurbitaceae and certain *Erythrophleum* barks
L.K. Sharp, Ph.D.	Synthetic anticoagulants Synthetic analogues of reserpine Synthetic analogues of emetine

2. Pharmaceutics

Professor E. Shotton, Ph.D.	Formulation of pharmaceutical preparations Surface films and the theory of emulsification as applied to mucilages Rheological properties of emulsions Factors affecting the disintegration of compressed tablets Factors affecting the entrainment of liquids during distillation The effect of certain phenolic antiseptics on the critical micelle concentration of soaps

2. Pharmaceutics (*continued*)

Engineering:

D. Train, M.C., Ph.D.	Fundamental aspects in the mechanism of pelleting Physical properties of powders

Microbiology:

A.M. Cook, Ph.D.	Bactericidal effects of Co^{60} Evaluation of bactericides The effects of bactericides on bacterial spores and on bacteriophages

3. Pharmacognosy

J.W. Fairbain, Ph.D. (Head of Department)	The active constituents of the vegetable purgatives containing anthracene derivatives The role of alkaloids and glycosides in the economy of the plant

4. Pharmacology

Professor G.A.H. Buttle, O.B.E.	Factors affecting the growth of a sarcoma of human origin transplanted into rats
G.B. West, D.Sc., Ph.D.	Relationship of histamine and 5-hydroxytryptamine to anaphylactic shock in different species Physiological significance of histamine and 5-hydroxytryptamine
W.C. Bowman, Ph.D. and L.C. Blaber	The mode of action of anticholinesterases on skeletal muscles
A.M. Barrett, Ph.D.	Factors affecting the level of corticotrophin in the blood
B.A. Callingham	The effects of reserpine on the adrenal medulla and the subsequent recovery of its catechol amine content
B.P. Block	Some metabolic effects with adrenocortical steroids
R. Cass (Miss)	Studies on 5-hydroxytryptamine and catechol amines
P.J.S. Spencer	Relationship of thyroxine to hypersensitivity

27 London University, University College

1. Anatomy

Professor J.Z. Young, D.Sc., F.R.S.	Nervous system
J.T. Aitken, M.D.	Histology of the spinal cord
M. Abercrombie, F.R.S.	Tissue culture
D.H.L. Evans	Autonomic nervous system
L.H. Hamlyn	Histo-electronic investigations of the hippocampus
D.A. Sholl	Quantitative histology of the central nervous system
D.W. James	Mechanism of wound healing and skin growth
J.D. Robertson, M.D., Ph.D.	Electron microscopy
E.G. Gray, Ph.D.	Electron microscopy of the cerebral cortex
B.G. Cragg	Histo-electronic investigations of the brain
E.M. Deuchar (Miss), Ph.D.	Chemical embryology
R.W. Guillery, Ph.D.	Histology of the hypothalamus
T.A. Quilliam, Ph.D.	Regeneration of peripheral nervous tissue
W.K. Taylor	Electronic simulators and analogue computers
A.S.G. Curtis	Tissue culture

2. Astronomy

Professor C.W. Allen, D.Sc.	Solar-terrestrial relations
E.W. Foster	Measurement of absolute spectrum line intensities
R.H. Garstang, Ph.D.	Theoretical spectrum line intensities

3. Biochemistry

Professor E. Baldwin, Ph.D.	Nitrogen metabolism in invertebrates
E.M. Crook, Ph.D.	Metal complexes and the mechanism of enzyme action Physical chemistry of proteins and enzymes
A.L. Greenbaum, Ph.D., D.Sc.	Biochemistry of lactation and metabolic effect of pituitary growth hormone
L.M. Kerly (Miss), Ph.D.	Metabolism of retina
S.P. Datta	Acid dissociations and chelation of metal ions Calorimetry
P.H. Clarke (Mrs.)	Bacterial enzymes
K. Law (Miss), Ph.D.	Enzymes in fungi
A.P. Mathias, Ph.D.	Peptide chemistry
P.M. Meadow (Miss), Ph.D.	Bacterial cell walls
B.R. Rabin, Ph.D.	Metal complexes and mechanism of enzyme action
E.M. Shooter, Ph.D.	Physical chemistry of proteins with special reference to haemoglobins and ribonuclease

4. Biometry

C.A.B. Smith, Ph.D.	Mathematical methods in treatment of genetical problems

5. Biophysics

Professor B. Katz, D.Sc., M.D., F.R.S.	Nerve-muscle physiology
E.J. Harris, D.Sc.	Cell permeability
P. Fatt, Ph.D.	Nerve-muscle physiology
H.E. Huxley, M.B.E., Ph.D.	Ultrastructure of muscle and of subcellular particles
R. Niedergerke, M.D.	Contraction of heart muscle

6. Botany

Professor D. Lewis, D.Sc., F.R.S.	Genetics of fungi, mating systems in plants
G.E. Fogg, Ph.D.	Algal physiology: growth, photosynthesis and nitrogen metabolism of Chlorophyceae, Xanthophyceae, Bacillariophyceae and Myxophyceae
L. Fowden, Ph.D.	New nitrogenous compounds and nitrogen metabolism in higher plants and micro-organisms
P.R. Bell	Developmental and phylogentical studies of Pteridophyta Experimental morphology
W.G. Chaloner, Ph.D.	Carboniferous lycopods and their spores Plant microfossils from the British Permian, Triassic and Tertiary
M.F. Mahoney (Miss), Ph.D.	Genetics of *Aspergillus* and *Sordaria*
P.J. Newbould, Ph.D.	Ecology of beech woods
P.J. Syrett	Carbon and nitrogen metabolism of algae Photosynthesis
H. Tristram	Induced enzyme formation in micro-organisms
D.J.B. White, Ph.D.	Developmental anatomy; timber
D. Wilkie, Ph.D.	Studies in ultra-violet induced mutations in fungi

7. Chemistry

Professor Sir C.K. Ingold, D.Sc., F.R.S.	Mechanism of reactions Ultra-violet band spectroscopy
Professor E.D. Hughes, Ph.D., D.Sc., F.R.S.	Mechanism of organic reactions Mechanism of inorganic reactions
Professor Dame Kathleen Lonsdale, D.Sc., F.R.S.	X-ray crystallography
Professor R.S. Nyholm, D.Sc., F.R.S.	Co-ordination chemistry
Professor D.P. Craig, D.Sc.	Theoretical chemistry Ultra-violet spectroscopy of crystals
C.A. Bunton, Ph.D.	Isotopic tracer studies with mass spectrometer
A.G. Davies, Ph.D.	Organic peroxides
P.B.D. de la Mare D.Sc., Ph.D.	Mechanism of aromatic substitution Mechanism of olefinic addition and rearrangement reactions
A. Maccoll, Ph.D.	Gas kinetics Theoretical chemistry
D.J. Millen, Ph.D.	Microwave spectroscopy Raman and infra-red spectroscopy
H.G. Poole, Ph.D.	Ultra-violet band spectroscopy
C.A. Vernon	Mechanism of enzyme reactions
Professor A. Wassermann, D.Sc.	Polyelectrolytes and polyampholytes Polymerization
T.M. Dunn, Ph.D.	Vacuum-ultra-violet band spectroscopy
J.H. Ridd, Ph.D.	Heterocyclic substitution
Y. Pocker, Ph.D.	Mechanisms of reactions in aprotic solvents
J.H. Callomon, D.Phil.	Ultra-violet band spectroscopy
H.J. Milledge (Mrs.), Ph.D.	X-ray structural investigations
J. Lewis, Ph.D.	Co-ordination and magnetochemistry
M.L. Tobe, Ph.D.	Reaction mechanisms in co-ordination chemistry
B.N. Figgis, Ph.D.	Nuclear magnetic resonance
P. Pauling, Ph.D.	Inorganic sterochemistry

8. Engineering, Chemical

Professor M.B. Donald	Flame radiation Electrostatic separation of minerals Heat transmission; boiling liquids; vibrating flow; gas-liquid phase coefficients in pipes Statistical analysis of mixing solid particles Flange gasket design Still downcomer design Liquid-liquid extraction
J.W. Mullin, Ph.D.	Distribution of liquids in packed towers Crystallization
J.A. Barnard, Ph.D.	Gas kinetics Vapour phase chromatography
K. Ridgway, Ph.D.	Azeotrope formation
R. Chayen, Ph.D.	Protein extraction from grasses Manufacture of co-enzyme A and glutathione Conversion of hydrocarbons to fatty acids

9. Engineering, Civil

Professor E.H. Thompson, O.B.E.	

9. Engineering, Civil (*continued*)

Coastal Engineering:

P.H. Kemp, Ph.D.	Laboratory and field study of the effect of waves on beaches

Concrete Technology and Structures:

R.H. Elvery	Non-destructive testing of concrete using the ultrasonic pulse velocity and resonance methods in relation to curing conditions
	Applications of the above non-destructive testing techniques to timber technology
	Study of the structural use of light-weight concrete
	Study of the effect of curing temperatures on high alumina cement concrete
	Shear strength of reinforced concrete Tee-beams
	Investigation into the lateral and vertical pressure distribution in deep storage bins containing non-cohesive granular materials
	Use of pumice concrete for structural model testing

Photoelasticity:

C. Snell I.M. Allison, Ph.D. H.T. Jessop	Application of photoelastic methods of exploration to engineering problems, including high pressure cylinders, aircraft components, pre-stressed concrete, etc.
	Physical and optical properties and treatment of plastics with special reference to frozen-stress technique and development of scattered light method
	Bearing pressures and arching effects in granular material, with reference to bins and silos
	Strain measurements in metals by stress optic coatings
	Stresses due to gravity and hydraulic loading on arch dams including the effects due to the nature of the bedrock
K.O. Kemp	Birefringence of polarized light in connection with fluid flow problems

Photogrammetry and Surveying:

Professor E.H. Thompson, O.B.E.	Research into methods of aerial triangulation, both analogue and digital
E.A. Miskin, Ph.D.	Non-topographic applications of photogrammetry with particular reference to medical and engineering problems
	Investigation into and reduction of distortions of cameras through physical conditions outside the apparatus

Public Health Engineering:

K.J. Ives, Ph.D.	Theory of filtration and simulation by digital computer
	Filtration of turbid water through uniform and graded sand beds
	Upflow filtration
	Surface chemistry of granular filter media

Soil Mechanics:

P.L. Capper	Investigation of factors in the California bearing ratio test on sand-clay mixtures: effects of mould size, plunger size, density gradient, methods of compaction and pore pressures

Traffic:

C.P. Andren	Surveys of pre-war and post-war trends
	Capacities of road, rail and pedestrian facilities
	Aspects of transport in town planning with particular reference to road junction design

10. Engineering, Electrical

Professor H.E.M. Barlow, Ph.D.	The internal conditions in electrical laminations with alternating magnetization
Professor F. Brailsford, Ph.D.	Measurement of power by application of the Hall effect in semi-conductors
J. Brown, Ph.D.	Problems of low-loss tubular waveguide transmission at millimetre wavelengths
B.C. Brookes	The origins of transformer noise
H. Marriott	Simultaneous measurement of Hall effect and radiation pressure for a semi-conductor
W.K. Taylor	Reflection of circularly polarized microwave radiation from an irregular surface
H.G. Effemey	Measurement of microwave Hall coefficients for semi-conductors
G.E. Gimson	Investigation of a lumped-circuit travelling wave tube
G.E. Kenshole	Magneto resistance and planar Hall effects in single crystal silicon
G.D. Sims, Ph.D.	Investigation of the errors arising in aerial radiation pattern measurements
I.M. Stephenson, Ph.D.	Measurement of the noise figures of microwave mixers
	The design of wideband aerials
	Analysis of the spent beam characteristics of a two-cavity klystron
	Investigation of alternating flux conditions in a transformer corner
	Investigation of effects of mechanical stress on magnetic properties of laminations
	Investigation of a microwave mixer employing Hall effect in a semi-conductor
	Synthesis of self-organizing pattern recognition and control systems
	Investigation of waveguide slot aerials
	The properties of ferrites, photoconductor and semi-conductor films at microwave frequencies
	Investigation of wave propagation in plasma-filled waveguides

11. Engineering, Mechanical

Professor R.E.D. Bishop, D.Sc.(Eng.)	Vibration of rotating bodies
	Basic investigations in the theory of mechanical vibration
	Oscillation of railway vehicles
	Random vibration
	Matrix methods in vibration analysis
H. Billett	Inhibition of combustion by water droplets
	Mechanism of flame extinction in flame traps
	Effect of intake additives on oil engine performance
K.L. Jackson	Investigations of the vibration of flexible rotating shafts
T.H. Lambert, Ph.D.	The correlation between elastic stress distribution and fatigue life
	Contact stresses
	The effects of non-linear valve characteristics on the performance of hydraulic servomechanisms
A.H. Makomaski, Ph.D.	Preliminary investigations in the design and operation of shock tubes
B.S. Massey, Ph.D.	Velocity and attenuation of pressure pulses in small tubes
	Reaction of jets and thrust on impact plates
	Extinction limits of combustible mixtures; the effect of diluents
S.R. Montgomery, Sc.D.	Unsteady flow in pipes
T.H. Walker	The measurement of receptances

12. Genetics

Professor H. Grüneberg, F.R.S.	Mouse genetics; genetics of development
R.J. Berry, Ph.D.	Genetics of development (mouse)
G.M. Truslove (Miss), Ph.D.	
M.S. Deal, Ph.D.	

Human:

Professor L.S. Penrose, F.R.S.	Mutation in man; causes of foetal malformation
J. Bell (Miss)	Pedigree studies on mongolism
M.N. Karn (Miss)	Human metrical characters
U. Mittwoch (Miss), Ph.D.	Human cytology
E.B. Robson (Miss), Ph.D.	Cystinuria; lysinuria; hypophosphatasia; serum proteins
S.B. Holt (Mrs.), Ph.D.	Genetics of dermal ridges and patterns
H. Kalmus, M.D.	Special sense genetics
S.D. Lawler (Mrs.), M.D.	Human serology with special reference to genetical linkage

13. Geography

Professor H.C. Darby, O.B.E., Ph.D.	Historical geography of England
W.R. Mead, Ph.D.	Geography of Scandinavia and Finland
E.H. Brown, Ph.D.	Geomorphology of Britain
J.T. Coppock	Land utilization in the Chilterns
K.A. Sinnhuber, D.Phil.	Historical geography of Central Europe
H.C. Prince	Parkland in England
R.A. French	Geography of the U.S.S.R.
K.M. Barbour	Geography of the Sudan
T.J. Chandler	Climate of London
J.H. Johnson	Historical geography of Ireland in the nineteenth century
J C. Crossley	Geography of Latin America
D. Thomas	Historical geography of Wales in the nineteenth century

14. Geology

Professor S.E. Hollingworth	Permo-Triassic evaporites Pleistocene stratigraphy Structural geology in N. Norway Stratigraphy of the Old Red Sandstone of Southern Ireland
T. Barnard, Ph.D.	Mesozoic microfaunas, their evolution and stratigraphical significance
M.K. Wells, Ph.D.	Studies of gabbro intrusions in Sierra Leone, W. Africa, and of metamorphic rocks and structures in N. Norway
A.J. Lloyd, Ph.D.	Foraminifera from the Kimmeridge Clay of N. France Stratigraphy and structure of part of the Neuchatellois Jura
J.E. Robinson, Ph.D.	Scremerston Coal Group of W. Northumberland Ostracod faunas from the Carboniferous Limestone succession of Northumberland and their relationship to those of the North of England succession
R.W.R. Rutland, Ph.D.	Metamorphism, granite emplacement and structural geology in N. Norway

14. Geology *(continued)*

A.J. Smith, Ph.D.	Cambrian sediments of N. Wales Structures in the late-glacial laminated clays of Windermere, Lake District
E.F. Stumpfl, Dr.Rer.Nat.	Tin deposits of the Rooiberg district, S. Africa Platinum deposits of the Eastern Bushveld, S. Africa Opaque heavy minerals in sediments and igneous rocks

15. History and Philosophy of Science

Professor D. McKie, D.Sc., Ph.D., F.R.S.E.	History of chemistry and history of physics
A. Armitage, Ph.D.	History of astronomy
N.H. de V. Heathcote, Ph.D.	History of physics
W.A. Smeaton, Ph.D.	History of chemistry and history of physics
J.S. Wilkie, Ph.D.	History of biology

16. Mathematics

Professor W.R. Dean	Hydrodynamics and elasticity
Professor C.A. Rogers, D.Sc., F.R.S.	Theory of numbers, packing and covering
T. Estermann, D.Sc., D.Nat.Sc.	Theory of numbers
K.F. Roth, Ph.D.	
G.L. Watson, Ph.D.	
A.C. Stevenson	Hydrodynamics and elasticity
L.A. Wigglesworth	
D.H. Michael, Ph.D.	
L.S. Bosanquet, D.Phil., D.Sc.	Theory of functions of a real variable
H. Kestelman	
P. Du Val, Ph.D.	Geometry
J.W. Archbold	
E.A. Power, Ph.D.	Mathematical physics

17. Pharmacology and Therapeutics

Professor F.R. Winton, M.D., D.Sc.	Intrarenal pressure, renal blood flow and other aspects of pharmacology of the kidney
H.O. Schild, M.D., Ph.D., D.Sc.	Mechanism of anaphylaxis Pharmacology of gastric secretion Drug antagonism
D.R. Laurence, M.D.	Pharmacology of tetanus
S.E. Dicker, M.D. Ph.D., D.Sc.	The metabolism of antidiuretic, vasopressor and oxytocic hormones in mammals and human beings
J.L. Mongar, Ph.D.	Mechanism of the anaphylactic reaction and immune haemolysis
H.R. Steinberg (Miss), Ph.D.	Psychological effects of drugs affecting the central nervous system

18. Physics

Professor H.S.W. Massey, F.R.S.	Experimental and theoretical nuclear, ionic and atmospheric physics; space research
E.H.S. Burhop, Ph.D.	Physics of atomic and nuclear collisions and of Auger processes Study of strange particles using nuclear emulsions

18. Physics *(continued)*

R.L.F. Boyd, Ph.D.	Experimental studies of electron collision processes, especially in gas discharges Space research
J.B. Hasted, Ph.D.	Experimental study of ion collision processes in gases
C. Dodd, Ph.D. C. Henderson, Ph.D.	Development of a heavy liquid bubble chamber for studying the path of ionizing particles
R.E. Jennings, Ph.D.	Experimental study of the scattering of high-energy electrons by nuclei
F.F. Heymann, Ph.D.	Experimental study of the polarization of protons in meson-proton collisions
T.C. Griffith, Ph.D.	Experimental study of nucleon-nucleon collisions at high energy using a high pressure cloud chamber
M.J. Seaton, Ph.D.	Physics of atomic collisions; applications in astrophysics
S. Zienau, Ph.D.	Field theory
J.W. Fox, Ph.D.	Collision processes in atomic hydrogen
G.V. Groves, Ph.D.	Theoretical studies relating to scientific use of rockets and satellites
D.W.O. Heddle, Ph.D.	Spectroscopic studies of atomic collison phenomena
I.C. Percival, Ph.D.	Theory of atomic collisions—the use of electronic computers
H.S. Tomlinson	Design of a heavy liquid bubble chamber
W.B. Lasich, Ph.D.	Study of strange particles using nuclear (emulsion) technique
A.P. Willmore, Ph.D.	Space research

19. Physiology

Professor Sir L. Brown, C.B.E., F.R.S.	Neurophysiology
L.E. Bayliss, Ph.D.	Rheology
H. Davson, D.Sc.	General physiology
G.D. Dawson	Transmission through sub-cortical nuclei
J. Diamond, Ph.D.	Physiology of regenerating nerves
M.G. Eggleton (Miss), D.Sc.	Renal physiology
J.A.B. Gray	Neurophysiology
R.D. Harkness M.L.R. Harkness (Mrs.)	Properties of connective tissue
O.F. Hutter, Ph.D.	Ionic fluxes in cardiac muscle
O.C.J. Lippold	Human muscular function
J.E. Pascoe	Properties of the spinal cord
D.R. Wilkie, M.D.	Muscle energetics
M. Schachter, M.D.	Active substance in tissues
Professor A.V. Hill, C.H., F.R.S.	Biophysics
S.J. Hubbard, Ph.D.	Sensory mechanism

20. Psychology

Professor G.C. Drew	Skills, especially effect of drugs on skilled performance
J.W. Whitfield	Experimental studies of problem solving and non-parametric statistics
G.H. Keir (Miss)	Child psychology
R.J. Audley, Ph.D.	Probabilistic descriptions of learning behaviour Animal and human choice behaviour

20. Psychology (*continued*)

E.K.C. Banks (Miss), Ph.D.	Child psychology including mental testing tests of personality and prediction studies in delinquency
C. de Monchaux (Miss), Ph.D.	The relation between content and form in psychoanalytic data
N.F. Dixon, Ph.D.	Decision process underlying recognitive behaviour in mental patients. The classification of pre-recognitive hypotheses as a function of mental disorder
R.T. Green, Ph.D.	Learning, remembering and attention
A.R. Jonckheere, Ph.D.	Devising distribution-free tests for the analysis of psychological data Mathematical analysis of learning phenomena
R.P. Kelvin, Ph.D.	Subliminal stimulation and learning The study of small group productivity The investigation of subjective colours
A. Summerfield	Problems of learning and perception Psychopharmacology
R.B. Buzzard	Studies of attendance in occupations with different environmental conditions
R. Marriott	Reactions to merit systems in industry
L.J. Buck	Effects of taxation on hours of work
N. Harris (Mrs.)	The reporting and recording of accident statistics. Problems in subjective assessing
M. Khairy (Miss), Ph.D.	Behavioural effects of drugs
D. Monnington (Miss)	Communication of production information and the relation of this to success in identifying and solving production problems liable to result in delivery delay
R. Sergean	Industrial merit rating Individual patterns in absence from work
R.D. Shepherd	Memory for spatial position
S.B.N. Shimmin (Miss)	Extra-mural factors influencing industrial motivation
J. Walker	Perception of directional information with reference to road signs
P.C. Wason, Ph.D.	Reasoning Negative information
R.H.J. Watson, Ph.D.	Biochemical correlates of behaviour

21. Statistics

Professor E.S. Pearson, C.B.E., D.Sc. F.N. David (Miss), D.Sc.	Development of mathematical techniques in connection with the theory of statistics and probability, having special regard to requirements for new methods of handling observational data
N.L. Johnson, Ph.D.	Probability theory and inference
N.W. Please, Ph.D.	Non-parametric methods
D.E. Barton, Ph.D. C.L. Mallows, Ph.D.	Mathematical work leading to computation of new tables of statistical functions Applications of statistical methods in industry, in medicine and to the biological sciences

22. Zoology

Professor P.B. Medawar, C.B.E., F.R.S. L. Brent, Ph.D.	Transplantation immunity Cellular transformations
Professor D.M.S. Watson, F.R.S.	Palaeontology of amphibia, reptiles and mammals

22. Zoology (*continued*)

Professor G.P. Wells, F.R.S.	Zoogeography, anatomy and physiology of Polychaeta
R.B. Freeman, M.B.E.	General systematics
D.M. Ross, Ph.D.	Coelenterate nerve muscle and behaviour Dermal sensitivity to light in lower vertebrates
D.R. Newth, Ph.D.	Embryogeny, regeneration and nucleic acid metabolism in amphibia
K.A. Kermack, Ph.D.	Triassic crocodiles and new Mesozoic mammals
M. Whitear (Miss), Ph.D.	Proprioceptors in Crustacea.
A. Comfort, Ph.D.	Comparative biology of ageing in vetebrates Factors modifying vertebrate lifespan
B.B. Boycott	Nervous system of cephalopods and lower vertebrates
J.P. Stevenson, Ph.D.	Insect pathology and immunity
P.L. Robinson (Miss), Ph.D.	Fauna of Triassic lepidosaurs and other reptiles Late Palaeozoic and Mesozoic Indian vetebrates
J.M. Smith	Genetics of patterns in *Drosophila*
A.D. Blest, D.Phil	Behaviour of Saturniid moths Systematics of spiders
K. Vickerman	Parasitic Protozoa

28 London University, Westfield College

1. Mathematics

G.K. Stanley (Miss) W.B. Pennington, Ph.D.	Theory of numbers
N.J. Hardiman (Miss), Ph.D.	Elasticity
B. Fishel	Differential equations

29 London University, Wye College

1. Agriculture

Professor W. Holmes, Ph.D.	Nutrition of dairy cows Measurement of feed intake on grazing Plant physiology and grass production
with J.E. Duckworth Ph.D.	Pig breeding and selection
A.E. Maddison	Sib selection in poultry Factors affecting egg quality
P.C.J. Payne, Ph.D.	Application of soil mechanics to farm machinery
Agricultural Zoology:	
D.A. Ede, Ph.D. W.A. Kelly	Effect of avian viruses on embryogenesis in the chick

2. Botany

Plant Pathology:	
I.W. Selman, Ph.D. (Reader in Agricultural Botany)	Physiological analysis of effects of virus and fungus infection of tomato
G.F. Pegg, Ph.D.	Analysis of the influence of *Verticillium* on the tomato plant
R. Milne	Spotted wilt virus disease of tomato

3. Chemistry*

Professor R.L. Wain, Ph.D., D.Sc.	Plant growth substances: chemical structure in relation to physiological activity; movement of growth substances and their stability within plant tissues; mode of action
M.S. Smith (Miss), Ph.D.	
D.R. Williams	Fungicidal and systematic fungicidal activity
S.T.C. Wright, Ph.D.	
C.H. Fawcett, Ph.D.	
D.M. Spencer, Ph.D.	
K. Rothwell, Ph.D.	
F. Taylor	
J.L. Garraway	
P.P. Rutherford, Ph.D.	
G.A. Carter	
J.M.A. Ingram (Miss)	Soil structure in relation to grassland management
G.P. Askew	Soil survey studies
J. Dalrymple	

4. Economics

G.P. Wibberley, Ph.D. (Reader in Agriculture with special reference to Agricultural Economics)	Agricultural and land economics
J.T. Ward	Competition for agricultural land Capital and rental value of farms
R. Best	Estimates of urban land area, use and requirements
R.R.W. Folley	Economics of horticultural production
W.L. Hinton	Economics of fruit growing
I.G. Reid	Farm organization and management
J.D. Sykes	Systems of farming in S.E. England
G. Allanson	Economic problems in milk production
E.S. Clayton	Poultry economics Agrarian development in E. Africa

5. Hop Research

H.S. Darling, Ph.D. (Head of Department)	Studies on the incidence of the hop aphis (*Phorodon humuli*) and its control by systemic insecticides
J.R. Coley-Smith, Ph.D.	Studies on hop downy mildew disease
R.A. Neve	Development of new varieties of hops by selection methods
R.F. Farrar	The use of controlled crosses for specific breeding projects with special emphasis on disease resistance The production of polyploid hops
E.W. Weston	The application of paper chromatography to the study of the organic constituents of the hop plant The determination of the α and β acids and resins in the hop cone as influenced by variety and manurial treatment
F.C. Thompson	Selection and development of clonal stocks of established commercial varieties of hops
F.H. Beard	Cultural and manurial trials The mineral nutrition of hops The use of leaf and soil analysis to study the uptake of nutrients by the plant and for the diagnosis of mineral deficiences
I.H. Williams, Ph.D.	Studies on the growth and development of the hop plant in relation to environmental and cultural factors

*Houses the A.R.C. Unit for Research on Plant Growth Substances and Systemic Fungicides. The staff of the Unit includes Professor R.L. Wain, Ph.D., D.Sc. (Honorary Director), C.H. Fawcett, Ph.D., K. Rothwell, Ph.D., D.M. Spencer, Ph.D., F. Taylor, S.T.C. Wright, Ph.D., and G.A. Carter.

6. Horticulture

Professor H.W. Miles	Horticultural entomology; insect ecology
E.H. Wilkinson, Ph.D.	Pomology and orchard management
A.A. Jackson	Vegetable crop production and improvement
J.T. Sykes	Aspects of plant propagation with special reference to the use of plant growth substances
M. Miles (Mrs.)	Entomology—Anthomyid flies of economic importance

30 London University, Charing Cross Hospital Medical School

1. Anatomy

Professor W.J. Hamilton, D.Sc., M.D.	Development and growth of the human placenta Placentation in Cervidae Early development of the human embryo
T.W. Glenister, Ph.D.	Activation of spermatozoa with gonadotrophins Study of endometrium, blastocysts and trophoblasts *in vitro* Implantation of mammals Development of the urogenital system in man
K.M. Backhouse	The gubernaculum testis and related structures Implantation in mammals Locomotion in aquatic mammals Hormonal effects on ground substance
J.R.W. Ross (Miss)	The development of the female genital tract in sheep
D. Brown	The bronchial anatomy of the primates, ungulates and carnivores

2. Biochemistry

Professor J. Patterson, Ph.D.	Studies of urinary steroids with special reference to patterns of steroid excretion in cases of adrenal hyperplasia
with J. Swale	Colorimetric assays on conjugated urinary corticoids
W.O. Sykes	Hydrogenated derivatives of substituted 4:7-phenanthrolines

3. Clinical Research

J. Balint, M.D. J.E. Pendower	Fat adsorption studies using labelled fat
A.L. Copley, M.D. with G.W. Scott Blair D.Sc. National Institute for Research in Dairying, Shinfield and R.G. Macfarlane, F.R.S., Radcliffe Infirmary, Oxford	Rheological studies on mammalian blood
W.E. Evans, M.D.	Changes in tissues observed in materials from exhumations
A.R. Makey J. Angus Smith	Development of a new heart-lung by-pass

3. Clinical Research (*continued*)

J.N. Mickerson, M.D.	The role of potassium in the maintenance of blood pressure Suprarenal insufficiency in systemic disease An assessment of the effect of insulin
R. Moore Patterson, M.C. N. Ramsey	A comparison between plethysmography and a method of measuring blood flow in the calf muscle of humans, using radioactive sodium Observations on a transfer of iron from mother to foetus at various stages of pregnancy using iron complex dextrin labelled with Fe^{59}
Professor N. Morris, M.D. M.K. Jeacock (Miss)	Changes in the metabolism of the placenta in normal and abnormal pregnancy
J.C. Sloper, M.D. B. King (Miss)	The effect of ionizing radiation on the hypothalamus and pituitary of rats
H.I. Winner, M.D.	The defence mechanisms of human beings against infection by fungi, with particular reference to the effect of such agencies as antibiotics and hormone therapy
M.A. Peyman, D.M.	The effect of sublingual heparin (clarin)
K. Shirley Smith, M.D.	Studies of arterial elasticity in hypertension
FULHAM HOSPITAL	
A.W.L. Kessel, M.B.E., M.C.	Investigation, surgical and social to determine the prognosis of fractures of the neck of the femur in the elderly
WEST LONDON HOSPITAL	
W.S.C. Copeman, O.B.E., M.D.	Clinical and biochemical assessments of severe cases of rheumatoid arthritis under treatment with corticotrophin

4. Obstetrics and Gynaecology

Professor N.F. Morris, M.D.	The transfer of I^{132} across the placenta to the foetus *in utero* The assessment of placental function in late pregnancy by estimating the placental enzyme content just after delivery

5. Pathology

W.St.C. Symmers, M.D.	Clinicopathological problems concerning the so-called collagen diseases (including polyarteritis nodosa, disseminated lupus erythematosus, thrombotic purpura, etc.) Clinicopathological problems concerning the lymphoreticular system The pathology of the deep-seated fungal infections in man
J.C. Sloper, M.D.	The mode of elaboration of posterior pituitary principle by hypothalamic neurones in the normal vertebrate The study of the hypothalamo-hypophyseal neurosecretory system in the human after surgical injury and in disease: and in other vertebrates following intense irradiation, and other forms of injury The distribution of various isotopes in the vertebrate brain and pituitary, both in the normal and in the stressed animal
J.C. Sloper, M.D. B.C. King (Miss)	The effect of radiation on the hypothalamus and pituitary of rats

5. Pathology *(continued)*

W.E.D. Evans, M.D.	Post-mortem changes in human tissues Morphological and other characteristics of human and animal hair
J.H. Shore, M.D.	Investigation of the morphology and histochemical reactions of keratin in tumours of the skin

Clinical:

S. Shaw, M.D. (Head of Department)	The thromboplastic function of platelets in primary and secondary thrombocythaemia The survival time of transfused platelets Evaluation of cardiolipin antigen in complement fixation tests
H.I. Winner M.D.	Clinical and experimental studies of the pathology of diseases due to the yeast-like fungi, with particular reference to factors affecting immunity Antibacterial effects of rubber and plastics

6. Pharmacology

J.B.E. Baker	The role of calcium and potassium ions in the action of digitalis The mechanism of digitalis bradycardia Elective cardiac arrest
G.W. Bisset, D.Phil.	The secretion of neurohypophyseal hormones in man and the rat

7. Physiology

Professor W. Burns, D.Sc. R.P. Gannon	Effect of acoustic stimulation on cochlear function
J. Lee	The role of antidiuretic hormone as a factor in the production of oedema of man

31 London University, Guy's Hospital Medical School

1. Anaesthetics

P.J. Helliwell (Director)	
T.H.S. Burns J.M. Hall	The development of new, non-explosive inhalational anaesthetic drugs
R.J. Vale	The investigation of broncho-dilator drugs in anaesthesia A clinical trial of the value of oral atropine in paediatric anaesthesia
J.A. Thornton	Investigation into the relative merits of various forms of artificial pulmonary inflation during anaesthesia with particular reference to thoracic surgery
B.R.P. Murray	An investigation into blood volume using radioactive isotopes

2. Anatomy

Professor R. Warwick,	Anthropometric report on the contents of a Roman-British cemetry at York
	Study of proprioceptor pathway of extrinsic ocular muscles
with P.L. Williams	An experimental study of the rubrospinal tract and red nucleus
	Ultrasonics in central nervous research
J. Joseph, M.D.	The electromyography of back muscles while standing at ease
with J. Townsend (Miss)	Healing of immobile skin
with G.A. Thomas, Ph.D.	Cartilage of proliferation and replacement
G.A. Thomas, Ph.D. with P. Polani, M.D.	Studies on the sex chromatin in certain bodily abnormalities
P.L. Williams with C.P. Wendell-Smith	An experimental study of nerve structure
C.P. Wendell-Smith	Investigation of comparative anatomy, innervation and development of pelvic floor musculature
	Intrinsic maculature of uterus
I. McColl	Micro-anatomy of the anal canal
with M. Hill (Miss)	Ultrasonics in detection of gall stones

3. Biochemistry

Professor G.A.D. Haslewood, D.Sc., Ph.D.	Comparative studies of bile salts, with particular reference to their possible importance in a study of evolution and of species characterization. Androst-16-en-3α-ol in human excretions
W.L.G. Gent, Ph.D.	Physical properties of proteins of central nervous system
A. Shore (Miss), Ph.D.	Electrophoretic analysis of normal and abnormal plasma and serum

4. Biology

Professor G.E.H. Foxon	Experimental study of blood circulation of vertebrates
	Reticulo-endothelial system in lower vertebrates
E.W. Baxter, Ph.D.	Biology of lampreys
B.J. Rickard	Fate of foreign colloids in invertebrates
J. Griffith, Ph.D.	Vertebrate palaeontology: Triassic fish

5. Chemistry

F.H. Brain, Ph.D.	Some aspects of the chemistry of gold

6. Dental Studies

Professor M.A. Rushton, M.D.	Reactions of dental tissues in relation to diseases
B.E.D. Cooke	Oral manifestations of dermatoses
Orthodontics:	
R.E. Rix	The effects of oro-muscular behaviour on the dento-alveolar structures
with W.J. Tulley	Cephalometric studies of the developing masticatory apparatus using the Broadbent-Bolton roentgenographic cephalometer
W.J. Tulley	Electromyographic study of oro-muscular behaviour

6. Dental Studies *(continued)*

Preventive Dentistry:

R.D. Emslie (Director)	A clinical trial of a toothpaste containing an enzyme inhibitor

Prosthetics:

Professor H.R.B. Fenn	Properties of dental materials
D.J. Neill, D.F.C.	Tissue reactions to prosthetic appliances The behaviour of dentures in function
A.J. Bridge	Dysfunction of the temporomandibular joint

7. Endocrinology

P.M.F. Bishop, D.M. (Head of Department) J.H. Briggs	Problems related to genera lendocrinology from a clinical point of view

8. Forensic Medicine

K. Simpson, M.D. (Head of Department)	Age estimation in bone and teeth Survival of foetal haemoglobin
A. Grant, M.D.	Heredity in blood group systems
A.K. Mant, M.D.	Nature and formation of adipocere Bacteriology of cadaver
R. Furbank	Assessment of laboratory identification of synthetic hypnotics

9. Medicine

W.N. Mann, M.D. (Director of Department)	
K.S. MacLean, M.D. (with the Department of Surgery)	Hypophysectomy and adrenalectomy in the treatment of breast cancer
with R. Brain	A combination of cytotoxic drugs and surgery in the treatment of carcinoma of the lung
K.D. Allanby, M.D.	Investigation of the incidence and mechanism of polycythaemia in chronic anoxic lung disease by the study of the total body haemoglobin and red cell mass related to the lean body mass

Experimental:

Professor W.J.H. Butterfield, O.B.E., M.D.	Aetiology and treatment of diabetes mellitus: factors affecting the uptake of glucose by peripheral tissues Studies of peripheral circulation by flow calorimetry and plethysmography
with I.K. Fry	Pyruvate metabolism in diabetes Correlation between natural history of diabetes and laboratory tests
with M.J. Whichelow (Miss)	^{14}Carbon-labelled pyruvate metabolism by human biopsy material
J.R. Trounce, M.D.	Study of disorders of unstriped muscle including achalasia of the cardia and Hirschsprung's disease Glycoproteins in diabetic and other vascular disease Treatment of hypercholesterolaemia

9. Medicine (*continued*)

Experimental (*continued*)

R.T. Grant, O.B.E., M.D., F.R.S.	Assay of circulating vasoconstrictor substances especially during hypoglycaemia
(M.R.C. attached worker)	Study of diseases of the cardiovascular system especially Raynaud's phenomenon

10. Microbiology

Bacteriology:

Professor R. Knox, M.D.	The mode of action of anti-tuberculous drugs, especially isoniazid
with A.I. Tiffin	Studies on the breakdown of isoniazid
with J.C. Kelsey	New techniques in sterilisation of syringes, dressings, etc.
R.H. Gorrill, M.D.	Localization of bacteria in the kidneys of experimental animals Studies on the establishment of lysogeny in *Salmonella typhimurium*
with the Department of Pathology	Long term studies on chronic pyelonephritis, including histological investigations
J.C. Kelsey	Tests for controlling the efficiency of sterilization

11. Obstetrics and Gynaecology

T.L.T. Lewis J.B. Blaikley with F.A. Murray	Gastric secretion in pre-eclamptic toxaemia
C.M. Flood, M.D.	Investigation into the treatment of ovarian carcinoma especially in young women with a special reference to subsequent pregnancies
A.S.F. Butcher I. Macdonald, Ph.D.	Follow up on the educational standards and mental state of children born to mothers who had pre-eclamptic toxaemia in their pregnancy
A.S.F. Butcher	The prognosis of carcinoma of the ovary in relation to the extent of disease found at operation Investigation into the relation between the shape and position of the sacrum on X-ray and difficulties in labour
P.J. Dwyer	Uterine rupture associated with intramuscular pitocin
P.J. Dwyer C.P. Wendell-Smith	Anatomical and radiological changes in the pelvic floor in patients suffering from prolapse
L. Rankin J.A.L. Thornton	Estimation of vital capacity in pregnancy

12. Paediatrics and Child Health

P.R. Evans, M.D. P.E. Polani, M.D.	Severe infantile hypercalcaemia Cerebral palsy Congenital heart disease Chromosomal sex
(with Department of Anaesthetics)	Oral atropin as premedication

13. Pathology

Professor G. Payling Wright, D.M., with A.N. Davison, Ph.D. (M.R.C. attached to the Dept.) and J. Dobbing	Studies on myelinogenesis and the persistence of myelin lipids
Professor G. Payling Wright, D.M., with F. Maurice Williams (Miss)	Pathogenetic effects of heterophile antibodies
S.J. De Navasquez, M.D.	Experimental infections of the kidneys
P.A. Gorer, D.Sc., with J.R. Batchelor (M.R.C. attached to the Dept.) and E.A. Boyse, M.D.	Serological studies on neoplasms
G.A.K. Missen	Studies on arteritis in man
C.W. Adams	General histochemistry Histochemical investigation of demyelinating diseases and arterial degenerations
A.N. Davison, Ph.D. (M.R.C. attached to the Dept.) with J. Dobbing	Metabolic studies of brain lipids
J.B. Cavanagh	Culture studies of nervous tissue in relation to myelination
Chemical.	
Professor R.H.S. Thompson, D.M.	The lipases and esterases, including the cholinesterases, of the nervous system, with special reference to myelin
B. McArdle, M.D. (M.R.C. attached to the Dept.)	metabolism and to the degenerative lesions of the nervous system produced by certain anti-cholinesterases
G.R. Webster, D.M.	The oxidation of keto-acids by nervous and other tissues, with particular reference to peripheral neuritis Effect of lysolecithin and other lytic agents on nervous tissue Urinary excretion of catecholamines
B. McArdle, M.D.	Studies on potassium metabolism in diseases of muscle
G.R. Webster, D.M.	Fractionation of lipids of the nervous system
R.W.R. Baker, Ph.D.	Applications of gas chromatography in the analysis of plasma and cerebro-spinal fluid constituents
P.H. Wright	Studies on insulin antibodies and on plasma insulin levels, using the isolated rat diaphragm, in diabetes mellitus and other endocrine disorders
Clinical:	
W.H.H. Merivale (Director)	Urinary steroid excretion in healthy women and those with benign hirsutism Urinary steroid excretions in patients with carcinomatosis Studies on the biochemical effects of alcohol and barbiturates

14. Pharmacology and Therapeutics

Professor J.M. Robson, M.D., D.Sc., F.R.S.E.	Pharmacological actions of sex hormones Effects of drugs on pregnancy Chemotherapy of tuberculosis and leprosy
J.A. Nissim, M.D.	Intestinal absorption Endocrinology of reproduction Metabolism of iron
L. Sinclair	The distribution and effects of drugs in the brain Distribution of drugs in pregnant animals
F.M. Sullivan	Chemotherapy of tuberculosis and leprosy

15. Physics

Professor C.B. Allsopp, Ph.D.	Measurement of electrical impedance of human tissues
R.D. Moore	Routine control of X-ray protection in the hospital and of physical problems arising in X-ray diagnosis
S.J. Wyard, Ph.D.	Measurement of gonad doses received by patients during diagnostic X-ray examinations
N. Veall	
C.K. Battye	Photo-conductive properties of amorphous selenium under irradiation with X-and γ-rays
E.H. Grant, Ph.D.	
M. Hill (Miss)	Preparation of thin films of amorphous selenium
B.R. Worsnop	Investigations of performance of moving grids in radiography
J.D. Pearson	
	Ballistocardiography
	Phenomenological coefficients of membranes
	Electron spin resonance spectroscopy of free radicals produced in radiation chemical and biochemical processes
	Electron spin resonance spectroscopy of free radicals produced in materials of biological interest by means of ionizing and ultra-violet radiations
	Study of carcinogenic substances by electron spin resonance spectroscopy
	Construction and development of electron spin resonance spectroscopes operating at 300, 9000, and 37 000 Mc/s and designed for medical and biological research
	The radiation chemistry of substances of biological interest
	Effects of chronic irradiation at low dose levels on bone growth
	Absolute standardization of radioactive isotopes
	Development of techniques for clinical use of radioactive isotopes
	Peripheral circulation studies with isotopes
	Body composition studies with radioactive isotopes
	Plasma protein metabolism
	Methods for labelling insulin; studies of its distribution and metabolism in man
	Labelled fat and fatty acid absorption in man
	Dosimetry of cobalt 60 radiation for radiotherapy
	Physiology and technology of cardiac pacemaking
	Investigation of calcium metabolism with calcium 47

16. Physiology

Professor W.R. Spurrell	Human gastric function
J.N. Hunt, M.D., Ph.D., D.Sc.	Patterns of gastric function in health and disease
	Alimentary osmoreceptors
D.J. Anderson, Ph.D.	Inter-dental forces in mastication
	The control of movements of mastication
I. MacDonald, Ph.D.	The effects of diet upon liver structure
	The effects of diet upon growth and development of the eyes
P.S. Firth	Micturition: measurement of urethral pressures

17. Surgery

H.J.B. Atkins, D.M. (Director)	Clinical research into all aspects of diseases of the breast
J.L. Hayward	The use of thick celloidin section technique to scan tissues for carcinoma and other epithelial structures
	Clinical and histological research into cancer of the breast
	Research into the urinary steroids in adrenalectomized and hypophysectomized patients
B.W. Wolff (Miss)	Histological and experimental research into cancer of the breast

18. Surgery, Thoracic

Sir R. Brock	Research on all surgical aspects of cardiac disease
D.N. Ross D.G. Taylor	Research into arterial homo-grafting and the problems of hypothermia and assisted and artificial circulation
F.E. Weale	Research into total body perfusion and into problems of heart-block

32 London University, Institute of Basic Medical Sciences

1. Anatomy

Professor G. Causey A. Barton C. Stratmann, Ph.D.	Electron microscopy and quantitative cytology
Professor R.J. Last F. Stansfield	Human anatomy and morphology
R. Livingston	Human and comparative anatomy
D. Tompsett, Ph.D.	Anatomical techniques

2. Pathology

Professor G.J. Cunningham, M.B.E., M.D.	Lung cancer
Professor G.J. Cunningham and J. Chayen, Ph.D.	Experimental liver carcinogenesis
J.B. Walter, M.D.	Transparent rabbit ear chamber techniques Effects on tissue of experimental irradiation
A.J.M. Reese, T.D., M.D.	Fate of suture material in wounds Experimental liver damage by anaesthetic agents
M.S. Israel	Tissue culture

3. Pharmacology and Therapeutics

J.R. Vane, D.Phil.	Mode of action of sympathomimetic amines
J.W. Thompson	Nerve regeneration and physiology and pharmacology of smooth muscle
J.E. Gardiner, Ph.D.	Enzymic processes in cholinergic transmission

4. Physiology

Applied:

Professor D. Slome, Ph.D.	Wound healing
B.D. Wyke	Electrophysiology of the cerebral cortex
C. Long, D.Phil., F.R.S.E.	Biochemistry of lipids

33 London University, Institute of Cancer Research

1. Cancer Research

CHESTER BEATTY RESEARCH INSTITUTE

Professor A. Haddow, M.D., D.Sc., Ph.D., F.R.S.	Mechanism of action of chemical carcinogens Production of renal hypertrophy by xanthopterin and other pteridines, and its relation to the function of xanthine oxidase Application of myleran in chronic myelogenous leukaemia
Professor F. Bergel, D.Phil.Nat., D.Sc., F.R.S.	Experimental chemotherapy: Phenylalanine derivatives
G.M. Timmis	Serine and threonine mustards Modified proteins
W.C.J. Ross, D.Sc., Ph.D.	Bis-[*p*-di-(2-chloroethyl) aminophenoxy] alkanes Polyol dimesylates
J.A. Stock, Ph.D.	Amino-acid antagonists
W. Davis, Ph.D.	Hydantoins related to amino-acid mustards
J.J. Roberts, Ph.D.	Sulphydryl group reactors
G.P. Warwick, Ph.D.	Potential antipurines
C.L. Leese, Ph.D.	Bis-purinyl alkanes
J.H. Lister, Ph.D.	Potential inhibitors of diphosphopyridine nucleotide synthesis
R. Wade, Ph.D.	
J.L. Everett	Styryl compounds
S.S. Brown, Ph.D.	Inhibition of mouse ascites tumour cells by various chemotherapeutic agents
L.A. Elson, Ph.D.	
P.D. Lawley, Ph.D.	Actions of the alkylating agents: Chemical reactivity of alkylating agents
G. Hems	
A. Loveless, Ph.D.	Action of nitrogen mustards and other alkylating agents on nucleoprotein
P. Brookes, Ph.D.	
	Biological alkylating agents and the alkylation of purines Further studies of the action of alkylating agents on nucleic acids and nucleotides Action of alkylating agents on bacteriophage systems Comparison of the physiological response to radiation and to radiomimetic agents
Professor J.C.V. Butler, D.Sc., F.R.S.	Deoxyribonucleic acids and deoxyribonucleo-proteins: Characterization of deoxyribonucleic acids
P. Alexander, Ph.D.	Deoxyribonucleic acids
K.A. Stacey, Ph.D.	Synthesis of nucleic acids in *Bacillus megaterium*
J.T. Lett	Crosslinking of deoxyribonucleic acids in nucleoproteins by alkylating agents
K.V. Shooter, Ph.D.	
A.R. Crathorn, Ph.D.	Action of deoxyribonuclease and proteolytic enzymes on deoxyribonucleoproteins
G.D. Hunter, Ph.D.	
A.B. Robins, Ph.D.	Amino acids, histones and proteins: Avidity of tumours for amino acids
D.J.R. Laurence, Ph.D.	
D.M. Phillips, Ph.D.	Possible incorporation of *p*-di-(2-hydroxy-[1:2-C^{14}] ethyl) amino-L-phenylalanine into protein
P. Cohn, Ph.D.	
	Histones of calf thymus and other tissues Protein synthesis in rat liver—role of the microsomes Protein synthesis in *Bacillus Megaterium*
K.S. Kirby, Ph.D.	Ribonucleic acids:
E. Reid, D.Sc., Ph.D.	Ribonucleic acids Fractionation of ribonucleic acids Metabolism of ribonucleic acid and ribonucleotides in normal liver Metabolism of ribonucleic acid and ribonucleotides in liver tumours Cytoplasmic ribonucleases

1. Cancer Research (*continued*)

Professor F. Bergel, D.Phil.Nat., Ph.D., F.R.S.	Enzymes and trace elements:
R.C. Bray, Ph.D.	Xanthine oxidase
J.L. Everett	Pyridoxal phosphate-vanadium (pyrvanal) and cysteine metabolism
	Succinic dehydrogenase activity in precancerous livers and hepatoma of August rats, maintained on a 5 per cent. protein diet plus 0.06 per cent 4-dimethylamino-azobenzene
	Substrate-induced enzyme adaptation in the developing chick embryo
	Trace elements
E.M.F. Roe (Miss), Ph.D.	Radiation effects:
P. Alexander, Ph.D.	Effect of ultra-violet light on deoxyribonucleic acids
K.A. Stacey, Ph.D.	Crosslinking of deoxyribonucleic acids in nucleo-proteins by ionizing radiations
D. Rosen, Ph.D.	Irradiation of deoxyribonucleic acids *in vivo*
J.T. Lett	Irradiation of proteins and other substances with X-and α-rays
	Direct and indirect action of radiation on chymotrypsin
	Shortening of life-span by irradiation and by radio-mimetic chemicals
	Physico-chemical studies:
	The photochemistry of nucleic acid constituents and of other polyelectrolytes
	Physico-chemical and biophysical studies of styryl-quinoline derivatives
Professor A. Haddow, M.D., D.Sc., Ph.D., F.R.S.	Carcinogenesis:
I. Hieger, D.Sc., Ph.D.	Carcinogenic action of iron-dextran in the mouse and rat
K.S. Kirby, Ph.D.	Carcinogenesis by cholesterol
Professor E. Boyland, D.Sc., Ph.D.	Influence of cholesterol on hydrocarbon-carcinogenesis
J.M. Booth (Miss), Ph.D.	Sarcomas induced by a carcinogen of steroid type
Professor R.D. Passey, M.C., M.D.	Endocrine carcinogenesis
	Carcinogenicity of vegetable tannins
	Induction of tumours following subcutaneous implantation of plastic films
	The solubilization of benzopyrene by caffeine
	Ferrocene
	Cigarette smoke and cancer of the lung
	Problems of air pollution
Professor P.C. Koller, D.Sc., Ph.D.	Leukaemogenesis:
J.F.A.P. Miller	Influence of thymectomy on leukaemogenesis by Ak leumaemic cell-free extracts
	Leukaemogenesis in Ak-tolerant C3H mice
Professor E. Boyland, D.Sc., Ph.D.	Metabolic studies:
P. Sims, Ph.D.	The metabolism of myleran in the rat
D. Manson, Ph.D.	The metabolism of alkyl alkanesulphonates and related compounds
J.M. Booth (Miss), Ph.D.	Biochemical studies with growth-inhibiting alkylating agents
B. Green, Ph.D.	The metabolism of naphthalene
	The metabolism of 2-naphthylamine
	The hydrolysis of metabolites of 2-naphthylamine by enzymes of human urine
	Enzymic hydroxylation
	The estimation of free and conjugated 3-hydroxyan-thranilic acid using spectrofluorimetry
	The metabolism of 4-amino-2':3-dimethyldiphenyl in relation to the induction of intestinal cancer
	Mechanism of action of urethane

1. Cancer Research (*continued*)

Professor P.C. Koller, D.Sc., Ph.D.	Cytology:
S.H. Revell, Ph.D.	Chromosomes of solid and ascitic tumours
A.J.S. Davies, Ph.D.	Cytological action of ionizing radiations
	Cytology and protein synthesis
	The nucleus and dividing cells
O.G. Fahmy, Ph.D.	Mutagenicity:
M.J. Fahmy (Mrs.), Ph.D.	The mutagenicity of mesyloxy-esters with special reference to mannitol-myleran
	Analysis of the "visible" loci on the X-chromosome
	Centres of alkylation in relation to mutagenicity
J. Gordon, Ph.D.	Immunology:
	Radiation-induced immunological neutrality
	Experimental alteration of immunological reactions in mice
D.A. Darcy, D.Phil.	Other aspects of tumour growth:
Professor A. Haddow, M.D., D.Sc., Ph.D., F.R.S.	Serum mucoprotein associated with tissue growth
	Tumour-stimulating effects of thiols
L. Foulds, M.D.	Pregnancy-responsive mammary tumours of mice
E.J Ambrose	The cell surface:
G.C. Easty, Ph.D.	Nature of the tumour cell surface
D.M. Easty (Mrs.), Ph.D.	Surface-active agents
	Microscopy:
E.M.F. Roe (Miss), Ph.D.	Interference microscopy of normal and tumour cells
R.L. Jones, Ph.D.	Differential fluorescent staining of deoxyribonucleic acids/ribonucleic acids by acridine orange
K.F.A. Ross, D.Phil.	Microscopical investigations of the cytoplasm in ascites tumour cells
E.H. Mercer, Ph.D.	Cell membranes and intercellular contact
M.S.C. Birbeck	Electron microscopy of macromolecules
R.J. Goldacre, Ph.D.	Clinical and chemotherapeutic studies:
D.A.G. Galton	Clinical trials of di-2-chloroethylamine (nor-HN2)
M.M. Till (Mrs.)	Amino-chlorambucil
E. Wiltshaw (Miss)	Melphalan
G.M. Timmis	The use of busulphan (myleran) in polycythaemia vera
L.A. Elson, Ph.D.	The action of chlorambucil and busulphan on the haemopoietic organs of the rat
Professor E. Boyland, D.Sc., Ph.D.	Vitamin B_{12} and neuroblastoma
	The treatment of cancer of the bladder with glucosaccharo-1:4-lactone
R.A.M. Case, M.D., Ph.D.	Statistics and demography:
J.L. Harley (Miss)	Cancer statistics and demography
M.W. Goldblatt, C.B.E., M.D., Ph.D.	Occupational and social history in cancer of the bladder
R.J. Goldacre, Ph.D.	Differentiation theory:
	An electronic model for morphogenesis

2. Physics

Professor W.V. Mayneord, C.B.E., D.Sc.	Studies related to the hazards of environmental radioactivity:
W. Anderson, Ph.D.	Application of low-level alpha-counting techniques in studies of natural radioactivity in a wide range of biological materials, foods and other substances
R. Bentley, Ph.D.	Chemical and alpha-counting methods of measuring activities of individual nuclides in bone and other tissues
I.G.F. Gilbert, Ph.D.	Physico-chemical studies of the binding of metal ions by tissue components
C.A. Greatorex, Ph.D.	
D.M. Taylor, Ph.D.	
R.C. Turner, Ph.D.	

2. Physics (*continued*)

Professor W.V. Mayneord, C.B.E., D.Sc.	Development of low background techniques for the measurement of fission products in foods and human tissues
W. Anderson, Ph.D.	Investigation of fission products in the atmosphere and analysis of the radioactivity in human lung and lymph node tissues
R. Bentley, Ph.D.	
I.G.F. Gilbert, Ph.D.	
C.A. Greatorex, Ph.D.	Alpha and gamma spectroscopy of nuclides in biological material
D.M. Taylor, Ph.D.	
R.C. Turner, Ph.D. (*continued*)	Development and construction of 100-channel pulse height analysers for the identification of radioactive nuclides in environmental materials and human tissue
J.P.M. Bensted	Experimental biological and physiological investigations:
N.M. Blackett, Ph.D.	Radiation response of bone of the growing rat with particular reference to bone tumour production following (a) internal administration of radioactive materials, (b) localised external irradiation. Application of histological, radiographic and autoradiographic techniques
E.B. Harriss (Miss), Ph.D.	
L.F. Lamerton, Ph.D.	
	Effects of protraction and of fractionation of radiation on the response of various tissues, particularly the blood-forming organs, the bone and the small intestine
	Studies of the life-span of blood cells in normal and irradiated animals
	Investigation of the excretion and turnover in the rat of the alkaline earth metals using Ca^{45}, Sr^{85} and Ba^{140}, + La^{140} and also of the trace element metabolism of zinc and cobalt
J.C. Jones	Applications of physics to medical radiology:
J.A. Newell, Ph.D.	Development of diagnostic techniques using I^{131}, I^{132} and Ca^{47}
K.W. Taylor, Ph.D.	
N.G. Trott, Ph.D.	Development of Ir^{192} grains for use in permanent implants
	Studies of distribution of radiation dose during various X-ray and radium treatment techniques
	Application of calorimetric methods in the measurement of absolute intensity and absorbed dose from X-ray and gamma-ray beams
	Development of liquid scintillation counting equipment for measurement of H^3 and C^{14} in biological material
	Study of short-lived radioactive isotopes including C^{11} and K^{43} produced by X-rays from 30 meV. synchrotron
	Standardistation of radioactive isotopes, including gas counting techniques for the measurement of S^{35} and C^{14}
	Application of ultrasonics to diagnostic problems

3. Radiotherapy

Professor D.W. Smithers, M.D.	Detailed clinico-pathological review of neoplasms at various sites
E.M. Ledlie (Mrs.)	Prognosis in the lymphadenopathies and blood diseases in relation to histology and treatment
E.O. Field, D.M.	Radioactive isotopes in the study of blood diseases and effects of radiation on patients
M.G. Rinsler, M.D.	Investigation of individual cell and tissue sensitivity to radiation
K.B. Dawson	Radioactive calcium in the investigation of patients with osseous metastases
M.M. Gwyther (Miss)	Examination of the effects of radiation on connective tissue by physico-chemical and isotopic methods

34 London University, Institute of Cardiology

1. Cardiology

P.H. Wood, O.B.E., M.D. (Director) D.E. Bedford, M.D. W. Evans, D.Sc., M.D. G.W. Hayward, M.D. W.W. Brigden, M.D. A.G. Leatham E.L. McDonald, M.D. T.H. Sellors, D.M. R.E.B. Hudson, M.D. P.J. Kerley, C.V.O., C.B.E., M.D. B.G.B. Lucas A.J.W. Beard, M.D.	Congenital heart disease: anatomy, natural history, physiology, clinical and instrumental differential diagnosis, selection of cases for surgery, post-operative long term results and respiratory physiology Rheumatic heart disease: the life history and haemodynamics of mitral valve disease including the accurate assessment of stenosis and incompetence, the effects of pulmonary hypertension, the cause and prevention of embolism, the proper selection of cases for cardiac surgery, and post-operative results. Similar studies on aortic and tricuspid valve disease Cardiomyopathies: clinical presentation and various special phenomena Ischaemic heart disease: blood coagulation and thrombosis, abnormal lipid metabolism, therapeutic effect of long term anticoagulant therapy The anatomy and pathology of the conducting system of the human heart Pulmonary hypertension: clinical and physiological aspects Heart failure: diagnostic tests and therapeutic measures Hypertension: effects of various forms of hypotensive therapy

35 London University, Institute of Child Health

1. Genetics

CLINICAL GENETICS RESEARCH UNIT (M.R.C.)

I.A. Fraser Roberts, M.D., D.Sc. (Director)	Study of genetic and other factors in causation of developmental abnormalities

2. Haematology

R.M. Hardisty, M.D. (Head of Department)	
J.C.W. Macfarlane, M.D. with J.B. Weiss	The toxoplasma dye test accessory factor and its relationship to the properdin system
S.S. Epstein, M.D. with J.B. Weiss	Developments of a method for assessing the growth response of *Euglena gracilis* in the presence of high concentrations of vitamin B_{12}
J.B. Weiss	Chromatographic indentification of differences in pigment function of *Euglena gracilis* in the presence of vitamin B_{12} antimetabolites
P.J. Jensen, M.D.	Studies on the uptake and survival of Cr^{51} labelled enythrocytes administered intraperitoneally to children with thalassaemia major
R.M. Hardistry, M.D. with K. Dormandy	Studies on the blood coagulation mechanism in infancy and childhood

3. Medicine

Professor A.A. Moncrieff, C.B.E., M.D. with W.W. Payne	Study of nephrosis
R.E. Bonham Carter	Initial expansion of human lungs Effect of early surgery of the prognosis of congenital heart disease

3. Medicine *(continued)*

R.T. Brain, M.D.	Use of radioactive isotopes in the treatment of vascular naevi
with F. Bell and P.J. Koblenzer	20-year survey of the national history of infantile eczema
E.M. Creak (Miss), M.D.	Research into childhood schizophrenia
M. Coghlan	Allergic conditions in mongolism
J.E. Hall	Lung volume of children with fibrocystic disease
A.D.M. Jackson, M.D.	Incidence of deafness in children with speech defects
B. Kiernander	Common postural and breathing defects in children
with A.T. Richardson E.D.R. Campbell	Study of electrical reactions of children with neuro-muscular disorders
A.P. Norman, M.B.E., M.D.	Effect of steroids in asthma Clinical care of cystic fibrosis of the pancreas
with J.E. Hall	Investigation of respiratory problems
G.H. Newns, M.D.	Adrenal hyperplasia Growth deficiences
G. Pampiglione, M.D.	Polygraphic studies during minimal seizures Study of motor co-ordination in normal controls in cerebral palsy and in various types of central and peripheral lesions
with E.M. Creak (Miss), M.D.	Electroencephalographic studies in juvenile psychosis
with Professor B.S. Platt	The maturation of the normal electroencephalogram in puppies fed on normal diets artificially and mother fed
B.E. Schlesinger, O.B.E., M.D.	Prognosis of ulcerative colitis Course and treatment of Still's disease
Sir W. Sheldon, K.C.V.O., M.D.	Research into coeliac disease
A.H. Snaith	Method for the estimation of antidiuretic hormone in urine Radioactive method for the estimation of aldosterone in urine and blood applicable in small babies
J.M. Tanner, M.D., D.Sc., Ph.D.	Study of the growth and development of a sample of 200 normal children at the Child Study Centre Skeletal maturity of children with Klinefelter's syndrome and of Turner's syndrome Longitudinal study of the excretion of adrenocortical steroids in identical twins
J.P.M. Tizard	Research into electroencephalography in the newborn

4. Pathology

M. Bodian, M.D. (Head of Department)	
M. Bodian, M.D. with G.M. Timmins and S.S. Epstein	The biology of vitamin B_{12} especially in relation to tumour chemotherapy
M. Bodian, M.D. with S. Leibowitz	The pathology of megalo-ureters
M. Bodian, M.D. with T. Scott	The physiology and pathology of sweat glands in fibrocystic disease of the pancreas
M. Bodian, M.D. with G.H. Newns, M.D., and T. Scott	Neonatal hepatitis

4. Pathology (*continued*)

Chemical:

B. Clayton, M.D., Ph.D. (Head of Department)	Work in amino-acid and sugar patterns in plasma, urine and cerebro-spinal fluid in children with mental retardation Survey of blood ACTH in Cushing's syndrome and the histological studies on pituitary gland
R.H. Wilkinson, M.D. with H.H. Nixon	Body space determinations in newborns undergoing surgery
R.H. Wilkinson, M.D. with W.S. Craig, M.D.	Measurement of total ultra-filtrable calcium in neonates
W.W. Payne with S. Hardy	Measurement of high voltage electrophoresis of amino acids with particular reference to cardiac disease
P. Wilson	Absorption of D-xylose as a test of intestinal function
T. McKendrick	Study of the electrolytes in the sweat of children with fibrocytic disease of the pancreas, utilizing pilocarpine by iontophoresis

5. Surgery

G. Lloyd Roberts	Investigation on Perthes' disease Infantile scoliosis Inequality of leg length
B.G.B. Lucas	Research in hypothermia
D.J. Waterston, M.B.E. J.E. Hall P. James (Cardiac Research Unit)	Construction of an artificial heart-lung machine suitable for children
D.N. Matthews, O.B.E., M.D.	Reconstruction of congenitally absent and malformed ears
G.H. Macnab	Treatment and prognosis of hydrocephalus by use of the Spitz-Holter valve
H.H. Nixon	A continued series of cap-splinted cleft palates Function in repaired imperforate anus
Professor A.W. Wilkinson	Pattern of urinary composition during the first fortnight of life in normal newborn children and in those subjected to operation during the first few days of life
with A.H. Snaith L. Stevens J. Orr (Miss)	Effects of intravenous administration of glucose solution, saline, fat emulsion, plasma and amino acids on post-operative nutrition during the first months of life
with L. Stevens	Some aspects of calcium and magnesium metabolism
D. Innes Williams, M.D.	Investigations into urinary tract obstruction in infants
K. Till	Effects of Cooper's procedure on children with dystonia

36 London University, Institute of Dental Surgery

1. Dental Studies

Children:

R.R. Stephens (Head of Department)	Research directed towards the improvement of the present methods of cavity preparation in children's teeth by the development of special apparatus and instruments Clinical investigation into the aetiology of caries of incisor teeth in babies and young children Clinical investigation into the relative merits of the different types of amalgam for the restoration of cavities in the deciduous dentition

1. Dental Studies (*continued*)

Conservative:

G.A. Morrant (Head of Department)	Properties of dental materials Application of high speed cutting instruments in clinical dentistry

Prosthetics:

R.I. Nairn	Histological structure of edentulous jaws

2. Orthodontics

Professor C.F. Ballard	Continuing the study of the relationship between variations of morphology and occlusion, now with particular reference to the establishment of habit patterns of activity
J.R.E. Mills	Studies in the dental occlusion of mammals
P. Blyth and B. Bond (Miss), with the assistance of the staff of the Department	A study of the relationship between variations in the soft tissue morphology and patterns of behaviour, and variations in speech patterns
D.G. Gould	Investigation of the number and distribution of missing teeth in adults between the ages of 25 and 35 Longitudinal cephalometric study of treatment of patients with "Heath" plates Investigation of treatment of patients with untrimmed Andresen appliances
C.D. Parker	The effect of appliances on the vertical development of the dento-alveolar structures

3. Pathology

I.R.H. Kramer (Head of Department)	Problems in oral histology and histopathology, including the experimental investigation of biological properties of materials The vascular architecture of the dental pulp
G.C. Blake	The development of apparatus for the preparation of hard tissue sections The permeability of the dental tissues to substances of low molecular weight Studies on the architecture of dentinal tubules
W.G. Armstrong	Biochemical and microbiological investigations on normal and diseased dental tissues Studies on the action of collagenase on sound and carious human dentine Identification of specific groups in the organic matrix of dentine determining susceptibility to attack by collagenase, and identification of the products of collagenase action Investigations into the nature of the changes occurring in the organic matrix of dentine during the carious process, with particular reference to those responsible for the collagenase resistance of carious dentine Quantitative amino-acid analysis, by ion exchange chromatography, of sound human dentine, carious human dentine, and enamel cuticle

4. Periodontology

W.G. Cross (Head of Department)	Bone implants for replacement of resorbed alveolus Methods of treatment of bifurcation and trifurcation involvements

4. Periodontology (*continued*)

W.G. Cross (Head of Department) (*continued*)	Methods of treatment of intrabony pockets Clinical and histological investigations into reattachment of soft tissues
G.G. McClure	Investigation into the properties of periodontal packs and potential new materials Investigation of plastic pocket measuring points

5. Surgery

Oral:

Professor H.C. Killey	Effects of surgical interference on the growth of the middle-third of the facial skeleton The part played by the musculature in remoulding of facial bones following fracture

37 London University, Institute of Dermatology

1. Dermatology

F.R. Bettley, T.D., M.D.	Assessment of Grenz-ray therapy in atopic dermatitis and other disorders Assessment of the value of ametox in the treatment of chronic eczema
C.D. Calnan	Dermatitis in nurses Cement dermatitis Survey of industrial dermatosis in an engineering factory Dermatitis from shoe adhesives Dermatitis from epoxy resin systems
S.C. Gold, M.D.	Evaluation of systemic methyl prednisolone for skin diseases Clinical trial of local dexamethasone Continued long term study of lupus erythematosus
H. Haber, M.D.	Histopathological aspects of mycosis fungoides
I.A. Magnus	Studies with the monochromator of erythema and pigmentation in normal human skin and experimental animals Monochromatic photosensitivity tests on patients with photodermatoses Determination of action spectrum of 8-methoxypsoralen in human skin with a monochromator Determination of action spectrum of phylloerythin and haematoporphyrin in rabbits and lambs with a monochromator Studies of spectral reactivitiy in pig skin Appraisal of light absorbing applications and antimalarials in patients with photodermatoses Determination of action spectrum of photosensitivity due to tar and pitch Assay of skin responses to ultra-violet light by monochromatic photography Determination of action spectrum of largactil in human skin, with the monochromator
A.K. Monro, M.D.	Malignant melanoma (clinical series). The relation of histology to prognosis
J.O. Oliver, O.B.E.	Infestation with *Demodex folliculorum* in normal subjects Studies in autosensitization
A.D. Porter, M.D.	Investigation into normal and abnormal light sensitivity
B. Russell, M.D. with R.W. Riddell, M.D.	Assessment of the value of griseofulvin in the treatment of fungus infections
R. W. Riddell, M.D.	Immunology of ringworm infections

1. Dermatology (*continued*)

K.V. Sanderson	The morphology, histopathology and histochemistry of basal-cell carcinoma The effect of exposure to sunlight on the histopathology of epithelial neoplasm The experimental production of epithelial tumours in mice with arsenic as a co-carcinogen
L. Szur	The natural history and treatment of skin reticulosis A clinical comparison between the effects of Grenz rays and superficial X-rays in benign dermatological conditions
A. Tickner	Serum transaminases in skin diseases
with P.D. Mier	Oxidative phosphorylation in skin
A. Tickner	Biochemical effects of ultra-violet light on the skin Carcinogenic action spectrum of ultra-violet light Reaction of nickel with proteins Biochemistry of *Tinea rubrum*—preparation and purification of a protease Biochemistry of eczema—sodium and potassium content of normal and abnormal epidermis
G.C. Wells	Histochemistry of the skin with particular reference to enzyme systems

38 London University, Institute of Diseases of the Chest

1. Chest Diseases

J.G. Scadding, M.D.	Sarcoidosis, with special reference to aetiology Pulmonary aspergillosis—clinical aspects and pathogenesis
F.J. Prime, M.D.	Disturbances in acid-base equilibrium in acute and chronic respiratory failure
J.R. Bignall, M.D.	Studies on the recovery of malignant cells from the blood in patients with bronchial carcinoma
R.W. Riddell, M.D.	Studies on the pathogenicity and immunology of fungi causing respiratory diseases Investigation of drug-resistant strains of *Myco bacterium tuberculosis* and of "atypical mycobacteria"
J.R. May, M.D.	The bacteriology of chronic non-tuberculous respiratory infections
L. McA. Reid (Miss)	Embryology of the intrasegmental bronchial tree Morbid anatomy of chronic bronchitis and emphysema Experimental study of bronchial secretion of mucus
I. Longmuir	Studies on cellular respiration
J. Pepys	Antigen-antibody relationships in tuberculin hypersensitivity Investigation of long-acting depot tuberculin preparations for skin testing Immunological investigations of infection and hypersensitivity in man to the *Aspergillus* species of moulds, and in particular to *Aspergillus fumigatus*

39 London University, Institute of Laryngology and Otology

1. Anatomy

OTOLOGICAL INVESTIGATION UNIT

Professor F.C. Ormerod	The minute anatomy of the petrous bone
D. Pye	The comparative anatomy of the temporal bone and the internal ear The lymph drainage of the larynx and pharynx Variations in the development of the paranasal sinuses

2. Audiology

E. Whetnall (Miss)	The aetiology of congenital deafness and acquired perceptive deafness
A.S. Walker	Auditory training of children and adults
Professor D.B. Fry, Ph.D.	Use of hearing aids by partially deaf and severely deaf children, including pre-school age children and infants
L. Fisch, M.D.	Relation of speech defects and deafness
	Tests of hearing in children
	Tests of intelligence in deaf children

3. Medicine

Physical:

B. Kiernander	A survey of the mode of action and effects of zinc ionization on allergic rhinitis
E.D.R. Campbell	Assessment of the variation of pH of the nasal mucosa in allergic rhinitis
	The electrical reactions and electromyographic changes in facial palsy

4. Otorhinolaryngology

Clinical:

OTOLOGICAL INVESTIGATION UNIT

Professor F.C. Ormerod	Long term follow-up of carcinoma of upper air passages
K. McLay	Pathology and treatment of cancer of the pharynx
	Comparison between operative treatment and irradiation of upper respiratory carcinomata
	Plastic surgery of the middle ear
	The surgery of deafness

5. Pathology

I. Friedmann, M.D.	Electron microscopic studies of toxic degeneration—due
D.A. Osborn	to ototoxic antibiotics or experimental infection
A.L. Jeanes	Electron microscopy of enzymatic activity in sensory epithelium of the otocyst and ear
	The ultrastructure of tumours of the glomus jugulare and of juvenile laryngeal papilloma
	Electron microscopy of sweat glands and nasal mucosa with particular reference to fibrocystic disease (with Institute of Child Health)
	Experimental pathology of Type III pneumococcal otitis
	The epidemiology and pathology of otitis media with particular reference to pneumococcal otitis and meningitis
	Malignant granuloma of the nose
	Tuberculosis of the ear, nose and throat
	Keratosis of the vocal cord
	Electrophoresis in the study of vocal polypi

OTOLOGICAL INVESTIGATION UNIT

Professor F.C. Ormerod	Tissue culture (sensory epithelium of internal ear,
K. McLay	olefactory and respiratory epithelium)
M. Flinn	The effect on the acoustic and static portions of the ear of
D. Pye	ultrasonic waves
	Metaplasia in mucous membrane of the respiratory passages

6. Physiology

OTOLOGICAL INVESTIGATION UNIT

Professor G. Döhlman	The variation in range and acuity of hearing under
R.W.B. Stephens, Ph.D.	different conditions
M. Flinn	Methods of examination of the organs of equilibration (optokinetic, caloric and rotatory)

6. Physiology (*continued*)

Professor G. Döhlman R.W.B. Stephens, Ph.D. M. Flinn	Investigation of electric impulses in the eighth cranial nerve and the associated cerebral and cerebellar pathways The physiology and chemical physiology of the sensory end-organs of the semicircular canals and the cochlea The production of voice: neuromuscular aspect

7. Radiodiagnosis

T.V.L. Crichlow R.D. Hoare C.G. Whiteside	Cine-radiography by means of the image intensifier in the investigation of:— The radiological significance of visualization of the cricopharyngeus Abnormal ring contractions in the oesophagus and its relationship with cardiospasm The relationship of the cricopharyngeus with regard to pouch formation and post-operative recurrence The relationship of the cricopharyngeus with the Patterson-Brown-Kelly syndrome The movements of the ossicles The anatomy of the sinuses in different races
with Sir V. Negus	The relationship of pressure with regard to the formation of pouches in the cervical oesophagus The possibilities of demonstrating the facial canal The surface marking of the semicircular canals The value of macrography in suspected cases of cholesteatoma Pressure measurements in the oesophagus and their influence on pouch formation Cholesteatoma and fistula formation in chronic mastoid disease Familial tendencies in oesophageal disease

8. Rhinology

RHINITIS INVESTIGATION CLINIC

C. Gill-Carey W. Black	Correlation of histological and clinical findings in vasomotor rhinitis

40 London University, Institute of Neurology

1. Neurology

Academic:

J. Marshall, M.D. (Reader)	Enquiry into the nature of physiological tremor and its relationship to the abnormal movements seen in disease
K.H. Ginzel, M.D.	The estimation of pharmacological substances in normal and neoplastic brain tissue in humans The mechanism of the peristaltic reflex and the role of 5-hydroxytryptamine therein
D.A. Shaw	The role of anticoagulant therapy in cerebrovascular disease
D.J. Joyce (Mrs.)	The effect of positive pressure respiration on diurna electrolyte tides

2. Neurology

Clinical:

M. Critchley, M.D.	Disorders of language Disorders of perception with special reference to the parietal lobes

2. Neurology (*continued*)

Clinical (*continued*)

W. Gooddy, M.D.

Clinical-physiological aspects of human cerebral activity, with special reference to spatial and temporal orientation, and their relation to language

Investigation of the human time-sense according to physiological principles

Study of "natural geometry" in connection with navigation and chronometry

3. Neurology

NEUROLOGICAL RESEARCH UNIT OF THE M.R.C.

E.A. Carmichael, C.B.E. (Director)
J.A.V. Bates
G.D. Dawson
A.M. Halliday
P.W. Nathan, M.D.
M.C. Smith (Miss), M.D.

The aim of the Unit is towards determining a clearer understanding of the intimate functioning of the nervous system of man by the development of new methods and instruments for recording changes; the application of these methods to the study in healthy subjects; of changes in function resulting from applied stresses of a temporary character; the study by these methods of changes in functions; the result of disease process or therapeutic measures; the control of such observations when possible by morphological studies

Cerebral action potentials: the elaboration of methods for recording evoked cerebral action potentials through intact scalp in man; the design and assembly of apparatus for recording direct from the cerebral cortex during surgical operation

The detection of focal cerebral abnormalities in epileptics

The study of infantile hemiplegics before and after hemispherectomy

Studies of nerve and spinal cord: an enquiry into the underlying physiological disturbances found in paraplegia

The sensory and autonomic function in inoperable cancer before and after cordotomy and their correlation with histological changes

Histological studies of nerve cell and tract degeneration following cordotomy

4. Neuro-Ophthalmology

T.K. Lyle, C.B.E., M.D.

Clinical research into the causes of, and treatment of, ocular palsies

The treatment of amblyopia ex anopsia

A study of retrobulbar optic neuritis

H.E. Hobbs

The use of stereocampimetry as an aid to the investigation of defects of the central visual fields

Investigations into the value of orbital angiography in the diagnosis of proptosis

5. Neurosurgery

H. Jackson

Studies relating to structural disorders of the spinal column —spondylosis and allied states

Clinical and pathological investigations applied to lesions of the orbital cavity

Studies in anatomical relationships of the basal nuclei in the application of stereoencephalotomy

The application of treatment towards relief of disorders of muscle tone by injection of the pallidus and/or thalamus

5. Neurosurgery (*continued*)

H. Jackson (*continued*)	Investigation of endocrine deficiency in relation to tumours of the pituitary gland
	New methods in the surgical treatment of gliomas of the brain
W. McKissock, O.B.E.	A controlled trial of surgical versus medical methods of treatment of ruptured intracranial aneurysms
L.S. Walsh A. Richardson	A controlled trial of surgical versus medical methods of treating primary spontaneous intracerebral haemorrhage
K. Till	A social and economic survey of the late results of extirpation of intracranial and intraspinal meningioma
	The treatment of Parkinson's disease and other forms of disordered movement by thermocoagulation of the globus pallidus and by chemopallidectomy
	A social and economic survey of the late results of treatment by combined surgery and X-radiation of the pituitary adenomas
	A social and economic survey of the late results of total excision of the acoustic neuromas
	The control of midline and paraventricular intracranial tumours by stereotaxic implantation of radioactive gold seeds
	The localization of intracranial space occupying lesions with the aid of ultra-sound
	A trial of various drugs, in particular urea, lyophilized chymotrypsin and pathilon, in the control of cerebral swelling

MAIDA VALE HOSPITAL

V. Logue	Use of stereotaxis in the treatment of intractable pain
	Investigation of the time limits of temporary major vessel occlusion of the cerebral arteries, in the treatment of aneurysms under hypothermia, utilizing isotopes
	Investigation into the cases of epilepsy continuing or appearing after the removal of benign tumours

6. Otology

OTOLOGICAL RESEARCH UNIT OF THE M.R.C.

C.S. Hallpike, C.B.E., F.R.S. (Director)	Clinico-pathological investigations, including histological examination of the temporal bones and central nervous pathways in vertigo, deafness and other organic derangements of cochlear and vestibular function
M.R. Dix (Miss), M.D. J.D. Hood, D.Sc. J.T.Y. Chou, Ph.D. L. Citron	Clinical, anatomical and electro-acoustic investigations of the loudness recruitment phenomenon, and other aspects of cochlear function in health and disease of the VIII nerve system
	Physiological studies of the semicircular canal system in man
	Experimental studies on the physiology and pathology of vertigo
	Biochemical studies of the labyrinthine fluids

7. Pathology

Professor W. Blackwood	Demyelinating diseases
	Myopathies and neuropathies
W.G.P. Mair, M.D.	Effect of proton beam irradiation on the nervous system

7. Pathology (*continued*)

Chemical:

Professor J.N. Cumings, M.D.	Copper metabolism in hepatolenticular degeneration Investigations are being continued into cases of lipoidosis, diffuse sclerosis, disseminated sclerosis, and the pattern of various lipids in the brain at various ages Electrophoretic examinations of the protein patterns of cerebro-spinal fluid and cyst fluids associated with cerebral tumours Examination of the various keto acids in disorders of peripheral neuritis and polyneuritis, previously investigated by the pyruvic acid metabolism test Electrolytic disturbances in pituitary tumours in relation to post-operative conditions
D. Marrack, M.D.	The cytology of the cerebro-spinal fluid
G. Curzon, Ph.D.	The chemistry of caeruloplasmin Investigations into metabolic disorders of schizophrenia
B.P. Hughes, Ph.D.	Investigations into muscular dystrophy and muscle proteins

MAIDA VALE HOSPITAL

W.H. McMenemey, D.M. H.C. Grant (Miss), M.D. P.H. Buxton, M.D.	Histopathology of the nervous system

8. Physiology

Applied:

D. Williams, C.B.E., M.D.	Mechanisms underlying the conscious state in man Effects of interruptions of blood flow through the basilar artery in man A study of hemianopic field defects
W.A. Cobb T.A. Sears	The electrophysiology of the nervous system in health and disease The human electroencephalograph with particular reference to symptomatic epilepsy Differential blocking of nerve fibres by local anaesthetics
R.W. Gilliatt, M.D.	Diagnostic value of conduction velocity measurements in human peripheral nerve lesions
H.B. Morton	Application of principles new to the design of multichannel electroencephalographs

9. Psychiatry

MAIDA VALE HOSPITAL

R.T.C. Pratt, M.D. A. Elithorn, M.D.	Studies on the mental state of patients with brain disease The interaction of the abnormalities in physiological and psychological mechanisms which determine emotional disturbances and disorders of behaviour in children and adults

NATIONAL HOSPITAL

E.T.O. Slater, M.D. (Head of Department) Professor O.L. Zangwill	Physiological and psychological studies on patients subjected to leucotomy, temporal lobectomy and hemispherectomy
G. Ettlinger, Ph.D. M. Wyke (Mrs.) E.K. Warrington (Mrs.)	The relationship between paroxysmal changes in the electroencephalograph and states of partial consciousness and persisting abnormalities of mood, including psychological studies on the relationship between epileptic paramnesia and paramnesia in normal subjects

9. Psychiatry (*continued*)

E.T.O. Slater, M.D. (Head of Department)	The development of central excitatory and inhibitory states and on the interaction of the physiological and psychological mechanisms underlying depressive reactions
Professor O.L. Zangwill	Experimental studies of higher visual disabilities associated with cerebral lesions
G. Ettlinger, Ph.D.	Analysis of amnesic states
M. Wyke (Mrs.)	Studies of language disorders and of intellectual defects in aphasia
E.K. Warrington (Mrs.) (*continued*)	Experimental analysis of the effect of localized brain excisions on the behaviour of monkeys

41 London University, Institute of Obstetrics and Gynaecology

1. Clinical Research

CHELSEA HOSPITAL FOR WOMEN

R.M. Feroze, M.D.	Investigation of metropathia haemorrhagica in functional uterine bleeding
R.B.K. Rickford, M.D. with D.W.T. Roberts	The place of extended hysterectomy in the treatment of carcinoma of the endometrium
C.A. Simmons	Studies of the radiological pelvic anatomy changes due to parity, age, prolapse and posture
	The Marshall Marchetti operation for the treatment of stress incontinence of urine
	The treatment of urge incontinence by oestrogens, bladder distention and anti-spasmodics
	The long term follow-up of vaginoplasties at Chelsea Hospital for Women
	The investigation of bromelain and papain in the treatment of dysmenorrhoea and their use in labour
	The evaluation of Doyle's operation in dysmenorrhoea
with G. Ardran, M.D. (Nuffield Institute of Medical Research Oxford)	Study of the normal physiology of the female bladder and urethra by means of rapid serial cystourethrography using an image intensifier and pressure recorder
	Studies with reference to incontinence of urine
with J.H. Smitham	Cervico-hysterosalpingography in the incompetent cervix, and the influence of bromelain causing cervical dilatation
G. Wynn Williams	Assessment of the various treatments for *Trichomonas* and monilial infections
	The use of cortisone for vaginitis

2. Endocrinology and Fertility Studies

ENDOCRINE LABORATORIES

I.F. Sommerville, M.D., Ph.D. (Director)	The biochemistry of steroid and protein hormones with special reference to endocrine disorders in women
with M.I. Stern J.M. McDonald	Studies upon chemical and biological techniques of hormone assay; notably the quantitative determination of progesterone and pregnanediol in blood, the quantitative determination of urinary oestrogens, and the fractionation of other urinary steroids by column and paper chromatography
	Application of such methods to the study of patients in the Endocrine and Fertility Clinics

2. Endocrinology and Fertility Studies *(continued)*

CHELSEA HOSPITAL FOR WOMEN

P.M.F. Bishop, D.M.	Gynaecological endocrinology; clinical studies on disorders of menstruation and the effects of endocrine therapy on endocrine disorders
with G. Wynn-Williams	Fertility: studies in the investigation and treatment of subfertile couples
with C. Simmons	The effect of sex hormones on the cervical mucus
with M. Murray (Miss)	Vaginal smear studies in gynaecological endocrine disorders
with F. Osmond-Clarke (Mrs.)	The use of nuclear sexing techniques in intersex and other disorders of the reproductive tract

3. Obstetrics and Gynaecology

HAMMERSMITH HOSPITAL

Professor J.C.McC. Browne	Results of treatment of stress incontinence
with Professor I. Aird	The relationships of blood group to ovarian tumours
Professor J.C.McC. Browne	Radioactive isotope studies of sodium, potassium and water metabolism in normal and abnormal pregnancy
with D.A. Davey and W.J. O'Sullivan	Maternal placental circulation
Professor J.C.McC. Browne	Assessment of maternal and foetal risks in confinement of normal women in hospital and at home
W.G. MacGregor	Cardiac output in pregnancy
	Isocitrit dehydrogenase as a test for placental damage
P.M.F. Bishop, D.M.	Clinical trials of new oestrogens
	Clinical assay of ovarian hormones
J.H. Carver	Male aspects of subfertility
	Correlation of testicular histology and seminal analysis
V.B. Green-Armytage	Female aspect of subfertility
	The results of tubal implantation
J.D. Murdoch	Antibiotic control of uterine tuberculosis
	Antepartum haemorrhage
E. Wachtel (Miss)	Vaginal cytology in the diagnosis of uterine cancer
	Early exfoliative cytology changes in experimentally produced cancer
	Assessment of hormonal levels by vaginal cytology
	Vaginal cytology in the follow-up of treated cases of carcinoma of the genital tract
A.F. Bushby	Non-specific vaginitis
W.J. O'Sullivan	Fibrinogen and fibrinolysis activity of maternal blood
W.J. O'Sullivan and D.A. Davey	Comparison of new Fe-fat compound and fersolate in treatment of anaemia of pregnancy
	Examination of liquor amnii in Rh. immunization
A. Starritt	Osmotic fragility of red blood cells in anaemia of pregnancy

QUEEN CHARLOTTE'S MATERNITY HOSPITAL

J.S. Tomkinson	Clinical trial of drugs for the treatment of nausea and vomiting of pregnancy
	Investigation of the aetiology of placental edge haemorrhage
T.L.T. Lewis	Enquiry into venous thrombosis during pregnancy and the puerperium
	Enquiry into the incidence of leukaemia in children born at Queen Charlotte's Hospital and the relation to antenatal X-rays

3. Obstetrics and Gynaecology (*continued*)

QUEEN CHARLOTTE'S MATERNITY HOSPITAL (*continued*)

J.M. Holmes, M.D.	An assessment of the degree of maternal and foetal respiratory depression from pethidine and chloropromazine narcosis
	Measurement of minute volumes of arterial oxygen and carbon dioxide saturation in labour
	Uterine relaxation with amyl nitrate as an aid to external and internal version
	Enquiry into the relationship between obstetric anaesthesia and analgesia, and asphyxia neonatorum
	Kiellands forceps rotation in the first stage of labour
with R.M. Calman	Bacteriology of caesarean section
G.C. Steel	The construction of a rapidly tilting obstetric bed
	Lumbar extradural block in cases of uterine inertia
C.A. Simmons	Survey of cases of constriction ring dystocia at Queen Charlotte's Maternity Hospital

QUEEN CHARLOTTE'S MATERNITY HOSPITAL, BERNHARD BARON MEMORIAL RESEARCH LABORATORIES

J. Murray, M.D. (Director)	Investigation of basic structure of certain blood group substances
with R.M. Calman	Studies of blood levels of new antibiotics in the newborn
	Study of control of nasal carriers of staphylococci
	Isoimmunization of pregnancy
R.M. Calman	Assessment of methods of measurement of fibrinogen
	Studies of blood coagulation in the newborn and the control of haemolytic disease
with A. White Franklin	Bacteriology of the umbilical cord
	The care of the umbilical cord and the prevention of infection
A.E. Claireaux, M.D.	Study of placentae in cases of toxaemia
	Study of development of pulmonary hyaline membrane
	Investigation of post-mortem material from all still-births and neo-natal deaths during March 1958 for the S.W. Metropolitan Region
M. Sandler	Catechol amine metabolism during pregnancy
	Metabolism of C^{14}-5-hydroxyindoles in pregnant and non-pregnant animals
	Monoamine oxidase studies in normal and toxaemic placentae
	5-hydroxyindole metabolism in normal and toxaemic pregnancy and in neonates
with C.M.B. Pare, M.D. (Maudsley Hospital) and with R.S. Stacey, M.D.	Investigation of biologically active amine metabolism in infants with brain damage

QUEEN CHARLOTTE'S MATERNITY HOSPITAL AND CHELSEA HOSPITAL FOR WOMEN

Professor J.H.M. Pinkerton, M.D.	Urinary tract infection in women
	Decompression of the maternal abdomen in labour
with E.C. Wood, S.A. Seligman and A.H. Labrum	The significance of meconium in labour
	Prolapse of the foetal cord
	The clinical aspects of foetal central nervous system abnormalities
	The connective tissues of the immature human ovary
Professor J.H.M. Pinkerton, M.D. with A.E. Claireaux, M.D.	Placental red blood cell changes in abnormal pregnancy

3. Obstetrics and Gynaecology (*continued*)

QUEEN CHARLOTTE'S MATERNITY HOSPITAL AND CHELSEA HOSPITAL FOR WOMEN (*continued*)

Professor J.H.M. Pinkerton, M.D. with D.F. O'Neill, M.D.	The obstetrical and social effects of illegitimate pregnancy
Professor J.H.M. Pinkerton, M.D. with P.M.F. Bishop, D.M. F. Osmond-Clarke (Mrs.) and M. Murray (Miss)	Vaginal cytology in pregnancy

4. Pathology

CHELSEA HOSPITAL FOR WOMEN

R.M. Haines, M.D. (Director)	A study of tuberculosis of the endometrium
	Exfoliative cytology of uterine malignant disease
H.P. Ferreira, M.D.	A study of unsuspected carcinoma of the cervix
	A study of the pathology of carcinoma of the body of the uterus

5. Paediatrics and Child Health

HAMMERSMITH HOSPITAL

J.P.M. Tizard with R. Harris (Miss)	The electroencephalogram in the newborn

QUEEN CHARLOTTE'S MATERNITY HOSPITAL

A. White Franklin with R.M. Calman	Prevention of neonatal pneumonia
A.P. Norman, M.D.	Clinical aspects of cystic fibrosis of the pancreas
	Hyperbilirubinaemia in the newborn
	Effect of maternal radiation on the incidence of mongolism

42 London University, Institute of Ophthalmology

1. Glaucoma Research

Sir S. Duke-Elder, G.C.V.O., D.Sc., M.D., Ph.D. (Director)	
J.D.M. Cardell	Clinical follow-up study of cases of glaucoma
A. Lister	Investigation into the aetiology of congenital glaucoma by means of serial stereophotography of normal and pathological filtration angles in infants
S.J.H. Miller, M.D.	The early diagnosis of glaucoma
E.S. Perkins, Ph.D.	The mechanism of glaucoma
C.J. Gavey, M.D.	Possible constitutional factors in relation to glaucoma
R.B. Niven	A study of the peripheral vascular system of patients suffering from glaucoma
J.H. Dobree	A clinical study of the factors influencing the function of filtering blebs
	The study of the causation of sudden field loss following anti-glaucoma operations
	Studies on neovascularization at the disc and venous thrombosis associated with raised ocular tension

1. Glaucoma Research (*continued*)

W.S. Foulds	The aetiology and course of the several types of chronic closed angle glaucoma
W.E.S. Bain	Physiological variations in the intra-ocular pressure An investigation into the factors governing the amplitude of the intra-ocular pulse
A C. Higgitt	The effect of mydriasis on the ocular tension in wide angle normal and glaucomatous eyes
J.A.E. Primrose	The investigation of the Priscol test in glaucoma The investigation of cases of glaucoma treated by peripheral iridectomy

2. Neuro-Ophthalmology

T.K. Lyle, C.B.E., M.D. (Dean)	Clinical research into the causes of, and treatment of, ocular palsies The treatment of amblyopia ex anopsia A study of retrobulbar optic neuritis
S.P. Meadows, M.D.	Prognosis of compression of the optic nerves by meningiomas and aneurysms
S. Behrman	A study of a spongiose form of sub-acute progressive encephalopathy A study of the syndrome of dyslysis
C.J. Earl, M.D.	Follow-up of patients with myotonic pupils

3. Ophthalmology

Clinical:

F. Ridley	The application of contact lenses in the treatment of recurrent corneal ulceration and in the management of corneal grafts The aetiology and management of keratoconus The development of a slit lamp camera
A.G. Cross, M.D.	Study of the arcuate scotoma The causes and treatment of uveitis, vasculitis and perivasculitis
E.S. Perkins, Ph.D.	The aetiology of uveitis
A.G. Leigh, M.D.	A study of the opacification and vascularization of corneal grafts, with especial reference to immunological factors
C.A.G. Cook, M.C., G.M.	Clinical and experimental research in diabetes
K.C. Wybar, M.D.	An assessment of the implications of pleoptic methods
D. Ainslie, M.D.	Determination of the concentration of various antibiotics secreted in the lachrymal fluids after systemic administration
R. Jones	Investigations into virus infections of the eye
J. Redmond Smith	Statistical analysis of the results of a complete ophthalmic and general examination of diabetic patients
C.G. Tulloh	Investigation into the aetiology of retinal detachment
H. Hobbs	An evaluation of orbitonometry
P. Hansell	A systematic appraisal of available retinal cameras New techniques in off-set lithography
G.H. Howells	Investigations into the extension of orbital tumours into the accessory sinuses and vice versa
P. Borrie, M.D.	Observation of the association between diseases of the skin and of the eye
E.F. Fincham	Research on night myopia and empty space myopia
M. Pugh (Miss)	Research on the disturbance in the visual apparatus which gives rise to amblyopia ex anopsia

4. Pathology

Professor N. Ashton (Director)	The morbid anatomy of simple glaucoma with histochemical studies on the normal and abnormal trabecular meshwork
	Nematode endophthalmitis
	Corneal vascularization
Professor N. Ashton with C. Pedler and C.N. Graymore, Ph.D.	Pathogenesis of the vascular retinopathies with particular reference to diabetic retinopathy and retrolental fibroplasia, involving studies on the effect of enzyme inhibitors on the retinal vessels of mature and immature animals, and studies on normal and abnormal retinal metabolism
D.R. Barry, M.D.	Histopathology of diabetic microangiopathy
B.R. Jones J. Hillsdon Smith	Immunological research on Sjögren's syndrome and diseases of the conjunctiva, cornea, sclera and uvea
J.M. Heaton	The pathogenesis of follicular conjunctivitis
	Pathological investigations of virus infections of the eye
K.C. Wybar, M.D. J.M. Mallett M. Coop (Mrs.)	Cancer follow-up in cases of malignant melanoma of the uvea and of chronic orbital granulomas
P.D. Trevor-Roper	Hypothermia in the lens
R. Blach	Effect of oxygen on the rat retina

5. Physiology

OPHTHALMIC RESEARCH UNIT OF THE M.R.C.

Sir S. Duke-Elder, G.C.V.O., D.Sc., M.D., Ph.D. (Director)	
E.S. Perkins, Ph.D. J. Gloster, M.D.	Control of the intra-ocular pressure
D. Cole, Ph.D. C.B. Taylor, Ph.D.	The blood-aqueous barrier and the formation of the intra-ocular fluids
D.M. Maurice, Ph.D.	The metabolism of the cornea
D. Salmony (Miss), Ph.D.	The metabolism of the cornea and the lens
G.B. Arden, Ph.D.	The electrophysiology of the visual pathways
H.J.A. Dartnall, Ph.D. C.D.B. Bridges, Ph.D.	The photopigments of the eye
R.A. Weale, Ph.D.	The physiology of vision
K. Tansley (Miss), D.Sc.	The microanatomy of the retina and optic nerve
D.P. Greaves	Physiological problems concerning intra-ocular pressure with particular reference to the influence of the autonomic nervous system

6. Surgery

H.B. Stallard, M.B.E., M.D.	The irradiation of malignant intra-ocular neoplasms
	Surgical access to the orbit in particular relation to the exposure and removal of dermoid cysts and neoplasms and for decompression
P.M. Moffatt, M.D.	Vitreous implants for detachment of the retina
C.D. Shapland	An assessment of the indications for the various methods of treatment of retinal separation
H. Ridley, M.D.	Intra-ocular acrylic lens surgery
J.R. Hudson	Investigations into the relative merits of the various surgical procedures for treating retinal detachment and a comparison with the results obtained with the surface diathermy techniques in use about ten years ago

6. Surgery (*continued*)

L.G. Fison	The effects of posture on retinal detachment A survey of the effects of treatment by light coagulation on tumours inside the eye
W.S. Foulds	A survey of the results of the various types of operation for entropion and a description of a new surgical technique for its repair

43 London University, Institute of Orthopædics

1. Orthopaedics

H.J. Seddon, C.M.G., D.M. and others	Poliomyelitis Peripheral nerve injuries Congenital dislocation of the hip Volkmann's ischaemic contracture
A. McPherson	Somatic-autonomic reflexes Blood flow in bone
P.G. Walker, Ph.D.	Enzymes acting on mucopolysaccharides
R. Heyworth, Ph.D. D.H. Leaback, Ph.D.	Balance studies in metabolic bone disease
F.B. Anderson, Ph.D. C.G. Greig	Enzyme histochemistry
A.B. Kinnier-Wilson	Follow-up studies of patients treated in respirators Mechanics of breathing with respiratory obstruction Performance of weak muscles Heating of paralysed limbs Apparatus design to help severe cripples
C.H. Lack and others	Role of plasmin in certain pathological processes Purification and action of staphylokinase Staphylococcal infection
J.T. Scales	Materials and their applications in surgery for internal prostheses Application of natural and synthetic materials for wound dressings The application of synthetic materials for orthopaedic appliances Tissue reactions to synthetic materials and metals
H.A. Sissons	Muscle atrophy and hypertrophy in poliomyelitis and other conditions Experimental study of longitudinal bone growth Experimental study of bone grafting Normal bone structure Uptake and localization of radioactive isotopes in bone Transplantation of bone tumours

44 London University, Institute of Psychiatry

1. Biochemistry

Professor H. McIlwain, D.Sc., Ph.D. P.J. Heald, Ph.D. R. Rodnight, Ph.D.	Biochemistry in relation to the central nervous system and mental disease Intermediary metabolism; metabolism of cerebral tissues, especially in electrically excited conditions, and biochemistry of drugs acting on the central nervous system Maintenance of the composition, metabolism and associated electrical properties of the brain and of isolated tissues from it Analysis of body fluids in normal and pathological conditions and in relation to treatment

2. Pathology

Neuropathology:

Professor P.M. Daniel, D.M.	General neuropathology The pituitary gland The hypothalamus
J.B. Brierley, M.D.	The changes in the brain in anoxic states
O.E. Pratt, Ph.D.	The biochemistry of endocrine disorders
E. Beck (Mrs.)	Anatomy of the nervous system Pathological changes in the hypothalamus
F.B. Byrom, M.D.	Experimental hypertensive encephalopathy, and effects of posterior pituitary hormones
S.J. Strich, D.M.	Hydrocephalus Pathology of head injury

3. Physiology

Clinical Neurophysiology:

J.D.N. Hill	Clinical and physiological aspects of epilepsy with special reference to mental disorder
W.A. Kennedy, M.D.	Anatomical and physiological correlates of temporal lobe epilepsy in man
M.V. Driver	Studies of cerebral excitability in response to convulsant drugs in mental disorder

Neuroendocrinology:

Professor G.W. Harris, M.D., Sc.D., F.R.S.	Interaction of the central nervous system and the endocrine system, with special reference to hypothalamic control of anterior pituitary function

4. Psychiatry

Professor Sir A. Lewis, M.D.	Social factors in mental disorder
M. Shepherd, D.M. E.T.O. Slater, M.D.	Prevalence of mental illness
V.A. Cowie (Mrs.), M.D. J. Shields	Genetics of mental disease
T.C.N. Gibbens, M.D. P.D. Scott, M.D.	Forensic aspects of mental disease
A.J. Coppen, M.D. J.L. Gibbons A.G. Mezey, M.D. G.F.M. Russell, M.D.	Metabolic studies in mental disorder
N.M. Goodman (Miss) L. Stein (Mrs.), Ph.D.	Statistics of mental disorder
J.C. Brengelmann, M.D., Ph.D.	Psychological studies of personality in mental disorder
D.L. Davies, D.M. B. Ackner, M.D. W. Linford Rees, M.D.	Evaluation of drug effects Psychosomatic studies
A.D. Leigh, M.D. F. Post, M.D. F.K. Taylor, M.D. K. Cameron W. Warren, M.D.	Psychiatric aspects of asthma Mental aspects of old age Dynamics of group structure Child psychiatry
C.P. Blacker, G.M., M.C., D.M. *A. Harris, M.A., M.D.	Demographic studies Prognosis of mental disorder

*deceased

4. Psychiatry *(continued)*

M.R.C. SOCIAL PSYCHIATRY RESEARCH UNIT

Professor Sir A. Lewis G.M. Carstairs, M.D. J.K. Wing N. O'Connor, Ph.D. J. Tizard, Ph.D. P. Venables, Ph.D. B. Hermelin (Mrs.), Ph.D. G.W. Brown E.M. Kirwan (Miss)	Social and experimental studies of chronic psychoses and defect
K. Rawnsley J.B. Loudon	Epidemiological studies of mental disorder

5. Psychology

Professor H.J. Eysenck Ph.D.	Personality measurement by means of objective tests The application of learning theory to abnormal personality
G.W. Granger, Ph.D.	Perceptual tests (simple physiological) as measures of personality
M.B. Shapiro, Ph.D.	Nature and measurement of depression
I. Martin (Mrs.), Ph.D.	Measure of autonomic and somatic reactivity in response to stress
E. Treadwell (Mrs.)	The effect of drugs on conditioning
P. Broadhurst, Ph.D.	Emotionality in the rat: its measurement, inheritance, and correlates
R. Willett	Conditioning and personality
H. Holland	Effect of drugs on meta-contrast and other perceptual phenomena
J. Sylvester	Apparent movement and its relation to personality traits

45 London University, Institute of Urology

1. Urology

J.D. Fergusson, M.D. (Director)	Carcinoma of prostate (methods of endocrine control therapy, prostatic smear cytology, tracer research with labelled oestrogens, and other methods of investigation of the disease)
A.R.C. Higham, T.D.	Cine-cystoscopy
C. Dukes, O.B.E., M.D. D.M. Wallace, O.B.E.	Pathology and treatment of tumours of the genito-urinary tract
H.G. Hanley, M.D.	Tuberculosis of the genito-urinary tract Male infertility
D.I. Williams, M.D.	Paediatric urology
J.J. Stevenson, M.D.	Radiological research with the X-ray image intensifier
R.C.B. Pugh, M.D.	Morbid anatomy of urological disease
A.R. Harrison, M.D.	Metabolic research on urinary calculi
H.P. Winsbury-White	The association between chronic urinary infections and rheumatic conditions
R.D. Hodges	Male fertility

46 London University
King's College Hospital Medical School

1. Anaesthetics

No information

2. Cardiology

S. Oram, M.D. with L. Resnikov	Cardiac catheter studies, pre-operative and post-operative in congenital and acquired heart disease
J.P.H. Davies	Cardiac catheter studies in Friedreich's ataxia and allied neurological conditions
E. Sowton	Qualitative and quantitative indicator dye-dilution studies in myocardial ischaemia with and without operation and in congenital and acquired heart disease
	Abnormalities of the RS-T phase of the electrocardiogram
	Significance of toxic effects of digitalis on the human auricle
	Correlation of complete heart block and gall bladder disease
	Cardiac aspects of scleroderma
	Phonocardiographic studies of right and left bundle-branch block

3. Dental Studies

Professor R. Cocker	A histological study of the innervation of human dentine
M.A. Kettle	Relationship of cleft lip and palate to dental arch deformity
	Experimental methods of treatment for impacted maxillary canines
B.C. Leighton	Investigation into the effect of certain environmental factors on the form and relationship of the dental arches from birth onwards
	Investigation by clinical examination, cine-photography, cephalometry and the use of plaster casts of the dental arches
R.A. Cawson with I. Curson	The effectiveness of some antiseptics on the mucous membrane of the mouth
W.F. Collyer with R.A. Cawson	A survey of the oral lesions in pregnant diabetics
	Incidence of caries in diabetic children
	Oral changes in pregnancy in diabetics
R.A. Cawson	Distribution of bacteria on the oral mucous membrane and ability of injection needles to implant material from the epithelial surface
	Applications of exfoliative cytology in the mouth
	Histological studies on changes in the supporting tissues of the teeth in relation to age and systemic disease

4. Dermatology

D.I. Williams	Staphylococcal infections
	Bacteriology and therapeutic trials
	Use of vitamin A in skin disorders
	Griseofulvin in fungus infections
R.H. Marten	Necrobiosis lipoidica
	Chronic paronychia, clinical and bacteriological study
	Griseofulvin in fungus infections
	Nylon hair net dermatitis
	Chloroquine: experimental study using guinea pigs

4. Dermatology (*continued*)

I. Sarkany	Griseofulvin in fungus infections Naevoxantho-endothelioma study Haematological study in infantile eczema

5. Haematology

W.M. Davidson, M.D. (Head of Department) with D.B. Gower	Haemolytic anaemia in animals; a study of the mechanism involved in the actual haemolysis and particularly a comparison between haemolytic reaction *in vitro* and *in vivo* using various methods including radioactive isotopes
W.M. Davidson, M.D.	Morphological sex differences in leucocytes of man and animals and chromosomal studies
P.T. Flute	Contact factors in fibrinolysis

6. Medicine

C. Hoyle, M.D. (Director)	Sarcoidosis
with H. Smellie	Sarcoidosis: clinical and pathological studies
B. Cardell, M.D.	
R.P. Crick	Ocular sarcoidosis
R. Greenwood	Antibody responses in sarcoidosis
with M.P. Godfrey	Lung function in sarcoidosis and the effects of steroid treatment
M.P. Godfrey	Airway resistance in respiratory disease The action of corticosteroids in sarcoidosis
V. Parsons	The epidemiology of sarcoidosis
M.T. Warwick (Mrs.)	Bronchial artery patterns in chronic pulmonary disease
J.L. Livingstone, M.D.	Value of long-term steroids in asthma
with R.S.B. Pearson, D.M., and Professor C.H. Gray, M.D., D.Sc.	Adrenal function in asthma
R.S.B. Pearson, D.M.	Prednisolone snuff for hay fever
with K. Maunsell (Mrs.), M.D.	
M.P. Godfrey	
with B. Cardell, M.D.	Clinical and pathological study of fatal cases of asthma
R.S.B. Pearson, D.M.	Natural history of asthma
S. Oram, M.D.	Investigations of the electrocardiogram with pulmonary embolisms
with R. Cutforth, M.D.	
with M.C. Holt (Miss), M.D.	Therapeutic assessment of pregnant cardiacs, 6 year follow-up
S. Oram, M.D.	Cardiac aspects of scleroderma heart disease Effect of nephrectomy on irradiation-induced malignant hypertension Assessment of cardiac patients for surgical treatment Early manifestations of coronary disease
K. Maunsell (Miss), M.D.	The seasonal variations of allergic bronchial asthma in relation to the concentration of pollen and fungal spores in the air in 1954, 1955, and 1956 The regional variations of allergic bronchial asthma with special reference to the areas of onset

7. Microbiology

Bacteriology:

A.C. Cunliffe, M.D. (Head of Department)	Relation of hypersensitivity to immunity Passive cutaneous anaphylaxis Epidemiology of infections of surgical wounds Bacteriology of *Proteus vulgaris*
F.L. Jackson	Mammalian and bacterial cytochrome systems Streptomycin and streptomycin antagonists The penicillin dependence of a staphylococcus Metabolism of *Proteus vulgaris*
C.P. Farthing	Relation of gamma-globulin to antibody

8. Neurology

M. Critchley, M.D.	Disorders of perception (with particular reference to the parietal lobes of the brain); disorders of language

9. Obstetrics and Gynaecology

J.H. Peel	Oxygen tension and haemoglobin in the blood of the new born babies of diabetic mothers Carbohydrate tolerance in patients suffering from carcinoma of the body of the uterus
S.G. Clayton with J.M. Brudenell	Muscle cramps in pregnancy
J.M. Brudenell with J.F. Fowler	Uterine blood flow in diabetic pregnancy as determined by radioactive sodium clearance tests

10. Ophthalmology

T.K. Lyle, C.B.E.	Surgical treatment of ocular palsies Endocrine exophthalmos Retro-bulbar neuritis
R.P. Crick	Sarcoidosis and the eye Research in perimetric technique Operative technique under high magnifications Investigations into eye complications of lupus erythematosus

11. Otology

T.S. Littler, Ph.D. (Director) T.E. Cawthorne	The testing of hearing by bone conduction as a diagnostic procedure, and the design and development of improved bone conduction hearing aids
J.J. Knight	Improvements in hearing aid equipment
A.B. Hewlett	Incidence and causes of deafness Audiometry The surgical treatment of deafness Investigation of central deafness Aetiology and pathology of Bell's palsy Effect of streptomycin on the VIIIth nerve system
W.I. Daggett	Investigation of the peripheral and the central vestibular mechanism in health and disease
S.R. Mawson with M. Wilmers (Miss), M.D.	Tonsillectomy: controlled therapeutic trial

12. Pathology

Professor H.A. Magnus, M.D.	A comparison between the histology of the gastric mucosa and cytological findings obtained by gastric lavage
B.S. Cardell, M.D.	The pathology of infants of diabetic mothers Experimental amyloidosis The pathology of bronchial asthma

12. Pathology (*continued*)

J. Bamforth, M.D. with M.K. Mason	An investigation into the problem of latent prostatic cancer
	The value of exfoliative cytology in the early diagnosis of gastric cancer
D.G. Rushton	Changes in the lungs in drowning and crush injury
M.E.A. Powell	An investigation into the methods of demonstrating cancer cells in the blood stream
	Urethane as an initiator of carcino genesis in mice
	An investigation into the relative densities of blood cells in relation to the formation of the buffy coat
Chemical:	
Professor C.H. Gray, M.D., D.Sc.	Metabolism of adrenal steroids, androgens and synthetic anabolic steroids in health and disease, using unlabelled as well as C^{14} labelled compounds
	Structure, stereochemistry and biosynthesis of porphyrins and bile pigments
M.J.H. Smith, Ph.D.	Mode of action of anti-rheumatic drugs
	Metabolic problems in diabetes
	Investigations of the clinical significance of multiple enzyme determinations in disease
D.C. Nicholson, Ph.D.	Synthesis, structure and metabolism of porphyrins and bile pigments

13. Physical Medicine

D.A. Brewerton	Hand deformities in rheumatoid disease
J.B. Millard	Effects of physical treatment on peripheral blood flow

14. Surgery

H.C. Edwards, C.B.E. (Director)	
S. Taylor	Autoradiography and chromatography of human thyroid containing labelled iodine
	Study of renal clearance of iodide in humans and rats
	Production of experimental thyroid cancer by ionizing radiation in rats on low iodine diet
L.T. Cotton	The pathology and aetiology of varicose veins
J.G. Murray	The responses of nervous tissue to injury and disease

15. Urology

J.G. Yates-Bell	Polycystic kidneys
J.G. Yayes-Bell	Radioactive gold grains for bladder carcinoma
H. Rees	Plastic operations for hydronephrosis
A.R.C. Higham, T.D.	Enuresis

47 London University
Lister Institute of Preventive Medicine

1. Biochemistry

Professor W.T.J. Morgan, C.B.E., D.Sc., Ph.D., F.R.S.	Immunochemistry
	Chemistry and immunology of the human blood group substances and of bacterial and protozoal antigens
M.G. Macfarlane (Miss), D.Sc.	Action of bacterial toxins on tissue constituents and the metabolic activity of cells
	Phospholipids of heart muscle and other tissues

1. Biochemistry (*continued*)

W.M. Watkins (Miss), Ph.D.	Immunochemistry The action of enzymes on human blood group substances The chemical basis of immunological specificity
W.J. Whelan, D.Sc.	Action patterns of starch-metabolizing enzymes Structural determination of polysaccharides by chemical and enzyme methods Chemical synthesis of polysaccharides

2. Biophysics

R.A. Kekwick, D.Sc.	Biophysical studies on proteins and other macromolecules of biological origin, particularly concerned with ultracentrifuge and electrophoresis data Proteins associated with the blood clotting system and with antigen-antibody interactions are being especially examined

3. Genetics

Human:

See Haematology

M.R.C. BLOOD GROUP RESEARCH UNIT

4. Haematology

BLOOD PRODUCTS LABORATORY (ELSTREE)

W.D'A. Maycock, M.B.E., M.D. L. Vallet	The techniques of freeze-drying plasma proteins Physical methods of sterilization of human plasma and plasma fractions Purification of plasma protein fractions

M.R.C. BLOOD GROUP REFERENCE LABORATORY

A.E. Mourant (Director)	
D.M. Parkin (Miss), D.Phil., M.D.	Investigation of cases of haemolytic disease of the newborn and blood transfusion reactions Serological and genetical research into rare antigens and phenomena of special interest arising from such cases Investigation of variants of the D (Rh) antigen, the use of enzymes in blood grouping, and other blood grouping problems Investigation of sera from patients with rheumatoid arthritis and other rheumatic diseases for agglutinating factors inhibited by γ-globulin
E.W. Ikin (Miss)	Control of routine blood grouping sera, and anthropological blood group investigations Serological and genetical research into new antigens and antibodies so discovered Serology of human haemoglobins

M.R.C. BLOOD GROUP RESEARCH UNIT

R.R. Race, Ph.D., F.R.S. R. Sanger (Miss), Ph.D.	Blood groups; searches for "new" blood group antigens; genetical studies of these antigens and their application to human genetics and medicine

5. Immunology

Preparation and Study of Bacterial Vaccines:

ELSTREE

(A.F.B. Standfast)	The antigenic potency of typhoid vaccines
J.M. Dolby (Mrs.), Ph.D.	(The antigens of *Haemophilus pertussis*)

Preparation and Study of Smallpox Vaccine:

ELSTREE

D. McClean	Inactivation of vaccinia virus by various physical and chemical agents
	Application of tissue culture methods to the large scale production of vaccinia virus
	Investigation of the accuracy of methods of titrating vaccinia virus and neutralizing antibody in sera

Preparation and Study of Therapeutic Sera:

ELSTREE

B.G.F. Weitz	Study of the antigenic characteristics of the serum proteins of man and animals
D.E. Dolby, Ph.D.	Interaction of toxins and anti toxins
	Study of the characters of fractions of antitoxic sera
	Studies on the feeding habits of bloodsucking insects of medical and veterinary importance
	The antigens of African trypanosomes

6. Microbiology

B.A.D. Stocker, M.D.	Bacterial genetics; transduction and lysogenic conversion in *Salmonella*
	Bacterial flagella
	Colicinogeny
	Biochemical microbiology

Virology:

L.H. Collier, M.D.	Properties of trachoma and inclusion blennorrhoea viruses
	Properties of measles virus

7. Pathology

Experimental:

Professor A.A. Miles, C.B.E., M.D.	Tissue and vascular reactions and non-specific immunity in the early stages of infection
	Relation of anaphylactic and bacterial allergy
M. Robertson (Miss), D.Sc., F.R.S.	Bulk growth of Protozoa in bacteria-free media for the production of antigen
	Serological studies of ciliates and flagellates (*Trichomonas*, *Tetrahymena*)
D.L. Wilhelm, M.D., Ph.D.	Serum and other endogeneous factors altering capillary permeability
	The mediation of increased vascular permeability in inflammation
E. Klieneberger-Nobel (Mrs.), Ph.D., D.Sc.	Pathogenic significance and antibody production of pleuropneumonia-like organisms and L-forms of bacteria
	Aetiology of non-gonococcal urethritis

48 London University
London Hospital Medical College

1. Anatomy

Professor R.J. Harrison, M.D., D.Sc.	Embryology—comparative placentation, delayed implantation Reproduction—changes in mammalian ovary and reproductive tract
F.R. Johnson, M.D.	Histochemistry of regeneration in various tissues
J.D.W. Tomlinson	Anatomy of vertebral veins
F.L.D. Steel	Anthropometry—effect of gravity on growth
J.W.S. Harris	Embryology of palate

2. Biochemistry

Professor F.L. Warren, Ph.D., D.Sc. H. Harris, M.D. M.W. Neil, Ph.D. C.W. Parr, Ph.D. M. Whittaker (Miss), Ph.D.	Studies in human genetics by investigation of biochemical individuality with special reference to protein components of blood Biochemical processes involved in the metabolism of foetal tissues and the development of certain enzyme systems during foetal growth Studies on the significance of phosphoglucose isomerase and factors influencing its activity in animal tissues
Experimental:	
Professor C.J.O.R. Morris, Ph.D.	Chemistry of gonadotrophins Preparation and properties of cytoplasmic nucleic acids and microsomes Study of separation methods in biochemistry
J.S. Fawcett, Ph.D.	Chemistry of thyrotrophic hormone

3. Cancer Research

M.H. Salaman, M.D. (Director) F.J.C. Roe, D.M. K.E.K. Rowson, M.D.	The study of leukaemia, with special reference to cell-free transmission of the disease. Tissue culture, serological and other techniques commonly used in study of viruses are being used in this work. The polyoma virus has been isolated and is under further investigation Chemical carcinogenesis, in particular the study of the nature and function of tumour-initiating and tumour-promoting agents, the precancerous state, and the development of malignancy. Special attention has been given to the carcinogenic role of the *Citrus* oils and other substances of plant origin The experimental induction of tumours by tobacco products, with special reference to the detection of tumour-initiating and tumour-promoting substances in tobacco smoke
D.H. Adams, D.Phil.	The effect of tumours on liver catalase and its relation to the normal maintenance of catalase activity

4. Cardiology

W. Evans, M.D., D.Sc. W. Brigden, M.D. P. Mounsey, M.D.	Clinical investigation and treatment of cardio vascular disease, aided by special tests which include electrocardiography, radiology, phonocardiography, vector cardiography, angiocardiography and cardiac catheterization

5. Chest Diseases

N.L. Rusby, D.M. K.M.A. Perry	Chemotherapy of pulmonary tuberculosis with particular reference to marsilid and steroid hormones and on respiratory physiology

6. Dental Studies

Professor A.E.W. Miles	Structure of dental tissues in vertebrates Histology of oral mucosa Abnormalities of dental development Morbid changes in the human temporo-mandibular joint
J.A. Pedler	Natural history of lesions of oral soft tissues
R.W. Fearnhead	Innervation of the pulp and dentine Electron miscroscopy of enamel and dentine
G.T. Hankey	Temporo-mandibular arthrosis
Conservative:	
Professor G.L. Slack, D.D.S. (Director)	
N.L. Ward	The diagnosis of changes in the pulp tissue and the assessment of these changes on electrical and thermal methods The measurement of galvanic action in the mouth
E. Nicholls	The bacterial flora of infected root canals and associated bone lesions, with special reference to the bactericidal efficiency of various agents

7. Dermatology

B.F. Russell, M.D. with S.L. Last and J.N. Morris	The significance of *Demodex folliculorum* in rosacea Electroencephalography in Besnier's prurigo Social survey of Besnier's prurigo
J.S. Pegum, M.D.	The use of mixed allergens in patch testing for metal and antibiotic sensitivity The effects on the skin of dermabrasion Alopecia areata
C.M. Ridley (Miss)	A follow-up of patients having steroid therapy Treatment of rodent ulcers and radiodermatitis by dermabrasion Racial varieties in the incidence of dermatoses

8. Medicine

Professor C. Wilson, D.M.	Aetiology and treatment of hypertension
J.M. Ledingham, M.D.	Haemodynamic changes in experimental hypertension
M.A. Floyer, M.D.	Role of the kidney in renal hypertension
D. Jennings	Aetiology and treatment of peptic ulcer
R.H. Balme, M.D.	Blood groups and lesions of the stomach
D.W. Vere	The nature of renal oedema
D.G. Penington	Humoral regulation of erythropoiesis

9. Microbiology

Bacteriology:	
Professor C.F. Barwell, M.D.	Investigations of virus infections in man The antigenic relationships of viruses of the psittacosis-lymphogranuloma group Serological reactions with *Toxoplasma* antigens
R.G. White, D.M.	The study of cellular aspects of specific immunity and the enhancement of antibody production The study of auto-antibody mechanisms in disease of the thyroid and other organs
C.S. Cummins	The chemical composition of bacterial cell walls in relation to antigenic structure and taxonomic position
S.E. Reed (Miss)	The study of tissue culture infection by herpes simplex and other viruses

10. Neurology

Sir W. Russell Brain, Bt.	Further studies on cervical spondylosis
R.A. Henson, D.M., M.D.	Epilepsy of late onset Diseases of muscle The carcinomatous neuromyopathies Clinical and pathological studies of chronic diseases of muscle

11. Neurosurgery

D.W.C. Northfield J.V. Crawford	Electrocorticography Hypothermia Recording of electroencephalography from deep electrodes

12. Ophthalmology

No information

13. Otorhinolaryngology

C. Keogh	The protective mechanism of the skin of the external auditory meatus Causes of congenital stridor in infants Causes of deafness in children Malignant cells in oseophageal mucus The causes and effects of pharyngeal paralysis The causes of Ménierè's syndrome

14. Paediatrics and Child Health

No information

15. Pathology

Histopathology:

Professor D.S. Russell, Sc.D., M.D., LL.D.	Neuropathology and other aspects of histopathology
J.W. Landells	Histochemistry of cartilage and bone in relation to arthritis
R.G.F. Parker, M.D.	The pathology of hepatic necrosis and fibrosis
K. Weinbren, M.D.	Regeneration of the liver and other tissues
A.H.E. Marshall R.G. White	Immunological aspects of thyroid disease in man and animals
L.J. Rubinstein, M.D.	Tumours of the nervous system
P.G.I. Stovin	Tumours and vascular diseases of the lungs Histopathology of the skin

16. Pharmacology and Therapeutics

Professor M. Weatherall, D.M.	Effects of drugs on the movements of electrolytes in tissues
C.R.B. Joyce, Ph.D.	Psychological effects of drugs
A. Herxheimer	Physiology and pharmacology of the human skin

17. Physiology

R. Creese, Ph.D.	The action of plasma proteins on sodium in isolated mammalian muscle
A. Howe, Ph.D.	Histochemical studies on the hypothalamus and pituitary gland
E.M. Glaser, M.C., Ph.D., M.D.	The influence of the central nervous system of man and rodents on slow retained adaptation to heat and cold. Effects of drugs acting upon the central nervous system in man and rodents

18. Radiotherapy

W. Shanks	The treatment of bladder cancer
L.A.W. Kemp	Telecobalt therapy
M. Cohen	The use of wedge filters in radiotherapy
D.G. Arnott	Research in the dosimetry of ionizing radiations
	Application of automatic and semi-automatic methods of investigating dose distributions in X-ray and γ—ray therapy
	Studies of thyroid metabolism using radioactive iodine, with particular reference to anti-thyroid drugs
	Exact techniques of the *in vivo* measurement of isotopes
	The measurement of the reaction of human skin to radiation by means of reflection spectrophotometry

19. Surgery

W.T. Irvine, M.D.	The role of the antrum in gastric acid secretion
	Relationship of oestrogens to cancer of the breast
	Colon absorption studies
	The use of alkylating agents combined with isolated perfusion techniques in the treatment of malignant tumours
H.D. Ritchie	Studies in the mechanism of biliary excretion
	Extension of dialysis techniques
J.P. Blandy	Studies on motility of oesophagus, duodenum and jejunum
	Studies on pancreatic function

20. Surgery, Thoracic

V.C. Thompson	Clinical pathological studies on carcinoma of the lung
G. Flavell	The surgical treatment of mitral stenosis
	The aetiology and management of bronchiectasis
	Studies in the use of a pump oxygenator for the maintenance of extra corporeal circulation in open operations on the heart

21. Venereology

A.J. King	The aetiology, diagnosis and treatment of non-specific genital infection (non-specific urethritis)
	The treatment of trichomonal vaginitis
	The significance of complement fixation tests for gonorrhoea performed on the sera of patients recently treated for gonorrhoea
	The value of benzathine penicillin in the treatment of gonorrhoea and comparison with procaine penicillin
	The natural history, treatment and progress of Reiter's syndrome
	Radiological changes associated with Reiter's syndrome
	The diagnosis and complications of chronic prostatitis
	The relationship of relapsing uveitis to non-specific genital infection
	Study of the results of treatment of early syphilis during the period 1946-1956
	The clinical significance of non-syphilitic reactions to standard serological tests for syphilis
	Histology of the mucous membrane of the male urethra in health and disease
	Bacteriological and clinical study of sensitivities of gonococci to penicillin and streptomycin
	Study of urethral strictures in the male, incidence, causes and treatment

21. Venereology (*continued*)

A.J. King (*continued*)	The clinical, radiological and serological changes in cases of chronic yaws
	The incidence of significance of genital infection in male patients with ankylosing spondylitis
	The diagnosis and treatment of treponemal disease in coloured immigrants
	Clinical assessment of results obtained with the treponemal Wassermann reaction
	The significance of pleuropneumonia-like organisms in the human genital tract
	The distribution of complement fixation antibodies to pleuropneumonia-like organisms in human sera
	Study of acute salpingitis including assessment of the results of treatment
	Investigation and clinical assessment of complement fixation tests for syphilis, using antigens prepared from the Reiter strain of *Treponema*
	Diagnosis and treatment of monilial vaginitis and urethritis
	Investigation of the causes of epididymo-orchitis with special reference to viral infections

49 London University
London School of Hygiene and Tropical Medicine

1. Biochemistry

Professor J.H. Birkinshaw, D.Sc. G. Smith C.E. Stickings, Ph.D. P. Chaplen, Ph.D.	Biochemistry of micro-organisms, particularly of fungi. Investigation of metabolic products of these micro-organisms, determination of their chemical structure, and synthesis. Investigation of antibiotic activity and other biological properties of these metabolic products

2. Entomology

Professor D.S. Bertram, Ph.D.	Virus transmission
J.R. Busvine, D.Sc.	Laboratory studies on insecticides
B.R. Laurence, Ph.D.	Mosquito biology

3. Microbiology

Professor E.T.C. Spooner, M.D.	
Professor F. Fulton, D.M.	Growth of virus in tissues Purification of viruses
E.W. Meynell (Mrs.)	Bacteriophage for motile *Salmonella*
C.E.G. Smith, M.D.	Arborviruses of Casals' groups A and B
J.H. Marshall, D.Phil.	Peptide synthesis by bacteria Purification of viruses Aromatic biosynthesis in bacteria
P. Chadwick	Antibiotic-resistant staphylococci
C.E. Cradock-Watson	Haemoglobin antigens
I.G. Murray	Aetiology of mycetoma
J. Walker (Mrs.), Ph.D.	Medical mycology

4. *Nutrition

Human:

Professor B.S. Platt, C.M.G., Ph.D. M.W. Grant (Miss) C.R.C. Heard, D.Phil. G.R. Wadsworth, M.D.	Clinical, field and laboratory investigations of patients suffering from protein malnutrition; treatment and prevention of this syndrome, especially in infants and young children; interrelationship of protein malnutrition with effects of zymotic diseases, particularly malaria
D.S. Miller D.J. Naismith, Ph.D. P.L. Pellett, Ph.D.	Protein malnutrition syndromes produced experimentally in animals, including methods of producing the syndrome, biochemical and cytological changes in tissues and organs, development of techniques for use in these studies
	The effects of malnutrition on ante- and post-natal development, especially of the skeletal and nervous systems
	The technology of the foods of colonial peoples including nutrient content, especially proteins and amino acids, indigenous methods of processing and the translation of these methods into suitable mechanized procedures
	Problems arising out of the application of knowledge of nutrition to the improvement of health of colonial peoples
	Investigation of milk proteins in relation to material nutrition

5. Occupational Health

ROCKEFELLER UNIT

R.S.F. Schilling, M.D. (Director of Unit)	Epidemiological, physiological and environmental studies of industrial pulmonary disease in workers exposed to vegetable dusts. This field work is supplemented by laboratory investigations of cotton dust
	Similar studies of other forms of chronic respiratory disease in cotton workers in Lancashire and Holland
C.H. Wood	Investigation into the occupations and social classes of patients with chronic bronchitis
	Clinical and environmental studies of textile workers
S.A. Roach	Environmental studies of textile workers (see above). Developments of instruments for sampling airborne dusts and methods of measuring dust exposures

6. Parasitology

Helminthology:

Professor J.J.C. Buckley, D.Sc. P.L. LeRoux, D.Sc.	Transmission and behaviour of schistosomes and other trematodes in experimental animals and their infectivity to their molluscan vectors
	Transmission and behaviour of filarial parasites of mammals in experimental animals
	Systematic studies on helminths

Protozoology:

Professor P.C.C. Garnham, D.Sc., M.D.	Tissue phase of malaria parasites
	Biochemical studies on trypanosomes and malaria parasites
W.E. Ormerod R. Lainson, Ph.D.	Toxoplasmosis. Leishmaniasis

7. Physiology

Applied:

Professor G.P. Crowden, O.B.E., T.D., D.Sc.	Muscular work and environment
M.L. Thomson, Ph.D.	Atmospheric pollution and field tests of lung function

*Including the Applied Nutrition Unit (administered by the School on behalf of the Colonial Office) and the M.R.C. Human Nutrition Research Unit.

8. Public Health and Preventive Medicine

Professor W.S. Walton, G.M., M.D. with Professor S.D.M. Court F.J.W. Miller	A thousand families in Newcastle upon Tyne
S.W. Hinds, M.D. (in conjunction with the Department of Child health, University of Bristol)	Aspects of child health which include prematurity, adoption, environmental effects, and the work of an almoner in a children's hospital
H.G. Maule, Ph.D. with J. Cooper (Miss)	An analysis of the background and future intentions of postgraduate medical students and the relation between their intelligence test scores and scholastic attainment
H.G. Maule, Ph.D.	The social and economic problems of the long-term hospital patient and the value of correspondence courses to such patients
M. Jefferys (Mrs.)	Problems of social classification in socio-medical enquiry Assessment of the effectiveness of an educational campaign on the dangers of smoking for schoolboys in S.W. Hertfordshire
S.P.W. Chave	A study of general practice in a new housing estate A survey of mental illness in a new town
R.M. Acheson, D.M.	Studies in the adaptation of the developing mammalian skeleton to adverse environmental circumstances
R.M. Acheson, D.M. (with Professor W.J.E. Jessop, Department of Social Medicine, University of Dublin)	Studies of the health and activity of a group of men aged 65-85
M.D. Warren, M.D. (in conjunction with the Department of Social and Preventive Medicine, Royal Free Hospital School of Medicine and Department of Physical Medicine, Royal Free Hospital)	An analysis of the medical condition and social and industrial needs of patients referred to a hospital Resettlement Clinic

9. Statistics

Medical Statistics and Epidemiology:*

Professor A. Bradford Hill, C.B.E., D.Sc., Ph.D., F.R.S.	The development and application of statistical methods in medicine and its associated sciences, including research into the epidemiology and aetiology of disease
Professor D.D. Reid, M.D., D.Sc., Ph.D.	The promotion and analysis of vital statistics
J. Knowelden, M.D.	The design and analysis of therapeutic trials of new drugs and other agents
J.T. Boyd P. Armitage, Ph.D.	The design and analysis of field trials of prophylactic agents
W.R.S. Doll, O.B.E., D.Sc., M.D.	The application of mathematical statistical techniques to the solution of laboratory problems
A.S. Fairbairn	The development of methods of biological assay
J.O. Irwin, D.Sc., Sc.D. B.J. Kinsley (Miss) W.J. Martin, Ph.D., D.Sc. I. Sutherland, D.Phil.	Studies of the hazards to man of nuclear and allied radiations

*Including the Statistical Research Unit of the M.R.C., Honorary Director, Professor A.B. Hill, C.B.E., F.R.S.

10. Tropical Hygiene

ROSS INSTITUTE

Professor G. Macdonald C.M.G., M.D.	Epidemiology of malaria: Basic theory
G. Davidson	Action of insecticides
C.E. Jackson (Miss)	Development of resistance to insecticides in anopheline and culicine mosquitoes Analysis of resistance: genetic and cytogenic studies Speciation of *Anopheles gambiae*
B.B. Waddy, D.M.	Onchocerciasis

11. Tropical Medicine

Clinical:

Professor A.W. Woodruff S. Bell P.D. Marsden G. Stott	The nature of various nutritional anaemias and their relationship to protein deficiency and liver damage The therapeutic efficiency of various antibiotics and synthetic organic compounds in amoebic dysentery, filariasis and leprosy Adreno-cortical function in tropical peoples Changes in the serum protein in man and animals induced by malaria, trypanosomiasis, nutritional disease and leprosy The therapeutic efficiency of various drugs in helminthic infections The immunological changes induced in man by schistosomal infections Ocular complications in onchocerciasis, their course and treatment The course, prognosis and treatment of tropical sprue Iron metabolism under tropical conditions including the genesis of haemosiderosis so commonly encountered in the tropics

50 London University, Middlesex Hospital Medical School

1. Anatomy

Professor E.W. Walls, M.D.	The structure of the human anal canal
P.H.S. Silver, Ph.D.	Experimental studies on neural crest derivatives
W.W. James, O.B.E.	The structure of dentine
R.P. Gould	The innervation of the carotid body
J.G. Bearn	Studies in foetal endocrinology

2. Biochemistry

COURTAULD INSTITUTE OF BIOCHEMISTRY

Professor Sir C. Dodds, M.V.O., F.R.S.	Synthetic hormone analogues: bacterial enzymes
Professor F. Dickens, F.R.S. G.E. Glock (Miss), D.Sc. P. Maclean J.B. Bennette (Miss), Ph.D.	Enzymes, tissue metabolism and cancer research
P.N. Campbell, Ph.D.	Biosynthesis of proteins

2. Biochemistry (*continued*)

I. Roitt, D.Phil.	Thyroid auto-immunity
W. Lawson	Synthetic hormone analogues
A.E. Kellie, Ph.D. A.P. Wade, Ph.D. E.R. Smith J.G.D. Carpenter F. Foggitt	Steroid metabolism
J.B. Jepson (Miss), D.Phil.	Pharmacologically active bases and peptides
C.F.M. Rose J.M. Wilkins (Miss) B. Speyer (Miss) L.M. Worsley (Miss)	Clinical biochemistry
S.J. Holt, Ph.D.	Cytochemistry
P.W. Sadler, Ph.D.	Chemical pharmacology
A.L. Miller	Clinical biochemical research
G.L. Mills, Ph.D.	Protein chemistry; bacterial enzymes
D.G. O'Sullivan, Ph.D.	Theoretical chemistry
H.E.H. Jones	Hormones
I. Smith, Ph.D.	Chromatography of peptides
V.M. Craddock (Miss), Ph.D.	Biosynthesis of proteins
E.G. Wilson (Miss), Ph.D.	Thyroid auto-immunity
W.F. Coulson, Ph.D.	Steroid metabolism

3. Biology

R.F.J. Withers	Genetical study of human obesity
F.T.C. Harris	The application of relation-theory to cell lineage studies The localization of the site of exchange of K^{42} in the kidney of the adult rat. The time of development of a high rate of exchange of K^{42} in the kidney of the foetal rat The histochemistry of the kidney of *Cercopithecus aethiops tantalus*

4. Medicine

Professor A. Kekwick	Metabolism of obesity Peripheral vascular disease
T. Chalmers	Endocrine control of electrolyte metabolism and renal function
E.J.M. Campbell, Ph.D., M.D.	Pulmonary function in lung disease
S.B. Furnass	Metabolic studies during sleep

5. Orthopaedics

No information

6. Otorhinolaryngology

C.P. Wilson, C.V.O.	Pathology of the nasopharynx
J.P. Monkhouse	Speech audiometry Pathology of otosclerosis
S.S. Beare, O.B.E.	Histology of acoustic nerve
D. Ranger	Vaso-motor responses of nasal mucosa
J.C. Seymour	Pathology of the vascular insufficiencies of the labyrinth and evaluations of the results of treatment. Investigation of fluid exchanges in the labyrinth in an attempt to provide relevant data to explain a number of the pathological features of some of the disorders

7. Pathology

BLAND-SUTTON INSTITUTE OF PATHOLOGY

Professor R.W. Scarff, F.R.S.E.	Histopathology of cancer
R.E. Thompson	Bacteriological research
A.C. Thackray, M.D.	Histopathology of cancer
A.D. Thomson, M.D.	
J.W. Stewart	Haematological research
Professor Sir S. Bedson, F.R.S., M.D., D.Sc.	Virus research in relation to tumours

8. Pharmacology and Therapeutics

Professor C.A. Keele	Chemical factors concerned in the production of pain
D.A.J. Armstrong (Miss), Ph.D.	Chemical factors concerned in the production of pain
F. Hobbiger, M.D., D.Sc., Ph.D.	Antidotes of organophosphate poisoning; actions of γ-aminobutyric acid

9. Physics

Medical:

Professor J.E. Roberts, Ph.D., D.Sc.	Physical problems involved in the therapeutic use of ionizing radiations, with particular reference to the application of radioactive isotopes in this field
H.F. Cook, Ph.D.	
J.K. Whitehead, Ph.D.	Development of equipment and methods for the use of radioactive isotopes in clinical diagnosis
R.E. Ellis	
J.W. Tappin, Ph.D.	Dielectric properties of heterogeneous media in the microwave region with special reference to such media found in biological systems
J.E.S. Bradley, Ph.D.	
R.P. Ekins	
T.H.E. Bryant	Development of scintillation counting methods, improvement of counter characteristics and study of phosphorescent processes
W.S. Reith, D.Sc.	
S. Goss	
I.M. Hoppett (Miss)	Study of adrenal corticosteroids of high mineral activity using physical methods of separation, detection and assay
A. Denbert (Miss)	
E.S. Williams	

The build-up of protein from carbohydrates in normal and malignant tissues using compounds labelled with tritium and C^{14}

The physical problems of hearing and electrical properties of the cochlea and labyrinth

The distribution of scattered radiation in radiological procedures with special reference to gonad and bone-marrow dose

Biophysical and clinical studies using radioisotopes:—

Iodine^{131} for thyroid studies with particular reference to detailed knowledge of iodinated plasma proteins

Sodium^{24} and potassium^{42} for electrolyte balance studies

Iron^{54} and chromium^{5} 'to study metabolism in normal and anaemic conditions

Iodinated^{131} and brominated^{82} fats in excretion and turnover studies

Study of radiation effects on solids using electron paramagnetic resonance techniques

10. Physiology

Professor E. Neil, M.D., D.Sc.	Hypothermia Reflex control of circulation and respiration
W.F. Floyd, Ph.D.	Electromyography and electroneurography
J.H. Green, Ph.D.	Reflex control of circulation

11. Radiotherapy

Radiotherapy techniques:

Professor B.W.Windeyer, D.Sc.	The treatment of disease by telecurietherapy (Mobaltron), telecobalt, 230 Kv and 95 Kv X-rays
M.D. Snelling (Miss) A.M. Jelliffe, M.D.	The use of iodine ^{131} and phosphorus^{32} in the diagnosis and treatment of disease
P.E. Bodkin I.S. Cade (Miss)	Stationary and moving field techniques in treatment by external irradiation with gamma and X-rays
M. Sutton	Treatment by a combination of radiotherapy with surgery, chemotherapy and hormone therapy
	Clinical research into the life history and response to treatment of various forms of cancer and methods of treatment

Bone marrow replacement:

The use of heterologous and autologous bone marrow in the treatment of widespread radiosensitive tumours is being investigated

Carcinoma of breast:

Survey of 1500 cases of carcinoma of breast treated at the Middlesex Hospital 1947-1952. Results to be considered in relation to clinical stage and histology before treatment, the treatment policy and radiotherapeutic technique employed

Investigation into effect on thyroid function of irradiation of lateral part of thyroid gland during treatment to supra-clavicular glands

Research into relationship between histology and progress of disease and response to treatment—to continue

An investigation into hypophysectomy as a method of treating advanced breast cancer

A trial of thiophosphoromide is being undertaken in the treatment of advanced breast cancer

Carcinoma of uterine cervix:

Investigation into the results of treatment of Stage I and Stage II cases by a full course of intracavitary radiation with radium followed by Wertheim's hysterectomy

The effect of deep X-ray therapy on the bone marrow and peripheral blood:

Immediate and long term effects

12. Surgery

R.V. Hudson	The surgery of the thyroid gland and auto-immunity
E.W. Riches, M.C.	New growths of kidney and bladder
D.H. Patey	Diseases of the parotid, and gustatory sweating
R.S. Handley, O.B.E.	Investigation of spread of breast carcinoma with special reference to the internal mammary chain
O.V. Lloyd-Davies	The surgery of secondary deposits in the liver
L.P. LeQuesne	Post-gastrectomy syndrome
M. Hobsley	The effect of operation on respiratory function

13. Surgery, Thoracic and Cardiac

T. Holmes-Sellors	Surgery of the heart

51 London University Postgraduate Medical School of London

1. Anaesthetics

H. Woodfield-Davies (Head of Department)	
J.P. Payne	The effects of carbon dioxide inhalation on the sensitivity of the cat and man to neuromuscular blocking agents
	Cardiac output changes under halothane anaesthesia
	Investigation of the use of Coomassie blue dye for measurement of cardiac output and blood volume during anaesthesia
M.K. Sykes	Development of apparatus for intermittent positive pressure respiration in the neonate
	Oxygen consumption studies in tetanus neonatorum
J.F. Nunn, Ph.D.	Measurement of oxygen tension of blood by polarography
	Study of effects of resistance to breathing during anaesthesia
	Investigation of effects of graded concentrations of carbon dioxide in the anaesthetized dog

2. Biochemistry

See Pathology

Chemical:

3. Biophysics

D.K. Hill	Physiology of muscle
G.R. Ball	Medical engineering
E.H. Belcher, Ph.D.	The use of radioactive isotopes in medical research
J.E. Pallett	Medical electronics

4. Haematology

Professor J.V. Dacie, M.D.	Pathogenesis of haemolytic anemia in man
J.C. White	Nucleoprotein metabolism of human tissues
	*Haemoglobin metabolism and abnormal haemoglobins
	Mucoproteins of bronchial secretions
D.L. Mollin	†Megaloblastic anaemias and metabolism of vitamin B^{12} and folic acid
P.L. Mollison, M.D. (Director, M.R.C. Blood Transfusion Research Unit)	Mechanisms of red cell destruction *in vivo* in relation to antibody characteristics

*Supported by Colonial Medical Research Committee grant
†Supported by M.R.C. grant

5. Medicine

Professor J. McMichael, M.D., F.R.S.	Haemodynamic studies in heart failure and hypertension
Professor R. Fraser, M.D.	Thyroid disorders. Bone metabolism. Diabetes
Professor E.G.L. Bywaters	The natural history of rheumatoid arthritis and other connective tissue diseases. Therapeutic trials
A. St.J. Dixon, M.D.	Gout. Connective tissue lipids
C.L. Cope, D.M.	Adrenal function in disease
C.M. Fletcher, C.B.E., M.D.	Epidemiological and laboratory studies of the aetiology and evolution of chronic bronchitis
J.F. Goodwin, M.D.	Congenital and acquired heart disease in relation to cardiac surgery Electrocardiography and angiocardiography The pulmonary circulation in heart disease
M.D. Milne, M.D.	Renal tubular function in health and disease; biochemistry of uraemia; tryptophan metabolism
*P. Hugh-Jones, M.D.	Lung function studies, including mass spectrometric and radioactive gas analysis to measure lobar and segmental lung function
*J. Shillingford, M.D.	The study of circulation by indicator dilution curves Direct measurement of intracardiac and intravascular velocity in man Studies on heart failure
C. Pallis, D.M.	Spinal cord circulation Treatment of epilepsy Electroencephalographic disturbance in brain stem disorders
C.C. Booth, M.D.	Sites of absorption in the small intestine and their relationship to conditions of malabsorption Pathogenesis of malabsorption in different conditions

6. Microbiology

Bacteriology:

Professor Lord Stamp	Immunity to staphyloccocal infection
M. Barber (Miss), M.D.	Study of antibiotic resistance in staphylococci
D.A. Mitchison	†Drug resistance in the chemotherapy of tuberculosis
A.C. Dutton	Cross-infection in hospital wards
N. Datta (Mrs.), M.D.	The bacteriology of chronic bronchitis

7. Pathology

Professor C.V. Harrison, M.D.	Pulmonary vascular disease Experimental pneumoconiosis
†A.G.E. Pearse, M.D.	Enzyme histochemistry
B.E. Heard, M.D.	Pulmonary emphysema and chronic bronchitis
‡I. Doniach, M.D.	Thyroid regeneration

*Part-time member of M.R.C. staff
† Supported by M.R.C. grant
‡ Supported by grant from the British Empire Cancer campaign and M.R.C.

7. Pathology (*continued*)

Chemical:

Professor E.J. King, Ph.D., D.Sc.	*§Experimental silicosis and pneumoconiosis Phosphatase: biochemical methods of analysis
W. Klyne, Ph.D., D.Sc.	Urinary steroids Stereochemistry of natural products †M.R.C. steroids reference collection ‡Rotatory dispersion of organic compounds
I.D.P. Wootton, Ph.D.	*Bile acid metabolism and infra-red spectrometry of steroids *Clinical chemistry *Haemoglobin standardization
C.E. Dalgliesh, Ph.D.	*Isotopic and nutritional studies of amino-acid metabolism and protein biosynthesis *Excretory patterns as an index of biochemical status
I. MacIntyre	Measurement of total body composition Isotopic and flame photometric studies of magnesium metabolism Electrophoresis on filter paper
L.G. Whitby, Ph.D.	Metabolic balance techniques Pressor amines
R.M. Haslam (Miss)	Metabolic balance during diuretic therapy Clinical chemistry

8. Radiodiagnosis

R.E. Steiner, M.D. (Head of Department)	Cine-radiography with the aid of image intensifier The radiological assessment of pulmonary hypertension Lung function studies with the aid of the photoelectrical density measurements of the lung and the image intensifier Ablation of the pituitary gland by yttrium seed implantation under direct fluoroscopic control, with the aid of image intensifier
J.W. Laws	Radiological study of the alimentary tract in the megaloblastic anaemias The correlation of the radiological and pathological appearances in pulmonary emphysema

9. Surgery

Professor I. Aird and others	The nature of the relationship between the ABO blood groups and cancer Experimental cancer of the stomach Surgical problems in obstructive jaundice
J. Calnan	Repair of experimental cleft palate Genetics of cleft palate
W.P. Cleland H.H. Bentall M. Bishop and E. Lloyd-Jones	Clinical application of the Melrose extra corporeal heart/lung machine Problems in intra-cardiac surgery
*W.J. Dempster	Tissue and organ transplantation
R.H. Franklin	Clinical research in oesophageal surgery
G.C. Knight	Spinal fixation by buried artificial prostheses

* Supported by M.R.C. grant
† Maintained on behalf of the M.R.C.
‡ Supported by D.S.I.R. grant and contract from U.S. Army Research and Development Group
§ Supported by N.C.B. grant

9. Surgery (*continued*)

P. Martin	The physiology and diseases of the peripheral vessels Arterial homotransplantation
D.G. Melrose	Perfusion methods for patients and organs
A.K. Monro	The effects and results of herniorrhaphy
R. Shackman	The behaviour of the circulation under anaesthesia and at operation Ureteric transplants Electrolyte metabolism in surgical and urological patients Radioactive methods of measurement of cardiac output The artificial kidney in clinical application
N. Struthers	Physiology of the ureter Artificial ureter
*S. Taylor	Studies of goitre and thyroid function with the use of radioactive iodine

52 London University
Royal Dental Hospital of London School of Dental Surgery

1. Dental Studies

Children:

J.H. Hovell	Clinical research into the surgical procedure for the correction of mandibular prognathism
P.M.C. James	The frequency and nature of carbohydrate consumption and its relationship to dental caries experience A study of dental caries, gingivitis, calculus, oral hygiene, hypoplasia, mottling and stains on the teeth in high and low fluoride areas in England A serial study of the relationship between bone age, tooth development, and chronological age in orphanage children (Harpenden growth study)
G.B. Winter	Abscess formation in deciduous molar teeth

Conservative:

M.R. Bennett	Resorbable paste in the treatment of pulpless teeth
G.F. Kantorowicz	Study of oral flora with reference to topical applications The evaluation of copper amalgam from a biological, chemical and physical view point Failures of amalgam fillings with special reference to cervical cavities
H.M. Pickard	A histological study of the amelo-dentinal junction

Prosthetics:

Professor A.O. Chick, Ph.D.	Relation between mandibular movements and the shape of teeth Permeability of enamel

2. Orthodontics

D.P. Walther	A statistical survey into the effects of skeletal and soft tissue morphology and muscle behaviour on the occlusion of the teeth. The incidence of cleft palate, hare lip, caries, gingivitis, premature loss, environmental factors and fluorine are also taken into account Survey divided into groups which include; a normal cross-section of children, children attending an orthodontic clinic, children with cleft palate and hare lip

* M.R.C. grant

3. Pathology

Professor R.B. Lucas, M.D.	Pathology of oral tumours Pathology of periodontal disease
H.J.J. Blackwood	Histology of the developing temporo-mandibular joint Microscopic anatomy of the dental tissues, particularly cellular morphology
J.D. Spouge	Pathology of periodontal disease

4. Periodontology

A.B. Wade	Recession of the periodontal tissues round mandibular incisor teeth Regeneration and reattachment of periodontal tissues Antibiotics in gingivectomy packs Inhibition of calculus deposition Clinical assessment of different drugs in therapy of Vincent's ulcerative gingivitis Survey of the incidence of caries, gingivitis and other factors in Iraqi and British children

5. Radiodiagnosis

S. Blackman	Rotagraphy and its extra dental applications Bone regeneration in the upper and lower jaws Radiographic control in interproximal disease Radioactive isotopes in dental science Radiographic observation in the development of skull and teeth

6. Surgery

D. Greer Walker	Gross developmental errors of the face Facial asymmetry in the newborn

53 London University
Royal Free Hospital School of Medicine

1. Anaesthetics

R.A. Green	An investigation into the clinical value of a new short acting barbiturate—methohexital. The investigations are being carried out in three phases:— A comparative study of methohexital and thiopentone involving electroencephalographic studies on volunteers A clinical study into the behaviour of 500 outpatients in whom anaesthesia has been induced prior to dental extraction with an intravenous injection of methohexital A study into the recovery period of volunteers in whom sleep has been induced with an intravenous injection of methohexital. This study chiefly involves an assessment of the subject's ability to drive a car and is being carried out on a 'Miles trainer'

2. Anatomy

Professor R.E.M. Bowden, D.Sc.	The pattern of innervation of facial muscles Anatomy of the recurrent laryngeal nerve, including a comparative study
with J.R. Napier	Factors affecting functional recovery after peripheral nerve injury in man
Professor (Emeritus) M.F.L. Keene, D.Sc.	A study of nerve endings in human laryngeal and palatal muscle
J.R. Napier	Functional anatomy of the primate hand Reconstruction and study of the limb bones of *Proconsul africanus*
P.R. Davis, Ph.D.	The functional anatomy of the axial skeleton in man and animals Radiological investigations of the internal structure of the bones of modern and fossil primates, with particular reference to *Proconsul africanus*
P.C.B. MacKinnon (Mrs.), Ph.D.	Sexual, season and age changes in the endocrine system of man and lower animals Sexual seasonal, age and stress effects of palmar sweating in man and in relation to endocrine activity

3. Biochemistry

A. Lawson, Ph.D., D.Sc. (Head of Department)	Synthesis and mode of action of antithyroid substances Synthesis and physiological activity of heterocyclic compounds with five-membered rings Synthesis and action of sympathomimetic drugs
R.A.F. Bullerwell, Ph.D.	Polarographic analyses
F. Kurzer, Ph.D., D.Sc.	Chemistry of urea and thiadiazoles
E.O'F. Walsh, Ph.D.	The effects on intermediate metabolism of habit-forming drugs
B.E. Ryman (Miss), Ph.D.	Quantitative studies of oestrogenic substances in relation to behaviour in the cat
H. Baum, Ph.D.	Function of mammalian arylsulphatases Structure of bacterial polysaccharides

4. Biology

C.L.T. Lucas (Miss) (Head of Department) A.M. Hughes (Mrs.), Ph.D.	Systematics and life-histories of Acari with special reference to those associated with stored foods
A.M. Baxter (Mrs.), Ph.D.	Cytology and histology of mammalian and reptilian adenohypophysis

5. Cardiology

F.V. Gardner (Miss), M.D.	Work on anticoagulant factors in the blood in normal individuals and in patients with myocardial infarctions Clinical trial of a new oral diuretic

6. Dermatology

C.D. Calnan	Biochemical changes of the horny layer of the skin in psoriasis Attempts at isolation of cancer antigens

7. Haematology

P.E. Thompson Hancock K. Booth (Mrs.), M.D. (under aegis of W.J.D. Fleming)	A study of the haemoglobin levels and differential white blood counts on a group of about 120 healthy volunteers over a period of four years. Technique standardized to try to assess any seasonal or other variations

8. Medicine

H.A. Kellgren (Miss) with E. Preiskel (Mrs.)	Spastic colon causing referred pain in the left leg
Professor S. Sherlock	The mechanism of hepatic coma
with B.H. Billing	Bile pigment metabolism in jaundice
with A.M. Dawson	The mechanism of fat absorption from the intestime Electrolyte changes in liver disease
A.T. Richardson	Serology of the collagen diseases with particular reference to muco-proteins Electromyograms in muscle fibre diseases (myopathies)

9. Obstetrics and Gynaecology

J.A.M. Moore (Miss) (Director)	
M.E. Egerton (Miss)	Evaluation of the vaginal smear as an index of endocrine function with particular reference to the diagnosis and treatment of the disorders of menstruation and the problems of infertility
L. Epsztejn (Miss)	Investigation into the possible relationship between length of gestation and nutritional and metabolic factors
Fertility Studies:	
M. Moore White (Miss), M.D.	Investigation into the effects of hydrotubation: The value of oral prednisone therapy ovaid: effects of the administration of whole gland ovarian products, i.e. ovaid, on infertile women
with P. Wade (Miss) (Radiotherapy Department)	Treatment of a series of infertile women with failure of ovulation by pituitary irradiation

10. Paediatrics and Child Health

U. James (Miss) with A.L. Hunter (Miss)	An investigation of stosstherapy in haemolytic streptococcal throat infections

11. Pathology

Professor K.R. Hill, M.D. (Head of Department)	Studies on liver disease, including experimental studies in veno-occlusive disease Hepatic carcinoma caused by the pyrrolizidine compounds (*Senecio* and *Crotalaria*) Comparative pathological and experimental studies of cardiovascular disease Cytological diagnosis of gastric carcinoma
D.N. Baron, M.D.	Endocrinological and metabolic aspects of hypophysectomy for carcinomatosis Steroid-hormone activation of enzymes Body fluids and hormone changes in cyclical psychoses Chemical anatomy of leucocytes in body fluid disturbances
F.M.T. Crowley (Miss)	Study of strains of *Streptococcus pyogenes* associated with acute glomerulonephritis and rheumatic fever, and antigenicity of streptococcal starch Systematic study of biological properties of *Vibrio jamaiciensis* Isolation of viruses from parturient mothers and their infants
G.B.D. Scott, M.D.	Pathological and experimental studies on vascular disease, including thrombosis and embolism The biological assay of coagulability Studies in the formation and on the nature of "fibrinoid" Experimental study of endocardial fibrosis

12. Pharmacology

Professor E. Zaimis	Neuromuscular blocking drugs
Mrs, (M.D.)	Hypotensive drugs
J.R. Hodges, Ph.D.	Sympathomimetic amines
M.J. Maclagan (Miss)	On the mode of action of reserpine
	The mechanisms controlling the adrenocorticotrophic activity of the adenohypophysis
	The determination of corticotrophin in biological fluids

13. Physics

H.A.B. Simons, Ph.D. (Head of Department)	The use of scintillation spectrometry techniques in the investigation of the determination of the position and strengths of γ-ray sources situated in scattering media
	Measurement of electron diffusion in plastic scintillators
M.E. Monk-Jones (Mrs.)	An investigation into the viscous properties of synovial fluid
K. Stratton (Mrs.), Ph.D.	High level γ-ray dosimetry
R.B.J. Palmer (Mrs.), Ph.D.	The determination of the α-particle stopping power of water in different phases using a photographic emulsion and other techniques
H.G. Frost	An investigation into the photographic action of low energy electrons

14. Physiology

Professor E. M. Killick, D.Sc.	Carbon monoxide hypoxia
	Resuscitation from acute carbon monoxide poisoning
C.B.B. Downman, Ph.D.	The sites of origin of inhibitory impulses affecting thoracic and other spinal reflex arcs, including the autonomic outflow
M.W. Duckworth (Mrs.)	Acclimatization to hypoxia in the rat
R.E. Moore, Ph.D.	Temperature regulation in the newborn kitten
P.P. Scott (Mrs.), Ph.D.	Factors affecting retention of calcium, phosphorus and nitrogen on high protein diets
	Dietary requirements of the cat
	Hormonal regulation of behaviour and reproductive activity
H.N. Duke (Miss), Ph.D.	Vasomotor control of the pulmonary circulation: circulatory changes in relation to oxygen diffusing capacity

15. Psychiatry

F. Brown, D.M.	The breavement factor in depressive illness. A study of 216 cases of depressive illness at Hampstead, comparing the incidence of childhood breavement with that of the general population
S.W. Hardwick, M.D. A. Elithorn, M.D. N. Swift (Mrs.) J.L. Crammer S. Wiseberg J.M. Mott (Miss) A.V. Francis (Mrs.)	The evaluation of treatment in psychological medicine. The physiology and psychology of depression

16. Radiotherapy

P. Wade (Miss) J.D. Crowley	Clinical study of the effect of oxygenation during radiotherapy
D.N. Baron, M.D. M. Gore (Mrs.), Ph.D. (with Department of Pathology)	The effect of certain potential irradiation protecting compounds of the 5-hydroxytryptamine (5HT) series

16. Radiotherapy (*continued*)

P. Wade (Miss) with J.G.S. Crabbe (Department of Pathology)	Vaginal cytology
P. Wade (Miss) with E.J. Radley Smith	Ablation of the pituitary Ablation of pituitary by hypophysectomy continued with implantation of radioactive gold grains. Radiation ablation by implantation of radioactive gold under stereotaxic control has been attempted in a few cases

17. Surgery

D. Downton and G.L. Fordyce with R.A. Green (see under Medicine) with D.C. Calnan and Professor K.R. Hill (see under Medicine and Pathology for names)	The use of intravenous anaesthesia (methohexital sodium) for dental extractions Investigation into the conditions of black hairy tongue
H. Daintree Johnson	Research on the changes in blood volume which follow haemorrhage and which result from blood transfusion. Comparison of results obtained by haemoglobin estimations and by radioactive tracer techniques
H.E. Hobbs	The ocular effects of chloroquine The early diagnosis of orbital tumours
J.P. Hopewell	Renal response to added load following urinary diversion into intestine-clearance studies and radioactive diodrast renogram Storage and transplantation of the kidney as a homograft
J. Minton	Ocular manifestations in paediatric medicine

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St. Bartholomew's Hospital Medical College

1. Anaesthetics

I.R. Ballantine	Hypophysectomy in relation to anaesthesia Electrocardiographic changes produced by trichlorethylene and halothane
R. Bowen	Variable speed motor-driven syringe for continuous injection Anaesthesia in operation for the relief of portal hypertension Airway resistance during anaesthesia
C. Langton Hewer	Development of ribbed mattress and bolster to retain patients in Trendelenburg position

2. Anatomy

Professor A.J.E. Cave, M.D., D.Sc.	Anatomy and morphology of human pharynx Cranial morphology of Rhinocarotidae Pneumatic osteolysis in mammalian cranium Posture of fossil man Comparative anatomy of primate nasal fossa
M.J. Blount, Ph.D.	Vascular anatomy of cranial and peripheral nerves Ischaemic degeneration of nerve fibres
C.J. Porteous, M.B.	Morphology of human and mammalian epiphyses Pneumalization of primate temporal bone

3. Biochemistry

Professor A. Wormall, D.Sc., F.R.S.	Immunochemistry (mainly using isotopically labelled antigens and antibodies) Cancer research (zinc and tumour tissues) Chemotherapy (the fate of nitrogen mustards and the trypanocidal drug suramin after their injection into the animal body) Radiobiology (the action of radiations on complement, antigens and enzymes)
G.E. Francis, D.Sc.	Immunochemistry Chemotherapy
E.D. Wills	Enzymology Radiobiology (the action of radiations on enzymes, etc.)
J.D. Hawkins	Immunochemistry

4. Cardiology

G. Hayward, M.D. (Head of Department)	Use of nitrous oxide in diagnosis of left to right intracardiac shunts
D. Weitzman, M.D.	A study of the heart sounds after mitral valvotomy Relationship between ischaemic heart disease and hiatus hernia Follow-up of electrocardiograms and serum lipids in symptomless middle-aged men
J. Wedgwood, M.D.	Study of effects of exercise on electrocardiograms of hypertension Study of angina of effort with serial exercise tests
with A. Jones, M.D. (Department of Radiotherapy)	Study of effects of radiations on the heart
with K. Heathfield, M.D.	Study of electrocardiogram in polymyositis Study of effects of tachycardia on the electrocardiogram
G.H. Apthorp with M. Henderson (Miss)	Method of measuring carbon monoxide in blood
with J.C. Hoyle, M.D. H.C. Smellie (King's College Hospital)	Effect of corticosteroids on pulmonary function in sarcoidosis
	Effect of bilateral upper thoracic ganglionectomy in angina of effort
with R. Marshall	Diffusion capacity: a comparison of breath holding and steady methods using CO.
with D. Lacey, Ph.D. (Department of Zoology)	Study of changes occurring in alveolar walls and lung capillaries in patients with mitral stenosis; using electron microscope Respiratory function in mitral stenosis before and after mitral valvotomy Study of pulmonary capillary blood volume in left to right cardiac shunts

5. Dental Studies

G.T. Hankey, O.B.E., T.D.	Diseases and complaints of the temporo-mandibular joint
G.A. Cowan	Physiology of the gingival epithelium

6. Dermatology

R.M.B. MacKenna, M.D. P.F. Borrie, M.D.	Research and investigation is continually being pursued on clinical matters ranging from lupus erythematosus to alopecia ariata. Purely scientific research has also included a wide range of subjects from the behaviour of radioactive mercury and zinc when applied to human skin to the action of chymotrypsin on the skin

7. Medicine

A.W. Spence, M.D. R.R. de Mowbray, D.M. A.W. Spence, M.D. V.C. Medrei, M.D. A.M. Robinson (Mrs.), D.Sc.	Treatment of adrenal virilism with steroids
A.W. Spence V.C. Medrei	Testosterone in the treatment of defective spermatogenesis
C.W.H. Havard, D.M. J.C.B. Fenton	Evaluation of the oral diuretic hydrochlorothiazide
C.W.H. Havard, D.M.	Investigation of refractory anaemias
R.M. Buckle	Evaluation of the oral androgen, fluoxymesterone
M.P.S. Foulds (Miss) D. Mendel R.R. de Mowbray, D.M.	Changes in serum potassium and arterial blood pH in respiratory acidosis
R.R. de Mowbray, D.M.	Dietary fat and serum lipids in coronary disease
E.F. Scowen, M.D. R.W.E. Watts J.C. Crawhall B.M. Dean	General nature of research, metabolic and endocrine:— The investigation of hyperoxaluria and the metabolic defects giving rise to this condition. Full investigation of the sources of oxalate in normal and pathological conditions
E.F. Scowen (with the Surgical Professorial Unit, St. Bartholomew's Hospital and the Imperial Cancer Research Fund)	The investigation of hormone dependent cancer and the factors which influence dependence and non-dependence
E.F. Scowen A.K. Thould	The investigation of familial goitre and its associations, particularly congenital deafness
A.G. Spencer, G.M., M.D. W.R. Cattell	The transport of amino-acids by the renal tubules The development of new tests of renal function, especially in hypertension and renal disease. Urinary excretion of enzymes in renal disease

8. Neurology

J.W. Aldren Turner, D.M. K.W.G. Heathfield, M.D.	Quadriceps myopathy occurring in middle age: a clinico—pathological study
J.W. Aldren Turner, D.M.	Neuralgic amyotrophy: a follow-up study

9. Neurosurgery

J.E.A. O'Connell	Involvement of the spinal cord by intervertebral disc protrusion Surgery in cervical spendylosis Lumbar intervertebral disc protrusions in pregnancy Lumbar intervertebral disc protrusions in childhood and adolescence Intracranial meningiomata associated with other tumours of the nervous system Intracranial aneurysms causing subarachnoid haemorrhage, their surgical treatment and an assessment of its value Surgery in the management of intractable pain
J. Andrew	Osteomata of the paranasal sinuses Tracheostomy in the management of the unconscious patient

10. Obstetrics and Gynaecology

J. Beattie, M.D. (Head of Department)	
J. Howkins, M.D.	The continued study of the surgical treatment of carcinoma of the cervix by synchronous combined abdomino-vaginal hysterocolpectomy
E.A.J. Ament	Vacuum extractor: a study of a new obstetric instrument to accelerate labour
	Clinical pelvimetry: detailed clinical study of 537 nulliparae
	Foetal phonocardiography: a study and recording of normal and abnormal foetal heart sounds with an experimental amplifier
	Progesterone implants: a study of 200 mgm. implants as prophylaxis against abortion
G.L. Bourne	A study of the anatomy, physiology and pathology of human amnion and chorion, including electron microscopic structure, and the preparation of a monograph
	Study of the transfer of materials across the human foetal membranes using colloidal gold
	A clinical study of the effect of folic acid in the treatment of subclinical macrocytic anaemia of pregnancy
	A trial of progestogenic hormone in the treatment of herpes gestationis
B. Measday	The analysis of the complications of hysterosalpingography

11. Ophthalmology

H.B. Stallard, M.B.E., T.D., M.D., LL.D.	The irradiation of malignant intra-ocular neoplasms—retinoblastoma and malignant melanomata
	Surgical access to the orbit in particular relation to the exposure and removal of dermoid cysts and neoplasms and for decompression
	Pigmented tumours arising in corneal epithelium
J.H. Dobree	A survey of the factors involved in the failure of fistula-forming operations for glaucoma
	The influence of hypotensive drugs on the retinal vessels
	Significance of colloid bodies in the fundus
	The factors which influence calibre changes in the retinal vessels
D.W. Hill	Epiphora—clinical assessment and operative relief

12. Paediatrics and Child Health

C.F. Harris, M.D. R.A. Shooter, M.D. P.A. Manfield (Miss)	A study of the acquisition of staphylococci by newborn babies, and its relation to sepsis
C.F. Harris, M.D. S. Mason, M.D.	On gastric digestion of the newborn
C.F. Harris, M.D. P.A. Manfield (Miss)	A study of placental weights and their relation to birth weights and subsequent development
C.F. Harris, M.D. S. Mason, M.D.	On the relationship between the Koratkow and the Flush methods of blood pressure recording in infants

13. Pathology

Professor J.W.S. Blacklock, M.D.	Lung cancer and its experimental production
	Mechanism of spread of tuberculosis in the body
	Effect of products of combustion on bacterial growth
Professor L.P. Garrod, M.D.	Studies in activity, absorption, excretion and therapeutic value of newly-discovered antibiotics

13. Pathology (*continued*)

A.B. Anderson, M.D.	Methods of measuring thyroid function The nature of the melanogen excreted in malignant melanoma The inhibition of alkaline phosphatases by hydroxyphenols and catechols
H.F. Brewer, M.D.	The titre of the indirect antiglobulin test for Rh antibodies in maternal serum The use of pure albumin for restoration of blood volume in shock Specific auto-immune antibodies in acquired haemolytic anaemia
R.J.R. Cureton, M.D.	Investigation of pathological specimens by X-ray diffraction methods
J.C.B. Fenton	Investigation of blood ammonia in health and in disease
W.J. Hanbury, M.D.	Primary and secondary tumours of the heart
H. Lehmann, M.D.	Pseudocholinesterase Abnormal haemoglobins
A.M. Robinson (Mrs.), D.Sc.	Urinary ketosteroids in adrenal tumours
R.A. Shooter, M.D.	Spread of staphylococcal infection in hospital wards Antibiotic resistance of staphylococci in out-patients
A.G. Stansfeld	The pathology and experimental production of arterial necrosis and necrotizing arteritis Pathology of bone cysts
P. Story, M.D.	Blood platelet changes in anaemia Auto-immune mechanisms in thrombocytopenia

14. Pharmacology

J.P. Quilliam and staff	Analysis of mode of action of general anaesthetics, hypnotics and tranquillizer drugs using conventional and electropharmacological techniques to study responses at peripheral synapses. Pharmacology of smooth muscle relaxants
D.F.J. Mason	Ganglionic effects of anticholinesterases
P.M.G. Bell	Application of electronic techniques to pharmacological research
B.W. Payton	The electropharmacology of the skeletal neuromuscular junction
P.D. Mulcahy	Assessment of tranquillizer action in man

15. Physics

Radiation:

Professor J. Rotblat, Ph.D., D.Sc.	*Radiation research:* effects of ionizing radiations on matter particularly on living tissue
T.E. Banks, Ph.D. E. Rollinson, Ph.D. S. Lovell, Ph.D.	*Nuclear physics:* structure and properties of nuclei of light atoms *Medical physics:* clinical uses of radiations and radioactive isotopes The use of a pulse-neutron source for the study of radiation effects in materials Yield of secondary electrons from thin foils in a high energy electron beam Determination of lifetime of radicals produced by ionizing radiation Detection of early radiation changes in proteins by means of electron spin resonance Action of radiation on urease and other enzymes, complement and trypanosomes

15. Physics (*continued*)

Radiation (*continued*)

Professor J. Rotblat, Ph.D., D.Sc.	Dose-rate effects in irradiated enzymes
	Oxygen effect in the inactivation of enzymes
T.E. Banks, Ph.D.	Effects of radiation on nucleic acids
E. Rollinson, Ph.D.	Effect of high dose-rates on survival curves of yeast
S. Lovell, Ph.D. (*continued*)	Electron microscope studies of radiation effects in cells
	Induction of malignant disease, life shortening and ageing of mice by ionizing radiation
	Dependence of acute and long term effects of radiation on age at irradiation
	Effect of parent irradiation of mice on their offspring
	Influence of dose-rate on acute and long term effects of radiation in animals
	The effect of oxygen tension and oxygen consumption during whole-body irradiation of animals
	Radiation-induced lens opacities in mice
	Induction time of radiation damage
	Photo-disintegration and electron-disintegration processes
	Short lived radioactivity produced by a pulsed beam of electrons
	Angular distributions of nuclear disintegrations produced by helium nuclei
	Energy distribution of particles in controlled thermonuclear reactions
	Monitoring and dosimetry of high energy X-ray and electron beams
	The possible use of mixed X-ray and electron beams in radiotherapy
	Physical principles underlying the use of 15 MeV electrons in therapy
	Investigation on the use of telecurietherapy units
	The uptake of radioactive iodine I^{131} and I^{132} for the study of the thyroid function, particularly on patients with carcinoma of the thyroid
	The use of radioactive krypton in the investigation of cardiac shunts
	The use of radioactive chromium and iron in the study of various types of anaemia
	Investigation into electromyography
	The use of an electromagnetic flowmeter in blood flow studies
	High voltage and low voltage electrophoresis
	Development of electronic aids for speech improvement
	Development of cardiac tachometers
	Radiation dose received during diagnostic procedure over a wide range of dose intensities
	Development of a foetal heart rate recorder
	Investigation on the ultrasonic frequencies of a turbo driven dental drill
	The radiation dose received by patients injected with thorotrast
	Study of thorotrast turnover in animals
	Study of pollution of the atmosphere with radioactivity

16. Physiology

Professor M. de B. Daly	Cardiovascular reflexes from the carotid sinus and carotid body with special reference to haemodynamic changes in the pulmonary circulation, and the role of the chemoreceptors in the responses caused by systemic hypoxia

16. Physiology *(continued)*

D.A. McDonald, D.M., D.Sc.	Haemodynamics with special reference to the arterial system
F.J. Aumonier	A histological study of the responses of human tissues to similar stimuli at different ages
	Comparative histological studies
J.G. Widdicombe, D.Phil.	The study of afferent nervous activity arising from the lungs and its reflex responses, both on the respiratory muscles and on pulmonary smooth muscle
E.A. Ullman (Miss), Ph.D.	Renal function with special reference to water and electrolyte metabolism

17. Psychiatry

W. Linford Rees, M.D. (Head of Department)	Double blind controlled trials of new drugs in psychiatric treatment, e.g. chlorpromazine, acetyl promazine; anti depressants such as iproniazid, phenelzine and tofranil
	Studies of psychosomatic relationships in asthma, chronic urticaria, hay fever, vasomotor rhinitis with comparable studies of control groups
	Metabolic and endocrine changes associated with post partum mental disorders and premenstrual syndromes
	Continuing research on temperamental and behavioural correlates of physical types

18. Radiotherapy

I.G. Williams (Head of Department)	An investigation of the physical problems involved in radiotherapy at energies of 1 to 15 MeV
A. Jones, M.D.	
G. Innes	Studies of ionization in heterogenous media at these ranges of MeV
	A clinical study of radiation-induced cancer in man
	The effects of irradiation on the heart
	A particular study of some tumours, e.g. tumours of the thymus, tumours of the glomus jugulare, retinal glioma and other tumours in children, carcinoma rectum, cerebral tumours

19. Statistics

Medical:

M.P. Curwen	Collaboration with clinical and other departments on various research projects

20. Surgery

Professor Sir J. Paterson Ross, K.C.V.O.	Clinical and experimental investigation of lymphoedema
G.W. Taylor	Clinical and experimental study of the use of prostheses in occlusive arterial disease
	Measurement of oxygen availability in ischaemic tissue
	Clinical and experimental investigation of staphylococcal wound infection
G.J. Hadfield	Clinical and experimental study of the endocrine factors associated with breast cancer and gynaecomastia
M.A. Birnstingl	Clinical and experimental study of pancreatography and the effect of pancreatic duct observation
	Study of experimentally produced hypertrophic pulmonary osteoarthropathy
	An investigation of digital artery disease
J.D. Griffiths with C. Naunton Morgan	Investigation of the blood supply of the colon: topographical distribution of the inferior mesenteric artery in dissected specimens and in injected post-mortem specimens

20. Surgery (*continued*)

C. Naunton Morgan J.D. Griffiths	The mucosal blood supply in the intra-mural anastomosis investigated by using a microradiographic technique
with C. Naunton Morgan (*continued*)	Aetiology of ulcerative colitis: The natural history of the disease and follow-up of patients Investigation of the vascular abnormalities occurring in the mucosa and in the wall of the large intestine in cases of ulcerative colitis. The normal 17-hydroxy-corticoids excreted in the urine in cases of ulcerative colitis
with A.M. Robinson (Mrs.), D.Sc. (Clinical Pathology Department)	The long term follow-up of untreated mild cases
with R.A. Shooter (Bacteriology Department) and the M.R.C. Cross Infection Unit, Colindale	Investigation of the dissemination and cross-infection in the ward of resistant staphylococci
with the Physiotherapy Department	Osteo-arthritic changes in the cervical spine Investigation into the anatomical, pathological distribution of osteophytic derangements of the joints of the cervical spine in relationship to their symptomatology and consequent treatment by manipulation and traction: Series of patients followed up for a period of 2 years
W.M. Keynes, M.D.	Investigation of the lymphatics of the colon and rectum: An attempt is being made to inject the lymphatics of removed portions to collate their topography with disease of these organs. Both micro-radiographic and microscopic techniques are also being used Investigation of the use of corticosteroids in the therapy of metastases of carcinoma of the breast: As a therapeutic test for endocrine surgery As alternative therapy to endocrine surgery An attempt is being made to obtain objective findings for improvement following the use of corticosteroids, with particular emphasis on calcium metabolism Investigation of patients with possible hyperparathyroidism Investigation in the diagnosis of adult hypertrophic pyloric stenosis: The collation of radiological findings with operative and pathological findings
A.H. Hunt, D.M. P. Knipe	Portal hypertension

21. Surgery, Thoracic

O.S. Tubbs R.L. Hurt I.M. Hill D. Mendel E. Shocket P.R. Slade B.G. Wells	An investigation into the efficiency of the Gaertner-Kay pump-oxygenator compared with the Melrose machine

22. Venereology

C.S. Nicol, T.D., M.D.	Partial resistance of gonococci to penicillin Investigation of a new trichomonicidal drug

23. Zoology and Comparative Anatomy

A.J. Marshall, D.Phil., D.Sc. (Head of Department)	Physiology of reproduction
D. Lacy, Ph.D.	Experimental cytology
B. Lofts, Ph.D.	Physiology of reproduction
R.M. Bellairs, Ph.D.	Experimental embryology

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1. Anaesthetics

No information

2. Cardiology

B. Robinson A.G. Leatham	Development of a test for measuring cardiac output on exertion using indicator dilution curves Development of an indirect method for recording the central arterial pulse and its comparison with direct recordings
B. Segal with A.G. Leatham	Long term study of children with innocent systolic murmurs. Mainly concerned with assessing the relation of the murmur on the phonocardiogram to the heart sounds and to a central arterial pulse
H. Shafter	A study of splitting of the second heart sound in normal subjects and patients with atrial septal defect
P. Sleight	Investigation of serum salicylate levels at intervals using four different varieties of aspirin Investigation of cardiac output following acute cardiac infarction
G. Mitchell K. Jefferson A.G. Leatham	Development of cine-angiocardiography Development of coronary angiography and visualization of the aortic valve Diagnosis of ventricular septal defect by cine-angiocardiography
T. Pilkington, M.D. A.G. Leatham A. Stafford	Long term study of the treatment of coronary artery disease with anticoagulants, low fat diet, etc.
B. Segal	Relation of intracardiac phonocardiograms to pressure pulses

3. Medicine

Professor A.C. Dornhorst, M.D.	Peripheral vascular control
T. Pilkington, M.D.	Plasma lipoproteins in disease and their modification by diet

4. Neurology

D. Williams, C.B.E., D.Sc., M.D.	Affective disturbances in epilepsy, with special regard to the representation of emotional patterns in the temporal lobes of the human brain The syndromes caused by disturbance of blood flow in the basilar artery

4. Neurology (*continued*)

J.H. Paterson, M.D.	The symptomatology of various cerebrovascular disorders including intracranial angiomas
T.G. Wilson, M.D.	Carotid artery occlusion and its effect on the cerebral circulation
	Basilar artery disease and its syndromes

5. Neurosurgery

W. Mckissock, O.B.E. (Head of Department)	A controlled trial of surgical versus medical methods of treatment of ruptured intracranial aneurysms
L.S. Walsh W.J. Penman I. MacKenzie	A controlled trial of surgical versus medical methods of treating primary spontaneous intracerebral haemorrhage
K. Till A. Richardson	The treatment of trigeminal neuralgia by injection techniques
J. Taylor	A controlled trial of X-radiation in the treatment of the intracranial gliomas
	A social and economic survey of the late results of extirpation of intracranial and intraspinal meningiomas
	The treatment of Parkinson's disease and other forms of disordered movement by thermocoagulation of the globus pallidus and by chemopallidectomy
	A social and economic survey of the late results of treatment by combined surgery and X-radiation of the pituitary adenomas
	A social and economic survey of the late results of total excision of the acoustic neuromas
	The control of midline and paraventricular intracranial tumours by stereotaxic implantation of radioactive gold seeds
	The localization of intracranial space occupying lesions with the aid of ultra-sound
	A trial of various drugs, in particular urea, lyophilized chymotrypsin and pathilon, in the control of cerebral swelling

6. Paediatrics and Child Health

C. Pinckney	A clinical and laboratory study into the phenomenon of cold haemagglutination
	Incidence of streptococcal and other infections in children awaiting tonsillectomy
U. James (Miss)	Investigation of pancreatic depression in early childhood
C.W. Kesson, M.D.	Aetiology of congenital malformations
Professor C.F. Ballard	Cross-sectional and longitudinal study on the relationship between varieties of facial morphology and the incidence of mouth breathing and upper respiratory infections
A.G. Leatham	Cine-angiography in congenital heart disease
	Phonocardiographic study of systolic murmurs
N. Hajdu, M.D.	The diagnostic value of plain X-rays of the abdomen in paediatric practice

7. Pathology

Professor T. Crawford	Pathology of arterial lesions
	Pathology of tumours of the nervous system
D. Dexter	Cardio-vascular pathology
M.R. Crompton	Pathology of cerebro-vascular disease
Professor N.H. Martin	Characterization of abnormal proteins in disease
	The genesis of the serum protein with special reference to the aproteinaemias
	The macroglobulins in health and disease

7. Pathology (*continued*)

C.B. Cameron	The steroids in their relation to aberrant cellular metabolism
G. Franglen, Ph.D.	Microtechniques of protein and peptide analysis Peptide and amino-acid patterns in health and disease
D.J. Perkins, Ph.D.	Protein turnover and interaction Protein conjugation studies The metal binding beta globulins
L. Irons	Protein interaction with calcium
A. Otaki A. Carter (Mrs.)	The serum enzymes in health and disease
Professor S.D. Elek, Ph.D., M.D.	Evolution of immune phenomena in lower animals
G.R.F. Hilson, M.D.	Serological relationships between leprosy and other acid-fast bacilli
H. Stern, Ph.D.	Cytomegalic inclusion body disease in man and animals
P. Fleming	The use of fluorescent antibodies in clinico-pathological problems
T. Rees, Ph.D.	Immune reactions in the S. African clawfooted toad
L. Butler, Ph.D.	Transformation experiments in *Haemophilus* and *Staphylococcus*
J.L. Stafford	Pathology of primary marrow dyscrasias Coagulation mechanisms and anticoagulant therapy
C.R. Spittle (Miss)	Vitamin B_{12} metabolism
D.P. Winstanley	Histopathology of bronchial mucosa
N.H. Kemp	Autologous marrow transplants; alkylating therapy in malignant disease
B. Brooke	Extra-corporeal blood circuits
C.M. Hawkey (Miss)	Coagulation studies in animal and man
H.F. Pogany (Miss)	Fibrinolytic mechanisms in heart disease

8. Psychiatry

P. Hays A.H. Crisp	Comparative trial of anti-depressive medications
P. Hays	Study of cases of hysterical amnesia

9. Surgery

M.F. Nicholls, C.B.E.	Long term study of renal tuberculosis hydronephrosis (in association with the Institute of Urology)
A.H.M. Siddons	Results of major surgical operations for pulmonary tuberculosis Association between thoracic disease and cerebral abscess
R. Smith	Relapsing pancreatitis
J.A. Gillespie, M.D.	Blood flow in vascular disease and after therapy. Post-sympathectomy physiological investigations

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1. Anatomy

Professor F. Goldby, M.D.	Transneuronal atrophy Quantitative studies in peripheral nerves

1. Anatomy (*continued*)

H.J. Gamble	Growth of peripheral nerve fibres with particular reference to the myelin sheath Mode of action of pyronin in accelerating nerve fibre regeneration
A. d'A. Bellairs, D.Sc.	Morphogenesis of skeletal tissue in vertebrate embryos Placentation in reptiles
A.S. Breathnach, M.D.	Investigation of human cutaneous pigmentation
A.G.H. Menzies, M.D.	The cytology of the gastric mucosa

2. Biochemistry

Professor R.T. Williams, D.Sc., Ph.D. J.N. Smith, Ph.D. D.V. Parke, Ph.D. D. Robinson, Ph.D.	The metabolism of drugs and toxic substances Comparative detoxication

3. Biology

C.L. Foster, Ph.D. (Head of Department)	Electron microscopy of rabbit anterior pituitary Histochemistry of pars intermedia
A. Fisk, Ph.D. with A.G.H. Menzies, M.D., Ph.D.	Developmental cytology of the chick's proventriculus
E. Cameron, Ph.D., D.Sc.	Anatomy and physiology of *Periplaneta*

4. Medicine

Professor W.S. Peart	Pharmacological action of hypertensinlike peptides in man and animals Renal hypertension
P.H. Sanderson	The nature of alkalosis Therapy of peptic ulcer General problems of electrolyte disturbance and renal function
J.F. Ackroyd, D.Sc.	Thrombocytopenic purpura Drug sensitivity Investigation of anticoagulants
J.I.S. Robertson	Nature of flushing in carcinoid syndrome Renal clamp hypertension
J.J. Brown	Isolation of further hypertensinlike peptides
J.F. Mowbray A.F. Lever	Vascular effects of sympathomimetic amines in man
N. Stone (Miss)	Isolation of renin
H. Muir (Miss), D.Phil.	The composition of the arterial wall
E.H. Cooper	Protein metabolism in isolated lymphocytes

5. Microbiology

ALLERGY CLINIC

A.W. Frankland, D.M.	Immunochemical and clinical studies on allergens
E.D. Hamilton (Miss), Ph.D.	Mycological aspects of inhalant allergens
R. Augustin (Mrs.)	Immunochemical studies on allergens

Medical

W.H. Hughes, M.D.	Bacterial variation in single cells with cine-micrographic and electron-microscopic studies of cell development and division

5. Microbiology (*continued*)
Medical (*continued*)

W. Brumfitt, M.D.	Investigation of renal and respiratory tract infections Experimental pyelonephritis Mechanism of antibiotic resistance
A.A. Glynn	The role of *Haemophilus influenzae* in chronic bronchitis The secretion of blood group substances

6. Paediatrics and Child Health

R.C. Lightwood, M.D. (Director of Department)	An investigation of home care for sick children Hypercalcaemia and other metabolic problems in infancy
T. Stapleton, D.M.	Psychiatric disorders in children Hypercalcaemia and other metabolic problems in infancy
K.W. Cross, D.Sc., Ph.D.	Respiration in infancy: physiological studies
P.J.N. Cox	Bilirubin metabolism in the newborn infant

7. Pathology

Professor D.M. Pryce, M.D.	Pulmonary carcinoma Intralobar sequestration and experimental embolism Heart block
E.A. Wright, M.D.	The influence of oxygen tension on the radio-sensitivity of the thymus lymph nodes and tumours Radiation carcinogenesis Radiation effects in the central nervous system The site and mode of action of neuro-toxins
R.H. Heptinstall, M.D.	Factors concerned in accentuation of cholesterol-induced atheroma in rabbits Factors concerned in experimental production of pulmonary atheroma Renal biopsy pathology Role of lipids in organization of thrombi in aorta
H. Barkley	Effects of X-irradiation on lymph glands and thymus
E. Neumark, M.D.	Aplastic anaemias and erythraemic myelosis Bone marrow pathology
K. Porter, M.D.	Bone marrow homotransplantation in X-irradiated animals
L. Michaels	Pathology of chronic bronchitis Pathology of reticulum cell leukaemia Sarcoidosis Thrombosis and malignancy
B.J. Leonard, M.D.	Leucocyte phosphatases Reticulum cell leukaemia Anaemia of renal disease
J. Guthrie	Testicular teratomas Experimental induction of testicular teratomas in birds

Chemical:

Professor A. Neuberger, F.R.S.	The carbohydrate complex in egg albumin
with J.J. Scott, Ph.D.	Biogenesis of porphyrins
with C.W. Crane	The use of N^{15} labelled compounds in the investigation of absorption problems in patients
K.D. Gibson, Ph.D.	Enzymes connected with the metabolism of proline and glutamic acid Biogenesis of porphyrins
N.M. Green, Ph.D. D.A. Lowther, Ph.D.	Metabolism and formation of collagen
V.H.T. James, Ph.D.	Metabolism of steroids

8. Pharmacology and Therapeutics

H.C. Stewart, M.D. (Head of Department) with K.R. Butterworth, Ph.D. M. Weinstock (Miss)	Investigation of new analgesic drugs and other analgesic problems
with C.M. Saunders (Miss)	Investigation of some clinical analgesic problems, including the control of withdrawal symptoms in addiction
with G.M. Battersby	An examination of the results of painful stimuli and the effects of analgesic drugs using electroencephalographic methods
P.A. Nasmyth, Ph.D. with W.H.H. Andrews, D.M.	Investigation of the mode of action of 2:6 xylyl ether bromide (T.M.10)
W.H.H. Andrews, D.M. with I. del Rio Lozano	The storage and excretion of various dyes by the liver, and an investigation into the source of hepatic lymph

9. Physics

S. Rowlands, Ph.D. (Head of Department)	The physical aspects of the circulation of blood
P.W. Roberts, Ph.D.	Electron-electron scattering using a β-ray spectrograph of the scintillation-counter type
A.C. Groom, Ph.D.	The circulation of blood using radioactive isotopes and electrical methods
H.W. Thomas, Ph.D.	The rheology of blood

10. Physiology

Professor A.St.G. Huggett, D.Sc., F.R.S.	Foetal carbohydrate metabolism and prenatal growth
K.W. Cross, D.Sc.	Respiratory mechanism and metabolism in the newborn and premature baby
P. Holton (Mrs.) D.Phil.	Ganglion transmission with special reference to substance P
D.A. Nixon, Ph.D.	Foetal inositol metabolism and renal function
H.G. Britton, Ph.D.	Carbohydrate metabolism of placenta and foetal liver
M.L. Jones (Mrs.)	Pancreatic vasculature and metabolism
G.H. Wright	Membrane potentials of placenta and foetal gut

11. Surgery

Professor C.G. Rob	Cardio-pulmonary bypass in deep hypothermia
J.R. Kenyon	The reconstruction of blood vessels and other hollow viscera with plastic prostheses Arterial grafting and the preservation of arteries The reconstruction of the thrombosed internal carotid artery The grafting of endocrine glandular tissue
V. Wynn, M.D.	Metabolic problems in medicine and surgery with special reference to the regulation of water and electrolyte balance
K.J. Kingsbury, Ph.D.	Metabolic problems in surgery with special reference to nutrition and calorie balance The aetiology of atheroma and pathological thrombosis Fundamental aspects of lipid metabolism and blood coagulation The biological effects of surface active compounds

11. Surgery (*continued*)

J.E. Scott, Ph.D.	An investigation into the chemistry and metabolism of the polysaccharides of connective tissue, with the intention of applying the results to pathological conditions in, for example, the aorta

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1. Anatomy

Professor D.V. Davies	Primate anatomy Anatomy and physiology of joints Growth of articular cartilage
C.H. Barnett	Anatomy and physiology of joints Veins of mammals Normal and pathological gait
W. Hewitt	The central nervous system Absorption of fat
E.W.T. Morris	Cardiac anomalies Anatomy of the normal heart

2. Biochemistry

Professor L. Young, D.Sc., Ph.D.	Biochemistry of toxic agents The metabolism of sulphur compounds
M.B. Thorn, Ph.D.	Electron transport systems
A.J. Grimes, Ph.D.	Biochemistry of hydroxylated cyclic compounds

3. Biology

A.G. Hamilton, D.Sc., Ph.D. (Head of Department)	The relationship between the output of carbon dioxide and sexual maturation in insects Periodic discharge of carbon dioxide by insects
P.S.B. Digby	Physiology and behaviour in flight of *Calliphora* Growth of synovial cells *in vitro* and problems of cell interaction Factors affecting vertical migrations of marine plankton in Arctic regions
R.R. Davies, Ph.D.	Spore detachment Mould spores and house dust as inhalant allergens The development of mould fungi in sub-saturated atmospheres

4. Medicine

Professor E.P. Sharpey-Schafer	Circulatory dynamics
H.E. de Wardener, M.B.E., M.D.	Renal function
B. Creamer, M.D.	Gastro-enterology
P.F.D. Naylor, M.D.	Dermatology
C.J. Hayter	Radioisotopes
S.J.G. Semple, M.D.	Respiratory function

5. Microbiology

Bacteriology:

Professor R. Hare, M.D.	The epidemiology of staphylococcal and anaerobic coccal infection
W.D. Foster, M.D.	The epidemiology of staphylococcal infection
E.H. Letchner (Miss)	Gonococcal sensitivity and the normal flora of the vagina

6. Pathology

Professor R.C. Curran, M.D.	Sulphate metabolism of human tissues The use of diffusion chambers in experimental silicosis
H. Spencer, M.D.	The relationship of lung cancer to lung scars, and the nature and development of such scars
J.A.M. Ager	The study of haemoglobins
Chemical:	
Professor F.T.G. Prunty, M.D.	The identification and measurement of urinary excretion products of adrenal cortical hormones and the response to adrenocorticotrophin Metabolic effects of steroids
R.R. McSwiney	General metabolic problems in human disease Biochemical abnormalities in hyperparathyroidism
J.S.M. Hutchison	Biological effects of hormones in the experimental animal
R.V. Brookes, Ph.D.	Biochemistry of urinary steroid metabolites

7. Pharmacology and Therapeutics

Professor R.S. Stacey	Investigations on the distribution, secretion and function of 5-hydroxytryptamine
T.J. Sullivan	Factors affecting the amount and distribution of 5-hydroxytryptamine in the intestine
S.E. Smith	Actions of reserpine and α-methyl dihydroxyphenylalanine
I. Laszlo	Estimation of substance P in tissues and the effect of drugs on its distribution

8. Physics

W. Cochrane, Ph.D. (Head of Department)	Electron diffraction

9. Physiology

Professor H. Barcroft, M.D., F.R.S. M.R. Allwood	Action of nerves and hormones on blood vessels in human extremities
A.J. Buller	Sense organs. Tendon reflexes
I.M. Young (Miss), Ph.D.	Foetal circulation and respiration
A.F. Cobbold, Ph.D.	Circulation in joints and muscles; muscle metabolism

10. Surgery

Professor J.B. Kinmonth (and other members of the staff of the Department)	Open cardiac surgery and related physiology Investigation of materials for repair of cardiac defects Cause and treatment of bleeding after perfusion for open heart surgery Lymphangiography Lymphatic and other forms of oedema Long term results of arterial replacement by grafts and prostheses Late results of operations for varicose ulceration Prevention of sepsis in operating theatres and wards
F.B. Cockett	The post-thrombotic syndrome of the leg and the long term results of operations on the lower leg perforating veins Long term results of arterial grafting Investigation of operative cholangiography in biliary disease

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1. Clinical Research

M.R.C. LABORATORY

E.E. Pochin, C.B.E., M.D. (Director) C.J. Cameron (Miss), D.Ph. L.G. Plaskett E. Shalom	The iodine metabolism of the normal human thyroid gland, of the gland in hyperthyroid patients and of thyroid carcinomata, particularly using radioactive iodine in investigation and in therapy
C.F. Barnaby	Properties of plastic phosphors for use as scintillation counters
E.N. Rowlands, M.D. D.A.W. Edwards, M.D. J. Lennard-Jones	Gastro-intestinal function in man, in health and disease

2. Medicine

Professor M.L. Rosenheim, C.B.E., M.D.	Treatment of hypertension and renal disease
Professor C.E. Dent, M.D., Ph.D.	Metabolic studies: Calcium and phosphorus metabolism Renal tubular syndromes Disorders of amino-acid metabolism Biochemical research: Isolation and identification of amino acids in urine
W.R. Trotter, D.M.	Thyroid diseases and auto-immune antibodies
D.R. Laurence, M.D.	Pharmacology of involuntary movement. Treatment of tetanus
E.J. Ross, Ph.D., M.D.	Aetiology of hypertension. Significance of aldosterone secretion in man
T.A.J. Prankerd, M.D.	Red cell abnormalities in haemolytic anaemia. Dynamics of red cell production and destruction
O.M. Wrong	Electrolyte disturbance in renal disease

3. Microbology

Bacteriology:

Professor W. Smith, M.D., F.R.S. G. Belyavin A. Cohen F. Biddle	The research work of the department is mainly concerned with the elucidation of the mechanism of infection in virus diseases and the factors involved in host susceptibility and resistance. Most of this work is done with the influenza viruses but other viruses, e.g. vaccinia, herpes, etc. are included as occasion requires The immediate interest is the dependence of various biological activities upon non-antigenic virus constituents and especially upon surface configuration. Investigations have included the study of spontaneous mutants, the effects of degradation of virus by various means, phenomena associated with virus enzymic activity, the mechanism of adaptation to new hosts and the possible significance of a host protein constituent of the virus particles Investigations of virus toxicity, as distinct from infectivity, are also being pursued Work with poliomyelitis viruses includes the development of the specific virus-antibody flocculation reaction, its practical applications in diagnosis and serological surveys and its use in investigations of surface structures The behaviour of the poliomyelitis viruses in cell culture lines of mammalian origin is under study and adaptation of the viruses to new host species is being attempted

4. Obstetrics and Gynaecology

W.C.W. Nixon, M.D.	Foetal electrocardiography and phonocardiography
C.N. Smyth	Electrical and mechanical studies of uterine action in labour
	The effects of drugs upon the human uterus in pregnancy, labour and postpartum
	Studies of respiration in the newborn
	Studies of diagnostic procedures and treatment for dystocia
	Studies of anaesthetics and uterine action
	Investigation of electrolytes in human uterus
G.I.M. Swyer D.M., M.D., D.Phil.	Separation and estimation of oestrogens in body fluids
	Effects of oophorectomy and adrenalectomy on oestrogen levels in patients with mammary carcinoma
	Outcome of pregnancy in previously infertile women
	Endocrine therapy for various menstrual disorders
	Therapeutic uses of androgens in women
	The effects of various progestogens and allied substances on women
	Therapy of male infertility
H.P. Wright, Ph.D.	Detection of placenta praevia with protein bound I^{132}
	Assessment of placental function using ionic and protein bound I^{132}
	Measurement of cardiac output and blood volume in pregnancy and labour
	Study of foetal and litter size in hypertensive rats
	Study of transfer of various elemental ions across placenta of rats using appropriate isotopes

5. Pathology

Professor Sir R. Cameron, D.Sc., LL.D., F.R.S.	Biliary cirrhosis
	Liver necrosis
J.F. Smith	Lead encephalopathy
	Problems of nephritis
P. Hughesdon, M.D.	Tumours of the ovaries
	Chronic endometritis
W.G. Spector	Nephrosis
	Birth injuries
M. Dawkins	Cellular functional disturbances in copper deficiency
P. Sutton	Combined intoxications of the liver
	Lymphomata
C.T. Hou	Regeneration of the bile passages
	Acute cholangitis
	Tumours of the liver

Chemical:

Professor C. Rimington, F.R.S.	Biochemistry of porphyrins and diseases of pyrrole pigment metabolism
K.R. Rees, Ph.D.	Mechanisms of liver injury

Clinical:

Professor M. Maizels	Water and cation exchange of tissue slices and red cells
F.V. Flynn, M.D.	Electrophoretic studies of urine proteins in disease
E.J. Stokes (Mrs.)	Investigation of a claim that a spirochaete-like organism is the cause of multiple sclerosis

6. Surgery

Professor R.S. Pilcher	Hypothermia in animals Metabolism in human liver Blood flow in peripheral vascular disease Methods of augmenting the blood supply of the myocardium Exfoliative cytology for cancer diagnosis
C.N. Smyth	Blood gas exchange apparatus for partial and total body perfusion
P.J.D. Heaf, M.D.	Alterations of respiratory physiology in diseases of lungs

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1. Microbiology

Bacteriology:

B.W. Lacey, M.D.	Antigenic constitution of *Bordetella pertussis* and related organisms Influence of environment on antigenic structure

2. Pathology

Chemical:

Professor N.F. Maclagan, M.D.	Elaboration of new methods in clinical biochemistry with special reference to diseases of the thyroid gland
J.H. Wilkinson J. Zilva (Miss)	Biochemical changes in patients with malignant disease with special reference to protein and mineral metabolism
J.D. Billimoria	Biochemistry of atheroma

Clinical:

Professor R.J.V. Pulvertaft, O.B.E., M.D.	The culture of malignant cells and of bone marrow The study of the effect of viruses on cells The use of tissue culture in the study of auto-immune diseases
A.D. Morgan, M.D.	The relation of coronary occlusion to atheroma of other arteries
I.M.P. Dawson, M.D.	Exfoliative cytology of malignant disease Distribution of enzymes and hormones in adrenal glands and effects of administered hormones A pathological and clinical study of ulcerative colitis
J.G. Humble, C.V.O.	Electromagnetic studies on red blood cells with special reference to anaemia in malignant diseases, together with spectrophotometric and electrophoretic studies of haemoglobin and other blood pigments in these conditions. The culture of bone marrow, with special reference to malignant diseases and leukaemia Study of bone marrow transplantation in the human
D.H. Mackenzie, M.D.	Review of fibroblastic tumours at Westminster Hospital Investigation of frozen section methods
K.L.G. Goldsmith	Study of platelet and leucocyte antibodies
H.B. Hewitt	Investigations of the therapy of mouse leukaemia using whole-body radiation
W.M. Edgar	Exfoliative cytology in gynaecology Immunological investigation of ulcerative colitis
T.G. Jones	Study of serum vitamin B12 levels in various blood diseases

3. Physics

Medical:

C.W. Wilson, Ph.D. (Head of Department)

Applications of radio-isotopes as tracers in various clinical problems
The study of thyroid disorders with I^{131} and Geiger counters
The measurement of X-ray and gamma ray doses using ionization chambers
The energies or wavelengths of the radiations present in tissue-like phantoms irradiated with high-voltage radiation are being examined using a pair of scintillating crystals
The effect of X-irradiation upon the uptake of P^{32} by the mouse tibia and knee joint and methods of modifying effect
Determination of blood volume and erythrocyte life in normal and pathological states using a scintillation counter and chromium 51
Determination of extra-cellular fluid using bromine 82, potassium 42, sodium 24 and tritium
Microradiography of tissue sections including normal and irradiated mouse bone
Development of cardiac and other electronic equipment, (e.g. defibrillators and pacemakers); apparatus for electromyography and for warning of heart failure using transistor circuits
Work on physical aspects of rotation therapy with a cobalt 60 beam unit
Cytological and histochemical studies of the effect of X-rays on the tibia of the growing mouse.

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1. Anaesthetics

H.J. Brennan, M.D. (Director)

Development of automatic blood pressure recorder
The inefficiency of controlled respiration
Investigation of vagal apnoea

T. Dinsdale

The clinical application of hypothermia
The assessment of safety in nitrous oxide anaesthesia
The effects of anaesthesia in surgery of the heart

A.R. Hunter, M.D.

Studies of artificial ventilation of the lungs
Controlled respiration in neurosurgery

W.K. Jones

Development of mechanical respirators
Methods of hypothermia
The place of fluothane in dental anaesthesia
Halothane and air anaesthesia with special reference to obstetrics

2. Anatomy

Professor G.A.G. Mitchell, O.B.E., D.Sc.

Central and peripheral arrangements of the autonomic nervous system
The central connections of the cranial nerves
Microradiographic studies

E.R.A. Cooper (Miss), M.D., D.Sc.

The venous drainage of the central nervous system
Further studies on the absorption of cerebro-spinal fluid

E.L. Patterson, M.D.

Congenital cysts of the heart
The anatomy of the lingual branch of the facial nerve
Electron-microscopic study of the thymus and other lymphoid tissues and of the ophthalmic membranes
Anatomical examination of Bronze Age human remains

2. Anatomy (*continued*)

G.T. Ashley, M.D.	Studies of possible efferent fibres in dorsal nerve roots
	The development of Nissl granules in the neurons of the brain stem nuclei
	Studies of developmental anomalies
D.A.N. Hoyte, M.D.	Bone growth and repair
A.D. Dixon, Ph.D.	Innervation and development of oral structures
	Sex chromatin
	Radioactive tracer studies of bone and tooth development and growth
J.B.D. Torr, M.D.	The blood supply of the cord and the vertebral venous plexuses
	Sex chromatin
	Studies of human chromosomes
J.R. Rintoul	A comparative study of the enteric plexuses
	The fibre content of the rami communicantes
	The condition of the intrinsic nerves in congenital hypertrophic pyloric stenosis
R.A. Butler	Radioactive tracer studies of anaesthetics in the central nervous system
G.B. Seddon	The anatomy and embryology of the bladder neck and urethra in the female

3. Archaeology

THE MUSEUM

T. Burton-Brown	Full report on excavations in the Shahriyar district of Persia in 1957
	Preparation of a detailed survey of the archaeology of Egypt
	Preparation of a work on the prehistoric archaeology of the Near East

4. Astronomy

Professor Z. Kopal, D.Sc.	Double stars
	Stellar hydrodynamics; theory of orbits
F.D. Kahn, D.Phil.	Interstellar matter
	Electromagnetic theory
R. Kurth, Ph.D.	Celestial mechanics
	Stellar statistics
Radioastronomy:	
Professor A.C.B. Lovell O.B.E., F.R.S.	Radioastronomical investigations using the 250-ft steerable radio telescope at Jodrell Bank, including the following:
R. Hanbury Brown	
J.G. Davies, Ph.D.	The galactic and extra-galactic radio emissions, including measurements of the size of the radio stars
H.P. Palmer, D.Phil.	
R.D. Davies, Ph.D.	Investigations of upper atmospheric winds by observation of the scintillation of the radio stars
R.C. Jennison, Ph.D.	
C. Hazard, Ph.D.	Investigations of the hydrogen line emission from the interstellar gas
M.I. Large, Ph.D.	
J.S. Greenhow, Ph.D.	Studies of the solar radio emissions and of the solar terrestrial relationships
R.G. Conway, Ph.D.	
J.H. Thomson	Radio echo investigations of meteors
J.V. Evans, Ph.D.	Delineation of orbits and studies of the physical processes in the upper atmosphere
	Measurement of upper atmospheric winds by the observation of radio echoes from meteor trails
	Radio echo studies of the aurora borealis
	Radio echo studies of the moon and planets
	Satellite and space probe tracking

5. Botany

Professor C.W. Wardlaw	Studies in morphogenesis by experimental methods
M.G. Calder, Ph.D.	Palaeobotany: Fossil conifers Mezozoic and Tasmanian woods Fossil algae
L.G.G. Warne, Ph.D.	Horticulture
K.J. Dormer, Ph.D.	Histology of the floret in Compositae
E.W. Simon, Ph.D.	Plant respiration and fermentation Structure and activity of mitochondria
A.P. Wylie (Miss)	Cytogenetic research on *Rosa* and Leguminosae
J.N. Hartshorne, Ph.D.	Control of sex ratios in dioecious flowering plants
R.C. Pecket, Ph.D.	Occurrence of anthocyanims and other phenolic compounds. Growth of excised roots and embryos
E.G. Cutter, Ph.D.	Experimental and developmental studies of shoot morphogenesis
J.H. Tallis, Ph.D.	Plant ecology
P. Newton, Ph.D.	Physiology of growth; horticulture
Cryptogamic	
A. Allsopp, Ph.D.	Morphogenesis, with special reference to Pteridophyta and Bryophyta
D. Park, Ph.D.	Investigation of fungi in the soil
THE MUSEUM	
J.W. Franks, Ph.D.	The flora of Andorra

6. Cardiology

A.M. Jones (Director) E.G. Wade, M.D.	Heart disease and pregnancy Coronary heart disease Ballistocardiography Haemodynamics of pulmonary circulation

7. Chemistry

Organic:

Professor A.J. Birch, F.R.S.	Structure and biosyntheses of natural products: structure of and reduction by metal-ammonia solutions; synthesis of steroid hormones
G.R. Barker, Ph.D.	Studies on nucleotides and related materials
G.F. Smith, Ph.D.	Heterocycles and natural products, especially alkaloids
J.D. Bu'Lock, Ph.D.	Natural products, especially fungal materials
D.C.C. Smith, Ph.D.	Synthesis of steroid hormones
J.D. Watkinson, Ph.D.	Studies on infra-red spectra Steric effects in reaction mechanisms
H. Smith, Ph.D.	Synthesis of steroid hormones and diterpenes; tracer studies in biosynthesis of phenols and polyterpenes
T. Quibell, Ph.D.	Structure and synthesis of natural polyphenolic compounds
F.R. Jevons, Ph.D.	The nature of the linkage between protein and carbohydrate in mucoproteins
R.W. Rickards	Structure and biosynthesis of natural products

7. Chemistry (*continued*)

Physical:

Professor G. Gee, C.B.E., F.R.S. G. Allen, Ph.D. R.O. Colclough, Ph.D.	Studies in polymer science, including (i) selected polymerization reactions (ii) static and dynamic physical properties of polymers (iii) thermodynamic properties of polymer solutions
F. Fairbrother, Ph.D.	The chemistry of inorganic catalytic halides and of niobium and tantalum
E. Warhurst, Ph.D.	The spectra and rates of reaction of ketyls and sodium-hydrocarbon complexes with organic halides Reactions of acetylide ions in liquid ammonia
J.H. Baxendale, D.Sc.	Chemical reactions induced by X- and γ-radiation and electrons Photochemistry of solutions Kinetics and mechanisms of oxidation and reduction reactions
H.A. Skinner, D.Phil.	Thermochemical studies on organo-metallic compounds Heats of combustion
W.C.E. Higginson, D.Phil.	Studies of the mechanism of oxidation-reduction reactions between inorganic compounds in aqueous solution
J.S. Rowlinson, D.Phil.	Experimental and theoretical thermodynamic studies of imperfect gases, liquids and solutions
J.B.M. Herbert	Low temperature calorimetry
O.S. Mills	X-ray crystal structure analysis of organo-metallic complexes and crystalline polymers
H.O. Pritchard, Ph.D.	Reactions of free radicals in the gas phase Free radicals by matrix isolation techniques Application of computers to chemical problems
W.B. Brown	Theoretical studies in statistical and quantum mechanics

8. Crystallography — No information

9. Deaf Education

Professor Sir A. Ewing, Ph.D.	Ascertainment of deafness in early infancy and childhood Mental growth of children with impaired hearing Linguistic development of deaf children The beginnings of spoken language in deaf children Emotional and social development of deaf children Provision of secondary modern curriculum for senior deaf pupils Cerebral-palsied children with impaired hearing Integration of deaf children into hearing society
with K. Harrison, M.D., and T.J. Watson, M.C., Ph.D.	A survey of children with impaired hearing in an English county Aetiology of deafness and its relation to speech discrimination Intelligibility of speech in relation to types of hearing aid equipment and conditions under which they are used Diagnostic tests of reading ability for deaf children Use of hearing aids out of school by pupils with impaired hearing
Professor Sir A. Ewing, Ph.D. with J.E.J. John and H.L. Owrid, Ph.D.	Acoustic conditions in classrooms and schools for deaf and partially deaf children Design and performance of hearing aids Use of binaural hearing aids An analysis of the speech of pupils in schools for the deaf

10. Dental Studies

Professor H.G. Radden B.V. Janes E.H. Seeley	Implantation of various substances in bone

10. Dental Surgery *(continued)*

H. Allred	An aspect of the morphology of human dentine
J.R. Grundy	Inhalation hazards to the dental surgeon
D.T. Hartley	The mechanical properties of orthodontic spring materials
S.D. Hatt	Dental problems in hill farm sheep (with Rowett Research Institute)
M.O. Hindle	Development of cementum and periodontal membrane
J. Miller, D.D.S.	Root treatment of deciduous teeth
P. Hobson (Mrs.)	The bacteriology of infected pulps and the use of antibiotics in pulp therary
J.A. Hargreaves	The normal pattern of exfoliation of deciduous teeth
	Microradiographic studies of enamel and dentine. Interrelation of dental diseases in children. Methods of treatment of caries in children.
	Relationship between the loss of teeth and the incidence of orthodontic conditions
P. Rothwell	An investigation into the magnitude and the consequence of thermal changes in the surface of enamel
T.C. Rowbotham	The dentition and associated structures of approximately
C. Cooke	300 skulls unearthed near York (period approx. 200-300 A.D.)
E.P. Turner	Development and formation of cusps of human molar teeth
Prosthetics:	
Professor E. Matthews, D.D.S., Ph.D.	The physical and chemical properties of materials used in dentistry, with reference to their biological adequacy
R. Earnshaw, Ph.D.	Cobalt-chromium alloys
J.F. Bates	Investigation of stress into partial dentures
D.C. Smith, Ph.D.	An investigation in the physical and mechanical properties of dental materials with special reference to dental polymers
W. Johnson	Investigation of stress distribution in full dentures
H. McIntyre	An investigation into haemorrhagic diseases
A.B. Shelmerdine	Structure and properties of dental amalgams
P. Hargreaves	Application of electronic methods to testing of dental materials

11. Engineering

Civil:

Professor J.A.L. Matheson, M.B.E.	
J.K. Alderman	Settlement of foundations on glacial clays
	Rate of consolidation of clays
T. Constantine, Ph.D.	The behaviour of ships in canals
	The effect of ridge and groove type of roughness on pipe flow
J.E. Gibson, Ph.D.	Theoretical and experimental stresses in shell roofs
	Bending and compression stresses in beams with discontinuous webs
R. Mathieson, Ph.D.	Water hammer
	Cavitation erosion
A.M. Neville, Ph.D.	Creep of concrete
	Shear failure of reinforced concrete and continuous prestressed beams
J.G. Nutt, Ph.D.	Instability effects on the collapse loads of structures
	Critical loads of lateral buckling of triangular frames
P.W. Rowe, D.Sc.	Stability of sheet-pile walls
	Mechanics of particle movements in shear

11. Engineering (*continued*)

Civil (*continued*)

M.G. Derrington	Lateral stability of frameworks
P. Montague	Structural behaviour of composite cables

Electrical:

Professor F.C. Williams, O.B.E., F.R.S.	
T. Kilburn, Ph.D.	Engineering developments of electronic digital computers
D.B.G. Edwards, Ph.D.	
R.L. Grimsdale, Ph.D.	
M. Lanigan	
R.A. Brooker	Application of electronic digital computers
C.M. Popplewell (Miss)	
R. Cooper, Ph.D.	Dielectric breakdown
T.E. Broadbent, Ph.D.	
G.R. Hoffman, Ph.D.	Digit storage
E.R. Laithwaite, Ph.D.	Development of induction motors
D. Tipping	
J.F. Eastham	
C.N.W. Litting, Ph.D.	Electroluminescence
M.J. Somerville, Ph.D.	Non-linear servomechanisms
D. Atherton	

Fluid Mechanics:

Professor P.R. Owen	Experimental fluid mechanics
N.H. Johannesen, Dr.Techn.	
H.K. Zienkiewicz	
J.H. Gerrard, Ph.D.	
J.S. Turner, Ph.D.	
T.H. Ellison, Ph.D.	
I.M. Hall, Ph.D.	

Mechanical:

Professor J. Diamond	Heat transfer
W. Johnson	The plastic deformation of metals
F.J. Edwards	Forced convection heat transfer with rough surfaces
J.L. Livesey	Internal aerodynamics of gas turbine combustion chambers
	Secondary flows about struts in thick boundary layers
	Generation and decay of velocity profiles having high velocity gradients
	Turbulence effects in ducted flow
P.G. Morgan	Air flow through wire gauzes
	Change of velocity profile of air flowing in ducts
P.H. Price, Ph.D.	The effect of duct wall temperature variation in heat transfer
J.D. Jackson	High subsonic ducted air flow
R.I. Turner	Lubrication of higher pairs of machine elements
F. Cheers	Heat transfer from finned tubes in cross-flow
A. Williams	Air and steam injectors

12. Geography

Professor P.R. Crowe, Ph.D.	Problems of climatic classification
T.W. Freeman	Population problems; England and Wales, Ireland

12. Geography (*continued*)

D. Sylvester (Miss)	Celtic and English rural settlement
R.H. Johnson	Geomorphology of S. Pennines
H.B. Rodgers	Urban and historical geography of the Manchester region
D.L. Niddrie	Problems of transport in eastern and southern Africa: and land use in Tobago
J.S. Duncan	The evolution of settlement in New Zealand
W.C. Brice	Historical geography of Turkey and the Near East
J. Carter (Miss)	Agricultural geography with special reference to tropical regions
G. North	The commercial relationships of W. Germany
D.J. Fox	The henequen industry of Yucatan; land use in British Honduras

13. Geology

Professor W.A. Deer, Ph. D.	Igneous and metamorphic petrology
G.D. Nicholls, Ph.D.	Geochemistry of sediments
I.M. Simpson, Ph.D.	Carboniferous stratigraphy and palaeoecology
F.M. Broadhurst, Ph.D.	Coal measure Mollusca
J. Zussman, Ph.D.	Crystal structure of amphiboles and antigorite
R.A. Howie, Ph.D.	Geochemistry of the charnockites and aplites
W.S. Mackensie, Ph.D.	Experimental petrology, phase equilibria in the $KAlSiO_4$—$NaAlSiO_4$—SiO_2 system
THE MUSEUM	
D. Owen, Ph.D.	Systematic study of Silurian Bryozoa
R.M.C. Eagar, Ph.D.	Palaeoecological and stratigraphical work on the non-marine Lamellibranchia (Anthracosiidae and Myalinidae) of the British Pennine coalfields; studies in the palaeoecology of genera of these families in relation to other Carboniferous faunas
	Stratigraphical and systematic work on the non-marine faunas of the Irish coalfields (mainly those in Leinster, Tipperary and Cork)
J.W. Franks, Ph.D.	Pollen analysis of British Pleistocene and Tertiary deposits

14. Haematology

J.F. Wilkinson, Ph.D., M.D. (Director)	Research investigations are being carried out in general on haematological and endocrinological subjects, in particular on macrocytic anaemia, including pernicious anaemia, nutritional anaemias, steatorrhoea, macrocytic anaemia of pregnancy and refractory anaemias, the nature of the anti-anaemic stomach principle and the importance of folic acid, vitamin B_{12} and similar substances
M.C.G. Israels, M.D.	Haemophilia: investigation, control and newer treatment (with a Regional Follow-up Clinic)
	Leukaemias: general investigations on the acute and chronic leukaemias, with particular reference to aetiology and newer forms of therapy such as ACTH cortisone, folic acid antagonists, nitrogen mustards and similar drugs
	Hypochromic, aplastic and haemolytic anaemias: investigations on aetiology and treatment. *In vitro* cultures of blood and bone marrow cells and determination of controlling factors, with particular reference to megaloblasts
	Porphyrin and haemoglobin formation and foetal haemoglobin: the errors of their metabolism in certain clinical conditions

14. Haematology (*continued*)

J.F. Wilkinson, Ph.D., M.D. (Director)	Endocrinological problems: investigations are mainly concerned with diseases of the pituitary, suprarenal glands, growth hormone and studies on obesity
M.C.G. Israels, M.D. (*continued*)	The morphology of blood cells

15. Mathematics

Applied:

Professor M.J. Lighthill, F.R.S.	Fluid dynamics (all branches)
C.R. Illingworth	
M.B. Glauert	
R.F. Chisnell, Ph.D.	
F.A. Goldsworthy, Ph.D.	
E.J. Watson	
B.R. Morton	
G.L. Camm, D.Phil.	Statistical dynamical astronomy
S. Levine, Ph.D.	Theory of colloids
E. Wild	Electromagnetic theory
C.B. Haselgrove, Ph.D.	Numerical analysis
D.R. Bland	Visco-elasticity

Pure:

Professor M.H.A. Newman, F.R.S.	Algebraic topology and mathematical logic
Professor K. Mahler, F.R.S.	Theory of numbers Diophantine analysis
B.H. Neumann, F.R.S., Ph.D.	Algebra, theory of groups
W. Ledermann, Ph.D.	
J.A. Green, Ph.D.	
P.M. Cohn, Ph.D.	
M.G. Barratt, Ph.D.	Topology
A.H. Stone, Ph.D.	
D. Stone (Mrs.), Ph.D.	Linear spaces, measure theory

16. Medicine

Professor D.A.K. Black, M.D.	Disorders of body fluid and renal function
Professor Sir R. Platt, Bt., M.D.	Clinical studies in genetics, hypertension, etc.
S.W. Stanbury, M.D.	Renal function and electrolyte metabolism Metabolic bone disease
J. Butler, M.D.	Normal and abnormal respiratory function
M.H. Roscoe (Miss), Ph.D.	Renal function in health and disease

17. Metallurgy

Professor C.R. Tottle	Deformation of metals Studies of anistropy in metals and alloys Materials for nuclear energy and high speed flight
H.J. Axon, D.Phil.	The structure of metallic meteorites
K.M. Entwistle, Ph.D.	Variation of damping capacity during quench ageing in aluminium alloys Growth of solid solution single crystals both from the melt and by strain-anneal methods Investigation of magnetic and other amplitude-dependent contributions to the damping capacity of metals

17. Metallurgy *(continued)*

R.A.J. Shelton	Analysis of metals and alloys Deposition of metals from vapour phase
J.R. Stubbles, Ph.D.	High temperature thermodynamic studies of sulphides and exides Non-stoichiometry in metal-sulphur systems
P.H. Spriggs	X-ray crystallographic studies of intermetallic phases and compounds

18. Microbiology

Bacteriology:

Professor H.B. Maitland, M.D.	Investigation of viruses
M.R.J. Salton, Ph.D.	Bacterial chemistry
N.W. Preston, M.D.	Pertussis antigens in relation to immunity

19. Neurology

F.R. Ferguson, M.D. (Head of Department)	Studies in the relief of spasticity Social and educational aspects of epilepsy
G.E. Smyth, M.D.	Correlation of electroencephalographic abnormalities with clinical disorders
L.A. Liversedge, M.D.	Investigation of the causation and relief of acro-paraesthesiae Therapeutic agents in the relief of epilepsy

20. Neurosurgery

R.T. Johnson, O.B.E.	Intracranial aneurysms and the cerebral circulation
J.M. Potter	Infection of the central nervous system Certain aspects of hydrocephalus, including protein tracer studies
A.R. Hunter	Anaesthesia in relationship to neurosurgery, including arterial hypotension
P.O. Yates	Pathological changes in mid brain compression

21. Obstetrics and Gynaecology

Professor W.I.C. Morris	The management of the pregnant diabetic
A.H.C. Walker	Liquor amnii and serological studies in the prediction of haemolytic disease of the newborn
F.A. Langley	The study of experimental and human granulosa cell tumours The relation between perinatal pneumonia and intrapartum infection

22. Occupational Health

Professor R.E. Lane, C.B.E., M.D.	A study of aluminium lung
I. Dingwall-Fordyce (Miss)	Survey studies of disease due to cotton dust
W.R. Lee	Studies of the after effects of electric shock

23. Ophthalmology

O.M. Duthie, M.D.	Aetiology and treatment of uveitis and glaucoma
A. Stanworth, M.D., Ph.D. E.J. Naylor, Ph.D. P.A. Graham	Characteristics of fusion, depth perception and amblyopia in strabismus

24. Orthopaedics

D. Ll. Griffiths, M.B.E.	The evolution of foot defects
J. Charnley	The mechanics of hip surgery
A.H.C. Ratliff	Shortening in the lower extremity in poliomyelitis

25. Otolaryngology

Professor V.F. Lambert	Malignant disease of the post nasal space
R.F. McNab Jones	Anaemia and dysphagia in relation to hypopharyngeal malignancy
K. Harrison with Department of Education of the Deaf	Some causes of deafness in children
B. Brown	Application of tracheostomy for conditions other than laryngeal obstruction with particular reference to tracheostomy in haemophilia

26. Paediatrics and Child Health

W.F. Gaisford, M.D. with G.V. Feldman and F.T. Perkins, Ph.D. (M.R.C.) with M.I. Griffiths (Mrs.), M.D.	Antenatal and neonatal immunization with single and multiple antigens Multiple puncture techniques for B.C.G. vaccination in infancy. Studies with isoniazid resistant B.C.G.
with A.H.C. Walker and G.M. Komrower	Haemolytic disease of the newborn: antenatal prediction and perinatal management
G.M. Komrower with W.I.C. Morris	Management of the "diabetic" baby
V. Schwarz, Ph.D. with A. Holzel, M.D. and G.M. Komrower	Further studies in galactosaemia; biochemical, genetic and clinical
J.K. Steward and K. Pearce	The Children's Tumour Registry
G.V. Feldman with J.B. Hartley, M.D.	Radiological and clinical studies in postmaturity
G. Watson	Congenital heart disease
F. Cavanagh (Mrs.)	Deafness in childhood
A. Jolleys, M.D.	Sequelae of cleft palate
M.I. Griffiths (Mrs.), M.D. with S. Guthrie (Mrs.), M.D.	Cerebral palsy
A.N. Guthkelch, M.D.	The pathology of craniosynostosis
A. Holzel, M.D. with V. Schwarz	Studies in allergy Congenital alactasia
G.V. Feldman	Vitamin K in the newborn

27. Pathology

Professor A.C.P. Campbell	Argentaffin and argyrophil cells
A.H. Gowenlock, Ph.D.	Biochemistry and chemical pathology of adrenocortical hormones

27. Pathology (*continued*)

J.P. Smith, M.D.	Transfusional haemosiderosis and haemochromatosis
P.O. Yates, M.D.	Neuropathology

28. Pharmacology

Professor A.D. Macdonald, M.D.	Studies on analgesics and anaesthetics
T.H.B. Bedford, D.Sc.	Circulation of cerebro-spinal fluid and the effects thereon of antiseptics and antibiotics
A.R. Hunter, M.D.	Studies on muscle relaxants in relation to anaesthesia
H. Jackson, Ph.D.	Uses of radioactive tracers in therapeutics

29. Pharmacy

Professor K. Bullock, Ph.D.	Local anaesthetics Hydrolytic enzymes Antiseptics, fungistats and fungicides
J. Thomas, Ph.D.	Synthesis of certain quaternary compounds
C. Melville, Ph.D.	Infestation of vegetable drugs with special reference to mites Quality control of vegetable drugs
D.M. Bellis	Re-examination of the coumarin derivatives of certain plants with a view to establishing biosynthetic relationships
H.B. Woodhead	Pharmaceutical applications of vapour-phase chromatography
A. Tallentire, Ph.D.	Survival studies following exposure of micro-organisms to ionizing radiations
G.J. Rigby, Ph.D.	Viable counts of *Streptococcus*, *Staphylococcus* and *Bacillus sp.* The germicidal activity of formaldehyde The germicidal activity of cationic germicides

30. Physics

Experimental:

Professor S. Devons, F.R.S., Ph.D.	Nuclear and high energy physics Particle accelerators
H.J.J. Braddick, Ph.D. J. Ring, Ph.D. W.R. Bradford, Ph.D.	Development and application of photoelectric spectrometers and interference filters; optical instrument design
J.B. Birks, Ph.D.	Physics of organic molecules and crystals Scintillation counters and nuclear detectors Dielectrics
E.B. Mendoza, Ph.D. H.E. Hall, Ph.D.	Low temperature physics; properties of liquid helium
J.O. Newton, Ph.D.	Nuclear structure; nuclear reactions
A.J.F. Boyle, Ph.D.	Electromagnetic radiation from nuclei
D.St.P. Bunbury, Ph.D. J.M. Calvert, D.Phil. I.S. Grant, Ph.D. A.A. Jaffe, Ph.D. W.R. Phillips, Ph.D. N. Gale P.F. Henry F.D. Read	Nuclear spectroscopy; coulomb excitation
D.M. Binnie, Ph.D.	Meson physics
G. Nassibian D. Broadbent	Linear accelerator for heavy ions
A. Herzenberg, Ph.D.	Nuclear physics; terrestial magnetism

30. Physics (*continued*)

Theoretical:

Professor B.H. Flowers, D.Sc., with A.R. Bodmer, Ph.D. S.F. Edwards, Ph.D. L.J.B. Goldfarb, Ph.D. F. Mandl, D.Phil. E.A. Power, Ph.D. P. Roman, D.Phil.	Quantum theory of fields and elementary particles; nuclear reactions and the structure of atomic nuclei; meson physics; statistical mechanics, theory of ionized gases; transport properties of metals

31. Physiology

Professor W. Schlapp F.B. Beswick	Physiology of the spinal cord
L.P. Kendal, Ph.D.	Metabolism of alcohols
J.N. Mills, M.D.	Human respiration Human renal function

32. Psychiatry

Professor E.W. Anderson	The psychiatric indications for the artificial termination of pregnancy and the psychiatric aspects of abortion Psychiatric, psychological and social problems of the adolescent (14-18) unmarried mother
with J.C. Kenna	The psychopathology of memory
J. Hoenig	Memory disorders
J.C. Kenna	History of British psychology, 1875-1950

33. Psychology

Professor J. Cohen, Ph.D. C.E.M. Hansel	Experimental and developmental studies of psychological probability The study of a national lottery Decision time as a measure of psychological probability The educational and occupational background of Members of Parliament
Professor J. Cohen, Ph.D.	Studies of the ideas of luck and chance
Professor J. Cohen, Ph.D. R.R. Skemp, Ph.D.	A study of eye movements in viewing complex patterns of stimuli
C.E.M. Hansel	Colour vision theory
F.E. MacNeill (Miss), Ph.D.	Sensory choices as psychological indicators
J. Morris, Ph.D.	Evaluation of adult education techniques of management selection
R.R. Skemp, Ph.D.	Experimental investigation of 'mental blockage'
R.R. Skemp, Ph.D. (in collaboration with National Foundation for Educational Research in England and Wales)	Relationship between a certain reflective activity and mathematical performance
E.E. Rump	The relationship between perceived size and perceived distance

34. Public Health and Social Medicine

Professor C.F. Brockington, M.D.	A follow-up study of a group of premature infants A study of the status of the student's father Studies into the history of English public health
M.G. Bulmer, Ph.D.	Completion of the study on the biology of human twinning

34. Public Health and Social Medicine (*continued*)

J.E. Leeson (Mrs.)	Studies of families of young mentally handicapped children in a local community
	Investigation of the problem associated with the demand from mental deficiency hospital accommodation in the Manchester Region
S.M. Lempert (Mrs.)*	Problems of the aged
J. Simpson, M.D.	Medical administrative problems produced by the progressive ageing of the population
	Sickness absence in professional groups
	Chronic disease and adult health
M. Susser, M.D. with Z. Stein (Miss), M.D.	A socio-medical family and clinical follow-up study of a group of persons ascertained as educationally subnormal at school
	A cultural and family study of enuresis in schoolchildren
R.F.L. Logan, M.D.	Operational studies in medical care in hospital and general practice
	Methods of multiphasic screening in general practice for diabetes, hypertension, anaemia, coronary heart disease, cancer, etc.

35. Rheumatism Research

Professor J.H. Kellgren J. Sharp, M.D. A.J. Popert	The definition and classification of rheumatic diseases in terms of abnormal connective tissue processes; controlled therapeutic trials
J. Ball, M.D. G. Williams	Histological and serological studies in rheumatic diseases and bone and joint pathology
F.A. Rose, Ph.D. C.H. Wynn, Ph.D.	Connective tissue metabolism and protease
J.A. Chapman, Ph.D.	Biophysical studies of connective tissue and other biological material
J.S. Lawrence, M.D.	Field studies of the prevalence of the various rheumatic diseases in the general population

36. Statistics

Mathematical:

Professor M.S. Bartlett, D.Sc.	Theory of stochastic processes with applications to physics, biology and to the analysis of time series
T. Lewis J.N. Darroch M.B. Priestley	Statistical methodology and inference

37. Surgery

Professor A.M. Boyd	Clinical study of peripheral vascular disease in all its aspects
A.G. Riddell, M.B.E.	Clinical study of portal hypertension
	Biochemistry of hepatic coma
	The evaluation of heart lung machines
K. Bloor, M.D.	The relationship between hypertension and arteriosclerosis
	Heredity in arteriosclerosis
	Relationship between occupation and arteriosclerosis
	Smoking in arteriosclerosis
	Gustatory sweating and regeneration of the sympathetic nervous system
	Staphylococcal hospital infections

38. Zoology

Professor H.G. Cannon, D.Sc., Sc.D., F.R.S.	Functional morphology of the Crustacea
Professor R. Dennell, D.Sc.	Arthropodan cuticle

*Grant from the National Corporation for the Care of Old People.

38. Zoology (*continued*)

J.G. Blower	Soil faunal studies; ecology and systematics of Myriapoda
E.J. Popham, Ph.D., D.Sc.	Biology of aquatic insects
E.J. Iles, Ph.D.	Taxonomy of Ostracoda
J.H. Kennaugh	Neurosecretion in insects
M.P. Thomas, Ph.D.	Freshwater plankton
M.E.G. Evans	Morphology of Coleoptera
D.E. Ashhurst (Miss)	Cytology of insect nervous system
P.D. Gabbutt, Ph.D.	Ecology of spiders and false scorpions Distribution of fleas on arctic mammals

THE MUSEUM

W.D. Hincks, D.Sc.	A systematic revision of the Dermaptera (earwigs) of the world Systematic studies on the Cassidinae (Coleoptera Chrysomelidae) of Madagascar Systematic revisions of the British fairy flies (Hymenoptera Mymaridae)
E.L. Seyd	Systematic study, with some ecological notes, of the moss mites (Oribatei) of Derbyshire; Oribatei of Kinder Scout
A. Brindle	Taxonomic studies on the immature stages of British Diptera

D. Owen, Ph.D. (Director)
R.M.C. Eagar, Ph.D.
W.D. Hincks, D.Sc.
E.L. Seyd
J.W. Franks, Ph.D.
A. Brindle
T. Burton-Brown
} **The Museum**

61 Manchester University, Faculty of Technology

1. Building Studies

Professor D. Harper, Ph.D.	A syllabus for higher building education
J.R.A. McDonald	A study of soil-cement stabilization related to building and an assessment of suitability of soil for this purpose
C.H. Garrett	Regional bioclimate related to building
R.A. Burgess	The design of building materials as elements in site productivity
T. Hesp C.T.G. Boucher, Ph.D. V.C. Barnes J.K. McKay R. Dilworth O. Edwards (Miss), Ph.D. T.A. Harwood	Analysis of the incidence of beetle and fungoid attack in the Mersey Valley

2. Biochemistry

Professor A.A. Eddy, D.Phil.	Cell structure Metabolism in micro-organisms
A.N. Hall, Ph.D.	Metabolism in micro-organisms

2. Biochemistry (*continued*)

B. Hodgson, Ph.D.	Metabolism in micro-organisms
E.V. Rowsell, Ph.D.	Amino-acid metabolism in animals
A. Dalby, Ph.D.	Biochemical changes underlying morphogenesis Fibrinolytic system of blood

3. Chemistry

Professor R.N. Haszeldine

Inorganic and Physical:

Professor R.N. Haszeldine, Ph.D., D.Sc., Sc.D.	Hydride chemistry Organo-metallic and organo-metalloidal compounds Inorganic chemistry of strong acids
S.M. Neale, D.Sc.	High frequency dispersion of dielectric absorption in poly-electrolytes and in the double layer
A.F.H. Ward, Ph.D.	Rheology of systems containing polymers
G.J. Kakabadse, Dr.Ing.	Specificity of analytical reactions The chemistry of vanadium Persilicates
R.B. Heslop	Free-radical hydroxylation and nitration in aqueous solution Peroxy compounds of nitrogen and sulphur
B.A. Pethica, Ph.D.	Contact potential and kinetic studies in ultra-high vacua in the system silver-caesium The heats of formation of the electrical double layer Surface potential studies of the specific binding of ions at charged monolayers Heats of wetting and adsorption of organic liquids to silica Conductance and thermodynamics of colloidal electrolyte micelles
G.W.R. Bartindale, D.Phil.	Molecular structures by X-ray diffraction
A.S. Dunn, Ph.D.	Kinetics of addition and condensation polymerization actions Molecular weight distribution
R.F. Simmons, Ph.D.	Kinetics of gas-phase decomposition reactions Mechanism of the extinction of flames by halogens Kinetics of combustion reaction
M.M. Crowder	Reactions of co-ordination compounds in solution
M.F. Lappert, Ph.D.	Organo-boron and other electron deficient compounds
J. Lee, Ph.D.	High resolution nuclear magnetic resonance Infra-red spectroscopy of inorganic compounds
G.J. Leigh	Non-transitional element complexes
M.J. Newlands, Ph.D.	Silicon to metal bonds Silicon to metalloid bonds

Organic:

Professor R.N. Haszeldine, Ph.D., D.Sc., Sc.D.	Fluorocarbon derivatives and reactions Silicones and polysilioxanes Hydride chemistry Polymers containing hetero-atoms Organic sulphur compounds Carbene reactions Polyhalogeno-aromatic compounds Infra-red spectra of aliphatic compounds Polymerization mechanism Organic compounds of nitrogen Plastics and polymers Organo-metallic and organo-metalloidal compounds Chemistry of strong acids

3. Chemistry (*continued*)

Organic (*continued*)

G. Baddeley, D.Sc., Ph.D.	Effects of intramolecular configuration on chemical reactivity Aluminium chloride as a reagent in organic chemistry The chemical consequences of the association of molecules Cationic attack on alkanes
G. Holt, Ph.D.	Action of Friedel-Crafts catalysts on aromatic sulphonic acids and derivatives Studies on aliphatic diazo compounds Sulphonated resins as catalysts in organic chemistry
A.R. Thompson, Ph.D.	Phenol-formaldehyde condensation products Infra-red spectrum of aromatic compounds Light absorption of organic compounds Effect of hydrogen bond formation on electronic spectra Colour filters
P.C. Crofts, Ph.D.	Organic chemistry of phosphorus
N.H.P. Smith, Ph.D.	Effects of molecular conformation on physical and chemical properties of organic compounds
J.E. Davies, Ph.D.	Natural products
R.E. Banks, Ph.D.	Fluorine chemistry
J.M. Birchall	Fluorine chemistry
H. Goldwhite, Ph.D.	Halogenated organic compounds: reaction compounds
R.S.W. Braithwaite, Ph.D.	Polycyclic cinnoline derivatives

4. Engineering

Chemical:

Professor F. Morton, Ph.D., D.Sc.	
with H. Holness	Oxidation of transformer oils
with P.J. King, Ph.D.	Separation of complex hydrocarbon mixtures
with A. Sagarra, Ph.D.	Constitution of mineral oils
with S.T. Loh, Ph.D.	Solubility studies of systems involving coal tar bases
T.K. Ross, Ph.D.	Corrosion of magnesium sprayed steel Polarization of sprayed aluminium Corrosion due to combustion of hydrocarbons Velocity effects in submerged corrosion Adsorption inhibition of corrosion The pelletization of powders The melting of solids Liquids mixing in distillation column Recovery of gaseous fuels
with A. Rushton	Heat transfer in sublimation
W.S. Norman, Ph.D.	Heavy water separation processes Stability of liquid films in adsorption columns, distillation columns and on heated surfaces Distillation in packed columns Distribution studies in packed towers
H. Holness with R.W. Adams	Thermogravimetric studies of some hafnium compounds
F.P. Stainthorp, Ph.D.	Thickness and wave profile of liquid films Control of precipitated particle size Non-linear control systems with load changes Frequency response characteristics of thick-walled jacketed pans

4. Engineering (*continued*)

Chemical (*continued*)

O.E. Potter, Ph.D.	Mass transfer between liquids and between gases and liquids
with B. Gay, Ph.D.	Local coefficients in heat exchangers
	Diffusion controlled reactions on catalysts
	Effect of mixing on catalytic reactor performance
G.A. Turner, P.D.	Frequency response determinations of flow distributions and physical structures
	Determination of diffusion in flow systems
C.A. Curtis, D.Sc.	The effect of agitation on heterogeneous liquid-liquid reaction rates
D.B. Scully	Vibrations of naphthalene
	Use of digital computers in chemical engineering calculations
D.G. Bagg	Polargraphic studies with a rotating platinum electrode
H.J. Bray, Ph.D.	Alloys in the system Bi-Cd-Sn
with J.D. Kitchingman	X-ray studies of phase changes and order-disorder phenomena in alloys
with K. Pearce	Effect of Al and Si additions on malleable cast iron
with R.J. Edwards	Investigation of the kinetics of the first stage graphitization of Fe-C-Si alloys
with F.D. Bell	A study of the Au rich ternary system Bi-Cd-Sn
with J.F.C. Morden	Fibre metallurgy
J.H. Cairns, Ph.D.	A study of the total emissivity, heat capacity and energy of transformation of metals
C. Handford	Etching metallic surfaces by controlled elemental attack
P.E. Evans, Ph.D.	Structure-sensitive properties of some ceramic materials
	Studies of interstitial compounds prepared with a pure heat source
	Fundamental studies in sintering
	Studies of magnetic materials prepared by powder metallurgical methods
with J.F.C. Morden	Fibre metallurgy
B. Gregory, Ph.D.	The effect of certain elements on formation and transformation of pearlite in steels of certain composition

Electrical:

Professor E. Bradshaw, M.B.E., Ph.D.	Applications of flying spot scanner
	Self-optimising systems
C. Adamson	Analogue computers for the solution of several mathematical and technological problems
N.M. Barratt	
N.N. Hancock	Commutation studies
E.N. Pickering, Ph.D.	Network synthesis
V.H. Attree	X-ray detection
O.P.D. Cutteridge, Ph.D.	High voltage direct current studies; plant and systems
J. Hindmarsh	Protective gear studies
D.K. McCleery	Power system analysis
B.D. Nellist	New forms of indicating instruments
J. Rawcliffe	Use of flexure pivots in electrical instruments
F.G. Heath	Two- and four-port networks as very high frequency filters
C.S. Gledhill	
B. Horsley	Transistor devices
F.R. Perry	Chain codes
W.P. Baker	Microwave discharges
R. Feinberg, D.Ing.	
P.L. Taylor	
P. Mathews	
W.J. Gibbs, D.Sc.	

4. Engineering (*continued*)

Mechanical:

Professor H. Wright Baker	Friction testing of brake lining and other materials
J.H. Lamble, Ph.D.	Stresses, deflections and support reactions for flat plates subjected to uniformly varying hydrostatic loading and to rolling loads Relation of parts of the S/N curve in fatigue with specific physical tests The use of diffraction gratings in the control of strain Photoelasticity: An examination of the mechanics of the sandwich method Stresses at a branch or nozzle in a thick cylinder subject to internal pressure Membrane stresses in flat plates subject to uniform and uniformly varying hydrostatic loading Load distribution in screwed fastenings A study of the scarphed joint
F. Koenigsberger	Measurement of cutting forces during milling operations under various cutting conditions Some aspects of automatic error correction in machine tool alignment Use of different measuring systems for machine tool positioning and control An investigation into the rigidity characteristics of welded machine tool structures by means of model and full scale experiments Servo problems in the positioning and control of machine tool slides Effect of residual stresses on dimensional stability of welded machine structures Effect of welds, which do not carry loads, on the fatigue strength of plate materials. (See also J.H. Lamble) Stresses in hammer guides due to impact other than transverse
G.S. Cantle, Ph.D.	Distribution of heat flux round vertical water-cooled tubes heated by radiation in a non-uniform enclosure, and its effect upon convective heat transfer rate within the tube. Stability of pulverized fuel flames with particular reference to ignition zone. Emissivity of pulverized flames in volatile region.
E. Johnson	The influence of speed on torque value when tapping $\frac{1}{4}$" dia. holes with variation in hole diameter and with oils with different characteristics
A.P. Hatton, Ph.D.	Thermal conductivity of insulating materials at low temperatures with special reference to the effect of contained water and ice Influence of surface roughness on heat transfer to air flowing between parallel flat plates. Measurement of heat transfer coefficient on smooth and rough flat plates by velocity and temperature surveys in the boundary layer
G.R. Schiffer	Development of teaching methods in drawing and design
J. Parker, Ph.D. J. Kettlewell	Behaviour of metals under complex stress conditions beyond the elastic limit
J.K. Royle, Ph.D.	Non-linear damping of a hydraulic control Feedback control on hydrostatic film bearings. Elimination of threshold effects in hydraulic amplifiers. Stiffness improvement in high gain electro-hydraulic drives
B.J. Fielding	Vibration of prime movers

4. Engineering (*continued*)

Mechanical (*continued*)

M. Barash P.L.B. Oxley, Ph.D.	On the transition from a continuous chip to a discontinuous chip and the influence on the geometrical and physical properties of the machined surface
J. Skorecki	Vibration of prime movers (diesel engines). Vibration of machine tools
J.S. Turton	Heat and mass transfer from humid air flowing in a straight vertical tube. Performance analysis of cross flow heat exchangers under transient flow and temperature conditions
P.L.B. Oxley, Ph.D.	Investigation of the effect of different rates of work-hardening on the machining process
H.J. Baker	Wear effects in simple sliding contacts
G. Roberts	Development of a rapid method for the measurement of thermal conductivity and diffusivity Measurement of local heattransfer Coefficients and friction factors for smooth and roughened plates parallel to forced air streams
G. Needham	Stresses in hammer guides caused by impact loading other than transverse
G.H. Farnworth	Vibrations of grinding machines

Municipal:

Professor R.J. Cornish	Soil moisture and the factors governing its movement
A. Johnson	Permeability of soils
E.Ll. Morgan	Stabilized soil: an interpretation of cylinder penetration ratio
G.B. Tait	Lime-stabilization
E. Spencer	The determination of the true angle of internal friction and true cohesion in clay soils
D.S. Chisholm J.B. White	Astronomical surveying: Solution of sets of observations for position; the correction for curvature in ex-meridian observations; devices to eliminate personal error of observation; design of registering chronometer; graphical and mechanical solution of spherical triangles
P. Coackley, Ph.D.	Analysis of indeterminate structures
J.C. Collins	Biochemical oxidation of alkyl benzene sulphonates and their degradation products
G.M. Bish	Influence of nitrogen in trade wastes Sludge dewatering Study of variables controlling sludge drying by evaporation Removal of radioisotopes from waste streams Disposal of radioactive wastes Mechanics of sedimentation Yield-storage relationships for impounding reservoirs Effect of additives on the workability of high-strength concrete

Structural:

Professor W. Merchant S.J. McMinn, Ph.D.	Investigation of the elastic, plastic and stability phenomena of structures
R.B.L. Smith	Reinforced concrete
D.M. Brotton, Ph.D. F.N. Pannell	Application of digital computers to structural problems

5. Mathematics

Professor G.J. Kynch	Rheological and sedimentation problems Stress waves Kinetic theory of ionized gases
L.R. Shenton, Ph.D.	Finite difference calculus Applications of statistics
G.M. Bell, Ph.D. H.E. Hogg	Statistical thermodynamics of colloid and co-operative systems
R. Butler, Ph.D.	Hydraulic servomechanism theory
V.T. Buchwald	Elasticity theory of plates
W.M. Fairbairn, Ph.D.	Theoretical nuclear physics
H. Neumann (Mrs.), Ph.D., D.Sc.	Group theory. Foundations of geometry
J.A.H. Shepperd, Ph.D.	Group theory
H.B. Shutrick, Ph.D.	Differential geometry
G.M. Vaisey (Miss)	Relaxation methods
R.A. James	Theoretical astronomy
A. Davis, Ph.D.	Kinetic theory

6. Physics

Professor H. Lipson, F.R.S.	X-ray diffraction, particularly crystal-structure determination by optical diffraction methods
C.A. Taylor, D.Sc., Ph.D.	Crystal structure determination by optical methods. Physical optics of image formation
A. Hargreaves, Ph.D. E. Stanley, Ph.D. R. Diamond, Ph.D.	Crystal structure determination
I.G. Edmunds, Ph.D.	X-ray diffraction studies of metals
H. Steeple, Ph.D.	Crystal structures at low temperatures
F. Fowweather, Ph.D.	Acoustics
M.M. Woolfson, Ph.D.	Crystal structure determination by direct methods
J.E. Geake, Ph.D.	Instrumentation, particularly spectroscopy

7. Technology

Textile Chemistry and Paper Technology:

Professor R.H. Peters	Dyeing theory studies Studies in diffusion Reaction mechanism in crosslinked polymers
H.A. Turner	The fundamental processes of textile printing, with special reference to dye transfer Investigations on plant operation problems
F.L. Hudson, Ph.D.	Rheological properties of cellulosic fibres and paper under various conditions of humidity and temperature Radioactive tracers in paper: Investigations of the sorption of sulphur dioxide by paper in relation to its permanence Crosslinking of papermaking fibres Two-sided effects in paper
G.S. Egerton, Ph.D.	Photochemistry of azobenzene and its derivatives and of amino-anthraquinone compounds Action of light on dyes and textile fibres Physico-chemical changes in dye high-polymer systems
A. Johnson, Ph.D.	Chemistry of esters of leuco vat dyes Chemistry of diazo ethers Stability of metal chelate compounds Heats of dyeing reactions

7. Technology (*continued*)

Textile Chemistry and Paper Technology (*continued*)

J.T. Chamberlain, Ph.D.	Cis/trans isomerism of azo compounds Reactions of cellulose with simple compounds
L.C. Spark, Ph.D.	Heats of dyeing reactions Colorimetric studies on dyeing and printing systems
J.P. Nicholson, Ph.D.	Kinetics of crosslinking reactions in polymers
A.P. Lockett, Ph.D.	Studies in light scattering
R. McGregor, Ph.D.	The mechanisms involved in the diffusion of dyestuffs in textile materials
P. Faichney	Investigations on the effect of rubber covered bedplate and beater roll on the laboratory beating of pulp
L.A. Kirk	Role of felts in the hot surface drying of paper
J.H. Young	Constituents of natural cellulosic fibrous raw materials and their reactions during the isolation of cellulose by industrial pulping processes Measurements of properties of paper sheets which affect behaviour during printing operations and the effect of variations in these properties on the quality of the printed reproduction

Textile Industries:

Professor J.J. Vincent	Weft insertion
Professor W.E. Morton	Rectilinear comber design
G.E. Cusick	Fabric drape and the factors governing it
J.W.S. Hearle, Ph.D.	The structure and physical properties of textile fibres and yarns
V. Duxbury	Boundary conditions of strip and grab tensile testing of fabric Air drag on suspended yarns and filaments Pneumatic weft projection
J.S. Taylor	Distribution of fibre mass in carding Cause of carding sliver long wave irregularity Significance of particular yarn wavelength in woven cloth Lap formation by scutcher cages and effect of fibre separation on this
G.R. Wray	The drafting behaviour of various fibre assemblies Textured filament yarns Yarn ballooning

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1. Biology

Professor A.R. Gemmell	Ecology of sand dunes General biology of the Bryophyta especially water relations Microbiological effects of chemical soil sterilization
R.G. Evans, Ph.D.	Intertidal ecology Water relations of *Patella* spp.
R.M. Badcock (Miss)	Ecology and taxonomy of the Hydropsychidae
K.M. Goodway, Ph.D.	Ecology of bogs Experimental taxonomy of *Galium* and *Quercus*
M. Campion (Miss), Ph.D.	Physiology of reproduction in Hydra
G. Russell, Ph.D.	Growth in freshwater of marine algae
E.P. Perrott (Mrs.), Ph.D.	Aquatic Phycomycetes

2. Chemistry

Professor H.D. Springall, D.Phil.	Molecular structure and energetics (calorimetry dielectrics; electron diffraction)
with C.T. Mortimer, Ph.D.	Protein structure
P.H. Plesch, Ph.D.	Cationic polymerization Chemistry of catalytic metal halides
I.T. Millar, Ph.D.	Heterocyclic and organo-metallic chemistry
S.C. Nyburg, Ph.D.	X-ray crystal structure analysis
G. Jones, Ph.D.	Natural products—quinolizines
C.T. Mortimer, Ph.D.	Thermochemical studies on organo-metallic and organo-metalloid compounds
R. McWeeny, D.Phil.	Quantum mechanics of molecules and crystals
V.C. Ewing, Ph.D., D.Phil.	Investigation of the structure and internal vibrations of molecules in the gas phase by electron diffraction studies

3. Geography

Professor S.H. Beaver	Micro-climatology of N. Staffordshire and the Pennine edge Reclamation of industrial wasteland
M.M. Cole (Miss), Ph.D.	Land utilization studies in the S. Pennines Origin of savanna types of vegetation in Brazil Opportunities for further development of savanna lands of Brazil and Africa
W.M. Williams	Social geography of Devonshire
A.D. Walton	Geomorphology of N.E. Staffordshire British resources of glass-making sands
M. Lambert (Mrs.)	The silk industry of N.E. Staffordshire
J. Naylon, Ph.D.	Irrigation and colonization in Spain
E. Derbyshire	Glacial geomorphology

4. Geology

Professor F.W. Cope, D.Sc.	Coal Measures of Potteries and Cheadle coalfields Stratigraphy of Carboniferous Limestone of Derbyshire Stratigraphy of Carboniferous Limestone of Anglesey Stratigraphy and palaeontology of Carboniferous rocks of the Cheshire-Derbyshire-Staffordshire border country Lower Carboniferous brachiopods
T.G. Miller	A critique of stratigraphic principles and practice
T.P. Burnaby, Ph.D.	The frequency distribution of foraminiferal species in some fossil and recent faunas Ordovician diploporite cystids
J.L.M. Lambert	Structure and petrology of the Gramscatho Beds, S.W. Cornwall
C.S. Exley, Ph.D.	Further studies of the St. Austell Granite, with special reference to the distribution and composition of minerals

5. Mathematics

Professor D.S. Jones, M.B.E., D.Sc.	Electromagnetic theory
D.C. Russell, Ph.D.	Infinite matrices and summability
J. Wiegold, Ph.D.	Theory of groups

6. Physics

Professor D.J.E. Ingram	Magnetic resonance of the solid state, including ultra-violet irradiation and free radical studies
D.E. Davies, Ph.D.	Gas discharges with special reference to surface effects
D.G. Holloway, Ph.D. D.M. Schlapp, Ph.D.	Physical properties of glass with special reference to the state of the surface
J.N. Hodgson, Ph.D.	The infra-red reflecting properties of metals
N.A. Surplice, Ph.D.	Electron and ion emission from solids

7. Psychology

A.H. Iliffe (Head of Department) P. Halmos, Ph.D.	Predictive value of psychological tests for undergraduate performance

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1. Agriculture

Professor J.D. Ivins, Ph.D.	Evaluation of grass production techniques in terms of animal production The utilization of herbage by the grazing animal
with N. McDermott (Mrs.), M.B.E.	Factors affecting yield of potato crop
P.M. Bremner	Growth analysis and yields of cereals
G.E. Lamming, Ph.D.	Factors affecting the reproductive activity of sheep Effect of ovarian hormones on resistance to genital infections Effect of steroid hormones on growth rate and carcase quality in ruminants
J.T. Morgan, Ph.D.	Growth and development of piglets in utero Nutrition of the breeding sow during pregnancy and lactation
with F.R. Green, Ph.D.	Sow milk production Nutrition of the bacon pig; protein levels, antibiotics and implantation with hexoestrol Nutrition of the broiler chicken
J. Chatterton	Crop drying
J.C. Buxton, Ph.D. (Veterinary Investigation Officer)	The occurrence of *Br. abortus* in cow's milk Bovine aphosphorosis Porcine haemolytic anaemia "Swayback"
F.G. Clegg	Effects of antibiotic supplemented feeding on structure and function of the alimentary tract
R.R. MacKay	The causes of abortion and stillbirth in pigs Toxoplasmosis
Agricultural Botany:	
Professor F.L. Milthorpe, Ph.D.	The growth of leaves Growth of the potato Factors influencing the transpiration rate Host pathogen relationships
M.M. Edwards (Miss), Ph.D.	The germination of seeds of charlock, *Sinapis arvensis*. L
K.W. Dent, Ph.D.	Competition between grasses
T.H. Nicolson, Ph.D.	The mycotrophic habit in grasses Competition between soil fungi
W.J. Whittington, Ph.D.	Cytology and growth characteristics of *Festulolium loliaceum* (Huds.) Genetic control of leaf growth Physiological role of boron

1. Agriculture (*continued*)

Agricultural Chemistry:

Professor E.G. Hallsworth D.V. Crawford	General studies of pedogenesis, with particular reference to the movement of clay and iron, including biochemical aspects of podzolization
G. Norton, Ph.D. I.H. Rorison, Ph.D. I.R. Cowan	Studies in the nutrition and biochemistry of the Leguminosae
D. Lewis, Ph.D.	Ruminant physiology and digestion Metabolism in the rumen with particular reference to the digestion of protein and carbohydrate materials Metabolic disorders in the ruminant; assessment of the rate of utilization and the factors affecting it
E.R. Ling, Ph.D.	Studies on the influence of acidity in milk and milk products

Agricultural Economics:

R.B. Jones	Problems of farm classification Economics of beef production
K.A. Ingersent	Economics of farm buildings
T.K. Warley	Agriculture in the common market and other regional trading blocs The changing role of agriculture in the process of economic growth
G.E. Jones	Factors affecting the adoption of new farm practices
K.E. Hocknell	The profitability of fertilizer applications to grass for beef production
H.G. Evans	Economies of scale in commercial egg production

Agricultural Microbiology:

M. Woodbine, Ph.D. A. Seaman, Ph.D.	Mass production of micro-organisms, with reference to their production of fat or protein Bacteriology and chemotherapy of the Corynebacteriaceae Anti-bacterial mechanisms of trypanocides Microbiology of sub-lethal heating Bacteriology of *Rhizobium* spp.

Agricultural Zoology

P.W. Murphy, D.Phil.	The fauna of leaf litter and studies of soil-inhabiting mites (Acarina) and microarthropods The biological characterization of 'humus forms' with particular reference to the animal component The oribatid mites associated with fruit trees
J.Y. Ritchie	Biological problems of Aphididae with particular reference to infestation and movement
W.N. Yule	Studies of the biological properties of pyrethrum formulations for use against pests of horticultural crops

2. Botany

Professor C.G.C. Chesters	Soil microbiology, with special reference to rhizosphere studies and the biology of soil inhabiting fungi Taxonomy and physiology of bark-inhabiting Ascomycetes Microbiological decomposition of seaweed products Physiology of fungi with special reference to fungal enzyme systems Certain aspects of forest pathology

2. Botany (*continued*)

M. Turner (Mrs.)	Bacterial populations of esturine salt marsh muds Classification and biology of species of *Mortierella*
G.J.F. Pugh, Ph.D.	Studies of the rhizosphere populations of salt marsh plants
M.C. Pearson, Ph.D.	Ecology of *Hippophae rhamnoides* Study of Pleistocene deposits of the Trent Valley
W.D. Connell	Germination in relation to dormancy
E.C.D. Cocking, Ph.D.	Biochemical and immunological aspects of growth and development with special reference to plant cells
B.G. Haughton (Miss), Ph.D.	The breakdown of pectic materials by bacteria

3. Chemistry

Inorganic and Physical:

Professor D.D. Eley	Studies on physical properties of metals and enzymes in relation to their catalytic activity and surface properties
C.C. Addison, Ph.D.	Friedel-Crafts complexes and cationic polymerization reactions
S.C. Wallwork, D.Phil.	Semi-conductivity of organic compounds
N.N. Greenwood, Ph.D.	Problems of lyophobe organosols
W.E. Addison, Ph.D.	Homogeneous reaction kinetics
R.B. Cundall, Ph.D.	The kinetics of polar polymerization and of reactions in films at liquid surfaces
G.D. Parfitt, Ph.D.	Structure of metallic complexes X-ray study of organic complexes and hydrogen-bonded crystals Properties of freshly formed surfaces Physico-chemical properties of liquid metals and alloys Reactions in non-aqueous solvent systems Inorganic molecular addition compounds
D.G. Tuck, Ph.D.	Use of radioactive tracers

Organic:

A.W. Johnson, Ph.D., Sc.D.	Investigations on natural products, especially mould metabolites and compounds related to vitamin B_{12}
B.D. Shaw, Ph.D.	The chemistry of plant growth substances
J.C. Roberts, Ph.D.	Structural studies on di- and tri-terpenes
T.J. King, Ph.D.	Extractives of resistant hardwoods
C.J. Timmons, Ph.D.	Studies of the spectroscopy of organic compounds
H. Booth, Ph.D.	Investigations of certain classes of nitrogeneous heterocyclic compounds

4. Engineering

Civil:

Professor R.C. Coates, with P.S. Pell, Ph.D.	Flexure of skew slabs The fatigue strength of bitumen sand mixes
D. McKay, Ph.D.	Pile driving by vibration methods
P.S. Pell, Ph.D.	Thermal stresses in reinforced concrete
D. Lenczner	The distribution of pressures under flexible footings
F. Sherratt with B. Mayfield	Development of load cells Steering of vehicles in soft ground
R.W. Sparrow, Ph.D.	Pore pressure changes during cyclical shear of soils
with C. Tory	Motion resistance of a towed wheel Stresses in layered systems

4. Engineering (*continued*)

Electrical:

Professor J.E. Parton, Ph.D.	Response loci of a.c. machines under slowly varying conditions Analogue computer for studies of nuclear reactor control Reswitching transients in machines Homopolar generator and mercury slip rings Reciprocating machines
W. Alexander, Ph.D.	Transistor bi-stable circuits Electronic and magnetic elements in computers
S.A. Swann, Ph.D.	Electromagnetic fault detection in non-ferrous pipes An investigation of the magnetic field in the air-gap of a dynamo-electric machine with eccentric rotor. Speed control of induction motors
J.P. Newsome	A study of Hall effect and magneto-resistance effect devices and their application to electrical circuitry Non-destructive testing; a study of certain aspects of the "eddy-current" technique
A.M. Marsden	Subjective assessment of light having a periodic waveform Starting of fluorescent tubes for intermittent use
A. Wright	The performance and protection of long, extra high-voltage, electrical power lines

Mechanical:

Professor J.A. Pope, D.Sc.	Effect of cold rolling fatigue strength of large shafts Propagation of fatigue cracks
with B.R. Dudley and M.J. Owen	Strength of rotor discs
D.M. Davies, Ph.D.	Aspects of heat transfer during evaporation
with E. Markland, Ph.D.	Flame stabilization by bluff bodies Eddy diffusion in a pulsating air stream
with H. McCallion, Ph.D.	Behaviour of rubber under impact
E. Markland, Ph.D.	Discharge from perforated pipes Aspects of design of centrifugal blowers Performance of small hydraulic control valves Performance of diffusers
with A. Lichtarowicz	Characteristics of hydraulic systems
H. Fessler, Ph.D.	Photoelastic determination of stresses in pressure vessels and bolted connections Plasto-elastic stress distributions studied by photoelastic reflection technique Drum head stresses
W.B. Heginbotham,	Effects of cutting conditions on surface finish Development of lathe tool dynamometers
H. McCallion, Ph.D.	Determination of the control characteristics of plant The mechanism of vibrating conveyors The dynamics of lace machinery Statics and dynamics of framed structures
E. Ollerton, Ph.D.	Fatigue in rolling contact Photoelastic determination of contact stresses under radial and tangential loads
T.F. Roylance	Cumulative damage in fatigue Heat transfer during evaporation of a two-component mixture

5. Geography

Professor K.C. Edwards	Historical geography of the Luxembourg iron and steel industry Geographical aspects of urban development

5. Geography (*continued*)

G.J. Fuller (Miss), Ph.D.	Development of settlement and population along the E. coastlands of San Francisco Bay between 1850 and 1955 Development of settlement and population in Santa Barbara, California, between 1850 and 1955 Development of settlement in central Derbyshire in the Middle Ages
F.A. Barnes	Anglesey: historical and regional geography Economic geography of the milk industry in England and Wales
F.A. Barnes with C.A.M. King (Miss), Ph.D.	Beach changes on the Lincolnshire coast
C.A.M. King (Miss), Ph.D.	Beach characteristics in W. Ireland Glaciology and geomorphology in W. Norway
J.P. Cole	The Milan industrial area with special reference to population changes, 1881-1951
R.H. Osborne, Ph.D.	Internal migration of population in Britain Economic developments in E. Europe

6. Geology

Professor W.D. Evans	The Lower Palaeozoic rocks of W. Wales The Devonian rocks of N. Cornwall The geochemical properties of coal The mineralogy of airborne dusts and their relationship to the aetiology of pneumokoniosis The petrogenesis of unconsolidated sediments The geochemistry of oil
R.B. Elliott, Ph.D.	The structure and petrology of the metamorphic rocks between Sota and Høydalen, Jotunheimen, Norway The phase petrology of British Tertiary tholeiites
A.M. Honeyman	The stratigraphy and palaeontology of the Carboniferous Limestone of S. Wales
R.J. Firman, Ph.D.	Structure, stratigraphy, petrology and mineralization of Borrowdale Volcanic rocks in the Lake District Study of fracture systems in the Great Scar Limestone, Yorkshire
A.J. Rowell, Ph.D.	The Bala and Valentian rocks of the Lake District between Coniston and Ambleside Inarticulate brachiopods
F.M. Taylor, Ph.D.	The morphology, ontogeny and taxonomy of the Avonian Rugose Corals of Derbyshire Carboniferous stylolites
W.A. Cummins	Stratigraphy and structure of Salopian rocks of N.W. Montgomeryshire, Wales Salopian geosynclinal sedimentation
Photogrammetry:	
Professor W.D. Evans	The application of photo-survey to the mapping of coalfields

7. Horticulture

Professor J.P. Hudson, M.B.E., G.M.	Effects of different water-regimes and salt concentrations on the growth and yield of plants Factors affecting regeneration of plants, especially from roots Control of environment for experimental work with plants and effects of environment on growth; possibilities of affecting responses of plants to particular weather conditions

7. Horticulture (*continued*)

M.E. Marston (Miss), Ph.D.	Vegetative propagation of plants, with special reference to regeneration from leaf cuttings
W. Heydecker, Ph.D.	Environmental effects on the establishment of vegetable seedlings
W.M. Dullforce (Miss)	The effects of transplanting on subsequent growth and development of plants in relation to environmental factors

8. Mathematics

Professor H.R. Pitt, Ph.D., F.R.S.	Fourier analysis and random function
Professor R. Hill, Sc.D.	Theory of elasticity and plasticity
L.E. Prior	Involutions
G. Power, M.B.E., Ph.D.	Problems of fluid mechanics and electricity
M. Jackson (Miss), Ph.D.	Bilateral generalized hyper-geometric series
E.E. Jones, Ph.D.	Potential problems of two-dimensional aerodynamics
M.E. Noble, Ph.D.	Theory of functions
A. Rose	Mathematical logic
J.E. Adkins, Ph.D.	Finite elastic deformations and continuum mechanics
J. Copping, Ph.D.	Summability
C.W.J. Granger, Ph.D.	Statistics
R.J. Knops, Ph.D.	Elasticity
A.L. Brown	Functional analysis

9. Metallurgy

Professor J.W. Cuthbertson	Fundamental researches on electrodeposition, anodizing and bright plating
H.K. Lloyd, Ph.D.	Determination of residual stresses in ferrous alloys Effect of hydrogen on the transformation characteristics of steels Effects of tempering on the hardness of alloy steels case:—hardened by nitrogen and other gaseous media Development of high-strength copper-base alloys containing manganese and other elements
E. Holmes, Ph.D.	Ultrasonic testing of welds
R.B. Waterhouse, Ph.D.	Intercrystalline failure by contact with liquid metals Diffusion of impurities in chromium at elevated temperatures Fretting corrosion

10. Mining

Professor F.B. Hinsley	Study of heat and humidity in mines Thermal properties of Coal Measure rocks Study of noise in fan systems Flow of air in rough ducts
R.L. Whitmore, Ph.D.	Hydrodynamics of suspensions Study of coal washing processes
L.H. Morris	Oxidation of coal The lighting of mines
P. Hackett, Ph.D.	Study of ground movement in mining
J.H. Brown, Ph.D.	Study of physical properties of Coal Measure rocks

11. Pharmacy

Professor G. E. Trease	The pharmacognosy of apocynaceous drugs The history of medieval pharmacy

11. Pharmacy (*continued*)

Professor G.E. Trease with W.C. Evans, Ph.D.	The pharmacognosy of species of *Rauwolfia*
with G.M. Watson (Miss)	Pharmaceutical history in the 18th Century
W.C. Evans, Ph.D.	Alkaloidal biogenesis in the genus *Datura*
M.W. Partridge, Ph.D. with H.J. Vipond, Ph.D. R.J. Grout, Ph.D. H.A. Turner, Ph.D.	The study of heterocyclic compounds with special reference to chemical carcinogenesis
F.C. Cooper, Ph.D.	The chemistry of polyaza-heterocyclic compounds
H.A. Turner, Ph.D.	The pharmacy of quaternary ammonium compounds
W.B. Hugo, Ph.D.	The mode of action of antibacterial agents; bacterial metabolism
R.E. Gilbert, Ph.D.	A study of smooth muscle spasmogens in various liver extracts
G.W.G. Sharp, Ph.D.	A study of certain diurnal rhythms

12. Physics

Professor L.F. Bates, Ph.D., D.Sc., F.R.S.	Heat changes accompanying magnetization processes Bitter figure studies of ferromagnetic domains Magnetic susceptibilities of rare earth and uranium alloys
Professor K.W.H. Stevens, D.Phil.	Theoretical investigations of the ferromagnetism of metals and alloys and of the paramagnetism of salts. Maser theory
N. Davy, M.M., D.Sc.	Theory of electric and magnetic fields. Equations of state
J.C. Woolley, Ph.D.	Properties of high coercivity magnetic materials Properties of semiconducting materials
K.J. Standley, D.Phil.	Microwave properties of ferrites; paramagnetic resonance; solid state masers
G.D. Adam, Ph.D.	Magnetic resonance
W.F. Nash, Ph.D.	Penetrating cosmic radiation
J.H. Phillips, M.C., Ph.D.	Properties of high coercivity magnetic materials
F. Hepburn, Ph.D.	Wave forms of atmospherics
J.C. Matthews, Ph.D.	Semiconductors and low temperatures
P.M. Rowell, D.Phil.	Low temperature physics
L.J. Challis, D.Phil.	Heat flow at low temperatures
J.G. Booth	Ferrimagnetism

13. Zoology

Professor E.J.W. Barrington, D.Sc.	Cytology and function of vertebrate digestive and endocrine systems
M.R. Young (Miss), Ph.D.	Parasitology Marine biology
A. Aitken	Metabolism of fish
B. Morris, Ph.D.	Mammalian embryology
K.U. Clarke, Ph.D.	Insect respiration
A.J. Matty, Ph.D.	Endocrinology of fish
R. Morris, Ph.D.	Osmo-regulation in cyclostomes

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1. Agriculture

Professor G.E. Blackman, F.R.S.	The analysis of environmental factors governing plant growth and development especially the light factor. The physiology of growth substances Physiological studies of phytotoxicity and the factors controlling selective action
with M.H.R. Soper	Factors affecting the development and productivity of the bean under field conditions
J.L. Harley, D.Phil. R.P. Martin, D.Phil. B.C. Loughman, Ph.D.	Investigations of plant nutrition, active transport and phosphorus metabolism; application of tracer methods to agricultural problems; accumulation of fission products in biological food chains
J.L. Harper, D.Phil.	The autecology of weeds Competition between closely related species
R.L. Lucas, Ph.D.	Factors affecting seed germination and seedling diseases Control of diseases by chemical, physical and biological means
J.M. Barry, D.Phil.	Biochemistry of peptide and protein biosynthesis
J.R. Clarke, D.Phil.	The adreno-pituitary system in mammals
G.B. Masefield	Environmental effects on the nodulation of leguminous crops

Agronomy:

A.R.C. UNIT OF EXPERIMENTAL AGRONOMY

Professor G.E. Blackman, F.R.S.	Studies in the principles of phytotoxic action The physiology of growth substances
with E.K. Woodford, O.B.E., Ph.D. J.D. Fryer R.J. Chancellor J.G. Elliott K. Holly, Ph.D. L. Kasasian C.C. McCready, D.Phil. D. Smith (Mrs.), Ph.D. R.G. Powell J.A. Sargent, Ph.D.	The development of herbicides
with E.K. Woodford, O.B.E., Ph.D. E.S. Bunting, Ph.D.	The introduction, development and selection of new crops in Great Britain with special reference to oilseed crops and maize for grain and silage production

Agricultural Economics:

INSTITUTE FOR RESEARCH IN AGRICULTURAL ECONOMICS

C. Clark (Director)	Terms of trade Population
R.N. Dixey A.H. Maunder	Economics of farm organization
J.R. Bellerby	Agricultural income
K.E. Hunt	Supplies and prices of agricultural commodities
G.P. Hirsch	Rural social organization
A.G. Antill	Economic statistics of agriculture
W.H. Beckett	Credit, co-operation and agricultural development of overseas territories

1. Agriculture (*continued*)

Agricultural Economics (*continued*)

INSTITUTE FOR RESEARCH IN AGRICULTURAL ECONOMICS (*continued*)

G.R. Allen	Agricultural policy with special reference to prices and marketing
H. Frankel	Agricultural development
G.T. Jones E.G. Jones L. Moore G.H. Peters G.L. Williams	Special project—long-period forecasts of demand for and supply of farm products in the United Kingdom

Soil Science:

R.K. Schofield, Ph.D.	Physical chemistry of soil colloids Factors controlling the release of ions from soils and their uptake by plants
G.R. Clarke	Soil mapping from air photography
P.H.T. Beckett, D.Phil.	Relation of soils to landforms

2. Anaesthetics

NUFFIELD DEPARTMENT

Professor Sir R. Macintosh	Use of air as vehicle for volatile anaesthetics: clinical observations on respiration, blood gases, pCO_2, etc.
H.G. Epstein, Ph.D. J.V. Mitchell	Measurement of lung function and composition of respired gases in mechanically ventilated patients
A. Crampton-Smith	Design of portable bellows respirators for use during anaesthesia
J. Parkhouse, M.D.	Study of appliances for endotracheal intubation

3. Anatomy

Human:

Professor Sir W.E.Le G. Clark, M.D., D.Sc., L.L.D., F.R.S.	Central nervous system Palaeontology of the Primates
A.G.M. Weddell, M.D., D.Sc. E. Palmer (Mrs.)	Anatomy and physiology of cutaneous sensibility
J.S. Weiner, Ph.D.	Physical anthropology Climatic adaptation
D.F.B. Roberts, D.Phil.	Physical anthropology with particular reference to geographical and climatic factors
R. Barer S. Joseph G.A. Meek, Ph.D.	Biological application of new methods of microscopy, including electron microscopy and cell refractometry
D.A.T. Dick, D.Phil.	Cell permeability
M. Clegg (Mrs.), Ph.D. L. Micklem (Mrs.)	Microbeam irradiation of local regions of single cells
T.P.S. Powell W.M. Cowan, D.Phil. M. Matthews (Mrs.) J. Carman L. Adamson	Studies of the central nervous system with particular reference to the connections of the basal ganglia and hippocampus, and the phenomenon of transneuronal degeneration
G.N.C. Crawford	Factors regulating the growth of voluntary muscle
S. Bradbury, D.Phil.	Histochemistry
K. Provins, D.Phil. C. Bell	Neuromuscular control at high and low temperatures
A.R. Lind, D.Phil. P. Humphreys	Effect of temperature on muscular activity
R. Hellon, D.Phil. G. Crockford	Circulatory changes in response to radiant heat

4. Anthropology

Social:

Professor E.E. Evans-Pritchard, Ph.D.	E. Africa (Nilotics) and Arabs
J.G. Peristiany, D.Phil.	E. Africa (Nilo-Hamites) and Cyprus
R.G. Lienhardt, D.Phil.	E. Africa (Nilotics)
J.H.M. Beattie, D.Phil.	E. Africa (Bantu)
D.F. Pocock, D.Phil.	India and E. Africa (Indians)
R. Needham, D.Phil.	S.E. Asia

5. Archaeology

E.T. Hall, D.Phil.	X-ray fluorescent spectrometry of metals and ceramics; development of automated methods, improved counters, and extension to low atomic numbers X-ray crystallography of ceramics X-ray microfluorescence Analysis of paint films, surface enrichment of metals and ceramic glazes
M.J. Aitken, D.Phil.	Optical spectrometry of metals and ceramics Neutron activation analysis of coins by gamma-ray spectrometry Thermo-remanent magnetic dating of fired clays and pottery Detection of buried archaeological features using a proton magnetometer Analysis of ceramic glazes by beta-ray back scattering Radiocarbon assay by delayed boiling and its possible use for radiocarbon dating

6. Astronomy

Professor H.H. Plaskett, F.R.S.	Physics of solar photosphere
M.G. Adam (Miss), D.Phil.	Interferometric determination of solar and laboratory wavelengths
W.R. Hindmarsh, D.Phil.	Laboratory determination of pressure broadening and shift

7. Biochemistry*

Professor Sir H.A. Krebs, M.D., F.R.S.	Cell metabolism
C.W. Carter	Nutrition with special reference to metabolism in avitaminosis
Professor D.D. Woods, F.R.S. R.G. Tucker J. Lascelles (Miss), D.Phil.	Nutrition and metabolism of micro-organisms
L.A. Stocken, D.Phil.	Radiation biochemistry
P.J.R. Phizackerley	Metabolism of malonic acid
D.E. Hughes, Ph.D.	Structure and enzymology in micro-organisms
A.R. Rodgers, Ph.D.	Metabolism of vitamins in micro-organisms
K. Burton, Ph.D.	Function and structure of nucleic acids

*Houses the M.R.C. Unit for Research in Cell Metabolism. The staff of the Unit includes Professor Sir H. A. Krebs, Honorary Director, Dr. K. Burton, Dr. D.E. Hughes, Dr. H.L. Kornberg, Dr. J.R. Quayle, Dr. A.R. Rodgers, Mrs. K. Rodgers, and Dr. R. Whittam.

7. Biochemistry (*continued*)

H.L. Kornberg, Ph.D.	The metabolsim of C_2-compounds in micro-organisms. Terminal respiratory mechanisms in micro-organisms
J.R. Quayle, Ph.D.	The metabolism of oxalate and C_1-compounds in micro-organisms
M.G. Ord (Miss), Ph.D.	Biochemical effects of X-radiation
D.S. Parsons, D.M.	Intestinal absorption; metabolism of intestinal mucosa; electrolyte metabolism of erythrocytes; problems of tissue swelling
R. Cecil, D.Phil.	Sulphur chemistry of amino acids and proteins
P.W. Kent, D.Phil.	Biochemistry of fluoro- and amino sugars
G.D. Parkes, D.Phil.	Reactions of organic compounds
R.M. Acheson, D.Phil.	The identification of urine constituents and some reactions of heterocyclic compounds
J.P. Johnston	Systemic poisoning by nitrogen mustard Effects of ions on histaminase
K. Rodgers (Mrs.)	Ultra micro-analysis
R. Whittam, Ph.D.	Cation transport and metabolism
A.R. Peacocke, D.Phil.	Structure, denaturation and irradiation of nucleic acids and nucleoproteins
C.A. Pasternak, D.Phil.	The effect of inhibitors on aminosugar biosynthesis

Clinical:

RADCLIFFE INFIRMARY

J.R.P. O'Brien (Director)	Physico-chemical properties of haemoglobin. Rapid rate reaction methods
L. Bagratuni, D.M.	Biochemical abnormalities of rheumatoid conditions
J. Becker	Abnormalities of plasma proteins in pathological conditions
M.W. Bradbury	Measurement of body fluids
G.P. Burn	Enzymic constitution of erythrocytes
G. Higgins	Abnormalities of plasma proteins in pathological conditions
R.M. Morris-Owen	Studies in hay fever
B.M. Turner	Micro-electrophoresis of cellular components
W.F. Warren, D.Ph.	Studies in sulphaemoglobin

8. Biometry

N.T.J. Bailey, D.Sc. J.F. Scott M.G. Bulmer, D.Phil.	Theoretical and practical problems in statistical science and biometry Experimental design Mathematical statistics The application of mathematics and statistics to problems in biology and medicine Mathematical statistics Mathematical theory of epidemics Mathematical genetics Function and design of hospitals Queueing theory Time series Experimental design

9. Botany

Professor C.D. Darlington, F.R.S.	Chromosomes, cell physiology, heredity and evolution
E.A. Bevan, Ph.D.	Genetics of fungi
K.R. Lewis, Ph.D.	Evolution of genetic systems
V.S. Butt, Ph.D.	Plastid pigments

9. Botany (*continued*)

E.F. Warburg, Ph.D.	Taxonomy: British flora
F.A.L. Clowes, D.Phil.	Developmental anatomy
K.W. Fuller, Ph.D.	Biochemistry of root growth
S.R.J. Woodell, Ph.D.	Experimental taxonomy and ecology of *Primula*
H.M. Hallaway (Miss), D.Phil	Physiology and biochemistry of ascorbic oxidase
L.K. Crowe (Miss), Ph.D.	Plant breeding
M.D. Gwynne, D.Phil.	Physiology of desert plants

10. Chemistry

Organic:

Professor E.R.H. Jones, F.R.S., Ph.D., D.Sc.	Natural products, especially of the triterpene and acetylene types
T.G. Halsall, Ph.D. M.C. Whiting, Ph.D. G.D. Meakins, D.Phil. V. Thaller, Ph.D. G. Lowe, Ph.D.	Chemistry of steroids, polyenes and of acetylenic and allenic compounds
J.C. Smith, D.Sc., Ph.D.	Physical properties of long-chain compounds Investigations and synthesis of fatty acids
M.L. Tomlinson (Miss), D.Phil.	Indole, carbazole, phenazine and chroman derivatives
W.A. Waters, F.R.S., Sc.D.	Study of free radical reactions Investigations of mechanisms of oxidation
J.A. Barltrop, D.Phil.	Natural products Sulphur compounds Application of radio-isotopes to the solution of chemical and biochemical problems
N. Polgar, D.Phil.	Constituents of the lipids of acid-fast bacilli
G.T. Young, Ph.D.	The chemical investigation of peptides and proteins
A.S. Bailey, D.Phil.	The chemistry of nitrogen heterocyclic compounds with special reference to alkaloids
T.G. Halsall, Ph.D.	Chemistry of isoprenoid compounds Chemistry of fused ring systems
M.C. Whiting, Ph.D.	Ultra-violet and infra-red spectra Organic chemistry of transition metals Chemistry of fused ring systems
B.R. Brown, D.Phil.	Investigations of the tannins Polynuclear heterocyclic systems Hydride-Lewis reductions
G.D. Meakins, D.Phil.	Studies in steroid chemistry Applications of spectroscopy in organic chemistry
R.O.C. Norman, D.Phil.	Correlation between structure and reactivity of organic molecules

Physical, Inorganic and Chemical Crystallography:

Professor Sir C.N. Hinshelwood, D.Sc., P.R.S.	Chemical kinetics including biophysical applications
E.J. Bowen, D.Sc., F.R.S.	Photochemistry; study of fluorescence
R.P. Bell, F.R.S.	Catalysis and quantum chemistry
H.W. Thompson, C.B.E., D.Sc., F.R.S.	Spectroscopy with special reference to infra-red

10. Chemistry (*continued*)

Physical Inorganic and Chemical Crystallography (*continued*)

L.E. Sutton, D.Phil, F.R.S.	Electron diffraction and dielectric phenomena
C.J. Danby, D.Phil.	Mass spectrometry and chemical kinetics
J.D. Lambert	Ultrasonic dispersion, and the properties of gases and vapours
R.F. Barrow, D.Phil.	Spectroscopy with special reference to the ultra-violet
R.E. Richards, D.Phil., F.R.S.	Nuclear magnetic resonance
R.H.P. Gasser	Surface phenomena
F.M. Brewer, M.B.E.	Inorganic chemistry of rarer elements
H.M.N.H. Irving, D.Phil.	Analytical methods and their physico-chemical basis
L.A.K. Staveley	Thermochemistry and phase equilibria of matter at low temperatures
J.W. Linnett, D.Phil., F.R.S.	Study of flames: valency problems
C.S.G. Phillips	Analytical problems: separation of gases by adsorptive methods
L.A. Woodward	Structural problems and Raman spectra
R.J.P. Williams, D.Phil.	Structure and properties of ions in solution Study of polymers
A.D. Buckingham	Theory of dielectric and optical phenomena
L.M. Venanzi, D.Phil.	Co-ordination compounds
M.I. Christie (Miss)	Photochemistry and reaction kinetics
H.M. Powell, F.R.S.	Chemical crystallography with special reference to X-ray work
D.M. Hodgkin (Mrs.), F.R.S.	X-ray structure analysis

11. Engineering

Professor A. Thom, Ph.D., D.Sc.	Theoretical and experimental studies of hydrodynamic problems
H. Motz, Dr.Ing. with D. Walsh	Millimetre wave generation, Cerenkov and undulator radiation; solid state masers, thermonuclear studies
G. Bomford, O.B.E., D.Sc.	Geodesy; deviation of the vertical
J.D. Campbell, D.Phil.	Effect of rate of loading on the plastic deformation of metals
J.E. Bialokoz, Ph.D.	Heat transfer
A.R. Robbins, D.Phil.	Geodetic astronomy

12. Entomology

Professor G.C. Varley, Ph.D.	Insect population ecology Studies of the behaviour of parasitic insects Field study of factors controlling population densities of winter moth
B.M. Hobby, D.Phil.	Bionomics of British flies of the family Empididae Insect morphology and taxonomy
M.W.R. de V. Graham, D.Phil.	Taxonomy of braconid and chalcidoid Hymenoptera

13. Ethnology and Prehistory

PITT RIVERS MUSEUM

T.K.Penniman(Curator) (Head of Department)	Problems of ethnology and archaeology Air photography in environmental studies
J.S.P. Bradford	Work on Mediterranean and Middle Eastern archaeology,
A.S. Butt (Miss), D.Phil.	Pacific and Americanist ethnology and archaeology
K.O.L. Burridge, Ph.D.	Work on techniques of ancient and modern Stone-Age cultures and implements, textiles, ancient metallurgy, ivory, bone and antler, pottery, musical instruments, etc.

14. Forestry

Professor M.V. Laurie, O.B.E.	Tropical forestry: forestry and land use
L. Chalk, D.Phil.	Systematic anatomy of wood Anatomical basis of variation in structure and properties of wood Identification of timbers
W.R. Day	Pathogenic conditions in the soil as determining root disease, the manner of growth in trees and in relation to the fungus flora of the main stem Parasitic and non-parasitic factors in relation to bark necrosis and canker development
E.W. Jones, Ph.D.	Ecology and silviculture of forest trees in Britain Tropical African forests
G.H. Thompson	Biological studies of woodwasps of the genus *Xiphydria*
J.J. MacGregor	Timber resources; supply and demand trends; prices; economic aspects of forest policy; survey of costs and prices in private forestry; work science; influence on efficiency of size of tree; economics of scale in timber conversion
W.R.C. Handley, Ph.D.	Investigations on the activities of micro-organisms in the breakdown of vegetable debris
L. Leyton, Ph.D.	Mineral nutrient relations of forest trees The influence of certain environmental factors, e.g., aeration and humus on the activity and growth of tree roots
E.R.C. Reynolds, Ph.D.	Water relations of the forest
G.W. Dimbleby, D.Phil.	Ecological study of moorland and heathland areas in Britain with special reference to soil development
T.E. Edwardson	Methods of measurement of trees and woods
A.C. Hoyle	Taxonomy and ecology of trees and shrubs, mainly of tropical Africa, and particularly the revision of the genus *Brachystegia*
F. White	Taxonomy and ecology of tropical trees and shrubs, mainly from Africa, and particularly from N. Rhodesia A revision of the Ebenaceae
W.A. Gordon	Forest Law. Colonial forestry
Colonel A.H. Lloyd	Forest utilization and engineering
F.C. Osmaston	Forest management and working plans Silvicultural systems and their practice Aerial survey

15. Geography

Professor E.W. Gilbert	The geography of areas of administration University towns in England and Germany The tourist industry
R.P. Beckinsale, D.Phil.	Physical geography

15. Geography (*continued*)

F.V. Emery	Historical geography History of regional studies in seventeenth century
F.R. Gullick	Economic geography, with special interest in transport
J.M. Houston, D.Phil.	Social geography The regional study of water resources Iberian Peninsula
M. Marshall (Miss)	Cyprus
A.F. Martin	Italy, Newfoundland
E. Paget	Colonial geography, with special interest in W. Indies Settlement in Sweden
N.C. Pollock	Southern Africa
D.I. Scargill	The W. Yorkshire conurbation
C.G. Smith	Local climate Middle East, with special interest in economic development in Israel
M.M. Sweeting (Miss), Ph.D.	Physiography of limestone regions in Australia and elsewhere; denudation chronology of a part of the N. Pennines
M.J. Webb	Location of economic activity The Indian monsoon

16. Geology

Professor L.R. Wager, D.Sc., F.R.S.	Petrology and geochemistry of igneous rocks, particularly the Tertiary igneous rocks of Greenland and Scotland Age of rocks by radioactive methods
E.A. Vincent, Ph.D.	Chemical analysis of rocks and minerals Optical, chemical and magnetic studies of the opaque minerals in igneous rocks Determinations of trace elements by neutron activation analysis
K.S. Sandford, D.Sc., D.Phil.	Geology of N. Africa: also North-East Land, Spitsbergen
J.V. Harrison, D.Sc.	The geology of Central Peru The geology of salt-domes
W.S. McKerrow, D.Phil.	Lower Palaeozoic rocks of W. Ireland The brachiopods and the stratigraphy of the Great Oolite Series
G.M. Brown, D.Phil.	Layered intrusions of Rhum, Skaergaard and Bushveld Pyroxenes of igneous rocks
R.St.J. Lambert, Ph.D.	Problems of metamorphism in the Scottish Highlands Age determinations of rocks and minerals Studies on metamorphic rocks from the vicinity of Mount Everest The crystallography of prehnite
H.G. Reading, Ph.D.	Stratigraphy and structure of the Eo-Cambrian and Lower Palaeozoic of Finnmark, N. Norway
M.G. Bown, Ph.D.	Studies of mineral intergrowths by X-ray diffraction X-ray fluorescence analysis
J.M. Edmonds	History of geology in Oxford and local Jurassic stratigraphy
A.W.G. Kingsbury	The rarer secondary lead, copper, zinc, etc. minerals in the British Isles The mineralogy and mineralization of the Lake District, and occurrences and distribution of rarer minerals and elements, in particular beryllium, in Devon and Cornwall

16. Geology (*continued*)

M.W. Porter (Miss), D.Sc.	Morphological and optical crystallography
D.F.W. Baden-Powell	Pliocene and Pleistocene geology and raised beaches from the Arctic to the Mediterranean

GEOLOGICAL AGE AND ISOTOPE GROUP

M.H. Dodson B.J. Giletti, Ph.D. A.A. Mills, Ph.D. S. Moorbath, Ph.D.	Age of rocks and minerals by potassium-argon, rubidium-strontium, uranium-lead and common lead methods

17. Mathematics

ROUSE BALL CHAIR OF MATHEMATICS

Professor C.A. Coulson, F.R.S.	Wave mechanics, theoretical chemistry Chemical reactivity Theory of metals Molecular structure and spectra

SAVILIAN CHAIR OF GEOMETRY

Professor E.C. Titchmarsh, F.R.S.	Eigenfunction expansions associated with differential equations

SEDLEIAN CHAIR OF NATURAL PHILOSOPHY

Professor G. Temple, C.B.E., F.R.S.	Theory of distributions Vibration theory Boundary layer theory Supersonic aerodynamics Non-linear differential equations

WAYNFLETE CHAIR OF PURE MATHEMATICS

Professor J.H.C. Whitehead, F.R.S.	Algebraic topology
G. Higman, D.Phil.	Algebra
I.M. James, D.Phil.	Algebraic topology
W.L. Ferrar, D.Sc.	Summation formulae and Dirichlet series
U.S. Haslam-Jones, D.Phil.	Real variable: differentiation
J.H.C. Thompson, D.Phil.	Elasticity and the solid state
I.W. Busbridge (Miss), D.Phil.	Mathematics of transfer theory
E.C. Thompson	Algebraic geometry: ideal theory of Noetherian rings
D.G. Kendall	Markov chains, semigroups of linear operators Applications of theory of stochastic processes
J.G. Mauldon	Probability theory: Markov chains and percolation theory
P.D. Watson, D.Phil.	Analytic topology
A.P. Cobbe (Miss), D.Phil.	Algebra: co-homology theory
J.M. Hammersley	Mathematical statistics: Monte Carlo methods and stochastic processes
K.A.H. Gravett	Abstract algebra: valuation theory and its generalizations
H. Wang	Mathematical logic: transfinite ordinal numbers
J.T. Lewis	Quantum theory
G.F. Paechter, D.Phil.	Algebraic topology
M.J. Kearsley (Miss), D.Phil.	Field theory and defects in solids
A.B. Tayler, D.Phil.	Compressible flow and non-linear equations
P.D. Robinson, D.Phil.	Wave mechanics

18. Medicine

REGIUS CHAIR OF MEDICINE

Professor Sir G.W. Pickering, M.D., D.M.	The location of renin The action of hypertension Mechanism of treatment of hypertension Experimental fibrinoid necrosis of arterioles Coronary atheroma
G. de J. Lee	Dynamics of the pulmonary circulation
M.A. Pears	Pyelonephritis Treatment of hypertension
W.I. Cranston	Mechanism of fever Treatment of hypertension
N.M. Bleehen	Action of hypertension on rabbits
R. Ross Russell	Cerebral vascular disease

NUFFIELD INSTITUTI

G.S. Dawes, D.M. (Director) J.C. Mott (Miss), D.Phil.	Physiological changes in foetal and newborn animals
G.M. Ardran, M.D.	Cine-radiological techniques applied to the physiology of swallowing and phonation, and of gastro-intestinal movements
M.M.L. Prichard (Miss), D.Phil.	Physiological and anatomical studies of the peripheral circulation by a variety of radiological and histological methods
H.B. Parry	Experimental induction of toxaemia of pregnancy in sheep; myopathy in sheep (scrapie)
H. Hooton (Mrs.) D.Phil. D.G. Wyatt, D.Phil.	The application of physical methods of biological problems; blood pressure and flow measurement and radiological techniques
G.R. Barer (Mrs.)	Physiology of reflexes from the heart
G.V.R. Born, D.Phil.	Biochemical changes in platelets during blood clotting

Clinical:

NUFFIELD DEPARTMENT

Professor L.J. Witts, C.B.E., M.D. S. Callender (Miss), M.D. G.H. Spray, D.Phil.	Clinical and experimental study of anaemia
S.C. Truelove, M.D. J. Badenoch, D.M.	Experimental, statistical and clinical studies in gastroenterology
Dame J. Vaughan, D.M. M. Owen (Mrs.), D.Phil.	The study of bone metabolism with radioactive isotopes

19. Metallurgy

Professor W. Hume-Rothery, O.B.E., D.Sc., F.R.S.	Constitution of molybdenum alloys of very high melting point Constitution of iron alloys Constitution of gold-cadmium alloys Constitution of bismuth alloys General work on the theory of alloy structures

19. Metallurgy (*continued*)

J.W. Christian, D.Phil.	Crystallography and kinetics of martensitic transformations Measurement of stacking faults, and mechanical properties of face-centred cubic alloys of low stacking fault energy Flow stress—temperature—strain rate relations in hexagonal close-packed face-centred cubic and body-centred cubic materials
J.W. Martin, D.Phil.	The fracture characteristics of uranium The high temperature properties of molybdenum alloys and compounds The effect of internal oxidation on the properties of some copper and nickel alloy powder compacts Intergranular brittleness in internally oxidized alloys High temperature properties of internally oxidized nickel alloys
S.L. Altmann, Ph.D.	Theoretical investigations of the band structure of transition metals
A. Hellawell, D.Phil.	Segregation and zone melting Grain boundary precipitation

20. Neurosurgery

J.B. Pennybacker (Director)	Intracranial neoplasm, hydrocephalus angiomatous malformations; infections of nervous system
W.S. Lewin	Head injuries, epilepsy and surgical treatment of mental disorders

21. Obstetrics and Gynaecology

Professor J.C. Moir, M.D.	X-ray pelvimetry and cephalometry in relation to labour Surgical treatment of bladder injuries in the female
M.P. Embrey, M.D.	Clinical measurement of uterine contractility and action of drugs on the uterus
J.A. Stallworthy	Genital tuberculosis

22. Ophthalmology

A. Pirie (Mrs.), Ph.D. R. van Heyningen (Mrs.) D.Phil.	Biochemistry of the eye with particular reference to changes in cataract formation
S.G. Waley, D.Phil.	Proteins and peptides of the lens

23. Orthopaedics

NUFFIELD DEPARTMENT

Professor J. Trueta	Studies on osteogenesis with special reference to epiphyseal cartilage growth
H.V. Crock	Experimental vertebral inter-body fusion Blood supply of the dog's vertebral column
M. Kelly (Miss)	Studies on collagen fractions in bone matrix
K. Little (Miss)	Electron microscopy of hard tissues
J. Poal	Clinical studies on growth disorders
W. Rigal	Tissue culture of epiphyseal cartilage
M. Sarrias	Studies on the longitudinal growth of bone
J.H.S. Scott	Clinical studies on hip fusions

24. Pathology

Professor Sir H. Florey, Ph.D., M.D., F.R.S.	Arterial disease
M. Jennings (Hon. Mrs.) D.M.	Arterial disease

24. Pathology (*continued*)

G.P. Gladstone	Pathogenicity of staphylococci
W.E. van Heyningen, D.Sc.	Mode of action of tetanus toxin
A.M. Woodin, Ph.D.	Properties of the two components of staphylococcal leucocidin
E.P. Abraham, D.Phil., G.G.F. Newton, Ph.D.	Biochemistry of peptides with biological activity
N.G. Heatley, Ph.D.	Purification of Castle's intrinsic factors
A.G. Sanders, D.Phil.	The effect of radiation on connective tissue
*J.E. French, D.M.	Experimental atherosclerosis
Sir P. Fildes, O.B.E., F.R.S.	Biochemistry of phage/bacterium complexes
D. Kay, Ph.D.	
J.L. Gowans, Ph.D.	Life-history and function of lymphocytes
J.F. Watkins, Ph.D.	Investigations on trachoma virus

RADCLIFFE INFIRMARY

A.H.T. Robb-Smith, M.D.	Morphology, physiology and pathology of connective tissue Disorders of lymphoreticular tissue
R.G. Macfarlane, M.D., F.R.S.	Blood coagulation Thrombosis
M. Pickles (Miss), D.M.	Immunohaematology
R.L. Vollum, D.Phil.	Mycobacterial infections
A.I. Spriggs, D.M.	Exfoliative cytology
D.R. Oppenheimer	Neuropathology
A. Sharp, M.D.	Blood platelets Haemostasis

25. Pharmacology

Professor W.D.M. Paton, D.M., F.R.S.	Synaptic pharmacology
E. Bülbring (Miss), M.D., F.R.S.	Electro-pharmacology of smooth muscle
J.M. Walker, D.M.	Hormones of the neurohypophysis
E.M. Vaughan Williams, D.M.	Electro-pharmacology of heart muscle
H. Blaschko, M.D., Ph.D.	Biochemical pharmacology; amine metabolism
H.R. Ing, D.Phil., F.R.S.	Structure-action relationships of drugs which act on the autonomic nervous system

26. Physics

THE CLARENDON LABORATORY

Professor B. Bleaney, D.Phil., F.R.S. A.H. Cooke, D.Phil. K. Mendelssohn, Ph.D., F.R.S. N. Kurti, Ph.D., F.R.S. J. Wilks, D.Phil. R.W. Hill, D.Phil. F.N.H. Robinson, D.Phil. R. Berman, D.Phil. A.J. Croft, D.Phil. H.M. Rosenberg, D.Phil. J. Hatton, D.Phil. W.P. Wolf, D.Phil.	Low temperature physics: Liquid helium and the helium film; high pressure work especially solid helium; properties of semi-conductors; thermal expansion; thermal conductivity and heat transport; mechanical properties of metals, including fatigue; electrical conductivity and magnetic phenomena in metals and semi-conductors; the superconductive state; investigations at temperatures below 1°K; paramagnetism and relaxation effects; nuclear paramagnetism and induction; nuclear orientation and nuclear cooling; low temperature calorimetry; cryogenic techniques; ferromagnetism, ferrimagnetism, antiferromagnetism

*Dr. J.E. French is working in the U.S. during 1959-60

26. Physics (*continued*)

THE CLARENDON LABORATORY (*continued*)

J.H.E. Griffiths, D.Phil. D.M.S. Bagguley, D.Phil. B.V. Rollin, D.Phil. J. Owen, D.Phil. J.M. Baker, D.Phil.	Short electromagnetic waves, paramagnetic and nuclear magnetic resonance phenomena; semi-conductors and cyclotron resonance
Professor D.H. Wilkinson, Ph.D., F.R.S. C.H. Collie D. Roaf, D.Phil. F.V. Price, D.Phil. J. Moffatt, D.Phil. K.I. Mayne, D.Phil. W.T. Davies, Ph.D. P.F.D. Shaw, D.Phil. M.A. Grace, D.Phil. D.F. Shaw, D.Phil. R.E. Meads, D.Phil. A.B. Clegg, Ph.D. A. Engler, Ph.D. N.W. Tanner, Ph.D. P.E. Hodgson, Ph.D. S. Lokanathan, Ph.D. J.H. Mulvey, Ph.D.	Nuclear physics using Cockcroft-Walton type generators of 100, 500 and 1200 kV; 140 Mev electron synchrotron Experimental work on interactions and level schemes of light and very light nuclei, nuclear photodisintegration and elementary photon scattering and interaction processes; nucleon-nucleon and nucleon-nucleus studies using particles in the 100 Mev range from the cyclotron at A.E.R.E., Harwell with electronic, cloud chamber and bubble chamber techniques; studies of K-mesons, hyperons, hyperfragments, anti-protons and the primary cosmic radiation using nuclear emulsions; investigations of radiations from nuclei aligned at low temperatures; mass spectrometric studies of He^3 and He^4 production
H.G. Kuhn, Ph.D., F.R.S. G.W. Series, D.Phil. G.K. Woodgate, D.Phil.	Interferometric spectroscopy; nuclear and radiation effects in atomic spectra; radio-frequency resonances in excited states; atomic beam resonance
J.H. Sanders, D.Phil.	Precise measurements of fundamental constants
A.W. Brewer, Ph.D. J.T. Houghton, D.Phil.	Physics of the upper air
Professor W.E. Lamb, Ph.D. D. ter Haar, Ph.D. M.C.M. O'Brien (Miss), D.Phil. H. Davies, D.Phil. J.A. Spiers, D.Phil. R.J. Blin-Stoyle, D.Phil. R.J. Elliott, D.Phil. D.M. Brink, D.Phil. C.A. Caine, D.Phil. M.J. Kearsley (Miss), D.Phil.	Quantum theory of elementary particles; theories of nuclear and atomic structure; theories of the solid state and collective phenomena

27. Physiology

Professor E.G.T. Liddell, D.M., F.R.S.	Nervous reflex action
R.J. Banister (Miss)	Circulatory physiology
S. Cooper (Miss), Ph.D.	Electrophysiology
R.V. Coxon, M.D., D.Phil.	General and intermediary metabolism. Neurochemistry
R.S. Creed, D.M.	Special senses
D.J.C. Cunningham	Regulation of respiration
I. de B. Daly, C.B.E., M.D., F.R.S.	Cardiovascular physiology
G. Gordon, D.M.	Electrophysiology
F.P. Glees, M.D., D.Phil	Neurohistology

27. Physiology (*continued*)

R.H. Kay, D.Phil.	Physical aspects of physiology
E.H. Leach	Histology
B.B. Lloyd	Respiration and nutrition
P.B.C. Matthews, M.D.	Neurophysiology
C.G. Phillips, D.M.	Neurophysiology
M.H. Pirenne, D. ès Sc., Ph.D.	Vision
R.W. Torrance	Circulatory physiology

28. Psychology

Professor R.C. Oldfield	Visual perception Experimental study of language
B. Babington Smith, O.B.E.	Holism and Gestalt theory Functional thresholds and subliminal stimuli Effects of attitude in perceptual situations Adaptation and adaptability
M. Argyle	Studies of the conscience and inner control processes Classification of delinquents by psychological types Studies of the need for achievement Self-perception in adolescents
M. Treisman	Central factors affecting threshold levels Mechanisms of arousal and attention

29. Public Health and Social Medicine

A.M. Stewart, M.D. (Head of Department J. Webb (Mrs.) D. Hewitt	Population studies. Malignant disease in children and adults. Pregnancy surveys

30. Statistics

C.R. Ross H.J.D. Cole	Factors affecting rates of replacement of capital assets
T.P. Hill H.F. Lydall P. Vandome	Studies of consumer finances
K.G.J.C. Knowles T.P. Hill E.M.F. Ward (Miss)	Enquiry into wage rates and earnings, wage "leadership", skill, differentials, and regional variations in wages
J.M. Hammersley	Problems in mathematical statistics
P. Vandome	Design of computer programmes
H.J.D. Cole D.G. Holland	Alternative measurements of industrial productivity
K.G.J.C. Knowles A.D. Hazlewood	Study of direct and indirect costs of industrial innovation
A.D. Hazlewood P. Vandome	Econometric model of the U.K.
T. Schulz (Miss)	Family budgets and human needs diet
G.D.N. Worswick D.G. Tipping	Enquiry into profits in British industry between the wars
M.J. Artis	Enquiry into selling costs

31. Surgery

NUFFIELD DEPARTMENT

Professor P.R. Allison, D.M. (Head of Department)	
R. Marshall R. Bosman	Investigation of pulmonary blood flow by plethysmographic methods
A.J. Gunning R. Marshall G. Barer	The pulmonary vascular system in relation to heart disease and lung disease and the effects of drugs on the pulmonary vascular system
P.R. Allison, D.M. A.J. Gunning	The surgery of vascular disease with special reference to coronary occlusion and the application of endarterectomy Open heart surgery involving the use of the artificial circulation with and without hypothermia as an adjuvant
with the Nuffield Department of Medicine	Metabolic problems related to total gastrectomy and gastric exclusion and the different forms of restoration of intestinal continuity
C.U. Webster	Surgical anatomy of the liver
H. Ellis	An investigation into the revascularization of ischaemic intestine and into the formation of intra-abdominal adhesions in the rat
P.R. Allison, D.M. P.J.R. Phizackerley	The investigation of substances designed to reduce the oxygen requirements of the brain
P.R. Allison, D.M. R. Light M. Dunnill	The fate of radio-opaque pulmonary emboli
P.R. Allison, D.M. A.H.B. de Bono M. Dunnill	The use of soluble cannulae for small blood vessel anastomosis

32. Surgery, Plastic

E.W. Peet	Causes and treatment of palatal insufficiency
T.J.S. Patterson	Causes and treatment of congenital and acquired jaw deformities
J.S. Calnan	
F.L.F. Innes	Jaw development in cleft lip and palate patients
B. Rossatti	Establishment of air-conduction hearing in cases of congenital ear deformity
D.S. Hayton-Williams	Congenital deformities of the hand
	Aetiology of ring constrictions
	Control of infection in hospitals
	Control of minor bleeding at operation using systemic haemostatics
	The processes of revascularization and phagocytosis of free fat autographs

33. Zoology

EDWARD GREY INSTITUTE OF FIELD ORNITHOLOGY

D. Lack, Sc.D., F.R.S.	Migration studies by radar
R.E. Moreau	African ecology and Mediterranean migration
B. Stonehouse, D.Phil.	Marine birds
N.P. Ashmole	Biology of terns
with others	Population ecology

33. Zoology (*continued*)

Field Studies:

BUREAU OF ANIMAL POPULATION

Professor Sir A. Hardy, F.R.S.	The Bureau studies density, structure, distribution and natural controlling processes in animal populations; the relations between species and between members of the species; the nature of animal communities of mixed species. Its chief material has been small mammals and certain groups of birds, but it also works on invertebrate populations
C.S. Elton, F.R.S. (Director)	Ecological survey methods and animal community patterns
D.H. Chitty, D.Phil.	Fluctuations and population processes in the field vole
H.N. Southern	Population relationships of wild mice and voles, and the owls that eat them Dimorphism in the common guillemot
P.H. Leslie, D.Sc.	The structure and dynamics of populations from the mathematical aspect
H. Chitty (Mrs.)	Reproduction in the vole
K. Paviour-Smith (Miss), D.Phil.	Animal communities in bracket fungi

Zoology and Comparative Anatomy:

Professor Sir A. Hardy, D.Sc., F.R.S.	Marine plankton studies
J.R. Baker, D.Sc., F.R.S.	Cytology, cytochemistry, microtechnique
E.B. Ford, D.Sc., F.R.S.	Genetic and evolutionary studies
H.K. Pusey	Amphibian phylogenetics
W. Holmes, D.Phil.	Comparative histology
A.E. Needham, D.Sc.	Biochemistry; regeneration in animals
N. Tinbergen, D.Phil.	Animal behaviour
A.J. Cain, D.Phil.	Taxonomy and evolutionary studies
M. Fischberg, D.Phil.	Studies in developmental genetics
P.C.J. Brunet, D.Phil.	Insect physiology and biochemical genetics
D. Nichols, D.Phil.	Evolution, ecology and histology of echinoderms
J.D. Currey	Anatomy of mammalian bone
M.E. Varley (Mrs.), Ph.D.	Effects of temperature on fishes
H.B.D. Kettlewell	Genetic, ecological and evolutionary studies
J.M. Cullen, D.Phil.	Fish behaviour studies

65 Reading University

1. Agriculture

Professor A.N. Duckham, C.B.E.	Farm operation Comparative agriculture Seasonality in farming
R.S. Tayler P.M. Harris	Irrigation of farm crops, water resources, effect on grass species, utilization of irrigated grassland Role of organic matter in crop production

1. Agriculture (*continued*)

J. Pearce, Ph.D. M.A. Carroll A. Lawrence	Effect of level of nutrition on growth and development and carcase quality of dairy steer calves reared for beef production Effect of age of castration on growth, development and carcase quality in beef cattle
S. Fox T.R. Morris	The effects of light on growth and reproductive performance
D.M. Allen, Ph.D.	The use of protein supplements in the diets of breeding hens The interaction of energy and protein in the diets of chicks and laying stock Early fat lamb production Intensive stocking of sheep Out-of-season lambing
J.A.C. Gibb	Mechanical handling of farm materials Automation on the farm
K.E. Morgan	Research on tractor design with special reference to steering and automatic control
D.H. Lloyd	Farm work organization with reference to problems of seasonal work
J. Pearce, Ph.D. J.N. Dominy W.P. Roberts D.H. Lloyd	Effect of design and layout of farmstead on productivity and use of labour A study of seasonal demand for farm labour under different patterns of farming Development, structure and economics of the poultry industry
J. Pearce, Ph.D. J.A.C. Gibb M. Upton	A study of the use of tractor force and fuel consumption under different patterns of farming
Agricultural Botany:	
Professor A.H. Bunting	Crop physiology and agronomy: ecology applied to agricultural problems
P.M. Cartwright (Miss), Ph.D.	Growth physiology of crops; physiology of root nodule formation in legumes
J.K. Jones, Ph.D.	Cytogenetics and plant breeding, especially in Gramineae and Rosaceae
J. McNeill, Ph.D.	Experimental taxonomy of cultivated plants
H. Owen, Ph.D.	Physiology of parasitism in fungi
D. Snow, Ph.D.	Physiology of pathogenic fungi; spore germination; root nodule formation in legumes
Agricultural Economics:	
	No information

2. Botany

Professor T.M. Harris, Sc.D., F.R.S.	Palaeobotany: fossil plants of the English Jurassic
E.V. Watson, Ph.D.	Classification and ecology of Bryophyta
F.B. Hora, Ph.D.	Systematics of and experiments on higher fungi. Plant physiology
J.W. Wilson, Ph.D.	Physiological ecology of Arctic plants. Analysis of the spatial distribution of foliage in vegetation
J.A. Townrow, Ph.D.	Fossil plants of S. African Triassic

3. Chemistry

Professor E.A. Guggenheim, Sc.D., F.R.S.	Thermodynamics
M.L. McGlashan, Ph.D.	Thermodynamic properties of gases and mixtures
J.E. Prue, D.Phil.	Electrolyte solutions Homogeneous catalysis
P.F. Holt, Ph.D.	Chemistry of silicosis Polycyclic compounds containing ringnitrogen
D. Bryce-Smith, Ph.D.	Organo-metallic compounds Free radicals Aromatic substitution
I.M. Mills, D.Phil.	Molecular structures by high resolution infra-red spectroscopy

Physiological:

Professor C. Tyler, Ph.D.	Mineral metabolism and egg shell formation Egg shell composition, physical properties and structural characteristics
A. Wild, Ph.D.	Chemistry of phosphorus compounds Chemical and physical properties of vermiculite
K.A. Hassall, Ph.D.	Toxicity in relation to physical and chemical properties of organic compounds
F.H. Grimbleby, Ph.D.	Effect of heat on the stability of milk proteins

4. Dairying

Professor E.L. Crossley	Scientific and technical studies of milk processing and the manufacture of dairy products
A. Sheppard (Miss)	Heat processing of milk and cream
V.E. Cheke (Miss)	Physical properties of cream and ice cream
J. Rothwell	Bacteriological properties of cream, condensed milk, dried milk
M.I.W. Benjamin (Miss)	Coliform bacteria in dairy products Chemistry and bacteriology of cheese ripening

5. Economics

See Agriculture
Agricultural Economics:

6. Geography

Professor A.A. Miller, D.Sc.	Denudation chronology and river development Climate and vegetation
A.McK. Frood	The Nile Basin and N. Africa
M. Parry	Urban climates Atmospheric pollution
G.R. Lucas	Strip lynchets Census returns of houses
P.D. Wood, Ph.D.	Political boundary development American geography Strip lynchets

7. Geology

Professor P. Allen	Sedimentology of the Wester Ross Diabaig Group, W. European Wealden and comparable Recent deposits Channel, braided and shoreface sediments The Weardale Grits of County Durham

7. Geology (*continued*)

Professor Emeritus H.L. Hawkins, F.R.S.	Hydrology Fossil echinoids
P.S. Walder (Miss)	Mineralogy of the Tertiaries of the Isle of Wight and Lower Old Red Sandstone of the Welsh Borderland and South Wales
G.N. Rose, D.F.C.	Variation in the mineralogical and chemical composition of a composite sill at Broadford, Skye Origin of mineralization and ore at Bawdwin and Mohochany, Burma Radioactivity of British sedimentary rocks
R. Goldring, Ph.D.	Stratigraphy and palaeontology of the Upper Devonian and Lower Carboniferous in N. Devon Lower Carboniferous trilobites of the S. W. Province Stratigraphical and sedimentological studies on the Carboniferous of W. Eire and the Rhaetic of the W. of England
N.E. Butcher	Stratigraphy, structure and petrology of Devonian and Carboniferous sediments and their associated igneous rocks in Devon and N. Cornwall, and the effects of the granites upon them Structural studies in the Devonian rocks around Plymouth
J.R.L. Allen	Sedimentology of the Niger Delta and Nigerian continental margin Petrology and genesis of Lower Old Red Sandstone sediments of S. Wales and the Welsh Borderland Petrology and genesis of Namurian sediments in the High Peak district of Derbyshire
A. Lees, Ph.D.	Sedimentology of Lower Carboniferous reef limestones of W. Europe and N. America
L.B. Tarlo, Ph.D.	World stratigraphy and palaeogeography of Devonian times with special reference to the vertebrate faunas Permo-Triassic reptilean faunas and the correlation of continental deposits in the northern hemisphere Morphology and evolution of the Plesiosauria

8. Horticulture

Professor O.V.S. Heath, D.Sc.	Developmental physiology and growth substances; photosynthesis, respiration and stomatal physiology
R. Barnwell	Mulching and physical control of weeds
G.P. Harris, Ph.D.	Developmental physiology of carnation; tissue culture; nitrogen nutrition
D. Vince (Miss), Ph.D.	Developmental physiology; light, temperature and their effects

9. Mathematics

Professor R. Rado, Ph.D., Dr.Phil.	Combinatorics, transfinite numbers, convex bodies
L.A.G. Dresel, Ph.D.	Electromagnetism
R.E. Edwards, Ph.D.	Functional analysis
G. Kreisel	Mathematical logic
D.H. Parsons, D.Phil.	Differential equations
P. White, Ph.D.	Elasticity

10. Microbiology

Professor B.C.J.G. Knight, D.Sc.	Nutrition of micro-organisms including *Mycoplasma* (pleuropneumonia-like) organisms Physiological studies in relation to classification

10. Microbiology (*continued*)

M.E. Chislett (Miss), Ph.D.	The genus *Bacillus; Mycoplasma*
R.M. Keddie, Ph.D.	The genus *Lactobacillus*
M.E. Rhodes (Miss), Ph.D.	Systematics of polarly flagellate bacteria
P.M.F. Shattock (Miss), Ph.D.	Serological and physiological studies on streptococci
L.J. Zatman, Ph.D.	Microbial physiology

11. Physics

Professor R.W. Ditchburn, Ph.D.	Absorption spectroscopy in near and far ultra-violet
with D.H. Fender, Ph.D.	Vision with a stabilized image
S. Mayne (Miss), Ph.D.	Eye movements
E.W.J. Mitchell, Ph.D.	Irradiation damage of solids
C.D. Clark, Ph.D.	
J.N. Lomer (Miss), D.Phil.	
S.D. Smith, Ph.D.	
T.B. Rymer, Ph.D.	Electron scattering intensities
H.K. Henisch, Ph.D.	Semi-conductors; electroluminescence
P.C. Banbury, Ph.D.	Semi-conductors; surface properties in ultra-high vacuum
D.H. Tomlin, Ph.D.	Investigations using radioactive tracers, particularly diffusion in metals
K. Robinson, Ph.D.	X-ray crystallography of intermetallic compounds
A.B. Lidiard, Ph.D.	Statistical mechanics and theory of solids
T. Evans, Ph.D.	Physical properties of diamond

12. Psychology

Professor M.D. Vernon, Sc.D.	Visual perception
D.J. Bruce, Ph.D.	Linguistic communication
E.R.F.W. Crossman, Ph.D.	Control skill. Laboratory and field studies
D.M. Vowles, D.Phil.	Integrative action in the insect brain

13. Zoology

Professor A. Graham	Anatomy and physiology of gastropod molluscs
	Variation in shell proportions in some freshwater gastropods
V. Fretter (Miss), D.Sc.	Functional morphology and embryology of prosobranch gastropods
M.I. Crichton, Ph.D.	Functional anatomy of insects; the biology of caddis flies
K.H. Mann, Ph.D.	Ecology and physiology of fresh water animals, particularly leeches and *Asellus*
	Study of populations of fish and invertebrates in the Thames
G. Williams	Diurnal activity of the floor community with particular reference to arthropods
M.G. Hardy	The neurophysiological basis of lamellibranch behaviour

66 Reading University
National Institute for Research in Dairying

1. Biochemistry

DEVELOPMENT COMMISSION UNIT FOR BIOCHEMICAL RESEARCH BEARING ON FISHERIES PROBLEMS

S.K. Kon, D.Sc. (Head of Unit)	The vitamin A chain in the sea Vitamin B_{12} and marine productivity
C.B. Cowey K.W. Daisley, D.Phil. L.R. Fisher, Ph.D. P.A. Plack, Ph.D.	Non-protein nitrogen in aquatic animals

Radiobiochemistry:

R.F. Glascock, Ph.D. (Head of Department)	Biochemical investigations of milk secretion and related phenomena using labelled compounds
R.W. Smith	Preparation and use of tritium-labelled substances The metabolism of small molecules and pathways of glucose catabolism in various tissues of various species The metabolism of hexoestrol by animals The uptake of hexoestrol by plants from soil

2. Chemistry

S.J. Rowland, Ph.D. (Head of Department)	Fundamental study of variations in milk composition
R. Aschaffenburg, Ph.D.	Studies of milk phosphatase: heat inactivation, etc.
I.H. Bath, Ph.D. R.L.J. Lyster, Ph.D.	Milk proteins, their constitution and properties
J.A.F. Rook, Ph.D. R.M. Smith, Ph.D.	Food utilization by the dairy cow; rumen metabolism Hypomagnesaemia in dairy cattle Calcium and magnesium metabolism in calves

3. Dairy Husbandry

A.S. Foot (Head of Department)	Grassland and fodder crops in relation to milk production
R. Braude, D.Sc.	Cow management factors in milk production
P.A. Clough F.H. Dodd, Ph.D. C. Line K.G. Mitchell, Ph.D. J.C. Murdoch, Ph.D.	Factors controlling growth in pigs

4. Dairy Products

Experimental Dairy:

H.R. Chapman (Miss)	Ripening of cheese and its control Studies concerning milk and cheese quality New methods of making cheese

Liaison:

W.G. Wearmouth, Ph.D.	Application in the dairy industry of recent scientific findings

5. Engineering

H.S. Hall (Head of Department)	Engineering aspects of machine milking and equipment cleaning
R.T. Budd	Bulk milk cooling and collection
H. Burton	Basic engineering problems of the heat treatment of milk
J. Hutchinson	Aseptic filling of milk
S.F. Suffolk	
C.C. Thiel, Ph.D.	Testing dairy machinery and equipment

6. Feeding and Metabolism

C.C. Balch, Ph.D. (Head of Department)	Efficiency of food utilization by the ruminant
W.H. Broster, Ph.D.	Factors affecting yield and composition of milk
R.C. Campling	Ruminant digestion
J.H.B. Roy, Ph.D.	Saliva production in the cow
K.W.G. Shillam	Factors influencing the growth of dairy heifers Colostrum and other factors in relation to health, growth and development of the young calf

7. Microbiology

Bacteriology:

W.A. Cuthbert (Head of Department)	Bacteriology of milk products
C.A.E. Briggs, Ph.D.	Improvements in processing; ultra-high temperature sterilization
C.M. Cousins (Miss)	Disinfection of apparatus, utensils and plant used in dairying; management in relation to udder infection
J.G. Franklin, Ph.D.	
E.I. Garvie (Miss), Ph.D.	Micro-organisms of the rumen and alimentary tract: antibiotics and growth rate in animals
D.J. Jayne-Williams, Ph.D.	Taxonomy and serology of lactobacilli
M. Lev, Ph.D.	Taxonomy of streptococci and other dairy organisms
F.K. Neave	Assay of vitamin K
B. Reiter	Nutrition and metabolism of lactic acid streptococci
M.E. Sharpe (Miss), Ph.D.	Lactic acid streptococcal phages

Chemical:

N.J. Berridge, D.Sc. (Head of Department)	Paper chromatography and recognition of closely-related types of bacteria
G.C. Cheeseman, Ph.D.	Cheese flavour
L.A. Mabbitt, Ph.D.	Gas chromatography Casein and the action of rennin

8. Nutrition

S.K. Kon, D.Sc. (Head of Department)	Nutritive value of milk (proteins, vitamins, minerals, fat)
M.E. Coates (Miss) Ph.D.	Effects of heat treatment and processing on nutritive value and of feeding and management of cows on vitamin content of milk
J.E. Ford, Ph.D.	Methods, chemical, physical, biological and microbiological, of vitamin assay
M.E. Gregory (Miss), Ph.D.	
K.M. Henry (Miss), D.Sc.	Absorption and metabolism of vitamin B_{12}; vitamin B_{12}-like compounds
J.H. Moore, Ph.D.	Role of intestinal flora in nutrition; germ-free animals
J.W.G. Porter, Ph.D.	Digestion and assimilation of carbohydrate, protein, fat and minerals in the young pig and calf
S.Y. Thompson, D.Sc.	
J. Toothill (Miss), Ph.D.	Vitamin D and antagonistic factors in pastures and hays

9. Physics

G.W. Scott-Blair, D.Sc. (Head of Department)	Changes in physical properties of milk under action of rennet: rheological measurements, studies in syneresis, physical changes in curd during early stages of cheese-making
F.A. Glover J.D.S. Goulden, Ph.D. L.W. Phipps T.H. Prentice	Thermal properties of emulsions, especially milk and cream, including preparation and processing Electrical measurements on dairy products Mechanical properties of fats and butter: cohesive and adhesive properties of butter Infra-red spectroscopy of aqueous solutions and of dairy products; spectroturbimetric studies of homogenization Biophysics: flow-birefringence, sedimentation measurements and rheological properties of bovine cervical mucus and mucoids; flow properties of cow's blood and mechanical properties of blood coagula; flow properties of semen

10. Physiology

S.J. Folley, D.Sc., F.R.S. (Head of Department)	Physiology of milk secretion: neural and hormonal factors and mechanisms concerned in mammary growth and in initiation and maintenance of lactation
P. Andrews, Ph.D. G.K. Benson, Ph.D. A.T. Cowie, D.Sc. R.A. Gibbons, Ph.D. H. Gutfreund, Ph.D. G.S. Pope, D.Phil. J.S. Tindal, Ph.D.	Neuro-endocrine milk-ejection reflex Assay of prolactin Synthesis of main milk constituents in the living animal, in the perfused udder and in mammary tissue preparations Mechanism of action of mammary gland enzymes Sex hormone levels in relation to mammary development and lactation Biochemistry of cervical mucus with special reference to the control of fertility

11. Statistics

C.P. Cox	Principles and methods of experimentation with dairy cattle Biometry in dairy research

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St. Salvator's College, St. Andrews

1. Anatomy

Professor R. Walmsley, M.D.	Bone, experimental Joints Heart
J. Mulligan	Physico-chemical structure of neurofibrils Canalicular systems in bone
J.W. Smith, M.D.	The mechanism of joints Physical properties of bone Structure of bone
J. Frame	Comparative study of bone

2. Astronomy

Professor D.W.N. Stibbs	Construction of the 38 inch Cassegrain-Schmidt telescope at the University Observatory Stellar kinematics and galactic structure Theory of stellar atmospheres and interiors Auroral investigations
T.B. Slebarski	Astrometry

3. Botany

Professor J.H. Burnett, D.Phil.	Mating systems in fungi: speciation
J.A. Macdonald, D.Sc.	The nuclei of fungi: life cycles of parasitic fungi
M.C.H. Blackler (Miss), Ph.D.	Ecology of marine algae with regard to seasonal variation in growth and reproduction Culture of certain species and study of their autecology
D.C. Weeks, Ph.D.	Physiology of adaptation in maritime plants and algae
D.H.N. Spence, Ph.D.	Vegetation of serpentine, lochs and swamps in Scotland

4. Chemistry

Professor J. Read, Sc.D., F.R.S.	Stereochemistry; chemistry of terpenes and camphors; essential oils; chemical and biochemical relationships in the genus *Eucalyptus;* alchemy and historical chemistry
F.D. Gunstone, Ph.D.	Animal and vegetable fats; long-chain fatty acids and related compounds
D.H. Reid, Ph.D.	Non-classical aromatic systems
D.M.G. Lloyd	Alicyclic compounds; non-benzenoid aromatic systems; terpenes
J.Y. MacDonald, Ph.D.	Ionic equilibria involving coloured ions, thermal decomposition of crystalline solids
C. Horrex, Ph.D.	Kinetics of thermal decomposition of organic compounds with a view to determining bond energies. Ionization potentials of organic compounds Free radical and free atom reactions in the gas phase
D.A. Blackadder, D.Phil.	Kinetics of chemical reactions in the gas phase and in solution

5. Geography

K.M. MacIver (Miss), Ph.D.	Problems of tropical geography, with particular reference to Africa Determination of critical densities of population
J.H. Paterson	Geographical methodology Dry-land farming in N. America

6. Geology

Professor C.F. Davidson, O.B.E., D.Sc., F.R.S.E.	The genesis of ore deposits Geochemistry of the radioactive elements Regional petrology of the Lofoten Islands and of the Outer Hebrides
H.I. Drever, D.Sc., F.R.S.E.	Petrogenesis of picritic rocks
W.T. Harry	The Cairngorm granite mass The diorite intrusion near Comrie, Perthshire The Lewisian gneisses of Achiltibuie
A.R. MacGregor, Ph.D.	The Llandeilo rocks of Pembrokeshire The Silurian of the Girvan District

6. Geology (*continued*)

J.A. Weir, Ph.D.	Lower Palaeozoic geology of (1) the Slieve Bernagh Mountains, Co. Clare; (2) the region between Creetown and Gatehouse, Kirkcudbrightshire Silurian trilobites of Girvan Ashgillian *Cyclopyge* faunas from N. Wales.
A.M. Hopgood	The Lewisian gneiss of Barra, Outer Hebrides

7. Mathematics

Professor E.T. Copson, D.Sc.	Partial differential equations. Asymptotic expansions
D.E. Rutherford, D.Sc.	Algebra
A.R. Mitchell, Ph.D., D.Sc.	Numerical analysis
D. Borwein, Ph.D.	Summability
J.R. Gray	Statistics
A. Read, Ph.D.	Functions of a complex variable
A.G. Mackie, Ph.D.	Partial differential equations of fluid dynamics
P.H.H. Fantham, D.Phil.	Algebraic topology
J.D. Lambert	Fluid dynamics

8. Physics

Natural Philosophy:

Professor J.F. Allen, Ph.D., F.R.S.	Properties of liquid helium
D.V. Osborne, Ph.D.	Second sound and other phenomena in liquid helium
C.G. Kuper, Ph.D.	Theoretical problems in low temperature, solid state, and plasma physics
D. Bijl, Ph.D.	Electron spin resonance of free radicals and other solid state problems
F.A. Rushworth, Ph.D.	Nuclear magnetic resonance in molecular crystals
H.M. Barkla	Birefringence in ferro-electrics

9. Physiology

Professor A.E. Ritchie, M.D.	Nerve injury diagnosis Physiotherapy
S. Bayne	Carbohydrate structure and metabolism
G.R. Tristram, Ph.D.	Chromatography of proteins and structure
J.H. Taylor	Physique and stress
J. Crossland, Ph D.	Electroencephalography Biochemistry of central nervous system
W.G.S. Stephens	Medical electronics, design and application
G.A.J. Goodlad, Ph.D.	Tumour-host relationships

10. Psychology

H.H. Ferguson (Lecturer in Charge)	General and social psychology Motivation
J.D. Uytman	Psychotherapy and social psychiatry
B.R. Singer	Emotion, motivation and perception Subliminal perception Influence of experimenter Eidetic imagery

11. Zoology

NATURAL HISTORY AND GATTY MARINE LABORATORY

Professor H.G. Callan, D.Sc.	Cytogenetics: structure and properties of giant cell nuclei and of lampbrush chromosomes
D.R.R. Burt	Avian parasitology and helminthology in general
J.M. Dodd, Ph.D.	Comparative endocrinology of cold-blooded vertebrates
M.H.I. Dodd (Mrs.), Ph.D.	Comparative endocrinology
G.A. Horridge, Ph.D.	Anatomy and physiology of primitive nervous systems
C. Muir, Ph.D.	Metabolic and chemical aspects of ageing in animals

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1. Anatomy

Professor R.E. Coupland	Histochemistry of the peripheral nervous system Problems relating to the synthesis, storage and release of pressor amines and insulin
J.D.B. MacDougall, M.D.	Tissue culture

2. Chemistry

Inorganic and Physical:

Professor A.D. Walsh	Absorption spectra in the vacuum ultra-violet; absorption spectra under high resolution in the near ultra-violet; emission spectra of chemiluminescence accompanying the combustion of many fuels The effects of surfaces on combustion reactions; the combustion of hydrocarbons with special reference to their behaviour in internal combustion engines The oxidation of gaseous ammonia; the pyrolysis and oxidation of lead tetraethyl
with J. Iball, Ph.D.	A study of the properties of surfaces in relation to the structure of thin deposited films
with K.A. Holbrook, Ph.D.	A kinetic study of the thermal decomposition and reactions of some gaseous alkyl halides
J.L. Copp, Ph.D.	Thermodynamics of strongly polar solutions
J. Iball, Ph.D.	The investigation, by X-ray diffraction methods, of the crystal and molecular structure of organic compounds and of metal-organic complexes
D.E. Hoare, Ph.D.	The effects of added gases in the photolysis of acetone. The photochemical oxidation of ketones. The thermal and photochemical oxidation of di-t-butyl peroxide
D.E. Bethel, Ph.D.	Infra-red spectra of inorganic compounds and absorption intensity measurements of infra-red spectra
R.F. Jameson, Ph.D.	The stability, spectra and magnetic properties of transitional metal complexes The chemistry of phosphorus compounds
E.T. Stewart, D.Phil.	Wave-mechanical studies of atomic and molecular energy levels
P. Wright, Ph.D.	Thermal conductivity and viscosity of gases
S.A. McGavin, Ph.D.	The structures of proteins, in particular of antibodies, and of antibody-antigen systems

Organic:

R. Roger, Ph.D.	Synthesis and reactions of aziridines Synthesis and reactions of optically active substituted tetrahydrofurans. Investigations of molecular rearrangements using optically active materials Synthesis and reactions of optically active desylamines

2. Chemistry (*continued*)

Organic (*continued*)

I.A. Smith (Miss), D.Sc.	Stereochemical topics
K.M. Watson (Mrs.), Ph.D.	Chemistry of imidates
R. Foster, D.Phil.	Charge-transfer complexes. Mechanisms of aromatic substitution
A. Nechvatal, Ph.D.	The mechanism of substitution at allylic carbon atoms
D.G. Neilson, Ph.D.	Chemistry of imidates, amidines, formazans and tetrazolium salts

3. Dental Studies

Professor A.D. Hitchin, D.D.Sc.	Parodontal diseases in sheep Odontomes in animals and man Clinical oral pathology
J.M. Fairley	The sequelae of occlusal imbalance A clinical study of dental imbalance
N.B.B. Symons	The development of the mandible and the mandibular joint in man A histochemical study of the dental tissues
J.N. Anderson	Masticatory efficiency Rubber base and silicone impression materials Acrylic resins—processing and unions between co-polymers
J.D. McEwen	Speech and malocclusion Incisal relationship
A. Cockburn	Cleft palate rehabilitation
W.D. McHugh, D.D.Sc.	A histological study of the development of gingival epithelium Histochemical studies of keratinization in gingival epithelium and enamel cuticles Early changes in inflammatory periodontal diseases

4. Engineering

Civil and Mechanical

Professor J. Dick	
A.P. Hall, Ph.D.	Velocity distribution in fluid streams
W. McNicoll	Scale models of hydraulic structures
A. Gibb	Stability of web stiffeners
R.L. Williamson	Boundary layers on curved surfaces
N. Jackson, Ph.D.	Ultimate strength of structural sections in combined torsion and bending with special reference to circular arc bow girders

Electrical:

Professor E.G. Cullwick, O.B.E., D.Sc.	Electromagnetic theory
W.M. Mackay, M.C.	Magnetic phenomena in electrical machines
A.J.O. Cruickshank, Ph.D.	Non-linear problems in servomechanisms
J.A. Bennet, Ph.D.	Transistor circuitry
D. Midgley, Ph.D.	Microwave aerials

5. Geology

F. Walker, Ph.D., D.Sc. (Head of Department)	Tertiary dyke swarms of Hebrides Contact phenomena of dolerites Basaltic crystallization
J.E. Richey, Sc.D., F.R.S.	Ordovician dykes of Tyrone
D.M. Ramsay, Ph.D.	Metamorphic petrology of Sleat (Skye) and of Søroyen Island (Hammerfest)

6. Mathematics

Professor A.M. Macbeath, Ph.D.	Measure theory Geometry of numbers
J.M. Jackson, Ph.D.	Sound waves in non-homogeneous media Relaxation computing by electronic methods
T.E. Faulkner	Statistics
H.G. Anderson, Ph.D.	Group representations
R.P. Pearce, Ph.D.	Dynamical meteorology
H. Jack	Analysis
J.M. Rushforth, Ph.D.	Modular functions
A.J. Cole, Ph.D.	Geometry of numbers
I.T. Adamson, Ph.D.	Algebra and number theory

7. Medicine

Professor I.G.W. Hill, C.B.E., and staff	Cardiological research with special reference to congenital and rheumatic heart disease
K.G. Lowe, M.D.	Renal tubular function in health and disease Studies in natural history of renal disease
J.M. Stowers, M.D.	Studies of hypoglycaemic agents in patients Studies of carbohydrate metabolism *in vitro* using specific enzymes Balance studies in patients with disturbances of calcium and electrolyte metabolism
H. Watson	Cine-angiocardiography with image intensification Short and long term anticoagulant treatment of coronary occlusion
W.K. Stewart L. Constable (Miss)	Homeostatic mechanisms governing sodium and water economy

8. Microbiology

Bacteriology:

T. Somerville, M.D.	Studies on immunity to staphylococcal infection
with J.N. Christison (Mrs.) with W. Shepherd, M.D.	Study of the colicins of *Shigella sonnei*
W. Shepherd, M.D.	Inquiry into the nutritional needs of *Shigella sonnei* with special reference to biochemical mutants
D.A.R. Simmons, M.D.	Chemical investigation of type specific polysaccharides of micro-organisms
D.M. Green, M.D.	Effects of nitrogen mustard on antibody production Studies in auto-immunity Investigation of chronic bronchitis
J.M. Dunbar, M.D.	Laboratory study of attenuated strains of *Mycobacterium tuberculosis*

9. Obstetrics and Gynaecology

Professor J. Walker	Statistical and clinical investigation of the causes of still-birth and neonatal death Problems of foetal anoxia Clinical and laboratory investigations in prematurity
A. Buchan	Clinical investigation of high multiparity
A.C. Turnbull	Clinical and laboratory studies in uterine action in labour
M.G. Coyle	Urinary pregnanediol excretion in normal and abnormal pregnancy

10. Ophthalmology

A.A. Douglas, M.D.	The eyes and vision in cerebral palsy The etiology of congenital squint

11. Orthopaedics

I.S. Smillie, O.B.E. R.D. Muckart	Treatment of osteochondritis dissecans Etiology and surgical pathology of meniscus tears Paget's disease Preparation of cancellous bone grafts Stenosing tendo-vaginitis Tendon transplants in spastic paralysis Extensor apparatus of the fingers

12. Otorhinolaryngology

M.J. Gibson J.L. Mowat	Investigation into the hearing of spastic children

13. Paediatrics and Child Health

Professor J.L. Henderson, M.D.	Cerebral palsy
R.G. Mitchell, M.D.	Histamine metabolism in childhood
K. Rhaney	Foetal anoxia Neonatal pneumonia Placental pathology
C.C. Forsyth (Miss), M.D.	A study of suprarenal cortical function in the newborn period

14. Pathology

Professor A.C. Lendrum, M.D., and staff	Fibrinous vasculosis Pulmonary hypertension Pathology of trophoblast Pathology of hypercalcaemia Myocardial damage Pregnancy anaemia

15. Pharmacology and Therapeutics

Professor R.B. Hunter	Studies on thyrotropic hormone and thyrotoxicosis
P.B. Marshall, Ph.D. W. Walker	The relationship between mast cell and non-mast cell histamine
D.M. Shepherd, Ph.D.	The chemistry and pharmacology of smooth muscle
N.R.W. Taylor	The chemistry and pharmacology of amino-alcohols
R.S. McNeil A.J. Matty, Ph.D.	The pharmacology and therapeutics of hypoglycæmic agents The effects of drugs on enzyme systems

15. Pharmacology and Therapeutics *(continued)*

Professor R.B. Hunter	Studies on thrombosis and haemorrhage and the pharmacology of anticoagulants
P.B. Marshall, Ph.D.	
W. Walker	The pharmacology and therapeutics of new anaesthetic drugs
D.M. Shepherd, Ph.D.	
N.R.W. Taylor	The mode of action of neuro-muscular transmitters on plain muscle
R.S. McNeil	
A.J. Matty, Ph.D. *(continued)*	The pharmacology of 5-hydroxy-tryptamine
	Study of gas diffusion in the lungs and the effect of drugs on respiratory pharmacology
	Intermediate metabolism of steroids
	The pharmacology and therapeutics of drugs affecting tremor
	Comparative pharmacology of endogenous chemical substances

16. Physics

Professor G.D. Preston, Sc.D.	
D.M.C. MacEwan, Ph.D.	Structure of crystals
W.G. Ferrier, Ph.D.	
D.W. Young, Ph.D.	
H.R. Wilson, Ph.D.	
G.F. Walton, D.Phil.	Physics of the upper atmosphere

17. Physiology

Professor G.H. Bell, M.D.	Physiology of bone growth
R.P. Cook, D.Sc.	Cholesterol metabolism generally and in relation to atherogenesis
B.L. Andrew, D.Sc.	Innervation of muscle
A.T. Macqueen	Pharmacology of surface action substances, spasmogens, and some chelating agents
G.J. Dutton, Ph.D.	Uridine diphosphate glucuronic acid and the biosynthesis of glucuronides and mucopolysaccharides
J.E. Chinnock	Chemoreceptors

18. Public Health and Social Medicine

Professor A. Mair, M.D., and staff	Epidemiology of chronic bronchitis
	Respiratory disease in jute and flax workers
	Hospital and Community follow up of patients discharged from medical wards of hospitals
	Survey of the Student Health Service in Britain
	Road accidents to pedestrians
	Development and evolution of health services in Dundee

19. Radiotherapy

W. Cameron Swanson	Carcinoma of breast
J.F. Riley	Mast cells in carcinogenesis

20. Surgery

Professor D.M. Douglas	The treatment of congenital and acquired valvular lesions of the heart by surgical means
J. Grieve, M.D.	
W.F. Walker	The pH of the gastric contents *in vivo*
	The healing of incised wounds in fascia in relation to local factors

20. Surgery (*continued*)

Professor D.M. Douglas	Tissue culture of certain simple and malignant tumours
J. Grieve, M.D.	Use and storage of vascular grafts
W.F. Walker (*continued*)	Long-term results of lumbar sympathectomy in relation to blood flow and sweating
	Investigation of urinary system by cineradiography (jointly with Department of Radiology)
	Calcium metabolism in relation to surgical procedures
	Cineradiography of blood flow in hepatic veins

21. Zoology

F.L. Waterhouse, Ph.D.	Insect microclimates and biology of sawflies and stored products insects
A.R. Sanderson (Miss), Ph.D.	Cytology of parthenogenetic insects
B.J.A. Nowosielski-Slepowron	Biology and control of tsetse and stored products insects

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1. Anatomy

Professor F. Davies	The conducting system of the vertebrate heart
B.F. Martin, M.D.	Histochemical studies of various tissues under normal and experimental conditions
T.S. King	The conducting system of hearts of carnivora and cetacea
R.M.H. McMinn, M.D. Ph.D.	Cytology of wound healing in various organs
P.F. Harris	Studies of fundamental aspects of haemopoiesis
M. Taylor, M.D.	Histology, histochemistry and histopathology of nasal respiratory mucosa
W.J.C. Wilkinson	Metabolism of glycogen in the muscle and conducting system of the heart

2. Biochemistry

Professor Q.H. Gibson	Intermediate compounds of haemoglobin with gases
M.A.G. Kaye, Ph.D.	Enzymes of snake venoms
G. Weber, M.D., Ph.D.	The properties of protein molecules as revealed by spectroscopic and fluorescence techniques
T. Hofmann	Phosphoproteins, phosphatases
P.M. Harrison (Miss), D.Phil.	Structure of collagen by X-ray diffraction
V. Massey, Ph.D.	Oxidative enzymes
K. Dalziel, Ph.D.	Enzyme kinetics
D. Gilbert, Ph.D.	Flavoprotein enzymes
J. Sykes, Ph.D.	Mechanism of action of antibiotics
S. Ainsworth, Ph.D.	Energy transfer in photosynthesis

3. Botany

Professor A.R. Clapham, F.R.S.	Geotropism of woody shoots
	Autecology of *Galium odoratum* and *Milium effusum*
J.G. Boswell, D.Sc.	Polyphenol metabolism with reference to oxidation systems in the higher plants
	Nitrogen, phosphate and organic acid metabolism in relation to terminal oxidase systems
J. Webster, Ph.D.	The ecology of fungi, especially aquatic Hyphomycetes
	The succession of coprophilous fungi
	Taxonomy of Pyrenomycetes with special reference to their conidial states

3. Botany (*continued*)

C.D. Pigott, Ph.D.	Soil development on limestone Factors in plant nutrition on limestone soils Analysis of climatic factors controlling the distribution of various species at the margin of their geographical range in the Pennines
A. Booth, Ph.D.	Mechanism of correlative inhibition, especially in the potato

4. Cardiology

D. Verel, M.D.	Blood volume changes in congenital heart disease and in heart failure

5. Chemistry

Professor R.D. Haworth, D.Sc., Ph.D., F.R.S.	Natural products, particularly resins, lignans, terpenoids, steroids and alkaloids; chemistry of cafesterol Phenolic oxidation products Natural tannins Angularly bridged cyclic structures
T.S. Stevens, D.Phil.	Molecular rearrangements Chemistry of porphin
A.H. Lamberton, Ph.D.	Chemistry of nitroamines
J. McKenna, Ph.D.	Stereochemical problems
P.L. Pauson, Ph.D.	Chemistry of ferrocene and other organo-metallic compounds
J.M. Tedder, Ph.D.	Organic fluorine compounds and diazonium compounds
E. Haslam, Ph.D.	Some polycyclic quinones Biosynthesis of tannins
Inorganic:	
R.G. Wilkins, Ph.D.	Exchange reactions of complex compounds, using radioactive isotopes as tracers Chemistry of protactinium Chemistry of sulphur-nitrogen compounds
J.B. Headridge	The reactions of rhenium compounds Analytical problems
M.J.G. Williams	Reactions of complex ions
A.J. Smith, Ph.D.	Chemistry and crystal structure of mixed metal oxides
Physical:	
Professor G. Porter	Spectroscopy, structure and reactivity of free radicals and excited molecules Photochemistry and radiation chemistry of aromatic molecules Phosphorescence and the triplet state Reactions in rigid solvents
A.S.C. Lawrence, Sc.D., Ph.D.	Study by various physical methods of the solubility of organic substances in aqueous solutions of soaps of all types as phase equilibria in partially miscible ternary systems The nature and stability of emulsions
H.J.V. Tyrrell	Thermal diffusion, and associated phenomena, in liquids Complex equilibria in solution Infra-red spectroscopy
P.A.H. Wyatt, Ph.D.	Properties of dissociating solvents
J.H.A. Leisten, Ph.D.	Organic reactions in sulphuric acid
B. Stevens, D.Phil.	Fluorescence and energy transfer in gases

6. Dental Studies

Professor G.L. Roberts	
J.J. Hodson, Ph.D.	Histogenesis and structure of enamel defects The pathology of caries The histology of mottled enamel and other types of hypocalcification The role of epithelial residues in jaw pathology
E.L. Hampson	An investigation of the application of the chrome-cobalt and nickel-chrome alloys to conservative dentistry
J.H. Gardiner	The incidence and nature of erupted teeth in the newborn and the effect of such teeth, and their loss, on the deciduous and permanent arches A survey of impacted teeth, their aetiology and treatment by orthodontic means An investigation into the sequelae of supernumerary teeth and their treatment An investigation into the joining of stainless steel surfaces with special reference to soldering
R. Sprinz, Ph.D.	Experimental work on the mandibular joint in rodents and monkeys Trigeminal nerve section for the study of the effect on muscle function and midline overlap
J.H. Allan	Investigations into the development and fine structure of the dental tissues using X-ray and polarized light
J. Clarke	An assessment of the value of local anaesthetic solutions, surface anaesthetics and obtundents as pain reducing agents in conservative dentistry An investigation into the relationship of metal ions present in local anaesthetic solutions and pain and swelling following injections for dental treatment
J.P. Smith	Studies of saliva of denture wearers Reaction of the supporting tissues to prosthetic appliances

7. Dermatology

I.B. Sneddon	Follow up of the effect of systemic steroids in constitutional eczema The ACTH stimulation test in patients who have been on systemic steroids for a number of years Serum transaminase estimations in dermatomyositis and allied disorders The study of capillary changes and purpura in patients with varicose veins The effect of intermittent Griseofulvin therapy on chronic fungus infections
R.E. Church, M.D.	Studies of lipid metabolism in xanthelasma Studies in epidermal sensitivity to hydrocortisone precursors

8. Engineering

Applied Mechanics:

Professor W.A. Tuplin	Deformation of surfaces by point-loading and line-loading Endurance of materials loaded and lubricated as in toothed gearing Dynamic loads on gear teeth
M.L. Meyer	Plasticity in wire drawing
P. Freeman	Mechanism of "running in" of gear teeth Performance of a hydrostatic thrust bearing in a power transmission system
C.L. Kirk	Vibration characteristics of stiffened plates and solids of revolution

8. Engineering (*continued*)

Civil:

Professor N.S. Boulton	Fatigue strength of steel under variable loads Elastic-plastic strength of tubular steel frames
W. Eastwood, Ph.D.	The bearing power of various forms of pile Vibration in foundations Losses in pipe bends
C. Osgerby	Lateral stability of plane frames
E.J. Sarginson	Storage and drawdown in sewers Losses in pipe bends
C.B. Wilby, Ph.D.	Lateral instability of post-tensioned reinforced concrete members Plastic redistribution of bending moments in reinforced concrete frames Strength of reinforced concrete beams in shear

Electrical:

Professor A.L. Cullen, Ph.D.	Generation of millimetre waves Applications of millimetre waves to plasma diagnostics Parametric amplification R.F. corona on aerials Supergain aerials Radiation pressure mixer Theory and applications of electromagnetic surface waves
O.I. Butler, D.Sc.	Losses in magnetic materials A.C. motor characteristics Controlled starting and stopping of induction motors
D. Harrison, Ph.D.	Analogue computer methods in mine-winding problems Generation of very low frequencies
F.A. Benson, D.Eng.	Attenuations of waveguide at 4 mm wavelength Characteristics of glow discharge tubes
D.J. Harris, Ph.D.	Microwave amplification by unstable electron beams Supergain aerials
P.N. Robson	A Doppler method of millimetre-wave generation
R. Brown, Ph.D.	Characteristics of machines with drag-cup rotors
J. Allison, Ph.D.	Backward-wave oscillators Microwave plasma phenomena
A.M. Howatson, Ph.D.	Gas-discharge measurements

Mechanical:

Professor J.P. Duncan	Stress analysis of heat exchanger tube plates Development of stayed thin-walled pressure vessels
E. Baildon	Vibrations
E.P. Bernat	Mixing of supersonic and subsonic air flows Boundary layer separation and reattachment
G.C. Briggs	Dual fuel performance of compression ignition engines Ignition systems
T.B. Ferguson	Fluid mechanics and thermodynamics of turbo-machinery
B. Kenny	Stress analysis of thick plates Three-dimensional photoelasticity
P.B. Neal	Journal and thrust bearing lubrications at high speeds Limiting conditions of hydrodynamic lubrication
J.D. Stringer	High speed hydraulic valves

8. Engineering (*continued*)

Mechanical (*continued*)

K.H. Sutherland	Study of mechanical lapping
J.F. Wallace, Ph.D.	Mechanical and geometrical aspects of plastic flow in metals Deep drawing, extrusion, rolling and metal forming operations
D.M. Woo	Axially symmetrical forming on sheet metal

9. Forensic Medicine

G. Forbes, M.D.	The applications of blood group serology to medico-legal problems Factors affecting the protective capacity of the skull Chemical methods of assessing the time since death The dangers of aspiration of therapeutic substances

10. Genetics

Professor J.A. Roper, Ph.D.	Genetics of micro-organisms Extra-chromosomal determinants
J.A. Beardmore, Ph.D.	Environmental fluctuation, heterosis and homeostasis Disruptive selection
C.E. Blank, Ph.D.	Mutation rate estimates in man Effects of parental age and birth order on the incidence of various human conditions Human chromosome studies

11. Geography

Professor C.A. Fisher	Economic and political geography of S.E. Asia
A. Garnett (Miss), Ph.D.	Microclimatology of the Southern Pennines Factors affecting the distribution of atmospheric pollution Survey of atmospheric pollution in the Sheffield region
I.S. Maxwell	Geography of XIth century Yorkshire from Domesday sources Place names and natural vegetation in Cornwall
A.J. Hunt	The morphology and growth of Sheffield
R.A.G. Savigear	Slope analysis and problems of slope evolution in Southern Pennines, S. Wales, Cornwall and W. Africa
J.L.H. Sibbons	Evaporation and potential evapo-transpiration
A. Straw	'Surface' and drainage development, and glaciation of E. England, with particular reference to Lincolnshire, Norfolk and N. Derbyshire

12. Geology

Professor L.R. Moore	Studies of carbonaceous rocks, various types of coals; oil shales of the Midlothian region of Scotland and S. England; genesis of oil Palaeontological studies; fauna and flora of Coal Measures
P. Wilkinson	The metamorphic structure and stratigraphic geology of the Moine Thrust complex east of Loch Eriboll, Sutherland Mineralogy, petrology and chemistry of Kilimanjaro and Rift Valley Volcanics
C. Downie, Ph.D.	Carbonaceous rocks; Jurassic oil shales of S. England and Scotland Investigation of microplankton, pollen and spores from Palaeozoic and Mesozoic sediments

12. Geology (*continued*)

D.W. Humphries, Ph.D.	Stratigraphy and petrology of the Lower Cretaceous rocks of the S.W. Weald and the Isle of Wight Petrology of the Tertiary rocks of the Isle of Wight Petrology of the Cretaceous rocks of Loch Aline Mechanical analysis of modern sediments Petrology of Yorkshire Land Axes
A.E. Currall, D.Phil.	Metamorphism and tectonics of Dalradian, Co. Mayo, Eire Petrological studies in the Ox Mountain migmatitic complex, Eire
P.E. Brown, Ph.D.	Tertiary igneous geology of the Mourne Mountains, Northern Ireland Ferromagnesian minerals from Kap Edward Holme area, East Greenland Petrological studies of migmatites from S.W. Tanganyika
L.G. Love, Ph.D.	Carboniferous Oil Shale of Scotland Dark pyritic and bituminous rocks of the Palaeozoic and Mesozoic Lower Carboniferous palynology of Scotland Stratigraphy of the Sheffield district
R. Neves	Palynological and petrological investigations in the Upper Palaeozoic sediments of Northern and Central England
Professor L.R. Moore W.H. Wilcockson P. Wilkinson C. Downie, Ph.D. D.W. Humphries, Ph.D. R. Neves	The geology and glaciology of Kilimanjaro

13. Mathematics

Applied:

Professor D.N. de G. Allen	Relaxation methods; numerical methods; structural analysis
P.H. Blundell	Electronic computation
D.E. Bourne, Ph.D.	Fluid mechanics
P. Chadwick, Ph.D.	Theoretical physics; mechanics of solids
D.R. Davies, Ph.D.	Turbulent diffusion
H.D. Deas, Ph.D.	Quantum theory of molecules; crystallography
S. Wardle, Ph.D.	Numerical methods

Pure:

Professor D.G. Northcott, Ph.D.	Algebraic foundations of geometry and ideal theory of commutative rings
A.F. Ruston, Ph.D.	Functional analysis
L. Mirsky, Ph.D.	Analytic theory of numbers and linear algebra
H. Burkill	Non-absolutely integrable functions and "almost periodicity"
H.K. Farahat, Ph.D.	Theory of group representations

14. Medicine

Professor C.H. Stuart-Harris	Studies on immunization against influenza and poliomyelitis Study of acute respiratory disease from the standpoint of causation The pathogenesis of chronic bronchitis and emphysema

14. Medicine (*continued*)

R.S. Duff, M.D.	Studies on the peripheral circulation and on hypertension Studies of the pulmonary circulation in acquired and congenital heart disease
B. Singer (Miss), Ph.D.	Mechanism of control of secretion of aldosterone Aldosterone excretion in the urine in various clinical conditions
J.D.S. Hammond	Studies of blood volume and capillary permeability in-patients with heart failure The renal function in chronic bronchitis Studies of lymphatic function in heart failure

CITY GENERAL HOSPITAL

C.S. Darke, M.D. E.G. Rhind	Prolonged antibiotic therapy in severe cases of emphysema

UNITED SHEFFIELD HOSPITALS

H.F. West, M.D.	Corticosteroid metabolism in relation to rheumatoid disease
A.W.D. Leishman, D.M.	Studies on prognosis in hypertension with and without therapy Clinical trial of 2-perhydroazocin-1'-ylethylguanidinium sulphate (guanethidine) in hypertensive patients
T.E. Gumpert	Asthma

15. Metallurgy

Professor A.G. Quarrell, D.Sc., Ph.D. (Head of Department)	Carbides in alloy steels Structural changes under creep conditions Effect of hydrogen on transformations in alloy steels Hydrogen embrittlement of high tensile steels Solubility of hydrogen in iron alloys Graphitization in steel
Professor R.W.K. Honeycombe, Ph.D.	Precipitation of carbides in alloy steels Fatigue of metal single crystals Deformation and fracture of alloy single crystals Development of creep resistant thorium alloys Intergranular fracture in steels
B.A. Bilby, Ph.D.	Mechanical twinning and martensitic transformations Continuous distributions of dislocation Interactions of lattice singularities and dislocations
H.T. Protheroe, Ph.D.	The factors influencing the formation of spheroidal graphite in cast irons The behaviour of refractory materials and slags in the vacuum melting of steel
R.G. Ward, Ph.D.	Silica activities in basic silicate melts Kinetics of the carbon-oxygen reaction in molten iron Silicon distribution between iron and slag Constitution of liquid alloys Brittle fracture of cast steel
A.R. Entwisle, Ph.D.	Effect of nickel on the crystallography of the transformation in iron Yield point phenomena in non-ferrous alloys Precipitation kinetics in copper-beryllium alloys The kinetics of the martensite transformation in iron alloys
W.J.McG. Tegart, Ph.D.	Effect of sulphur on mechanical properties of steels Structural changes during high temperature deformation

15. Metallurgy (*continued*)

B.B. Argent, Ph.D.	Paramagnetic susceptibilities of the alloys of palladium with groups IVa and Va elements Relationship between thermodynamic properties and structure Oxidation of niobium and its alloys Constitution and properties of alloys containing niobium
D.J. Williams, Ph.D.	Structure of molten phosphate and silicate slags Effect of fluorides on molten phosphates and silicates
G.F. Modlem, Ph.D.	The role of substructures in fatigue Fatigue of welds in high strength structural steels
C.W. Haworth, D.Phil.	Paramagnetic susceptibilities of alloys of palladium with group VIa elements

16. Microbiology

Professor S.R. Elsden, Ph.D. (Head of Department)	The growth of bacteria in relation to the energy supply
B.A. Fry, Ph.D.	Bacteriophage and megacin
D.S. Hoare, Ph.D.	Metabolism of photosynthetic bacteria
J.L. Peel, Ph.D.	Mechanism of pyruvate breakdown and fatty acid synthesis by anaerobic bacteria
Bacteriology:	
Professor C.P. Beattie J.K.A. Beverley, M.D.	Epidemiological and experimental studies in toxoplasmosis
Virology:	
D. Hobson, M.D.	Studies on poliovirus virulence; studies on acute respiratory disease
J.M. Hoskins, Ph.D.	Variation in enteric viruses

17. Mining

Professor F.S. Atkinson	The use of photoelastic methods in the assessment of three dimensional strains around mine openings Stress transmissions in drill rods Study of methane layering in a model airway
G. Hurst and H.J. Bune	Particle movement in the bed of a jig washer Characteristics of froth flotation slurries The application of hydrocyclones to coal preparation The application of ultrasonics to mineral dressing
F.T. Williams	Roof control on mechanized faces Failures in trailing cables and their mechanical properties
(Continuing work of A. Roberts in his temporary absence in the United States)	Ignitions of fire damp resulting in the fracture of fluorescent tubes Time dependent strains in rock and their effect on fracture Fundamental study of the fracture of rock subjected to triaxial stresses The study of prestress and relaxation of rocks The resistance of rocks to impulsive forces
B.R. Pursall	Ventilation of vehicular tunnels and mine roadways Study of air flow in mine shafts using laboratory models The application of gas chromatography to the analysis of gases occurring in coal mines
J.R. Metcalf	Rock drilling Errors in local triangulation

18. Obstetrics and Gynaecology

Professor C.S. Russell	Management of urinary fistulae in women
C.J. Dewhurst	Urinary pregnanediol in normal and abnormal pregnancy
D.H. Blakey	and placental insufficiency
D.W. Warrell	Delivery before full dilatation with special reference to incision of the cervix
	Treatment of Bartholin's cysts by marsupialization
	Plastic vaginal operations
	Puerperal surgery
	Pitfalls of cysto-urethrography

19. Paediatrics and Child Health

Professor R.S. Illingworth	Problems of infant feeding
	Problems of the normal child with particular regard to behaviour problems
	The development of the normal child with particular regard to prediction of intelligence
	Early diagnosis of mental deficiency and cerebral palsy
	The prognosis of children with birth injury
	The treatment of rheumatic fever with particular regard to the use of cortisone and to the duration of bedrest
	The treatment of acute nephritis
	The problem of the handicapped child in the home
	The treatment of cerebral palsy
J. Lorber, M.D.	The natural history of miliary and meningeal tuberculosis
	The treatment of tuberculous meningitis
	The natural history and treatment of primary tuberculosis
	Different types of B.C.G. vaccine
	Long term follow-up of cases of tuberculous meningitis and miliary tuberculosis
	The aetiology of erythema nodosum
	Long term results of B.C.G. vaccination
	Multiple puncture B.C.G. vaccination
	Natural history of congenital hydrocephalus
	Controlled studies in the treatment of congenital hydrocephalus and meningomyelocele
	Treatment of obesity
K.S. Holt, M.D.	The mentally defective child
	The impact of handicapped children upon the family
	The treatment of phenylketonuria
	The growth disturbances in infantile spastic hemiplegia
	The evaluation of treatment of cerebral palsy
T.J. Rendle-Short, M.D.	Constipation in children
	The diagnosis of infantile congenital heart disease
	The measurement of intelligence by conditional reflexes
	The testing of hearing by conditional reflexes
	The treatment of obesity
	The diagnosis of infantile congenital heart disease

20. Pathology

Professor D.H. Collins, M.D.	Pathology of bone and connective tissues
	Vitality and ageing of human cartilage
	Small-celled sarcomas of bone
F.N. Ghadially, M.D., Ph.D.	Mitosis and metabolism of tumours
	Action of carcinogens
	Squamous epithelial tumours of man and animals
O.G. Dodge, M.D.	Human tumours at tissue junctions
	Aspiration cytology of gastro-intestinal epithelium
R.A. Caldwell	Osteoporosis; endocrine associations; reaction to plastic implants

20. Pathology (*continued*)

W.A.J. Crane, M.D.	Effects of adrenal cortical hormones Mechanisms in hypertension
with T.F. McElligott	Utilization of S^{35} by human alimentary mucosa

21. Pharmacology and Therapeutics

Professor G.M. Wilson, M.D.	Iodine metabolism and thyroid physiology and pathology Action of diuretics Clinical therapeutic trials
D.S. Munro, M.D.	Thyroid stimulating hormone Adrenal cortical hormones Measurement of body composition by isotope dilution techniques
G.R. Tudhope, M.D.	Red-cell volume and production in anaemia and leukaemia
R. Kilpatrick	Antithyroid drugs Mechanisms in the development of goitre Metabolism of sulphonamides
J.D. Acland	Iodide transport Statistical methods in pharmacology
G.D. Broadhead, Ph.D.	Urinary iodide excretion Thyroidal iodine content

22. Physics

Professor W. Sucksmith, F.R.S.	Paramagnetic and ferromagnetic properties of metals and alloys
N.H. March	Applications of quantum mechanics in molecular and solid state theory
R. Street	Antiferromagnetism Properties of ferrites Radio-frequency spectroscopy
T.R. Kaiser	Radioastronomy, the upper atmosphere
R.S. Tebble	Magnetic susceptibility of metals at high temperatures Magnetic properties of rare earth ferrites Radiation damage in ferromagnetic material Domain structure
E.W. Lee	Magneto-optic effects in ferromagnetics Eddy current effect Properties of thin magnetic films
J. Crangle	Magnetization of ferromagnetic alloys
J.H. Smith	The electrical and mechanical properties of metallic antiferromagnetic alloys

23. Physiology

Professor D.H. Smyth	Intestinal absorption
V.R. Pickles, M.D.	Hydroxytryptamine, endometrial plain-muscle stimulant
G. Wiseman, Ph.D.	Transport of ions, amino-acid metabolism
G.R. Hervey	Control of appetite
H. Newey, Ph.D.	Intestinal absorption
R.J.C. Barry, Ph.D.	Absorption of fatty acids
E.L. Jervis (Miss)	Absorption of amino acids
J. Matthews	Absorption of ions
R.T. Levin	Effect of endocrines on absorption

24. Psychiatry

Professor E. Stengel, M.D.	Suicide and attempted suicide Psychogenic pain
W.L. Tonge, M.D.	Occupational adjustment and neurosis
F.A. Jenner, M.D., Ph.D.	Metabolic changes associated with periodic mental disorder Pathophysiology of appetite
L. Grimshaw	Personality and obsessional illness Student-patient relationships
R.J. Kerry	Phobia
P. Hall	Change of domicile and neurosis

25. Public Health and Preventive Medicine

P.E. Brown	The socio-medical aspects of cerebral vascular disease
C.E. Fleming	The age factor in the British cutlery industry (the three inter-relating aspects are (a) workforce age-structure, (b) managerial policies and practices with regard to ageing operatives and (c) operatives and former operative attitudes to later-age employment and to retirement) Community attitudes and adjustments to population ageing in Great Britain
J.W. Roe	Effect on health and respiratory function of abandoning tobacco smoking

26. Radiotherapy

G.W. Blomfield	Therapeutic use of radioactive colloids Studies of body composition Investigations into blood dose in I^{131} therapy Studies on leukaemia Cytological effects of ionizing radiation and its bearing on the treatment of carcinoma of the cervix

27. Statistics

G.H. Jowett, Ph.D.	Statistical analysis of stochastic series Biometric techniques Simplified methods of statistical analysis

28. Surgery

Professor A.W. Kay, M.D.	The physiology of human gastric secretion Clinico-physiological problems of peptic ulcer
O. Daniel	Chemical and radioactive zinc metabolism in health and neoplasia Endocrine studies in advanced prostate and mammary carcinoma Clinico-physiological problems of urinary diversion
B.N. Catchpole, M.D.	Blood flow and metabolic studies in experimental shock Experimental observations using arterial prostheses
I.E. Gillespie	The physiology of the pyloric antrum in man Gastric secretion studies in dogs Anaemia following gastrectomy
A.G. Cox	Clinico-physiological problems of intestinal absorption

29. Technology

Fuel Technology:

Professor M.W. Thring C. Hulse, Ph.D. R.G. Siddall, Ph.D.	Combustion of solid, liquid and gaseous fuels in relation to heat transfer, soot formation and chemical action on material heated
M.G. Perry K. Littlewood	Application of new principles and methods to furnace heating and power production
G. Underwood, Ph.D. R.H. Essenhigh, Ph.D.	Solution of problems in steady and unsteady state conduction of heat in various shapes Fluid flow in forced convection Use of cold models for study of fluid flow pattern, recirculation and mixing in furnaces, combustion chambers and rockets Direct electricity processes both magnetohydrodynamics and fuel cell Physical and chemical processes in the temperature range 2000-6000°K Smoke and fume production from combustion of all fuels
I. Fells, Ph.D.	Study of coal structure to elucidate mechanism of coking Desulphurization of liquid hydrocarbons and flue gases
A.E. Beet, Ph.D.	Rapid methods of chemical analysis of fuels and their derivatives The nitrogenous constituents of coal and their importance in carbonization

Glass:

Professor R.W. Douglas	Investigation of the structure and properties of glass by physical and chemical methods Variation of the physical properties of glass with time Infra-red absorption of glasses Reactions of glasses with water Viscosity and delayed elasticity of glasses Phase equilibria in glass forming systems
T. Bates	Coloured glasses including applications of ligand field theory
J.O. Isard	The electrical conductivity and dielectric properties of glass Electrode potentials of glasses
R.F.R. Sykes	Investigations of the chemical analysis of glasses

Refractories:

Professor J. White	Equilibrium relationships at high temperatures in systems containing iron oxides Reactions of silicates with water vapour Phase relationships in uranium carbide-metal systems Mechanism of bond formation in basic refractories
W.F. Ford, Ph.D.	The tensile properties of refractories at high temperatures The mechanism of failure of magnesia refractories The influence of thermal stresses on the mechanical properties of ceramic bodies
S. Swiecki, Dr. Eng.	The effect of texture on the mechanical properties of ceramics

30. Zoology

Professor I. Chester Jones, D.Sc.	Comparative endocrinology
E.T.B. Francis, Ph.D.	The conductive system of the vertebrate heart The salivary enzymes of Amphibia Water relations in reptiles Host reactions to parasites with special reference to the gut

30. Zoology (*continued*)

E.T.B. Francis, Ph.D. (*continued*)	Nutritional requirements of intestinal worms with special reference to larval stages
F. Segrove, Ph.D.	Estuarine and marine shore ecology Reproductive cycles in Spirorbinae and structural changes in the operculum
F.J. Ebling, Ph.D.	Factors influencing the mammalian epidermis, hair, and sebaceous glands The mode of action of hormones on mammalian tissues The ecology of a marine lake
J.D. Jones	Respiratory function in invertebrates, especially burrowing Polychaetes
K.C. Highnam	Endocrinology of postembryonic development and diapause in Lepidoptera and Orthoptera
O. Lusis	Postembryonic development and activity of the reproductive system of *Arion ater*
J.G. Phillips, Ph.D.	Comparative endocrinology
G.T.C. Stark	Ecology of estuarine Gammarids

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1. Biochemistry

K.A. Munday, Ph.D. (Head of Department)	Intermediate metabolism in invertebrates
G.A. Kerkut, Ph.D.	Characterization of neurohormones
R.B. Beechey, Ph.D.	Intermediate metabolism in Crustacea Magnesium deficiency and oxidative phosphorylation in rats
A.N. Clements, Ph.D.	Intermediate metabolism in insects

2. Botany

Professor W.T. Williams, Ph.D., D.Sc.	Physiology of stomata; transpiration Growth phenomena, especially etiolation Statistical methods in ecology
G.R. Lane, Ph.D.	X-ray and radiomimetic effects in *Tradescantia* and *Vicia* Cytological and anatomical studies in etiolation Cytology of *Spartina*
J.M. Lambert (Miss), Ph.D.	General bog, fen and saltmarsh ecology Competition studies Statistical ecology Experimental taxonomy
J.G. Manners, Ph.D.	Plant pathology, especially larch canker (in conjunction with the Forestry Commission): rust fungi and physiology of parasitism Taxonomy of Uredinales and Discomycetes
A. Myers, Ph.D.	Chemistry of plant cell walls Physiology of cell wall growth Carbohydrate and nitrogen metabolism

3. Chemistry

Professor R.C. Cookson, Ph.D.	Natural products Reaction mechanisms Spectroscopy and photochemistry
I. G.M. Campbell (Miss), Ph.D.	Stereochemistry of organic compounds of phosphorus and arsenic
R.E. Parker, Ph.D.	Kinetics of nucleophilic organic reactions
G.W.A. Fowles, Ph.D.	Reactions in liquid ammonia Complex compounds of the transition elements

3. Chemistry (*continued*)

M.C.R. Symons, Ph.D., D.Sc.	Structure and reactivity of oxy-anions Study of free radicals by paramagnetic resonance Formation and properties of iodine cations Ionic spectra and ionic solvation
A.C. Riddiford, Ph.D.	Kinetics of electrode processes Contact angles
E. Cartmell	Raman spectroscopy
E.A.S. Cavell, Ph.D.	Kinetics of reactions in solution
H.M. Frey, Ph.D.	Kinetics of gaseous reactions

4. Electronics

Professor E.E. Zepler, D.Phil., Ph.D.	Practical application of indium antimonide
W.A. Gambling, Ph.D.	Noise in travelling wave tubes and other microwave devices Stability and noise generation in electron beams Ferrite parametric amplifiers Design of high resolution microwave spectrometers
S.W. Punnett	Barkhausen noise in ferrites
B.H. Venning	Analogue computers applied to some aspects of helicopter design and to packaging and impact problems
E.V. Vernon	Elastic properties of single crystals of metals

5. Engineering

Aeronautical and Astronautical:

Professor E.J. Richards, O.B.E., D.Sc.	Aerodynamic noise Acoustic fatigue Turbulence Design of ground silencers for jet aircraft
B.L. Clarkson, Ph.D.	Correlation of acoustic pressures near an air jet Response of structures to noise
I. Torbe, Ph.D.	Response of linear systems Cumulative damage in fatigue
P.O.A.L. Davies, Ph.D.	Correlation measurement of turbulent reaction in a jet Pressure measurements in unsteady flow Derivative measurements of a highly swept delta in high speed flow
J.P. Jones, Ph.D.	Helicopter blade oscillations Separated flows Yacht aerodynamics
D.J. Mead	Internal damping of structures Effect of noise on structures
T. Tanner	Aero/hydrodynamics of sailing yachts
K.N.C. Bray	Hypersonic aerodynamics
M.K. Bull	Noise due to boundary layer turbulence
P.C. Parks	Automatic flight Panel flutter
J.F. Barrett	Magnetic suspension of aircraft in wind tunnels Randomly disturbed non-linear systems, especially in automatic control
P.A. Knowles	Helicopter rotor derivative measurements

Civil:

Professor P.B. Morice, D.Sc., Ph.D.	Application of electronic digital computers to the linear analysis of shell roofs and other statically indeterminate structures

5. Engineering (*continued*)

Civil (*continued*)

Professor P.B. Morice, D.Sc., Ph.D. (*continued*)	The strength of prestressed concrete statically indeterminate structures
	The analysis of infilled and clad frames
	Load distribution in grillages
P.N. Ray	Studies of soil-cement and soil-bitumen mixtures
A.P.K. Tate	Elastic and collapse studies of flexibly supported concrete slabs
	Load carrying capacity of eccentrically loaded pile groups in clay
N.B. Webber	Model studies of the tidal phenomena in Southampton Water and the Solent
J.R. Rydzewski, Ph.D.	Stresses in buttress and arch dams
	Use of photoelastic techniques for structural problems
L.G. Booth, Ph.D.	Structural model and wind tunnel studies of shell roofs
	Structural design using digital computers
	Timber structures
H. Tottenham	Analyses of doubly curved shells and thin walled space structures

Electrical:

Professor L.G.A. Sims (Head of Department)	The thermal properties of magnetic steel sheets
K.L. Morphew	A study of electrical discharges at very low gas pressures
B.M. Weedy	Heat flow analogue
R.E. Steven	Prediction of synchronous machine performance
R. Yorke	Transient performance of the acoustical loudspeaker
	Electrical analogues of vibrating systems
K. Morgan	Electro-acoustics

Mechanical:

Professor A.N. Black	Strain measurement in concrete
A.F. Cook	Motion of railway coach bogie
C.H. Helmer	Vibrations
H.J. Sara	Thermal conductivity
N.S. Grassam, Ph.D.	Nuclear engineering
R.J. Foyle	Separation of mixed liquids
T.R.G. Williams	Fatigue, brittle fracture

6. Geography

Professor F.J. Monkhouse	Regional geography of W. Europe (Belgium and Netherlands)
	The waterways of W. Europe
	Cartographic methods
	Aerial photographs
L.E. Tavener, Ph.D.	Local geography of Dorset
	Common lands, with special reference to the commons of Hampshire
R.A. Pelham, Ph.D.	English iron industry in 16th Century
	1801 crop census of England and Wales
	Regional study of Val d'Herens (Switzerland)
	Early steam mills of Birmingham
G.W.S. Robinson	Urban geography of Southampton
	The geography of "Tourism"
D. Large	Cotton production in Southern U.S.A.
	Settlement problems in the West Hampshire Basin
R.J. Small, Ph.D.	The geomorphology of the Chalk

7. Geology

Professor F. Hodson	Carboniferous stratigraphy particularly of Ireland Carboniferous *Goniatites*
P.H. Shelford	Irish Namurian stratigraphy Gault Foraminifera Superficial deposits around Stevenage
M.E. Cosgrove D.E. Wisden (Miss)	Petrological and chemical studies of basic igneous rocks of Padstow-Camelford area

8. Mathematics

Applied:

Professor H.A. Jahn, Ph.D.	Theoretical nuclear physics Theoretical fluid mechanics
Professor B. Thwaites, Ph.D.	
L. Cohen, Ph.D.	
H.J. Davies, Ph.D.	
J.P. Elliott, Ph.D.	
J. Heading, Ph.D.	
D. Schonland, Ph.D.	

Computation:

*G.N. Lance, Ph.D. (Director)	Application of numerical methods to problems of fluid flow
J.P. Cleave, Ph.D.	Logical structure of automata Auto-codes
J.B. Willis, Ph.D.	Theoretical work on nucleon-nucleon scattering

Pure:

Professor E.T. Davies, D.Sc., Ph.D., D.Math.	Differential geometry
R.S. Clark, Ph.D.	
F. Brickell, Ph.D.	
A.W. Deicke, Ph.D.	
F. Rhodes, Ph.D.	
W.H. Cockroft, D.Phil.	Algebraic topology

Theoretical Mechanics:

Professor B. Thwaites, Ph.D.	Fluid dynamics Haemodynamics

9. Physics

Professor A.M. Taylor, Ph.D.	Magneto-optical rotation and birefringence of liquids
S. Weintroub	Thermal and electrical properties of single crystals of metals and of liquid metals
K. Kellner, Ph.D.	Thermal conductivities of gases and vapours at low temperatures and high pressures
H.G. Jerrard, Ph.D.	Viscosity, optical scattering, birefringence, and dielectric constant of streaming liquids and solutions of macromolecules
D.M.A. Mercer, Ph.D.	Acoustic absorption by tuned resonators Correlation techniques applied to acoustic measurements
B.J. Hopkins, Ph.D.	Surface studies in diodes
R.G. Scurlock, D.Phil.	Properties of solids below 1°K

*E. N. Wilson, Ph.D. replaces G.N. Lance, Ph.D. on 1st January, 1960.

10. Physiology

K.A. Munday, Ph.D. (Head of Department)	Endocrinology of the response to cold in vertebrates Physiology of respiratory pigments
G.A. Kerkut, Ph.D.	Physiology of the nervous system in relation to behaviour Isolation of neurohormones
A.N. Clements, Ph.D.	Hormonal systems in insects

11. Zoology

Professor J.E.G. Raymont	Studies on the physiology of marine zooplankton Seasonal cycles of plankton in Southampton Water
with A.R. Hockley	Experiments on fertilization of marine waters
A.R. Hockley	The biology of *Limnoria* and other marine wood-borers
R.E. Hall	Ecology of Chironomidae Studies on *Chirocephalus*
M.J. Delany	Ecology of heathlands with reference to the Arthropod population Ecological studies on small mammals
G. Shelton, Ph.D.	Physiology of hearing Respiration in fishes

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University College of Wales, Aberystwyth

1. Agriculture

Agricultural Botany:

Professor P.T. Thomas, Ph.D.	Cytological aspects of differentiation
H. Rees, Ph.D.	Genetical determination of chromosome behaviour
A. Durrant, Ph.D.	The interaction of genotype and environment
E. Griffiths	Microbiology of grassland
D.B. James	Physiological aspects of plant distribution

Agriculture Chemistry:

Professor T.W. Goodwin, D.Sc.	Biosynthesis of vitamins Photosynthesis Biochemistry of seed germination
W.M. Ashton, Ph.D.	Phytin and related compounds in cereals with special reference to oats Coumarin and related compounds in sweet vernal Aspects of hypermagnesaemia
V.I. Stewart, Ph.D.	Significance of iron/organic matter patterns in soil profile morphology Influence of geomorphological processes on the soils of the Aberystwyth area

Agricultural Economics:

Professor E.F. Nash	Agricultural economics (general) Competitive position of British agriculture
J.R.E. Phillips	Economics of the dairy industry
M.B. Jawetz	Farm management survey; input-output relationships in milk production Cost studies in pig production
D.H. Evans	Profitability in farming
W.D. Jones	Economics of egg and table poultry production Economic survey of store-raising farms

1. Agriculture (*continued*)

Agricultural Economics (*continued*)

E.A. Attwood	Agriculture and economic growth Capital investment in British agriculture Economic efficiency in farm management Economics of hill farming
M.H. Dummer	Economics of sheep farming (hill and lowland flocks)
G. Hallett	Problems of land tenure Problems of agricultural policy
W.J.K. Thomas	Distribution of farm types in Wales

Animal Health:

K.B. Sinclair, Ph.D.	Metabolic and nutritional diseases in farm animals

Animal Husbandry:

Professor J.E. Nichols, Ph.D. with J.L. Lees J.B. Owen, Ph.D.	Ecological aspects of sheep husbandry; genetic and environmental factors affecting production in dairy cattle; selection methods; nutritional and management factors involved in lamb production Shelter research: agricultural aspects

Crop Husbandry:

Professor W. Ellison, Ph.D.	Studies of marginal land problems Pasture improvement in upland areas The productivity and longevity of leys in upland areas and their response to certain major and minor plant nutrients Factors affecting the formation of herbage mat on certain types of reseeded hill pasture
R.S. Edwards, Ph.D.	Moisture relationships in cut herbage of different physiological ages under varying conditions of temperature and humidity
J.L. Hammerton, Ph.D.	Measurement of frost-heaving of soils under various cultivation regimes The influence of various types of soil tilth on the germination and establishment of cereals and root crops The effects of soil tilth, water supply and level of N fertilizer on the N content of barley grain

Dairying:

J. Lewis (Director)	Performance and operational costs of farm dairy equipment The influence of penicillin infected milk in cheesemaking
with A. Edwards (Miss)	The relative efficiences of agents used in the chemical sterilization of dairy utensils

2. Botany

Professor P.F. Wareing, D.Sc., Ph.D.	Developmental plant physiology Problems of dormancy in seeds and buds, especially in relation to hormones and growth inhibitors Tree physiology, including cambial activity, flowering and effects of gravity
I.M. Wilson (Miss), Ph.D.	Marine fungi. Cytology and development of Ascomycetes
P.W. Carter	History of botany in Wales and some counties of England
E.H. Chater	Salt marsh ecology with special reference to new forms of *Spartina townsendii*
H. Jones, Ph.D.	Translocation of C^{14} assimilates, especially in relation to leaf age Leaf development problems in *Callitriche intermedia*
J.W. Bradbeer, Ph.D.	Metabolism of succulent plants
J.P. Savidge, Ph.D.	Cyto-taxonomical studies of *Callitriche* and *Stachys*

3. Chemistry

Professor C.W. Davies, D.Sc.	Ion exchange resins Electrochemistry; kinetics of crystallization
J.B. Bowen	Structural factors in adsorption of polar-nonpolar molecules
M.M. Davies, Ph.D., D.Sc.	Spectra, structures and interactions of molecules Dielectric absorption studies Sublimation pressures and lattice energies
S.H. Graham, Ph.D.	The chemistry of substances derived from cyclo-octatetraene; the study of medium rings
C.B. Monk, Ph.D., D.Sc.	Electrochemistry of multivalent electrolyte solutions; nuclear chemistry
G.A. Morrison, Ph.D.	Chemical kinetics of bacteria
W.J. Orville-Thomas, Ph.D., D.Sc.	Molecular structure and potential functions of simple polyatomic molecules

4. Geography

Professor E.G. Bowen	Historical geography of Atlantic Britain
W. Fogg	Human geography and sociology of the Barbary States
E. Watson	Subaerial erosion under arid conditions in S.W. Africa
G.M. Howe, Ph.D.	Distribution of human diseases in Britain
J.G. Thomas	Rural depopulation in N. and Central Wales
H. Carter	The urban geography of Wales
R.A. Yates	Landform mapping in Wales
J.A. Taylor	Ecological and soil-climate studies in S. Britain
P.R. Mounfield	Geographical aspects of industrial location in the United Kingdom

5. Geology

Professor A. Wood, D.Sc., Ph.D.	Micropalaeontology, with particular reference to smaller Foraminifera Geomorphology of cliff and valley slopes The coast line of Wales The origin of greywackes
J. Challinor	The history of geology
N. Kirk (Miss), Ph.D.	The stratigraphy and tectonics of the area east of Rhayader The Lower Palaeozoic rocks of N. Wales
J.R. Haynes, Ph.D.	Gault Foraminifera of England Foraminifera of the Cretaceous and Tertiary of Libya
W.J. Phillips, Ph.D.	The Stratigraphy, structure and petrology of the Moine-Lewisian rocks of Morar The palaeogeography and petrology of the Lower Palaeozoic rocks of Merioneth and Pembrokeshire

6. Mathematics

Applied:

Professor T.V. Davies	Hydrodynamics and its meteorological and geophysical applications Non-linear differential equations
C.E. Easthope, Ph.D.	Problems in vectoral mechanics
U. Opik, Ph.D.	Solid state physics
R.H. Rogers, Ph.D.	Aerodynamics Hydrodynamics

Pure:

Professor V.C. Morton	Algebraic geometry
D.S. Meyler (Miss)	Algebraic geometry
A.O. Morris	Algebra

7. Physics

Professor W.J.G. Beynon, C.B.E., D.Sc., Ph.D.	Studies of the upper atmosphere
E.M. Job	
G.M. Brown	
D.A. Richards	Optical studies of artificial earth satellites
W.M. Jones, D.Phil.	The flow of gases and vapours through porous media and adsorbent beds
D.H. Edwards, Ph.D.	Experimental investigations on the propagation of stress waves in solids
D.H. Trevena, Ph.D.	The mechanical properties of metals and the tensile strengths of liquids at high rates of stressing
	The measurement of pressure and velocity in detonation waves in gaseous mixtures

8. Zoology

Professor T.A. Stephenson, D.Sc., F.R.S.	The intertidal fauna and flora of the shores of the world
	The scientific study of painting
F.G. Rees (Miss), Ph.D.	Helminth parasites of fishes and whales
J.R.E. Jones, Ph.D., D.Sc.	The general ecology of rivers
	Biological aspects of river pollution
P. Fortune (Miss), Ph.D.	Endocrinology of the lower vertebrates
T.B. Poole	Ecology of the Collembola
L. Slay (Mrs.)	Ecology of birds

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University College of Wales, Aberystwyth Welsh Plant Breeding Station

1. Agronomy

Grassland:

Ll.I. Jones	The reaction of different species to climatic conditions, manuring and management
D.G. Miles	
I. Davies	The comparison of strains in sward formation under different conditions of upland and lowland
A. Troughton, Ph.D.	
A.H. Charles	The interaction between the animal and the sward
A.G. Davies (Miss)	The evaluation of species and strains for different purposes under various environmental conditions
	The management of grasslands
	Animal production of pastures
	The influence of sward type and sward management on subsequent arable crops
Ll.I. Jones	The improvement of hill pastures by manuring, re-seeding and controlled grazing
	The chemical destruction of hill swards as a preliminary to re-seeding
	The influence of covering seed with various fertilizers on germination and establishment
D.G. Miles	Investigations regarding suitable technique for pasture experimentation
I. Davies	Grass strains and their management for herbage conservation
A. Troughton	Root studies of herbage plants
A.H. Charles	Sociological studies regarding the establishment of herbage plants
	Synecological studies in *Lolium*
A.G. Davies (Miss)	The effect of external factors on the behaviour of perennial ryegrass at close spacings

2. Chemistry

G.ap Griffith, Ph.D.	Analysis of plant material in collaboration with herbage and cereal breeders Fibre content and other factors in relation to seasonal change in herbage Soil nitrogen relationships of pasture species Studies of non-protein nitrogen fraction of pasture species

3. Cytology

K. Jones, Ph.D.	The cytology of grasses in relation to breeding The population cytology of *Dactylis*, *Anthoxanthum* The cytology and biosystematics of *Holcus*

4. Genetics

J.P. Cooper, Ph.D.	Genetics of production characters in herbage grasses Selection for physiological and biochemical differences in herbage grasses
P.B. Vose	Intraspecific variation in nutritional response and requirements in the herbage grasses The physiology of non-flowering strains

5. Pathology

A.J.H. Carr, Ph.D.	Selection and breeding for resistance to clover rot (*Sclerotinia trifoliorum*), stem eelworm (*Ditylenchus di psaci*) *Verticillium* wilt, black stem (*Ascochyta imperfecta*), and other diseases of herbage crops Pathology of herbage virus diseases Studies on clover nodulation

6. Plant Breeding

Professor P.T. Thomas, Ph.D.	Cytogenetic studies in crop plants
Cereals, Beans and Brassicae:	
D.J. Griffiths, Ph.D.	Study and development of breeding techniques for the improvement of cereal crops
T.D. Johnston J.D. Hayes	The production of new varieties of oats for varying levels of fertility and different purposes
H. Thomas	Breeding for disease resistance Cytogenetical studies of species interrelationships within the genus *Avena* The production of new varieties of spring wheat and spring barley Breeding work with field beans Breeding of improved strains of rape and kale
Grass:	
A.R. Beddows	Breeding of improved strains of *Lolium*, *Dactylis*, *Phleum*, *Festuca*, *Agrostis*, etc. Study of breeding techniques Study of breeding systems Phenology of grasses and anthesis in relation to meteorological conditions
M. Borrill, Ph.D.	The genecology and taxonomy of *Dactylis* and *Anthoxanthum* Developmental anatomy of various grasses
E.L. Breese, Ph.D.	Syngenetical studies in *Lolium* Quantitative inheritance in herbage grasses
E.J. Lewis	The production of amphidiploids from intergeneric hybrids Interspecific relationships in *Alopecurus*, and the autecology of *A.pratensis*

6. Plant Breeding (*continued*)

Herbage Legumes:

W.E. Davies	Potentiality studies, breeding, breeding techniques, genetics and agronomic studies in *Trifolium* and *Medicago*
A.M. Evans (Miss), Ph.D.	Interspecific hybridization and the induction of polyploids in *Trifolium* and *Medicago*
D.G. Jones	Investigation of nodulation problems in *Trifolium* spp. Inoculation trials and manurial treatments: *T.repens*

Seed Multiplication:

G. Evans, O.B.E.	The effect of technique on the seed yield, quality and growth form in grass strains
H.M. Roberts J. Lewis	Multiplication of seeds of bred strains of cereals, grasses and clovers and investigation of the effect of environmental and other factors on the seed produced by bred strains of grasses
J. Lewis	The effect of different factors on the viability of crop and weed seeds under various storage conditions
J.L. Stoddart	Nutritional and other factors affecting seed production in grasses and clover

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University College of North Wales, Bangor

1. Agriculture

Professor E.J. Roberts	
G.M. Davies, Ph.D.	The effect of spring defoliation on winter sown cereals
G.L. Williams	Performance and progeny testing of mountain sheep
J.H. Watson, Ph.D.	Animal breeding and genetics
W. Brown	The application of work study techniques to design and layout of farm buildings

Agricultural Botany:

Professor R.A. Roberts	Plant ecology with special reference to economic history in N. Wales
D.W. Parry	Effects of plant growth regulating substances on meristematic tissues in oat seedlings Anatomical studies in the Gramineae with species reference to opaline silica bodies
M.J. Mence (Miss)	Root fungi
A.D. Bradshaw, Ph.D.	Population differentiation and hybridization in *Agrostis* species. Evolution of populations adapted to different soil types in *Trifolium repens* and *Festuca ovina*. Natural hybridization in *Crataegus* The mineral nutrition of grass species studied by sand culture techniques

Agricultural Chemistry:

Professor W.C. Evans, Ph.D.	Biochemistry of farm animals Cattle bracken poisoning
A.J. Thomas, Ph.D.	Blood biochemistry in health and disease
I. Antice Evans	Metabolic disorders of farm animals
R.F.E. Axford	Digestive enzymes of farm animals
R.A. Evans	Plant saponins and their effects on animals
C.B. Coulson (I.C.I. Fellow)	Soil organic matter (humic acid fraction)

1. Agriculture (*continued*)

Agricultural Chemistry (*continued*)

Professor W.C. Evans	Metabolism of aromatic compounds by soil micro-organisms
R.I. Davies	Correlation of soil type with the incidence of stomach cancer
G.H. Owen	Factors in soil profile formation
F. Smithson, D.Sc.	Micro-mineralogy of soils Phytoliths in plants and soil

Agricultural and Forest Zoology:

J. Hobart (Head of Department)	The ecology of the arthropods of forest soils General biology and control of insect pests
M.O. Ind (Miss), Ph.D.	Protozoology: with special reference to soil faunas and the gut parasites of arthropods
J.B. Ford, Ph.D.	Behavioural and biochemical studies of feeding and nutrition in insects Ecology of Chironomidae

2. Botany

Professor P.W. Richards, Sc.D.	Ecology of British vegetation and of the tropical rain forest Biology of British plants (for Biological Flora) Bryophyta
C.G. Dobbs, Ph.D.	Soil mycology Tree-ring analysis
P. Greig-Smith	Pattern in vegetation Systematics of Lejeuneaceae
G.A.D. Jackson, Ph.D.	Role of ascorbic acid in plant metabolism
W.S. Lacey, Ph.D.	Palaeobotany
M. Martin (Miss), Ph.D.	Algae
N. Woodhead	Freshwater algology

3. Chemistry

Professor S. Peat, Ph.D., D.Sc., F.R.S. J.R. Turvey, Ph.D.	The constitution, enzymic synthesis and biological function of the carbohydrates of land and sea plants
P.F. Lloyd, Ph.D.	Mucopolysaccharides and related substances
F. Holmes	Co-ordination compounds in quantitative analysis
T.M. Thomas, Ph.D.	Heterogeneous gas-solid reactions
W.R. Angus, Ph.D., D.Sc.	Magnetism and molecular structure

4. Engineering

Electronic:

Professor M.R. Gavin, M.B.E.	Ion beams Parametric amplification
F.J. Hyde	Transistor measurements
G. Ratcliff	Apparatus for ionospheric measurement Control engineering

5. Forestry

Professor E.C. Mobbs, O.B.E.	Natural regeneration of exotic conifers Establishment and development of various species under conditions of exposure and high elevation
T.H. Owen	
D. Kinloch	Structure and qualities of timber from conifer plantations in varying site conditions
G.K. Elliott	

5. Forestry (*continued*)

E.R. Huggard	Investigation of forest machinery, tools and equipment
T.H. Owen	Extraction of forest produce—methods and costings
C.G. Dobbs, Ph.D.	Mycology, biology of soil micro-fungi Dendrology, growth rings of trees

6. Marine Biology

D.J. Crisp, Ph.D. (Director)	Biology of cirripedes Distribution of intertidal fauna Settlement of invertebrate larvae Vision in marine invertebrates
C. Burdon-Jones, Ph.D.	Embryology and physiology of protochordates Embryology and behaviour of littoral Gastropods
C.P. Spencer, Ph.D.	Biochemistry of marine diatoms and flagellates Hydrography of inshore water Pigments from red algae
W.E. Jones, Ph.D.	Settlement and growth of red algae Algal ecology and distribution

7. Mathematics

Professor D.E. Littlewood	Algebra Invariant theory Group representation theory
R.A. Newing, Ph.D.	Kinematical relativity Astrophysics, rotating stars
C.C.H. Barker	Algebraic geometry
Ll.G. Chambers	Mathematical physics
A. Hare	Hydromagnetics

8. Physics

Professor E.R. Andrew, Ph.D. R.G. Eades, Ph.D. J.P. Llewellyn, Ph.D.	Nuclear magnetic resonance
S. Clough	Electron spin resonance
D.P. Morris, Ph.D.	X-ray and magnetic investigation of alloy systems
R. Parker, Ph.D.	Ferrites
R.H. Tredgold, Ph.D.	Theory of many-body phenomena Conduction processes in dielectrics
P. Wright, Ph.D.	Kinetics of order-disorder transformations

9. Zoology

*Professor F.W.R. Brambell, F.R.S. †W.A. Hemmings †R. Halliday, Ph.D. †I.G. Morris, Ph.D.	Embryology, foetal physiology and immunology of mammals in relation to problems of sterility and prenatal mortality
L.H. Jackson	Marine biology
T.B. Reynoldson, D.Sc.	Population ecology of *Urceolaria* (Protozoa) Taxonomy and ecology of freshwater triclads
W.C. Jones, Ph.D.	Physiology and growth of sponges
A.B. Acton, D.Phil.	Chromosomal polymorphism in *Chironomus*
R.McN. Alexander, Ph.D.	Biophysics of the teleost swim-bladder

*Honorary Director, A.R.C. Unit of Embryology.

†A.R.C. Unit of Embryology.

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University College of South Wales and Monmouthshire, Cardiff

1. Anatomy

Professor J.S. Baxter	Development of the reticulo-endothelial system Correlation of structure and function in the mesonephros and metanephros of the mammalian foetus
with F. Beck	Experimental production of congenital defects
H. Hughes	Growth and regeneration of tissues and organs in the post-natal period Growth and behaviour studies on Chiroptera Anatomy and pathology of prehistoric man
F. Jacoby, M.D., Ph.D.	Histology and histochemistry of salivary glands Tissue culture, especially studies on growth of pure population of macrophages, and the relationship of macrophages to fibroblasts
with M.B.L. Craigmyle	Electron microscopy of salivary glands
D.B. Moffat	Regulating mechanisms in arteries *In vivo* studies of the circulation in the uterine vessels of the rat Development of the vascular system
M.B.L. Craigmyle	Transplantation of tissues Electron microscopy of cartilage
G. Irvine	Neuro-anatomy

2. Archaeology

Professor R.J.C. Atkinson	Problems of European prehistory with special reference to Britain in the 2nd millennium B.C. Archaeological field techniques
L. Alcock	Iron Age and Mediaeval archaeology with special reference to Wales
M.G. Jarrett, Ph.D.	Romano-British archaeology with special reference to Wales Chronology of mediaeval pottery in the north of England

3. Biochemistry

Professor J. Pryde, D.Sc. K.S. Dodgson, Ph.D. B. Spencer, Ph.D. F.A. Rose, Ph.D. A.G. Lloyd, Ph.D.	The biochemistry and enzymology of sulphuric acid esters and cognate structures, including the biochemistry of mucopolysaccharides, of connective tissues and of epithelia

4. Botany

Professor G.F. Asprey, Ph.D.	Plant ecology of industrial waste areas Tropical plant ecology with particular reference to the Caribbean area Studies on the nyctinastic movement of leaves
M.S. Percival (Mrs.), Ph.D.	Pollen presentation in flowering plants
A.G. Lyon, Ph.D.	Palaeobotany
K. Benson-Evans (Miss)	The physiology of reproduction in the Bryophyta

4. Botany (*continued*)

R. Harvey	The endophytic fungi of the roots of aquatic plants Aerobiology with particular reference to fungal spores
S.E. Arney	Shoot growth and morphogenesis in *Fragaria*, including the induction of flowering and dormancy
E.C. Hill	The bacteriological decomposition of phenolic effluents The sterilizing effects of gamma radiation
M.A. Williams (Mrs.)	The bacterial ecology of caves

5. Chemistry

Professor A.G. Evans, D.Sc.	Activation of carbon-carbon double bonds by cationic catalysts Production of carbonium ions by the action of metal salts Effect of solvent on the ionization of organic halides Ionization at carbon-oxygen bonds
N.M. Cullinane, D.Sc.	Study of the Fries rearrangement
A.R. Pinder, Ph.D.	Studies in natural product chemistry
N. Thorne, Ph.D.	Studies in the tetraphenylethylene series
J.H. Thomas, Ph.D.	Gas phase reactions of nitrogen dioxide
J.W. Bayles, D.Phil.	The acid-base function in non-aqueous solvents
E. Whittle, Ph.D.	Gas phase bromination of alcohols Reactions of CF_3 radicals
G.O. Phillips, Ph.D.	Radiation chemistry and reaction mechanism studies of carbohydrate systems
S.J. Chard	Applications of titanium tetrachloride in organic chemistry

6. Engineering

Professor H.C.H. Gurney, D.Sc.	Fracture of materials Thermodynamics
Professor E. Williams, Ph.D.	Electronic circuits and devices
J.L. Bannister	Characteristics of prestressing tendons and concrete reinforcement
D.G. Ashwell, Ph.D.	Finite distortion of elastic plates and shells
R.O. Bray	Heat transfer from condensing steam
W. Davies, Ph.D.	The contact resistance and associated phenomena of carbon-copper contacts
W.H. Powell, Ph.D.	The noise problem in coal mines
L.H. Butler	Friction and surface effects during plastic deformation of metals
T.T. Lewis	Fatigue of glass fibres
W.F. Thomas, Ph.D.	Mechanical properties of glass fibres
C.F. Trigg	Earth pressures on retaining walls
H.A. Slyper	Vibration of cantilevers
J.G. Thomas	Electronics applied to various physiological problems

7. Geology

Professor J.G.C. Anderson, D.Sc. with J.W. Baker and G.G. Lemon	Stratigraphy, structure and petrology of the Caledonides in Scotland and Ireland
with R.K. Blundell, Ph.D.	Glacial and post-glacial geology of S. Wales Stratigraphy and structure of Ffestiniog district, N. Wales Caledonian and Hercynian structure in S.W. Wales
R.K. Blundell, Ph.D. J.W. Baker	Geology of the Old Red Sandstone and Carboniferous rocks of S. Wales
R.M. Appleby, Ph.D.	The evolution of the ichthyosaurs The Mesozoic rocks of S. Wales

8. Mathematics

Professor J.L.B. Cooper, D.Phil.	Fourier transforms, linear spaces
Professor P.T. Landsberg, Ph.D.	Statistical mechanics; theory of solids
R.M. Morris (Miss), Ph.D.	Theory of elasticity
N.J.S. Hughes, Ph.D.	Algebra
R.J. Chisholm, Ph.D.	Quantum field theory Statistical mechanics
J.F. Rigby, Ph.D.	Algebra
G. Lederer	Descriptive function theory
D.E. Edmunds, Ph.D.	Elasticity
G. Gould, Ph.D.	Linear spaces

9. Metallurgy

Professor W.R.D. Jones, D.Sc.	Stress-corrosion of high strength aluminium alloys
P.P. Das, Ph.D.	Aluminium lithium alloys
T. Evans	Solubility of hydrogen in ferrous materials
R.D. Garwood	Transformations of alloys in the solid state Physical properties of molten alloys
R. Rawlings, Ph.D.	Constitution of iron nitrogen alloys containing a third element Study of precipitation in Al-Mg-Zn alloys by internal friction method
J.L. Taylor	Electron microscopy of aluminium alloys

10. Mining

Professor J. Sinclair, Ph.D.	Mining subsidence Application of the electron microscope to problems of mining and other industries
J. Platt, Ph.D.	Mineral preparation; mine supports
K.M. Brown	Mine dusts
W.H. Powell	Noise from underground machinery
B. Collins	Strata pressures and the economics of roadway supports
W. Baxter-Browne	Gas emission from power-loaded faces and factors affecting the flow from methane drainage boreholes

11. Physics

Professor A.J.C. Wilson, Ph.D.	Theory of the diffraction of X-rays Statistical methods in X-ray analysis
D. Grant, Ph.D. R. Hine R.G. Howells J.P.G. Richards D. Rogers, Ph.D.	Crystal and molecular structure of organic compounds, particularly natural substances
B.W. Delf	Development of counter diffractometer
J.W. Hughes, Ph.D.	Identification problems
I.E. Lewis (Miss)	Extension of ASTM X-ray powder data file

12. Physiology

Professor J.M. Peterson, D.Sc.	Distribution of body solutes
R.C. Jordan, D.Sc. F.W. Beswick	Vector-electrocardiography

12. Physiology (*continued*)

E.T. Waters, D.Sc.	Carbohydrate metabolism Anaphylactic shock Coagulation of blood
S.L. Stone	Liver function
H.E.F. Davies, M.D.	Renal function

13. Technology

Fuel:

T. Evans	Physical properties of the pure coal substance
D.L. Carpenter, Ph.D.	Ignition and explosive properties of coal dust

14. Zoology

Professor J. Brough, D.Sc.	Vertebrate palaeontology
M.C. Brough (Mrs.), D.Sc.	Early history of tetrapods
E.M. Sheppard (Miss), D.Sc.	Systematics of isopods
G.T. Jefferson	Heat injury in insects and reproduction in locusts
W.A.L. Evans, Ph.D.	Digestion in insects and other invertebrates
D.A. Erasmus, Ph.D.	Life histories of trematodes, and physiology of *Taenia pisiformis*
B.W. Staddon, Ph.D.	Nitrogenous excretion in insects
T.E. Thompson, Ph.D.	Marine gastropods
H.H. Williams	Cestodes
M.F. Claridge	Parasitic Hymenoptera

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1. Botany

Professor H.E. Street, D.Sc.	Studies in growth, metabolism and genetics involving the culture of excised roots and callus tissues Heterotrophic metabolism of unicellular algae
I. Isaac, Ph.D.	Taxonomy of species of *Verticillium* and of closely related genera *Verticillium* wilt and other diseases of crop plants
G.T. Goodman	Autecology of selected species of *Eriophorum* in Britain
J. Hayward	The inorganic nutrition of the smaller algae
E.G. Brown, Ph.D.	Metabolism of purines, pyrimidines and related compounds in higher plants

2. Chemistry

Professor C.H. Hassall, Ph.D.	Structural chemistry of naturally occurring organic compounds, in particular, steroids, polypeptides, mould metabolites
E.E. Ayling	Dihydroresorcinols; other cyclic diones
R.F. Curtis, Ph.D.	Natural products chemistry
H.E. Hallam, Ph.D.	Infra-red spectroscopy
D.A. Long, D.Phil.	Raman spectroscopy
G.H.R. Summers, Ph.D.	Steroids; other natural products

3. Engineering

Chemical:

Professor E.S. Sellers	Problems of two-phase flow Problems of the flow of non-Newtonian liquids
J.C. Lee, Ph.D.	Gas absorption accompanied by chemical reaction
R.M. Wood, Ph.D.	Transient behaviour of distillation columns

3. Engineering (*continued*)

Civil:

Professor B.G. Neal, Ph.D.	Steel trusses. Deflection of steel frames
K.C. Rockey, Ph.D.	Steel trusses. Buckling of plate girders
J.A. Sandover, Ph.D.	Surge waves in open channels
J.D. Davies	Buckling of plate girders Reinforced concrete tanks

Electrical:

Professor W. Fishwick, Ph.D.	Control systems including non-linear servomechanisms, analogue computer studies and machine vibrations
H. Dickinson M.N. Azam	High voltage measurements. Behaviour of liquid dielectrics and glass under high field stress
J. MacCormack	Measurement of transistor parameters and transistor circuitry
H.W. Gosling	Measurement of magnetic fields by nuclear methods and applications
W.G. Townsend, Ph.D.	A study of avalanche and Zener breakdown in silicon rectifiers
V.N. Chiplunker	Transistorized multi-channel communication systems

Mechanical:

Professor R.H. Macmillan	The application of adaptive control systems to industrial processes Continuously variable speed power transmission systems Propagation of fatigue cracks, including the effect of residual stresses
J.S. Caswell	Stress concentrations and fatigue strength Stresses in rolling mill housings
T.C. Daniels	Density separation in fluidized beds
T.H. Davies	Thermosyphon cooling of rotating machines
A.A. Nicol, Ph.D.	Effect of vapour velocity on condensation of steam in pipelines

4. Geography

Professor W.G.V. Balchin, Ph.D.	Problems of water supply in Great Britain University location in Great Britain Evolution of limestone topography with special reference to the Bristol Channel area
J. Oliver	Local climates, in particular mountain climates and oceanic influences in local climates Climatic change in Wales
G.E. Groom (Miss)	Coastal evolution and denudation chronology of S. and S.W. Wales The physiography of limestone regions Periglacial landforms and deposits in S. Wales
D.H. Maling, Ph.D.	The geology and glaciology of the South Orkney Islands Map projections Developments in photogrammetry, cartography and geodesy in the U.S.S.R.
S.H. Cousens, Ph.D.	Demographic changes in post-famine Ireland Field patterns and land use in S. Wales
G. Manners	Economic geography of power industries Economic geography of S. Wales

5. Geology

Professor F.H.T. Rhodes, Ph.D.	Cambrian microfaunas from New Zealand Carboniferous micropalaeontology Conodont studies
with T.R. Owen	Sedimentary and palaeoecological study of the Basal Coal Measures of S. Wales
B. Simpson	Petrological study of the rocks of the Silurian/Devonian Boundary at the Usk Reservoir Supply Tunnel, S. Wales Problems of coast erosion at Ogmore-by-Sea A study of the lithology, movement and depositional features of the sands of Caswell Bay, S. Wales
T.R. Owen	The *Dibunophyllum* Zone in S. Wales (including Pembrokeshire) The Penlan Quartzite Structural problems in South Wales The relationship of drainage and geological structure in the S. Wales Coalfield
with D.G. Jones	The Millstone Grit-Carboniferous Limestone junction in the S. Wales and Pembrokeshire Coalfields The Namurian and Basal Coal Measures of the eastern portion of the S. Wales Coalfield
V.G. Walmsley, Ph.D.	The geology of the Silurian inlier of Usk, Monmouthshire The stratigraphy and palaeontology of the Upper Silurian of Pembrokeshire and the Ludlow District Study of Dalmanellid Brachiopods Investigation of *Pteronitella retroflexa* (Wahlenberg)
T.W. Bloxam, Ph.D.	Petrology and chemistry of the glaucophane-schists in California, Wales, and Scotland Ultrabasic and basic rock relationships, S. Ayrshire. (Petrology and geochemistry) Lavas and basic intrusions, S. Pembrokeshire (Petrology and geochemistry) Sedimentary geochemistry; particularly the Carboniferous of S. Wales Trace elements in fossils
G. Kelling	Stratigraphy, structure and petrology of Lower Palaeozoic sedimentary rocks in S. W. Scotland Petrological studies in the Pennant sandstones of S. Wales Sedimentology of Old Red Sandstone rocks in S. Pembrokeshire
P.R. Hooper	Petrology of Anvers Island, W. Antarctica

6. Mathematics

Applied mathematics:

Professor J.G. Oldroyd, Ph.D., Sc.D.	Viscous fluid flow Elasticity in solids and liquids
J.R. Jones, Ph.D.	Rheology
T.S. Walters	Atmospheric turbulence and diffusion
J. Wilkinson, Ph.D.	Three-dimensional viscous boundary-layer theory

Pure Mathematics:

Professor R. Wilson, D.Sc.	Coefficient theory of the Taylor series Functions analytic in an angle
H.O. Foulkes, D.Sc.	Symmetric functions Matrix representation of groups

6. Mathematics (*continued*)

Pure Mathematics (*continued*)

H.J. Godwin, Ph.D.	Theory of algebraic numbers
J.G. Brennan	Linear series on algebraic curves
F.R. Keogh, Ph.D.	Properties of schlicht functions Summability problems Fourier series
C.N. Linden, Ph.D.	Functions regular in the unit circle
S.K. Zaremba, D.Phil.	Probability theory and stochastic processes
G.M. Petersen, Ph.D.	Matrix theory of summability Number theory Tauberian theorems

7. Metallurgy

Professor H. O'Neill, D.Sc.	The deformation properties of metals and alloys at various temperatures
Professor A.R.E. Singer, Ph.D.	The control of process variables in the extrusion rolling and pressure welding of metals
Professor R. Higgins, Ph.D.	The viscosity characteristics of slags
J.P. Dennison, Ph.D.	The effect of precipitation hardening on the creep of metals Fundamental studies of tertiary creep and fracture in pure metals
A.P. Greenough	Surface energy of solid metals The effect of annealing on the fatigue damage of metals
D.E. Davies, Ph.D.	The oxidation of silver and gold The corrosion of metals

8. Physics

Professor F. Llewellyn Jones, D.Sc.	Electron and discharge physics Surface ionization phenomena and properties of thin films Temporal growth of ionization Electrical contact phenomena
P.M. Davidson, Ph.D.	Theoretical physics; quantum electrodynamics, transport phenomena in gases, temporal growth of ionization
M.R. Hopkins, Ph.D.	Electrical contact phenomena and properties of metals at very high temperatures
J. Dutton, Ph.D.	Electrical breakdown of gases at high pressures and properties of positive ions
C. Grey Morgan, Ph.D.	Electron and discharge physics
L.R. Griffin	Arc discharges and spectrographic sources
K.A. Thomas	Spectroscopy of electrical discharges

9. Zoology

Professor E.W. Knight-Jones, D.Phil.	Responses of marine invertebrates to changes in hydrostatic pressure Setting behaviour of serpulids and barnacles Sublittoral faunistic surveys with the aqualung
A. Macfadyen	Extraction methods for soil animals Continuous records of respiratory rates of small animals
E. Naylor	Ecology and taxonomy of Isopoda Fauna of artificially warmed docks Rhythms of behaviour in marine animals
R.F.O. Kemp	Genetics of fungi (Basidiomycetes)
P.E. King	Reproductive systems of Hymenoptera

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1. Anaesthetics

Professor W.W. Mushin	Anaesthesia in cardiac surgery Methods of relief of intractable pain Pharmacology of newer drugs
with W.W. Mapleson, Ph.D.	Theoretical and experimental study of gas flow in anaesthetic systems Dynamics of controlled respiration

2. Haematology

J.L. Withey	Assay of serum B12 level during pregnancy with particular reference to megaloblastic anaemia of pregnancy
with E.E. Payne	Serum B12 assay in patients receiving anticonvulsant therapy
J.H. Jones, M.D.	Identification of platelet antibodies in idiopathic thrombocytopenic purpura and certain secondary purpurae

3. Medicine

Professor H. Scarborough, Ph.D.	Bleeding diseases Thrombocytopenia Capillary fragility
A.H. James, D.M., M.D.	Gastric and duodenal acidity
L.P.R. Fourman, M.D.	Disorders of calcium metabolism and their effects on the kidney
S. Shuster, Ph.D.	Adrenal cortical hormones and renal function

ASTHMA AND ALLERGY RESEARCH UNIT

D.A. Williams, M.D.	Prevalence and aetiological factors in asthma
H.A. Hyde	Atmospheric pollen and spores in relation to allergic disease

4. Microbiology

D.E.B. Powell	Staphylococcal septicaemia
R.B. Payne	Preparation of a hyaluronic and globulin complex and investigation of its immunological properties
W.G. Strawbridge, M.D.	Bacterial residues in lesions of the lung Determination of the aetiology of sarcoidosis The active principle of Kveim antigen Determination of strains of acid fast bacteria by examination of lipid fractions Lipid fractions in lesions of leprosy
Professor S. Thomson, M.D.	The bacteriology and mechanism of infantile gastroenteritis Cross-infection in hospitals Influence of pCO_2 upon sodium ion transport
R.A. Holman, M.D.	Bacterial respiration The formation of antibodies Anaerobes Mycobacteriaceae *Bacillus Proteus* Respiration of tumours

5. Obstetrics and Gynaecology

Professor A.S. Duncan, D.S.C. and A.H. John	Investigation of a method of forecast of placental insufficiency by means of a hypoxic test
J.G. Lawson, M.D.	Investigation of beta-glucuronidase and alpha-mannosidase in vaginal fluids

6. Paediatrics and Child Health

Professor A.G. Watkins, M.D.	M.R.C. therapy trial in rheumatic fever Hospital morbidity survey
P.T. Bray	Fibrocystic disease Parent group studies
J. Jacobs, M.D.	Primary tuberculosis Long-term follow-up of haemolytic anaemia of the newborn Etiology of bronchiectasis Iron therapy in prematures
O.P. Gray	Rheology studies Protein diet in prematures
K.M. Laurence	Pathology and natural history of hydrocephalus Pathology and genetics of spina bifida cystica Pathology of choroid plexus papilloma Relationship between lymphangioma and lymphangiectasia

7. Pathology

Professor J. Gough, M.D.	The pathology of emphysema and asthma The pathology and radiology of pulmonary hypertension
with D.E.B. Powell	The pathology of byssinosis The inter relationship of pneumoconiosis, infection and hypersensitivity in the rabbit
A.G. Heppleston, M.D.	The pulmonary disposal of inhaled particulate matter, using a double-dusting technique The electron microscopy of the lung in pathological states, human and experimental
with J.W. Keyser, Ph.D.	Tissue and serum polysaccharides in relation to the formation and destruction of tissue as seen in experimental inflammatory and neoplastic states
H.J. Whiteley, M.D.	The mechanism of hair growth and hair replacement in the rabbit The effect of the hair cycle on experimental skin carcinogenesis in the rabbit The effects of age on the reactions of the skin of the mouse
W.R.L. James, M.D.	A study of fatal acute lung infections in infants
J.W. Keyser, Ph.D.	Studies of the serum glycoprotein pattern in disease and after injury, with particular reference to the influence of hormones Investigation of laboratory techniques
with G.M. Mitchell	Studies on ACTH
W.J. Williams, M.D.	The relationship of alveolar metaplasia to pulmonary scars in industry and the development of lung cancer A histological survey of berylliosis The experimental production of berylliosis and its relationship to carcinoma Pulmonary pathology of nickel workers The nature of inclusion bodies in sarcoidosis and beryllium disease
P. Roche with A.S. Curry	Investigation of the toxic principles of *Amanita phalloides*

7. Pathology (*continued*)

E.E. Payne	The vascular patterns of the spinal cord in man The pathology of the spine
R.T. Hughes	Pulmonary changes in uraemia and hypertension

8. Pharmacology and Therapeutics

Professor F.W. Landgrebe, D.Sc.	Purification and assay of chorionic gonadotrophin Isolation and separation of pituitary autacoids, with particular reference to ACTH and melanophore dispersing hormone
J.D.P. Graham, M.D.	Antihistaminic and antiadrenergic drugs
G.M. Mitchell	Functional significance and metabolism of chorionic gonadotrophin Differentiation and assay of melanophore expanding hormone and ACTH
R.S. Tonks, Ph.D.	Gastric secretory processes
with A. Hughes, M.D.	Rheumatic carditis
R.J. Ancill	Metabolism and quantitative cytology of haemopoietic and lymphoid tissues Steroids and haemopoietic substances

9. Psychiatry

Neuropsychiatric Research Centre:

D. Richter, Ph.D. (Director)	Investigation of the function and metabolism of the brain with particular reference to the causation and treatment of mental illness
J.G. Ingham, Ph.D.	Psychological mechanisms in the neuroses
T.J. McDermott	The electrical activity of the brain: recording systems
G.B. Ansell, Ph.D.	Study of the lipid metabolism of the brain by radioactive tracer methods
G.B. David	Normal and pathological cytology of the central nervous system

10. Public Health and Social Medicine

Professor F. Grundy, M.D. E. Lewis-Faning, D.Sc., Ph.D.	Infant and child morbidity, with particular reference to immaturity and congenital malformations
with R.A.N. Hitchens, M.D.	Morbidity and anthropometric surveys of students in the University of Wales
G. Grant	Aspects of the epidemiology of acute rheumatism
with R.A.N. Hitchens, M.D.	Relation between morbidity in the school child and educational attainment Hospital administrative problems
E. Lewis-Faning, D.Sc., Ph.D. and others	Studies in the epidemiology of bronchial asthma Therapeutic trials in various clinical fields

11. Surgery

Professor L.C. Rogers, V.R.D., C.B.E.	Conduction in the spinal cord, the effects of cord compression and the nature and behaviour of certain spinal tumours. Surgical treatment of spondylosis
with A.S. Aldis	Some problems of intestinal obstruction. The parathyroid glands
with L.P. Thomas	Some problems relating to peripheral vascular disease and tissue transplantation

11. Surgery (*continued*)

C. Langmaid	The treatment of intracranial aneurysms. Congenital spinal lesions
H.R.S. Harley	The nature and correction of congenital cardiac lesions Subphrenic abscess
R.A. Mogg	Congenital lesions in the genito-urinary tract
J.S.H. Wade, M.C.	Surgery of the thyroid gland
Sir J.W. Tudor Thomas	Corneal grafting

12. Tuberculosis and Chest Diseases

Professor F.R.G. Heaf	The comparison of multiple puncture and intraderm a techniques in B.C.G. vaccination The results of intensive isoniazid therapy in drug resistant patients
J. Marks, M.D.	The chemotherapy of experimental silico-tuberculosis The properties of the "anonymous" or "atypical" mycobacteria

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Printed in England under the authority of Her Majesty's Stationery Office by
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