

LEICESTER RESEARCH GRANTS AND BOOKS

PRESS COVERAGE OF RESEARCH GRANTS

The *Bulletin* is sent to the media as well as other external contacts. As a result, details of grants appearing in this section may stimulate press interest. The Press Office may also actively seek media coverage of particular grants detailed in this section. It is therefore the grantholder's responsibility to request that any grant of a sensitive/confidential nature be excluded from the *Bulletin*.

This can be done by contacting the Research Office, which has responsibility for compiling this Research section (2495).

BIOCHEMISTRY

Dr A M Fry, Dr J Norman, Dr S Prigent, Dr M Dickens

Digital Fluorescence Microscope Imaging System

Major discoveries in science frequently result from the application of new technologies to old questions. One of the most exciting advances in biology in recent years has been the development of naturally fluorescent proteins to study basic biological processes within living cells in real time. Equally important has been the rapid advance in computer-driven fluorescence microscopes and electronic cameras with exquisite sensitivity and resolution. This generous grant from The Wellcome Trust will enable us to install two state-of-the-art digital fluorescence microscope systems in a dedicated Cell Imaging Suite within the Department of Biochemistry. The equipment will provide us with fascinating new insights into many biomolecular processes such as intracellular signalling, protein trafficking and cell division. The results obtained will most likely challenge the way we currently think about many biological processes, as well as providing vital clues to the cause of major illnesses such as heart disease and cancer.

£369,035 Wellcome Trust

BIOCHEMISTRY, CARDIOVASCULAR RESEARCH INSTITUTE

Dr S Prigent, Prof B Williams

Characterisation of Drug-Activated Chimeric VEGF-Receptors with Potential for Therapeutic Angiogenesis

£126,888 British Heart Foundation

BIOLOGY

Prof G Whitlam

Supp. – TSE in Milk Programme

£172,233.60 (supp) ADAS

CELL PHYSIOLOGY & PHARMACOLOGY

Dr R J Challiss, Prof S R Nahorski

GPCR Constitutive Activity

£60,670 Novartis Pharmaceuticals UK Ltd (Horsham Research Centre)

Prof S R Nahorski, Dr R J Challiss

Regulation of Ca²⁺ Mobilising G-Protein Coupling Receptors in Neurones

Our brains consist of billions of neurones (or nerve cells) that are responsible for transmitting, receiving and processing information. This is achieved by the release of chemical neurotransmitters and their

specific recognition by protein receptors at neuronal cell surfaces. There are two major classes of such receptor, ionotropic in which neurotransmitters can regulate opening of integral ion channels or metabotropic in which activated receptors increase the activity of another family of proteins called G-proteins. Activated G-proteins often interact with effector enzymes to trigger signalling cascades that regulate neuronal activity. For many years we have investigated recombinant metabotropic receptors expressed in model cells that function in this way but now wish to take new information on their specificity and regulation into mammalian neurones. This requires the use of new methods to image signalling in single cells in real time and to express such "biosensors" in native neurones using viral gene transfer. A major aim of this five year programme is to further develop those techniques and to use them to investigate receptor activation in living neurones. The receptors we will specifically examine recognise the transmitters glutamate and acetylcholine and are thought to be associated with memory and learning as well as the consequences of diseases such as dementia, epilepsy and stroke. Hopefully this new information will contribute to new approaches in the treatment of such diseases.

£958,918 Wellcome Trust

CHILD HEALTH

Dr P Barry, Prof C O'Callaghan

ABLE Spacer – In Vitro Assessment

£5,900 Clement Clarke International

Dr S Kotecha

Identifying Genes which are Affected by Successful Treatment of Premature Babies with Corticosteroids

£9,990 F H Muirhead Charitable Trust

ECONOMICS, EPIDEMIOLOGY & PUBLIC HEALTH WITH CAMBRIDGE UNIVERSITY

Prof S Pudney, Dr R Hancock

Stigma, Claim Costs and Means-Tested Pensioner Benefits

£166,901.76 ESRC

EDUCATION

Prof K Fogelman, Dr C Comber

The Use of ICT to Facilitate Cross-Phase Transfer

This initiative is part of the larger project, known as the TRANSFER & TRANSITION project, sponsored by the DfEE, which is examining a range of strategies for improving curriculum continuity across and within educational phases. This smaller-scale 'project within a project' is exploring the specific potential of ICT to facilitate these processes, with a particular focus on the primary/secondary boundary, as pupils move from Keystage 2 and into Keystage 3. An initial survey of LEAs (Strand 1 of the project) has revealed considerable variation in the nature and sophistication of ICT-related strategies which are concerned with transfer, from pre-transfer ICT lessons in the receiving secondary school to schemes which use ICT to facilitate exchanges between primary and secondary schools involved in curriculum continuity projects. Strand 2 (ongoing) involves working with selected partner schools to design, implement and evaluate specific ICT-mediated transfer initiatives. £3,000 has been allocated from the 'parent project' budget for this study, which is due to be completed by the end of 2001.

£3,600 Department for Education and Employment via University of Cambridge

EDUCATION (EDUCATION MANAGEMENT DEVELOPMENT UNIT)

Dr J Lumby, Ms A Briggs

Managing Sixth Form Colleges

Wide ranging changes were introduced into further education in 1993. Since that time, sixth form colleges (catering for approximately 750,000 16-19 year olds), have remained almost invisible in research terms. The Nuffield Foundation is funding a project at the Educational Management Development Unit at the University of Leicester to investigate how colleges have experienced changes brought about by government policy, how this has impacted on the student's experience and the way colleges are managed. The research will investigate not only how colleges see themselves, but also how schools and general further education colleges see their role and how far they have worked in competition or collaboration. It is hoped the research will allow recommendations to be made to regional and national learning and Skills Councils on how the role of sixth



University of Leicester



form colleges may contribute to the opportunities for 16-19 year olds particularly.

£65,785 Nuffield Foundation

EPIDEMIOLOGY & PUBLIC HEALTH

Prof G Parker

Position Paper on Intermediate Care Services (Scoping Study)

£8,301 Department of Health

EPIDEMIOLOGY & PUBLIC HEALTH (UKCCSG)

Prof M Clarke, Dr K Abrams, Prof C R Pinkerton

Supplement – UKCCSG Administrative Office

£6,650(supp) Cancer Research Campaign

EPIDEMIOLOGY & PUBLIC HEALTH, CHEMICAL PATHOLOGY

Dr E Draper, Prof M Clarke, Prof J Lunec

Recreational Drug Use: Major Risk Factor for Gastrochisis

£137,022 NHS Trent

EPIDEMIOLOGY & PUBLIC HEALTH, GENERAL PRACTICE & PRIMARY HEALTH CARE WITH INSTITUTE OF CANCER RESEARCH/ROYAL MARSDEN NHS TRUST

Dr C Exley, Dr R K McKinley, Dr T Stokes, Prof D Field

An Evaluation of Primary Care Based Palliative Care for Malignant and Non-Malignant Disease in two Cancer Accredited Practices in Leicestershire

The study aims to evaluate the provision of palliative care to people who are terminally ill in two large primary care practices in Leicestershire. The study will examine the care provided by the primary health care team focusing on how care changes over time in relation to the patient's illness, and how the team works with other health care providers e.g. hospitals and hospices. In particular, the study will compare the care provided to people who have, or had, cancer with those who have, or had, other long term

terminal illnesses. Data will be gathered retrospectively from bereaved lay-carers, and prospectively through interviews with patients, lay carers and health care professionals. By scrutinising the delivery of palliative care in these practices, the research seeks to identify good practice which can be disseminated more widely. It also hopes to highlight barriers to such good practice and suggest ways to overcome these.

£77,177 NHS Executive Trent

EPIDEMIOLOGY & PUBLIC HEALTH WITH DANISH INSTITUTE OF ANIMAL SCIENCE

Dr N A Sheehan

Markov Chain Monte Carlo Methods for the Detection of Quantitative Trait Loci by Association with Incomplete Marker Data on General Pedigrees

The analyses of genetic data on related individuals frequently require the calculation of probabilities on pedigrees. Although exact methods exist, the calculations are not always possible in practice due to the enormous storage requirements of the method.

The computational problems arise when the pedigree, viewed as a graph, has too many loops or cycles. What generally happens as a result, is that either some structural information is discarded and analyses are performed on smaller manageable subgraphs, or Markov chain Monte Carlo (MCMC) methods are employed to provide estimates of quantities which cannot be calculated exactly. In human genetics, most genetic analyses are performed on relatively small, simple structures. Even so, computational problems arise with the ever-increasing amount of data being made available and an exact multipoint linkage analysis, for example, can quickly become intractable. In animal genetics, however, it is common to have genetic data on large complex relationship structures and such complexity often makes exact analyses impossible for even the simplest genetic systems.

The problem that we wish to tackle is that of detecting a quantitative trait locus (QTL) by association with one or more known discrete genetic markers for general pedigrees. Between any two known locations, for example, are there sections of the chromosome which affect a

continuous trait of interest? MCMC methods tend to be avoided due to insufficient testing on large structures and slow mixing problems which can provide unreliable estimates. Although we wish to follow on from this work by refining MCMC methods to deal with large, complex pedigrees, we intend to lend a new perspective by working with computer scientists at Aalborg University, Denmark, to reformulate the problem in more general terms as a Bayesian network. A large complex pedigree is an extremely complicated network and immediately takes us into an area where computations are difficult. However, it is

precisely the computational complexity of these applications, deriving from the scale and intricate structure of large animal pedigrees, which provides a challenging forum in which to stimulate new collaboration between the areas of statistics, genetics and computer science.

£14,790 Wellcome Trust

EPIDEMIOLOGY & PUBLIC HEALTH WITH UNIVERSITY OF CAMBRIDGE

Prof C Jagger, Prof G Parker

Forecasting Future Disability Levels and Care Needs Under Changing Patterns of Diseases

£48,229 PPP Healthcare Medical Trust

GENERAL PRACTICE

Dr R K McKinley, Prof R C Fraser

Consultation Skills Enhancement

The Leicester Assessment Package (LAP) was designed for the educational and regulatory assessment of general practitioners. As the consultation is the core of clinical practice, the acquisition, development and maintenance of consultation competence must be key elements of undergraduate education, professional training and continuing professional development. The LAP can make a critical contribution in these areas and has been used in the educational assessments in Leicester-Warwick Medical School and the regulatory assessment for family practice training in Kuwait and higher professional training in Hong Kong.

With this funding we will offer experienced general practitioners in Leicestershire two educational 'LAP assessments' six months apart with consultation skills workshops to address identified learning needs in the interim. The evaluation will examine the acceptability of the process to practitioners and start to identify patterns of strengths and weakness in consultation skills amongst established practitioners.

£13,250 Leicester Primary Care Audit Group

GENETICS, JAGIELLONIAN UNIVERSITY, KRAKOW, POLAND

Dr R Borts, Dr R Korona

Transfer – The Impact of Mildly Deleterious Mutations on an Organisms Fitness: An Experimental Study with Mutator Strains of Yeast – Collaborative Research Initiative Grant – Dr R Korona

Organisms are constantly acquiring changes to their genetic information. These range from completely harmless to those that cause life threatening illnesses, such as cancer, or those that lead to inherited genetic disorders. How those causing disease or genetic disorders are passed through populations are relatively easy to study because they have major obvious effects. At the other end of the scale, many genetic changes have no obvious effect themselves but when present in combination with other changes have cumulative deleterious effects. Many human conditions such as heart disease and diabetes are of this "multifactorial" type. The population dynamics and interactions of such genes are extremely difficult to study due to the small effects exerted by each minor genetic change. This grant uses the model organism





Saccharomyces cerevisiae to establish the fundamental principles of genetic interactions for these mildly deleterious genes. Such work will be of use in studying the impact of improved health care on human population structures.

£16,970 Wellcome Trust

GENETICS WITH UNIVERSITY OF BIRMINGHAM

Prof R C Trembath

Genetic Mapping and Identification of Recessive Disease Genes in Asian Inbred Families

Autosomal recessive diseases are an important cause of genetic morbidity and mortality, particularly in communities where consanguineous relationships are common. The identification of recessive disease genes allows reliable diagnostic and carrier testing to be offered to at risk families. An efficient method of mapping recessive genes in inbred pedigrees is to perform autozygosity mapping. We propose to initiate a collaborative study to (i) systematically ascertain and document inbred Asian families with recessive disorders from the East and West Midlands and Yorkshire regions, (ii) bank DNA from families to establish a resource for autozygosity mapping studies, and (iii) perform a pilot study to validate the proposed strategy by mapping the disease genes for specified neurodevelopmental, ophthalmic and endocrine disorders. Such a study would be well placed to (i) exploit the resources increasingly available as a result of progress in the human genome project (e.g., sequencing and mapping of cDNAs) with particular emphasis on the identification of genes involved in normal foetal development and (ii) provide detailed genetic epidemiological data on recessive disease in the Asian community with the prospect of developing carrier testing and improved genetic counselling.

£19,423 Wellcome Trust via University of Birmingham

GENETICS, UNIVERSITY OF BIRMINGHAM, UNIVERSITY OF LEEDS

Prof R C Trembath, Prof E Maher, Prof R Mueller, Dr G Woods

National Autozygosity Mapping Resource (NAMR)

Within the next few months the majority of the raw sequence of DNA for humans will have been determined. The availability of the template sequence represents a major challenge to efficiently determine the individual role and mechanism of interaction, for genes and their protein products. Over one thousand different autosomal recessive disorders have been described and occur when both parents transmit a deleterious alteration of the same gene to an affected offspring. The chance of such an event is significantly increased within inbred families. Identifying genes in autosomal recessive disorders is significantly easier in inbred families, as in the majority of occasions, the altered gene will have been inherited from a common ancestor and hence be identical for both carrier parents. We wish to establish a resource of DNA samples from inbred families and database the material stored. We seek to protect individual confidentiality by ascertainment through specialist Clinical Genetics



departments nation-wide, following informed consent. Specifically, the resource will enable the efficient and effective generation of information for families living with these inherited disorders and rapidly increase understanding of the mechanisms by which genes cause human disease.

£412,195 Wellcome Trust

LAW

Prof C Graham, Mr M Fitch
Striking a Deal

The Centre for Utility Consumer Law is investigating electricity debt in partnership with the local electricity company PowerGen and the Citizens Advice Bureau in Chesterfield. The CAB is providing the data and PowerGen the funding. The Centre is offering a co-ordinating and analytical contribution.

When they are approached by people with electricity debts advice centres virtually always succeed in securing an arrangement for debt recovery and continuance of supply that is satisfactory to the company and to the debtor. The question arises: why was it not possible for the debtors to secure agreement themselves? Why does it often require protracted negotiations to 'strike a deal'?

The question is significant because removing barriers to securing agreement 'first time' would benefit consumers in that it would save them trouble and anxiety, companies in freeing resources presently applied to debt recovery, and advice agencies in releasing them to address other pressing needs.

The study is timely in complementing PowerGen's research on Scope for Better Prevention and Management of Debt in connection with the gas and electricity regulator's Social Action Plan, a programme of initiatives to counter 'fuel poverty'

£2,640 PowerGen

MATHEMATICS & COMPUTER SCIENCE

Prof S C Koenig

Relating Polynomial $GI(N)$ – Representations of Different Degrees

£61,781 EPSRC

Dr R J Marsh

Canonical Bases, Reduced Expressions and Normal Forms

A braid is a way of twisting a number of strings. Braids play a key role in the theories of knots, combinatorics, Lie algebras, algebraic groups, and quantum groups, amongst others. There are many unsolved problems in the theory. For example, there is no known formula giving the number of different ways of twisting a number of strings into the opposite order (with an appropriate definition of 'different'). It is possible to define a graph on the set of all such twistings. Each point corresponds to a twisting, and two such points are linked by an edge if they are related by a certain simple transformation. These transformations are important, as it is known that the graph defined in this way is connected.

We shall search for natural descriptions of this graph by finding a 'normal form' for each twisting. We shall also investigate the topological structure of the graph, as well as its inductive structure (how it can be constructed from the graphs associated with fewer strings). Our motivation is the connection between this graph and various piecewise-linear functions associated with quantum groups. Quantum groups were algebraic objects defined by physicists Drinfel'd and Jimbo in 1985, but have since been put to great use by algebraists, for example in the representation theory of Lie algebras, and play a central role in current research in pure mathematics, with links to many areas. These algebraic objects contain a fascinating algebraic combinatorics (describing the canonical basis) which we want to understand via the twistings mentioned above. The grant provides funding for a research assistant to come to Leicester to work on these problems.

Potential users of this research include mathematicians working in the fields of quantum



groups, algebraic groups, Lie algebras and related algebraic geometry, semigroups, and knot theory, as well as physicists working in related areas, such as integrable systems and the quantum inverse scattering method.

£52,708 EPSRC

MATHEMATICS & COMPUTER SCIENCE WITH UNIVERSITIES OF OXFORD AND BRISTOL

Dr N Snashall

Bristol Leicester Oxford Colloquium

£1,000 London Mathematical Society

MEDICINE & THERAPEUTICS (CARDIOLOGY)

Dr A Gerslick, Prof H Thurston, Dr Q Javed
TNF- α Antibody and Tyrphostin AG1295
Eluting Stents to Inhibit Vascular Smooth Cell Proliferation

£59,693 British Heart Foundation

MEDICINE & THERAPEUTICS – NEPHROLOGY WITH DUNDEE UNIVERSITY

Dr J Barratt, Prof J Feehally, Dr A Allen
Molecular Characterisation of the Human Mesangial Cell Fc Alpha Receptor Cell

Kidney diseases are some of the commonest causes of chronic illness in the UK and at present there are very few effective treatments available. IgA nephropathy is a type of kidney disease that characteristically leads to chronic kidney damage, usually becoming apparent in teenagers and causing kidney failure in over 40% of patients. In IgA nephropathy the filtering units of the kidney are blocked with the antibody IgA. Why this should happen remains unknown. In Leicester we are trying to identify the mechanisms by which this IgA becomes trapped in the filters and how once trapped it causes kidney damage. By understanding

this it will then be possible to develop treatments to keep the kidney's filters free of IgA and working normally in patients with IgA nephropathy.

Value Reported in December/January Bulletin

ONCOLOGY

Dr G D D Jones

PhD Studentship – Gabriela Martinho de Almeida

Many agents used in cancer chemotherapy interact with genomic DNA leading to the formation of cytotoxic DNA adducts, and certain enzymes play important roles in determining the levels of these adducts (i.e. drug metabolising enzymes, DNA repair enzymes, etc). A wide inter-individual variability in the levels and activities of these enzymes exist among humans, and this is thought to be in some part due to genetic polymorphisms and differential RNA expression levels. Therefore, the possible influence of these genetic features on drug response could be an important factor in determining the success of chemotherapy.

In this project we propose to measure DNA adduct levels (32P post-labelling techniques), mRNA levels (microarray technology) and to undertake genotyping (PCR) in tissue samples from people undergoing chemotherapy. If a correlation between a certain genotype and/or level of mRNA expression, and higher or lower incidence of DNA adducts is found, this may prove to be useful in predicting an individual's reaction to the drug, and ultimately to forecast the best 'likely to succeed' set of chemotherapeutic agents for that patient.

Value Reported in December/January Bulletin

Dr K J O'Byrne

A Randomised Double-Blind Phase III Comparative Trial of 2 Doses of ZD1839 (Iressa™) or Placebo in Combination with Gemcitabine and Cisplatin in Chemotherapy-Naïve Patients with Advanced (Stage III/IV) Non-Small Cell Lung Cancer

Recent studies have indicated that the combination of new cytotoxic agents such as Gemcitabine with Cisplatin improves response rate and survival in patients with stage III and IV NSCLC. Despite this the outcome remains relatively poor, patients with stage III disease having a median survival of 12-18 months and a 5 year survival of 5-10% and patients with stage IV disease having a median survival of 8 months with few survivors beyond 2 years. Recent work has indicated that these tumours overexpress many growth factors and their receptors. One of the growth factor receptors overexpressed in NSCLC is the epidermal growth factor receptor (EGFR). EGFR has been implicated in the growth and spread of the disease. In tumours overexpressing the factor inhibition of EGFR activation results in inhibition of tumour growth and spread. Iressa™ is a recently developed selective EGFR tyrosine kinase inhibitor. In phase I trials it has been shown to inhibit the growth of NSCLC tumours in patients. In experimental models there is evidence that Iressa™ enhances the activity of conventional cytotoxic chemotherapeutic agents. The purpose of this placebo controlled study is to evaluate two different dosages of Iressa™ in combination with Cisplatin and Gemcitabine in the treatment of NSCLC. Overall survival, time to tumour progression and response rate together with the tolerability of Iressa™ combined with chemotherapy will be evaluated.

£72,000 AstraZeneca UK Ltd

PHYSICS & ASTRONOMY

Dr C L Nicklin

Self Organisation of Nanoscale Crystallites

Small assemblies of atoms grouped together, with a typical size of a few millionths of a millimetre in diameter, have properties very different to a normal bulk material. This project will study how clusters of gold atoms interact with each other when they are coated by different organic molecules. The process of self-assembly will enable ordered arrangements of clusters to be formed with unique electronic properties. The structures will be produced by two techniques; evaporation of the solvent in which the particles are dissolved and assembly at the air-liquid interface. The technique used to study these structures involves the small angle scattering of X-rays produced by synchrotron radiation.

£60,393.64 EPSRC

Dr J Remedios

MIPAS (IROE, CCN5)

£32,877 ESA-ESTEC

Prof A Wells, Prof G Fraser

TCS Programme

£59,112 Teaching Company Directorate and JRA Aerospace & Technology Ltd



PSYCHIATRY

Dr J Milton

Rampton Referrals Cohort Follow-Up Project

£30,727 East Midlands Centre for Forensic Mental Health, Central Nottinghamshire Healthcare

SOCIOLOGY

Dr J O'Connell Davidson

Sex Exploiter Theme Paper

The Government of Japan, in co-operation with UNICEF, ECPAT International and the NGO Group for the Convention on the Rights of the Child, will host the Second World Congress against Commercial Sexual Exploitation of Children in December 2001 in Yokohama. The main purpose of the Second World Congress is to review progress since the First World Congress in Stockholm and to strengthen the follow-up process in the implementation of the Stockholm Agenda for A on.

Dr Julia O'Connell Davidson has been commissioned to write one of the six main theme papers for the Congress, entitled "The Profile of the Sex Exploiter". Research for this paper will focus on questions about who sexually exploits children and why, and will include fieldwork in Russia, India and China.

£6,896 NGO Group

SOCIOLOGY (CENTRE FOR LABOUR MARKET STUDIES)

Dr A Felstead, Mr N Jewson, Dr S Walters, A Phizacklea

Transforming Places of Work

The project will examine a series of fundamental changes in the places and spaces in which 'knowledge work' is carried out. It will focus on the shift from a single, fixed, traditionally-organised office to a range of new and diverse places of work. These include the car, the home, the train, the plane, hotelled office accommodation and

'hotdesks'. This means that work is not merely shifted from one location, or time, to another but working hours and places become independent of any particular institutional context, building or regime. The combination of laptop computers, the Internet, mobile phones and the car have made possible radically new patterns of distance and proximity.

The project will investigate:

- National trends;
- International comparisons;
- Implications for managerial strategies of control;
- Impact on the experience of work and worker resistance;
- Explanations and reasons for the transformation of places of work.

This will involve analyses of the Labour Force Survey and the Census of Population, an international review of the literature, a telephone poll of top British companies, case study interviews with managers and workers, the collection of visual records of places of work, and the shadowing of workers.

£130,206.35 ESRC

SURGERY

Dr N Brindle

Characterisation and Functions of Novel Effectors of the Endothelial Receptor Tyrosine Kinase Tie-2

£157,186 Wellcome Trust

Functional Significance of the Tie-2: Tie-1 Complex in Angiogenic Signalling

£82,603 British Heart Foundation

SURGERY, (LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE); UEA AND VARIOUS NHS COLLABORATORS

Mr G Peek, Dr D Elbourne

CESAR (Conventional Ventilation or ECMO for Severe Adult Respiratory Failure)

The survival of adults with severe respiratory failure remains poor in the majority of intensive care units. For patients with aggressive respiratory failure, under 20% survive. Improvements have been made in leading intensive care units that are using "gentle" ventilation, which reduces the amount of lung damage, caused by the ventilator itself. Nevertheless the outlook for patients with severe disease is still dismal.

Extracorporeal Membrane Oxygenation or ECMO uses a modified heart-lung machine to take over the function of the lungs, thereby keeping the patient alive and giving them a chance of recovery. At Glenfield Hospital in Leicester ECMO has been used for adult patients with severe respiratory failure and survival figures of 66% have been recorded.

ECMO has been shown to be superior to conventional ventilation for babies with severe respiratory failure. However, despite the promising early results of ECMO in adults, we do not yet have clear evidence to prove whether ECMO really does improve survival in adult respiratory failure.

The CESAR trial is the result of collaboration between the University of Leicester Division of Cardiac Surgery, The London School of Hygiene & Tropical Medicine and intensive care units up and down the country. It is funded by the Health Technology Assessment Agency and the National Specialist Advisory Group. It aims to compare ECMO with the currently used treatment (conventional ventilation) in order to determine which treatment is the most effective and the most cost effective. The CESAR study will finish in 2004.

Further details can be found on our website: www.cesar-trial.org

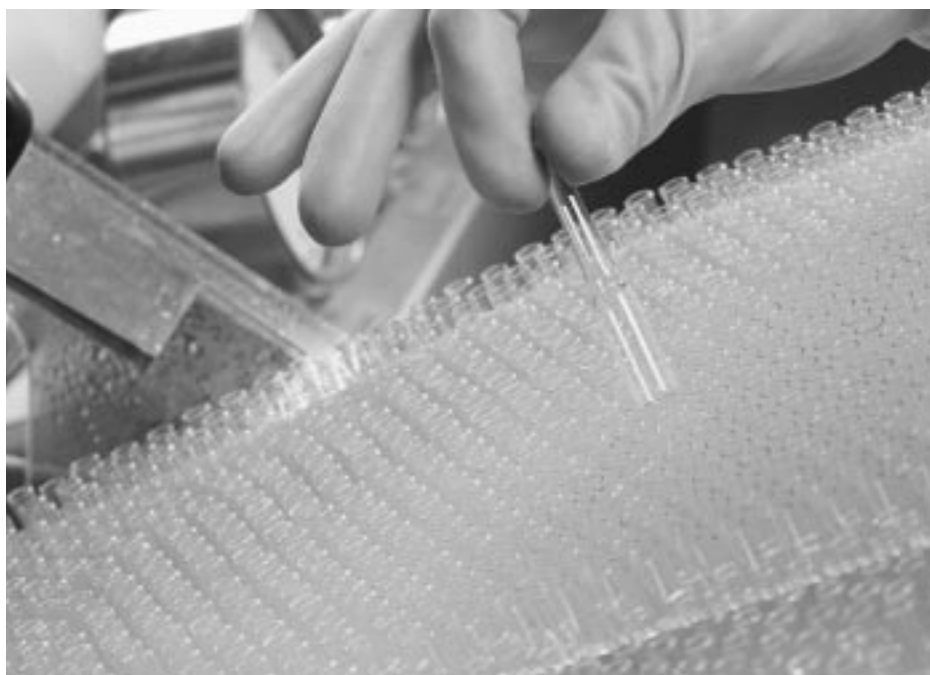
£175,961 HTA via London School of Hygiene and Tropical Medicine

SURGERY WITH UNIVERSITY OF SHEFFIELD

Dr R James

A Continuous Supply of Human b-Cells for the Cure of Diabetes

£214,137 Wellcome Trust via University of Sheffield





CROSS-CULTURAL CASE STUDY

Edited by Dr Christopher J Pole (Department of Sociology) and Professor Robert G Burgess (Vice-Chancellor)

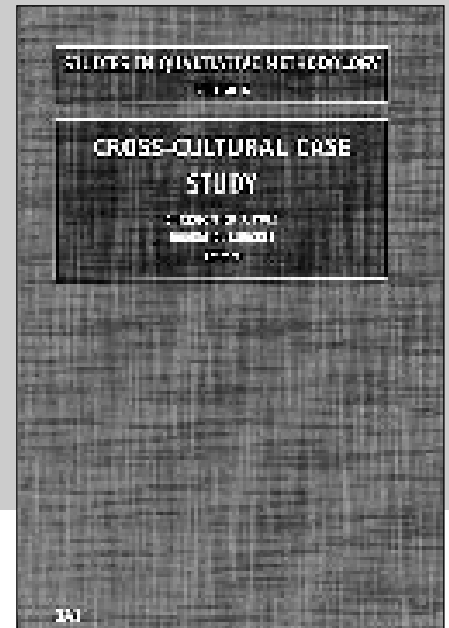
JAI Press, November 2000, £50.50 (hardback)

Available from the Bookshop
ISBN 0 7623 0053 1

This volume seeks to address a major gap in the literature on qualitative research namely cross-cultural qualitative research. The essays cover a range of methodological and substantive issues. In common with previous

studies on qualitative research, they focus on the practice of social research and reflect the issues faced by the qualitative researcher in their attempt to define a role. In addition, issues concerning research design and the collection, analysis and dissemination of data are also examined.

Together, these papers focus on a set of themes of central concern to experienced researchers conducting cross-cultural qualitative research.



METHODS FOR META-ANALYSIS IN MEDICAL RESEARCH

Alex J Sutton (Department of Epidemiology and Public Health), Dr Keith R Abrams (Department of Epidemiology and Public Health), Professor David R Jones (Department of Epidemiology and Public Health), Trevor A Sheldon and Fujian Song

John Wiley & Sons Ltd, November 2000, £55.00 (hardback)

Available from the Bookshop
ISBN 0 471 49066 0

Meta-analysis provides a framework for combining the results of various clinical trials and drawing inferences about the effectiveness of medical treatments. The move

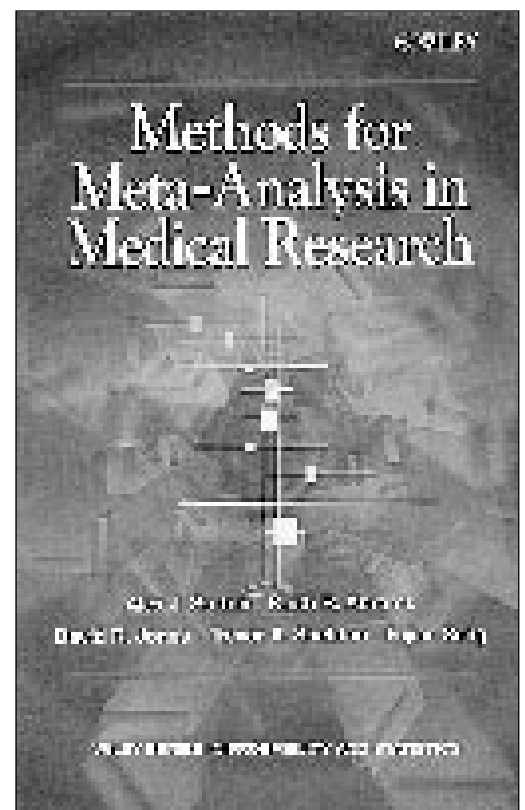
towards evidence-based health care and practice is underpinned by the use of meta-analysis. Meta-analysis methods play a crucial role in health research and have been developed substantially over the last five years.

Practising statisticians, statistically-minded clinicians and health research professionals will benefit greatly from the clear presentation and numerous examples. Medical researchers will grasp the basic principles of meta-analysis, and learn how to apply the various methods.

• Alex J Sutton is a Lecturer in Medical Statistics in the Department of Epidemiology and Public Health.

• Dr Keith R Abrams is a Reader in Medical Statistics in the Department of Epidemiology and Public Health.

• Professor David R Jones is Professor of Medical



Statistics and Head of the Department of Epidemiology and Public Health.

• Trevor A Sheldon and Fujian Song are based at the NHS Centre for Reviews and Dissemination, University of York.

- Provides a thorough criticism and an up-to-date survey of meta-analysis methods.
- Emphasis is on the practical approach, and the methods described are illustrated by numerous examples.
- Describes the use of Bayesian methods in meta-analysis.
- Includes discussion of appropriate software for each analysis.
- Includes numerous references to more advanced treatment of specialist topics.
- Refers to software code used in the examples available on the authors' Web site.



LOOKING INTO THE EARTH An Introduction to Geological Geophysics

Alan E Mussett and Emeritus
Professor M Aftab Khan
(Department of Geology)

Cambridge University Press,
September 2000, £24.95

(paperback), £60.00 (hardback)

Available from the Bookshop

ISBN 0 521 78085 3 (hardback)

ISBN 0 521 78574 X (paperback)

Geophysics, the application of physics to the study of the earth, from the surface to the centre, is an essential part of modern earth science. *Looking into the Earth* is an introduction to geophysics suitable for those who need it but do not necessarily intend to become professional geophysicists. These include geologists, and other earth scientists such as civil engineers, environmental scientists, and field archaeologists.

Unlike other books that deal with either 'global' or 'exploration' geophysics, this book

comprehensively introduces both branches of geophysics. It covers the principles and applications of geophysics on all scales, ranging from deep earth structure in relation to plate tectonics, to the search for oil, water and minerals, to detailed studies of the near surface. The book is organised into two parts: Part I describes

‘...the most readable geologically oriented geophysical text on the market.’

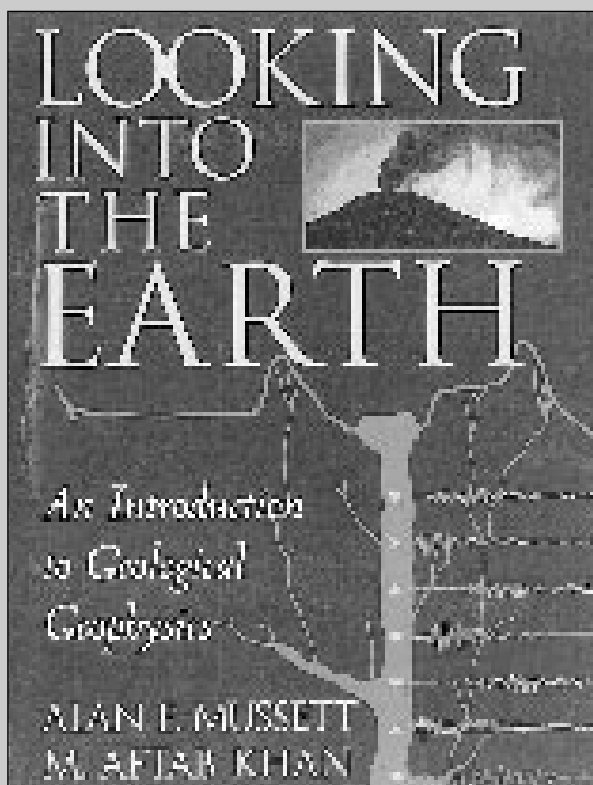
Professor Mike Dentith,
University of Western Australia

the various geophysical methods, while Part II illustrates their use in a number of case histories, some extended. Throughout, the emphasis is on what geological (or archaeological or civil engineering) information the various geophysical methods can yield. The authors recognise that many students taking introductory courses in geophysics are not fluent in mathematics or physics, so the necessary mathematical and physical principles are introduced at an elementary level and only as needed. Questions for students are given at the end of appropriate chapters.

Looking into the Earth is aimed primarily at introductory and intermediate university (and college) students taking courses in geology, earth science,

environmental science, and civil engineering. It will also form an excellent introductory textbook in geophysics departments, and will help practising geologists, civil engineers, and archaeologists understand how geophysics can help their work.

- Emeritus Professor Aftab Khan taught geophysics at the University of Leicester for 37 years. He has been editor and managing editor of the *Geophysical Journal International* since 1985. He is the author of *Global Geology* (Wykeham Publications, London, 1976). His research interests are mainly in seismology, palaeomagnetism, exploration geophysics, and geophysical studies of the continental crust. He has published over 100 scientific papers, notably on East Africa, Cyprus, and the British Isles.
- Alan E Mussett has taught geophysics in the Departments of Physics and Sciences at the University of Liverpool for 30 years. He is co-author (with G C Brown) of the first and second editions of the undergraduate textbook *The Inaccessible Earth* (Allen and Unwin, London, 1981 and 1993). Alan's research interests are mainly in palaeomagnetism and radiometric dating, and he has published many scientific papers, notably on East Africa, Iceland and the British Isles.





NINETEENTH CENTURY BRITISH PAINTING Emeritus Professor Luke Herrmann (Department of the History of Art)

Giles de la Mare, October 2000, £29.95 (paperback)

Available from the Bookshop

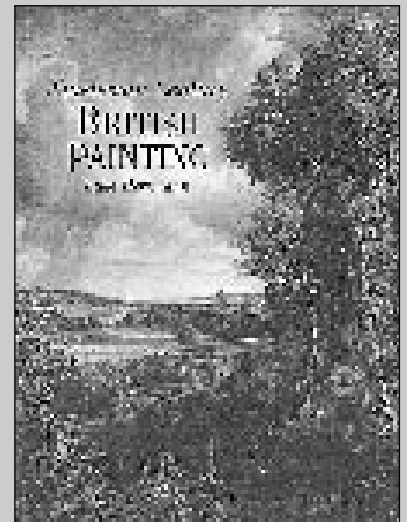
ISBN 1 900357 17 8

Nineteenth Century British Painting provides a succinct and informative chronological survey of a century of British painting which produced a great variety of work. It progresses from the beginnings of Romanticism in the late eighteenth century to the British adoption of Impressionism in the late nineteenth, dividing this prolific period into nine parts. In each part the work of the major figures in particular movements or genres is discussed and analysed, and each painter is presented in a biographical context. The artists are set in the framework of their historical, social and economic background. The majority of the paintings and drawings that are examined in detail are reproduced in the 323 plates, 82 of them in colour.

The book is intended to be used more as an introduction, and where appropriate as a textbook, than as a work of reference, although its arrangement will enable readers to obtain fuller information about individual artists, with longer sections devoted to such major figures as Lawrence, Turner, Constable, Rossetti, Leighton and Whistler.

The last decade has seen a growing interest in nineteenth century British art in this country, and also in the United States and on the Continent. During this

time much has been published in the field and there has been a succession of important exhibitions. Even so, there is no up-to-date and comprehensive survey of the whole century on the market. *Nineteenth Century British Painting* fills the gap, meeting the need for such a book among undergraduate and graduate students, and among connoisseurs and collectors. It will also have strong appeal for people with a general interest in the period.



- *Luke Herrmann is Emeritus Professor of History of Art, and has lectured on British art for many years. Before joining the History of Art Department at Leicester in 1967, he worked in the Department of Western Art at the Ashmolean Museum in Oxford.*
- *He has published numerous books and articles, including Ruskin and Turner (1968), British Landscape Painting of the Eighteenth Century (1973), Paul and Thomas Sandby (1986) and Turner Prints (1990).*

INSPECTING SCHOOLS FOR RACE EQUALITY

**OFSTED's Strengths and
Weaknesses**

**Professor Audrey Osler (School of
Education) and Dr Marlene
Morrison (School of Education)**
Trentham Books Ltd, July 2000,
£14.95 (paperback)

Available from the Bookshop
ISBN 1 85856 235 X

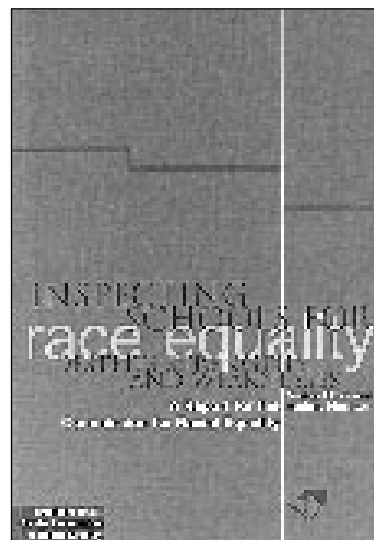
In response to the 1999 Macpherson Report on the Stephen Lawrence Inquiry, the Government gave OFSTED lead responsibility for monitoring how schools address and prevent racism. This research, undertaken for the Commission for Racial Equality, evaluates how OFSTED is fulfilling that responsibility.

Through a meticulous analysis of inspection reports and documents, the researchers reveal how, even where there is compelling evidence

of racial inequalities in a school's educational provision, issues concerning ethnic differentials in attainment and exclusion rates, racial harassment or the support provided for pupils who have English as an additional language are rarely reported to teachers, parents and governors. From the voices of HMI and contracted inspectors we learn something of the OFSTED culture and how both past and present frameworks, although apparently robust, frequently fail to deliver on race equality. Headteachers and LEA officers in three contrasting local authorities suggest ways in which the school inspection process might be

improved so as to contribute effectively to the realisation of racial prejudice.

This report is essential reading for teachers, governors, researchers and policy makers, and all who are concerned with improving standards and achieving race equality in education.



- *Professor Audrey Osler is Professor of Education in the School of Education and Director of the Centre for Citizenship Studies.*
- *Dr Marlene Morrison is a Lecturer in the School of Education.*



CITIZENSHIP AND DEMOCRACY IN SCHOOLS:

Diversity, Identity, Equality
Edited by Professor Audrey Osler
(School of Education)

Trentham Books Ltd, October
2000, £15.95 (paperback), £48.00
(hardback)

Available from the Bookshop
ISBN 1 85856 222 8 (paperback)
ISBN 1 85856 221 X (hardback)

Part One: *The Citizenship Agenda*
(with contributions from
Audrey Osler)

Part Two: *Race, Identity and
Human Rights*

Part Three: *Practising Democracy*
(with case studies and
international perspectives on
human rights and Citizenship
education)

This book provides a framework
for Citizenship Education
within contexts of cultural

diversity. Underpinning
Citizenship Education has to be
an understanding and practice
of human rights. The
contributors show how human
rights principles are used by
schools to challenge structural
inequality, discrimination and
exclusion and to support young
people in developing confident
identities in contexts of cultural
diversity. Case studies illustrate
how students can realise their
rights and responsibilities as
citizens.

Leading researchers and expert
teachers worked over two years
in seminars funded by the ESRC
and in debate with Bernard
Crick, to produce this
authoritative and coherent
work.



- Professor Audrey Osler is Professor of Education in the School of Education and Director of the Centre for Citizenship Studies.

THE ALCOHOL REPORT

Edited by Martin Plant and Douglas Cameron
(Department of Psychiatry)

Free Association Books, November 2000, £16.95
(paperback), £45.00 (hardback)

Available from the Bookshop
ISBN 1 85343 524 4 (paperback)
ISBN 1 85343 525 2 (hardback)

A huge literature has been produced on almost every possible aspect of alcohol in recent years. The scale of this output is daunting, but it does now provide a basis for giving an informed and balanced view of humanity's 'favourite drug'. *The Alcohol Report* sets out to provide, in non-technical terms, a considered, authoritative and informative review of some of the key topics likely to interest those with a serious interest in the facts about alcohol consumption and alcohol-related problems. In addition, it is hoped that *The Alcohol Report* will be helpful to a wide range of people whose work is likely to bring them into contact with drinking and 'problem drinking'. *The Alcohol Report* will also be of great



The Alcohol Report

Edited by Martin Plant and Douglas Cameron

interest to those with personal experience of alcohol problems, the drinkers themselves, their friends and family members.

The topics covered in this book include the negative and positive effects of alcohol, the effects of heavy drinking during pregnancy, reasons why alcohol problems develop, national and international trends in alcohol consumption and alcohol-related problems, the economics of the alcohol market and the costs of alcohol problems, harm minimisation strategies, health promotion, treatment and support and counselling for problem drinkers. The latter include both 'conventional approaches', such as psychologically-oriented treatments and home detoxification, together with complimentary therapies.

- Dr David Cameron is Senior Lecturer in Substance Misuse in the Department of Psychiatry.
- Martin Plant is Director of the Alcohol and Health Research Group, Edinburgh.



FARMING THE DESERT

The UNESCO Libyan Valleys

Archaeological Survey

Volume One: Synthesis

Edited by Professor Graeme W
Barker (School of Archaeological
Studies)

Volume Two: Gazetteer and
Pottery

Edited by Professor David J
Mattingley (School of
Archaeological Studies)

UNESCO Publishing, February
1997, £44.00 Volume I (hardback),
£60.00 Volume II (hardback)

Available from the Bookshop

ISBN 92 3 103214 3 (Volume I)

ISBN 92 3 103273 9 (Volume II)

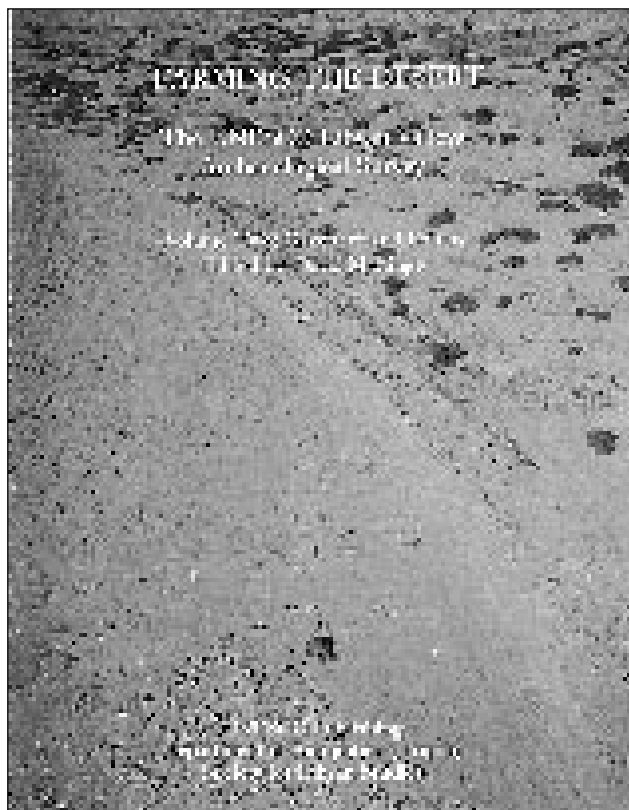
The desert margins of North Africa are extremely rich in archaeological ruins of the Roman period, evidence of dense settlement 2,000 years ago in what are now arid and hostile environments. Historians, geographers and archaeologists have long debated the significance of these sites, explaining the 'Greening of the Desert' variously in terms of environmental change, colonisation, external market forces or combinations of factors. What has characterised the debate so far has been the lack of scientific data from any one region concerning, on the one hand, the nature of settlement, society and land-use and, on the other, the

the strengths and weaknesses of the alternative theories. The two volumes of *Farming the Desert* (one of synthesis, the other of accompanying specialist data) present the results of the alternative approach taken by the UNESCO Libyan Valleys Archaeological Survey (ULVS) - a detailed major interdisciplinary study by archaeologists, geographers and historians of a single region, ie the basins of the Wadis Sofeggin and ZemZem in Tripolitania, northwest Libya. The project's methodologies for studying the archaeology of

***Farming the Desert* is the tenth recipient of the prestigious James R Wiseman Book Award, one of the highest honours the Archaeological Institute of America - the AIA - confers. The AIA is the largest archaeological organisation in the world.**

arid-zone agriculture have been recognised internationally, and the results of their application to the study area have transformed our understanding of how the desert margins of North Africa were farmed in antiquity, with important implications for modern agricultural planning.

• *Professor Graeme W Barker is a Professor of Archaeology in the School of Archaeological Studies, and Graduate School Dean.*



- *Professor David J Mattingley is a Professor of Roman Archaeology in the School of Archaeological Studies.*
- *Dr Annie E Grant, an Honorary Reader in the School of Archaeological Studies, contributes research for Volume I.*
- *Dr Marijke Van der Veen, a Senior Lecturer in the School of Archaeological Studies, is a contributor to Volume I.*

'A particular triumph. It marshals a wide variety of skills and techniques, transforms our understanding of ancient pre-desert farming, and is as vital a contribution to modern needs as it is to scholarship.'

Tim Potter, British Museum.

contemporary climate and environment: this has made it impossible to compare rigorously

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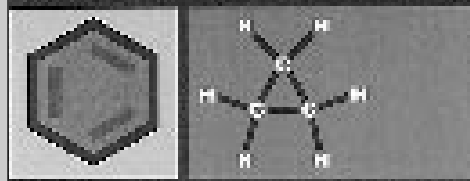


THE CHEMICAL TREE
A History of Chemistry
Emeritus Professor William H
Brock (Department of History)
W W Norton, January 2000,
\$19.95 (paperback)
Available from the Bookshop
ISBN 0 393 320685

This is an unaltered reprint of Professor Bill Brock's classic analysis of the history of chemistry, first

'A classic ... For the general reader, this book is an intellectual feast where everyone will find a favorite dish.'
New York Times Book Review

published in America in 1993 as the *Norton History of Chemistry*, now reissued in paperback format. On its first appearance, the *Times Literary Supplement* called it 'an astonishing tour de force', while *Nature* described it as 'accessible yet authoritative' and suggested that its 'account of twentieth-century developments is especially interesting'.



HANDBOOK OF OFFENDER ASSESSMENT AND TREATMENT
Edited by Professor Clive R Hollin (Centre for Applied Psychology)

John Wiley & Sons Ltd, December 2000, £75.00 (hardback)
Available from the Bookshop
ISBN 0 471 98858 8

There is a growing consensus that offender rehabilitation, prison regimes, and the treatment of offenders with special needs, must be based on research, methods and experience that are effective, humane and related to individual, organisation, and social considerations. This authoritative, comprehensive and international handbook will fill this need, as a resource for advanced students and professional courses and for researchers and practitioners.

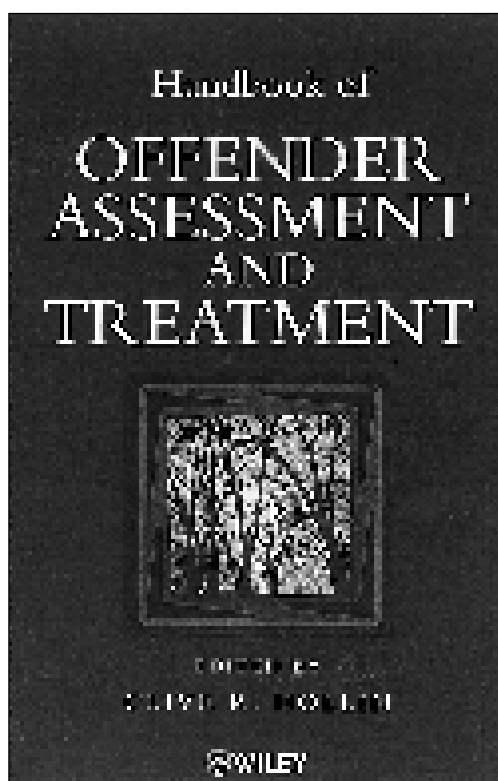
The Handbook provides an up-to-date review of current knowledge and best practice in the rehabilitation and treatment of offenders, in community, prison and secure hospital settings. Major sections cover the rationale and objectives of treatment, risk assessment, the whole range of approaches to treatment (including behavioural/cognitive, family work, reasoning, rehabilitation, and anger management), and the assessment and treatment of various categories of offenders and problems (with detailed chapters that include child abuse, violence,

mentally disordered offenders and sex offenders). A

final section of the Handbook deals with different types of treatment settings – maximum security hospitals, residential settings, and in the community.

This important volume will be essential for prison and correctional services, forensic psychologists and psychiatrists, clinical psychologists and mental health nurses working with offenders, probation and community workers, and also for libraries serving academics and professionals in criminology, law and penal policy.

- Professor Clive R Hollin is Professor of Criminological Psychology and Course Director for Forensic Psychology in the Centre for Applied Psychology. Alongside his academic appointments, Professor Hollin has worked as a prison psychologist, as Director of Rehabilitation in the Youth Treatment Service, and as a Consultant Forensic Psychologist at Rampton Hospital.
- Professor Hollin is the 1998 recipient of the Senior Career Award for Distinguished Contribution to the Field of Legal, Criminological and Forensic Psychology awarded by the Division of Criminological and Legal Psychology of The British Psychological Association.





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