

QUEEN SQUARE ALUMNUS ASSOCIATION

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QUEEN SQUARE NEWS

DEATHS

PROFESSOR W. IAN McDONALD

Brief mention of Professor McDonald's death was made in last year's Report, and the following is a more detailed obituary from the Lancet of February 2007.

During the 1950's as Ian McDonald was earning his BMedSci and MBChB from Otago University, New Zealand, Neurologists and Physiologists were just accepting the idea that nerve impulses travelled by electrical conduction. McDonald was attracted to this idea and returned to Otago in 1959, after time as a House Officer, to join Archie McIntyre's laboratory where he set to work on an experimental mode of demyelination. Using the model- parenteral injection of diphtheria toxin- McDonald showed that electrical conduction was blocked where nerve demyelination began and that following demyelination, conduction was slowed in single active nerve fibres in the dorsal roots after peripheral stimulation.

After his training in general internal medicine and neurology, McDonald set up his own laboratory in the UK at the National Hospital, Queen Square, London, in 1967. Here he replicated his earlier findings but in the Central Nervous System, where the pathology of multiple sclerosis occurred. He then wanted to confirm the results in human beings. In 1972 he and Tom Sears began a collaboration with Martin Halliday, who was using the visual evoked potential to map the projection of the retina on the visual area of the brain. McDonald quickly linked this work to the many cases of acute but recoverable loss of vision caused by optic neuritis he was seeing at Moorfields Eye Hospital, realising this symptom was often the first sign of multiple sclerosis. "The results were immediate and dramatic", he later wrote. "There was in 90 per cent of cases a substantial delay in the response from the affected eye. Moreover the delay persisted even when the vision had returned to normal. It was quickly apparent that this method could be used to detect asymptomatic damage in the optic nerves and that accordingly it should be useful as a diagnostic aid in multiple sclerosis." The technique, which was the first laboratory test for multiple sclerosis "immediately came relevant for clinical testing". Alastair Compston, Professor of Neurology at Cambridge University, Cambridge, UK told the Lancet, "It became a marker for compression as well as for demyelination, applicable in a range of areas."

Based on the technique, McDonald developed the first set of diagnostic criteria for multiple sclerosis that incorporated laboratory tests. Later, the usefulness and importance

of those criteria faded as MRI came along, said Compston, who met McDonald in 1975 when McDonald hired him to research the genetics of multiple sclerosis. Once again, however, McDonald's ability to identify MRI potential in the clinical setting was critical. He convinced the Multiple Sclerosis Society to fund an MR that would be used only for research. "That was critical", said Alan Thompson, who trained under McDonald and is now Professor of Clinical Neurology and Rehabilitation at Queen Square. "What really stands out was how he was able to translate what he did." Thompson added "He was very clinically driven."

McDonald was inspirational and unselfish with his time. Thompson said, "He was incredibly approachable, and everyone thought they could speak to him. What I could never understand about him was how he managed to do everything. He used to get up at 4 a.m. and take little catnaps every day," Thompson recalled. McDonald served as editor of *Brain* from 1991 until 1997. That year he retired from Queen Square and became the Harveian Librarian of the Royal College of Physicians until 2004.

He was also a wonderful pianist, said Charles Poser of Harvard Medical School, Boston, USA, who helped write the 1983 guidelines for multiple sclerosis that were updated in 2001 by a group led by McDonald. "My wife and I had dinner with him at his home on several occasions and he would invariably give a recital on his piano." In 2004 it was McDonald's difficulty reading music that made him realize that he had had a stroke. "I had been asked to turn pages for a performance of the Schubert F minor Fantasy for piano duet - a work I knew well I was quite unable to do so," he wrote in a personal essay published last year in *Brain* that melded his own neurological symptoms and recovery with the history of the field.

A Memorial service for Ian was held at St. Marylebone Parish Church on 24th April followed by a Reception at the Royal College of Physicians.

PROFESSOR JOHN NEWSOM-DAVIS

John Newsom-Davis, who died in Romania on 24th August 2007 as a result of a road traffic accident, was one of a small number of physicians who, in the 1970s, began to apply advances in basic science to clinical problems, helping to keep Britain at the forefront of clinical research and inspiring many younger medical doctors to do likewise.

His greatest contribution was to identify auto-immune mechanisms and appropriate treatments in neurological diseases. Many neurological diseases like Alzheimer's and Parkinson's are chronic and progressive. A turning point in the 1970s was the discovery that at least one disease, albeit not the most common, is caused by a defect in the immune system and can be treated by drugs or other procedures.

Myasthenia gravis affects the signaling junction between nerves and muscles, leading to muscle weakness which can be life-threatening. Work in the United States, also performed by Newsom-Davis, Ricardo Miledi and colleagues, showed reduced signaling protein in the junction in patients' muscles, and that this was most likely caused by

antibodies that search out and destroy this protein. A logical but previously untested treatment was to remove the offending antibodies, which was performed by Newsom-Davis, Anthony Pinching and Keith Peters using a procedure called plasma exchange. This produced a remarkable clinical effect, even in patients who had been partly paralysed for many years and further work convincingly demonstrated that the antibodies to receptor protein were the cause of the disease, which could also be treated with drugs that suppress the immune system.

In addition, genetic studies with Alastair Compston and Richard Batchelor helped to define distinct subgroups of myasthenia, including the younger patients in whom the thymus gland is enlarged, which Newsom-David and colleagues went on to show was a source of immune dysfunction actively produced some of the harmful antibodies. He then hypothesized and demonstrated that two other diseases of the nerve-muscle junction, the Lambert-Eaton myasthenic syndrome and acquired neuromyotonia, were due to antibodies to different proteins that control the signaling process. This meant that these conditions too could be successfully treated with immuno-suppressive therapies, and his finding also threw new light on a poorly understood relationship between cancer and neurological diseases.

In each case, Newsom-Davis's research group was able to establish laboratory methods for the detection of the antibodies, ensuring that neurologists in other countries could also diagnose, and thence treat appropriately, their patients, in parallel, they defined several genetic diseases that involve the nerve-muscle junction, but are not caused by the immune system and require different treatment.

John Michael Newsom-Davis was born in 1932, the eldest child (by 10 minutes) and only son of Kenneth Newsom-Davis, the managing director of the Davis Gas Cooker Company, and his wife, Eileen, the daughter of a doctor. Less robust than his twin sister, John did not much enjoy prep school or his subsequent years at Sherborne. A positive influence was undoubtedly the two years he spent doing national service in the RAF when, because of the Korean war, a small cohort qualified for full pilot training and a chance to fly Meteors – an achievement of which Newsom-Davis remained immensely proud for the rest of his life.

Although originally offered a place at Cambridge to read English and History, he decided to follow his maternal grandfather into medicine, and he duly qualified at the Middlesex Hospital in 1960.

From the Middlesex he joined Tom Sears at the National Hospital, Queen Square, where they investigated the perception of breathlessness and physiological control of breathing – often recording with electrodes from their own intercostal muscles. He then spent a year in Cornell Medical Centre with Fred Plum dissecting the central pathways involved. Newsom-Davis completed neurology training at the National and in 1970 was appointed consultant neurologist there and at the Royal Free Hospital where he established a very active research group, becoming the first MRC Clinical Research Professor in 1980.

Recruited by Oxford University in 1987 to the Action Research Chair of Clinical Neurology, with a Fellowship at St. Edmund Hall, he arrived with most of his group and spent the next 11 years providing inspiration to the younger generation while he built up clinical neuroscience in Oxford, both in his own field of immune mediated and genetic diseases and, with George Radda and Alan Cowey, establishing a Centre for the Functional Magnetic Resonance Imaging of the Brain which has become a world leader. An essential attribute was his ability to obtain funding from the Medical Research Council and charities to keep together the senior researchers who had transferred from London. Much of his work has thereby continued after his retirement, with further discoveries in related immune and genetic conditions.

He was at various times President of the Biomedical Section of the British Association of the Advancement of Science, President of the Association of British Neurologists, a founder member of the Academy of Medical Sciences, and twice chair of the MRC Neurosciences Board. In 1997, he took over from Ian McDonald as editor of *Brain*, the premier neurology journal, which he effortlessly took into the 21st century, making it one of the first journals to go on-line. He travelled widely, gave superb lectures, and was awarded many prizes and honours including election as Fellow of the Royal Society in 1991, a very unusual honour for a clinician. He was appointed CBE in 1996, and to Foreign Membership of the Institute of Medicine of the US National Academy of Sciences in 2001.

Despite editing *Brain*, a weekly myasthenia clinic and visits to the lab in Oxford, and many invitations to lecture abroad following 'retirement' from Oxford in 1998, Newsom-Davis needed a new challenge. Empirical removal of the thymus gland had been performed as treatment for myasthenia gravis for over 40 years, but the treatment effect is unpredictable and one could question whether it is ethical to perform invasive surgery when the currently used immuno-suppressive drugs are usually effective. In association with myasthenia experts in the United States, Newsom-Davis took on the huge task of organizing and funding (via the National Institutes of Health in the United States) a multi-centre trial of thymectomy involving over 80 participating centres which will determine whether the operation has any place in modern treatment.

John's dark hair, good colour, large brown eyes and slim build meant that he always looked at least 10 years younger than he was; new recruits to the lab or clinic would say nervously, "I thought he was older," to which one could retort, "is." He had enormous energy, but seldom seemed hurried despite massive workloads. He always showed concern for colleagues, remembered their problems and took an interest in their children. This caring attitude was of course experienced by the patients he treated and also extended to others that he met professionally, particularly the younger generation of neurologists for whom he was a most influential role model.

In 1963 he married Rosemary Schmid, an English Swiss, who later became an education psychologist. Together they had two daughters and a son who is a doctor. Their very happy family life is perhaps best illustrated by the children's relatively early marriages, and his seven grandchildren, which were a source of great pleasure and pride. Much of

his babysitting, as he liked to call it, took place in their Dorset cottage where, after several hours pouring over recipe books, John would produce fantastic meals, further enlivened by his conversational skills. His only other love was classical music, particularly opera.

PROMOTIONS AND AWARDS

PERSONAL CHAIRS

(with effect from October 2007)

Lisa Cipolotti
Brain Day
Eleanor Maguire
Dimitri Rusakov
Matthew Walker

PROMOTION TO READER

Matthias Koepp
Patricia Limousin
Rohan De Silva
Sarah Tabrizi

The following staff are to be congratulated on various achievements:

PROFESSOR LIZZY FISHER on her election as a Fellow of the Academy of Medical Sciences (thus bringing the total of Fellows at Queen Square to fourteen).

DR CAROLINE SELAI on being awarded one of the Provost's new Special Teaching Awards.

PROFESSOR RAY DOLAN on the Golden Brain Award for 2007 from the Minerva Foundation and the prestigious Max Planck Research Award for 2007.

PROFESSOR ANDREW LEES on his invitation to meet the Queen and the Duke of Edinburgh at Buckingham Palace on 24th October 2006, at a Reception to mark the contributions of the British Scientific community.

PROFESSOR MASUD HUSAIN on the award of the Royal College of Physicians Graham Bull Prize in Clinical Science.

PROFESSOR KAILASH BHATIA on being elected as Corresponding Fellow the American Neurological Association, and on the presentation of the William Koller Memorial Fund award at the 10th International Congress of Parkinson's Disease and Movement Disorders.

PROFESSOR NIAL QUINN on being awarded Honorary Life Membership of the Movement Disorders Association.

PROFESSORS PETER GOADSBY AND MARTIN ROSSOR have been asked to deliver the Royal Society of Medicine lectures in 2008.

NEW APPOINTMENTS

Professor John Hardy has been appointed to the Chair of the Molecular biology of Neurological Disease.

Professor Ken Smith, Professor of Neurophysiology at King's College London, has been appointed to the Chair of Experimental Neuroinflammation. Professor Smith and his team moved to Wakefield Street in October 2007.

Dr Manjit Matharu has been appointed to the post of clinical Senior Lecturer in Headache in the Department of Brain Repair and Rehabilitation with effect from 1st June 2007.

Mr Neil Kitchen has been invited to head the Institute of Neurology's Division of Neurosurgery with effect from 1st July 2007.

ANNUAL OPENING ADDRESS

Professor Bob Williamson FRS, currently Professor of medical Genetics and Director of the Murdoch Institute, Melbourne, Australia delivered the Annual Opening Address on 3rd October 2007 entitled "The Outcomes of the Human Genome Project: Was it Worth the \$3 Billion?".

GOWERS MEMORIAL LECTURE

Professor Andrew Lees delivered the Gowers Memorial Lecture on 16th May 2007, entitled "In Search of the Lost Mystery of Neurology".

INAUGURAL LECTURE

The Inaugural Lecture of Professor John Hardy was delivered in September 2007, entitled "Genetics and Neurology: From Single Gene Disorders to Whole Genome Analyses", and was given as the 4th Anita Harding Memorial Lecture.

RETIREMENTS

2006/07 saw the retirement of several distinguished and long standing members of staff at Queen Square:

PROFESSOR JOHN CLARK, Professor of Neurochemistry, after seventeen years at the Institute.

PROFESSOR D. G. T. THOMAS, Professor of Neurological Surgery and Honorary Consultant Neurosurgery, after 30 years.

DR DAFFYD THOMAS, Senior Lecturer and Honorary Consultant Physician, after 26 years at the Institute and Hospital.

DR NICK MURRAY, Consultant and Head of the Department of Clinical Neurophysiology in December 2006 after 30 years. He will be remembered for inspiring generations of young doctors as well as for leading a team which developed the clinical technique of magnetic brain stimulation – now a widely used procedure for evaluating neurological conditions affecting the nervous system.

PROFESSOR NIALL QUINN arrived at the National in 1988 and over the past nineteen years has been an outstanding clinician and a passionate teacher (as many researchers and students testify). Actively involved in the Institute of Neurology's Diploma and MSc courses, he brought the National international prestige for his work and publications on Parkinson's Disease and other movement disorders. A Festschrift for him was held on 6th July 2007, followed by a Reception.

RESIGNATIONS

Professor David Baker and Dr Gavin Giovannoni to Queen Mary University on 1st November 2006.

Dr Holger Kaube to a Chair in Neurology at the University of Southampton on 1st November 2006.

Professor Bob Turner to take up the Directorship of a new Department of Imaging Science in the Max Planck Institute of Human Cognitive and Brain Sciences, Leipzig, Germany on 1st January 2007.

OTHER NEWS

CLINICAL NEUROSCIENCES CENTRE

We have received two generous pledges towards the scheme; one from the Foyle Foundation and the other from the Henry Smith Charity. The 'topping-out' ceremony was held on 13th September 2007 and the building is due to be completed in April 2008. The building will provide clinical care facilities and much needed research labs for projects relating to Parkinson's disease (Deep Brain Stimulation operations) epilepsy, and other movement disorders. However we do need to raise a further 1 million.

WELLCOME TRUST CENTRE FOR NEUROIMAGING AT UCL

The Functional Imaging Laboratory has been accorded Wellcome Centre status following an award of £6.74 million funding from the Wellcome Trust. Professor Dolan, Director of

the laboratory, has also won two major awards: the Golden Brain and Max Planck Awards.

The Golden Brain award is given by the Minerva Foundation to researchers who make breakthrough findings in vision and brain research and Professor Dolan has been awarded it in recognition of his contribution to the study of the emotional brain.

The Max Planck award is given by the Alexander von Humboldt Foundation and the Max Planck. Professor Dolan plans to use the prize money to investigate, together with colleagues in Germany, the neurochemical mechanisms underlying emotional learning and decision making in humans. He says "This is an area of research that is tremendously exciting at present involving mathematicians, behavioural economists and cognitive neuroscientists among others. Understanding how neurochemical systems regulate cognition is key to developing treatments for devastating brain disorders such as Parkinson's Disease and Schizophrenia."

MRC CENTRE FOR NEUROMUSCULAR DISEASE

A bid from Professor Mike Hanna and Professor Martin Koltzenburg for the MRC Centre for Neuromuscular Disease in Children and Adults at the ION and ICH, in collaboration with the University of Newcastle, has been successful. Professor Hanna, is the Centre Director and a grant of £2.5K has been awarded by the MRC, with effect from 1st October 2007.

OXFORD HANDBOOK OF NEUROLOGY

The Oxford handbook of Neurology by Hadi Manji and Neil Kitchen from the National, along with Adrian Wills, Neil Dorwood, Sean Connelly and Amrish Mehta has just been published. This is a practical and concise quick reference guide for use on the wards and in clinical settings. It covers the entire breadth of neurology – with sections on neuroanatomy, neurosurgery, neuroradiology and neurophysiology – and is an essential book for anyone working with neurological patients.

ROYAL COLLEGE OF PHYSICIANS PRIZE AWARD

The Institute is delighted to congratulate Professor Masud Husain, from the Department of Headache, Brain Repair and Rehabilitation, who has been awarded the Graham Bull Prize in Clinical Science. Professor Husain and his team are researching cognitive disorders following stroke. The prize is awarded annually by the Royal College of Physicians to a young researcher under the age of 45 who has made a major contribution to clinical science.

QUEEN SQUARE PRIZE

The Queen Square Prize was awarded to Dr Miratul Muqit, Registrar at the National for his research into the functional analysis of the Parkinson's Disease Associated Gene, Pink 1.

THE NATIONAL ON NATIONAL TV

The result of nearly a year's filming at the National hit screens earlier this year in the form of a three-part BBC One Documentary. The film crew followed patients and staff throughout the hospital, covering neurological conditions including cluster headaches, epilepsy and Parkinson's disease – as well as extremely rare conditions where the National Hospital's speciality is the only one in the UK.

HAYMON GORLOV PRIZE

Ionana Sevastou was awarded the Haymon Gorlov prize. This annual prize is for the best Masters student in Neuroscience at the Institute of Neurology.

HUNTINTON'S DISEASE WEBSITE

The Huntington's disease clinical research team has launched a new website that will bring the latest news and clinical research in Huntington's to patients, relatives and carers in the UK and worldwide.

Lead consultant, Dr Sarah Tabrizi says: "The website will move Huntington's disease research in the UK bringing the latest information about taking part in clinical research strategies to the home of gene carriers, their families and carers. We expect it to become an invaluable and trusted resource for our patients to get informed and get involved in research. We also hope to reach those family members who may want to take part in research, but do not necessarily want to be seen at the Huntington's disease clinic."

The Hi Q Foundation in America has awarded £6 million to Dr Tabrizi for Track-HD Website: www.hdresearch.ucl.ac.uk

DEMENTIA RESEARCH CENTRE

When the MRI scanner is installed at the Dementia Research Centre in 2008, the Centre will finally have all the equipment it currently needs. In the short time since it was set up on 2005, the Centre has involved over 4000 patients, with their carers, in studies. It has already made some breakthrough progress, including collaborative work which led to identifying presymptomatic cognitive and imaging changes in Alzheimer's disease and pioneering MRI imaging techniques to improve the diagnosis and track the progression of Alzheimer's disease.

NEW COURSE AT THE INSTITUTE

MSc in ADVANCED NEUROIMAGING

A new course in Neuroimaging, developed by Professor Tarek Yousry, will commence in September 2008. The MSc marks a departure for the Institute, in that there is a part-time option (in response to market demand).

I hope you enjoy reading this Newsletter. If you wish to receive this by email, please send your email address to Jean Reynolds (j.reynolds@ion.ucl.ac.uk)

I would like to wish you all a very Happy Christmas and New Year.

Pat Harris