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Philip Montagu D'Arcy Hart, born 25 June 1900, died 30 July 2006. He is survived by his wife Ruth and their son Oliver. Additional material for this article is available from the James Lind Library website (<http://www.jameslindlibrary.org>), where this biography was previously published.

Philip D'Arcy Hart was born in 1900 into a family prominent in politics and finance. His grandfather was first Baron Swaythling, founder of the banking firm Samuel Montagu and Liberal MP for the Whitechapel Division of Tower Hamlets, London. In 1941, Philip married Ruth Meyer, later a medical gynaecologist. The author and editors are grateful to Philip and Ruth D'Arcy Hart for confirming, at a meeting with Iain Chalmers on 25 August 2004, the accuracy of the account that follows.

Philip D'Arcy Hart was initially influenced towards a medical career because of his mother's high regard for a surgeon who had operated on him whilst a child. After attending Clifton School, he was educated at Cambridge University and University College Hospital (UCH) Medical School, London. The state of medicine at the time was such that as a student there in the 1920s, he recalled being taught by Sir John Rose Bradford that there was only one disease that could be cured medically—scurvy. Inspired to follow a career in medical research Hart qualified in 1925, served as House Officer to Wilfred Trotter, and passed the membership examination of the Royal College of Physicians of London shortly afterwards. He became a member of the Medical Unit at UCH, which had been founded by the Rockefeller Foundation, and proceeded up the medical ladder.

After a period on a research fellowship in the United States in the early 1930s, Hart returned to become a Consultant Physician at UCH in 1934. There he was influenced by the distinguished cardiologist Sir Thomas Lewis, who was on the staff at the Medical Unit. Lewis was also a member of the Medical Research Council (MRC), and he suggested to the Council that Hart should be asked to investigate coal miners' diseases. When the Council offered Hart only a three year Fellowship to do this, Lewis protested that it was completely inappropriate to offer such

a short contract to a man who had a full career ahead of him. Hart was consequently offered a permanent staff position by the MRC, and decided to leave his post at the hospital to become a full time researcher.

Remembering his departure from this prestigious (and potentially quite lucrative) hospital appointment many years later, Hart recalled that his colleagues at UCH regarded him as practically a 'traitor' for leaving the hospital, and they never invited him back to give a postgraduate lecture about his research. Thus it was that, in 1937, he became a member of the MRC's staff, beginning an association that continued formally until 1993. From 1948 until 1965 he was Director of the MRC's Tuberculosis Research Unit. After his 'retirement' in 1965, he held MRC research grants at the MRC's National Institute of Medical Research (NIMR) until 1993, after which he continued his association with the MRC as an Attached Worker.

In 1936 the Home Office and the Mines Department asked the MRC to investigate chronic pulmonary disease among coalminers, particularly in the South Wales coalfields. A major stimulus for the request was a growing dissatisfaction that coal face workers in anthracite fields were frequently incapacitated by a lung disease, pneumoconiosis, for which no compensation was available, unlike the rock workers who suffered from silicosis, which was compensated. At a time when Britain was almost certainly facing a major war, and discontent was rife in the coalfields, the Government was anxious to be seen to be addressing politically sensitive issues, even if it was not actually dealing with them.

The request from the Home Office and the Mines Department was referred to the MRC's Committee on Industrial Pulmonary Disease, chaired by CG Douglas of Oxford. A large-scale clinical and radiological examination of pulmonary disease was proposed. Hart supervised the medical part of the investigation, assisted by Dr E Aslett from the Welsh National Memorial Association. Two pathologists, Dr TH Belt and Dr AA Ferris, completed the team. The work involved not only medical staff, but also dust experts, mineralogists, geologists, Inspectors of Mines, the mine owners (this was before nationalization of the industry) and the South Wales Miners' Federation—the miners' trade union.

The medical phase started in 1937, focusing on just one colliery in Ammanford, near Swansea. Six months later

another 15 collieries were included in the detailed investigation, whilst the third, and final stage, moved away from the coal face to examine the health of the coal trimmers, who loaded ships with coal. The studies relied heavily on the cooperation of all the local coal workers and physicians, and recorded the results of clinical examinations and investigations of whole communities. A mobile X-ray van travelled up and down the valleys, and Lord Nuffield presented a Morris Minor car specially for the team.

The novelty of the work caused some difficulties, and gave rise to numerous anecdotes. One refers to 'the half-crowns'—two shillings and sixpence (2/6d), or 12.5 pence in decimal currency. One particular investigation of the relationship between tuberculosis (TB) and pneumoconiosis involved volunteers being tested for TB, for which they received payment of 2/6d. However, those who tested negative had to be re-tested, for which, unsurprisingly, they expected a further half-crown. This had not been included in the original budget, and it was only after Hart made an urgent call to London that a sack of half-crowns was put on the overnight train to Swansea, thus ensuring that the investigation could be completed.

A second incident occurred during the Second World War when the Morris Minor car broke down, and Hart had to hitch a lift to the nearest town. His rescuers, however, were suspicious of the strange Englishman stranded in the Welsh valleys, and they took some convincing that he was working for the MRC, and not a German spy who should be taken to the police. The three major MRC reports produced by the studies not only changed the diagnostic criteria of pneumoconiosis, but were successful in getting compensation for sufferers, which Hart considered a particularly important triumph.^{1,2}

A similar problem, during the same period, was an investigation on behalf of the Colonial Office, of TB in Newfoundland, then a British Colony. In war conditions, Hart and a colleague, Tom Garland, travelled by sea-plane to the capital, St John's, where they instigated similar studies to those in South Wales, using mobile X-ray apparatus, and often travelling by boat between the isolated communities. Appalled by the living conditions he found in Newfoundland, Hart made what recommendations he felt he could to the Colonial Office for improvements in these and in medical care. Privately, he advised local officials that they would receive better resources and facilities if they negotiated to become a part of Canada.

Such work reinforced Hart's interest in what was becoming known as 'social medicine'. In 1939, an informal club called the Committee for the Study of Social Medicine was established, and Hart became its secretary³. Its members were concentrated in London, especially at UCH and St Mary's Hospital, the Committee providing a forum for the exchange of ideas and information, and for

debates and discussion of what constituted 'social medicine'—was it socialist medicine; Marxist medicine; or public health? Members included Jerry Morris, Richard Titmuss, John Ryle, Max Rosenheim, Archie Cochrane (although then still a prisoner of war) and Tom Garland, all of whom became significant figures in post war medicine. They undertook a number of surveys: of mothers whose children had not been immunized against diphtheria; of the social distribution of juvenile rheumatism; and of the financial burden occasioned by TB. Unfortunately the Committee's records were destroyed by a bomb during the Second World War, and the members decided not to continue as a group.

In 1943, the MRC was approached by the Therapeutic Research Corporation, a wartime consortium of British pharmaceutical companies, to conduct a trial of patulin, an antibiotic that had shown some promise as a treatment for the common cold. A Committee was appointed to investigate, Hart was appointed as Secretary, and a trial design was agreed involving the treatment of alternate patients with patulin or a control solution.⁴ Patients were recruited in several factories around the country, and Hart, his wife Ruth, and Joan Faulkner (later Lady Doll), the Committee's Assistant Secretary, went to some trouble to devise procedures to ensure that neither the patient nor the medical staff would know which 'treatment' was being administered. It was this later aspect that makes the patulin trial a serious contender to be considered the first well-controlled, multicentre trial done under the aegis of the MRC, although one that has been overlooked until recently by historians.^{5,6} One reason for its apparent neglect is probably that no beneficial effect of patulin was discerned.

Shortly after the end of the war, based on his practical experience in the patulin trial, Hart was appointed Secretary of an MRC Committee established to investigate the therapeutic claims made for streptomycin as a treatment for TB. Hailed as a 'miracle drug', streptomycin had been discovered in the USA in 1944, and its ready availability and rapid acceptance there had prevented any large scale testing of the drug. Hart recruited Marc Daniels, a young TB researcher, and they and the statistician Austin Bradford Hill became responsible for coordinating what has become one of the most celebrated randomized clinical trials in history.^{7,8}

Later assessments of new remedies, or combinations of drugs, followed the same lines as the streptomycin trial, and the MRC's Tuberculosis Research Unit, under Hart's direction, focused on developing the statistical design and analysis of therapeutic trials. In addition, from 1950 for more than a decade, Hart also developed and supervised TB vaccine trials on behalf of the MRC. Almost 60,000 school children were included in tests of the BCG (Bacillus-Calmette-Guérin) and vole bacillus vaccines. By

the time of the final report in 1963 the overwhelming evidence was that both vaccines substantially reduced the incidence of TB.

During this period (in 1954), Hart helped to establish another specialized medical club—the Acid Fast Club (the title refers to the histological staining techniques used to identify TB bacilli in pathological samples). The prime mover was Charles Lack, a bacteriologist at the Royal National Orthopaedic Hospital, who contacted several people with research interests in TB. A major issue was that the only extant journal in the UK devoted to TB, *Tubercle*, was not then appropriate for serious scientific papers, and as a result, these were scattered throughout the medical literature. A small delegation including Hart approached the editor to suggest reforms. In 1956 the journal was realigned, a new editorial board was appointed (of which Hart was a founder member), and British TB researchers had a dedicated academic journal in which to publish their work.

On his first 'retirement' in 1965, after a lifetime of pioneering work conducting epidemiological research and clinical trials, Hart turned entirely to laboratory studies on mycobacterium at the National Institute of Medical Research (NIMR) in Mill Hill, north London. He pioneered some major investigations into cellular mechanisms of infection, such as the stimulation of the macrophage lysosomal system in response to infective agents. In this he was supported financially by the MRC as an External Grant Holder. In 1993, when this arrangement came to an end, Hart became an Attached Worker at the NIMR, an

association that continued until his death at the age of 106, on 30 July 2006.

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- 9 See also: Dr Philip D'Arcy Hart in conversation with Dr Kenneth Citron, 18 October 2001, in Oxford Brookes Video History Collection, MSVA 205. Details available at <http://www.brookes.ac.uk/schools/bms/medical/>