

## **Eric Bywaters A Life Story – 1.6.1910 to 2.4.2003**

**David Isenberg, Centre for Rheumatology, Division of Medicine, UCL**

**Room 424, The Rayne Building, 5 University Street, London WC1E 6AG**

[d.isenberg@ucl.ac.uk](mailto:d.isenberg@ucl.ac.uk)

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In the early 1990s I regularly attended the Executive and Finance Committee of the charity then known as the Arthritis Research Campaign and was delighted to have the opportunity to meet and talk to Eric Bywaters [Figure 1], widely acknowledged as one of the great innovators in British Rheumatology. An early interest in biology at school in Kent led to his entering the now defunct Middlesex Hospital Medical School, from which he qualified in 1933 with a gold medal in pathology. He researched aspects of cartilage structure and function with Sir Charles Dodds at the Courtauld Institute (linked to the Middlesex Hospital) and came to the notice of one of the leading lights of rheumatology in the United States, Walter Bauer, who suggested that if he came to the Massachusetts General Hospital in Boston to work with him, he could move from studying cartilage metabolism in rabbits to that in large cows! This was enough to persuade him to spend about two years working in Dr Bauer's laboratory. While there, he also studied patients with systemic lupus erythematosus, assisted by his wife Betty.

It was certainly this period which sparked his interest in rheumatology – a sub-speciality then barely recognised in the United Kingdom. In 1939 with the outbreak of the Second World War imminent, he and his wife moved back to London, where he took over a run-down hospital ward at the Hammersmith Hospital, then part of the British Post-Graduate School of Medicine, shortly after Francis Fraser had been appointed the Chief of Medicine. During the war, a kidney problem meant

he was rejected from military service, but by a strange irony he studied bomb victims who developed a sinister form of kidney failure known as the “crush syndrome” after their limbs were trapped by falling masonry <sup>(2,3)</sup>. This was shown to be linked to myoglobin (from the damaged muscles) which blocked the ducts in the kidneys interfering with the normal filtration of waste products. He also went on to show that the use of alkaline fluids by mouth, or intravenously, provided the kidney with some protection in this situation. Remarkably, around this time he was able to contact Dr Kolff a general practitioner working in Campen in Holland who had developed a very primitive dialysis machine, a version of which Bywaters arranged to be installed at the Hammersmith Hospital (he was the first to set this technology up in the UK) although by his own admission, it was not widely successful.

Shortly after the war, Bywaters was made the Director of the Special Unit for Juvenile Rheumatism at the Canadian Red Cross Memorial Hospital at Taplow near Maidenhead, West of London. It had been a military hospital during the First World War, but in 1947 it became a small general hospital linked to a paediatric hospital with offices and research laboratories for rheumatology. This rather inauspicious setting became a leading UK centre of rheumatology research. (It is now an even more mundane housing estate!) In the next 20 years it attracted large numbers of clinicians and basic scientists [Figure 2].

Bywaters read widely (he was an avid medical historian) and when Philip Hench and Edward Kendall first reported the remarkable benefits of cortisone therapy in rheumatoid arthritis patients in the 1940s <sup>(4)</sup>, he and his colleagues in the Special Unit at Taplow were well placed to study children under their care with rheumatic fever. Its remarkable effects on the painful and inflamed joints of these children were noted and reported <sup>(5)</sup>. Bywaters was regarded by his colleagues as a dedicated clinician with broad scientific interests (Michael Denman described him to me as someone who

when talking to clinicians was regarded as something of a scientist and when talking to scientists as something of a clinician!).

Using the simple tools then available to him i.e. careful observation of clinical signs and X-ray interpretation (he was often seen sitting in his office with a magnifying glass poring over X-rays looking for signs of early erosions!) and an obsession with long-term follow-up of patients with arthritis over long periods of time to determine patterns of disease, led to his widespread recognition as a genuine international authority. He was an outstanding and enthusiastic teacher. It is estimated that he trained around 350 trainees from the late 1940s to the mid-1980s when he began to wind down his workload.

He is particularly remembered in the UK for establishing a major research interest in juvenile chronic arthritis together with his colleague Barbara Ansell <sup>(6,7)</sup> who herself became a doyenne of British rheumatology <sup>(8)</sup>. Thus his key contributions to the science of rheumatology were to demonstrate the importance of analysing, classifying and (as far as it was possible to do in the 1950s and 60s) treating children with rheumatic symptoms as problems to be dealt with in their own right rather than thinking of these conditions as simply joint diseases in small adults. He was also well aware of the importance of genetic susceptibility. Although the scientific methods available then were clearly limited, careful analysis of familial disease clustering provided important clues and spoke to the appropriate nature of this approach. By assembling, as he did from 1948 onwards, multidisciplinary teams of clinicians, immunologists and pathologists, he was a genuine pathfinder in the approach to categorising, classifying and optimising the treatment of rheumatological diseases.

He had many interests outside of medicine including left-wing politics, painting in watercolours and later in oils. He became a skilful portrait artist and regularly caricatured himself [see Figure 3].

Another passion was gardening (he was a member of the Royal Horticultural Society). He was also known to be a reckless driver! A famous anecdote recalls how this lifelong workaholic managed at one point to drive his car off the road and with it stuck in a ditch, the Automobile Association were called. When they eventually arrived, they discovered Eric Bywaters's car with Bywaters himself inside, frantically typing his next paper on his portable typewriter!

Towards the end of his life he ensured 'good homes' for his extensive book and slide collections, insisting for example that Patricia Woo [arguably his 'scientific granddaughter' – she took over from Barbara Ansell at Northwick Park Hospital] take a large number of his clinical slides for her own collection.

He was a remarkable man who led a remarkable life and talking to him in his early 90s as I did, he was both courteous and highly informative!

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**Figure 1**



**Figure 2**

**STAFF OF M.R.C. RHEUMATISM RESEARCH UNIT, MAY 1967**



Figure 3





## Figure Legends

1. Eric Bywaters in his heyday!
2. Eric Bywaters is in the centre, front row (Barbara Ansell, second person to his right).
3. Sketch of Eric Bywaters by Eric Bywaters.