

The Square 1946-1966

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Before the Second World War, I spent 14 years at the Wellcome Research Laboratories at Beckenham—we had a most exciting period of pharmacological work there. In the work on malaria, we were testing compounds of quinine on canaries infected with *Pl. relictum* at the time when Schulemann and Kikuth found plasmoquin and mepacrine. When we tried them, it was clear that a new phase of malaria treatment had begun. Also, the discovery of drugs to treat bacterial infection was a real and most unexpected advance in medical practice. One remembers so many cases when Prontosil and sulphanimide saved lives which previously would have been lost. 4,4'-Diaminodiphenylsulphone (dapsone), which we stumbled on in 1937, proved an excellent drug for pneumococcal infections, but the war started and we had to attend to other things so we never tried it in tuberculosis or in leprosy.

During the interval between the Allies crossing the Rhine in 1944 and my being posted to Burma to make arrangements for a Blood Transfusion Service there, I had a note from Harold Burn to say I ought to apply for a job in Bloomsbury Square, so I sent a list of my published papers to London University and flew off to Burma. When I got back I had a note from Jack Gaddum telling me that this was no way to apply for a Chair and that I must write a proper letter to the University! And so I came to Bloomsbury Square.

During the first twenty years since its inception the department had become responsible for the biological standardization of drugs. Harold Burn wrote the standard work on the subject and Jack Gaddum was responsible for the mathematical monographs for the B.P. After the war the department was still working on this subject and Katharine Coward, who had made considerable contributions to methods for estimating Vitamin D, was in charge of a division of nutrition. Many tests were carried out for the smaller firms in the U.K. but, as these expanded, they were able to carry out the work themselves.

After the end of the war there was a scarcity of pharmacologists in London teaching schools. For the first few post-war years we helped with the teaching at three of the Medical Schools as well as teaching our own students. The association with St Bartholomew's Medical School was a particularly

happy and constructive one, and I believe this association is still in being and Bart's is now contributing to the teaching of human pharmacology to students from The Square.

During the period 1946-1966 the teaching programme of the School evolved into a three-year honours course, and in the third year the students were asked to specialize in one particular subject and many of them selected pharmacology. The chief preoccupation of the average pharmacist has changed from the dispensing of galenicals to the giving of advice on the use and abuse of prepared drugs; the relative importance of pharmacology has therefore increased considerably.

The scope of this course expanded satisfactorily both in theoretical and practical instruction. The only real difficulty was practical chemotherapy. Although our friends at the Wellcome Foundation helped us a great deal with this problem, it did seem that more practical instruction by animal experiments to show the effect of drugs on the control of infectious disease would have been a considerable help to the student.

The expansion of the teaching programme was made possible by the University of London which took over the responsibility for the School from the Pharmaceutical Society. The University provided the funds for expenses and for the provision of the new premises in Brunswick Square. Owing to delays in the building programme there was a period of six or seven years when we were running the new three-year course in the Bloomsbury Square laboratories with completely inadequate space for the job. The course was only made possible by the kindness of the authorities at the Royal Veterinary College in allowing us the use of a wing of their building, which we employed for the third-year practical classes. It was largely due to Professor Amoroso's interest and encouragement that our time at the Vet School was so productive.

In addition to our teaching, the department carried out research over a very wide field of pharmacological interest. Much of the earlier work on the control of the adrenal cortical secretion was done at The Square by Dr Marthe Vogt. She has made great contributions to all aspects of pharmacology from cortical secretion to the action of morphine and her recent studies in tryptaminergic

nerve fibres. She, as well as three of our other old friends from the department, Professors Edith Bülbring, Harold Burn and Jack Gaddum were elected to the Royal Society. The work on the adrenal cortex started by Marthe Vogt and continued by Bob Hodges, Michael Barrett, Mike Stockham and John Flack, has been a main theme at the Square. Bob Hodges moved to the Royal Free Hospital School of Medicine where he has maintained his endocrinological interests and is now a professor. Mike Barrett left the Square to work on adrenergic mechanisms at ICI and he now has his own department at Leeds University where he is Professor of Pharmacology. John Flack was excited by the very high plasma levels of glucocorticoids in human pregnancies and made an interesting investigation of free and bound glucocorticoids and of substances which released or activated the bound steroids.

Dr. (now Professor) Eleanor Zaimis, while working with Professor W. D. M. Paton found that hexamethonium blocked the transmission of nervous impulses in the autonomic ganglia. This work continued when she came to the Square together with work on the neuromuscular junction. She was joined in her research by Bill Bowman who is now Professor of Pharmacology at Strathclyde University. He first did fundamental work on the effects of catecholamines on fast and slow skeletal muscles and he also became an acknowledged expert in the field of neuromuscular blocking agents. He later collaborated with Mike Rand on various aspects of cholinergic transmission. Together with Mike and Geoff West he has written a comprehensive textbook on pharmacology.

Out at the Vet School there were three people who come to mind. First, Geoff West who had been in the Department in the forties but had left to go to Dundee. It was there where his work on histamine in the mast cells and anaphylaxis began. He continued these studies when he returned as Reader to the Square in 1955, and set up his laboratory at the Vet School. His work led to many observations including the difference in the chemical mediators of the anaphylactic reaction in rats and guinea-pigs and on to a consideration of the genetic factors involved in the anaphylactoid reaction in the rat. Geoff was always one of the most effective supervisors of his younger colleagues and research students for their Ph.D. There are many who owe him great appreciation. George Somers did some of the first work on the actions and uses of succinylcholine and of glycyrrhithinic acid before leaving to do vital re-

search into the teratogenic actions of thalidomide for which he was awarded a D.Sc. Monica Mann was our catecholamine expert whose detailed investigations into the depletion and resynthesis of the amines in the adrenal glands provided a sure base for the work that followed.

Dr. Mike Rand, now Professor of Pharmacology at Melbourne University, proved to be a most stimulating and original teacher and supervisor. He had previously worked on the autonomic nervous system with Prof. Burn at Oxford, where they produced the 'Burn and Rand' theory in which they suggested that acetylcholine was the substance first released from post-ganglionic sympathetic nerve endings. This acetylcholine in turn provided the stimulus for the release of noradrenaline. Mike Rand has made many useful contributions to our knowledge of adrenergic transmission including investigations of the actions of α -methyl dopa and of guanethidine.

There were of course many others who did excellent work both in teaching and research, such as Jim Pascoe and 'Brock' Brocklehurst. There was Rosemary Cass who worked on physicochemical methods of catecholamine estimation. Her untimely death during her lectureship was a great loss to her colleagues. Her mother has endowed a series of lectures in Dundee in her memory. Brian Callingham and Alan Cuthbert, both now in Cambridge, and Ken Butterworth, Mike Day, Pat D'Arcy Gerald Cox and Neville Kellett all made substantial contributions to the development of the Department. Brian Block is in private enterprise and Paul Spencer is Professor at UWIST. Pat D'Arcy, one of our most popular lecturers and an excellent organiser, is now Professor of Pharmacology at Queen's University Belfast.

In summary, the post-war period at the Square was notable for both research and the instruction of students—undergraduate and postgraduate—many of whom have become teachers or research workers in pharmacology. A great deal of useful research work has been done on the catecholamines, on histamine and on the drug control of hypertension. Perhaps the most helpful papers have been on the control of cortical secretion, the action of drugs at the myoneural junction and on anaphylaxis.

In all of this, we owed our technical staff, with my old friend Norman Maclaren at its head, as well as the School administrators, a great debt for making possible our achievements as a department of pharmacology.