

## Obituary

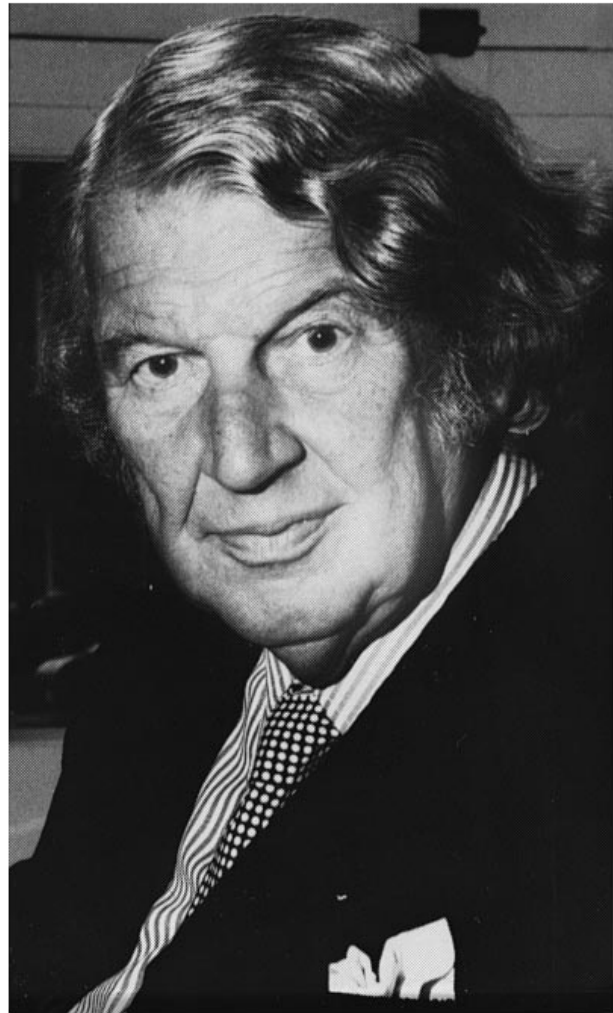
### JOHN ZACHARY YOUNG, F.R.S., Hon. F.B.A., M.A. (1907–1997)

John Zachary Young, universally known as JZ, was born in Bristol on 18 March 1907 and died on 4 July 1997. The Zachary in his name was said to be of Cornish origin. His ancestor Thomas Young achieved fame through his modulus and through the Young–Helmholtz theory of colour vision. JZ was educated at Marlborough, which school also produced another notable scientist, student of and early collaborator with JZ, Peter Medawar. Having acquired an interest in zoology at school, JZ read zoology at Magdalen College, Oxford, and then obtained a scholarship to work at the Zoological Section in Naples. There he began to investigate the autonomic innervation of the gut of fish. While in Naples he rediscovered the giant axons of the squid but, unlike L. W. Williams in 1909, he immediately recognised their importance. His observations led to the fundamental studies on the generation of the membrane potential and conduction of the action potential of axons by Hodgkin and Huxley. During his time in Naples before the War, JZ began his lifelong interest in the brain and behaviour of cephalopods.

During World War II, JZ remained in Oxford and worked on peripheral nerve injuries with Herbert Seddon, Peter Medawar, Kingsley Sanders, David Barker, Ludwig Gutmann and others. These studies were a model of how problems encountered by surgeons involved in the repair of nerve injuries could be investigated experimentally in animals by a combination of quantitative morphological and electrophysiological techniques.

At the termination of the War, JZ was appointed to the chair in anatomy at University College London. I was a second MB student at UCL at the time. The fracas over the appointment filtered down to the student body via the staff of the Anatomy Department and through letters, published in the *British Medical Journal* and elsewhere, written by most of the professors of anatomy in the UK. They were outraged that someone without a medical qualification should have been chosen. His invitation to the chair was quashed by the Academic Council of the University but at a subsequent formal appointments committee he was selected in competition with Solly Zuckerman.

When JZ arrived, he was an impressive figure: tall,



with a hairstyle not quite in keeping with the military short back and sides favoured at the time. Although the second MB students were inspired by his infectious enthusiasm for science, and in particular his series of lectures which became the basis for his 1971 book *An Introduction to the Study of Man*, it was the B.Sc. anatomy students who most revered him. I was fortunate enough to have been his first B.Sc. student at UCL but, sadly, I was too early to participate in the summer vacation visits to Naples to work on octopus.

In the early period after his appointment at UCL, the work on peripheral nerve continued in conjunction with Jack Aitken, Lodwick Evans, Gilbert Causey and others. But the studies on the anatomy of the octopus brain and the correlation of experimentally produced lesions with behavioural modifications

progressively dominated JZ's interest. At the same time, the Anatomy Department under his direction expanded and flourished. Wyckoff, J. D. Robertson and George Gray established the electron microscope laboratory, Michael Abercrombie, Gavin de Beer and later Elizabeth Deuchar and Ruth Bellairs took over embryology, while Donald Sholl and Brian Cragg worked on the cerebral cortex. Pat Wall with his laboratory on the physiology of pain, Semir Zeki on vision, John O'Keefe on the hippocampus and Alan Boyde on hard tissues were added. It was a vital and exciting environment in which to work. It is doubtful whether a department covering such a wide range of interests under the direction of a single individual would now be possible.

JZ's interests extended beyond the laboratory into the realms of philosophy. Although his book *Philosophy and the Brain* (1982) did not appeal to philosophers, his plea that the workings of the mind should be solved by experiment and the application of scientific method must be correct. His ideas on cerebral function were laid out in his book *Programs of the Brain* (1978). Nevertheless, it was his studies on the anatomy of the octopus brain, documented in *The Anatomy of the Nervous System of Octopus vulgaris* (1971) and in a series of papers—many of which were

published in the *Philosophical Transactions of the Royal Society*—that constitute his major scientific achievement. His behavioural studies on cephalopods never fully received the approval of the experimental psychologists. I have often thought that it was a great pity that JZ did not persist with his peripheral nerve work. His observations on the influence of peripheral connections on the maturation of regenerating nerve fibres were the presage of the subsequent explosion of information on neurotrophic factors.

JZ considered himself to be a morphologist, but his breadth of scientific vision was enormous. This is reflected, in particular, in his 2 textbooks *The Life of Vertebrates* (1950) and *The Life of Mammals* (1957). He is survived by his second wife, Raymonde (Raye) Parsons, by a son and a daughter from his first marriage and by a daughter from his second. Raye is fondly remembered by generations of B.Sc. students for the parties that she and JZ gave in their house in Camden Road before JZ moved back to Oxford to work in Larry Weiskrantz's Department of Experimental Psychology. He will be greatly missed. Although physically frail towards the end of his life, his prodigious mental capacity remained undiminished. I, for one, will be forever in his debt.

P. K. THOMAS