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EDITORIAL

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Sir Andrew Fielding Huxley (1917-2012)

May 30th 2012, a legend passed away from this world: Sir Andrew Fielding Huxley (1917-2012) is no more with us. Sir Andrew Huxley, who has died aged 94, was one of the great scientist and – a Nobel laureate, a master of Trinity College, Cambridge, and a past President of The Royal Society. Huxley was a grandson of Thomas Henry Huxley, the 19th-century biologist who was among Charles Darwin's most outspoken champions, and was half-brother to the biologist Julian Huxley and the novelist Aldous Huxley. He was educated at University College (1925-30) and Westminster Schools (1930-5), winning a major Entrance Scholarship in 1935 to Trinity College, Cambridge. Huxley's collaboration with Hodgkin on the nature of nerve impulses began in 1939, when Hodgkin returned from the US to a fellowship at Trinity and Huxley became one of his postgraduate students. At this time there was bitter controversy about the way in which neural signals were generated and transmitted along fibres and across synapses – the connecting junctions where there are gaps between the ends of one fibre and beginning of the next.

His first encounter with physiological research was in 1939 with Alan Hodgkin on the properties of the propagated impulse in giant axons of squid. Hodgkin and Huxley's (1939, 1945) intracellular recordings of the action potential demonstrated that the membrane potential becomes substantially positive. This observation was to lead eventually to the current view that this reflects an increased permeability specific for sodium ions, which would diffuse inwards carrying a positive charge [1-2]. Huxley won 1963 Nobel Prize in Physiology or Medicine for his experimental and mathematical work with Alan Hodgkin on the basis of nerve action potentials, the electrical impulses that enable the activity of an organism to be coordinated by a central nervous system. Hodgkin and Huxley shared the prize that year with John Eccles, who was awarded for research on synapses. Hodgkin and Huxley's findings led the pair to hypothesize the existence of ion channels, which were isolated only decades later. Together with the Swiss physiologist Robert Stämpfli he evidenced the existence of saltatory conduction in myelinated nerve fibers. Huxley's later research explored electrical conductivity in muscles. Huxley also developed the mathematical equations for the operation of myosin "cross-bridges" that generate the sliding forces between actin and myosin filaments, an entirely new paradigm for understanding muscle contraction.

Sir Andrew also followed his grandfather, Thomas Henry, as president of Britain's main scientific academy, the Royal Society. The Huxleys are thus the only family to have provided two holders of that post. And he became master of Trinity, an institution regarded, at least by those who have attended it, as the pinnacle of British academic life. That was a post he hugely enjoyed. He did not even mind the master's duty of officiating in chapel, since he was, he explained, not atheist but agnostic (a word usefully invented by his grandfather), and was "very conscious that

there is no scientific explanation for the fact that we are conscious"[3]. He became Jodrell Professor of Physiology in 1960, then Royal Society Research Professor in University College London in 1969, knighted in 1974 and appointed Order of Merit in 1983. He was elected Ordinary and Honorary Member of the Physiological Society in 1942 and 1979, served in its Committee (1957-61; 1970-4) and served on the Editorial Board of The Journal of Physiology (1950. He was joint president of the International Union of Physiological Societies in 1986 to 1993 [4].

References

1. Hodgkin AL & Huxley AF. Action potentials recorded from inside a nerve fibre. *Nature* 1939; 144:710-711.
2. Hodgkin AL & Huxley AF. Resting and action potentials in single nerve fibres. *J Physiol* 1945; 104: 176-195.
3. Andrew Huxley. The Economist, June 16th 2012.
4. Huang CLH. Sir Andrew Fielding Huxley (1917-2012). The Physiological Society. http://www.physoc.org/sites/default/files/page/Obit_Huxley_PhySoc_0812.pdf dated 23rd August 2012.