had an immense faith in his capacity to obtain answers to questions which had been previously unsolved. Then at the end of the experiment Adrian would return to his usual self; simple, smiling, ready to comment with a sense of humour on the errors which might have been committed during those moments of highest tension.'

Lord Adrian was born in 1889. He went to Trinity College, Cambridge, in 1908 with a scholarship in Science and started work at the Institute of Physiology in collaboration with Keith Lucas, with whom he published his first paper in 1912. He was Foulerton Research professor of the Royal Society from 1929 to 1937 and was professor of physiology at the University of Cambridge from 1937 to 1951. He resigned when he was elected Master of the Trinity College.

Lord Adrian was made a peer in 1955. He was President of the Royal Society and foreign member of many Academies. He had honorary degrees from British, American, Canadian and European Universities. He died in 1977.

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Obituary

Yngve Zotterman (1898–1982)

On 13 March Yngve Zotterman succumbed to a heart attack in his Stockholm home at Wenner-Gren Center. He was one of the few surviving physiologists with personal memories from the time when the early valve amplifiers reshaped his science. He stood with E. D. Adrian on two classical papers in 1926 demonstrating for the first time single-fibre discharges from a stretch receptor in a frog muscle as well as impulses elicited from the skin by touch and pressure. Returning home to the Caroline Institute, he continued working on cutaneous end organs, alone in the cellar of the institute, and pioneered recording from the very thin fibres subserving pain and light touch. His major contribution, entitled 'Touch, Pain and Tickling' and published in 1939 (in the *Journal of Physiology*), introduced a development that today has led to a virtually complete identification of the specific responses carried by such fibres.

In my opinion, Yngve Zotterman's leading contribution to neurophysiology was his work with E. Dodt and H. Hensel on temperature sensitivity in the cat's tongue. At the time, the study of thermosensitivity was encumbered by a host of complicated psychophysical theories, a state of affairs contrasting with the relative ease with which thermally elicited spikes could be recorded by adequate stimulation of identifiable sites. Specific warmth- and cold-sensitive fibres were found, both types with characteristic optima of their firing rates varying from fibre to fibre within a range of approximately ± 10°C. The cold receptors were found to discharge at steady rates, the warmth receptors in a more spluttering fashion. Dodt and Zotterman even discovered a probable substrate for the paradoxical sensation of cold above 45°C in a corresponding reappearance in cold fibres of a discharge peak at these temperatures.

Yngve Zotterman

Zotterman was at first much elated by finding in the frog's tongue fibres responding to pure water – his 'water taste' – but disappointment set in, when it proved impossible to detect such fibres in the mammalian tongue.

In 1940 Zotterman was appointed Associate Professor at the Caroline Institute, and in 1946 Professor and Director of the Physiology and Pharmacology Departments of the Veterinary High School, Stockholm. Retiring from this position in 1965 he could look back upon fundamental contributions to an understanding of the senses of taste, smell and temperature and to a reputation as the grand old man in the greatly expanded field of study of the sensory endings in skin, tongue and nose. The findings were summarized in international Symposia at the Wenner-Gren Center, where he served as secretary, scientific adviser and conference director to the day of his death. From 1971 to 1974, Zotterman was President of the International Union of Physiologists. He served Swedish physiology in many capacities, being one of the few all-round men in his science in a time of increasing specialization. For 40 years he was the secretary of the Physiological Society in Stockholm.

Yngve Zotterman was of an 'outgoing' disposition, lively and intensely interested in seeing and talking to his fellow beings. He probably knew more people and had more friends all over the world than any other physiologist among his contemporaries. Being of a most generous nature he was a kind and tolerant judge of the personalities of his friends and was always ready to appreciate the scientific efforts of his colleagues. In conversation he often returned to his early happy days in Cambridge and greatly appreciated receiving an honorary degree from this university in 1968 as well as an honorary membership of the Physiological Society. He drew a vivid picture of himself and his life in his autobiography entitled *Touch, Tickle and Pain* (1969).

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