

## SIR JOHN GADDUM

Four days before this Symposium started, J. H. Gaddum died at the age of 65 after a long illness uncomplainingly borne. His pharmacological interests being centred around biologically active tissue constituents, he made many valuable contributions in the field of catecholamines. His earliest paper in 1926 was on the interaction of adrenaline and ergotamine; it was a quantitative study of the phenomenon and demonstrated the laws governing this interaction. In 1933, Gaddum, together with Schild, was the first to use fluorescence in alkaline solution to estimate adrenaline in solution, a reaction which forms the basis of later fluorescence techniques. Five years later there followed, in collaboration with Kwiatkowski, the discovery that ephedrine in low concentrations sensitizes organs to the action of adrenaline, whereas high concentrations are inhibitory. Theories to account for these actions included that of competition with receptors to explain inhibition. In this, and in subsequent papers, Gaddum was trying to identify the transmitter released from the rabbit's ear on nerve stimulation, and correctly concluded that it probably was adrenaline. In contrast, he suspected noradrenaline to be the so-called sympathin E released from nerves to the liver, and his work with Goodwin, interrupted as a result of the war, stated that this view is compatible, but not convincingly proved, by the experimental results. A few years later, Peart in Gaddum's laboratory was the first to demonstrate the release of noradrenaline on stimulation of sympathetic nerves.

This result was based on preceding work by Gaddum and co-workers, in which the specificity of bioassay was greatly improved by using parallel tests on a number of isolated organs, and by calculating the errors involved in such methods. A further advance was the discovery of the method of "superfusion" by which the sensitivity of certain bioassays is greatly enhanced. In 1957, Gaddum, with M. Holzbauer, wrote a monograph on adrenaline and noradrenaline; his last paper on catecholamines appeared in 1958, when he and Krivoy studied the excretion of these substances after the administration of reserpine. His report at the first catecholamine symposium was on "bioassay procedures."

M. VOGT

## NILS-ÅKE HILLARP

Nils-Åke Hillarp was born in 1916. He defended his thesis at the Medical Faculty of the University of Lund, Sweden, in 1946 and then served as assistant and associate professor there. From 1960 to 1962 he was given a position by the Swedish Medical Research Council, that enabled him to devote himself entirely to research at the Department of Pharmacology, University of Göteborg. In 1962 he was given a call to the chair of histology at Karolinska Institutet, Stockholm. He held this position till his death on March 17, 1965.