Obituary Notice

ELFREIDA CONSTANCE VICTORIA MATTICK (1887-1943)

Dr E. C. V. Mattick (Mrs A. T. R. Mattick) died in Reading on 19 July 1943, after a courageous fight, extending over several years, against a slowly progressing heart lesion. She was the last of the small group of research workers that joined Stenhouse Williams and John Golding (whose recent death we also mourn) at the newly founded National Institute for Research in Dairying, before the outbreak of the 1914-18 war.

Born in Somerset, Elfrieda Cornish was educated at the Merchant Venturers' College and at Bristol University where she graduated in 1910. A well-trained chemist with a growing interest in agricultural problems, she was awarded in 1913 a Research Scholarship by the Ministry (then the Board) of Agriculture—the first Ministry scholarship to go to a woman. It was at this stage that she was posted to the infant Institute, then hardly a year old, and began her work in dairy chemistry and her long association with the Institute which remained unbroken till 1943. She joined the Biochemical Society in 1914. In 1920 she married her colleague A. T. R. Mattick, the bacteriologist, who in 1932 succeeded Stenhouse Williams as Head of the Bacteriology Department of the N.I.R.D.

Her first investigation at Shinfield was concerned with an awkward problem which was causing trouble to Stilton cheese makers, the occurrence of yellow, red and brown discoloration in the finished cheese. Her study of this problem led her almost immediately into the fundamental question of the mode of degradation of proteins by micro-organisms. She later found that products of the breakdown of tyrosine and tryptophan were mainly responsible for the discoloration, and she spent some months in Hopkins's laboratory in Cambridge getting to closer grips with the biochemical changes involved. Much of this work she submitted in 1923 to the University of Bristol in part fulfilment of the requirements for her Ph.D. degree.

In collaboration with Stenhouse Williams she later undertook work on the effect of heat on the nutritive value of milk, then an acutely controversial question. She was able to demonstrate that measurable changes did in fact take place when milk was submitted to relatively mild heating, but the significance of these changes from the stand-

point of nutrition remained obscure. Her experiments with rats on restricted diets eventually showed that there was a small nutritional difference, which she and Golding suspected to be related to vitamin B changes, between raw and 'legally' pasteurized milk. Later investigators have fully confirmed that a slight fall in vitamin B₁ content occurs as a result of such heat treatment.

Dr Mattick, in collaboration with Golding and Mackintosh, carried out very extensive analyses of the milk of a typical herd of normal Shorthorn cows which was maintained on a known dietary for 5 full years. Their figures have provided a most useful normal standard for subsequent workers. With W. L. Little she followed the changes in calcium content of cow's blood at the time of parturition. Their findings, together with those of N. C. Wright, laid the foundation for the present method of prevention and treatment of milk fever.

During the last few years Dr Mattick's work was mainly in three fields—on the extent to which the Ca and P of milk are retained in some types of British cheese at various stages in manufacture and ripening, on the presence and properties of a lipase (tributyrylase) in cow's milk, and (just before and during the present war) on substitutes of vegetable origin for rennet, of which, in the early stages of the war, there was a threatened shortage. She investigated in particular the milk-clotting enzyme present in *Withania coagulans* and showed that excellent cheese could be made by the use, in place of ordinary rennet, of extracts of this Indian bean.

A gifted investigator, willing to pay any price for accuracy, Dr Mattick was also a charming and cheerful personality both in her laboratory and out of it. Until recent years, when her physical disability greatly curtailed any but essential activities, she had taken a full part in living. Lately only grim determination kept her working steadily at her bench till she could work no longer and the end followed soon.

Dairy chemistry, from its small circle of competent workers, can ill afford the loss of one with her wide experience, professional skill, loyalty and courage.

H. D. KAY