If such an impurity were comparable in activity to some of the more recently discovered anti-histamine substances, a concentration of less than 1 part in a million in the streptomycin could produce these effects. However, it seems unlikely that an impurity active in very low concentrations would be present in such constant amounts in all the streptomycin preparations tested. Furthermore, it has been shown[4] that less highly purified preparations of streptomycin have a definite histamine-like action.

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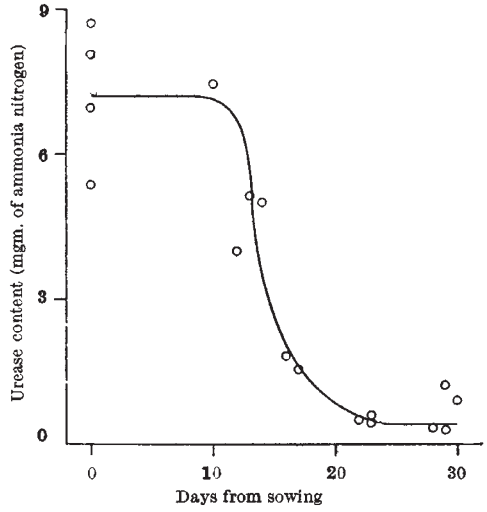
Function of Urease in *Citrullus* Seeds

IT is customary to assume that an enzyme fulfils the function *in vivo* that it exhibits *in vitro*, however surprising the conclusions to which this leads; yet it is frequently overlooked that, were its true function unknown, hæmoglobin might similarly be credited only with its powers of acting as a peroxidase, or absorbing carbon monoxide, neither of which would form a useful basis for a study of the physiology of blood. The extremely high concentration of urease found in a number of seeds is an interesting example of this type of problem; it can, for example, be readily calculated from the results below that the cotyledons of the seed of *Citrullus* (the water-melon) contain sufficient urease to decompose more than their own weight of urea every hour. Moreover, the technique used has been such that this result is almost certainly too low. An extensive literature on the occurrence of urease exists, virtually all of it directed to the production of pure or concentrated urease preparations for kinetic studies or urea determinations; the function of the urease in the seed receives in general no more than a puzzled mention.

I suggest that the urease is present simply as a reserve protein, and that its urea-hydrolysing capacities are, so far as the seed is concerned, completely irrelevant. If this is true, some light might be expected to be thrown on the problem by investigating the fate of the urease when the seed germinates.

Citrullus seeds ('mixed') were sown in soil and the seedlings harvested individually at irregular intervals. No selection was carried out, and germination was distinctly erratic, the seedlings emerging between about the tenth and fifteenth days after sowing. It was ascertained by qualitative methods that all but a trace of the urease present was in the cotyledons, so further investigation was confined to these. The cotyledons of a given seedling were ground up in water and a known quantity of this extract digested



with 3 per cent urea in $M/6$ phosphate buffer at pH 7 for 15 min. at 30° C., the reaction being stopped with saturated potassium carbonate solution and the ammonia determined by aeration into $N/100$ sulphuric acid. The accompanying figure, in which each point represents in arbitrary units the total amount of urease in a single seedling, shows the results obtained. Despite the great variability, the general pattern is clear: on germination, there is a sharp fall in urease content to about one-fifteenth of the amount present in the seed. Since urease is not destroyed in the course of the reaction it promotes, this is incompatible with its enzymatic function; but it is exactly what would be expected if urease, in common with the other reserve material of the seed, were being drawn upon as a reserve protein during the early stages of germination.

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Appearance of *Elminius modestus* Darwin in South Africa

GREAT attention has been directed recently to the occurrence of the barnacle *Elminius modestus* along the south coast of Britain, where it is supposed it has been carried on the hulls of ships from Australia[2]. Prior to 1945, this southern hemisphere barnacle had never been recorded in the northern hemisphere; but in that year Bishop[2] and Crisp and Chipperfield[3] noted it in great numbers at Chichester and Fambridge, Essex. Since then it has spread so rapidly along the south coast of Britain that it is now a potential enemy of the periwinkle and oyster industries[1,5].

Although *Elminius modestus* is reputedly a southern hemisphere species, it appears to be restricted to Australia and New Zealand[4], and up to the present had not been recorded in South Africa. Recently, however (July 1949), on experimental plates kept by Dr. N. A. H. Millard and myself in Cape Town Docks, a single individual appeared on a plate which had been submerged at a depth of 2 ft. for three months. This specimen measured 3 mm. carino-rostrally, and,