THIAMIN AND PLANT GROWTH

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ALTHOUGH several investigators, including R. J. Williams (1920) and Lepeschkin (1924), had reported a favorable effect of vitamin B₁ or thiamin upon plant growth, their crude preparations contained other substances as well as thiamin, and their results could not be accepted as definitive. Indisputable evidence of the importance of thiamin for plants depended upon the availability of the pure compound. Isolated in crystalline form by Jansen and Donath as early as 1926, thiamin did not become generally available until 1934, largely as the result of the work of R. R. Williams and his associates.

Almost at once Schopfer (1934) demonstrated that Phycomyces Blakesleeanus will not grow in a medium of mineral salts, asparagine and sugar unless supplied with thiamin. The demonstration was so striking that further investigations with this organism and with others soon followed until it is now clear as the result of the work of Schopfer, Bonner, Knight and others that thiamin is as necessary in the physiology of plants as it is in the nutrition of animals.

My own interest in thiamin arose from a study of the nutrient requirements of excised roots, initiated in 1917 as the result of a paper by Jacques Loeb in which he suggested that a hormone is concerned in the formation of roots by the leaves of Bryophyllum calycinum. It was my opinion that Loeb had not eliminated sugar accumulation in the leaves as the "hormonal" factor, and the experiments on excised roots were initiated to attack that problem directly. In the twenty years since the original experiments a number of people have been associated with me and through their assistance one aspect or another of that problem and related ones

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