

- LANGER, I., STRÁNSKÝ, P., KUTÁČEK, M.: Differences of cytoplasmic transaminase activity in normal and opaque-2 maize (*Zea mays* L.) seedlings. — *Theor. appl. Genet.* **46** : 19–23, 1975b.
- LOWRY, H. O., ROSEBROUGH, N. J., FARR, A. L., RANDAL, R. J.: Protein measurement with the Folin phenol reagent. — *J. biol. Chem.* **193** : 265–275, 1951.
- MERTZ, E., BATES, L., NELSON, O.: Mutant gene that changes composition and increases lysine content of maize endosperm. — *Science* **145** : 278–280, 1964.
- WIGHTMAN, F., COHEN, D.: Intermediary steps in the enzymatic conversion of tryptophan to IAA in cell free systems from mung bean seedlings. — In: WIGHTMAN, F., SATTERFIELD, G. (ed.): *Biochemistry and Physiology of Plant Growth Substances*. Pp. 275–286. The Runge Press, Ottawa 1968.

BOOK REVIEW

BEWLEY, J. D. (ed.): *NITROGEN AND CARBON METABOLISM*. Proceedings of a Symposium on the Physiology and Biochemistry of Plant Productivity, held in Calgary, Canada, July 14–17, 1980. Developments in Plant and Soil Sciences. Volume 3. — Martinus Nijhoff — Dr. W. Junk Publishers, The Hague—Boston—London 1981. 248 pp., Dfl. 75, US \$ 39.50.

Eight representative papers presented in this book deal with various aspects of nitrogen and carbon metabolism, their interrelationships and interdependence. The editor claims in his brief preface, that the book “is no attempt to provide a comprehensive coverage of the basic physiological knowledge upon which this research depends” but to “highlight various interesting and important lines of research that are in progress”.

The introductory chapter is written by R.G.S. Bidwell who was awarded the Canadian Society of Plant Physiologists Gold Medal in 1979 in recognition of his outstanding published contributions and for his service to plant physiology and the Canadian Society. In his contribution he defines the aim of plant physiologists' research and their responsibilities to the public whose money supports them to make profound and useful discoveries, and refers to some practical implications of the latest results of plant physiological research. The second chapter (J. Rigaud) compares the respective roles of nitrogen fixing and nitrate utilization pathways and determines their relative efficiencies, particularly in relation to the possible improvement of crop productivity at a lower cost. The third chapter (L. E. Schrader and R. J. Thomas) deals with possible ways of improvement of nitrate uptake, assimilation, transport, accumulation, remobilization and reduction. These processes are under genetic control and hence should be able to select those traits for variability and to produce genotypes that are more efficient in the utilization of nitrate N, and in this way also in plant productivity. Many instructive schemes illustrate the fourth chapter (J. S. Pate and D. B. Layzell) on empirical modelling of the carbon and nitrogen partitioning and transport within plant organisms. A logical continuation is the next chapter “Relationships between nitrogen metabolism and protosynthesis” (J. A. Bassham *et al.*) discussing the regulatory effect of low levels of ammonium ion in cell media on shift of biosynthetic metabolism away from saccharides towards some, but not all, amino acid synthesis. Chapter Six deals with the photosynthate limitation in free-living heterocystous blue-green algae as a model for symbiotic N₂ fixation by the *Azolla-Anabaena* symbiosis (K. Andersen *et al.*). D. T. Canvin in the seventh chapter explains the essential links between photorespiration and nitrogen metabolism. The last, most voluminous, chapter is devoted to seed storage proteins in grain of crop plants as a source of dietary amino acids (B. J. Miflin and P. R. Shewry).

The book was prepared and issued within a short time by photoreproduction of the typed text. Unfortunately, the overall good impression is somewhat impaired by strikingly differing types, particularly when used within one chapter. The book will be very useful to all those interested in various aspects of nitrogen and carbon metabolism.

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