

- LOVEYS, B. R., KRIEDMANN, P. E.: Rapid changes in abscisic acid like inhibitors following erasions in vine leaf water potentials. — *Physiol. Plant.* **28** : 476—479, 1973.
- PIATTELLI, M.: Betalains. — In: GOODWIN, T. W. (ed.): *Chemistry and Biochemistry of Plant Pigments*. Vol. 2. Pp. 560—592, Academic Press, London 1976.
- RHODES, M. J. C., WOOLVERTON, L. S. C.: The effect of ethylene on the respiration and on the activity of phenylalanine ammonia lyase in swede and parship root tissue. — *Phytochemistry* **10** : 1989—1997, 1971.
- RUSSEL, D. M.: Metabolism of aromatic compounds in higher plants. X. Properties of cinnamic acid 4-hydroxylase of pea seedlings and some aspects of its metabolic and developmental control. — *J. biol. Chem.* **246** : 3870—3878, 1971.
- SCHNEIDER, M. J., STIMSON, W. R.: Contribution of photosynthesis and phytochrome to the formation of anthocyanins in turnip seedlings. — *Plant Physiol.* **48** : 312—315, 1971.
- SCHNEIDER, M. J., STIMSON, W. R.: Phytochrome and photosystem I interaction in a high energy photoresponse. — *Proc. nat. Acad. Sci. USA* **69** : 2150—2154, 1972.
- VEERANJANEYULU, K., DAS, V. S. R.: Photoacoustic spectroscopy — Leaf absorption spectra. — *J. exp. Bot.* **33** : 515—519, 1982.
- WONG, E.: Biosynthesis of flavonoids. — In: GOODWIN, T. W. (ed.): *Chemistry and Biochemistry of Plant Pigments*. Vol. 2. Pp. 464—521. Academic Press, London 1976.
- ZABADAL, T. J.: A water potential threshold for the increase of abscisic acid in leaves. — *Plant Physiol.* **53** : 125—127, 1974.

## BOOK REVIEW

LYONS, J. M., VALENTINE, R. C., PHILLIPS, D. A., RAINS, D. W., HUFFAKER, R. C. (ed.): *GENETIC ENGINEERING OF SYMBIOTIC NITROGEN FIXATION AND CONSERVATION OF FIXED NITROGEN*. Basic Life Sci. Vol. 14. — Plenum Press, New York—London 1981. 698 pp. US \$ 69.50.

The possibility to clone bacterial genes to be responsible for air N<sub>2</sub> fixation in plants belongs to the main research projects of genetic engineering. The solution of this problem would mean better exploitation of nitrogen by plants, i.e. in increase nutrition value of plant products, and decrease and probably even elimination of N fertilizers. This aim, however, is still very far and it is impossible to predict whether it can be attained. First of all, basic regulatory mechanisms of plant cells and of bacterial genes supposed to be cloned must be understood much better. Another problem is to find a suitable vector for cloning in plant cells. Lot of problems connected with production and use of plant tissue and cell cultures and of cell protoplasts have to be solved. These reasons led to organizing a conference devoted to nitrogen fixation; the conference was held in Lake Tahoe, California, 1981. The aim of this conference was to confront opinions of scientists working in different fields connected in some manner with biological N fixation from atmosphere. It is possible to say that the organizers succeeded in their intention. On the other hand, it has become apparent how much effort it is necessary to exert for basic research of this important biological mechanism.

The editors of these proceedings divided the lectures into five sections. Three short notes are in the introductory section. A. Hollaender briefly summarized the importance and present state of research dealing with ammonia production from atmospheric nitrogen and soil nitrate, and reasons for organizing this conference. Further, there is an overview on financial support organization of N fixation research in the U.S.A. and a short chapter describes the present state of N fixation research at California University (Davis). The second section is devoted to N fixation genetics and regulation, molecular cloning of genes responsible for N fixation, energetics of hydrogen input and genetic regulation of stress tolerance. Factors influencing N assimilation are the topic of the third section. Several methodological works (e.g. estimation of N fixation) are included here. Articles dealing with N fixation by non-legumes are in the fourth section. The last section is devoted to denitrification.

The book as a whole is highly qualified and very useful survey of present knowledge and research trends in the field of N fixation.

J. ŠATAVA (Praha)