

- SCHÖNHERR, J., SCHMIDT, H. W.: Water permeability of plant cuticles. Dependence of permeability coefficients of cuticular transpiration on vapour pressure saturation deficit. — *Planta* **144** : 391–400, 1979.
- SHARMA, M. L.: Contribution of dew in the hydrologic balance of semiarid grassland. — *Agr. Meteorol.* **17** : 321–331, 1976.
- WITTWER, S. H., BUKOVAC, M. J.: The uptake of nutrients through leaf surfaces. — In: SCHARREB, K., LINSE, H. (ed.): *Handbuch der Pflanzenernährung und Düngung*. Vol. 1. Pp. 235–261. Springer-Verlag, Wien 1969.

BOOK REVIEW

HÄNSEL, R.: *PHARMAZEUTISCHE BIOLOGIE*. Allgemeiner Teil — 412 pp., Spezieller Teil — 484 pp. Heidelberger Taschenbücher Vol. 204, 205 (Basistext Pharmazie). — Springer Verlag, Berlin—Heidelberg—New York 1980. Paperback DM 34.— /approx. US \$ 20.10; DM 36.— /approx. US \$ 21.30.

Few pharmaceutical disciplines have experienced such conspicuous changes within this century as pharmacognosy. Originally pharmacognosy was a descriptive discipline, based on morphology and anatomy of vegetable and animal crude drugs and their diagnostics. The at present already classical *Handbuch der Pharmakognosie* (published in 1910–1923) by A. Tschirch, although respecting the diagnostic tradition of pharmacognosy, did signalize the need for a broader and deeper scientific approach as well as an extension by including above—all the phytochemistry and pharmacology. These new trends were successively realized in the pharmacognostic textbooks and handbooks by R. Wasicky (1932), R. Jaretsky (1949), O. Moritz and D. Frohne (1967), E. Steinegger and R. Hänsel (1972), E. Teuscher (1978).

The co-author of Steinegger's *Lehrbuch der Pharmakognosie* R. Hänsel, doubtlessly will have his name inscribed in the development history of pharmacognosy as the author of the new university-grade textbook and valuable handbook of pharmacognosy, justly entitled *Pharmazeutische Biologie*.

The first general part is divided into two sections, dedicated to the biosynthesis of natural substances and to the origin, collection or production, and analysis of vegetable and animal crude drugs. The second special part bears the hallmark of the author's modern and progressive approach, applying the pharmacological system to the classification of the material. Individual drugs are classified with respect not to botanical, organological, or chemical criteria, but to their pharmacodynamic activities. Beginning with drugs acting upon the parasympathetic and sympathetic systems, continuing with analgetics, antiarrhythmics, and other agents, the author includes into his textbook also hormones, vitamins, immunological and antibacterial agents. The best chapters in the special part are dedicated to so-called bases and ancillary substances used in the preparation or industrial-scale manufacture of pharmaceuticals, and finally to the phytopharmacy *i.e.*, a discipline serving not the human and veterinary therapy, but the treatment of plants infested with diseases and noxious organisms. The very treatise on herbicides attests to the author's capacity of objective biological thinking and to his admirable gift to present a concise, but perfect survey of an even very complicated discipline.

In the general part of the textbook we have to appraise some captivating new chapters lacking in earlier pharmacognostic textbooks, *e.g.*, on chemotaxonomy, selection and cultivation of medical plants, or the concise chapter dealing with cell cultures. This chapter demonstrates the author's sense for a concise but still lucid arrangement of the text and inclusion of good illustrations, which offer a better information than a lengthy exposition might do. The author strictly adheres to the pedagogic principle of explanation proceeding from simple to complicated matters, and therefore he succeeded in writing a textbook not easily surpassable. Incomplete information will occasionally be found, of course. For example, about ergot production: inoculation is presently made with special machines, not with inoculation pistols any more; superficial or submersion fermentation of ergot mycelium for industrial production of ergot alkaloids is already real, *etc.*

Rudolf Hänsel's *Pharmazeutische Biologie*, consisting of two parts, excellently printed and graphically arranged, is an outstanding modern textbook and handbook of pharmacognosy. It shows this scientific discipline in dimensions appropriate to its function synthesizing botanical, phytochemical and pharmacological knowledge to so-called pharmaceutical biology. We can look forward to new, systematically revised and updated editions.

F. STARÝ (Praha)