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BOOK REVIEW

ZIMMERMANN, M. H.: *XYLEM STRUCTURE AND THE ASCENT OF SAP*. — Springer-Verlag, Berlin—Heidelberg—New York—Tokyo 1983. 143 pp. 64 Figs. Cloth DM 54,—; approx. US \$ 22.30.

The evolution of dry land plants depended upon the development of water-conducting systems which enabled a sufficient rate of water transport in the soil-plant-atmosphere continuum. Therefore the monograph providing an integrated description of sap ascent very appropriately inaugurates The Springer Series in Wood Science. (A wide scope of this series is proposed: from the structure, chemistry and physical properties of wood, its formation and biodegradation to the utilization of forest biomass.)

The first two chapters are mostly anatomical, the following four mostly physiological, the last one phytopathological. It is very important that through the whole book the accent is laid on the close connection between structure and function.

The first chapter deals with the structure of the main conducting units: tracheids and vessels, and the second with the vessel network in the stems of different plant types. The mechanism of water transport in xylem based on cohesion theory is the main item of the third chapter. The fourth chapter considers velocities of water transport in individual plant parts and also in relation to transpiration of leaves, and the fifth the radial water movement in stem and the adaptation of xylem to different environments. The sixth chapter deals with the ontogeny of conducting tissues and the function of xylem during the year. The xylem blockage due to diseases is the subject of chapter 7.

The name of the author is a sufficient guarantee of the high professional standard of this book. In addition, the information is well presented and readily comprehensible due to readable text and very descriptive figures.

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