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BOOK REVIEW

Anatomy of Seed Plants, 2nd Ed. 1977, Katherine Esau. John Wiley & Sons, Inc., Publishers, 605 Third Avenue, New York, NY 10016. Price $16.95.

The "Anatomy of Seed Plants" is intended primarily for students who have had a relatively limited experience in the study of plants. If one is dealing with plants as do horticulturists, agronomists, foresters, plant pathologists, or ecologists it is important to know what the plant is like and how it functions. This knowledge is obtained by studying the structure of the plant, its development, and its various activities.

The author states that in this interrelationship of sciences, anatomy plays a major role, and that a realistic interpretation of plant functions by the physiologist must rely on a thorough knowledge of the structure of cells and tissues associated with that function. Better understanding of these functions has been enhanced by descriptions of structures of the plants concerned with photosynthesis, movement of water, translocation of food and absorption by roots. The explanation of the success or failure of many horticultural practices such as grafting, pruning, vegetative propagation and the associated phenomena of callus formation, wound healing, regeneration and development of adventitious roots and buds is more meaningful as the structural features underlying these phenomena are properly understood.

The "Anatomy of Seed Plants" has an excellent outline for plant structure, evidence of much thought in its preparation. All phases of development have been expertly outlined, so that a specific reference can be found within a matter of seconds.

The subject matter of this text includes an introduction and chapters on development of the seed plant, the cell, cell wall, parenchyma and collenchyma, sclerenchyma, epidermis, xylem: general structure and cell types, xylem: variations in wood structure, vascular cambium, phloem, periderm, secretory structures, the root: primary state of growth, the root: secondary state of growth and adventitious roots, the stem: primary state of growth, the stem: secondary growth and structural types, the leaf: basic structure and development, the leaf: variations in structure, the flower: structure and development, the flower: reproductive cycle, the fruit, the seed, embryo and seedling.

This is a valuable reference for those who are teaching and doing research with plants. For those who are only interested in growing plants, it reveals the fascinating aspects of plant growth and will provide a better understanding of how plants function.

—Roy K. Simons