REVIEWS

"Botany of Sugarcane" by C. Van Dillewijn

WALTHUM, MASS. : THE CHRONICA BOTANICA Co.

THE publication of this handbook by the Sugarcane Expert of the Food and Agriculture Organization of the United Nations and one-time Director of the Sugar Experiment Station, Cheribon, is an event of considerable significance in the annals of sugarcane research. Investigational work on this crop has been voluminous and scattered, and although regional accounts of certain aspects of sugarcane work exist, the lack of a satisfactory manual which integrated the experience and the experimental results of various countries has seriously handicapped the research worker. Dr. van Dillewijn's masterly monograph fills this hiatus. Not only does this lucid presentation of existing knowledge of sugarcane make it possible for the research worker to see his problems in perspective, but the careful sorting of the material into sections and sub-sections facilitats reference.

Two broad sections are recognized, viz., (1) Morphology and Anatomy, with chapters on the stem, bud, leaf, inflorenscence and root, and (2) Physiology with chapters covering germination, tillering, growth, vegetative and chemical composition, nutrition, water relations, photosynthesis and respiration. The most striking virtues of the book are the lucidity of thought and clarity of diction which characterize every page. The section on physiology which composes the bulk of the book—274 pages out of 332—is particularly ambitious and stimulating. Chapter 7 on germination discusses the influence of environmental factors, preplanting treatments and the use of growth-regulating substances. Chapter 8 on tillering will interest all workers on grasses. Chapter 9 on Growth discusses the conformity of shoot and root growth to Blackman's Compound Interest Law, Van't Hoff's Rule and other formulae. Chapter 12 on Nutrition deals in detail with the rôle of N, P,K, calcium, and trace elements. Chapter 13 covers all aspects of water relations of sugarcane and presents evidence of the plant's curious capacity for absorbing large quantities of water aerially. Chapter 14 on photosynthesis treats exhaustively with sucrose synthesis, translocation, storage and inversion. The only chapters that are somewhat circumscribed in scope are Chapters 10 and 15 on Vegetative Composition and Respiration.

The author preserves a fine sense of proportion in the handling of an amazing mass of information, and in no instance does his own research obtrude unduly. The approach is factual throughout, speculative discussions are curtailed, and the translations of research results to practice receives full emphasis.

The book should prove valuable not only to those interested in sugarcane, but to workers on related crops. The reviewer finds the book helpful in his investigational work with rice. The systematy, cytogenetics, anthesis and breeding of sugarcane are excluded, but these subjects will, of course, find a place in the completed Handbook of Sugarcane of which the volume under review is the first.

The 229 line drawings and half-tone reproductions are uniformly of excellant quality. A list of these illustrations would prove a useful insertion in the next edition. Errors and misprints are refreshingly scarce, and the pleasing format reflects credit on both author and publisher.

M. F. C.

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