Book Reviews


This book is designed as a text to introduce students in agriculture to the forage management practices and problems in the north central and northeastern states. Particularly valuable to the student are the excellent explanations of the reasons for approved practices as they relate to the physiology and morphogenesis of the plant. For example, a clear cut treatment of physical and chemical processes within cells as affected by external environment precedes a discussion of management practices in relation to winter survival of grasses and legumes. In a text of this nature a profound treatment of such matters is hardly possible. Dr. Smith appears to have achieved a happy balance whereby principles are amply illustrated but the student is not borne down with technical terms and concepts with which he may not be prepared to deal. The abundant use of illustrations and tables as well as a comprehensive list of references at the conclusion of each chapter add to the attractiveness and usefulness of the text.

Following a discussion of factors affecting legume and grass establishment, underlying principles concerning management practices are discussed. The application of these is then shown as they apply to the various cultivated legumes and grasses. A rather complete treatment of adapted varieties and the range of their adaptation is included. In general, the organization of the material corresponds to the treatment that might be expected in a course of this nature except in the instance where legume and grass seed production is discussed before the individual grasses are dealt with. Pasteure renovation and management are treated quite adequately in the last part of the book. It would seem, however, that the chapter on range management was added as an afterthought. Even a short treatment of this nature should not be divorced from a discussion of the grass species involved, as it is in this instance. Consideration of the large and important group of wheatgrasses is entirely omitted. For this reason the text will be more useful in the central and eastern states than in the western states of the northern region.—J. G. Ross, Agronomy Department, South Dakota State College, Brookings, S. D.


This volume contains 22 reviews (chapters) by authors selected throughout the world for competence in their respective specialties. The chapters cover a range of diverse phases of plant physiology. Each topic is well documented by literature citations, there being 3604 in all. For ease of reference, a subject index is provided and each author cited in the Volume is included in an alphabetical author index. A cumulative index covering volumes 4-13 gives contributing authors and chapter titles.

The following titles, with authors listed, comprise the content of Volume 13: The present status of the comparative study of photosynthesis, C. B. van Niel; Structure and chemistry of plastids, W. Menke; The ribosomes—ribonucleoprotein particles, P. O. P. Ts'o; Mineral analysis of plant tissues, P. F. Smith; Roots nodules, M. Raggio and N. Raggio; Urea, ureides, and guanidines in plants, H. Reinbothe and K. Mothes; The path of carbon in photosynthesis, M. Stiller; Leaf respiration, G. Ducet and A. J. Rosenberg; Metabolism of sulfate: Sulfate reduction, L. G. Wilson; Lipid metabolism, L. P. Zill and G. M. Cheniae; The physiology of ethylene formation, S. P. Burg; Synthesis of polysaccharides of higher plants, H. K. Porter; Ascorbic acid metabolism in plants: Part II. Biosynthesis, F. A. Isherwood and L. W. Mapson; Internal water relations of higher plants, R. O. Slater; ion transport and electrical potentials in plant cells, J. Dainty; Longevity of plant organs: Internal factors controlling abscission, W. P. Jacobs; Seed germination, D. Koller, A. M. Mayer, A. Pujakoff-Mayber, and S. Klein; Primary effects of light on growth, H. Mohr; Aspects of aging in plants, K. Sax; Developmental physiology of lower archegetiates, U. Näf; Tumor inception and development in the crown gall disease, A. C. Braun; Respiration of the diseased plant, A. Miller and K. J. Scott.

Agronomists will find this volume to be an invaluable aid in keeping abreast of the voluminous literature on the topics included.

—HORTON M. LAUDE, University of California.


This concise annual report is of interest to individuals in various aspects of crop improvement including breeding and physiology. Phases covered in summary form include breeding of grasses, legumes, cereals, field beans, and crucifer fodder crops. Other reports are entitled "Developmental Genetics, Grassland Agronomy, Seed Multiplication, Plant Pathology, Chemistry, Cytology". Seven papers, individually authored, cover current research in greater detail. Topics discussed include forage quality, environment and animal production, seed production, cytological unbalance resulting from selection and plant collection in Portugal. There are descriptive notes of three forage grasses and two oat varieties. A list of publications concludes the report.—PAUL N. DROLSOM, University of Wisconsin.