team in India. This book is designed to serve primarily as a text for first or second year students in Indian agricultural colleges. It is simply written. A minimum of preparation in chemistry and other basic sciences is assumed and a minimum is introduced in the text itself. This is probably advisable. As a result it is less rigorous than the average introductory college textbook. This report is roughly 24 chapters and deals with specific problems and species in soil management: the nature of the soil and the climatic cycles, soil testing, tillage, the role of organic matter, green manuring, fertilization, weed control, crop rotations, irrigation, drainage, and water use. The remaining chapters deal with the specific problems which arise in managing soils for each of the more important crops grown in India—rice, wheat, the millets (maize is included here), sugar cane, cotton, tobacco, oilseed, pulses, grasslands, coconuts, arecanuts, tea, coffee, rubber, fruits, vegetables, and jute. The authors have drawn their information largely from Indian publications. There is naturally and unavoidably considerable repetition especially in the last 11 chapters, for, after all, there are many principles of soil management which are applicable to many crops.

To one unfamiliar with Indian soils or agriculture, it gives a true impression of the wide range and diversity of each. While the average yields of most crops obtained in India are among the lowest in the world, there seems to be evidence, scattered but convincing, that modern scientific methods can be adjusted to the various soil and climatic conditions, yields can be raised from 2 to 4 times present levels. This book should be of real help in the struggle toward these goals. It contains in appendices (1) vernacular names of common Indian crops, (2) conventional factors for the various units of measurement used in different parts of the country and (3) definition of terms commonly used in the soil science literature. These appendices should enhance the value of the book as a reference especially to readers outside of India.—RICHARD BRADFORD, Cornell University.


This is a series of papers on the role of potassium in forage plant production given at Vienna under the chairmanship of Prof. Dr. L. M. Kopecz. These papers were presented by European authorities and hence provide a good opportunity to become better acquainted with the thinking of these scientists. Considerable stress is placed on the effect of potassium on the species composition and quality of the forage.

The titles of the papers are as follows: The study of plant associations in grassland with respect to planning of farm production; The use and misuse of potassic fertilizer applications on grassland; Influence of potassium applications on production status and the composition of grassland; Influence of potassium fertilization on the chemical composition and the nutritive value of herbage crops; Influence of potassium fertilizer on annual production from pasture; The potassium nutrition of grassland grazed by sheep; the use of potassic fertilizers on grassland in temperate humid regions; Potassium fertilization of grassland in alpine and subalpine regions; Potassium fertilization of grassland in the Mediterranean region; Potassic fertilization of irrigated grassland under intensive cultivation; The basis of Austrian agriculture in relation to the use of fertilizers; Potassium supply of Austrian soils and soil analysis in Austria; Fertilizer applications and crop rotations; The Austrian Fertilizer Advisory Department—a new form of fertilizer advisory service. Two of the papers are in English and summaries of all papers are given in four languages, including English.—WERNER L. NELSON, American Potash Inst., Lafayette, Ind.


This is the fourth report on the nature of species (I-1940, II-1945, III-1948) relating to ecologic, evolutionary, and genetic studies with wild plant species growing in California and nearby regions. The first part of this book reports on the species of Potentilla glandulosa and crosses among them. This is a perennial diadoph species with 7 pairs of chromosomes. Although there is considerable morphological variation and a wide range of ecologic associations with P. glandulosa, loss of P. glandulosa, crosses among the races are highly fertile. Three chapters are devoted to studies with P. glandulosa describing the ecological races, the genetic analysis of segregating generations among several crosses at one environment, and the responses of different races, F1 hybrids, and individual F1 plants in different climates.

Chapter IV discusses systems of genes which control certain characters and their significance in environmental adaptation and evolution. This chapter comprises over 3/4 of the written text and reviews the pertinent literature concerning the interrelated genetic and the ecological studies on wild species.

The final chapter represents the concepts of the authors concerning basic ideas about the genetic structure of naturally occurring evolutionary entities. In their analysis of natural species they have concluded that the gene systems involved are primarily postgenic or multiple kinds of moderate complexity. They are one of four principle kinds: additive, epistatic, oppositional, or complementary genes. The experimental procedures were such that analysis dealt primarily with major gene entities and were not precise enough to differentiate other gene actions.

The study of "genecology", perhaps first defined by the work of Turresson in Sweden (1922) and up to the present publication by Clausen and Hiesey, which they refer to as "ecological genetics," has not received the proper attention of workers in applied genetics, i.e., plant breeding. The plant breeder is attempting to direct the evolution of economic plants toward better adapted types for specific environments. The study of naturally occurring species does provide basic concepts and a framework of thinking about such problems. This book is good reference material for students in plant breeding, particularly the discussions in chapters IV and V, and the literature citations related to the field of ecological genetics.—E. G. HEYNE, Kansas State University.


This conference, held at San Francisco, Calif., April 29-30, 1959, was sponsored by the American Society of Civil Engineers, American Society of Agricultural Engineers, and Soil Science Society of America in cooperation with the U. S. National Committee, International Commission on Irrigation and Drainage. Widely recognized authorities are included among the authors of the 26 papers published in this proceedings. Of special note are the following papers and authors: Effect of climate on irrigation agriculture, W. D. Criddle; Watershed management in relation to water yield—snow pack, vegetation management, phreatophytes, H. W. Anderson, R. H. Burge, and C. B. Thompson; Useful life of reservoirs, C. B. Brown; Ground-water storage basins, H. E. Thomas; Reduction of evaporation losses, G. E. Harbeck, Jr.; Maintaining water quality, M. Fireman; Selection of crops for water-deficient areas—breeding and management, C. A. Suneson and F. J. Viehmeyer; Crop-rotation practices for best water use, C. O. Stanberry; Plant disease, insects and weeds, J. W. Oswald, R. F. Smith and A. W. Harvey; Soil classification, R. E. Stone; Soil fertility, F. G. Viets; Soil structure and infiltration rates, M. Houghton; Salinity hazards, I. A. Richards and H. E. Hayward; Hydraulics of irrigation water, V. E. Hansen; and Drainage, C. R. Maierhofer. This is a fine contribution to the literature on irrigation agriculture and has world-wide application.—R. DINAUER.


This report contains the papers read and the main points of the discussions held during the Conference on Supplemental Irrigation which was organized by Commission VI of the International Society of Soil Science and held in Copenhagen, Denmark, June 30-July 4, 1959. An introduction is given by C. van den Berg, president of Commission VI. Topics included among 17 papers are: climatic aspects of supplemental irrigation, calculation of potential evapotranspiration, water deficiencies in Europe, water balance as a basis for irrigation research, statistical analysis of differences between precipitation and evaporation in the Netherlands, soil science and sprinkler irrigation, effect of soil moisture on the growth and yield of vegetable crops, time of sprinkling as determined by growing stage of the crops, irrigation with seawater, irrigation of coastal areas with seawater, supplemental irrigation, and sprinkler irrigation in desert sandy soils of Egypt. Irrigation specialists and climatologists will be interested in this report.—R. DINAUER.