Soils of South Africa: Their distribution, properties, classification, genesis, and environmental significance

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This book opens with a brief description of the unique binomial South African classification system which originally divided all soils into soil Forms based largely on morphological characteristics recognizable readily in the field. These Forms were further subdivided into Series based on texture, structure, physical, and chemical properties. To conform to other international classification systems which have a small number of Orders or Reference Soil Groups, Fey reorganized the 74 soil Forms into 14 soil Groups (Organic, Humic, Vertic, Melanic, Silicic, Calcic, Duplex, Podzolic, Plinthic, Oxidic, Gleyic, Cumulic, Lithic, Anthropic) based either on a distinctive topsoil or subsoil horizon. Placing a particular soil in a soil Group is arrived at by a process of elimination, proceeding through the Groups until the defining characteristic is reached. The Forms are now subdivided into Families and then Series. To facilitate the placing of a given soil in its correct place in the classification, he has developed an extensive array of Keys in tabular form. He has provided the reader with a series of maps which locate the soil Groups geographically together with estimates of abundance within land types. Because Fey has a great facility with words, the reading of relatively dry classification material becomes quite enjoyable, a very nice touch. He has achieved this by inserting here and there interesting tidbits of useful information which keeps the reader’s attention.

In Chapter 2, he has devoted a separate section to each of the soil Groups in which he discusses the morphological, chemical, and physical properties, classification, genesis and use of the soils. The discussion on soil genesis is referenced to the original research that was conducted. This chapter is illustrated prolifically with stunning photos of the soils and the landscapes in which they occur. He also provides in tabular form, the approximate placement of the various soil Forms in international classification systems. Soil quality as it relates to land use and ecology is discussed in detail. From time to time, he has inserted explanatory boxes in the text in which the phenomena or relevant to a particular soil Group are investigated. These in large measure are very informative, helpful to the reader, and to being a delight to read.

A unique feature of this book is Chapter 3 dealing with animals in soil environments, where he has composed (largest group of Khoikhoi (ˈkɔɪˌkɔɪ; “people people” or “real people” who live along the west coast of South Africa) wildlife) psalms as the link with Chapter 2. These psalms, in the most eloquent language the interactions between processes of soil genesis and the actions of animals both large including man giving this volume a truly literary aspect, something to be enjoyed even by non-soil scientists. The fully illustrated chapter containing astounding photos from elephants to termites describes the important role that animals have played the development of soil. Few books on soils have ever paid attention to this aspect of soils.

In Chapter 4, detailed and complete tabulations of soil chemical and physical properties are presented together with descriptions of typical profiles for each soil Group, highlighting points of interest and interpretation. These data are useful resources for intending users.

At the end of the book, the appendix contains methods of soil description and analysis followed by an exhaustive list of references, a glossary describing all the diagnostic horizons used in the system and an extensive index.

The prose used in this book is eloquent and succinctly facilitating the digestion of the material it contains. This condition to being an essential textbook for libraries and pedology in South Africa, this volume is a must read for those in Southern Africa dealing with soils (soil scientists, ecologists, environmental scientists and planners) and would be a very useful resource for others all over the world. I highly recommend it!