

non-professionals" (Quart. Rev. Biol. 74:74), "...invaluable to anyone..." (Acta Paediatr. 87:1211), "this manual is by far the best I have used" (HortScience 33:1274), "this book is very up-to-date" (Annals Int. Med. 130:168), "...an outstanding compendium of genetics" (Choice 36:1563, Nov. 1998).

J. SUTKA

Nyle C. BRADY and Ray R. WEIL: The Nature and Properties of Soils. 12th edition (1998) Prentice Hall, Upper Saddle River, New Jersey. ISBN: 0-13-852444-0

A fundamental knowledge of soil science is a prerequisite for meeting the many natural resource challenges that will face humanity in the 21st century.

The authors dedicated their book "... to all the students and colleagues in soil science who have shared their inspirations, camaraderie, and deep love of the Earth". In the Preface they expressed their opinion that soil provides an ideal system in which to observe practical applications for basic principles of biology, chemistry and physics and these principles can be used to minimize the degradation and destruction of one of the most important natural resources: *soil*. Consequently, the study of soils can be both fascinating and intellectually satisfying.

The publication of the twelfth edition marks the seventy-seventh year in which this classic book has helped inform and educate readers. It is the most widely adopted and read book on *soils* in the world. Hundreds of thousands of students in many countries have used it to launch their professional careers or merely to learn about soils as a *natural resource*.

In this new edition the main concept was to summarize the fundamental principles of soil science: to introduce soils, and to describe and explain their nature, physical, chemical and biological characteristics, formation and degradation processes (mass and energy regimes; transport, abiotic and biotic transformation) in a clearly understandable and richly illustrated manner. Particular emphasis was given to interactions between the soil and other components of forest, range, agricultural, wetland and constructed ecosystems. Environmental

applications, management problems and human impact on soils were also discussed and presented.

The book includes 20 chapters, as follows (the four numbers following the title are: number of pages; "boxes"; tables; figures):

1. The soils around us (28; 3; 2; 26).
2. Formation of soils from parent materials (42; 4; 1; 35).
3. Soil classification (46; 10; 1; 29).
4. Soil architecture and physical properties (54; 11; 5; 42).
5. Soil water: characteristics and behavior (42; 7; 3; 38).
6. Soil and the hydrologic cycle (52; 8; 0; 45).
7. Soil aeration and temperature (42; 7; 2; 31).
8. Soil colloids: their nature and practical significance (36; 8... 2; 21).
9. Soil reaction: acidity and alkalinity (35; 1; 4; 30).
10. Alkaline and salt-affected soils and their management (26; 7; 3; 15).
11. Organisms and ecology of the soil (42; 7; 1; 28).
12. Soil organic matter (45; 8; 4; 27).
13. Nitrogen and sulfur economy of soils (49; 13; 4; 30).
14. Soil phosphorus and potassium (45; 9; 2; 34).
15. Micronutrient elements (27; 7; 0; 19).
16. Practical nutrient management (56; 17; 2; 36).
17. Soil erosion and its control (55; 16; 1; 38).
18. Soils and chemical pollution (36; 15; 1; 18).
19. Geographic soils information (29; 4; 1; 18).
20. Global soil quality as affected by human activities (27; 16; 0; 14).

The content of the 20 thematic chapters is supplemented by 3 *Appendixes* (A. U. S. Soil Taxonomy suborder map and legend; B. Canadian and FAO soil classification systems; C. SI unit conversion factors and periodic table of the elements); by a 35-page *Glossary* (containing the exact definition of 750 technical terms); and by an 18-page *Subject Index*. The clear index and glossary definitions are extremely helpful in teaching, in scientific discussions and

publications (to avoid misunderstandings and misinterpretation) and in the precise translation of English soil-related technical texts to other languages.

The main value of the book is the excellent and logical *structure*. The typography of the text makes the content clear, precise and easily understandable, with carefully and properly selected emphases. It is considerably helped by the 39 "boxes" that present either fascinating examples and applications or technical details and calculations. The 178 tables are informative, clear, not over-complicated and support the information, statements and conclusions in the text. The excellent illustrations, figures, photographs (altogether 575!) and the 35 colour plates represent unique value. All are selected well, constructed logically and prepared clearly, and their content is convincing and self-explanatory, making the whole book easily understandable: clear statements, convincing conclusions. The

illustrations could be extremely useful in teaching, education and "popularisation" programmes in soil science and related subjects, giving useful and attractive guidelines for both students, teachers and university professors. The 1–2 page concise summaries (conclusions), 10–15 study questions, and the references (25–30 titles) at the end of each chapter represent considerable additional help in these activities.

The book is a huge and valuable information source, an excellent guideline and an exciting and enjoyable read for all "... who have shared their inspirations, camaraderie, and deep love of the Earth", as was expressed in the authors' introductory dedication. Let us hope that the book reaches a great number of specialists and "soil lovers" and successfully fulfils its "mission": to convince more and more members of human society of the particular significance of this multifunctional medium of natural resources: the *SOIL*.

G. VÁRALLYAY