

ANTARCTIC SOILS AND SOIL FORMING PROCESSES. Edited by J. C. F. Tedrow. *Antarctic Research Series, Volume 8. Washington: American Geophysical Union of the National Academy of Sciences-National Research Council. Publication No. 1418, 1966. 8 x 11 inches. ix + 177 pages, graphs, charts. \$10.00.*

The volume *Antarctic Soils and Soil Forming Processes* consists of six papers covering the subjects of antarctic geomorphology, climate, patterned ground, terrestrial vegetation, soil microbiology, and soils. The 177 pages of text are well illustrated with an abundance of photographs and diagrams, and contain many tables of data collected during the early 1960's. Each paper is complete in itself, but all bear, in various degrees, upon the volume's theme of antarctic pedology.

The first paper, by R. L. Nichols, is entitled "Geomorphology of Antarctica." It is a well-documented and well-illustrated review of the literature and the author's own observations up to 1964. The major subjects discussed include Paleozoic and Tertiary glaciations, Quaternary multiple glaciations, interglacial and glacial features, deglaciation, glacial and subglacial topography, the continental shelf, dry valleys, elevated marine surfaces, periglacial features, the influence of wind and running water, lakes, and thermal data. This comprehensive presentation is a functional introduction to the geological understanding of antarctic soil materials. The second paper, "The Antarctic climate," by W. S. Weyant, discusses: (1) the general climate of the continent, including the radiation and water budgets, temperature regimes, storm tracks, and climatological zones; and (2) local climatology of ice-free areas, with particular reference to soil thermal regimes. The next paper, "Preliminary measurements of growth of nonsorted polygons, Victoria Land, Antarctica," by T. E. Berg and R. F. Black, provides a detailed account of the application of patterned ground to the dating of recent geomorphic surfaces. Included in this significant report are discussions on nonsorted polygons, types of wedges, evaluation of the technique of wedge-growth measurements, and site descriptions.

The next two papers are on biological subjects. E. D. Rudolph in his paper,

"Terrestrial vegetation of Antarctica," describes the predominance of lichens, algae, mosses, and fungi and the lack of seed-producing plants, the differences between micro- and macro-climate, and experiments in growing flowering seed plants. In the paper by W. L. Boyd, J. T. Staley, and J. W. Boyd, "Ecology of soil microorganisms of Antarctica," an extensive survey is made of the microbial types in soil habitats. Included in the paper are discussions of food chains, occurrence of bacteria and molds in various environments, results of experiments on factors limiting microbial growth, physiological groupings, and studies on transmission and viability of microorganisms.

The last paper, "Antarctic soils," by J. C. F. Tedrow and F. C. Ugolini, briefly reviews the climate, geology, and weathering processes of Antarctica and discusses soil formation and classification of soil conditions encountered in the ice-free areas of the continent.

The papers included in this volume are all important contributions to their respective disciplines. Although the book was published in 1966, most references are dated before 1964. Therefore, some two to five years of additional data are now available by the same authors and others on the subjects covered. The title may be somewhat misleading, although students of pedology will recognize that the first five papers contain many elements on the concepts of soil genesis: time, parent material, vegetation, climate, and relief. The final paper, although brief, introduces the concept of antarctic pedology, a subject which has since received additional attention by investigators in various disciplines.

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ATLAS ANTARKTIKI (ATLAS OF ANTARCTICA). *Volume I. Moscow-Leningrad: Main Administration of Geodesy and Cartography, 1966. 15 x 23 inches, 16-3/4 lbs. xxiii + 225 pages. 30 roubles.*

The first volume of this atlas contains maps, diagrams, tables, graphs, and air-