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RECENT BOOKS

CLAY IN ENGINEERING GEOLOGY, by Jack E. Gillott. Published by Elsevier Publishing Company, Amsterdam, London and New York, 1968, xvi + 296 pp., \$21.50

Clays, their classification, origin, composition, physical chemistry, moisture interaction, strength, elasticity, plasticity, viscosity, and other properties are comprehensively and definitively treated in this text devoted to the importance of clays to engineering geology. The concluding chapters deal with mineralogical, physical, and engineering analysis methods of clays and soils. The stated purpose of this book is to introduce geologists and mineralogists to soil mechanics and the terminology in this field, and

to introduce engineers to the geology and mineralogy of clays. It presents a valuable summary of the present knowledge of clays in comprehensible and readable style.

MIGMATITES AND THE ORIGIN OF GRANITIC ROCKS, by K. R. Mehnert. Published by Elsevier Publishing Company, Amsterdam, London and New York, 1968, x + 393 pp., \$26.00

This volume deals primarily with the petrography and genesis of migmatites. Such rocks are widely distributed in the crust, but their nature, origin and great importance to the theory of petrogenesis have been recognized only recently; no previous textbook

restricted to these complex rocks has been published. Discussion of megascopic structures and microfabric of migmatites is followed by consideration of experimental petrochemistry, geological thermometry, migration of mobile components within the crust, and the geochemistry of granitic rocks. In the concluding section, the theories of origin of granites and migmatites are explored, including magmatic formation, anatectic formation, and metasomatic formation of granitic rocks. Numerous photographs and drawings illustrate the conspicuous penetrating structures of migmatites. In the appendix, the complicated terminology of migmatites is summarized with definitions of the terms used currently in migmatite nomenclature.

A PETROGRAPHY OF AUSTRALIAN IGNEOUS ROCKS, by Germaine A. Joplin. Published by American Elsevier Publishing Company, Inc., New York, 1968, xiv + 214 pp., \$8.50

Following discussions of classification and nomenclature, the igneous rocks of Australia are systematically described and illustrated by petrographic micro-drawings selected as typical examples of Australian rock types. The rocks are arranged according to type of magma so that suites of rock types related in origin rather than composition are together. Tables for identification are included.

A PETROGRAPHY OF AUSTRALIAN METAMORPHIC ROCKS, by Germaine A. Joplin. Published by American Elsevier Publishing Company, Inc., New York, 1968, x + 262 pp., \$12.50

This book treats the Australian metamorphic rocks in a manner similar to that in the companion volume described above. It begins with discussions of metamorphic processes, nomenclature and classification, followed by description of Australian metamorphic rocks arranged according to their mode of origin. Thirty-five tables of chemical analyses and 191 petrographic micro-drawings of rock types are included.

BASALTS: The Poldervaart Treatise on Rocks of Basaltic Composition, edited by H. H. Hess and the late Arie Poldervaart. Published by Interscience Publishers (John Wiley & Sons), New York, London and Sydney, 1967-1968, vol. 1, xvi + 482 pp., index, \$22.00; vol. 2, viii + p. 483-862, index, \$22.00

The basaltic rocks are the most widespread type of igneous rocks. This work, the first comprehensive treatise on basalts, was planned and organized by Arie Poldervaart before his untimely death in 1964. Poldervaart asked Harry H. Hess to take over the work of editing the contributions of the 22 authors which appear in the finished volumes, if he did not survive to see them completed.

Volume one deals with the forms and structures, mineralogy, petrography, and geochemistry of basaltic rocks, the silicate systems, and the effects of high pressure, water and oxygen pressures on crystallization of basaltic magmas. The second volume considers physical properties of basalts, cooling and solidification, spatial relations in island arcs, rhythmic and cryptic layering in plutons, differentiation of basalt magmas, andesites, spilites, eclogites, metamorphism of mafic rocks, and concludes with the origin of basaltic magmas.

MINERAL SPECIMENS, edited by C. J. Morrissey. Published by American Elsevier Publishing Company Inc., New York, 1968, 210 pp., \$18.00

Mineral Specimens is a handsome atlas of full color photographs of 100 natural minerals, each with a page of descriptive information, listing composition, crystal habit, physical and optical properties, identifying features, occurrence and uses. Only specimens showing the typical appearance were chosen to illustrate each mineral; those presented were selected for their economic importance, importance as constituents of rocks, or spectacular appearance. The simplified presentation should be of interest to the amateur collector as well as to the professional geologist and mineralogist. —H.C.S.