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Geología - una visión moderna de las Ciencias de la Tierra, by Fernando Bastida, 2005. Ediciones Trea S.L., Maria Gonzalez de Pondala, 98, Nave D, E-33393 Gijon, Spain. Soft cover. Two volumes. Volume I: 974 pages; price EUR 75.00; ISBN 8497041674. Volume II: 1035 pages; price EUR 75.00; ISBN 8497042026.



This impressive book (24.1x17.1cm), published in two volumes, provides an overview of the earth sciences. It discusses the state-of-the-art in general geology and is arranged in an encyclopedic style. The different subjects are first presented from a general perspective, then more specifically, taking into consideration educational and methodological aspects. Fernando Bastida, the author, draws for the purpose upon his thirty years of experience at the University of Oviedo.

Bastida has arranged the book in different parts in order to facilitate reading. Each part considers general aspects and is divided into specific subjects, and includes references. Volume I comprises the first five parts and contains, at the end, an alphabetical index (26 pages), whereas Volume II is built of the four remaining parts and has also an alphabetical index (15 pages).

After the 30-page Introduction, the first part provides a general view of the Earth (in 141 pages) that deals with nine subjects (Earth - general characteristics; Terrestrial gravitation field; Stress and deformation; Earthquakes in the interior of the Earth; Pressure in the Earth's interior; Terrestrial heat; Terrestrial magnetic field; The chemical composition of the Earth; Meteors and climate).

The second part deals with crystallography and mineralogy, with four subjects occupying 177 pages (Concepts in crystallography; General mineralogy; Description and classification of minerals; Thermodynamic considerations; Mineral equilibrium phases).

The third part, on petrology of igneous rocks, is divided into five subjects (Basic techniques of work in geology; General concepts of petrology; Texture, structure and classification of igneous rocks; Origin and evolution of magmas; Description and origin of the main igneous rocks). This part has a total of 123 pages.

The fourth part, which is dedicated to stratigraphy, paleontology and sedimentology, is divided into nine subjects, which are dealt with in 349 pages (Concepts and basic processes in stratigraphy and sedimentology; Sedimentary rocks; Sedimentary structures; General principles of paleontology; fossil systematics; Techniques of work in stratigraphy and sedimentology; Continental sedimentary environments; Deltas and transitional sedimentary environments; Marine sedimentary environments).

The fifth part is devoted to the petrology of metamorphic rocks and to time in geology, with special emphasis on absolute dating methods. Three subjects are detailed (General concepts regarding metamorphism; Metamorphism of the main groups of rocks; Measurements of time in geology: methods of absolute dating), with 149 pages in total.

The sixth part deals with tectonics and structural geology and has sixteen subjects. It consists of 450 pages that are devoted to: Structural geology; Basic geometric techniques; Analysis of finite deformation; Measurements of rocks' internal deformation; Flow and progressive

deformation; Rheologic models; Rock fracturing; Rocks in the Earth's crust: rheologic behaviour; Deformation mechanisms; Regions constituted by parallel and flat strata; folds; Fractures; Faults and joints; Tectonic foliations; Shear zones; Boudinage, diapirism and impact structures; Superimposition of structures; Global tectonics).

The seventh part covers the concepts of regional and historic geology, with especial emphasis on orogens. Its 167 pages comprise six subjects (Comparative tectonics; Orogenic processes; Origin and early evolution of the Earth; The Earth during the Precambrian; Caledonian and northern Appalachian ranges; Variscan-Uralian-southern Appalachian ranges; Active collision ranges: the Alpine-Himalayan system).

The eighth part, which is devoted to hydrogeology and geomorphology, is also divided into nine subjects (Hydrogeology: basic concepts; Weathering of soils; Fluvial geomorphology; Glacial geomorphology; Morphology and slope processes; Periglacial regions, desert, equatorial and intertropical areas: geomorphological processes; Karst morphology; Geomorphology of regions constituted mainly of igneous rocks; Coastal geomorphology) that cover a total of 239 pages.

The ninth part deals with applied geology and is divided into three subjects (Geology of petroleum deposits; Mineral deposits; Environmental geology) in 115 pages.

Finally, an appendix covering the various types and applications of main mathematical concepts is included (56 pages). This appendix is not only valuable because it facilitates the comprehension of some complex subjects, but also because it largely enhances the quality of the work.

My impression is that the book is comprehensive and well organized. The parts and the subjects vary in length as a result of the degree of detail in which these subjects are treated. Given the specialism of the author, it is understandable that some subjects - such as the petrology of igneous rocks and structural geology - receive more attention and are more detailed than others. Most of the subjects have, however, been reviewed by different specialists, which has enhanced the quality of the book.

Both Fernando Bastida and Ediciones Trea are to be congratulated on producing this mammoth work. Its presentation in two volumes and its considerable weight (4.4 kg) exclude its use in the field. Nevertheless, it should prove very helpful as a reference book in public and private libraries. Despite the existence of some misprints and some incomplete figure captions, the elegant typography, the good figures (the majority in colour) greatly enhance the quality of the book. I believe that this heavy and complete work, written in clear and concise Spanish, will be of great value to students and graduates as well as to all persons interested in the general earth sciences, especially geology. This admirable book, in which a sweeping panorama of the earth sciences is presented, with special emphasis on specific aspects, provides a long-needed enrichment of the Spanish geological literature.

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