Book Review

Volcanoes: Global Perspectives, by John P. Lockwood and Richard W. Hazlett, Wiley-Blackwell, 2010;
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This textbook has its sources in the classic volume of “Volcanoes” (Prentice-Hall, 1972) by too-early passed Gordon Macdonald. Initially, the intention of Lockwood and Hazlett was to update and refresh the Macdonald’s book, following his plans for a second edition. However, as the knowledge in volcanology grew faster than the new text increased, the idea of the second edition turned toward a completely new book, in which only a little (but still) of Macdonald’s legacy remained.

The book by J. P. Lockwood and R. W. Hazlett, eye-witnesses of volcanic events in many places, is a comprehensive review of the current knowledge on fundamental processes of volcanic activity of the Earth. If compared to Macdonald’s times, our understanding of the nature of volcanism greatly increased due to substantial progress in submarine volcanism recognition. Submersible vehicles, working on the oceanic floor, along with new side-scan sonar imaging and submarine research drillings, changed our views on a global dimension of volcanism. Space missions additionally shed new lights on volcanic eruptions that took place on other planets of the Solar System. Collected together, these new outcomes make a solid justification for a new volume on volcanism and its role in the geosystem. Lockwood and Hazlett have written their volume at a right time, providing us with an excellent, easily written guidebook on the external evidence of the endogenic processes taking place in our planet, not without

impressive discussions on the environmental issues and on a fate of the human society in a confrontation with the realm of Hades.

The book is organized in five parts, each part having separate chapters. Part I contains one chapter and is an introduction, presenting some basic terminology, a history of volcanology, as well as introducing the reader to a basic discrimination between “grey” (explosive) and “red” (effusive) types of volcanic eruptions. Part II, titled “The Big Picture”, contains three chapters devoted to plate tectonics and volcanism relationships, the nature of magma, and the physical properties of magma. Discussed are processes along plate boundaries, magma melting, temperature rheology, chemistry and conditions standing behind the magma eruption. Part III deals with volcanic eruptions and their products. In four chapters, different approaches to volcanic eruption classifications, and a nature of effusive and explosive volcanic eruptions and their products are explained. The last sub-chapter includes a closer look at large-scale Plinian explosive eruptions, discussing their size, dynamics, pyroclastic density currents, directed blasts and the super-eruptions that face civilization in the future. Part IV presents volcanic landforms and settings. Subsequent chapters describe constructional (positive in a sense of topography) landforms on the example of the large igneous provinces (LIPs), shield and composite volcanoes, and a history of the old volcanoes extinction by erosion. Topographically negative volcanic landforms are described in the following chapter. Mass-wasting processes and products are the subject of the next chapter, and Part III ends with the chapter devoted to submarine and subglacial, as well as

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extraterrestrial volcanoes. Part V is devoted to humanistic volcanology, the term coined by Thomas Jaggar, founder of the Hawaiian Volcano Observatory. In this part the applied interfaces between volcanic activity, global ecology and human society are summarized. In three chapters of Part V the authors deliberate on links between volcanoes and life, climate and human history, strongly dependent on volcanic activity both in economic and social dimensions. An epilogue on the future of volcanology ends the volume.

The volume contains excellent graphics, unique color photos of more than 300 in number, as well as informative tables, one of which lists the 141 volcanoes, their names, localities and genetic types. Each chapter ends with advised further reading, and topic

questions for thought, study and discussion. The book includes an index and a color map of volcanoes worldwide.

Volcanoes will satisfy everybody interested in this fascinating topic, but most of all this textbook is written for volcanologists, and advanced undergraduate and graduate students in Earth sciences. Students and lecturers will be supported by website at www.wiley.com/go/lockwood/volcanoes.

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