



Journal of Sedimentary Research

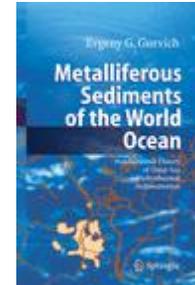
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Metalliferous Sediments of the World Ocean—Fundamental Theory of Deep-Sea Hydrothermal Sedimentation, by Evgeny G. Gurvich, 2006. Springer-Verlag, Tiergartenstrasse 17, 69121 Heidelberg, Germany. Hardcover, 416 pages. Price USD 159.00. ISBN 3-540-27869-9.



It was in the 1890s that, after the first oceanographic expedition of H.M.S. *Challenger* (1872-1876), a report by J. Murray and A.F. Renard on deep-sea deposits described for the first time sediments with high Fe and Mn content. These unusual sediments, called afterwards “metalliferous,” received almost no attention during the following 100 years. Marine geologists rediscovered them in late 1960s after detailed investigation of the Red Sea deeps and East Pacific Rise sediments.

The first summary on metalliferous sediments was published in the early 1970s by K. Boström. Since then, a vast amount of literature has accumulated as a result of the tremendous progress in this field, but the information is scattered and not always accessible. Several books on submarine hydrothermal activity have seen the light. They focus mainly on hydrothermal fluids, plumes and massive sulfides, however, and none of them deals with seafloor hydrothermal jet halos: metalliferous sediments.

Metalliferous Sediments of the World Ocean summarizes the state of the art in the recent research on hydrothermal sedimentation in the deep ocean. The author, one of the best specialists in the field of submarine hydrothermal activity, explains in a manner that is concise and easy to understand the basics and most recent findings in the field. Gurvich published a number of papers on geochemistry of microelements in metalliferous sediments in the 1970s. These and his later studies on many seafloor hydrothermal areas (active and inactive) have contributed significant fundamental advances. This personal experience has provided him with a firm ground for writing this book.

Based on the plate-tectonics model, the book offers a comprehensive insight into the composition, origin and fate of metalliferous sediments. The description and analysis of these sediments from all the oceans is followed by chapters focusing on the various processes they undergo. The author’s observations lead to a deep insight into how the composition of the hydrothermal fluids is built up, how it changes at the hydrothermal fluid/seawater interface and gives birth to hydrothermal plumes, and how the rain of hydrothermal suspended matter forms metalliferous sediments when the plume dies away.

Literature on the Recent metalliferous sediments, although scattered, is available, whereas little has been published about the ancient (J₃-Q) metalliferous sediments. Gurvich has done us all a great service by undertaking the gruelling task of summarizing and discussing all the available data on the ancient metalliferous sediments cored in the

course of the DSDP and ODP programs. A particular achievement of this book is the approach towards the reconstruction of the submarine hydrothermal activity history of a particular site, based on the study of the metalliferous sediments.

I have really enjoyed reading Gurvich's book. Undoubtedly, I will use *Metalliferous Sediments of the World Ocean* for my courses in Marine Geology and I will recommend it to my colleagues. I am convinced that a wide range of geoscientists will benefit from using it as it is a valuable source of information.

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