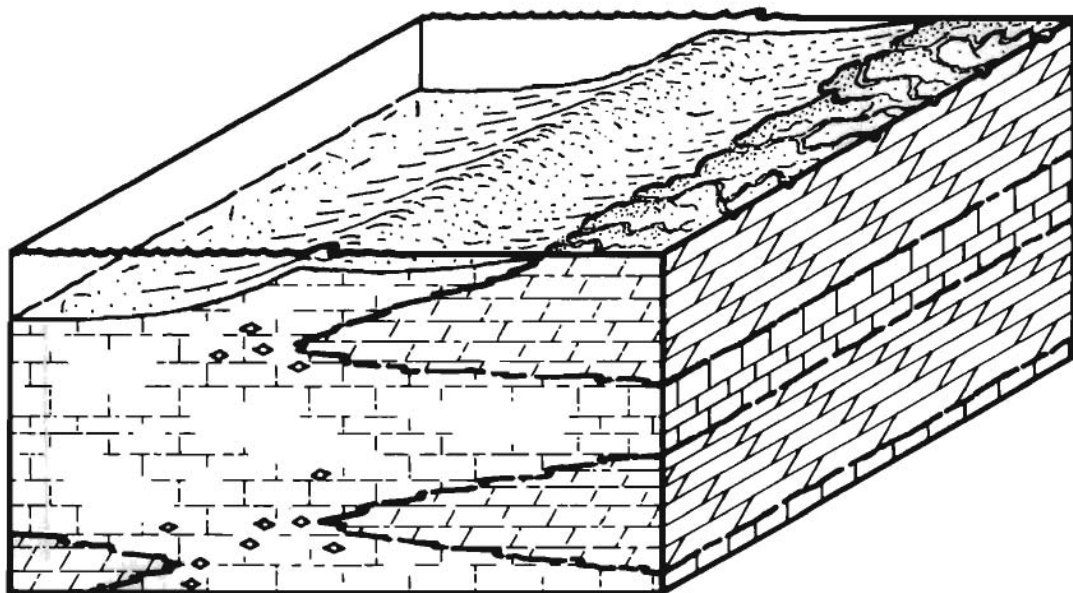


CONCEPTS AND MODELS OF DOLOMITIZATION

*Based on a Symposium
Sponsored by The Society of
Economic Paleontologists and Mineralogists*



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PREFACE

Special Publication 28 has its roots in the 22nd Annual Research Symposium of the Society of Economic Paleontologists and Mineralogists entitled *Concepts and Models of Dolomitization—Their Intricacies and Significance* held on April 3, 1979 in Houston, Texas, as part of the joint annual meetings of the SEPM and the American Association of Petroleum Geologists. The purpose of that symposium was to express the state-of-the-art of the study of the elusive process(es) of dolomitization; such a consideration was long overdue. Our predecessor, the very successful SEPM Special Publication 13 (1965) entitled *Dolomitization and Limestone Diagenesis*, included several papers on dolomitization, emphasizing the then new discoveries of Holocene dolomite in the Bahamas, Persian Gulf, and Bonaire (Netherlands Antilles).

Although there had been, of course, numerous SEPM technical sessions including individual papers on dolomitization, and even a Special Session on Dolomitization organized by Zenger (Anaheim, 1973), a consideration of dolomitization was believed to be well worthy of the recognized stature of the Research Symposium; we are all aware of the importance of dolomites as petroleum reservoirs (approximately 80 percent of North American carbonate reservoirs are in dolomite) and as hosts for base metal ore deposits, particularly of the "Mississippi Valley" type.

A "pilot run" to determine interest in a possible Research Symposium was organized for the 1977 AAPG-SEPM meeting in Washington, D.C., where the SEPM Carbonate Research Group informally discussed the pros and cons of various models of dolomitization but with particular emphasis on the meteoric water-marine water mixing model. From the beginning, then, the 1979 Research Symposium evolved into a group of 16 presentations which were solicited to provide a picture of where we are. This volume is essentially the Symposium; all papers here were given orally at Houston. Reference to individual papers will be found in the introductory chapter. In addition to our main goal of adequately covering the subject, we sought representation by researchers

in industry and government as well as in academia. We are especially indebted to our colleagues from Europe, Australia, and Canada, who not only made such impressive contributions to the program but in several instances made considerable personal sacrifices to attend the meetings in this country.

We are indeed grateful to the many individuals who helped to make both the Research Symposium and Special Publication possible; whereas all cannot be mentioned here individually, we do wish to point out a few. Ray Murray and Tom Freeman served as co-chairmen of the Symposium. John Warme was especially cooperative and helpful in his role as SEPM Technical Program Chairman for the Houston meeting. Charles Ross and Stan White, former and present chairmen of the SEPM Publications Committee, respectively, have helped to guide us through the evolutionary stages of this publication. Xeroxing, mailing, and typing chores and costs associated with producing such a volume are impressive. For the work we are especially grateful to the cheerful services rendered by Jean MacKay and Magell Candelaria, Geology Department, Pomona College, and for the expenses we are pleased to acknowledge the generous financial support of this departmental operation by the Seaver Institute. The cooperation of the management of Union Oil Research is appreciated. We thank the many non-participating geologists, who reviewed manuscripts and helped considerably in making this Special Publication more technically sound; these include J. R. Allen, T. L. Elliott, T. Freeman, R. M. Lloyd, P. O. Roehl, E. A. Shinn, and D. L. Suarez. Appreciation is due to Doug Brink for help with the composition of the illustration on the cover.

As editors, it is our great pleasure to present this volume to you. It is our sincere hope that it will be a worthy "successor" to Special Publication 13.

DONALD H. ZENGER, JOHN B. DUNHAM,
AND RAYMOND L. ETHINGTON, Editors

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