Studies in Permian and Permo-Triassic microremains

West Texas Middle Permian conodonts and fish microremains, Vietnam Permian/Triassic boundary conodonts, and western U. S. Permian microfaunas

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This volume targets microfaunas from four areas where Permian strata are exposed: conodonts and fish microremains from the Guadalupe Mountains of West Texas; conodonts of a Permian/Triassic boundary interval in Vietnam; conodonts from the Sulphur Springs Range, Nevada; conodonts from the Phosphoria basin in the western U.S. and microfossils from two terranes in the Blue Mountains of eastern Oregon.

The first three papers in this volume concern conodont and fish microfaunas from Middle Permian strata in the Guadalupe Mountains area of West Texas. In the first paper, the conodont succession is described from a well exposed Wordian section of the Pinery and underlying Hegler Members of the Bell Canyon Formation (Middle Permian). An important part of the study is that the Wordian/Capitanian conodont transition from *Jinogondolella aserrata* to *Jinogondolella postserrata* can be recognized in the upper part of the stratigraphic section discussed in the paper. In the second paper, a multi-element apparatus reconstruction is presented of the coniform conodont species *Caenodontus serrulatus* from elements recovered from strata of the Hegler Member in the same section. The third paper documents fish microremains from the Rader Limestone Member of the Bell Canyon Formation (Capitanian, Middle Permian) at the well-known "Rader Slide" road cut in the Guadalupe Mountains area.

The fourth paper describes the conodont succession in a Permian/Triassic boundary section from a locality at Lung Cam near the Vietnamese/Chinese border. The significance of this section is that it is more expanded then the Permian/Triassic boundary GSSP section in south China at Meishan where the boundary interval is somewhat condensed. The presence of the boundary defining conodont *Hindeodus parvus* is well documented in the Lung Cam section.

The fifth paper concerns the gondolellid conodont evolution present in the Phosphoria Formation, primarily in the Roadian/Wordian interval of the Middle Permian; the presence of *Jinogondolella aserrata* is significant and ties the succession to the West Texas Regional Standard Section. Duration of phosphatic shale deposition is estimated based on the conodont distribution.

The sixth paper concerns the conodont fauna of the Garden Valley Formation in central Nevada where it consists of a succession of strata reflecting a shallow carbonate platform, followed by basinal mudstone and carbonate, and then a shore fan-delta complex. These intervals are dated by the various conodont species to constrain the tectonic events that caused such varied depositional environmental swings.

The seventh paper documents a loose but distinctly different biostratigraphic connection among the microfossil assemblages of conodonts, fusulinids and radiolarians in the Baker and Olds Ferry terranes, two adjacent accreted terranes in the Blue Mountain province of eastern Oregon. Rare bryozoans and a tabulate coral are also noted as part of the biostratigraphic history.