

# WYOMING GEOLOGICAL ASSOCIATION

## 1984 Luncheon Meetings

### Casper, Wyoming

#### Abstracts of Papers

worldwide use in differentiating three great divisions of earth history which he designated Paleozoic, Mesozoic and Cenozoic. Subsequent study has shown that approximately fifty percent of the animal families known from Permian strata are not represented in younger rocks, and the end of the Paleozoic is often termed the greatest crisis in the history of life. Two questions come quickly to mind. First, how closely spaced in time were the Permian extinctions? Second, what caused them? One byproduct of the search for clues has been the gradual recognition that latest Permian strata are absent in most parts of the world. Wyoming is typical in that our youngest Permian faunas are correlative with Guadalupian faunas in west Texas, where the fossiliferous strata are overlain by a thick sequence of unfossiliferous Pre-Triassic rocks. The boundary between Permian and Triassic beds in Wyoming is intriguing in its own right because physical evidence of the implied hiatus is unimpressive at most localities.

The search for a record of continuous marine deposition representing the Permian-Triassic transition has narrowed to the eastern Tethys, where considerable debate has focused on character and quality of sections along the Russian-Iranian border, and in the Salt Range of Pakistan. Ironically, the more complete the record, the more intense is the debate over criteria for defining the boundary. Meanwhile, intensive work by Chinese geologists has led them to conclude that several sections in their country have a record of continuous deposition across the Paleozoic-Mesozoic boundary. With a desire to have one of these localities designated as the international stratotype section for the boundary, the Chinese invited a group of foreign geologists to spend two weeks last March learning the results of their work and visiting two of the sections. As a member of the visiting group, I enjoyed the traditional Chinese hospitality and the chance to visit an area not normally open to foreigners. After several days of formal meetings in Beijing, we travelled by train for two days and a night to inspect a section near Guangyuan. Another overnight train trip brought us to Chongqing, where we examined another section. Interest in the Guangyuan section is heightened by the report of an iridium anomaly in the boundary beds. Although not as dramatic a "spike" as the much publicized occurrence at the Cretaceous-Tertiary boundary, it raises the possibility of an extra-terrestrial cause for the Permian extinctions and invites a review of the pros and cons of this currently popular explanation for mass extinctions in the stratigraphic record.

**BOYD, DONALD W., University of Wyoming**

**The Permian-Triassic Transition — or — In One Era and Out The Other**

In the mid-nineteenth century, John Phillips recognized that two major changes in the character of life would be of