tion will weigh on the side of inertial homoiothermy, endothermy, or some other, unforeseen form of thermal behavior. In any case, this symposium will be viewed in retrospect as a milestone in the examination of this fascinating problem.

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Tectonic Evolution

The Origin of the Gulf of Mexico and the Early Opening of the Central North Atlantic Ocean. Proceedings of a symposium, Baton Rouge, La., March 1980. REX H. PILGER, JR., Ed. Louisiana State University School of Geoscience, Baton Rouge, 1980. iv, 104 pp., illus. Paper, $15.

Included in this volume are nine papers and 11 abstracts on the geologic development of the Gulf of Mexico, the Caribbean, and the western North Atlantic. Of the nine papers, seven deal with the Gulf of Mexico, one with western Colombia (by W. D. Mooney), and one with the Late Paleozoic–Early Mesozoic reconstruction of the continents based on paleomagnetism (P. Morel and E. Irving).

In his paper Mooney proposes that the Western Cordillera of Colombia represents an accretionary wedge or was formed as a result of the stacking of oceanic crust following a westward jump of a subduction zone during the Cretaceous. He proposes a similar origin for the Pacific Coastal Range, with the Atrato–San Juan basin between the Coastal Range and the Western Cordillera representing a fore-arc basin. Morel and Irving describe two continental reconstructions. The one for the Late Carboniferous–Early Permian has northwestern South America opposite the eastern seaboard of North America. The one for the Early Jurassic has northwest Africa against eastern North America. According to Morel and Irving the change from Late Paleozoic to Early Jurassic continental distribution occurred in the Late Permian–Triassic by right lateral motion between Gondwana and the northern continents.

In the papers dealing with the Gulf of Mexico, J. R. Garrison, Jr., *et al.* use rubidium-strontium data from the Precambrian granulite and Paleozoic greenschist near Ciudad Victoria, Mexico, to reconstruct the Paleozoic tectonic evolution (one of subduction) of the eastern continental margin of Mexico. The other papers deal with the tectonic evolution of the present Gulf. Although all the contributors believe that the present Gulf is due to large horizontal motions of the surrounding continents, they disagree as to the nature and magnitude of these motions. S. E. Cebull and D. H. Shurbet, for example, in their paper on the Ouachita belt suggest that the Gulf of Mexico is a Paleozoic basin that began to enlarge in the early Mesozoic to its present dimensions. The rest of the writers propose that complete closure of the Gulf of Mexico occurred at the end of the Paleozoic and that the present basin formed by sea-floor spreading in the Jurassic. Stratigraphic, paleontologic, and tectonic data described by R. Schmidt-Effing from the Huayacotla aulocogen in eastern Mexico would indicate that the rifting phase was initiated during the Hettangian and the drifting phase (continental separation) began in the Sinemurian. According to R. T. Buffler *et al.* only the deep Gulf of Mexico is underlain by oceanic crust, a crust emplaced by a sea-floor spreading episode that began during the Late Jurassic and terminated in the Early Cretaceous. According to these authors this oceanic crust is surrounded by a thinned continental or transitional crust. J. L. Walper, on the other hand, places the location of the continental-oceanic crust boundary inboard of the Texas coast. W. R. Dickinson and P. J. Coney propose that prior to the Jurassic opening of the Gulf the Yucatan peninsula nestled against the southern United States and eastern Mexico. Walper and W. A. Gose *et al.*, on the other hand, postulate that Mesoamerica prior to the Jurassic was not located in its present position and was displaced eastward along megashears. Buffler *et al.* suggest that salt deposition (Louann salt) was restricted to the thinned continental crust. Walper, on the other hand, proposes that evaporite deposition took place in the shallow epicratonic seas behind the elevated continental edge and atop the young oceanic crust. Walper also believes that the salt basin was originally continuous and was split in two as segments of Mexico were displaced eastward. Buffler *et al.*, however, suggest that the salt was deposited in two different basins separated by a median high. Later this high became the locus of sea-floor spreading that separated the basins into their present positions.

As a whole I found the book well written and adequately illustrated. To those working in the Gulf of Mexico it will be a welcome addition to their libraries. To me, however, the most striking thing about the proceedings is what is left out rather than what is included. There is no discussion of the nature of rifting prior to continental decoupling, and only in passing is there any discussion of the distribution of oceanic crust. Information on both of these subjects is needed to reconstruct the geologic history of the Gulf of Mexico.

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Genetics of *Homo sapiens*

Human Genetics. Problems and Approaches. F. VOGEL and A. G. MOTULSKY. Springer-Verlag, New York, 1979. xxviii, 702 pp., illus. $49.50.

Human genetics has suffered too long from being treated as general genetics with a few human touches. For that matter, medical genetics has itself been similarly treated by human geneticists. This book, written by geneticists, both with diversified experience and both physicians, should do something to restore perspective. It is not the first book in the field, but it is the first big book. It runs to 700 pages of small type and has some 1800 references, 400 figures, nine long chapters, and nine appendixes; the table of contents is itself 20 pages long. The graduate student who really wants to study human genetics at last has a major source and method book, one that is not divorced from experimental genetics but transcends it. The book is handsomely printed on fine paper in double columns with good quality half-tone diagrams.

After a short historical review (with just a little too much ancestor worship for my taste) the authors lead off with chromosomes—a tribute, one supposes, to the traditional primacy of morphology. Unexpectedly, sketches of abnormal phenotypes are widely used in place of photographs. There follows a long chapter on genetic analysis that contains all those cardinal matters that tend to be neglected in doctoral programs in human genetics. As one might imagine, the treatment is most assured in the classical segregation analysis, but there is extensive discussion of methods for the study of twins, and the authors do heroic battle (although in strictly orthodox terms) with the much less coherent field of quantitative genetics. The fourth chapter covers gene action in some detail; it is largely concerned with the genetic biochemistry of enzymes, protein polymorphisms, antibodies, and pharmacogenetics, with concern for clinical applications. The chapter has a novel