Crucial tests based on the foregoing considerations and also many others can be devised to test the possible validity of an ocean-control theory. I intend to pursue some of these tests as they concern the geologic aspects of the problem.

References and Notes

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C. P. Berkey, Pioneer in Engineering Geology

Geologic knowledge has been applied intuitively to the building of man-made structures for centuries. But only in recent years has the geologist become a member of the teams that plan and construct great dams, bridges, and aqueducts. Charles Peter Berkey was foremost among those who demonstrated the value of geologic advice in the construction of public works. Born on a farm in Indiana on 25 March 1867, he moved with his family to Texas and then to Minnesota, where he completed his doctorate at the University of Minnesota in 1897. His first work was on rocks and fossils in Cambrian sandstones at Taylors Falls on the St. Croix River. But in ensuing years his interests turned to petrology, the study of igneous and metamorphic rocks, which he had seen through his college days only as erratic boulders in the glacial drift of southern Minnesota. In 1903, he came to Columbia University.

The City of New York undertook the surveys for the Catskill Aqueduct in 1906. The geologic advisers to the city at the time were James F. Kemp and William O. Crosby, professors at Columbia and Massachusetts Institute of Technology. In that summer they left for Mexico City to attend the excursions and meetings of the International Geologic Congress and were otherwise engaged. Hence, independent responsibility fell on Berkey. The practical problems were investigated, and the answers were given with such clarity and success that he was to be engaged in such undertakings for the succeeding half-century, until his death on 22 August 1955.

Charles Peter Berkey was associated with scores of engineering projects. The Catskill aqueducts of New York and the water supply systems of Boston and Los Angeles gained his attention. He advised on the dams of the Tennessee Valley Authority and of the Bureau of Reclamation; the Hoover Dam owes its present location largely to his judgment of the merits of the foundations and tunnel conditions at this and alternate sites. The George Washington Bridge across the Hudson River bears his name on its tablets. His reports had influence on the construction of public works in half of the states of the United States and some in foreign lands. The responsibilities were a reflection not only of his good judgment and experience but also of his facility in presenting in speech and writing the nature and causes of the problems that might be encountered in such manner that his advice could be understood; hence, design and construction were altered to meet the conditions that he described. Berkey made geology a useful tool. The American Society of Civil Engineers elected him an honorary member in 1941, and the Geological Society honored him at its dedication of the *Berkey Volume on the Application of Geology in Engineering Practice.*

Berkey was Newberry professor of geology in Columbia University in his later years. His courses in petrology were particularly valued; his lectures and discussions emphasized the reasons for things—he was skilled in showing the favorable and unfavorable aspects of possible solutions and the considerations that led to his conclusions. In his most distinctive course, the students examined the rocks and sections he had used in reports on hundreds of practical problems that he had investigated. He was executive officer of the department of geology for many years, and his counsel was valued on administrative committees in the university. One of his earliest experiences in exploration was an expedition in the Uinta Mountains, Utah, about the turn of the century. But his greatest satisfaction came from the expeditions of the American Museum of Natural History in Mongolia in 1922 and 1925; much publicity was gained from the latter trip through the finding of dinosaur eggs.

One of his greatest services was as secretary of the Geological Society of America through 20 years, from the time when it was a small organization with limited resources to that when it became more richly endowed through the benefactions of R. A. F. Penrose in the early 1930's. His judgment and enthusiasm were undoubtedly largely influential in this development of the society, which elected him president in 1941. He was a member of the National Academy of Sciences and of the geological societies of London and France. The Kemp medal was awarded him in 1951 for distinguished service in geology. His greatest monuments are the enduring structures that grew under his skilled advice. His influence will affect the lives of generations who will not know his name.

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