

GEOLOGIC PAST

Highlighting Articles from Past Issues of *GSA Bulletin*: 95 Years Ago

PALEOGEOGRAPHY PUT ON THE MAP

GSA Bulletin, February 1910

Charles Schuchert: *Paleogeography of North America*

In a thorough discussion of paleogeography, Charles Schuchert provides *GSA Bulletin* readers (v. 20, p. 427–606) with a new geologic time table (p. 601) and over 50 plates illustrating geologic time periods and the associated formations and faunal changes in North America. His paper begins with a definition of paleogeography as “the geography of geologic time” (p. 431) and gives a history of the science. Beginning with James D. Dana’s 1863 book, *Manual of Geology*, Schuchert presents an overview of early paleogeographic maps. Schuchert directs the reader to Austrian paleontologist M. Neumayr’s 1883 paper on climatic zones in the Jurassic and Cretaceous, which, Schuchert says, “includes what is probably the first paleogeographic map of the world” (p. 432), as well as a discussion of the distribution of marine Jurassic fossils, “on the basis of which,” states Schuchert, “[Neumayr] conceived the great transverse continent of Gondwana” (p. 432). After his thorough account of the history of paleogeography, Schuchert illustrates the shallow continental seas of Paleozoic time in North America (p. 438 and plate 48), giving descriptions and history of the study of each sea. He also writes definitively that “fossils [are] indicative of exact time” in geologic formations (p. 439). Notably, Schuchert collected his first fossil as a teen nearly 38 years before this seminal paper (p. 429).

Charles Schuchert (1858–1942) first presented this paper to GSA at the annual meeting in Baltimore, Maryland, on Dec. 30, 1908. Schuchert, whose formal education did not even include a high school diploma (Cooper, 1999), was chair of Yale University’s geology department from 1909 to 1921, President of GSA in 1922, and recipient of the GSA Penrose Medal in 1934. He is considered one of America’s premier paleontologists, for whom the Paleontological Society named their Charles Schuchert medal in 1973.

REFERENCE CITED

Cooper, C., 1999, Academic genealogy of Brown University’s Planetary Geology Group: <http://www.planetary.brown.edu/~cooper/genealogy/schuchert.html> (Accessed Feb. 24, 2005).

WHEN THE CONTINENTS CREPT AWAY

GSA Bulletin, June 1910

Frank Bursley Taylor: *Bearing of the Tertiary Mountain Belt on the Origin of the Earth’s Plan*

American geologist Frank Bursley Taylor first presented his ideas on the movement of the continents in abstract and lecture form at the GSA Annual Meeting in Baltimore, Maryland, on Dec. 29, 1908. In the subsequent 1910 *GSA Bulletin* (v. 21, p. 179–226) article, Taylor writes what some consider the first-ever discussion of continental drift. Basing much of his argument on the extent and uniformity of “a great world-belt ... of Tertiary fold-mountains almost encircling the earth” (p. 179) and on the work of Eduard Suess, Taylor states that “North America, like Eurasia, had been affected in Tertiary times by a crustal movement” (p. 204). Referring to a bathymetric chart accompanying the text (plate 4), Taylor points to the mid-Atlantic ridge as one of the “most remarkable and suggestive objects on the globe” (p. 216), “a submerged mountain range of a different type and origin from any other on the earth...” (p. 217), by which he supports his theory that the continents separated in Tertiary time (p. 216–217). The mid-Atlantic ridge, in Taylor’s view, “marks the original place of the great fracture” from which “the continents on opposite sides ... crept away” (p. 218).

Incorporating study of the coasts of continents to support his theory, Taylor points to “the remarkable relation of Greenland to North America,” as further evidence that “North America moved toward the southwest” (p. 205). Noting specifically the parallel relationship of the coasts of Greenland and Labrador, he writes, “The parting of these shores can hardly be more recent than the Tertiary” (p. 208). In his observations of Africa, he states “there are many bonds of union which show that Africa and South America were formerly united” (p. 218).

Frank Bursley Taylor (1860–1938) published a follow-up article, titled “Correlation of Tertiary mountain ranges in the different continents,” in *Bulletin* in 1930 (v. 41, p. 431–473), in which he continued to support his theory of the “horizontal sliding of continental crust-sheets.”