

years after which standard or final geographic positions can be furnished for the triangulation stations to engineers, scientific workers, or others who may need the data. Of course there is no such thing as a final position for there is abundant evidence that the earth's surface during geological time has undergone changes both vertical and horizontal, but it seems reasonably certain that very few of the triangulation stations of this country will be affected by geological processes to an extent that will vitiate the data in a few hundred years at least. Regions of considerable seismic activity will of course have triangulation stations whose positions are likely to change during earthquakes and even between such earthquakes but such areas form only a small portion of the total area of the country.

The accuracy of the triangulation, as shown by the adjustment of the western net, is quite remarkable. There were 16 circuits with perimeters averaging about 1200 miles. The average closing error of these circuits was about one part in 430,000. There were only two of the circuits for which the closing error was greater than about 1/200,000. While it is doubtful if the length of a line of triangulation is known with an accuracy greater than 1/100,000, yet where there is a series of such lines combined to measure a distance across country, the errors of the individual lines tend to balance out according to the law of accumulation of accidental errors.

The scientific and practical needs for triangulation data are increasing from year to year. The demands for such data have led the President of the United States to include in his budget for the fiscal year 1931 a substantial increase in the money to be devoted to geodetic surveys, including triangulation. It is hoped that the triangulation net composed of first and second order work will be finished within the next ten or twelve years.

PALEONTOLOGY.—A *Cretaceous pelecypod with color markings*.¹

JOHN B. REESIDE, JR., U. S. Geological Survey.

Color markings are so rarely preserved on fossil shells that the exceptional case of their preservation seems always worthy of record, particularly where the genus concerned is extinct. The writer here presents a note and figures descriptive of a species of *Inoceramus* related to *Inoceramus stantoni* Sokolow from the lower part of the Mancos

¹ Received January 4, 1930. Published with the permission of the Director of the U. S. Geological Survey.

shale of Vermilion Creek, Moffat County, Colorado.² The specimens are completely flattened in a calcareous shale and the original sculpture and outline may be only guessed at. The fossils in adjacent layers, however, show that the age of the beds is that of the lower part of the Niobrara limestone (Coniacian).

The markings on these shells show as light-brown, nearly straight bands radiating from the beaks and gradually increasing in width toward the basal margins. The width of the individual bands differs much, though there seems to be a wider band near the middle of each shell and narrower bands on each side of it. What the original color of the bands may have been seems scarcely worth conjecture, but it is beyond doubt that the pattern preserved is that of the coloring of the shell in life.

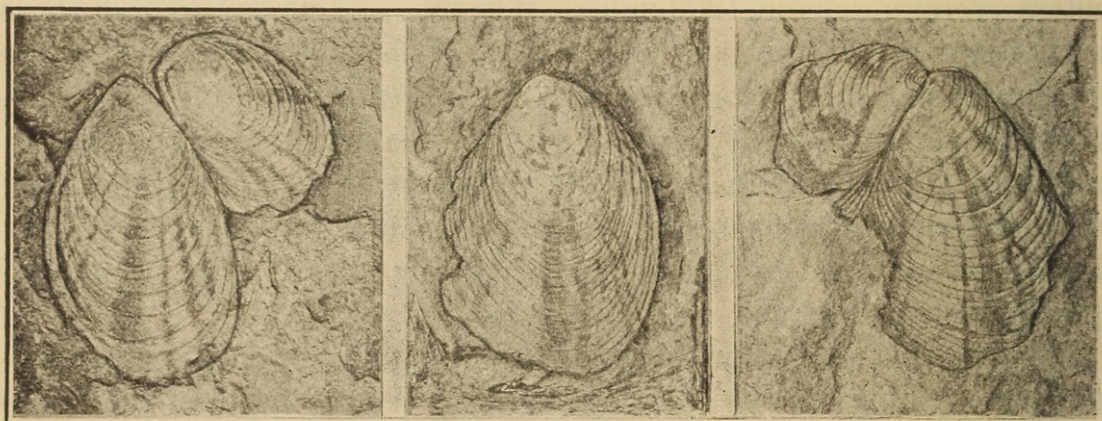


Figure 1.—*Inoceramus* aff. *I. stantoni* Sokolow, from the Mancos shale of Vermilion Creek, Colorado. Three individuals showing color markings. U. S. National Museum cat. No. 73736.

PETROGRAPHY.—*Pacificite, an anemousite basalt*.¹ TOM. F. W. BARTH, Geophysical Laboratory, Carnegie Institution of Washington. (Communicated by L. H. ADAMS.)

Introduction. In many lavas the amount of silica is insufficient for the formation of feldspar, and consequently minerals undersaturated in silica are formed, among them the feldspathoids. Microscopic investigations of the undersaturated lavas of the Pacific island volcanoes have shown that nephelite occurs throughout the area, forming

² See THIS JOURNAL, 20: 40. 1930.

¹ Received January 18, 1930.



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