

that he had to hurry up to push at all? It would seem to me to be true in this case also that the push back on him would be the same if the cart were in the same state of strain and at rest.

If the point of view brought forward here is correct it would seem to me desirable to leave out of any elementary discussion of mechanics an "inertia reaction."

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AN ADDITIONAL NOTE ON "THE OOLITIC AND PISOLITIC BARITE FROM THE SARATOGA OIL FIELD, TEXAS"

ABOUT three years ago the writer wrote a description of some barite of unusual type from the Saratoga Oil Field, Texas.¹ Specimens of this mineral have been brought to the surface in pumping, and they have been found, in all cases reported to the writer, at a depth around 1,200 feet, indicating that they probably have their source in a definite geological horizon. At the time the above-mentioned paper was written it was supposed that the concretions of this mineral originated with the sands in which they were found but there was no definite information on the subject.

In discussing this matter a short time ago with Mr. E. G. Woodruff, he stated that at least some of these concretions undoubtedly formed in the wells after they were equipped, because they had been found reaching a quarter of an inch in diameter, in a well with a screen on the tubing, the mesh of which was altogether too small to admit a concretion of the size stated. He kindly sent the writer an assortment of specimens of various shapes and sizes from other wells in the same field as those previously described and of approximately of the same depth. Tests with the blow-pipe and specific gravity determinations show that the composition of the concretions is almost identical to that of those previously described. A number were examined for nuclei, but in most cases no definite nucleus could be found. When a nucleus is present

it consists of earthy material made up mostly of clay and barite and this mass is often stained with iron ioxide which gives the center of the concentration a brownish tint.

This additional information is interesting from the standpoint of its bearing on the origin of concretions. It would appear to be practically impossible for bacteria or other low types of life, which are believed to play an important part in the origin of oölites, to exist in a liquid with such strong antiseptic properties as those of warm petroleum containing considerable sulphuric acid. It would seem to demonstrate that living organisms are not essential to the development of oölites and that these may form where precipitation is taking place in an agitated solution, in the absence of life.

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SCIENTIFIC BOOKS

Ocean Magnetic Observations, 1905-1916, and Reports on Special Researches. By L. A. BAUER, Director, with the collaboration of W. J. PETERS, J. A. FLEMING, J. P. AULT and W. F. G. SWANN. Washington, D. C., 1917. Carnegie Institution. Pp. vii + 447.

This large and handsome volume is the third of the series issued by the department of terrestrial magnetism of the Carnegie Institution and contains full reports of all the magnetic work of the department at sea during the past eleven years. The two preceding volumes deal with the observations on land for the periods 1905-1910 and 1910-1913 respectively.

In 1905 the wooden brigantine *Galilee* was chartered at San Francisco and fitted up for magnetic observations with the purpose of making a preliminary survey of the Pacific Ocean which was at that time "nearly a blank as regards magnetic observations." In the course of three years, this vessel cruised 63,834 nautical miles and, magnetically speaking, put the Pacific Ocean "on the map." In addition to the great number of valuable and accurate observations which were accumulated, these cruises of the *Galilee* afforded an opportunity for testing and improving magnetic instru-

¹ Oölitic and Pisolitic Barite from the Saratoga Oil Field, Texas," by E. S. Moore, *Bull. of the Geol. Soc. of Amer.*, Vol. 25, pp. 77-79, 1914.