

A PRELIMINARY PAPER ON THE ORIGIN AND CLASSIFICATION OF INTRAFORMATIONAL CONGLOMERATES AND BRECCIAS.

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INTRODUCTION.

The term intraformational in contradistinction to interformational was first proposed by Walcott (1) in 1894. He writes: "An intraformational conglomerate is one formed within a geologic formation of material derived from and deposited within that formation." In the same paper he remarks upon the importance of determining the time element or sequence of events in the formation of a sedimentary or clastic rock, by a study of the shapes and textures of its constituents. Thus, in his introduction he writes (p. 91): "Usually the presence of a conglomerate in a stratigraphic series of rocks is a matter of considerable importance to the geologist. He naturally infers the presence of a break in the continuity of sedimentation; an orographic movement of greater or less extent; erosion of pre-existing formation." In other words the term conglomerate by its definition conveys to the mind of the stratigrapher a great difference between the ages of the pebbles and the cement. It is proposed to show in this paper that there is often a nice distinction between the ages of the constituents in most conglomerates and in intraformational conglomerates in particular. It is true that we arrive at a knowledge of the sequence of the events which have taken place in the formation of any given clastic by describing the texture and shape of its constituents, but the writer believes that the tendency has been too strong among students of the sedimentary rocks to express their findings in purely textural and structural terms without special thought as to their history and origin. Thus, any rock, be it limestone or otherwise, which is formed of coarse and apparently water-worn materials, is dubbed a conglomerate, and its natural history, even if recognized, is lightly passed over in its classification.

It is not proposed in this paper to attempt a classification of all conglomerates on such a basis as outlined above. A study of certain Paleozoic limestone conglomerates, and especially of certain structural and textural phenomena as exhibited in the limestone formations at Trenton Chasm, Chambers-