

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

BY RICHARD M. FIELD, AGASSIZ MUSEUM, CAMBRIDGE, MASS.

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The author shows that in ground plan these structures are quite similar to mud-cracks, and that they may be accounted for by the excessive dessication of limy sediments or clay-like material which has been preserved above water level for a sufficient period of time to permit of an abnormal deepening of the surface mud-cracks. Should the spaces or cracks between successive layers of such columnated limestones become impregnated with a subsequent deposition of limy, or even sandy material, an interesting type of intraformational breccia would probably be formed.

Hyde (6) describes a peculiar limestone conglomerate from the so-called "fresh-water" horizon of the Ohio coal measures. He writes: "after complete evaporation and cracking of the limy surface, it is necessary to suppose that there was a submergence in order to account for the matrix of small fragments and shells in which the pebbles all rest. * * * * If, after the conglomerate was completely formed, the deposition of limestone had been resumed instead of a soft shale, the result would have been a typical intraformational conglomerate of a thinner type, in which the structure would probably have been so obscured that a detailed study would have been impossible, or only possible with a great amount of labour."

BIOGLOMERATES.

There is some evidence that certain intraformational conglomerates may have been formed partly by organic agencies. Their origin may have been the result of either plant or animal (?) activities, and furthermore, the organisms may have had either a direct or indirect structural influence. Certain so-called "limestone conglomerates" are supposed to be composed of fossil organisms. Thus, Seeley (7) describes conglomerates from the Beekmantown of the Champlain valley as having their pebbles formed from sponges, a new genus, which he called *Wingia*. Brown (8) describes certain conglomerates at Bellefonte as due to the action of lime-secreting algae. He notes