

two principal factors controlling the formation of such a glomerate:

1. Alternation of the conditions of deposition.
2. Dessiccation.

Figure 3 of this article is a diagrammatic summary of the argument for a classification of sedimentary rocks, and especially of intraformational glomerates, according to the sequence of formative events which they have undergone. The figures are more or less diagrammatic, and no attempt has been made to draw an accurate picture of each type. The reader may consult the various descriptions for accurate illustrations. Seven types of glomerates are represented in the columnar section, six intraformational and one interformational. In order to make the comparisons of the six intraformational glomerates relatively the more graphic, they are all supposed to have formed within a single formation, characterized by the index fossil *Ophileta complanata*.

Beginning with *A* time, we have deposition of pure limestone until *B* time, which commences with alternating depositions of pure and shaly limestone, followed by mud-flat conditions with dessiccation and the formation of mud-crack zones or stratified breccias. Here the phenoclast *b* is practically of the same age as the cement or matrix. During the rest of *B* time, marine currents are dominant and form edgewise glomerates, whose phenoclasts of the *b'* type have been carried a short distance and slightly abraded, so that they are slightly older in relation to their matrix than those of the *b* type. From the close of *B* time to the beginning of *D* time, pure, structureless limestone is laid down. During *D* time conditions are favorable for the formation of biglomerates. Here again, as in the case of early *B* time, the phenoclasts are formed in place, and are practically contemporaneous with the cement. Through *E* we have a period of pure limestone deposition, except during the middle when shale was formed interstratified with the limestone. In *F* time we have the formation of a limestone conglomerate whose phenoclasts *c* are true water-worn pebbles derived from the subjacent zone *E*. Obviously the pebbles of this conglomerate were formed long before they were deposited, and long before the ensuing lithification of the mass. Compare the pebbles of this type with the phenoclasts of the preceding types. During *G* time there is a short period of pure limestone deposition, followed by a period characterized by conglomerates of the mixed type, certain of whose pebbles contain the same fossils as the cement (*Ophileta complanata*), proving that the conglomerate is truly intraformational in character. *I* time sees the close of the period characterized by *O. complanata*. Uplift and erosion