

Cambrian genera showing enlargements of the third segment, includes one species (*idahoensis* Walcott) (a) characterized by the presence of a long median spine on the fifth segment, and one species (*typicalis* Walcott) (b) in which the median spine adorns the eighth segment. This enlargement of certain segments is comparatively rare among the trilobites, and its further study should yield results of morphologic value. The foregoing can only be considered as a resumé of some of the facts which may contribute "to the observational basis of the ultimate discussion."

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

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### LIMESTONE CONGLOMERATES.

Intraformational conglomerates have been described which are more nearly related to conglomerates in the ordinary sense than those heretofore discussed. The phenoclasts (true pebbles in this case) of these conglomerates are usually of several orders of size, and all but the largest are water-worn, i.e., derived, by transportation and attrition, from indurated, angular material. The pebbles contain the same fossils as are found in the cementing material or ground mass, and thus the conglomerate is proved to be truly intraformational in time. Such conglomerates are of manifold occurrence. Walcott (op. cit. p. 34) describes one from a locality below Schoelck Landing, Rensselaer County, N.Y. He writes: "It (the conglomerate) shows that the limestone pebbles, boulders and brecciated fragments were formed from a calcareous sediment sufficiently consolidated to be broken up and more or less rounded by attrition, and these collected to form a bed of conglomerates, the matrix of which is usually calcareous." Sometimes these conglomerates are very coarse, and contain phenoclasts the size of boulders (two to four feet in diameter). Walcott describes such conglomerates from eastern Pennsylvania, and others from Tennessee, in Cook, Sevier and Blount counties. In one portion of the Cictico conglomerates, he states (op. cit. p. 38), some of the boulders reach

(a) Smithsonian Misc. Coll., vol. 53, No. 2, 1908, pl. 3.

(b) Canadian Alpine Journ., vol. 1, 1908, pl. opp. p. 248, fig. 1.