

Unless otherwise mentioned, all the specimens are from the same stratum of rock.

Contour of the head.—The smallest specimen of the head observed, fig. 1c, pl. xx, is 2.5^{mm} in length, and resembles in its outline the larger head, fig. 1e, which has a length of 7.5^{mm}, which is seen more clearly by comparing the latter with the enlargement of fig. 1c=fig. 1. Between figs. 1c and 1e, in size, is the form represented by fig. 1d, which is transversely quadrilateral in outline, with the genal angles and spines carried forward to form antero-lateral angles on a line with the frontal margin of the head; and the geniculation of the posterior margin, which is so strongly marked in fig. 1, is still further increased to form an angle of nearly 90°, which, from its position, might be incorrectly viewed as the true genal angle if the anterior spines were broken away or obscured and the course of development of the species unknown. In fig. 1g the genal spines are still more anterior than in the smaller forms (figs. 1c and 1e), and present a transition stage—not considering the size of the head, but the general form—between figs. 1c and 1d, or 1d and 1e; the angles of the posterior margin *xx* are also more obtuse, and the frontal margin broadly rounded. Through the forms represented by figs. 1e, 1g, 1h, the modification of these features is very uniform to the normal adult type of the contour of the head, as shown by fig. 1i. In figs. 1m and 1k, however, which are considerably larger specimens, the angularity of the posterior margin is a prominent feature, the genal angles being advanced as in the forms before fig. 1i. In fig. 1l the outline is still further diversified by having the angularity of the posterior margin and the position of the genal spine on one side different from the other side. Fig. 1i is considered as nearly typical of the adult outline of the head as the largest specimen found, and a number of medium size have the same form, and it is characteristic of other species of the genus.

The geniculation of the posterior margin is an embryonic character that is singularly persistent in many examples that have otherwise adult characters. In fig. 3b the adult form of the head of another species of the genus is shown.

The specimen represented by fig. 1f is from the south end of the Timpanute Range, 200 miles south of the Eureka district. It is associated with such forms as 1c, 1e, and 1i, and also with *O. Iddingsi* on the same slab of limestone. It has the genal spines even more anterior than in fig. 1d. With it occurs the form on plate xix, fig. 2d, which, in the position of the glabella, is much like the typical *O. Gilberti* of Meek. One other specimen of the head that is 3^{mm} in length has the outline of fig. 1g, and three others, having a length of 2^{mm}, 1.8^{mm}, and 1.5^{mm}, respectively, have a contour as shown in fig. 2c, pl. xvii.

Glabella.—In the smallest head the glabella is depressed between the large crescent-shaped eyes, and the anterior lobe appears to be a link uniting the anterior portions of the two eyes to form a semicircle around the depressed glabella back of its anterior lobe; in succeeding