

fined to the Cambrian system; *M. punctatus*, *M. sculptus*, and *M. pulchellus* appearing in the Lower Cambrian; *M. speciosus*, *M. Meeki*, *M. Parkeri*, and *M. lobatus*, in the Middle Cambrian; and, if *Pemphigaspis bullata* proves to belong to the same group, we have one species from the Upper Cambrian, and all the species now referred to *Microdiscus* would then be referred to *Pemphigaspis*, as Emmons's original name of *Microdiscus* could not be retained, as it appears to have been founded on a specimen of the genus *Trinucleus*.

In my review of the fauna of the St. John group of the Hartt collection I referred the St. John species to *M. Dawsoni* and *M. punctatus*. A reconsideration of the last species causes me to refer it to the species *pulchellus*, a name proposed by Mr. Hartt in cataloguing the species of the St. John Formation (Bull. U. S. Geol. Survey, No. 10, p. 24).

MICRODISCUS SPECIOSUS Ford.

Plate xvi, figs. 3, 3a-c.

Microdiscus speciosus Ford, 1873. Amer. Jour. Sci., 3d ser., vol. vi, p. 137, figs. 2a, b.

Idem, 1877. Same journal, vol. xiii, p. 141.

Original description.—"Head destitute of eyes and sutures, semi-elliptical, with a conspicuous border all around, thickened at the edge, which in the majority of cases carries from five to six minute tubercles on each side; border expanded in front. Glabella long, conical, prominent, smooth, without neck furrow, extending in an obscurely triangular projection slightly beyond the posterior outline, separated from the cheeks by rather wide and deep dorsal furrows, sometimes, though only in very rare instances, obscurely lobed by from three to four faint furrows on each side. Cheeks convex, prominent, well defined by the dorsal and marginal furrows. Posterior angles narrowly rounded.

"Thorax with four equal segments. Pleuræ pointed, straight except at their extremities, which are bent down and slightly recurved, deeply grooved for nearly their whole length. The rings of the axis have a slight groove across them in the posterior half of each. The fourth or hindmost ring appears to be anchylosed to the pygidium; at least, it invariably accompanies it when the latter is found isolated.

"Pygidium as long as the head and of nearly the same shape, but slightly narrower, taking the extreme measurements and more rapidly tapering, gracefully curved in outline. Marginal rim distinct all around, widest anteriorly, distinctly raised or thickened at the edge. Axis conical, sometimes acutely so, long and slender, extending very nearly to the margin, divided by faint cross furrows, directed slightly backward into eleven rings or segments. Side-lobes highly convex and without furrows. The axis and side lobes appear to overhang the marginal rim at the posterior extremity, giving the border the appearance of being only about half as wide behind as it is in front.

"The entire surface is finely punctate. In one specimen of the pygid-