

lost, so we can only reproduce the rough wood cut given with the original description.

*Formation and locality.*—Middle Cambrian. Even-bedded limestone on the ridge east of the city of Troy, New York.

### Genus MICRODISCUS Emmons.

*Microdiscus* Emmons, 1855. Amer. Geol., vol. i, pt. 2, p. 116.

Type, *M. quadricostatus*.

*Original description.*—"Minute, oval, middle lobe of the cephalic shield strongly developed; ribs of the body or abdomen, four; of the tail, four or five. The form of the cephalic shield is only obscurely indicated; the size of this trilobite is shown in the small figure. It is found in the white fragile shales of Augusta County, Virginia, associated with minute molluscas and graptolites."

I have long had a suspicion that the original specimen on which the species *M. quadricostatus* was founded was a young specimen of *Trinucleus concentricus*, or a species of that genus, although it might be the young of some species of the genus *Ampyx*; the former is more probable, as specimens of the latter genus are of rare occurrence in American strata and *Trinucleus concentricus* is quite abundant at the same horizon in which Dr. Emmons found the specimen described by him. It is the type of the young *Trinucleus*, as may be seen by comparing it with Barrande's figure of *T. ornatus*, showing four segments in the thorax. The glabella is clavate and of the type of that of *Trinucleus*; the pygidium is essentially that of *Trinucleus*, as are also the thoracic segments. When collecting from the Hudson River shales, in Central New York, I found the heads of *T. concentricus* distorted and with the punctate margin and genal spines so broken away that they appeared similar to the head of *M. quadricostatus*. We now know that the light-colored, fragile shales of Augusta County, Virginia, belong to the Hudson River group, and that they carry graptolites and minute shells such as Dr. Emmons mentions. In view of these facts and since all the species subsequently referred to the genus *Microdiscus* have the head and pygidium subequal in size and form and a cylindro-conical glabella, I am inclined to consider Emmons's type as belonging to the genus *Trinucleus* and take as the type of *Microdiscus* the next species referred to it, *M. punctatus*.

The above was written before I had read M. Barrande's observations on the same trilobite. He was of the opinion that Dr. Emmons was probably in error in referring the species to the lowest geologic horizon of his Taconic system and that *M. quadricostatus* recalled the young of *Trinucleus*: "D'après cette circonstance, que la forme de la tête est obscurément indiquée, il est impossible de juger avec sécurité la nature de ce Trilobite. Sa taille et ses apparences nous porteraient à croire que le spécimen figuré représente le jeune âge de quelque espèce dont