tentaculiferous. Neither arms nor pinnules have any distinct ambulacral skeleton, and sacculi are altogether absent. Some of the lower pinnules have terminal combs.

History.—This generic name was proposed by Müller[1] in 1841 for a fine specimen of *Comatula solaris*, Lamarck, which he had examined at Vienna in the previous year. He had not then seen the type of Lamarck's species, and seems to have assumed that it was an endocyclic form like *Pentacrinus* and the three European Comatulæ, *i.e.*, that the disk bore five ambulacral grooves converging upon a central mouth.

This is not the case, however, in reality, for Müller discovered on a later visit to Paris[2] that the disk has the same peculiarity in Lamarck's types of *Comatula solaris*, as in the large Vienna specimen "welche generisch von andern durch die Bildung ihres Scheitels verschieden zu sein schien. Auf dem Scheitel der mit blumenartigen Kalkblättchen bedeckt ist, ist keine Spur von den Furchen zu sehen die bei den Comatulen von den Armen zum Munde führen. Auch ist dort nichts vom Munde zu sehen. Die mitte der Bauchseite nimmt eine Röhre ein. Die Arme haben die ventrale Furche der Comatulen, die Furchen der 10 Arme münden aber in gleichen Abständen in eine die Scheibe am Rande umziehende Cirkelfurche. Diese eigenthümliche Bildung liesse sich durch eine unsymmetrische Vergrösserung desjenigen Intertentacularfeldes worin die Afterröhre steht über den ganzen Scheitel, und auf Kosten der anderen Intertentacularfelder erklären, so dass der Mund aus der Mitte des Scheitels ganz an die Seite zwischen je 2 Armen geräth." Owing to the dry state of the Vienna specimen the exact position of the mouth could not be determined; and the same difficulty presented itself with the types of *Asterias multiradiata* and *Asterias pectinata*, Retzius, which Müller examined in the Retzian collection at Lund, and found to present "ganz dieselbe Bildung des Scheitels" as the Vienna specimen.[3]

In the absence of better-preserved material Müller hesitated to make a definite generic separation of these three Comatulæ from the ordinary endocyclic species. But in 1844 he visited the Paris Museum and there found several Comatulæ in spirit with the same arrangement of ambulacra on the disk as he had described in *Actinometra imperialis* and in the two Retzian species, *i.e.*, a circular furrow extending round the greater part of the margin of the disk, with the ambulacra of the primary arms opening into it at tolerably regular intervals, very much as in Pl. LVII. fig. 3. The number of ambulacra converging on the excentric mouth would thus be less than five, and in fact was reduced to three in two of the three individuals first seen by Müller. This character, and not the position of the mouth, was regarded by him as the most distinctive peculiarity of *Actinometra*. For he found that some species may have a central anal tube and excentric mouth "ohne dass die *Ambulacra* ihre symmetrische Vertheilung auf die 5 Armstämme einbüssen."[4]

[1] *Monatsber. d. k. preuss Akad. d. Wiss. Berlin*, 1841, p. 180.
[2] *Ibid.*, 1846, p. 178.
[3] *Archiv f. Naturgesch.*, 1843, Jahrg. ix. Bd. i. pp. 132, 133.
[4] *Monatsber. d. k. preuss. Akad. d. Wiss. Berlin*, 1846, p. 177.