

form which they have described so ably under the name of *Nyaster mirabilis* supports the views upheld by Perrier, and should be ranked in the same category as forming "a connecting link between Crinoidea and Asteroidea" on account of the presence of its remarkably developed dorsal appendage.

It is probable that the apical plates of *Nyaster* have never yet been observed (they had not been seen when the type, which is probably too large to possess them, was described); and I venture to consider that the abactinal prolongation in *Nyaster*, like that in *Caulaster*, is also an anal funnel (whether functional or not I cannot say), and that, such being the case, it does not lend any support to the view that this remarkable development is in any way homologous to the stem of a Crinoid. I would further remark that this most interesting form *Nyaster mirabilis* appears to me to be more nearly allied to the Astropectinidæ than to any of the genera which I have included in the family Porcellanasteridæ.

With reference to the foregoing remarks, it may be pointed out that Dr P. Herbert Carpenter¹ hesitates to accept the homology of the dorsal appendage of *Caulaster* and *Nyaster* with the stem of a Crinoid, and considers that the assumption is not yet satisfactorily proved. Carpenter also points out that Perrier's comparison of the plates round the dorsal appendage of *Caulaster* with those forming the periproct of an Urchin cannot be followed out in detail, as, according to Perrier's description, the apical system of *Caulaster* consists, not of genitals and oculars (basals and radials) as in an Urchin, but of under-basals and basals. With these views I entirely concur.

In conclusion I would add that I am altogether at a loss to reconcile Perrier's view according to which "le dos des Astéries correspondrait à la région buccale des Oursins et non à leur région anale"² with his comparison of the apical system of *Caulaster* with that of an Urchin.³ For either the proposition is self-contradictory, or, if it be true that the abactinal area of *Caulaster* corresponds to the apical region of the Echinoid, whilst the abactinal area of all other Asterids corresponds to the buccal region, it seems to me only another way of saying that the abactinal area of *Caulaster* corresponds not to the abactinal area, but to the actinal area in other Asterids. I will not do M. Perrier the injustice of thinking for a moment that he believes this to be the case.

For my own part I consider, along with Lovén,⁴ Carpenter,⁵ Agassiz,⁶ and other naturalists, that the buccal region of an Asterid, of an Echinoid, and of a Crinoid are correspondent, and consequently that the apical systems of an Asterid or Echinoid and the calyx of a Crinoid are homologous parts.

¹ Report on the Crinoidea, Voyage of H.M.S. Challenger, Zool. Chall. Exp., 1884, Part xxxii. p. 401.

² *Nouv. Archives Mus. His. Nat.*, 2e Sér., 1884, t. vi. p. 162.

³ *Comptes rendus* (Dec. 1882), t. xcvi. p. 1380.

⁴ *Études sur les Échinoïdées*, K. *Svensk. Vetensk. Akad. Handl.*, 1874, Bd. xi. No. 7.

⁵ Report on the Crinoidea, Voyage of H.M.S. Challenger, Zool. Chall. Exp., 1884, Part xxxii. p. 401.

⁶ *Mem. Mus. Comp. Zool.*, Harvard, 1877, vol. v. No. 1.