Thomson as characteristic of the species *Aphrocallistes beatrix*, Gray. This, which has been figured by me in Pl. LXXXIV. figs. 9, 10, occurs irregularly scattered in great numbers throughout the whole parenchyma. While the one axis of the spicule has two rays greatly prolonged, and while each of these two long rays divides into four diverging, pointed terminals, the rays of the two other axes, which cross the first in the middle, remain simple short principals, which end in sharp points. The entire form may be therefore described as a longitudinally extended oxyhexaster, in which the four short principal rays remain undivided, while each of the principals of the long axis, which are sometimes provided with lateral prickles, divides into four diverging, pointed terminals.

Since parenchymalia of this kind are not found in any other form of *Aphrocallistes*, it becomes possible to determine the separation of this form as a distinct species; I must, however, draw attention to the fact that in *Aphrocallistes bocagei*, which is also very similar in external appearance, I found widely scattered parenchymal oxyhexasters, and similar forms were also figured by Oscar Schmidt in the Spongien des Meerbusens von Mexico (pl. vi. fig. 3). They do not indeed completely agree with the above peculiar spicules, but they approach them, and evidence at least a close affinity between the two forms. The view which Oscar Schmidt has expressed,[1] to the effect that the spicule which is characteristic of *Aphrocallistes beatrix* is an accidentally introduced foreign element I cannot accept.

For purposes of comparison with the other species of the genus *Aphrocallistes* more carefully described below, I will here give a short summary of the most important microscopic skeletal characters, based upon my examination of the original specimen of *Aphrocallistes beatrix*, Gray.

The dictyonal framework is formed, as represented by Wyville Thomson[2] and by Bowerbank,[3] of a tolerably irregular, narrow-meshed network with strongly thickened crossing knots. The beams are almost entirely and more or less thickly beset with small tubercles, but these tubercles are stronger and more abundant on the spherical nodes of intersection, and on each of the strong conical pegs which project freely both on the dermal and gastral surfaces, and also in the interior of the radial prismatic mesh-spaces. The pegs, projecting into the lumen of the mesh-spaces, seldom stand exactly at right angles to the surface of the reticulate partition from which they spring, but are directed obliquely inwards towards the gastral cavity of the entire sponge. The middle portion of all the septa between adjoining prismatic radial canals consists only of a single layer of irregularly fused hexacts, and an irregularly triangular prismatic interspace is formed where three such septa meet.

The dermal skeleton consists of delicate hexacts in which the distal ray bears numerous narrow, curved, fir-tree-like, lateral prickles, while the five other straight

[1] Spongien des Meerbusens von Mexico, p. 50.

[2] *Ann. and Mag. Nat. Hist.*, ser. 4, vol. i. p. 123.

[3] *Proc. Zool. Soc. Lond.*, 1869, pl. xxi. figs. 2–4.