

a thin layer of tissue, 0.02 mm. thick, crowded with microstrongyles and covered by the investing epithelium; the outer layer of the cortex is thus barely represented. Throughout the cortex, and particularly on the outer layer, are scattered oval pigment-cells, consisting of a thin cell-wall, enclosing numerous minute, spherical, transparent granules. The cells measure about 0.0158 by 0.0197 mm.; the granules about 0.002 mm. in diameter; their colour in the thin sections appears to be an ochreous-yellow. Ridley, in defining the characters of the genus *Erylus*, remarks that the sterrasters of the cortex are not united by ligaments like those I had described as binding together the sterrasters of other Geodine sponges; but that they lie independently of each other.<sup>1</sup> After a careful examination of the structure of the cortex in this species I offer the following account of the relations of the sterrasters to the accompanying tissue. The latter consists of a finely granular matrix which stains with hæmatoxylin, and contains fusiform cells dispersed through it. Near the innermost fibrous layer of the cortex, fine fibrillæ, no doubt belonging to fibrillated cells like those which bind together the usual Geodine sterrasters, may sometimes be clearly perceived proceeding from the granulated surface of a sterraster, to which they are attached, and extending into the adjacent fibrous tissue. Again, by staining a fragment of the cortex with magenta or hæmatoxylin and teasing out in glycerine, a film of fine fibrillæ may frequently be observed attached at one end to a sterraster, and extending from it into the surrounding medium. That the granulations on the surface of these spicules should serve for purposes of attachment is what one would naturally expect from analogy with the function of the spines of the more usual form of sterraster, especially as like these they do not appear till the last stage in the development of the spicule, when it enters the cortex. On examining thin sections mounted in glycerine one will at first be unable to make out more than granular fusiform cells crossing the sterrasters transversely, but by close observation one may, in many cases, distinguish fine fibrillæ extending from the surface of one of the spicules, and very rarely these can be traced into connection with an adjoining spicule. So rarely, however, does this occur than it can scarcely be regarded as indicating the rule, and I therefore suspect that the fibrillated cells, instead of extending directly from the surface of one spicule to that of another, and for this indeed there is scarcely room, wrap round the surfaces of adjacent spicules and thus bind them together. So far then I can completely confirm Ridley's statement as to the contrast between the structure observable in the cortex of a more typical Geodine sponge and of this; but not as to the independence of the sterrasters; they do not lie loosely aggregated like the orthodragmas in the cortex of *Dragmastra*, but are separately attached to fusiform cells, by which they are united together.

The outer or microstrongylose layer of the cortex is continued down the sides of the chones, as the corresponding layer usually is in the Geodiidæ, forming their walls,

<sup>1</sup> Ridley, Voyage of the "Alert," p. 625.