

"In the above designations of the auxiliary spicula, it must not be understood that their respective titles strictly define their offices, as it frequently occurs that under peculiar circumstances the same form of spiculum is destined to serve two, or even three, distinct purposes. Thus, an external defensive spiculum will occasionally perform retentive offices for the purpose of securing prey; or internal defensive spicula will combine the offices of defensive spicula against the larger and more powerful of their enemies with that of wounding and securing their smaller ones."

It would lead us much too far to give particulars of the various and often wonderful forms which occur under the several heads here indicated. It was a very happy idea, the division of all the true sponges into three groups, according to the substance which forms their skeleton. These Dr. Bowerbank denominates *Calcarea*, *Silicea* and *Keratosia*. In the first two the skeleton is strengthened by the hard parts of which we have given some account; in the third it is composed of a peculiar substance, of the nature of which we will now give our author's statement:—

"Keratode is the substance of which the horny elastic fibres of the skeleton of the officinal sponges of commerce are composed. It has, correctly speaking, no relationship either chemically or structurally with horn, and Dr. Grant has judiciously rejected the term 'horny fibre' as applied to the sponges of commerce, and has substituted that of keratose by way of distinction; and in accordance with that term I propose to designate the substance generally as keratode, whether it occurs in the elastic fibrous skeleton of true *Spongia*, which are composed almost entirely of this substance, or of those of the Halichondraceous tribe of *Spongiadæ*, where it is subordinate to the spicula in the construction of the skeleton, and appears more especially in the form of an elastic cementing medium. In a dried state it is often rigid and incompressible, but in its natural condition it is more or less soft, and always flexible and very elastic. It varies in colour from a very light shade to an extremely deep tint of amber, and it is always more or less transparent. In its fully developed condition, in the form of fibre, it appears always to be deposited in concentric layers; but in the mode of the development of these layers there are some interesting variations from the normal course of production. As we find in *Aranea diadema*, the common Garden Spider, that the creature has the power of modifying the deposit of the substance of its web so that the radiating fibres dry rapidly while the concentric ones remain viscid for a considerable period, so we find in the production of the young fibres of the skeletons of the *Spongiadæ* in some species, as in those of commerce, there is no adherent power at the apex of the young fibre, excepting with parts of its own substance; while in *Dysidea* and in some other genera, the apex of the newly-produced fibre is remarkably viscid, adhering with great tenacity to any small extraneous granules that it may happen to touch in the course of its extension (Fig. 272, Plate XIV); but this adhesive character appears to be confined to the earliest stages of its production only, as exhibited at the apices of the newly-produced fibres, the