own specimens may be described as var. *triradiata*. I can detect no difference at all between *St. challengeri* and *Syn. alexandri*, while the points raised by LUDWIG seem to me to be due either to the state of preservation or to the incompleteness of the earlier author's description. If we however put a great deal of weight on the shape of the spicules, the Japanese specimens, which have almost entirely triradiate spicules, might be separated as *Syn. triradiata*. But there are also triradiate spicules in THÉEL's and LUDWIG's specimens, only they are much less numerous than the four-armed ones.

The choice between the two courses is almost entirely a matter of fancy. The safest course perhaps is not to disturb THÉEL's descriptions at all, and to establish my specimens for the present at least as a separate species, leaving the question of identity between the three sets of specimens to be settled by future investigations.

4. *Synallactes discoidalis*, sp. n.

(Textfig. 3).

Specimens examined :—

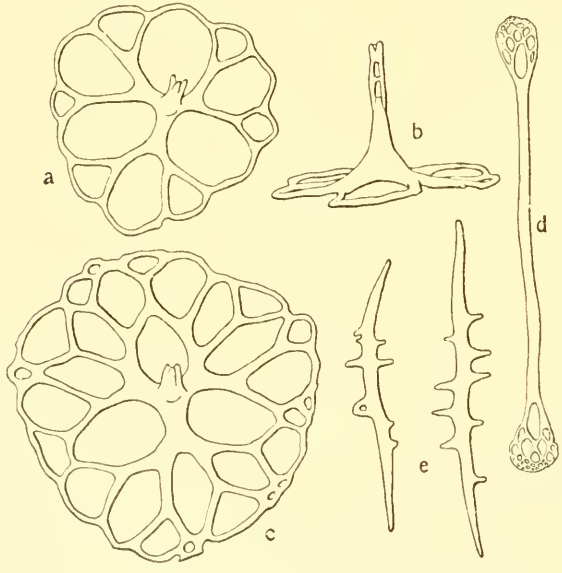
Sci. Coll., Spec. No.	Number of individuals	Preservation	Size in cm.	Locality	Depth in *hiro*	Collector	Date
1067	1	Alc.	6.2 long	Off Odawara, Sagami Bay.	270	Ijima	Aug. 1, 1895
1468	1	,,	11 × 1.5 (14 × 2.5 when fresh)	Numa, Sagami Sea.	350	Mitsukuri & Aoki	Aug. 9, 1903
1469	2	,,	7 × 1.5	Numa, Sagami Sea.	330	,,	Aug. 22, 1903
1518	1	Glyc. mixture		Outside Okinosé, Sagami Sea.	400	Aoki	Apr. 25, 1904

Specimen 1468 was observed in the fresh state.

Description:—Dorsal surface was mottled with irregular, large and small, reddish-brown patches; the largest patch not more than 5 mm. across. But as some of the patches were close together, the whole dorsal surface appeared variegated with reddish-brown areas on lighter ground. The ventral face was uniformly reddish-brown. Prof. Ijima marked specimen No. 1067 at the time of capture "Transparent with crimson markings or patches." His specimen being smaller and therefore younger, the perisome was probably more transparent, and the marking perhaps brighter. These markings entirely disappear in alcohol, and the entire animal becomes translucent and whitish.

Tentacles 20. Dorsal papillae in six rows corresponding to those in *S. triradiata*. Their shape is also the same as that of the papillae in *S. triradiata*, viz., each with a broad wart-like base and a slender distal part. Their length seems to be uniform, i.e., there is no tendency of the slender distal part to grow longer in those papillae placed on the dorsal side of the mouth—a character somewhat marked in *S. triradiata*. In the smallest specimen (No. 1067), dorsal papillae are much shorter than in *S. triradiata*, but are still in six rows. Ventral pedicels in three zones. The two lateral zones with pedicels arranged in two alternate rows; the median zone with same in longitudinal halves, each half with 2—3 alternate rows. The clear space between the zones wider than in *S. triradiata*. Genital tubes in two bundles. Polian vesicle single, about 1.5 cm. long in larger specimen. Stone-canal single, attached to the mesentery, which runs in front of, and parallel with, the genital duct and becomes attached to the body-wall. Anterior processes of the radialia of the calcareous ring usually wide.

The table-like calcareous bodies (textfig. 3*a*—*c*) are built on the same plan in all parts of the body, although there are differences in size and elaboration; 0.09—0.23 mm. in diameter. They are all on the same fundamental plan as those of *S. triradiata*, but the ends of the arms and their branches are united with one another by lateral processes, and a disk-shaped base is thus formed. Triradiate ones very few, except at the base of ventral pedicels. Spire of a single pillar, never in the form of columns. Supporting rods scattered among large basal disks of dorsal papillae (*d*), very long (0.6 mm.); the two ends have many perforations. These rods are irregularly scattered, and even toward the tip of the papilla, although becoming somewhat



Textfig. 3.

Synallactes discoidalis: *a*—*c*—Table-like bodies; *d*—Supporting rod of dorsal papilla; *e*—Same of pedicel.

(*a*—*c*, × 210. *d*, *e*, × 80).

shorter, they do not become as numerous or simple or twisted as in *S. nozawai* or *S. triradiata*. Supporting rods in pedicels (*e*) are like

ordinary supporting rods in the pedicels of *S. triradiata*, and are arranged parallel to the end-plate.

Remarks :—The arrangement and size of ambulacral appendages are different from those of *S. triradiata*. Probably the markings too are different. But above all, the spicules of this species are so strikingly different from those of the other known species of *Synallactes* that I think it must be treated as a new species. The specific name is in reference to the discoidal shape of the base of the tables.

5. *Synallactes ishikawai*, sp. n.

(Textfig. 4).

Specimens examined :—

Sci. Coll., Spec. No.	Number of individuals	Preservation	Size in cm.	Locality	Depth in *hiro*	Collector	Date
1453	1	Alc.	11.3×3	Nishi no-Yodomi, Sagami Bay.	130	Owston	Jul. 30, 1899
1454	1	Alc. (probably once in formal.)	14×3	„	300	Aoki	Jun. 16, 1901

Description :—Body subcylindrical ; dorsal and ventral surfaces distinct, the ventral somewhat flat. When fresh, of a distinct brown tint. On specially contracted parts, wherever there was a mass produced by contraction, that part had a deep brown color. At present, the color is gone, except from the tips of papillae which remain brown, and the whole body has a dirty white color and a cartilage-like aspect.

Dorsal papillae in six rows, there being two rows on each of the two dorsal ambulacra. The papillae in these two rows stand generally opposite one another at nearly equal distances, so that they form very regular series or lines of papillae from the front backward. There are about 28—40 papillae in each row.