

(THÉEL '86); Galapagos (THÉEL '86, CLARK :02); Panama (SELENKA '67); Surinam (LUDWIG '74); Tortugas, Florida (SELENKA '67); St. Bartholomew (THÉEL '86); Paumotu; Liu-Kiu Is.

23. *Holothuria isuga*, sp. n.

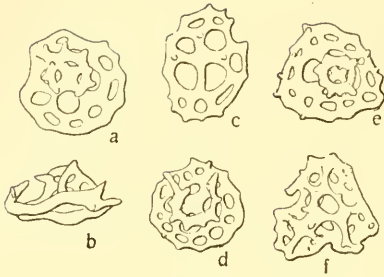
(Textfig. 18).

Specimens examined.—Three individuals from Chinenzaki, Okinawa I. (Sci. Coll., Spec. No. 1188, *a, b, c.*) taken for me at three fathoms' depth by divers under the direction of NABSA, an enthusiastic native collector, during my trip to Okinawa in the spring of 1901.

Description.—Specimens very deep purple to almost black except the rather narrow brownish streak in the dorsal median line. Similar color around the anus and, in two specimens at least, in some parts of the ventrum (probably due to discoloration in alcohol). Pedicels all over the body, on the dorsum as well as on the ventrum, and on ambulacra as well as on interambulacra, except in the dorsal median brown streak, which is very conspicuous even in life and has long papillæ of the same color. Five groups of several papillæ around the anus. Pedicels white-tipped in fresh state. Polian vesicle single, long. Stone-canal single, free, dorsal.

In fresh condition one foot or more in length. In alcohol, highly contracted: three specimens measure 11×7 , 10×7.5 , and 9×6.5 cm. respectively.

Calcareous deposits are tables and buttons (textfig. 18 *a—f*). In one specimen, many of the tables consist simply of disks, irregular in shape, with uneven and spinous margin; the spire represented by short simple knobs. The two other specimens show a more or less partly formed spire to the tables, and



Textfig. 18.

Holothuria isuga :

a—c—Tables of dorsum ;

d—f—Same of ventrum.

($\times 300$).

besides these, some very peculiar modifications of the table. The edges of the crown, which may or may not be complete, send outward processes which unite with similar processes arising from the outer parts of the disk. The result is sometimes a very irregular and complicated figure. Buttons are mostly irregular in shape.

Remarks :—I must confess that I have been sorely puzzled over these specimens. It seems probable, judging from what has been brought out in *Stichopus japonicus*, that the tables found in these specimens are senile forms. We must then judge by those of the specimens that show the tables in a nearly perfect state. It is evident that my specimens are closely related to *Holothuria ragabunda*. But there is this difference : in *H. ragabunda* the more imperfect the tables are, the larger becomes the crown of the spire in comparison with the disk, while in the specimens under treatment the crowns are much smaller than the disk. It seemed to me that my specimens come also very close to *H. fusco-rubra*, but in that species the pedicels should be “much more numerous than the dorsal papillæ, which are comparatively few, so that an obvious line of demarcation is discernible between the dorsal and the ventral surfaces” (THÉEL '86, p. 182), whereas in my specimens the pedicels extend all over the body except on the narrow median dorsal streak which has long papillæ, and there is no obvious demarcation between the dorsal and the ventral surface. Moreover, for *H. fusco-rubra* no mention was made by THÉEL of the peculiarly modified tables, although this may be due to the fact

that he had only a single specimen which may have happened to be like the one of my specimens before alluded to. Again my specimens showed more or less likeness to *H. curiosa* and *H. lagena*, without however fitting in exactly with either of these. It has therefore been thought best to put them separately by themselves as a distinct species, although it is with great reluctance that I introduce a new name. At the same time, it would not surprise me at all to be told hereafter that these specimens are old individuals of an already known species, e.g., of *H. vagabunda*. At present, however, there are no data for making such an assertion.

The specific name *isuga* is the name given by the natives of Okinawa to this species, as I am told by NABISA.

24. *Holothuria lubrica* SELENKA, var. *mæbii* (LUDWIG).

(Textfig. 19).

Holothuria mæbii LUDWIG 1883, pp. 171-2.—LAMPERT 1885, p. 90.—THÉEL 1886a, p. 206.—LUDWIG 1889-'92, p. 330.

Specimens examined :—

Sci. Coll., Spec. No.	Number of indi- viduals	Preser- vation	Locality	Collector	Date
1244	Many	Alc.	Kominato, Bōshū.	Ishikawa, Okada &c.	Apr., 1885.
1245	4	"	Morokata, Chichijima, Ogasawara Is.	Hinota and Seki- guchi	Feb.-Apr. 1894.
1246	6	"	Ōshima, Izu.		
1248	2	"	Kōzushima, Izu.		
1249	2	"	Natsui, Hyūga.	Mitsukuri and Hara	Apr. 13, '96.
1250	1	"	Shimabira, Satsuma.	"	Apr. 18, '96.
1252	2	"	Mizoe, Hyūga.	"	Apr. 2, '96.
1633	1	"	Koajiro, Misaki.	Ago	Aug. 18, '99.