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New Thai Record : *Holothuria* (*Stauropora*) *discrepans* Semper, 1868

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ABSTRACT .- Thirty-four species of holothurians belonging to fifteen genera have been investigated along the eastern coast of Thailand from 1998 to 2002.From this study found that one species that has not been previously reported in Thai waters before namely *Holothuria* (*Stauropora*) *discrepans* Semper,1868, which is here documented.

KEY WORDS : new record, holothurian, sea cucumber, Eastern Coast, Gulf of Thailand, *Holothuria* (*Stauropora*) *discrepans*.

INTRODUCTION

The Holothurian are comnonly known as sea cucumbers, trepang or bêche-de-mer. They play the important roles in marine ecosytem as assisting in the composition of organic matter in sediment and releasing nutrients to the ecological food chain. Moreover, they are commercially important to the economy and medicine. There are approximately 25 families, 200 genera and 1400 species worldwide (Rowe and Gates, 1995). Seven families, 28 genera and 74 species are recorded in Thailand (Bussarawit and Thongtham, 1999).

The genus *Holothuria* is the biggest group among the class Holothuroidea (Echinodermata), Comprising 14 subgenera and 29 species recorded in Thailand.

The main characters of the subgenus *Stauropora* are small size; soft body, not very thick; tube feet confined to the three ventral ambulacral areas; small, irregularly and dorsally arranged papillae; 18 - 30 peltate tentacles, with collar of papillae around the base of the tentacle; calcareous ring with radial plates up to the three times the length of the interradial plates; table spicules always present, with low or high spire; disc usually squarish to octagonal with a large centrally-placed cruciform holes, disc rim smooth or spinose; buttons usually present and variable in forms such as oval, smooth or rugose, occasionally incomplete or complete buttons with three or six pairs of holes. (Clark and Rowe, 1971).

The only one species of subgenus *Stauropora* namely *Holothuria* (*Stauropora*) *fuscocinerea* Jeager,1833 has been recorded in Thailand. We had investigated holothurians along the eastern coast of the Gulf of Thailand between 1998 and 2002. Three specimens from this study were identified as *Holothuria* (*Stauropora*) *discrepans* Semper,1868 in the subgenus *Stauropora* which has not previously been recorded in Thai waters.

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MATERIALS AND METHODS

Between 1998 and 2002, we had surveyed and collected the Holothurians along the eastern coast of the Gulf of Thailand. The specimens had been collected from the total of 82 stations in Chon Buri, Rayong, Chanthaburi and Trat provinces and various habitats including, coral reef, sea grass bed, sandy beaches and rocky beaches.

The Holothurians are identified mainly on the basis of spicules and morphological character and classified by their form and number of tentacles, distribution of tube feet and papillae, color, shape, length of bodies, calcareous ring and presence or absence of cuvierian tubules. (Reyes-Leonardo, 1984).

For spicule examination, cutting small pieces (approx. 0.5x0.5 cm^2) in 3 positions of dorsal and ventral body wall, tentacles and tube feet were boiled in 10% NaOH for dissolving the tissues and leaving the calcareous spicules intact. These were then washed with distilled water for 3 times and finally dehydrated in 95% ethanol. The samples were then examined under the microscope and a photos taken.

The taxonomic scheme used in this paper follows those of Rowe (1969), Clark and Rowe (1971) and Massin (1999).

The speimens were deposited in Reference Collection of Institute of Marine Science, Burapha University, Bang Saen, Chon Buri province, Thailand.

RESULTS

Phylum Echinodermata
Class Holothuroidae
Order Aspidochirotida
Family Holothuiidae
Genus *Holothuria*
Subgenus *Stauropora*

Holothuria (Stauropora) discrepans Semper, 1868 (Fig. 1, 2A-F, 3A-F, 4A-F)

Holothuria (Stauropora) discrepans Semper, 1868 : Rowe, 1969 : 140, fig. 9; Clark and Rowe, 1971 : 178, Pl. 28, fig. 4; Massin, 1999 : 46-48, figs. 36a-k, 37, 111b; Lane, et al., 2000 : 489.

Materials.- : 3 specimens - BIMS-I 1020, BIMS-I 1025 and BIMS-I 1029 (Table 1)

Description : Specimens with average size of 70 x 25 mm almost uniformly greenish brown with some lighter spots (Fig. 1); skin soft, thick (about 2 mm) and coated with mucus; body cylindrical with ventral mouth and subdorsal anus; 20 yellowish peltate tentacles and few papillae on dorsal and few tube feet along the ambulacrum; Cuvierian organ present at posterior end.

Calcareous ring is stout; radial pieces are about 3.0 mm thick with deep V-shaped notch at the middle. Interradial pieces have little teeth (Fig. 2A, 3A-B).

Figure 1 Lateral view of *Holothuria* (*Stauropora*) *discrepans* Semper, 1868. BIMS-I 1020, in 75% ethanol, Pictured by Arom Mucharin.

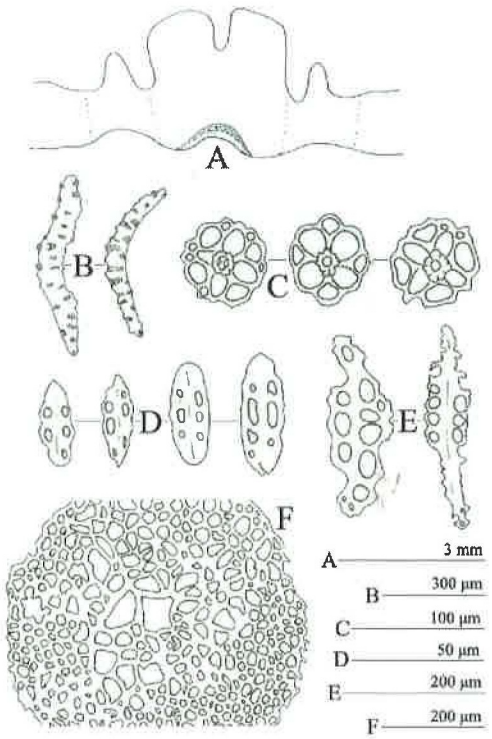

Figure 2 *Holothuria* (*Stauropora*) *discrepans* Semper, 1868. A: calcareous ring (R : radial piece; IR : interradial piece); B: tentacle rods; C: body wall tables; D: body wall buttons; E: tube foot perforated rods; F: tube foot perforated plates. Thefigures was drawn by Arom Mucharin.

Tentacle spicules are straight or curvy rods, with heaps of small spines (Fig. 2B, 3C-D), about 396.0-742.5 µm long.

Body wall spicules consist of tables and buttons. Tables are abundant, discs are 49.5-69.3 µm in diameter, with 4 main center holes and 4-8 little holes around disc. Four pillars stand on disc, each pillar has dense spines at the end, looking like crown when view from above (Fig. 2C, 3E-F). Buttons are very thin, 2-4 pairs of holes, 39.6-49.5 µm in length, some buttons may be variable in shape (Fig. 2D, 4A-B), but rarely with seen. Tube feet spicules consist of tables, buttons, perforated rods and perforated plates.

Tables are similar to those of the body wall but less in quantity than body wall. Buttons are similar to those of the body wall but more or less longer than body wall buttons (39.6-60.0 µm in length). Perforated rods have 2 forms, including smooth and spiny skin (292.0-313.2 µm in length) and perforated rods with holes, 287.0-299.5 µm in length (Fig. 2E, 4C-D). Perforated plates are large, 500.0-600.0 µm in length (Fig. 2F, 4E-F).

Habitat : *Holothuria* (*Stauropora*) *discrepans* Semper,1868 was found lives under the dead corals or flat rock, at 2-3 meters depth.

Distribution : *Holothuria* (*Stauropora*) *discrepans* Semper,1868 is not common in the Indo-West Pacific region and distribute in the Maldive area and South Pacific Islands. For Thailand, we found it in 3 stations consiting of Kra-Tean Islands, Rayunt Nok Island and Whi Island of Trat Province (Fig 5).

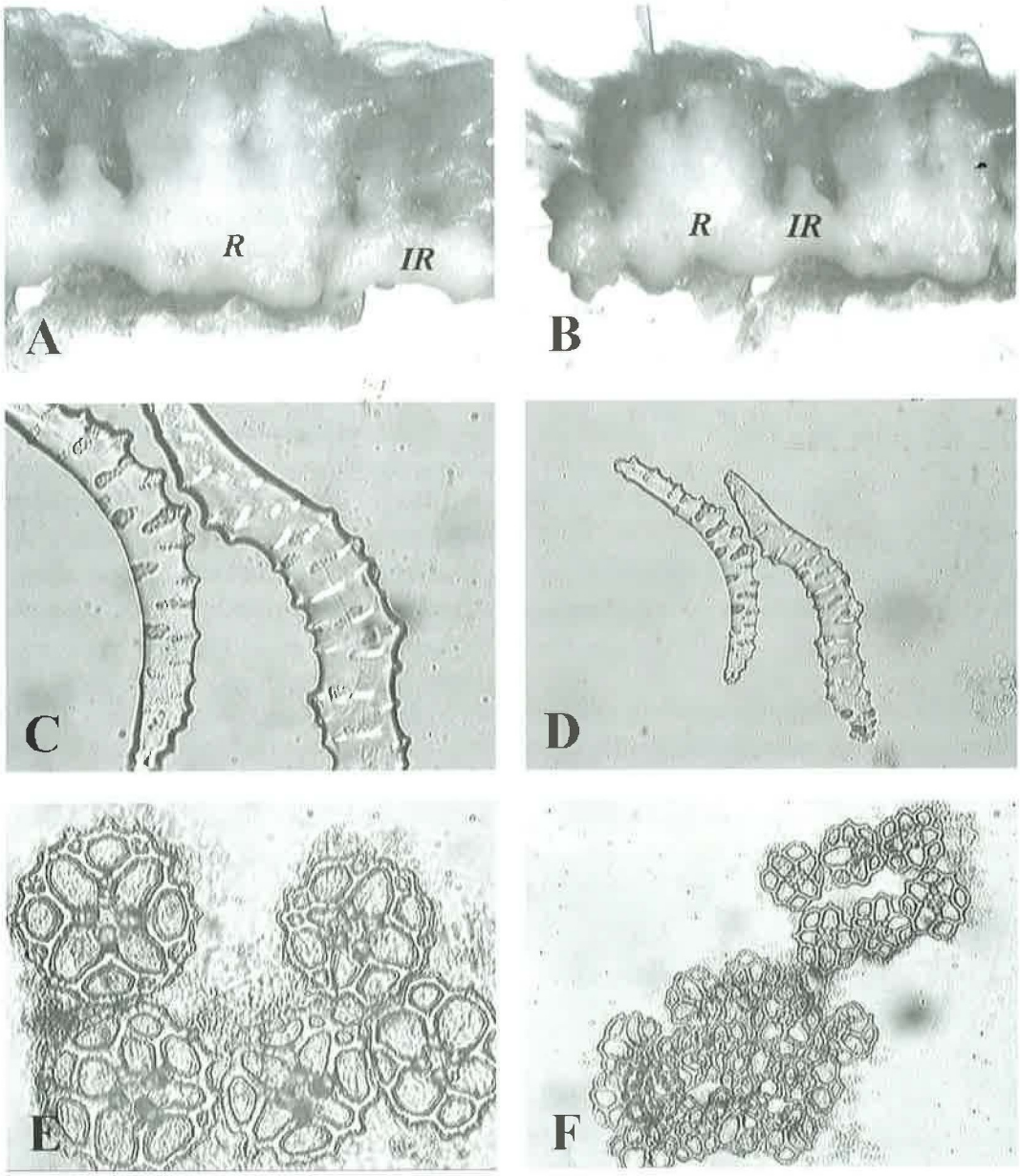

Figure 3 *Holothuria* (*Stauropora*) *discrepans* Semper, 1868. A-B : calcareous ring (R : radial piece; IR : interradial piece); C-D : tentacle rods (heaps of small spines on tentacle rods); E-F : body wall tables. All microscopic pictures taken by Arom Mucharin.

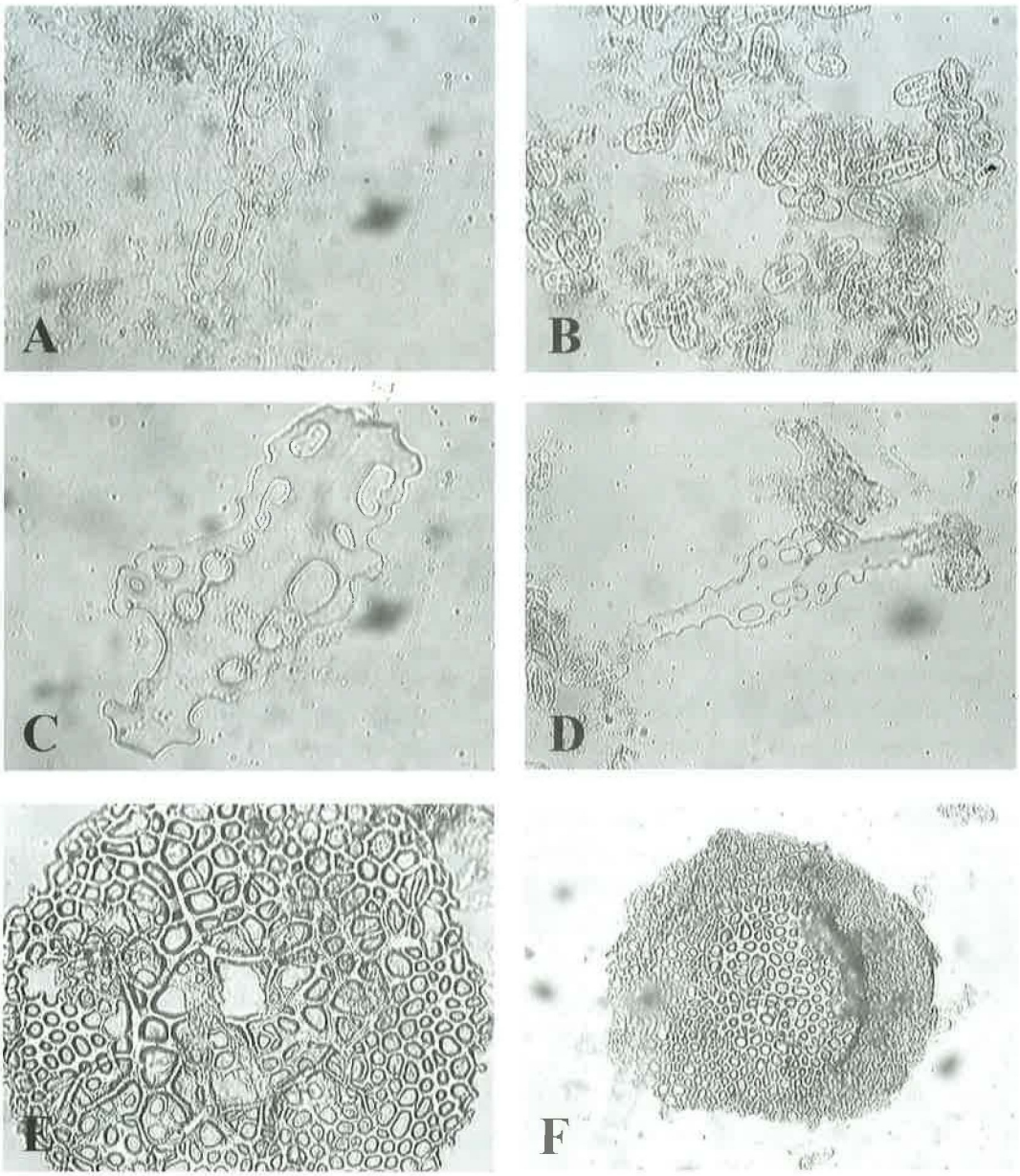

Figure 4 *Holothuria* (*Stauropora*) *discrepans* Semper, 1868. A-B : body wall buttons; C-D: tube foot perforated rods; E-F : tube foot perforated plates. All microscopic pictures taken by Arom Mucharin.

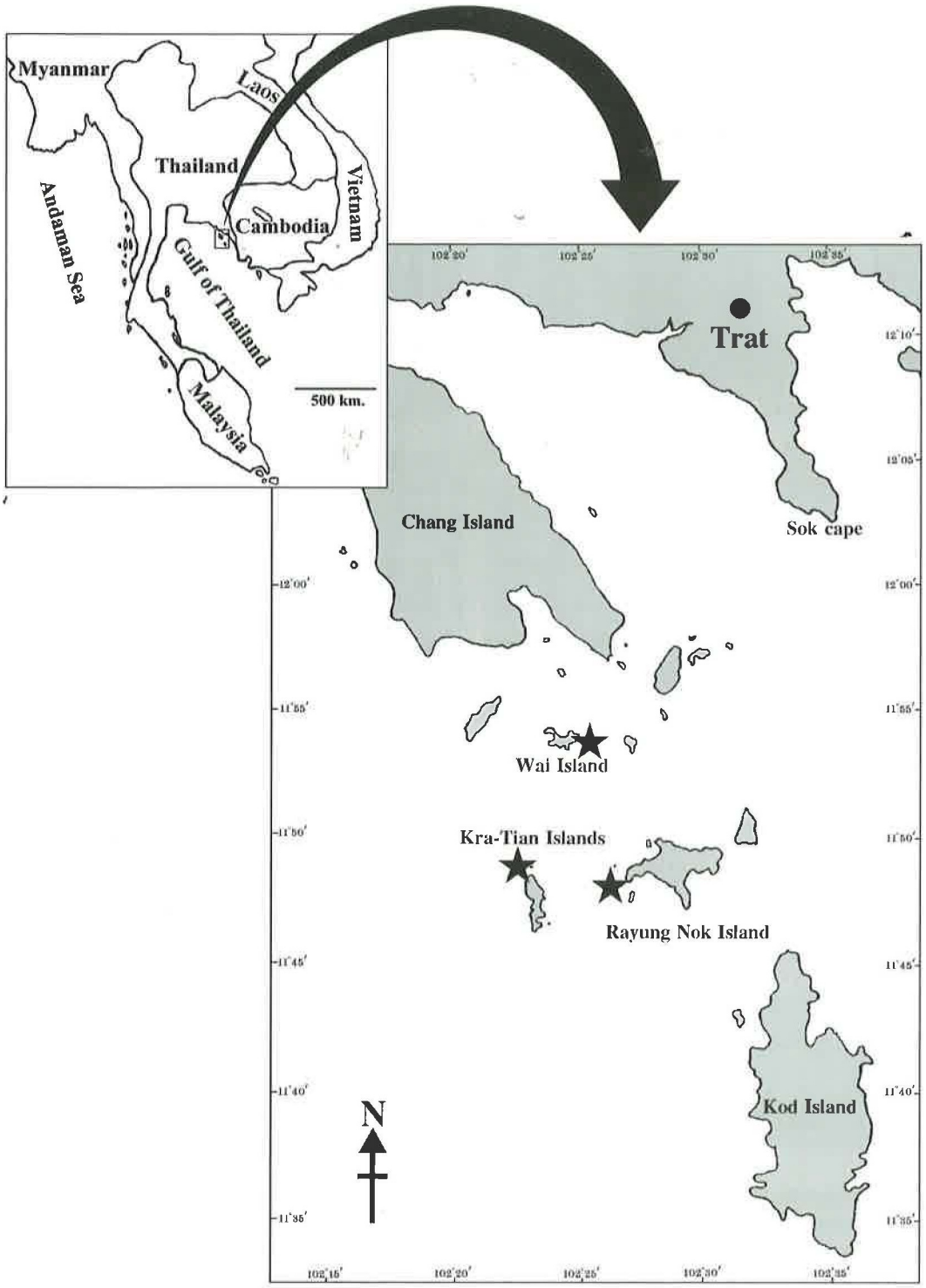

Figure 5 Collecting localities of *Holothuria* (*Stauropora*) *discrepans* Semper, 1868 (Star) at the Wai Island, Kra - Tian Islands and Rayung Nok Island, Mu Ko Chang, Trat, Thailand. The map was modified by Arom Mucharin.

Table 1 Field data of specimens : *Holothuria* (*Stauropora*) *discrepans* Semper,1868.

Collection No.	Locality	Habitat	Date	Collector
BIMS-I 1020	Northwest of Kra-Tian Islands. Trat Prov.	Under the dead corals. In coral reef. Depth 3-4 meters.	26 Feb. 01	Arom Mucharin
BIMS-I 1025	Northwest of Rayung Nok Island. Trat Prov.	In a nook of corals. In coral reef. Depth 2 meters.	27 Feb. 01	Arom Mucharin
BIMS-I 1029	East of Wai Island. Trat Prov.	In a nook of corals. In coral reef. Depth 3 meters.	28 Feb. 01	Arom Mucharin

Note.: - BIMS : Bang Saen Institution of Marine Science, Burapha University, Chon Buri, Thailand.

DISCUSSION

From the studying of the *Holothuria* (*Stauropora*) *discrepans* morphological character of body size, form and number of tentacles, distribution of tube feet and papillae, color, shape, calcareous ring and spicules are very similar to those described in the report of Rowe (1969) and Massin (1999).

Holothuria (*Stauropora*) *discrepans* was found from Kra-Tian , Rayung Nok and Wai island in Thailand by Mucharin in 2001. Although Bussrawit and Thongtham (1999) had reported 74 species of Holothurians of Thailiand but this species is not included in their work. In addition, from the literature review, the *Holothuria* (*Stauropora*) *discrepans* has not been reported in the East Indies but were found in the South China Sea (Lane, et. al., 2000), Maldives area and the South Pacific islands (Clack and Rowe, 1971).

So its present occurrence at the site about the mid-point between the two known localities should be highly probable.

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