

**DESCRIPTION OF *FAVITES MONTICULARIS*  
SP. NOV. (FAVIIDAE) OFF NORTH ANDAMAN  
ISLANDS, INDIA**

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Scleractinian corals are described under 18 families. Among these, Faviidae is denoted as the second largest family having 126 species of corals belonging to 24 genera (Veron 2000). Veron (1986) described the characteristics as well as differentiation among the genera such as *Favia*, *Barabattoia*, *Favites*, and *Montastrea*. Veron (2000) summarized a total of 14 species of corals under the genus *Favites* among 16 extant species. The described species under the genus *Favites* are flat, rounded, massive, encrusting with irregular compact organization. Corallites are monocentric and cerioid with fused structural form with the presence of common wall which is acute. Leafy walls are composed of 6–8 mm deep fossa. Calices are variable in structure such as oval, polygonal and angular with a series. Several marginally spiny septa are developed from the fossa with prominent dentations. Colonies are usually brown to green but the peristome region can be seen with contrasting colour. The Andaman & Nicobar Islands represent diverse scleractinian corals of the genus *Favites* with new records of *spinosa*, *paraflexuosa* and *micropentagona* (Mondal et al. 2010a,b). These islands also represent a high diversity of scleractinian corals at North and Middle Andaman & Ritchie's Archipelago (Mondal et al. 2011, 2012a). This

paper deals with the taxonomic description of a species which bears a unique compelling character to be described as new to science.

**Material and Methods:** The holotype coral specimen was sampled from off Shibpur, Diglipur, North Andaman by self contained underwater breathing apparatus (SCUBA) diving. Collected material was kept in freshwater for six days to remove the mucous substances and air dried for examination. Morphological measurements were made with Vernier Caliper (Aerospace 074 15376). Characteristic features of the specimen were examined under the Digital Stereozoom Microscope, Model Leica M 205 A. Taxonomic characters of the specimen were studied in consultation with Veron et al. (1977) and Veron (2000).

Order: Scleractinia Bourne, 1900

Suborder: Faviina Vaughan and Wells, 1943

Family: Faviidae Gregory, 1900

Genus *Favites* Link, 1807

***Favites monticularis* sp. nov.**

urn:lsid:zoobank.org:act:51885921-4955-4FB4-BE0B-113D1D4FCC12

**Material Examined:** Holotype: ZSI/ANRC-7410, 03.iii.2012, a small terminal portion of the observed colony (Image 1) was sampled at a depth of 14m in a reef area off Shibpur (13°14.439'N & 92°02.971'E), located at Diglipur, North Andaman. The area of the observed colony was about 1m<sup>2</sup>.

The measurement of the sample is as follows: length—3.5cm, width—2.1cm and height—1.5cm. Holotype is deposited in the National Zoological Collections of Zoological Survey of India, Port Blair. Five colonies were



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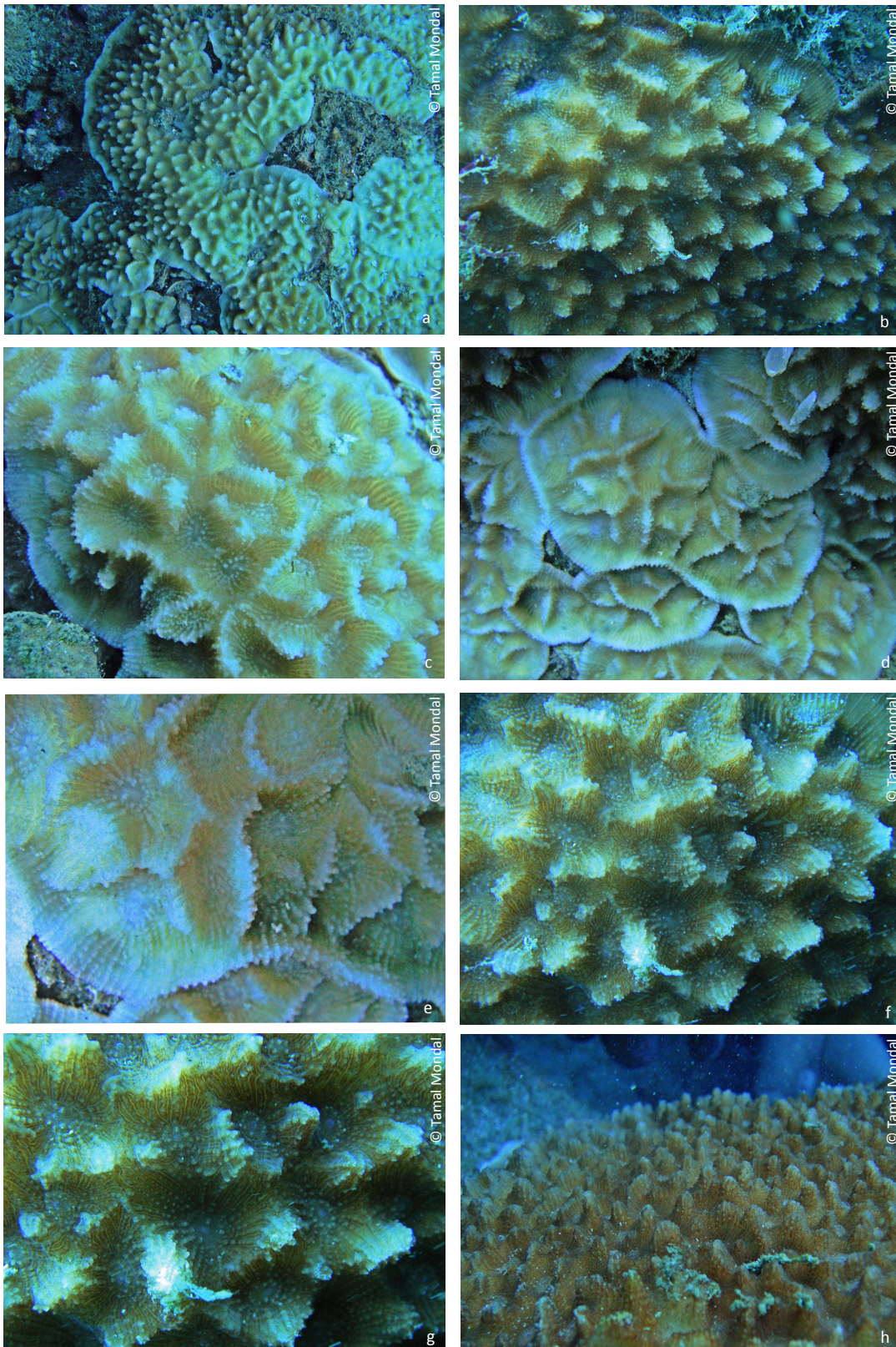
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**Competing Interest:** None.

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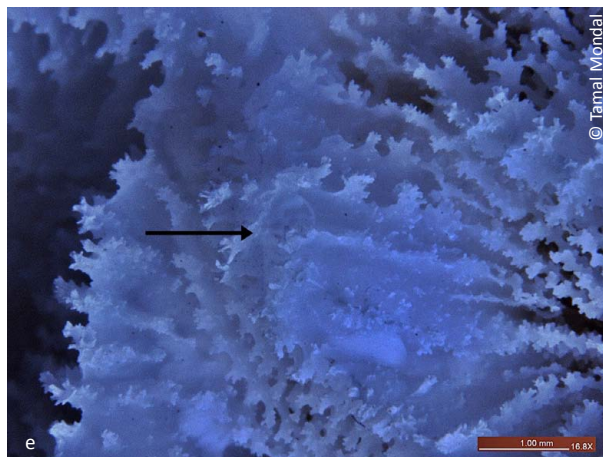
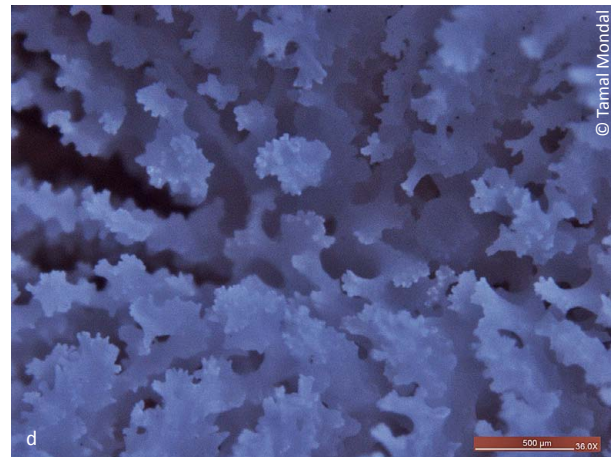
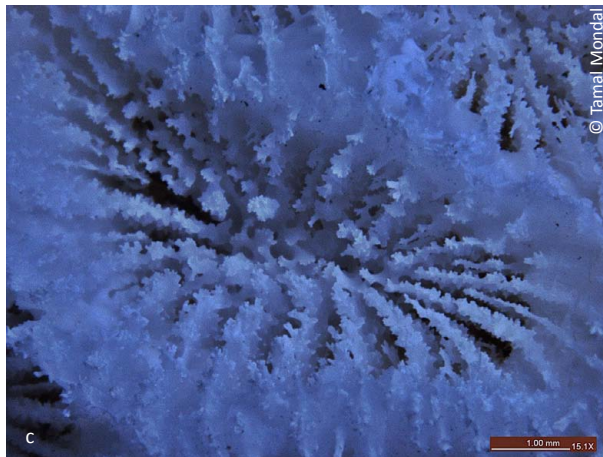
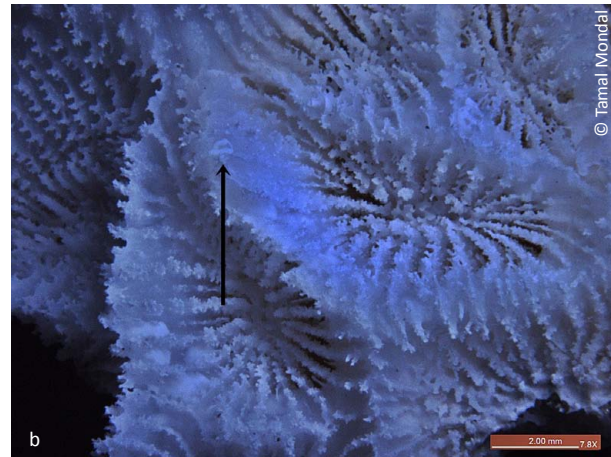
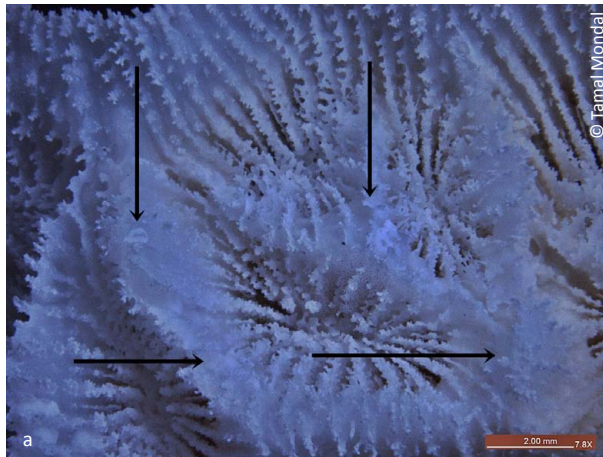




**Image 1. a–h - Underwater live colonies with monticulate shaped structure.**

**a - Encrusting holotype colony; b - Holotype colony with monticulate shaped structure; c - Holotype colony showing corallites and monticulate shaped structure at the septal wall; d - Colony of paratype; e - Paratype colony with terminal corallites; f - Paratype colony with monticulate shaped structure; g - Close-up image of corallites and monticulate shape character; h - Side view of colony to distinguish monticulate shaped character separately**





**Image 2.** Different key characters of *Favites monticularis* sp. nov. a - Corallites (inner portion); b - Corallites (terminal portion); c - Septal arrangement with dentition; d - Paliform lobes and coenosteum; e - Monticules shaped structure.

observed from the same study area (Image 2).

**Diagnostic characters:** The colonies of *Favites monticularis* sp. nov. are encrusting, massive. Corallites are cerioid. The diameter of the corallites is 6–10 mm. Two septal cycles can be distinguished. Lengths of the septa are variable. The first order septa reach the columella while the second order may or may not. Paliform lobes are well developed, echinose in structure. Septal dentition is also well formed in echinose pattern. Columella is poorly developed and loose. Septa are variable and exert over the theca forming conical-shaped monticule structures. These are regular and variable in length of 2–3 mm according to corallites structure. Due to the presence of monticules, the colonies appear as serially arranged upwards and downwards structures (Image 2).

**Closely related species:** *Favites pentagona* is a very closely related species. This species does not have a monticule like structure. *Favites monticularis* sp. nov. is also closely related to *Hydnophora microconos* in lateral view.

**Colour:** Colonies are green to brown in colour. Centre of the corallites or columella is pale and the monticules

Table 1. Comparison of key characters of different species under genus *Favites*

Sno	Species name	Specific characters
1.	<i>Favites stylifera</i>	Corallites very small (<6mm in diameter), corallites irregular in shape.
2.	<i>Favites micropentagona</i>	Corallites very small (<6mm in diameter), corallites uniform in shape.
3.	<i>Favites pentagona</i>	Corallites small (6–10 mm in diameter), corallites angular, paliform lobes well developed.
4.	<i>Favites spinosa</i>	Corallites small (6–10 mm in diameter), corallites angular, paliform lobes weakly developed or absent, septa very exsert.
5.	<i>Favites acuticollis</i>	Corallites small (6–10 mm in diameter), corallites angular, paliform lobes weakly developed or absent, septa not exsert.
6.	<i>Favites bestae</i>	Corallites small (6–10 mm in diameter), corallites rounded, paliform lobes well developed.
7.	<i>Favites chinensis</i>	Corallites small (6–10 mm in diameter), corallites rounded, paliform lobes absent.
8.	<i>Favites halicora</i>	Corallites middle-sized (10–14 mm in diameter), colony surface hillocky.
9.	<i>Favites russelli</i>	Corallites middle-sized (10–14 mm in diameter), colony not hillocky, septa irregularly exsert.
10.	<i>Favites abdita</i>	Corallites middle-sized (10–14 mm in diameter), colony not hillocky, septa not irregular, corallites angular.
11.	<i>Favites complanata</i>	Corallites middle-sized (10–14 mm in diameter), colony not hillocky, septa not irregular, corallites rounded.
12.	<i>Favites vasta</i>	Corallites large (>14mm in diameter), corallites rounded.
13.	<i>Favites flexuosa</i>	Corallites large (>14mm in diameter), corallites angular, septal teeth conspicuous.
14.	<i>Favites paraflexuosa</i>	Corallites large (>14mm in diameter), corallites angular, septal teeth not conspicuous.
15.	<i>Favites monticularis</i> sp. nov.	Corallites small (6–10 mm in diameter), corallite angular, paliform lobes well developed, presence of monticule shaped structure

are whitish in colour.

**Etymology:** *Monticularis* is based on the word monticule which means small hill or mound, as the species bears small hill (monticule) shaped structure on the septal wall, which distinguishes this species from other species of the genus *Favites*.

The presently described species has been compared with other 14 species of *Favites* reported from worldwide with their key taxonomical features (Table 1).

**Discussion:** The Andaman and Nicobar Islands harbor a great deal of scleractinian corals which makes this area one of the highly diversified reef areas in the Indo-Pacific region. *Favites monticularis* sp. nov. is described as a new scleractinian coral species from the Andaman and Nicobar Islands. Although this species shows a close resemblance to *Favites pentagona*, in morphological characters - it also shows a distinct difference with the presence of monticule. This character makes this species unique. Apart from the described holotype of *Favites monticularis* reported from off Shibpur, five more colonies of the presently described species were observed from the same study area and subsequently three colonies at Neil Island (11°50.857'N & 93°01.140'E) and two colonies at Havelock Island (11°53.274'N & 93°01.439'E) during underwater status survey of scleractinian corals. Mondal et al. (2012b) reported a total of 88 species of faviids with 13 species of *Favites* from these groups of islands. This new species under the genus *Favites* is not only an addition to scleractinian order but also new to science.

## REFERENCES

- Link, H.T. (1807). Beschreibung der Naturalien Sammlungen der Universität zu Rostock. 3: 161–165.
- Mondal, T., C. Raghunathan & K. Venkataraman (2012a). Scleractinian Diversity of Ritchie's Archipelago, Andaman & Nicobar Island. *Global Journal of Science Frontier Research* 12(4): 53–64.
- Mondal, T., C. Raghunathan & K. Venkataraman (2012b). An account of Faviid Corals of Andaman & Nicobar Islands. *Research Journal of Science and Technology* 4(2): 62–66.
- Mondal, T., C. Raghunathan & K. Venkataraman (2011). Diversity of Scleractinian Corals in Middle and North Andaman Archipelago. *World Journal of Zoology* 6(4): 407–419.
- Mondal, T., C. Raghunathan, C. Sivaperuman & Ramakrishna (2010a). Identification of Seven Scleractinian Corals from Andaman & Nicobar Island as New Record to Indian Water. *Proceedings of Zoological Society* 63(1): 61–66.
- Mondal, T., C. Raghunathan & Ramakrishna (2010b). New Record of Thirteen Scleractinian Corals in Indian Waters from Middle and North Andaman. *Biosystematica* 4(2): 75–89.
- Vaughan, T.W. & J.W. Wells (1943). Revisions of the sub-order, family and genera of the Scleractinia. *Geological Society American Special Paper* 44: 1–363.
- Veron, J.E.N. (2000). *Corals of the World - Volumes 1 & 3*. Australian Institute of Marine Science, Townsville, 463pp & 490pp.
- Veron, J.E.N. (1986). *Corals of Australia and the Indo-Pacific*. Australian Institute of Marine Science and the University of Hawaii Press, Honolulu, 644pp.
- Veron, J.E.N., M. Pichon & M. Wijsman-Best (1977). *Scleractinia of eastern Australia, II. Families Faviidae, Trachyphylliidae* 3. Australian Institute of Marine Science, Monograph Series, 1–233pp.

