

## NEW RECORDS OF TWO GASTROPODS (MOLLUSCA: GASTROPODA) FROM INDIAN WATERS

Two new records of the gastropods *Clypeomorus petrosa chemnitziana* (Pilsbry, 1901) and *Sinustrombus sinuatus* ([Lightfoot], 1786), from Great Nicobar Island, India are reported along with descriptions and illustrations. The present report is the first record of *Sinustrombus* to the Indian mollusca fauna and provides an additional record of *Clypeomorus petrosa chemnitziana*.

The genus *Clypeomorus* (Caenogastropoda: Cerithiidae) is represented by fifteen living species including three subspecies and three extinct species<sup>1,2</sup>. The genus is characterised by low spire, variable sculpture, frequently beaded shells with short anterior siphonal canal and contracted collumella. They are tropical herbivores, found living under rocks in the intertidal region and usually occurring in large, cerithiid aggregations<sup>1</sup>. *Clypeomorus* is represented by 6 species in Indian waters, 5 of which are also recorded from Andaman and Nicobar Islands, viz., *Clypeomorus batillariaeformis* Habe & Kosuge, 1966; *Clypeomorus brevis* (Quoy & Gaimard, 1834); *Clypeomorus purpurastoma* Houbriek, 1985; *Clypeomorus bifasciata bifasciata* (Sowerby); *Clypeomorus petrosa gennesi* (Fischer & Vignal, 1901)<sup>3,4</sup>.

The genus *Sinustrombus* (Littorinimorpha: Strombidae) is represented by 3 species viz., *Sinustrombus latissimus* (Linnaeus, 1758), *Sinustrombus sinuatus* ([Lightfoot], 1786) and *Sinustrombus taurus* (Reeve, 1857) in the world<sup>5</sup> with no previous known records from Indian waters<sup>3,4</sup>. The earliest records of *Sinustrombus* were from tropical and sub-tropical waters of the Indo-Pacific region<sup>5,6</sup>. *Sinustrombus* is known from the intertidal up to a depth of 30m and usually in sandy areas with coral rubble covered with algae and in relatively clear waters<sup>5</sup>.

As a part of a survey on marine faunal diversity of Great Nicobar Islands during April and December 2019, the authors discovered 5 individuals of *Clypeomorus petrosa chemnitziana* (Pilsbry, 1901) at the upper intertidal region of Vijay Nagar (Lat: 06°50.683'N; Long: 93°53.472'E) (ZSI/ANRC/M/23856), (Lat: 06°55.479'N; Long: 93°54.243'E) (ZSI/ANRC/M/25316). Additionally, one specimen of *Sinustrombus sinuatus* ([Lightfoot], 1786) was collected from sandy shore area during low-tide, Pilobah (Lat: 06°49.661'N; Long: 93°49.539'E) (ZSI/ANRC/M/25318) (Fig. 1). These two species constitute new records

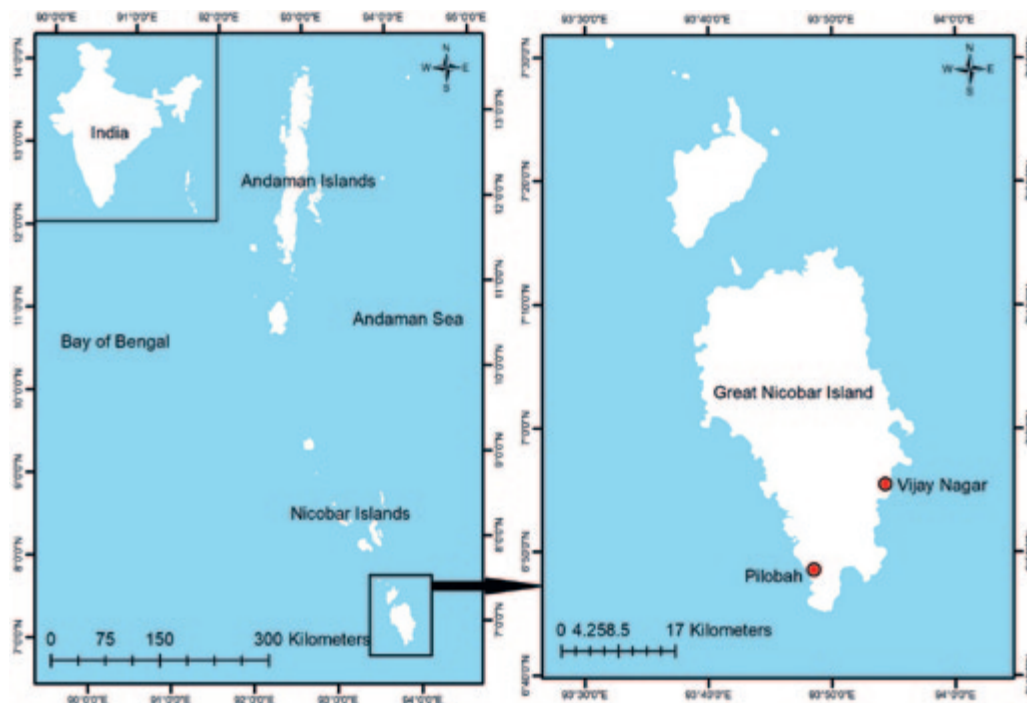
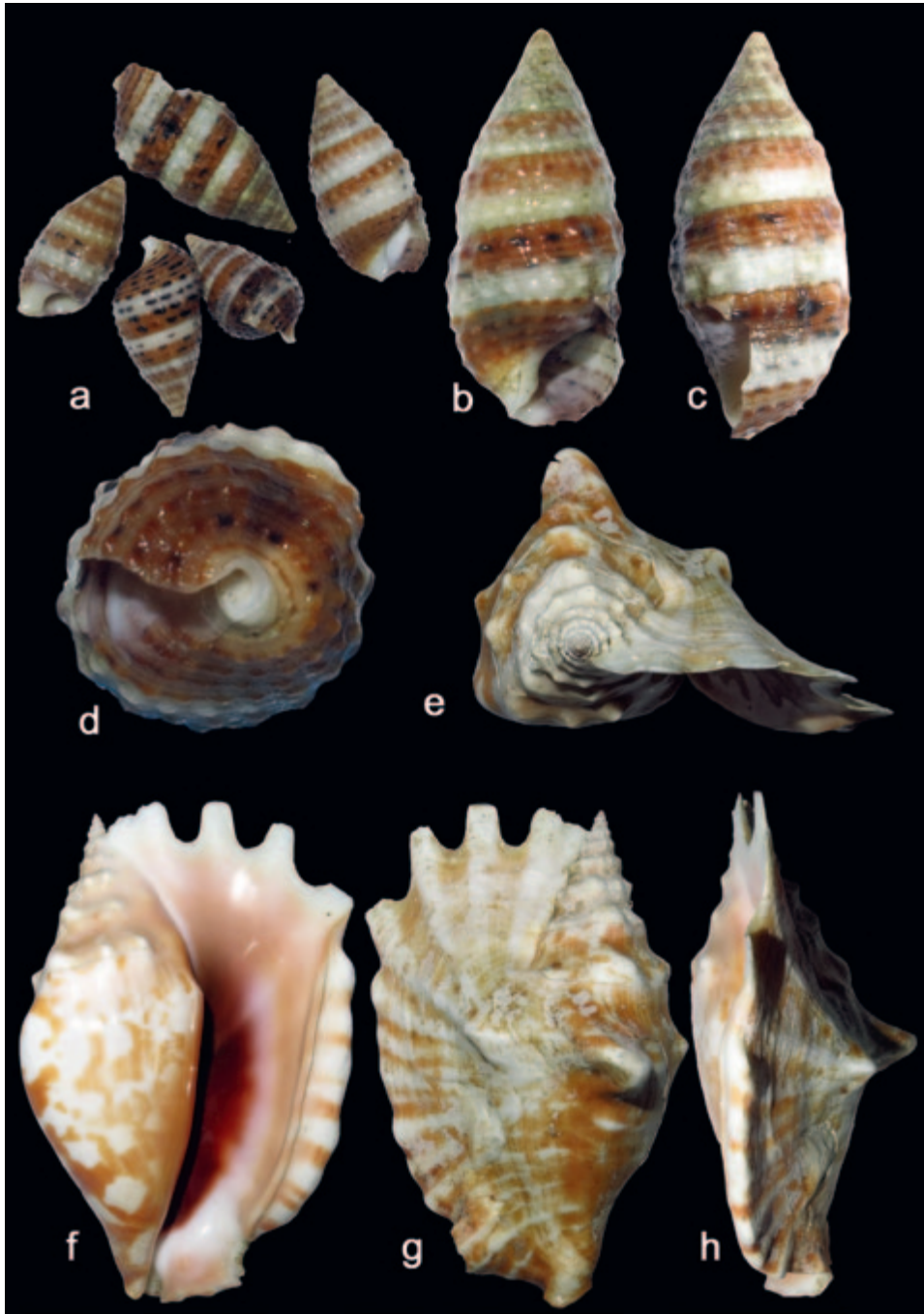


Figure 1 Study sites of Great Nicobar Island, India.



**Figure 2** a–d, Different views of *Clypeomorus petrosa chemnitziana* (Pilsbry, 1901); e–h, different views of *Sinustrombus sinuatus* ([Lightfoot], 1786).

to Indian waters from Great Nicobar Island of A & N Islands. These specimens were deposited in Andaman and Nicobar Regional Centre, Zoological Survey of India, India.

*Descriptions of species*

*Clypeomorus petrosa chemnitziana* (Pilsbry, 1901) is characterized by a turreted, pupiform shell with 10 weakly sculptured whorls. Wavy suture

deeply incised. Frequent grooved spiral lines and relatively smooth sculpture. Aperture ovate, outer lip more rounded and smoother and less distorted at penultimate whorl region. Shell is white with yellow bands and black dotted lines. These specimens recorded total length (5 specimens) ranges from 14-23mm, width 8-10mm (Fig. 2a–d). The present specimens were found underneath rocks with other Cerithiidae shells.

Previously this species has been recorded from Southern Japan, the Ryukyus, to the Philippines and Indonesia<sup>8</sup>. This species is uncommon only found in one study area of Great Nicobar Island.

*Sinustrombus sinuatus* ([Lightfoot], 1786) is characterized by a solid, thick, high spired body whorl moderately heavy, confined below suture and spirally corded. Stromboid notch deep and flaring. The siphonal canal is short and recurved. The deep interior of the aperture is deep purple, blending into soft brown towards the smooth edge of the outer lip. Lip wide, flaring, and thickened with sharp ridge running parallel to the columella. Posterior edge of lip adnate to the spire and having 4 thin whitish tongue-like blades. The total length of the specimen is 103mm and width 64mm (Fig. 2e–h). Previously this species has been recorded from Ryukyu Islands, Taiwan, Philippines, Indonesia, New Caledonia, Solomos, New Caledonia, Fiji, Marians, Carolines, Marshalls, Micronesia, Melanesia, and West Pacific<sup>7–9</sup>.

Great Nicobar Island (7.03°N to 93.8°S) is the southernmost island of the Nicobar archipelago and very few studies have been carried out on its molluscan fauna<sup>10–13</sup>. Most of the areas of this island remain untouched and unexplored, hence further studies should be carried out to provide a comprehensive understanding of the intertidal species of this island.

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<sup>2</sup> WORMS 2020 Mollusca. Accessed at: <http://www.marinespecies.org/aphia.php?p=taxdetails&id=51> on 2020-06-12.

<sup>3</sup> MONDAL T 2018 Molluscs. In K. Chandra & C. Raghunathan (eds) *Faunal Diversity of Biogeographic Zone: Islands of India*: 353–372. Published by the Director, Zoological Survey of India, Kolkata.

<sup>4</sup> DEY A 2016 *Catalogue of Marine Molluscs (Polyplacophora and Gastropoda)* (Published by Director of Zoological Survey of India) 687 pp.

<sup>5</sup> MOLLUSCABASE eds 2020 MolluscaBase. *Sinustrombus* Bandel, 2007. Accessed through: World Register of Marine Species at: <https://www.marinespecies.org/aphia.php?p=taxdetails&id=531843> on 2020-12-

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<sup>7</sup> ABBOTT RT, ROSEWATER J, POWELL AWB, WILSON BR, MCCOMB JA, WILLIAM K, EMERSON, ROBERTSON R. & CERNOHORSKY OW 1964 *Indo-Pacific Mollusca: Monographs of the marine mollusks of the Tropical Western Pacific and Indian Ocean* Academy of Natural Sciences.

<sup>8</sup> ABBOT RT & DANCE SP 2000 *Compendium of seashells. A full-colour guide to more than 4,200 of the world's marine shells* Odyssey Publishing, China.

<sup>9</sup> OLIVER APH 2004 *Guide to Seashells of the World*. Firefly Books (printed in china).

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<sup>12</sup> ARUMUGAM M, SHANMUGAM A, BALASUBRAMANIAN T, KANNAN L & AJMALKHAN S 2010 Studies on molluscan diversity of Great Nicobar Island- a pre-tsunami scenario. In Ramakrishna, C. Raghunathan & C. Sivaperuman (eds) *Recent Trends in Biodiversity of Andaman and Nicobar Islands* Zoological Survey of India, Kolkata: 275–282.

<sup>13</sup> RAGHUNATHAN C 2015 *Littoral faunal Diversity of Great Nicobar Island* Records of the Zoological Survey of India. Occasional Papers 369: 1–172.

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