

LEPTOSERIS KALAYAANENSIS (SCLERACTINIA: AGARICIIDAE), A NEW CORAL SPECIES FROM THE PHILIPPINES

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ABSTRACT. – *Leptoseris kalayaanensis* new species, from the Kalayaan Island Group, the Philippines, is described. It is characterized by unique solid spines all over its encrusting surface.

KEY WORDS. – Scleractinia, Agariciidae, *Leptoseris*, new species.

INTRODUCTION

A new species of *Leptoseris*, *L. kalayaanensis* is described from three coralla found under overhangs in about 15m depth at its type locality, the Northeast Investigator Shoal of the Kalayaan Island Group, the Philippines. It is unusual among *Leptoseris* in that it bears solid spines (up to 10 mm long and three mm thick at the base) all over its encrusting surface. These spines are different from the hollow tubes sometimes found in *L. scabra* Vaughan, 1907 and *L. tubulifera* Vaughan, 1907. The spines are three to five mm apart and are usually found either on concentric ridges near the middle of the corallum, or on radiating ridges near the colony margin. Corallite centers are larger and more recognizable near the colony center, where a slightly larger central corallite is found.

Leptoseris kalayaanensis, new species, was first mentioned in Licuanan (2003) but since no holotype or syntypes were designated then, this name as originally used should be considered as a nomen nudum under ICZN Code Article 16.4.1. This new species is thus described in this paper and a holotype (P1L001932, deposited at the Coral Collection of the Marine Science Institute, University of the Philippines, Quezon City, the Philippines) is designated.

Type locality is the Northeast Investigator Shoal of the Kalayaan Group of Islands west of Palawan, western

Philippines. The authors have not seen the species in the Philippines outside the type locality. Mr. Phan Kim Hoang (Nha Trang Institute of Oceanography, Vietnam) has collected another colony (a photograph of which was sent by Mr. Brian Stockwell of Silliman University, Philippines) at 27–28m depth at the south reef of North Danger Reef in the Spratly Islands. Like the holotype, it was found in indents on a steep reef slope.

MATERIALS AND METHODS

Corals were collected at the Investigator Shoal (9.172°N 116.467°E) on 6 May 1999 on the way back from the Kalayaan Islands Group Inter-Agency Marine Scientific expeditions to the Spratly Islands on board the Training and Research Vessel Sardinella, of the University of the Philippines in the Visayas, and funded by the Philippine Department of Science and Technology. The site of the collection is a steep wall at 15 m depth. Paratypes were located approximately 2 m from the holotype at the same depth. After soaking in sodium hypochlorite solution, the corals were examined using a Zeiss Stemi DV400 stereomicroscope. A stage micrometer for the latter microscope was used for the measurements. Macro photographs of the corolla were made using Nikon D70S with 60 mm Micro Nikkor and Sigma EM-140 DG while photomicrographs were made using an Olympus SZX7 dissecting scope with an Evolution 5.0 MP digital camera attachment.

The holotype and paratypes are deposited at the Coral Collection of the Marine Science Institute, University of the Philippines, Quezon City, the Philippines.

TAXONOMIC ACCOUNT

Scleractinia Bourne, 1905

Fungiina Verril, 1943

Agariciidae Gray, 1847

***Leptoseris* Milne-Edwards & Haime, 1849**

***Leptoseris kalayaanensis*, new species**

Type material. – Holotype P1L001932 (94 mm in diameter). Paratypes P1L001933 (84 mm in diameter) and attached to but clearly distinct from P1L001934 (103 mm long). All collected from the NE Investigator Shoal (9.172°N 116.467°E), 15 m depth, coll. W. Licuanan, 6 May 1999. The paratypes are attached to the same rock and have no skeletal connection.

Holotype. – Corallum small, encrusting (but with margins mostly raised from the substratum) to unifacial laminate and slightly dome-shaped. Margin entire or lobate (Fig. 1). Thickness at the margins is about 0.5 mm and increasing towards the center. Living colony light brown with whitish margin [photographs can be seen in Licuanan (2003) and in Pg. 51 of the same book]. Newly cleaned coralla had greenish tinge in the center.

Corallites circular to elliptical, 1.8 to 3.6 mm in diameter measuring from where septo-costae descend into the shallow fossa (Fig. 2). Central (primary) corallite deeper but barely distinct from lateral ones, which may be of similar size (Fig. 2, see also Fig. 3 of a paratype). Corallites are located mainly within the inner zone of the corallum, from the centre until halfway the periphery, somewhat in a regular pattern three to eight mm apart from each other, but rarely about 10 mm from the margin. These are not outwardly inclined but are immersed to sub-immersed.

Distinctive spines are distributed over the upper surface; up to 10 mm tall and elliptical in cross-section, diameter about 2.7 mm at the base and 1.1 mm at the blunt tips. The spines are unbranched and are scattered between corallites in concentric rows. Most spines initially point out towards the corallum periphery then curve upwards (Fig. 4). Some spines are found on top of folds of laminae near the corallum margins, whereas others emanate from a mound-like common base. Spines are solid, as can be seen in a broken spine, (Fig. 5), which suggests that they are not homologue to the hollow tubes in *L. scabra* Vaughan, 1907, and *L. tubulifera* Vaughan, 1907. The spines are much taller than the mound-like nodules described for *L. solida* (Quelch, 1886), *L. hawaiiensis* Vaughan, 1907, and *L. scabra* (see Dinesen, 1980). About 10–15 individual septo-costae run continuously up to the tips and, except for the ones at the sharp ends of the elliptical base, down to the other side.

Septo-costae are equal, closely packed, with non-dentate edges and an acute keeled profile. Fine granulations are found at regular intervals at the edges of lateral ridges running parallel to the septo-costae giving them a saw-like appearance. The septo-costae are fairly straight, also on the spines. About 12–23 reach the corallite center but some fuse before reaching the centre while some others form interrupted plates near the center.

The columella, usually present in the larger corallites, is usually a solid mass with an uneven surface that may be connected to septo-costae. The encrusting unifacial laminae and fine septo-costal structure suggests this species is better placed in *Leptoseris* than in any other of the attached agariciid genera.

Paratypes. – Both paratypes have central corallites with slightly raised margins (Fig. 6). P1L001933 is dome-shaped

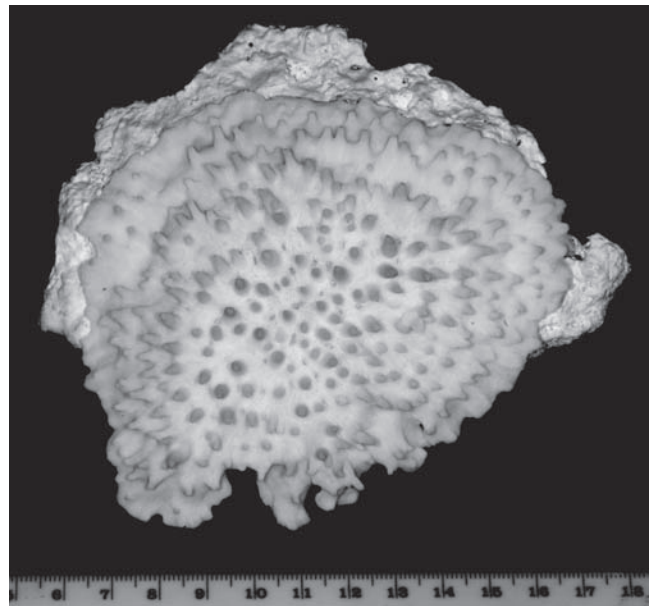


Fig. 1. *Leptoseris kalayaanensis*, new species: Holotype (diameter 94 mm), NE Investigator Shoal, Kalayaan Islands (P1L01932). Photo: W. Licuanan.

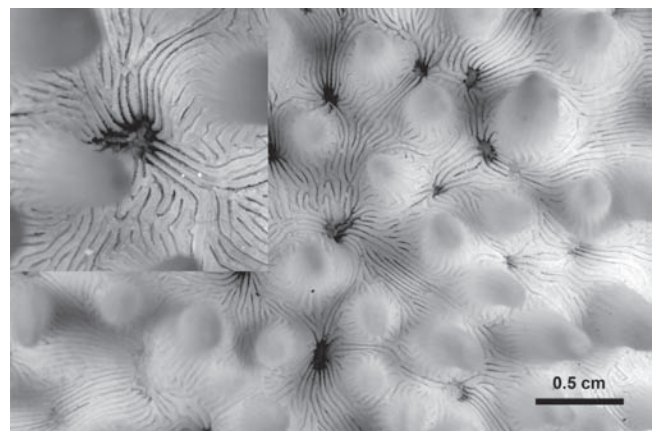


Fig. 2. *Leptoseris kalayaanensis*, new species. Holotype: Inset showing the slightly larger central corallite and its columella. Photo: K. Luzon.

and attached only at the centre. The distinctive spines, when examined from the underside of the corallum (where the underlying substratum was cleared), are clearly solid as well. It partially covers P1L01934 and is attached to the same rock. P1L01934 has shorter spines but remain distinct from other *Leptoseris*.

Etymology. – The species is named after the Kalayaan Island group, near Palawan province in the western Philippines, in which the type locality is found.

Affinities. – The spines of *L. kalayaanensis*, new species, clearly distinguishes it from the other *Leptoseris*. It differs from *L. gardineri* Horst, 1921, and *L. papyracea* (Dana, 1846) in that there it shows no tendency to form branching fronds nor does it form tiered or whorled fronds like *L. amitoriensis* Veron, 1990. Among the encrusting to laminate forms, *L. kalayaanensis*, new species, differs from *L. explanata* Yabe & Sugiyama, 1941, *L. scabra*, *L. solida*, *L. striata* Fenner & Veron, 2000, and *L. yabei* (Pillai & Scheer, 1971) in that the septo-costae do not alternate. *Leptoseris hawaiiensis*, *L. incrustans* (Quelch, 1886), *L. mycetoseroides* Wells, 1954, and *L. foliosa* Dinesen, 1980, also have even septo-costae but *L. kalayaanensis*, new species, does not have the irregular

folds or collines of *L. mycetoseroides*, nor the deep rounded corallites of *L. hawaiiensis*. *Hydnophora*-like projections have been described for *L. incrustans*, and mound-like nodules for *L. solida*, *L. hawaiiensis*, and *L. scabra* but these are shorter and do not have the shape of *L. kalayaanensis*, new species, spines.

DISCUSSION

With the addition of *L. kalayaanensis*, new species, the number of *Leptoseris* species in the Philippines has increased to 14 (as based on Veron, 2000), next to *L. gardineri*, *L. papyracea*, *L. tubulifera*, *L. amitoriensis*, *L. explanata*, *L. scabra*, *L. solida*, *L. striata*, *L. mycetoseroides*, *L. hawaiianensis*, *L. incrustans*, *L. foliosa*, and *L. yabei*. Veron

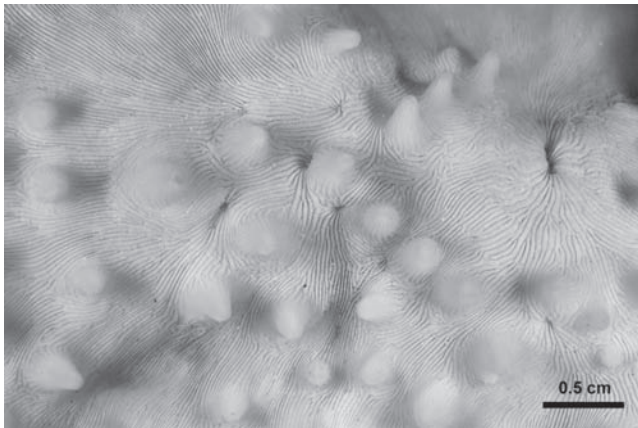


Fig. 3. *Leptoseris kalayaanensis*, new species. Paratype (P1L01933): Detail showing the larger central corallite on the upper right. Photo: K. Luzon.

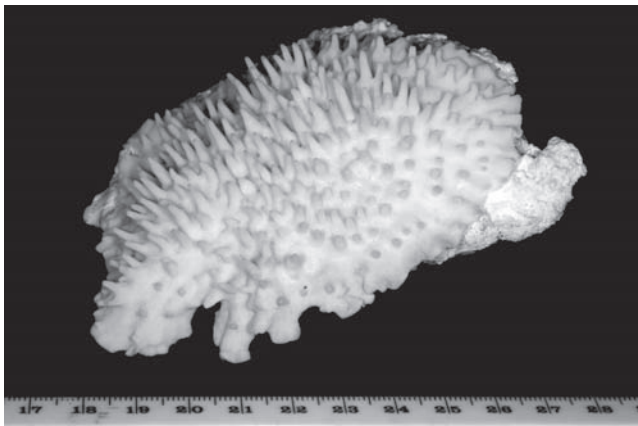


Fig. 4. *Leptoseris kalayaanensis*, new species Holotype: oblique photo to show spines. Photo: K. Luzon.

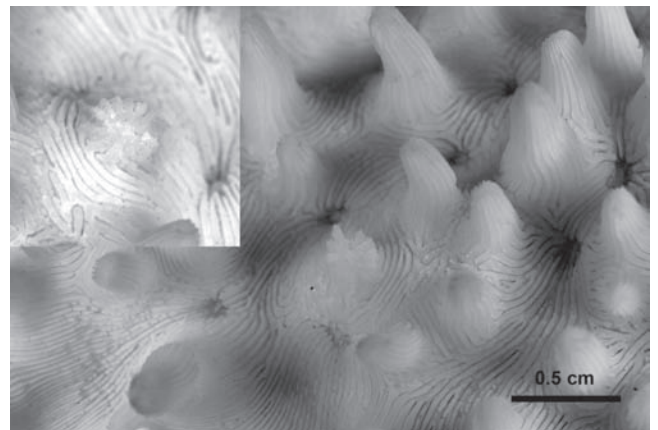


Fig. 5. *Leptoseris kalayaanensis*, new species. Holotype: Detail and inset showing the base of a broken spine demonstrating it is solid, not hollow. Photo: K. Luzon.

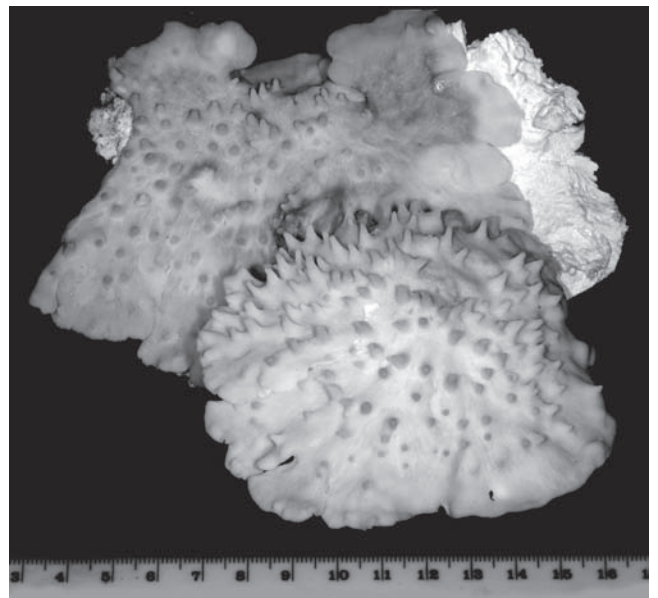


Fig. 6. *Leptoseris kalayaanensis*, new species. Paratypes: ex (diameter 84 and 103 mm), NE Investigator Shoal, Kalayaan Islands (P1L01933 is the lower part). P1L01934 is partially covered by P1L01933 and is attached to the same rock. The two have no skeletal connection. Photo: W. Licuanan.

& Fenner (2000) however did not include the Philippines in the species ranges of *L. tubulifera* and *L. striata* (a new species then) unlike in Veron (2000).

All colonies of *L. kalayaanensis*, new species, that have been reported so far all came from the same reef complex. None have been seen in the other biogeographic sections of the Philippines despite the intensive search for the species. Like the type specimens, the one collected by Dr. Phan Kim Hoang was also in deep water (27–28 m) at the base of the reef slope.

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