

Morphological review of Smithsonian specimens from USNM loan number 2077280

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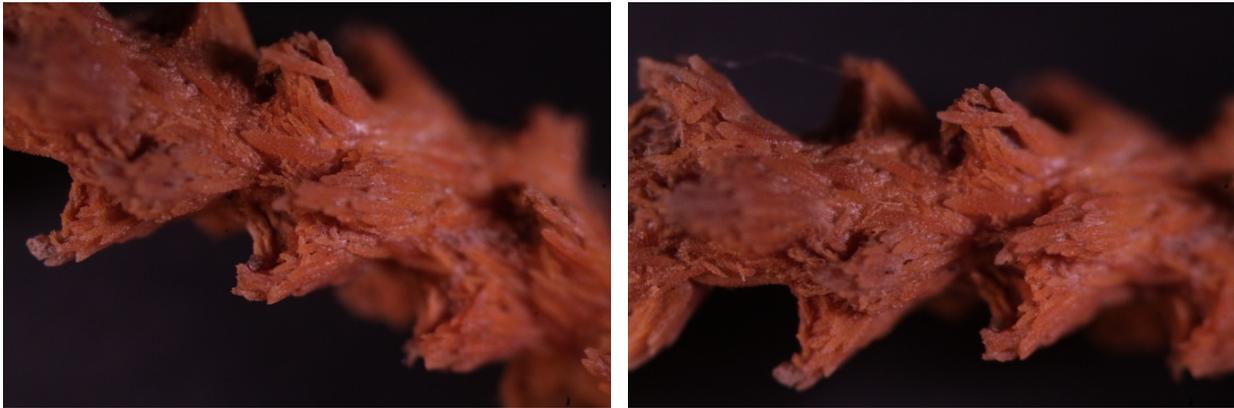
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USNM no.	Original Identification	Reviewed Identification
50533	<i>Muricea pendula</i>	<i>Muricea pendula</i>
55082	<i>Hypnogorgia sp.</i>	<i>Muricea sp.</i>
57402	<i>Hypnogorgia pendula</i>	<i>Scleracis guadalupensis</i>
57403	<i>Hypnogorgia pendula</i>	<i>Muricea sp.</i>
61170	<i>Muricea pendula</i>	<i>Muricea pendula</i>
72460	<i>Muricea pendula</i>	<i>Muricea pendula</i>
85716	<i>Muricea pendula</i>	<i>Muricea pendula</i>
1237132	<i>Hypnogorgia sp.</i>	<i>Nicella sp.</i>
1240234	<i>Hypnogorgia sp.</i>	<i>Paracis sp.</i>
1240235	<i>Hypnogorgia sp.</i>	<i>Paracis sp.</i>
1240237	<i>Hypnogorgia sp.</i>	<i>Paracis sp.</i>
1240238	<i>Hypnogorgia sp.</i>	<i>Paracis sp.</i>
1240249	<i>Hypnogorgia sp.</i>	<i>Placogorgia sp.</i>

Project result synopsis

The original intention for this set of samples was for inclusion in a larger genetics project looking at haplotype diversity in *Swiftia exserta*, *Hypnogorgia pendula* and *Muricea pendula*. Upon delivery of specimens many of the specimens listed as *Hypnogorgia* did not exhibit the typical characteristics of the genus. This prompted a thorough a morphological review of all specimens from the loan, the results of which are described below for each specimen. Ultimately none of the specimens listed as *Hypnogorgia* were correctly identified and ultimately excluded from consideration for the originally intended genetics study. The *Muricea pendula* specimens were all correctly identified, however, given the exclusion of the *Hypnogorgia* samples they have also been excluded in favor of identifying more recently collected material of both *Hypnogorgia pendula* and *Muricea pendula*.

USNM 50533 *Muricea pendula* – Octocorals



Morphologically confirmed as *M. pendula* based on the polyp distribution, sclerite color and composition, and calyx shape.

USNM 55082 *Hypnogorgia sp.* – Octocorals



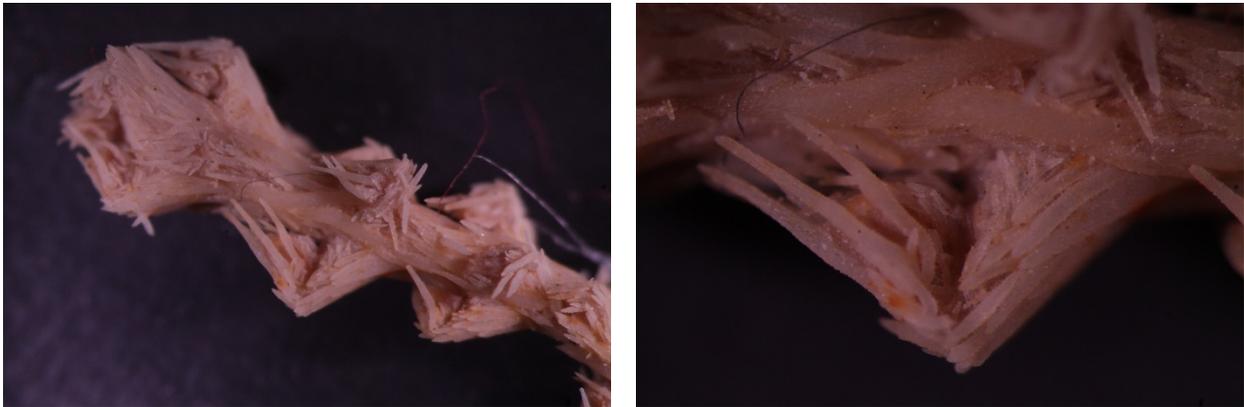
USNM 55082 exhibits features uncharacteristic of *Hypnogorgia pendula*, and there is no other species in the genus to consider. Deichmann describes *Hypnogorgia* as possibly containing pink coloration, but this is in reference to the tissue and not the sclerites. Similarly, many of the calices exhibit an abnormal double spine on the calyx; however, the double spine is not consistent across all calices and may be due to age of the sample or damage to the sample. The spacing of calices is also not consistent with *Hypnogorgia pendula*, which normally exhibits fewer polyps along the axis. Given the lack of another species in the genus *Hypnogorgia* and the close relationship and similarities between *Hypnogorgia* and *Muricea*, further evaluation against other species of *Muricea* is warranted for this specimen.

USNM 57402 *Hypnogorgia pendula* – Octocorals



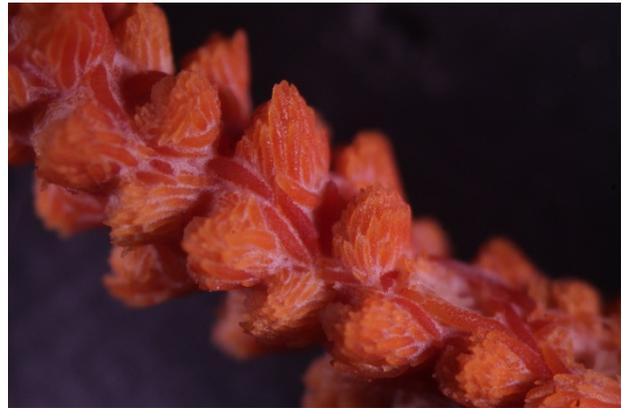
USNM 57402 cannot be *Hypnogorgia pendula* because the cortical spindles are too small in size and the sclerites are red in color. While tissue color can vary with *Hypnogorgia pendula*, sclerite color remains white. Also, the calyx shape of this specimen does not exhibit the shelf shape pattern indicative of *Hypnogorgia pendula*. The cylindrical calyx shape, the red coloration of the sclerites, and the shape of the sclerites is more characteristic of *Scleraxis guadalupensis*.

USNM 57403 *Hypnogorgia pendula* – Octocorals



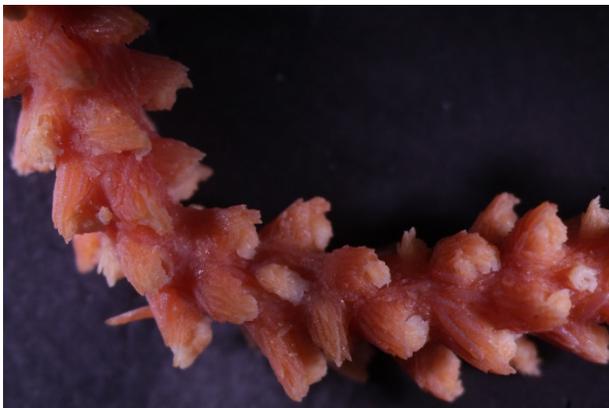
While USNM 57403 shares similarities with *Hypnogorgia pendula*, that diagnosis is not supported. This specimen has prominent spines associated with the polyp crown, which are distinctly different from the spines protruding from the shelf-shaped calyx. In addition, the spacing of the polyps are too close together. This specimen is likely a species of the genus *Muricea*.

USNM 61170 *Muricea pendula* – Octocorals



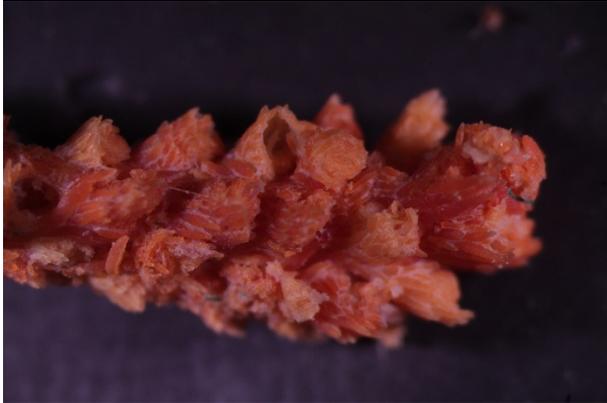
Morphologically confirmed as *M. pendula* based on the polyp distribution, sclerite color and composition, and calyx shape.

USNM 72460 *Muricea pendula* – Octocorals



Morphologically confirmed as *M. pendula* based on the polyp distribution, sclerite color and composition, and calyx shape.

USNM 85716 *Muricea pendula* – Octocorals



Morphologically confirmed as *M. pendula* based on the polyp distribution, sclerite color and composition, and calyx shape.

USNM 1237132 *Hypnogorgia sp.* – Octocorals



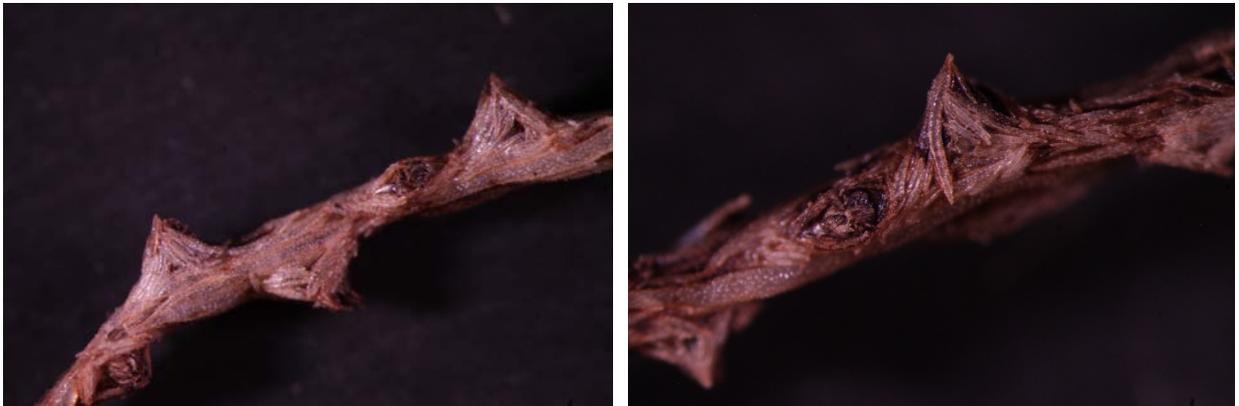
USNM 1237132 is not *Hypnogorgia sp.* The calyx shape and sclerite composition share nothing in common with the *Hypnogorgia* genus or its sole species *Hypnogorgia pendula*. Small flattened rods are prominent in the body wall and smaller double heads dominate the coenenchym – both of which are indicative of the family Ellisellidae. The numerous small branches in the small clipping would suggest *Nicella sp.*

USNM 1240234 *Hypnogorgia sp.* – Octocorals



USNM 1240234 is not *Hypnogorgia sp.* While the conical protrusions seen along the axis are similar in appearance to the shelf-shaped calyx of *Hypnogorgia pendula*, these are not calices. The conical protrusions lay between the polyps and their calices. The specimen's polyps are retractile and have a very small mound-shaped calyx. These characteristics exclude this specimen from being part of the genus *Hypnogorgia*. On the other hand, the specimen does exhibit large cortical spindles that are similar to *Hypnogorgia*; however, the characteristics previously stated are also present in the genus *Paracis*. The specimen closely resembles several line drawings associated with *Paracis enopla* from The Alcyonaria of the “Blake” Expeditions: The Unpublished Plates. There is no current record of *Paracis enopla* as valid species or of its reclassification of this species. The sample is identical to other samples DCEL has analyzed morphologically either from samples directly collected or samples collected by collaborators. There are also several occurrences of this diagnosis in this sample set as well.

USNM 1240235 *Hypnogorgia sp.* – Octocorals



USNM 1240235 has the same diagnosis as USMN 1240234 and is not *Hypnogorgia sp.* Instead, this specimen resembles *Paracis sp.*, specifically the line drawings of *Paracis enopla* from The Alcyonaria of the “Blake” Expeditions: The Unpublished Plates. However, *Paracis enopla* is no longer considered a valid species and there is no record of a reclassification of this species.

USNM 1240237 *Hypnogorgia sp.* – Octocorals



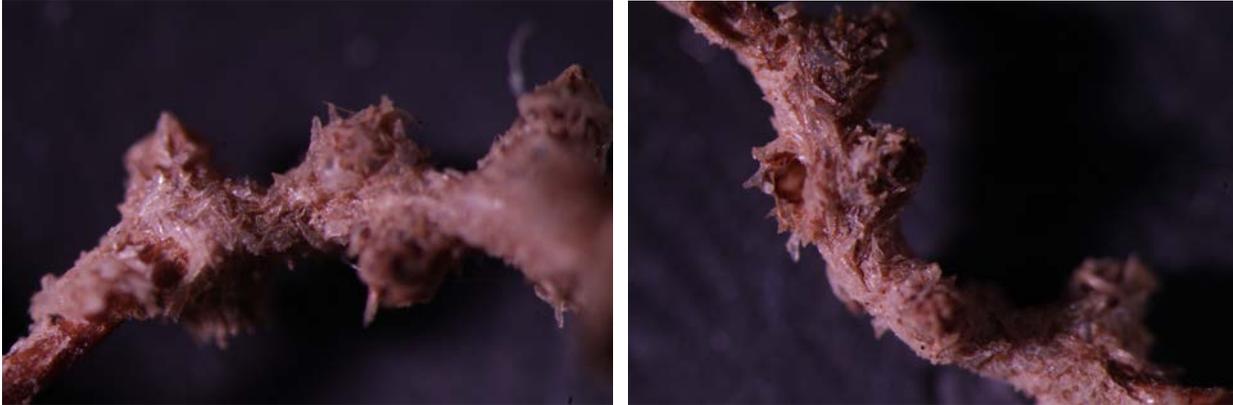
USNM 1240237 has the same diagnosis as USMN 1240234 and is not *Hypnogorgia sp.* Instead, this specimen resembles *Paracis sp.*, specifically the line drawings of *Paracis enopla* from The Alcyonaria of the “Blake” Expeditions: The Unpublished Plates. However, *Paracis enopla* is no longer considered a valid species and there is no record of a reclassification of this species.

USNM 1240238 *Hypnogorgia sp.* – Octocorals



USNM 1240238 has the same diagnosis as USMN 1240234 and is not *Hypnogorgia sp.* Instead, this specimen resembles *Paracis sp.*, specifically the line drawings of *Paracis enopla* from The Alcyonaria of the “Blake” Expeditions: The Unpublished Plates. However, *Paracis enopla* is no longer considered a valid species and there is no record of a reclassification of this species.

USNM 1240249 *Hypnogorgia sp.* – Octocorals



USNM 1240249 contains thorn-scale sclerites in the calyx, which immediately makes the diagnosis of *Hypnogorgia sp.* invalid. Presence of thorn-scales suggests either *Placogorgia* or *Paramuricea*, which are differentiated by the presence of spines on the cortical spindles as referenced in Bayer's 1981 key to the Genera of Octocorallia. The diagnosis of this species suggests it is *Placogorgia sp.* because of the presence of spines on the cortical sclerites.