



PISCO
Uniform Point Contact
(UPC)
2016



Bare Rock

No noticeable inverts or algae on the surface



Bare Sand
Relatively coarse sand



Bare Sand
Gravel



Shelly Debris

Lots of shell fragments on top of sand or other sediment



Sediment / Mud

Very fine, creates suspended clouds if disturbed



Dead Kelp Holdfast

Can be any species (*Macrocystis*, *Nereocystis*, *Pterygophora*,
Laminaria, *Pleurophycus*, et al.)



Tubeworm - Other Solitary
Myxicola infundibulum



Tubeworm - Other Solitary
Pista elongata



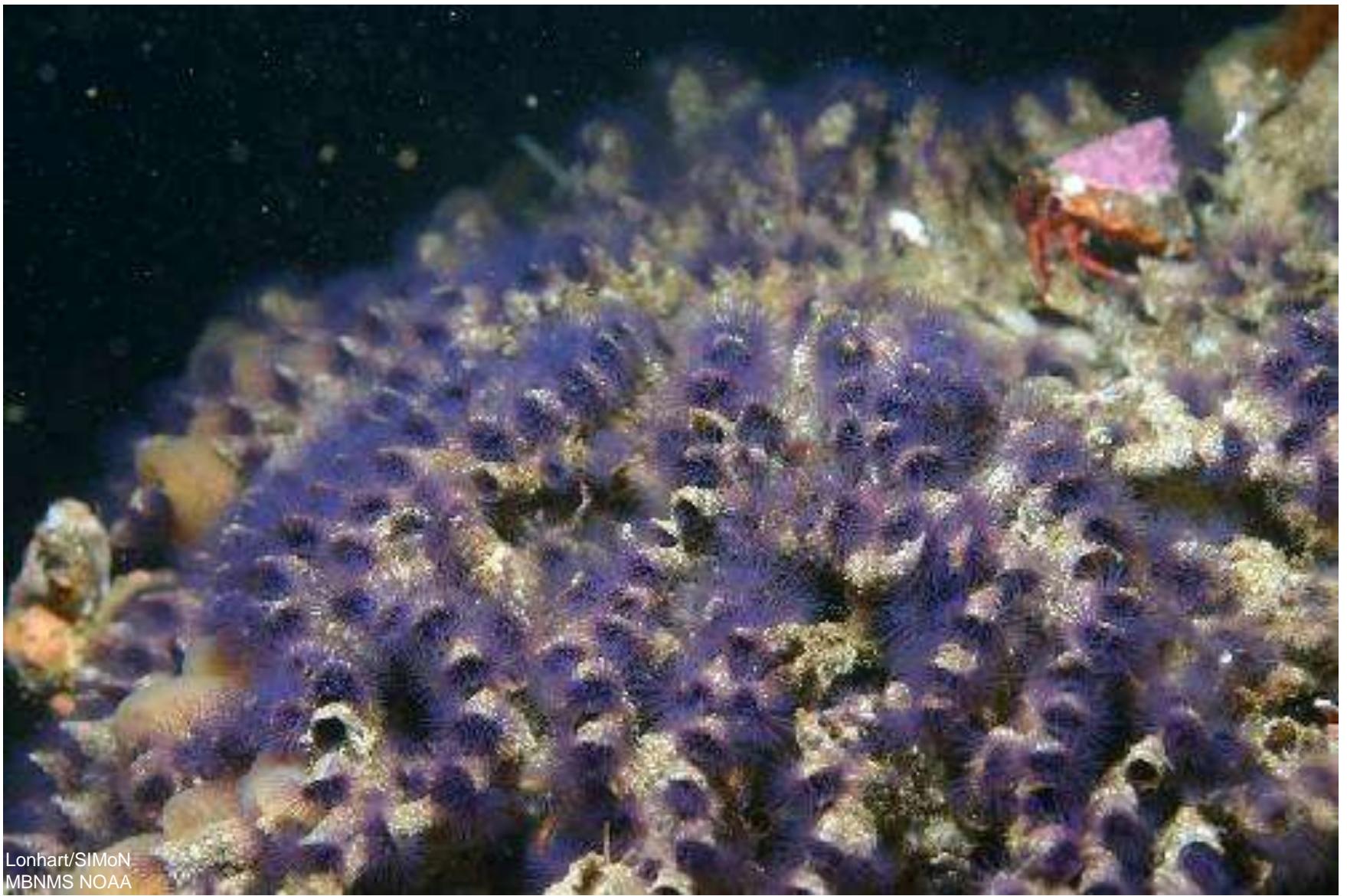
Diopatra ornata

Ornate tube worm covered with shells (two pictured)



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Diopatra ornata
Ornate tube worm covered with shells

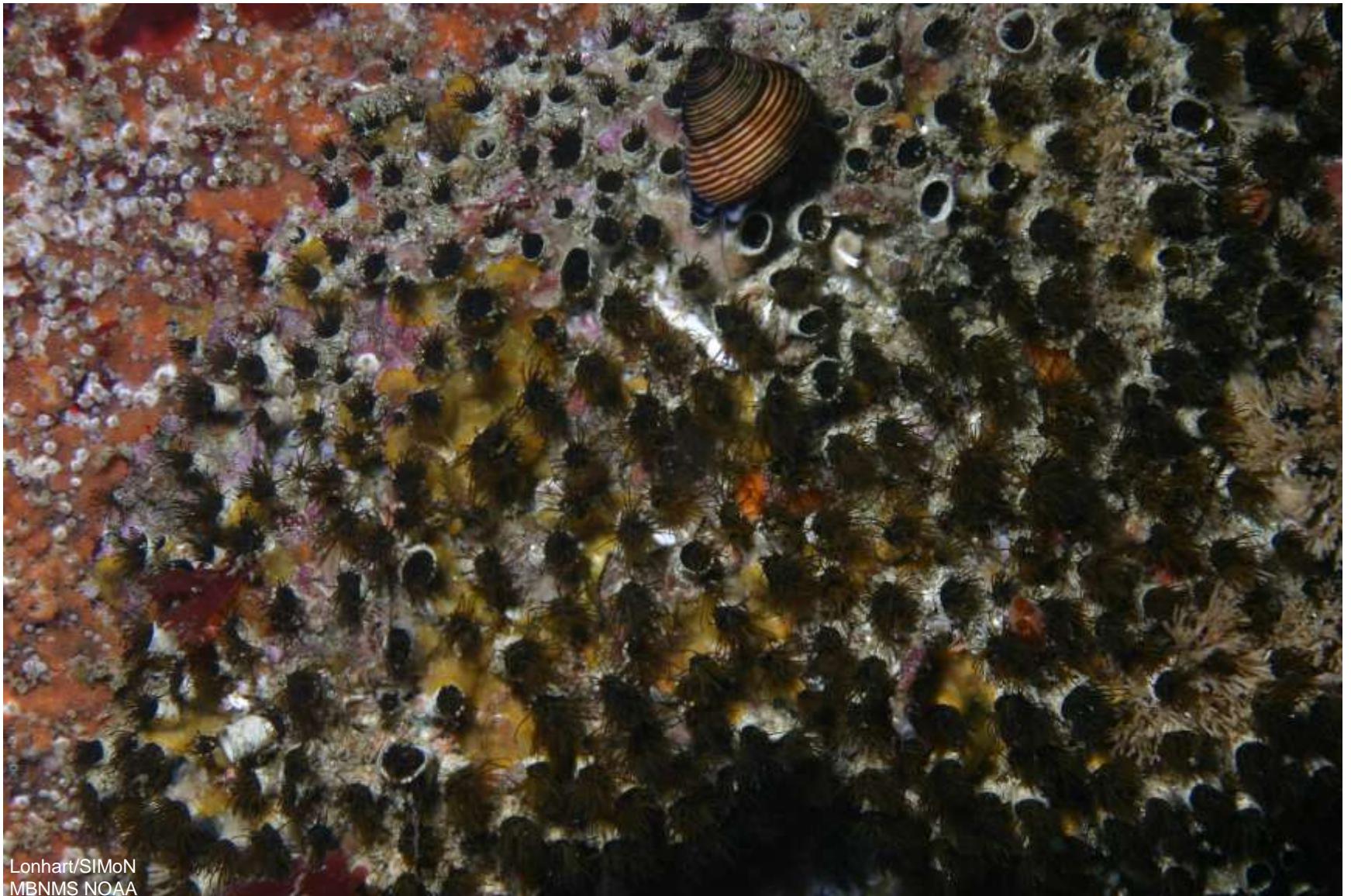


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Phragmatopoma californica

Honeycomb worm

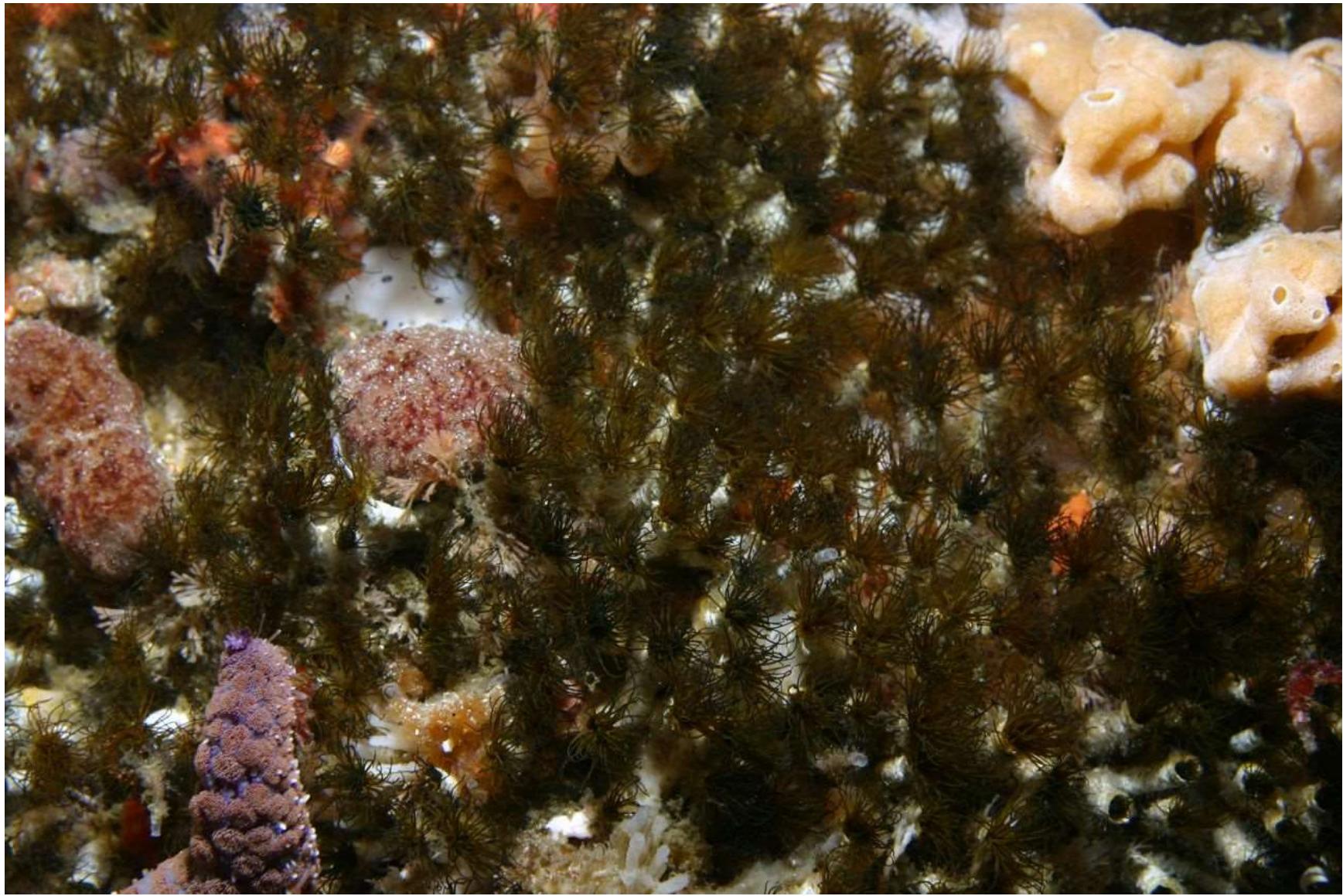
Tube worm with sand tubes, usually with purple tentacles



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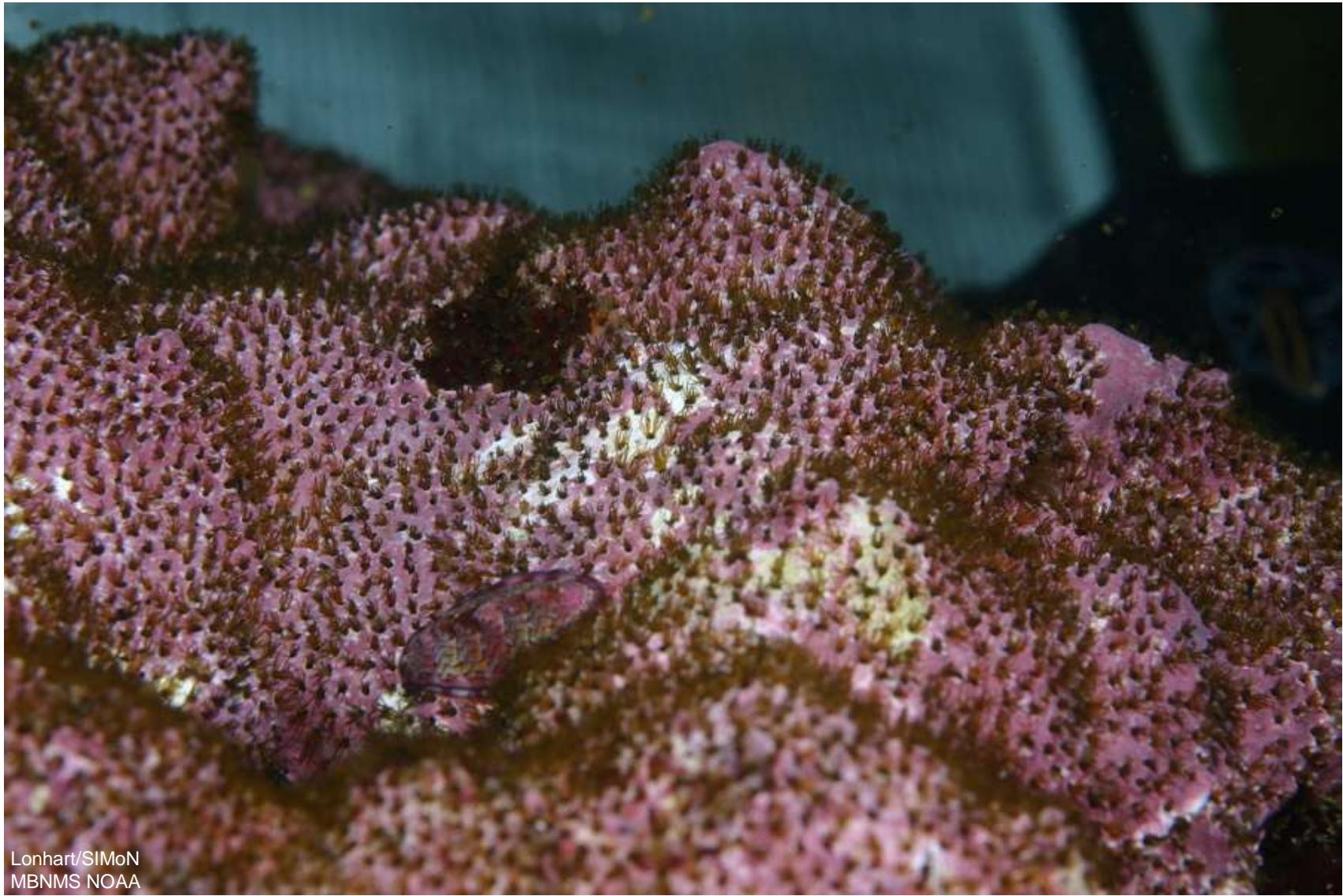
Dodecaceria fewkesi

Colonial tubeworm, white tube with black-green tentacles,
tube openings 3-5 mm diameter



Dodecaceria fewkesi

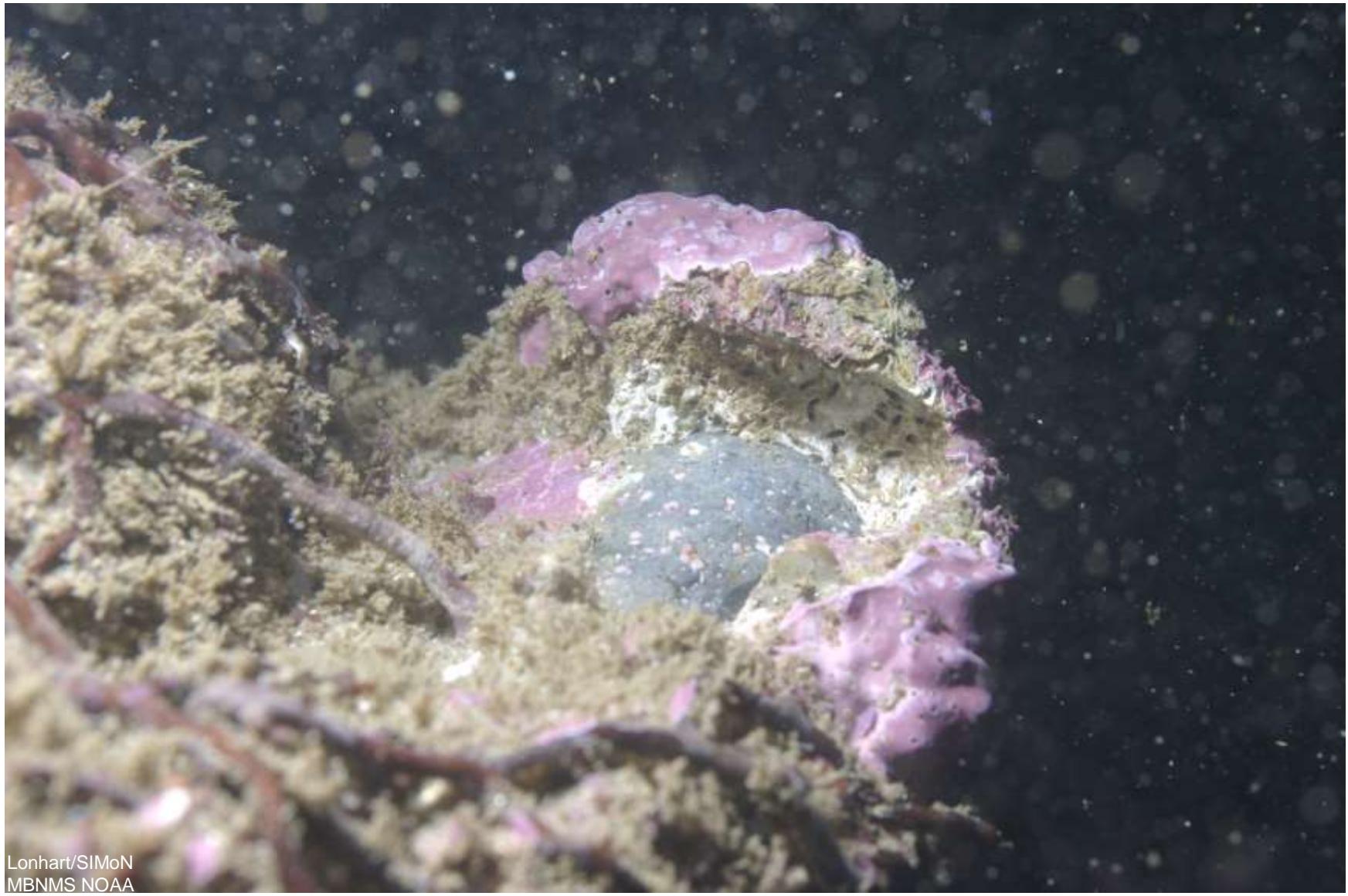
Colonial tubeworm, white tube with black-green tentacles,
tube openings 3-5 mm diameter



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Dodecaceria concharum

Colonial tubeworm, white tube with green-brown tentacles,
tube openings 2 mm diameter



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Dodecaceria concharum

Colonial tubeworm, white tube with green-brown tentacles,
tube openings 2 mm diameter



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Dodecaceria concharum

Colonial tubeworm, white tube with green-brown tentacles,
tube openings 2 mm diameter



Serpulorbis squamigerus

Vermetid gastropod, larger than *Petaloconchus montereyensis*, orange lips



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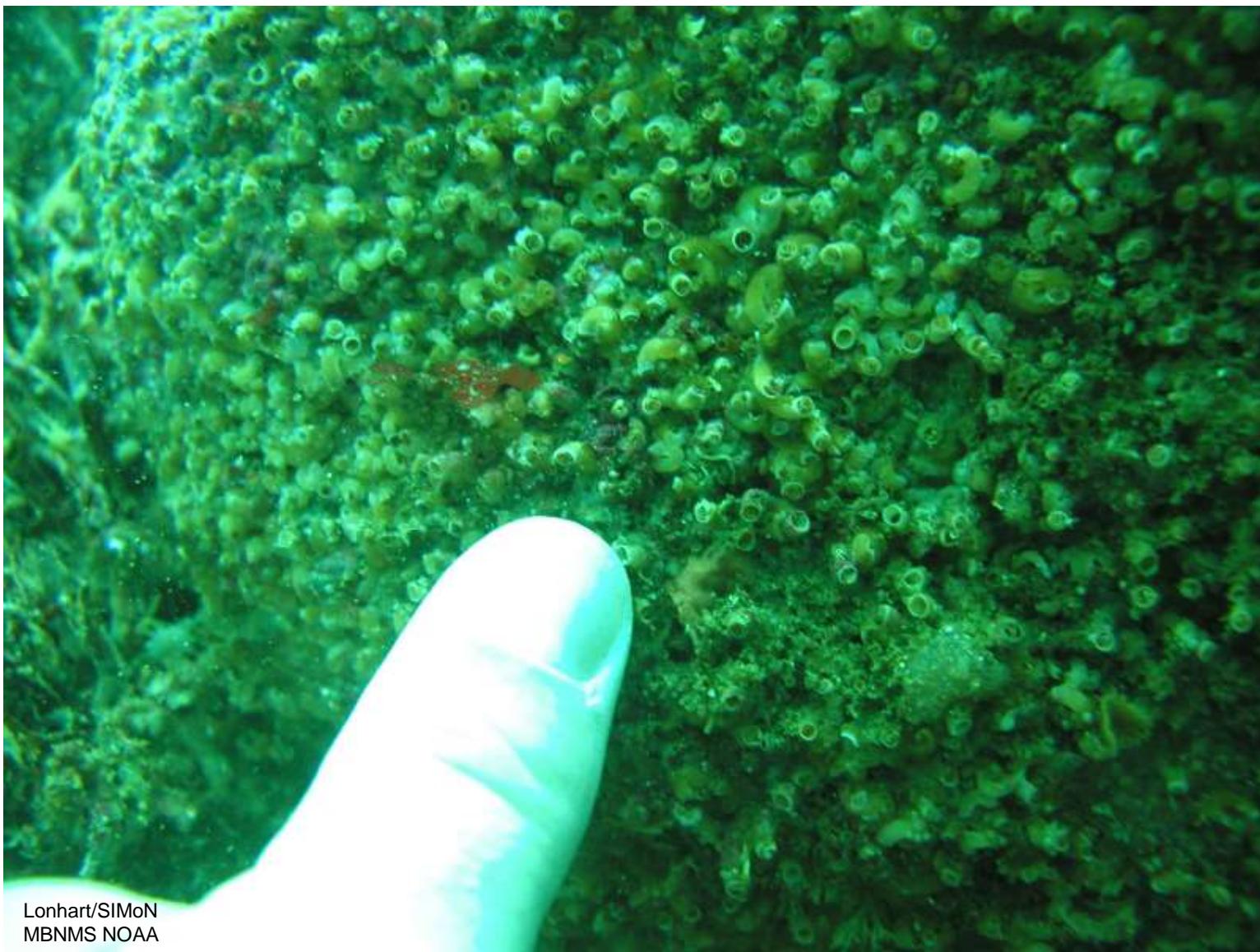
Serpulorbis squamigerus

Vermetid gastropod, larger than *Petaloconchus montereyensis*, orange lips



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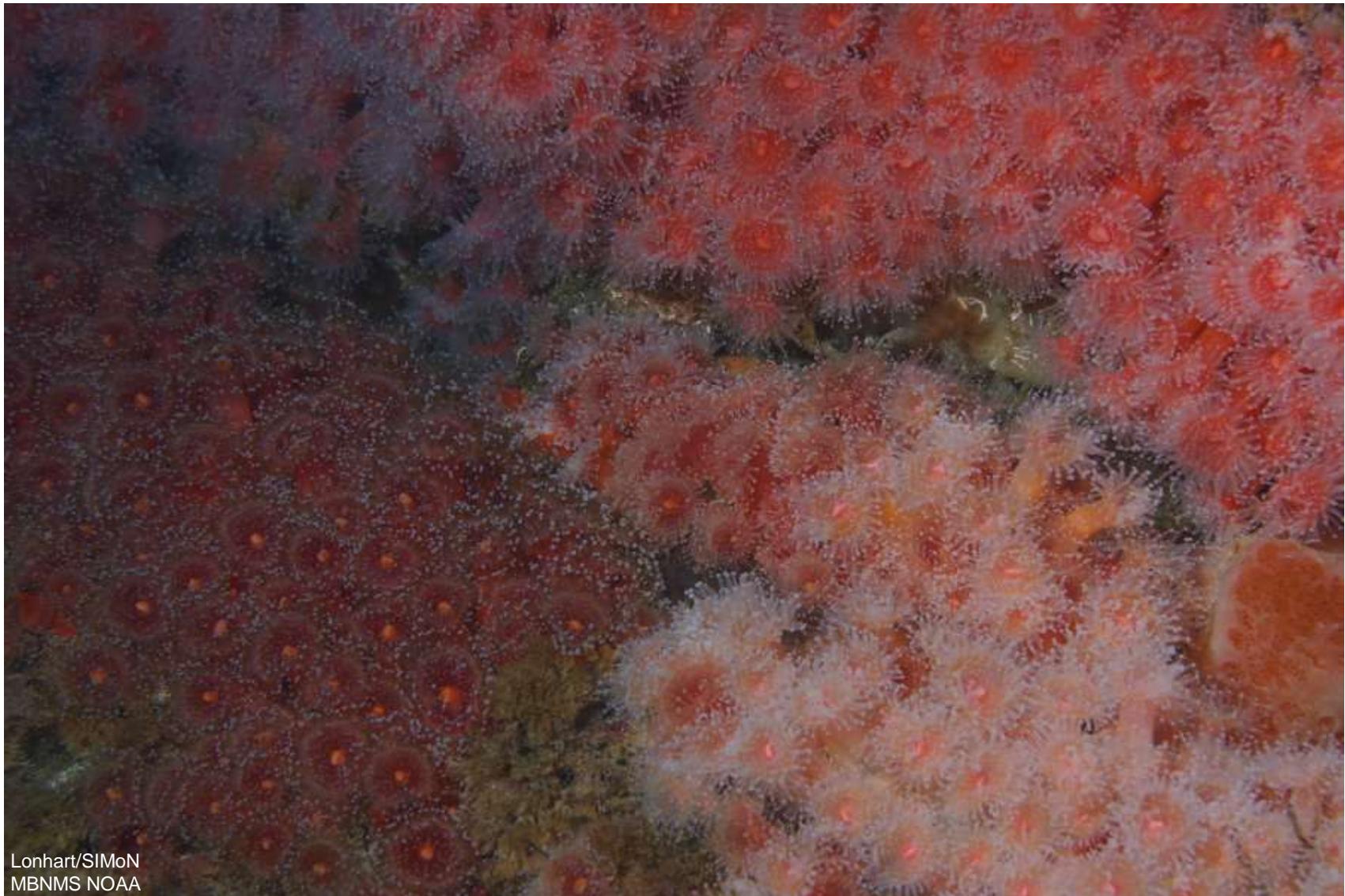
Petaloconchus montereyensis
Vermetid gastropod, smaller than *Serpulorbis*



Petaloconchus montereyensis
Vermetid gastropod, smaller than *Serpulorbis*



Petaloconchus montereyensis
Vermetid gastropod, smaller than *Serpulorbis*



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Strawberry or club-tipped anemone
Corynactis californica

Often red, orange or pink, white tentacles with bulbous tips, dense clusters



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Cup coral

Balanophyllia elegans the orange cup coral



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Cup coral

Astrangia lajollaensis colonial brown cup coral
small diameter, numerous, golden brown



Cup coral
Brown cup coral
Solitary, brown calyx, diameter of a quarter



Efird

Other anemone
Halcampa decemtentaculata



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Other anemone

Anthopleura elegantissima aggregating or pink-tipped anemone



Other anemone
Urticina lofotensis white-spotted rose anemone



Other anemone

Urticina crassicornis painted or green-blottedched anemone



Other anemone
Urticina piscivora fish-eating anemone



Other anemone
Urticina columbiana sand-rose anemone



Other anemone
Urticina coriacea stubby rose anemone



Other anemone

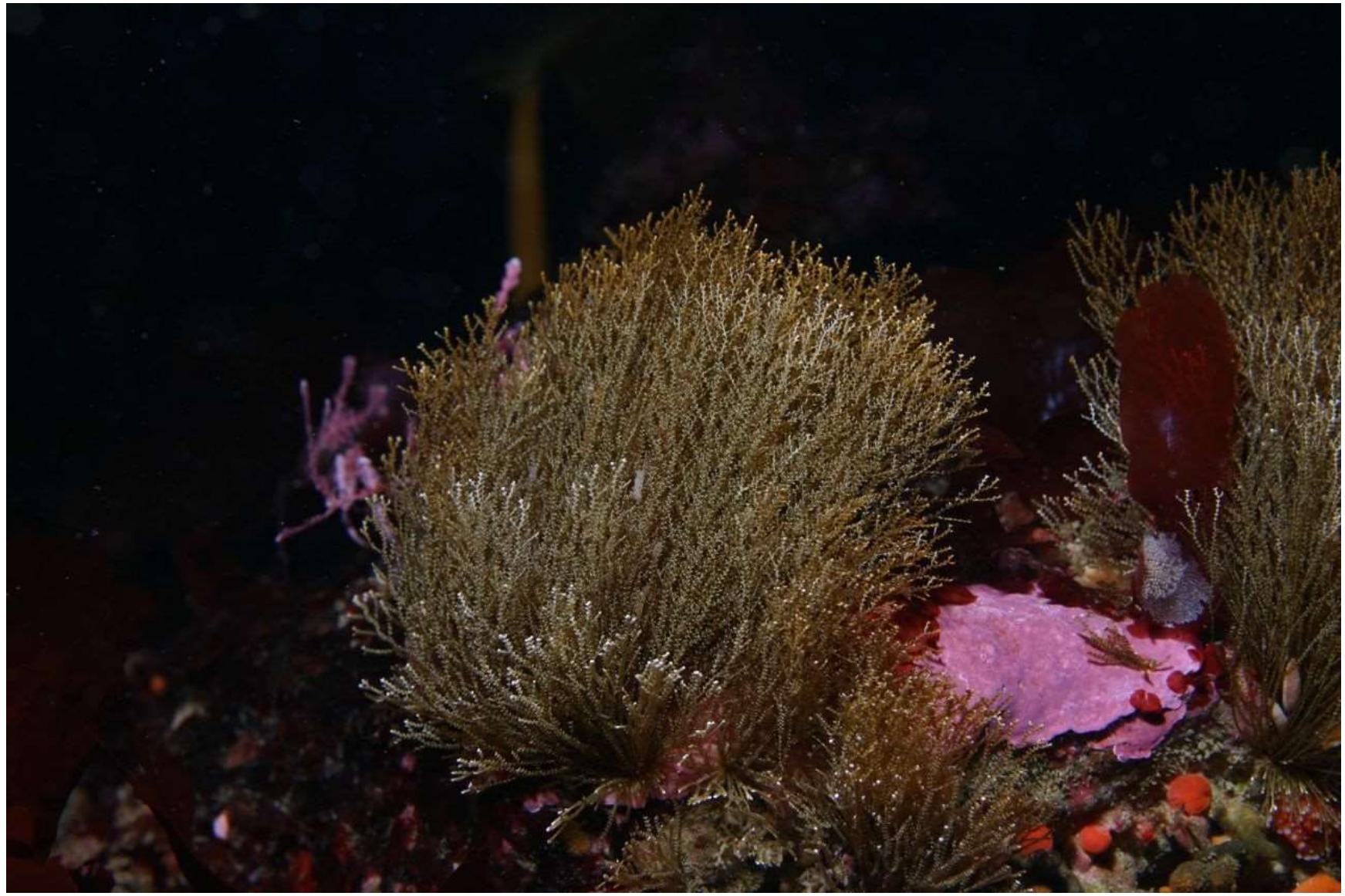
Urticina spp. distinctive column patterns and textures



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Hydroids

Unlike bryozoans, which these can resemble, hydroids are flexible



Hydroids



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Hydroids



Hydroids



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Hydroids



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Hydroids



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Hydroid
Aglaophenia spp.



Hydroids



Hydroids
Hedgehog hydroid *Hydractinia milleri*



California hydrocoral

Stylaster californicus

Variable colors, usually in high flow areas



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California hydrocoral
Stylaster californicus

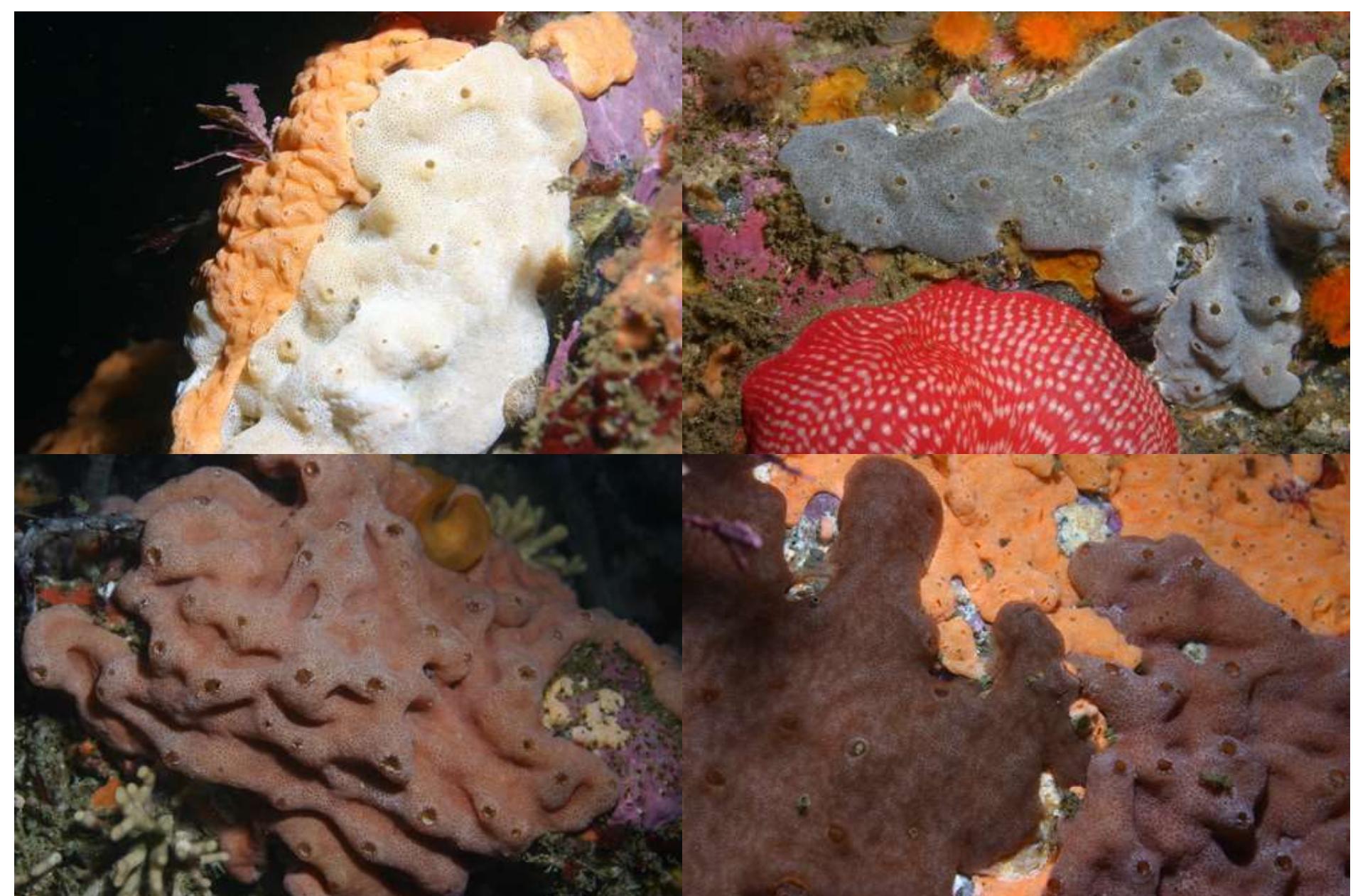


Colonial tunicates



Colonial tunicates

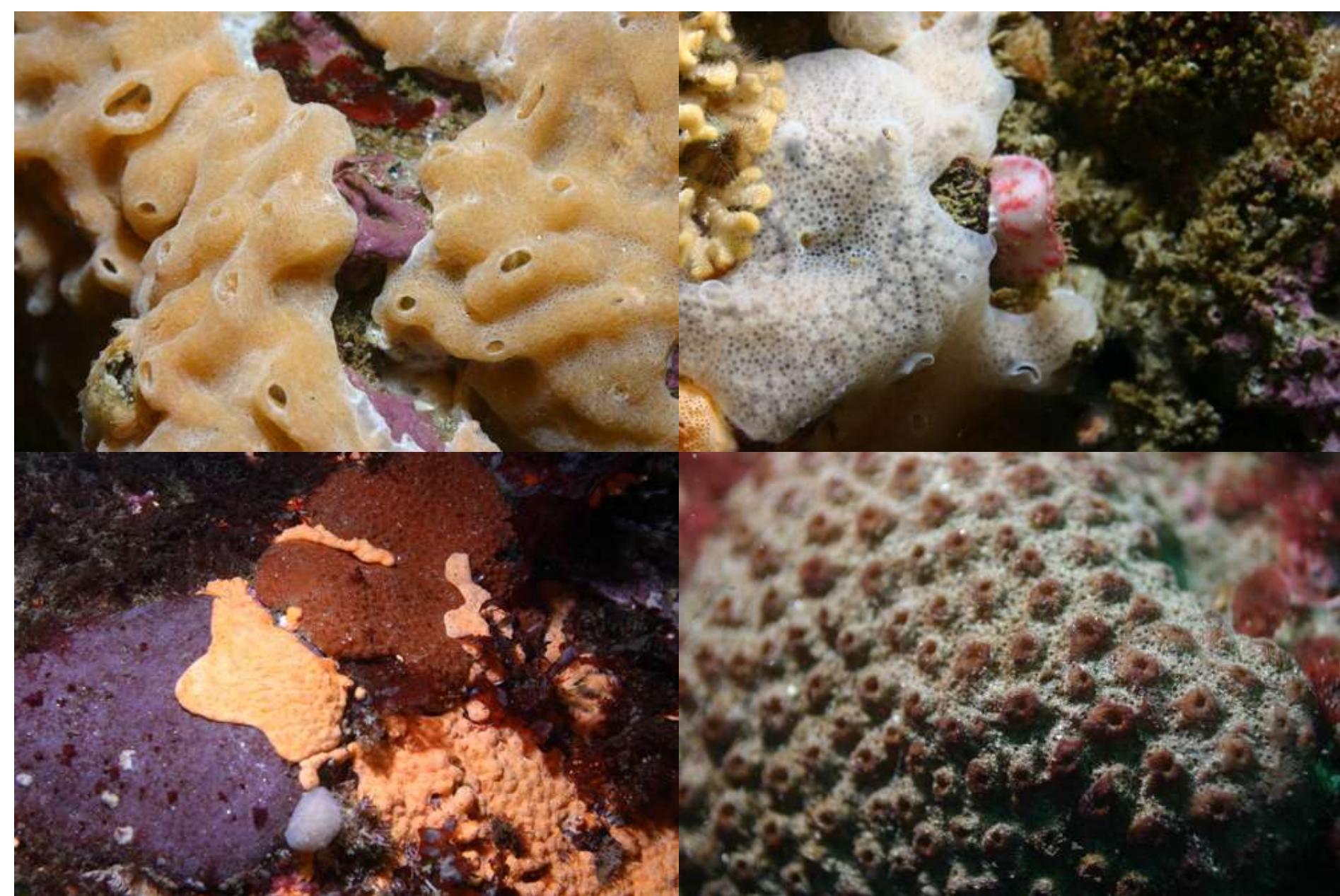




Colonial tunicate



Colonial tunicate



Colonial tunicate



Colonial tunicate



Colonial tunicate



Colonial tunicate



Colonial tunicate



Efird

Colonial Tunicate



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Solitary tunicate
Cnemidocarpa finmarkiensis
Smooth tunic, usually orange or red



Solitary tunicate
Styela montereyensis
Smooth tunic, can be covered with epibionts

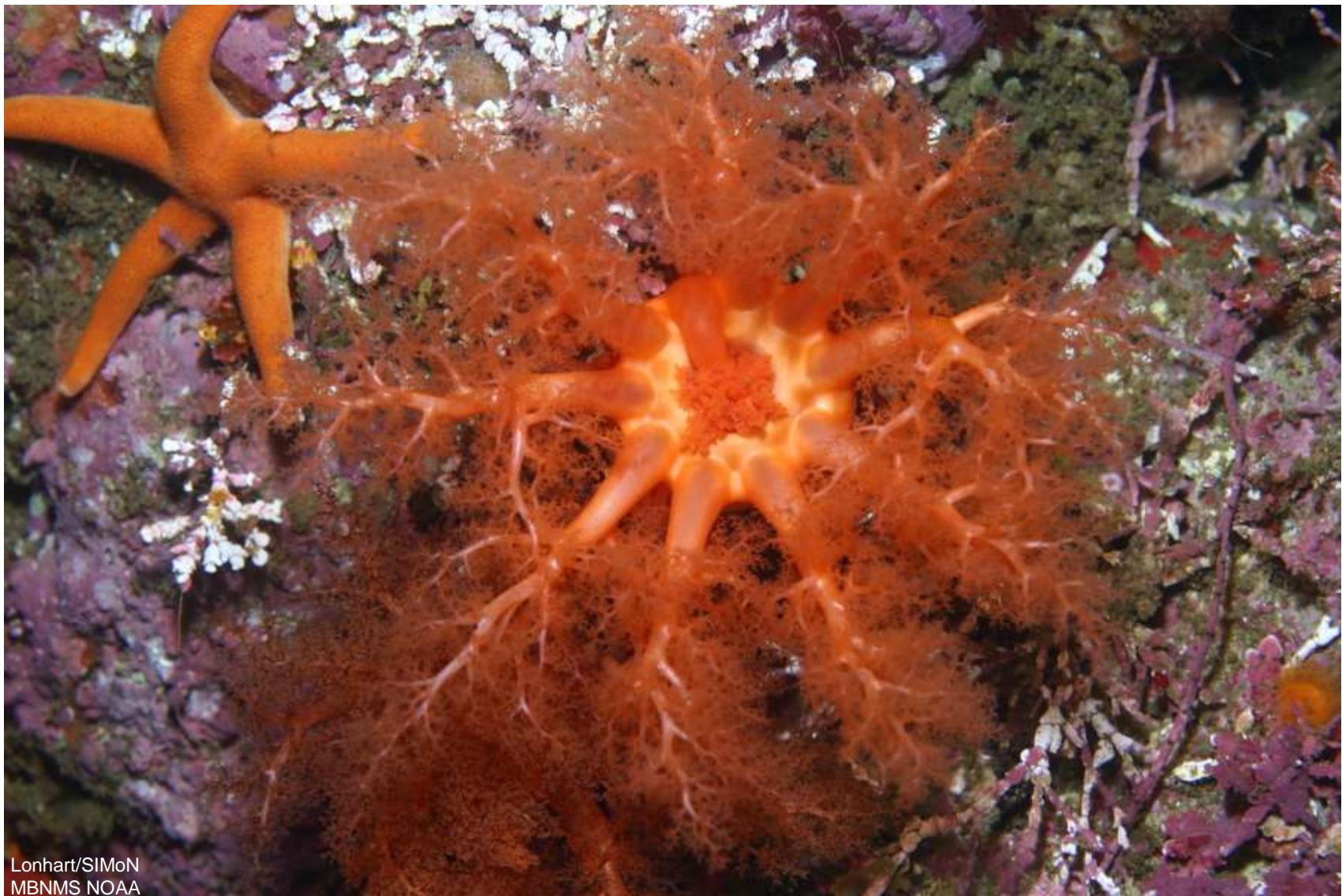


Solitary tunicate



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Crassadoma gigantea
Giant Pacific rock scallop



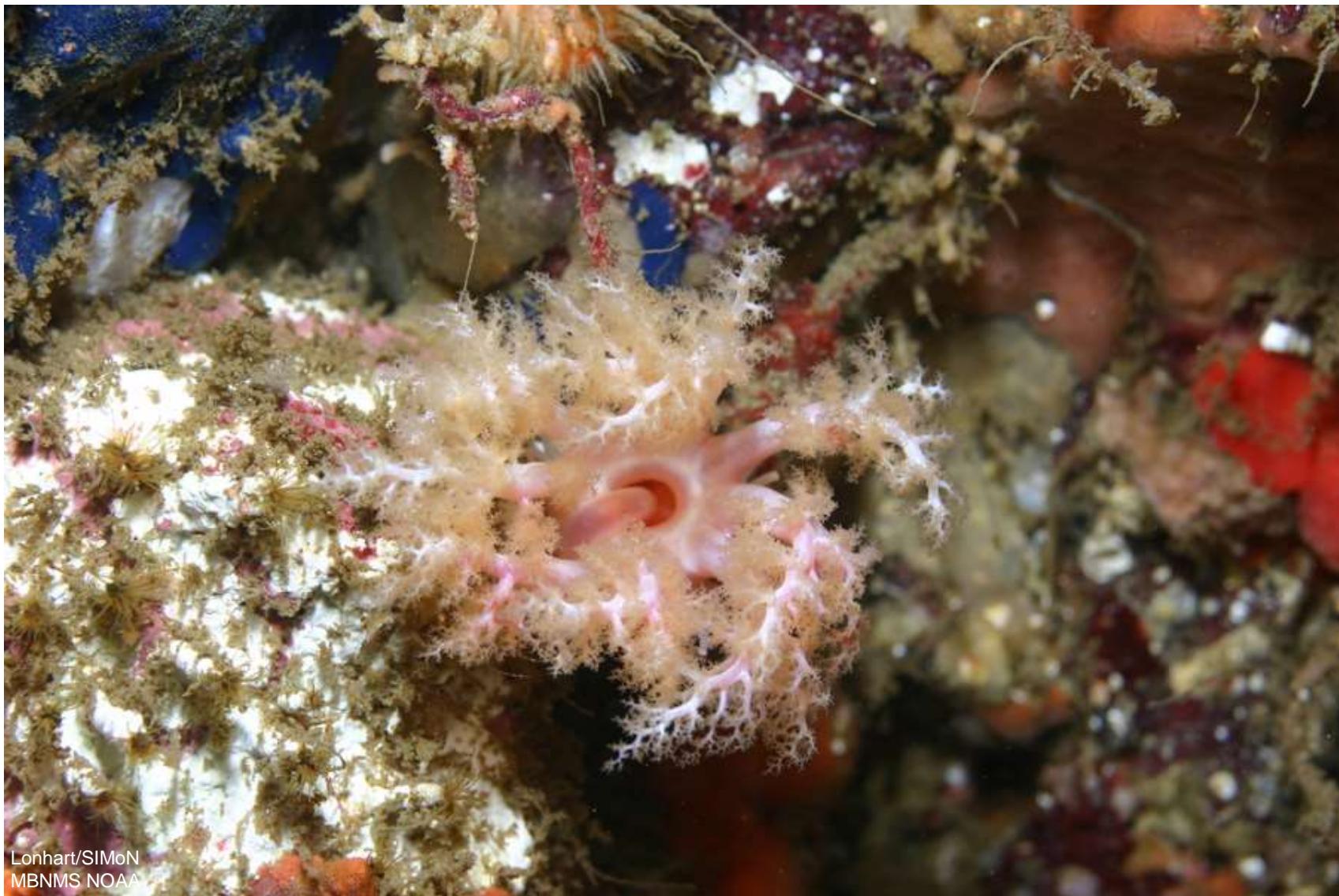
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Embedded Cucumber



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Embedded Cucumber



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Barnacle



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Barnacle



Barnacles

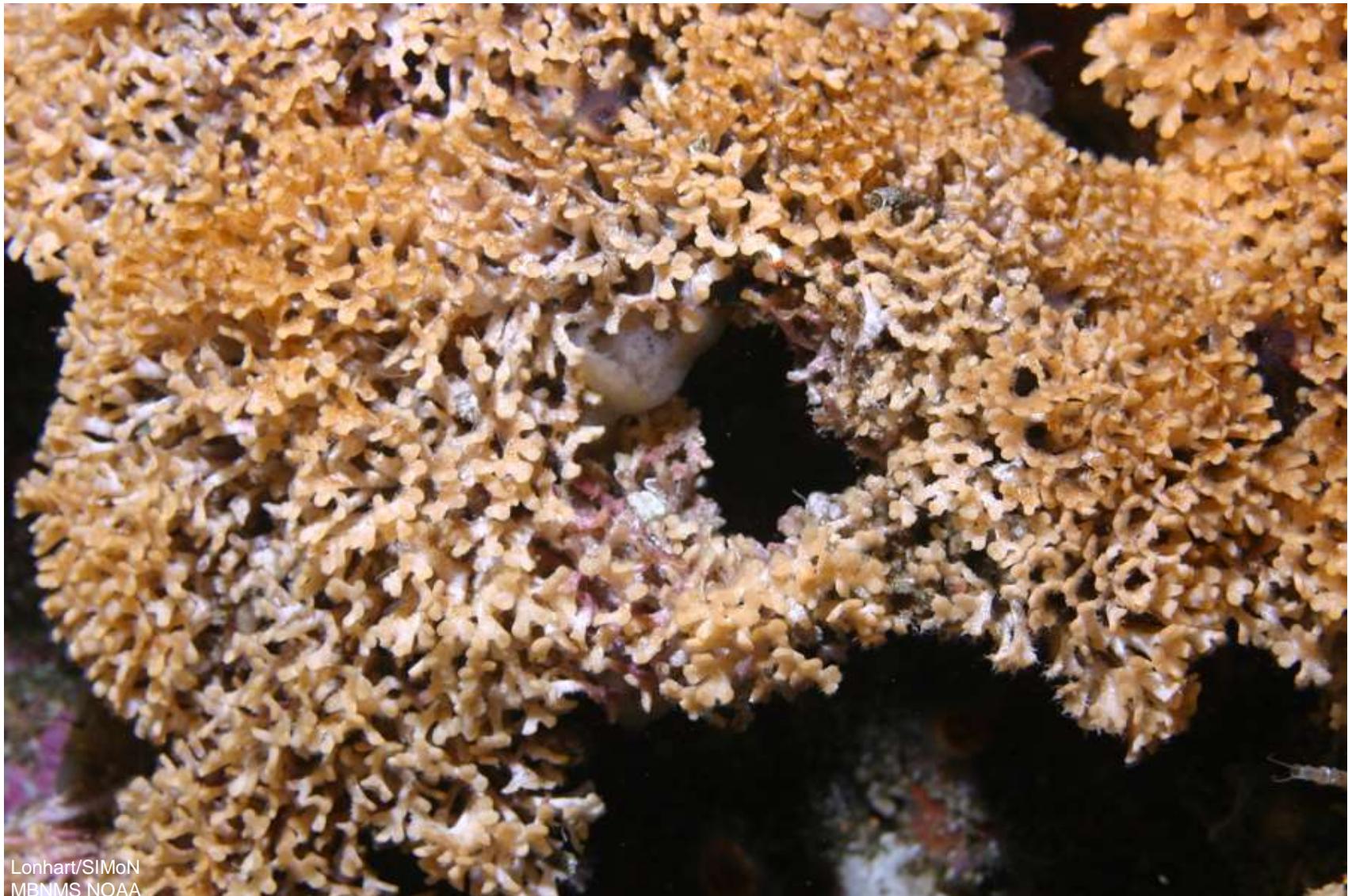


KING

Bryozoans

Brittle and rough texture

Colonies branching tubes with joints (*Cellaria mandibulata*)



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Bryozoans

Colonies branching, not quite cylindrical, short, highly ridged (*Diapereroforma californica*, formerly *Diaperoecia*)



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Bryozoans

Brittle and rough texture

Orange was called *Costazia* but is now *Celleporina*



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Bryozoans

Brittle and rough texture

Part of this colony is dead (white, dirty brown) while the rest is alive (golden)



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Bryozoans

Colonies branching, cylindrical, pale to golden (likely *Celleporella* and not *Heteropora*)



Bryozoans

Not so brittle but with a rough texture
This can be confused with a hydroid



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Bryozoans

This is an exception—not brittle but instead very flexible (*Bugula*)
This can be confused with a hydroid, but concentric rings/spirals are key



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Bryozoans
Brittle and rough texture
Colonies fluted like corn flakes (*Hippodiplosia insculpta*)



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Bryozoans

Brittle and rough texture (*Watersipora* sp.)

Colonies fluted or sheet-like crusts, burgundy alive, black or grey when dead



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Bryozoans

Brittle and rough texture (reddish colony with white lophophores)
Colonies sheet-like crusts



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Bryozoans

Brittle and rough texture (bright red, not burgundy, which is an alga)
Colonies sheet-like crusts



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Bryozoans

Brittle and rough texture

Colonies sheet-like crusts (bright red) and tunicates (light orange)



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Brittle and rough texture
Colonies sheet-like crusts



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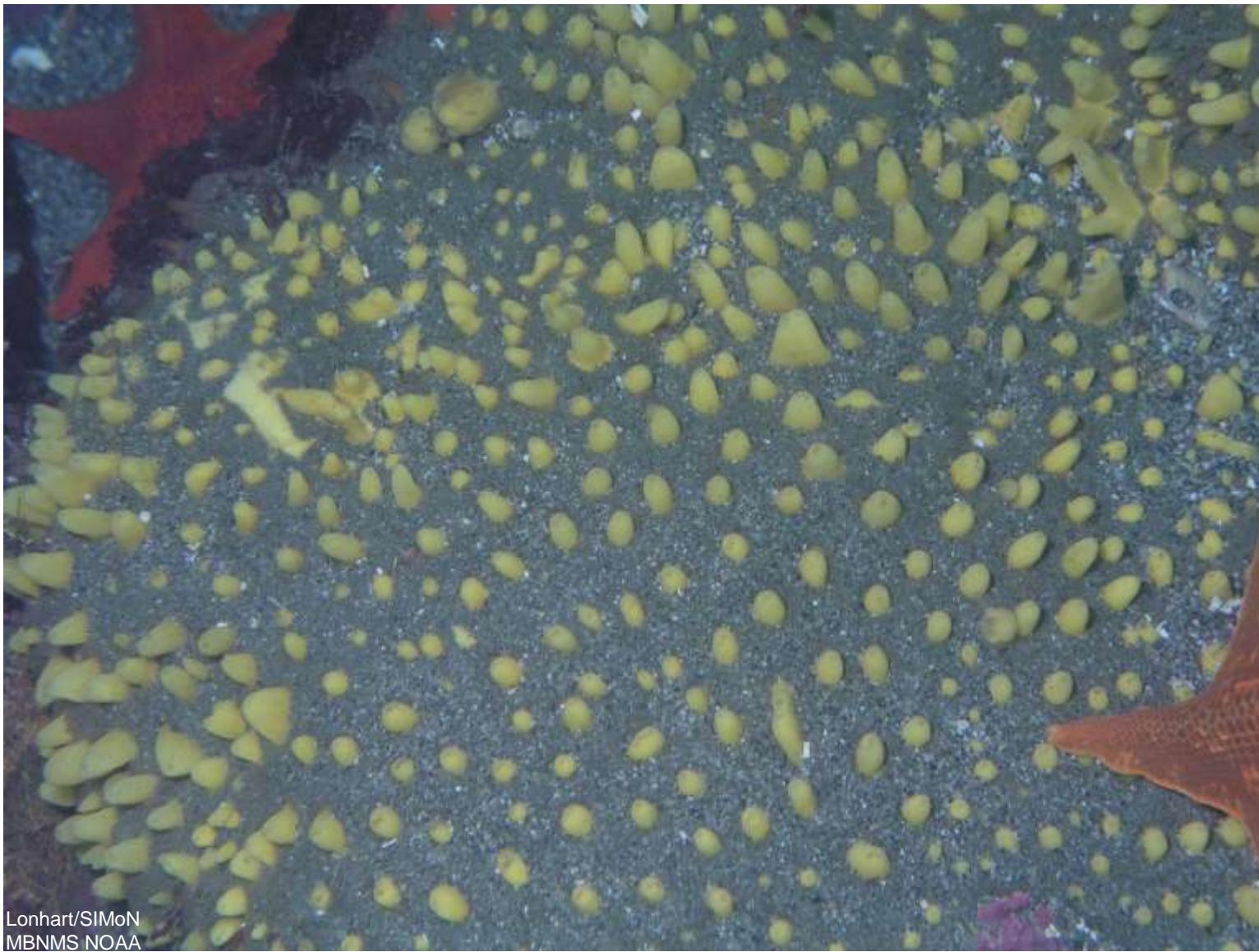
Bryozoans
Brittle and rough texture
Colonies orange sheet-like crusts



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Bryozoans

Brittle and rough texture (golden *Reginella hippocrepis*)
Colonies fluted on edges of sheet-like crusts



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Sponge

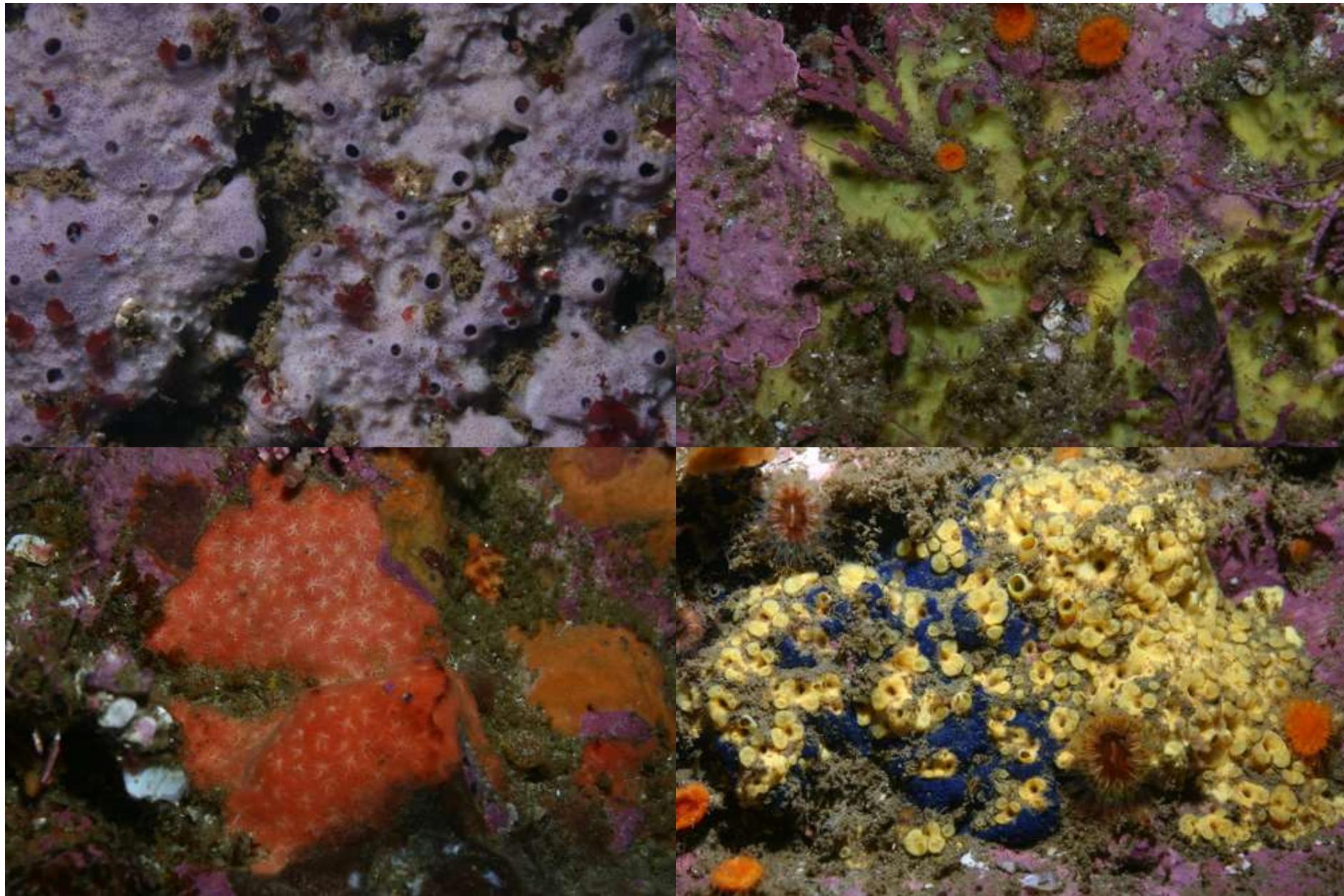
Polymastia pacifica (=*pachymastia*)

Aggregated fingers with osculae on top, can cover areas up to 3 m diameter



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Sponge
Polymastia pacifica (=*pachymastia*)



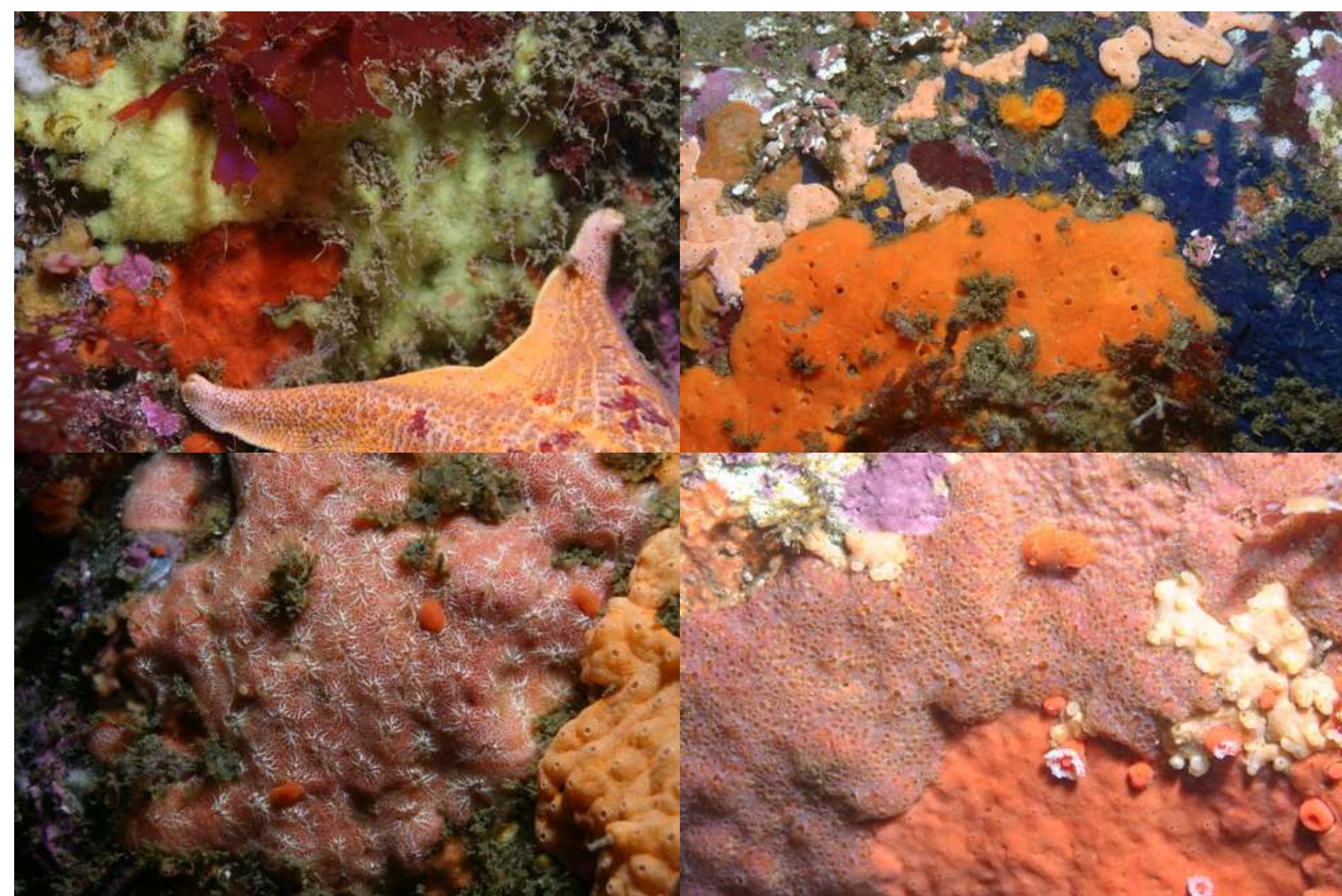
Sponge

Sheets, clumps, balls, or fingers; often rough, spongy



Sponge

Sheets, clumps, balls, or fingers; often rough, spongy



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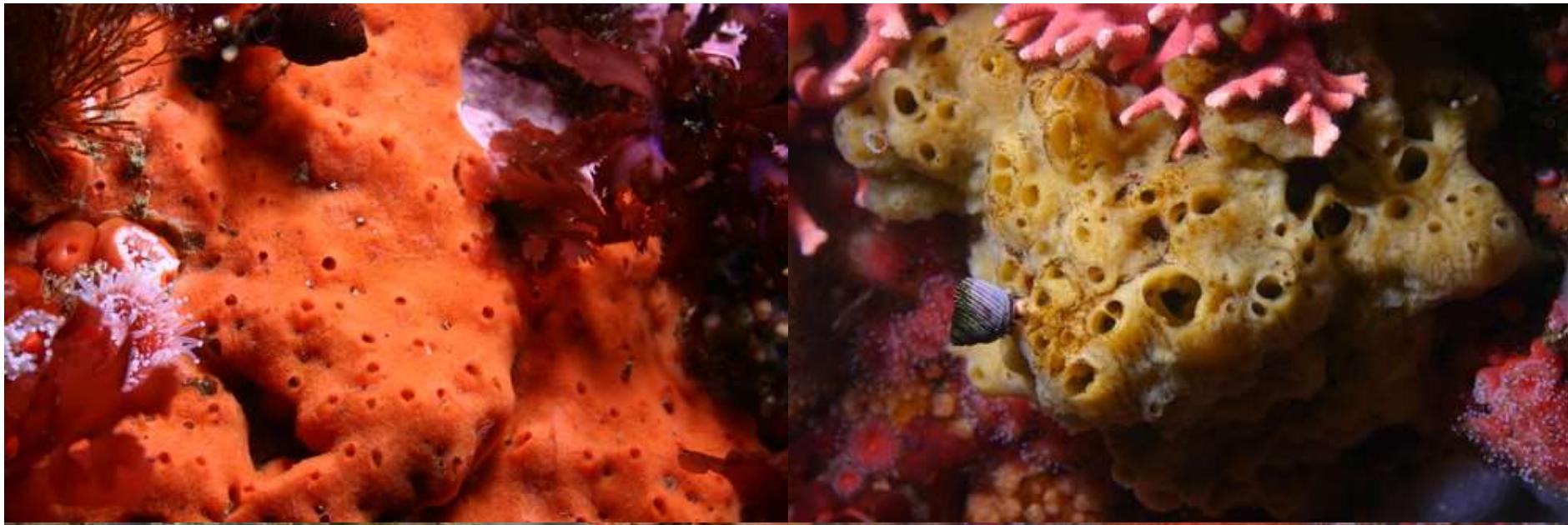
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Mussels



Tube Mat

Probably *Phyllochaetopterus prolifica*, which forms large tube mats

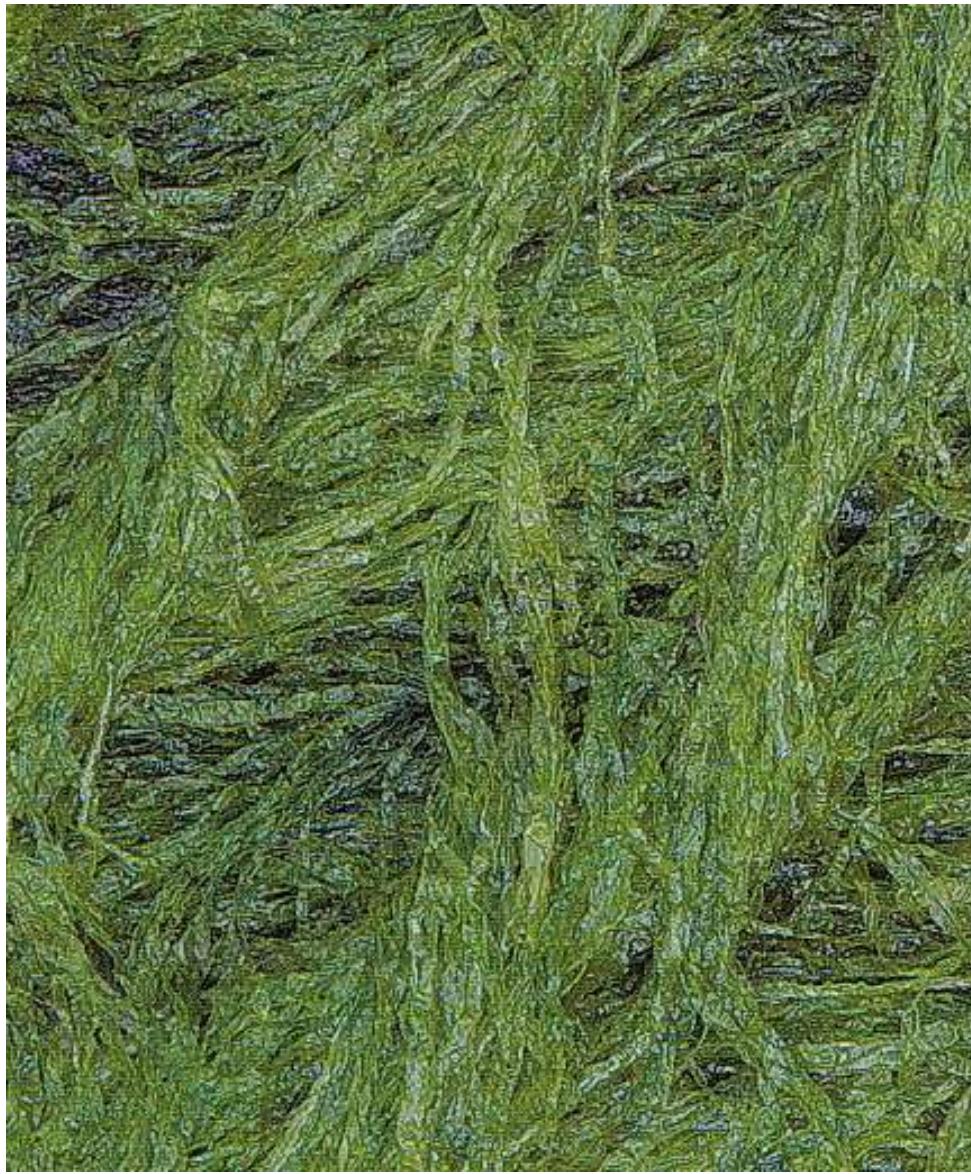


Tube Mat

Probably *Phyllochaetopterus prolifica*, which forms large tube mats



***Phyllospadix* spp. (Surf Grass)**



Green Algae
Ulva spp.

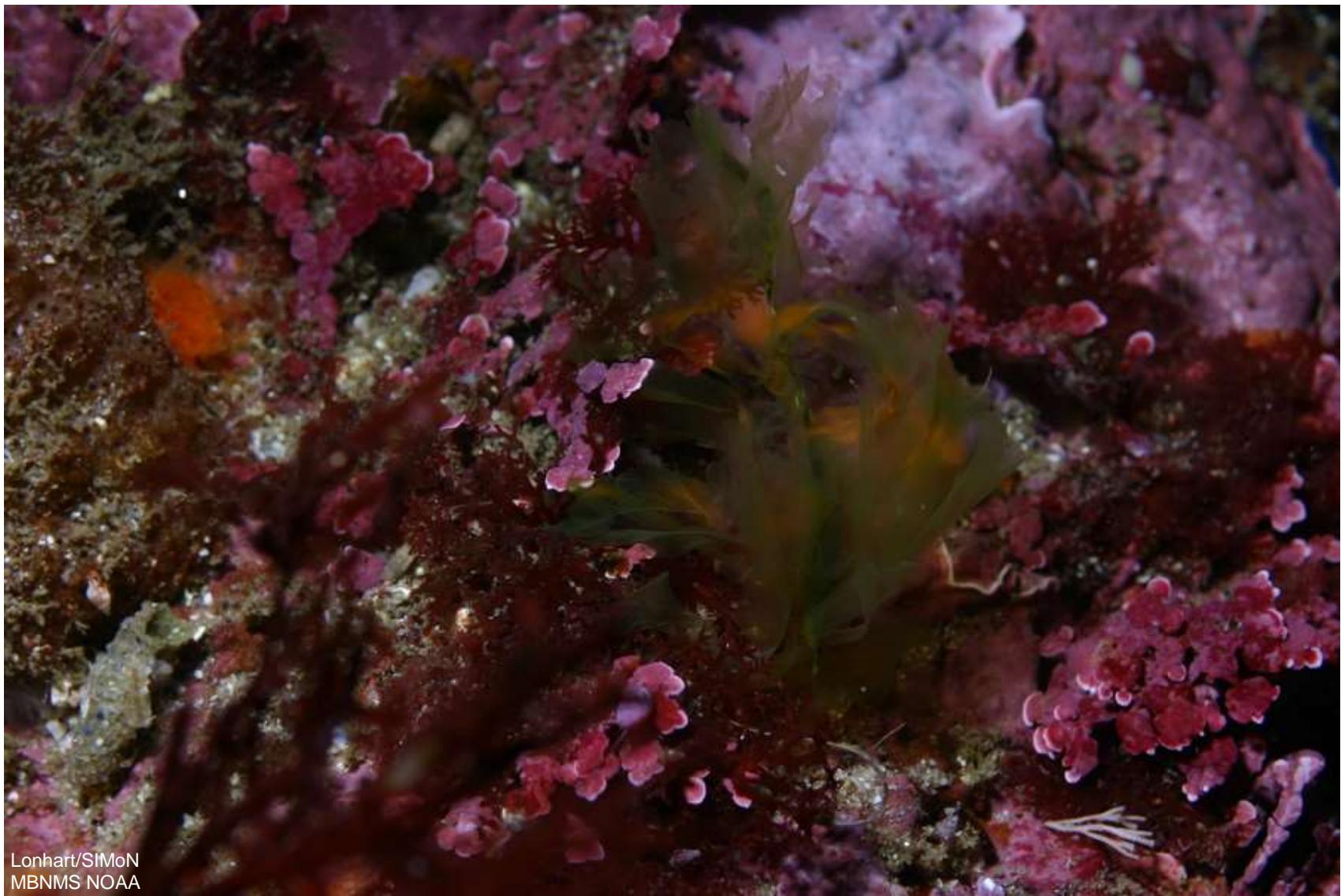


Green Alga
Codium setchellii



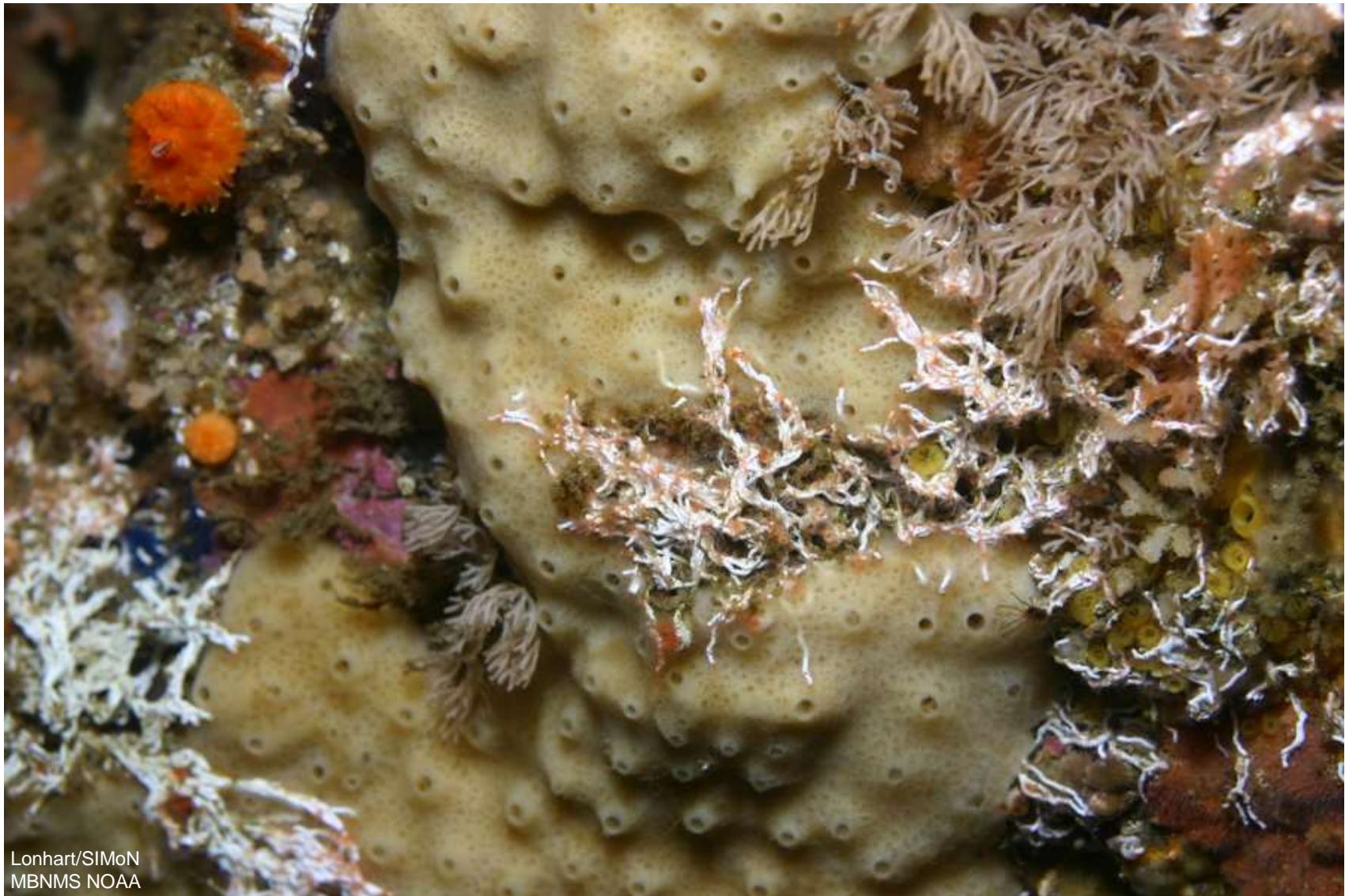
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Green Alga



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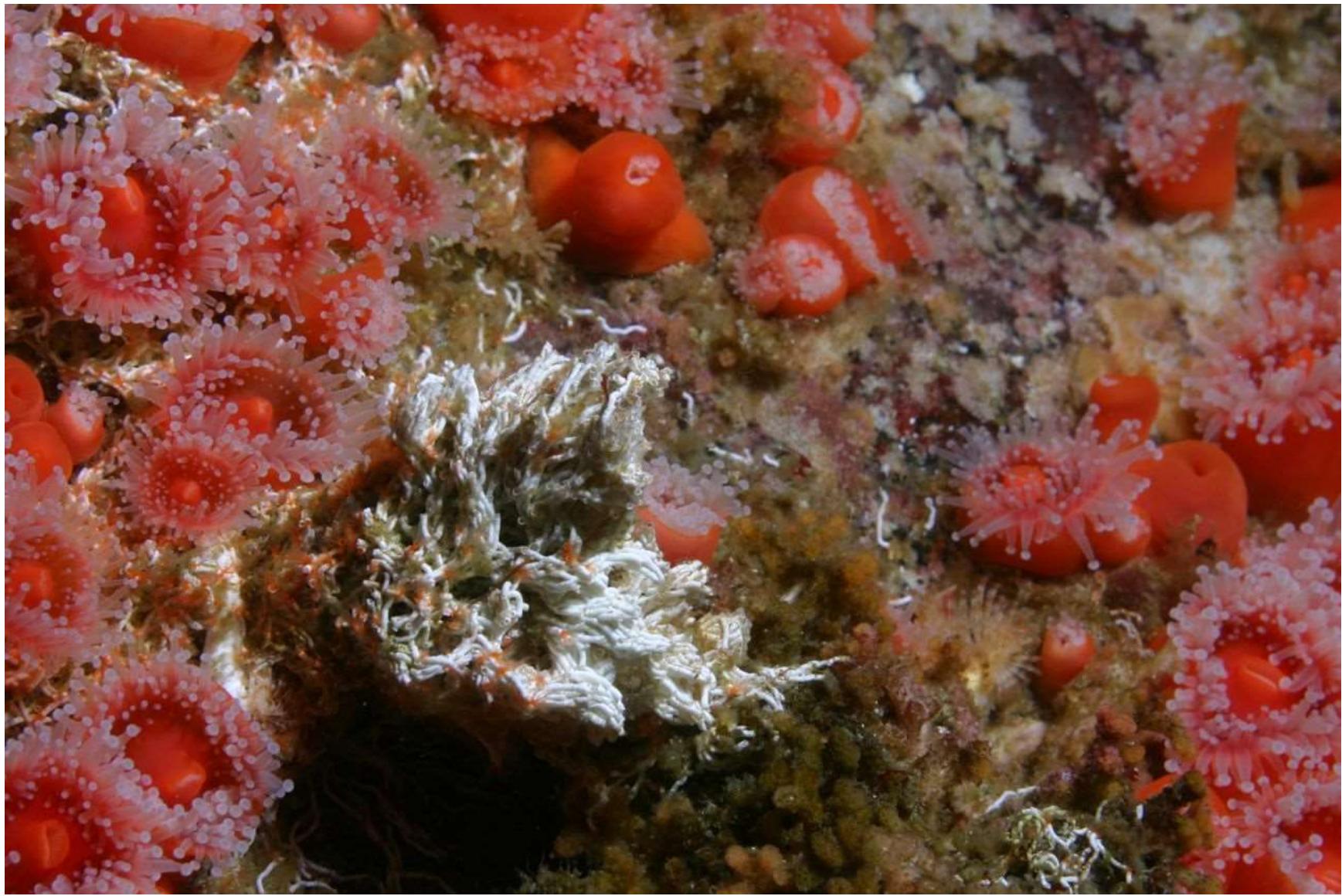
Green Alga



Lonhart/SIMoN
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Salmacina tribranchiata

Calcareous tubeworm, very fragile white tubes with bright orange tentacles



Salmacina tribranchiata

Calcareous tubeworm, very fragile white tubes with bright orange tentacles



Lonhart/SIMoN
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Dictyotales

Brown, branching algae



Dictyotales
Brown, branching algae



Turf

1-2 cm tall, red filaments, few or no branches



Laminariales juvenile – superlayer category