# Opisthobranchs of Rongelap: a Survey of Living Nudibranchs and Sea Slugs with 50 New Records from Rongelap Atoll

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**Abstract:**

An underwater photographic data capture survey was conducted in shallow water at Rongelap atoll, Republic of the Marshall Islands, between 13 July 2020 and 13 September 2020. The survey focused on finding living nudibranchs and sea slugs and photographing them in situ to document species diversity. 51 different identifiable species were observed, comprised of 43 named species and 8 undescribed but known species.

**Introduction:**

The purpose of this survey was to find and identify as many different species of Opisthobranchs as possible during the survey period. The intent was to photographically document the diversity of Opisthobranchs present in Rongelap shallow water environments. Opisthobranch diversity in Rongelap has not been well studied due to the geographic isolation of the atoll and lack of supporting local infrastructure. Rongelap lies approximately 350 nautical miles northwest from the capital of Majuro. There is no regular schedule of air or sea transportation serving Rongelap.

Rongelap is a relatively large atoll with a reef circumference of approximately 84 nautical miles and there is currently no human habitation outside of Rongelap Island which lies at the south east corner of the atoll. Rongelap atoll also presents a unique opportunity for study because of minimal human habitation and minimal local anthropogenic environmental pressure during the past 65 years. Rongelap has remained lightly populated since the 1950's due to concerns about lingering effects of radioactive fallout from the 1954 Castle Bravo U.S. nuclear weapon test at Bikini atoll which caused radiation poisoning of Rongelap inhabitants and subsequent relocation of the population. At the time of this survey only six people were living on Rongelap Island.

There has been only one previously published work known to identify Opisthobranchs from Rongelap atoll (Johnson and Boucher, 1983). The referenced work identified six species from Rongelap atoll.

**Methods:**

A survey of living nudibranchs and sea slugs was performed at Rongelap atoll, Republic of the Marshall Islands, from 13 July 2020 to 13 September 2020. A privately owned live-aboard boat was used for the expedition to Rongelap. Two divers with underwater cameras spent a total of 40 days in the water surveying in Rongelap. Each diver used a Sony RX100V compact camera in a Nauticam NA-RX100V underwater camera housing. A Nauticam CMC-1 wet macro lens was used to magnify small subjects. Light & Motion SOLA VideoPro lights were used for subject illumination. Strobes were not used. No scuba equipment was used and the survey was limited to snorkeling and free-diving in shallow water, from 0.5

to 5 meters. The survey was limited to daytime only and primarily near shore on the lagoon side of barrier reef islands and on the open barrier reef, favoring the lagoon side of the eastern reef. Average time in the water was about 5 hours (10 person hours) per survey day. No specimens were collected. Species were identified by comparing photographs of animals found to photographs of animals at the website http://www.underwaterkwaj.com (Johnson and Johnson, 2020) and by comparison to photographs and descriptions in the book *Nudibranch and Sea Slug Identification Indo-Pacific 2nd Edition* (Gosliner et. al., 2018). Animal sizes were recorded photographically by placing a white ruler, with 1mm interval black hash marks, flat and parallel next to the subject while the subject was actively moving with its body extended. "Size" is the measured length from the tip of the tail to the front of the head, excluding any projecting rhinophores or oral tentacles.

**Results:**

51 identifiable species were photographed. *Dendrodoris coronata* is the only species observed in this survey to have been previously reported from Rongelap (Johnson and Boucher 1983), thus 50 new records from Rongelap are reported from this survey. The findings of the survey are summarized in Table 1. Photographic images (71 color plates) are presented in the Appendix.

Table 1 – Summary of Survey Findings

| | Genus & species (author citation) | Number observed | Size range in mm (number of animals measured) | Comments |
|---|---|---|---|---|
| 1 | *Berthellina delicata* (Pease, 1861) | >200 | 28 to 43 (n = 4) | Typically found under rocks in day on shallow barrier reef exposed to strong current at high tide. More than 200 animals (estimated) observed ranging in color from pale yellow to bright yellow to orange to reddish orange. 4 animals measured. Most animals observed fell into the measured range. Some smaller animals were seen but not measured. An exact number count was not kept but this was the most commonly found species in the areas surveyed. In one cut between islands, 32 individuals were found in less than 1 hour by one diver. |
| 2 | *Berthella caledonica* (Risbec, 1928) | 4 | 15 to 55 (n = 4) | Found under rocks in day on open barrier reef between islands. 2 animals observed were typical for the species and 2 animals were atypical with no white flecks and no dark spot centered on the dorsum. Identification of the atypical individuals is uncertain but they are included as probable variants of *B. caledonica*. |

| | Genus & species (author citation) | Number observed | Size range in mm (number of animals measured) | Comments |
|---|---|---|---|---|
| 3 | *Berthella martensi* (Pilsbry, 1896) | 1 | 35 (est.) | Found subtidal at less than 1 m depth at low tide on barrier reef. |
| 4 | *Bornella* sp. e468 (Scott Johnson) | 3 | 11 to 15 (n = 3) | Found under rocks in day at 1 m depth at low tide on barrier reef. Typically found in areas that experience very strong current at high tide, under rocks with an abundance of sponges, corals, weed, algae, small crabs and shrimp. 3 specimens found on different days on different sections of reef. |
| 5 | *Bornella stellifer* (A. Adams & Reeve, 1848) | 4 | 18 to 24 (n = 2) | Under rocks in day on shallow barrier reef. |
| 6 | *Cadlinella ornatissima* (Risbec, 1928) | 1 | 9 | Under rock in day on shallow barrier reef. |
| 7 | *Caloria* sp. e562 (Scott Johnson) | 1 | 15 | Under rock in day on shallow barrier reef. |
| 8 | *Carminodoris grandiflora* (Pease, 1860) | 4 | 27 to 36 (n = 4) | Under rocks in day on shallow barrier reef and in sheltered lee of barrier islands. |
| 9 | *Chromodoris aspersa* (Gould, 1852) | >100 | 11 to 25 (n = 5) | This was the second most common species seen in the areas surveyed. Many very small specimens were observed but not measured. Found on barrier reef and in sheltered lee of barrier islands. Always under rocks in day. Frequently found 2 or 3 individuals together under the same rock and often with eggs. |
| 10 | *Cyerce elegans* Bergh, 1870 | 1 | 54 | Under a large slab in day in a narrow cut between islands. 1 m depth. |
| 11 | *Dendrodoris coronata* Kay & Young, 1969 | 2 | 17 to 20 (n = 2) | Under rocks in day. 1 m depth at low tide on barrier reef and 4 m depth in lee of barrier island. |
| 12 | *Dendrodoris elongata* Baba, 1936 | >30 | 26 to 45 (n = 3) | Found from 0.5 to 4 m depth at low tide. Sometimes found under “dead” rocks with no coral, sponge or weed. Also found under rocks with abundant life. Found on barrier reef and in protected lee of barrier islands. |

| | Genus & species (author citation) | Number observed | Size range in mm (number of animals measured) | Comments |
|---|---|---|---|---|
| 13 | *Dendrodoris nigra* (Stimpson, 1855) | >20 | 14 to 30 (n = 7) | Found at 1 to 3 m depth under rocks in day on barrier reef and in the lee of barrier islands. Highly variable from solid black with no white spots to profuse white spots. Solid black specimens found with large dorsal bumps. |
| 14 | *Dendrodoris tuberculosa* (Quoy & Gaimard, 1832) | 1 | 80 | 1 m depth at low tide under rock in day on barrier reef. |
| 15 | *Dermatobranchus fortunatus* (Bergh, 1888) | 2 | 9 (n = 1) | 0.5 to 2 m depth in protected lee of barrier island under rocks in day. |
| 16 | Discodorid sp. e606 (Scott Johnson) | 1 | 30 | <1 m depth at low tide under rock during the day in lee of barrier island. |
| 17 | *Discodoris coerulescens* Bergh, 1888 | 2 | 17 to 22 (n = 2) | 1 to 2 m on barrier reef under rocks in day. |
| 18 | *Doriprismatica atromarginata* (Cuvier, 1804) | 12 | 22 to 46 (n = 5) | Often exposed and visible in day. Frequently found in pairs feeding on grey sponge. Usually 1 to 2 m depth on barrier reef. |
| 19 | *Doris viridis* (Pease, 1861) | >20 | 2 to 8 (n = 9) | Found at 0.5 to 2 m depth in lee of barrier island under rocks in day often with egg mass. |
| 20 | *Elysia* sp. e543 (Scott Johnson) | 2 | 12 to 15 (n = 2) | Found at 0.5 and 2 m depth in lee of barrier island under rocks in day. |
| 21 | *Facelina bourailli* (Risbec, 1928) | 6 | 7 to 10 (n = 4) | Under slabs on barrier reef 0.5 to 1.5 m. |
| 22 | *Glossodoris hikuerensis* (Pruvot-Fol, 1954) | 1 | 100 | 2 m under slab near shore in lee of barrier island. |
| 23 | *Glossodoris rufomarginata* (Bergh, 1890) | 4 | 14 to 25 (n = 4) | Under rocks in day, 1m, barrier reef. Found 2 solitary animals and 1 pair with eggs. |
| 24 | *Goniobranchus decorus* (Pease, 1860) | 2 | 14 to 15 (n = 2) | 1 to 2 m. One on barrier reef and one near shore in lee of island. Both under rocks in day. |
| 25 | *Goniobranchus fidelis* (Kelaart, 1858) | 4 | 8 to 16 (n = 3) | 1 to 3 m under rocks in day on barrier reef and in lee of islands. One individual observed eating both red and purple sponges. |

| | Genus & species (author citation) | Number observed | Size range in mm (number of animals measured) | Comments |
|---|---|---|---|---|
| 26 | *Goniobranchus geometricus* (Risbec, 1928) | 1 | 12 | Under rock in day, 1 m, near shore in lee of island. |
| 27 | *Halgerda albocristata* Gosliner & Fahey, 1998 | 17 | 12 to 25 (n = 9) | Under rocks in day. Found on barrier reef but more frequently near shore in protected lee of islands from 0.5 to 4 m. Highly variable coloration in Rongelap with individuals intergrading from white and black to bright yellow and black to brownish yellow and black. |
| 28 | *Halgerda* sp. e346 (Scott Johnson) | 1 | 8 | 1 m under rock in day on barrier reef exposed to strong currents. |
| 29 | *Halgerda tessellata* (Bergh, 1880) | 1 | 16 | 1 m under rock in day in lee of barrier island. |
| 30 | *Hypselodoris decorata* (Risbec, 1928) | 1 | 12 | 1 m under rock in day with abundant live sponges and corals on barrier reef. |
| 31 | *Jorunna funebris* (Kelaart, 1859) | 2 | 10 to 15 (n = 2) | 0.5 to 1 m at low tide under rocks in day on barrier reef with very strong current at high tide. |
| 32 | *Mariaglaja sandrana* (Rudman, 1973) | 3 | 18 to 20 (n = 3) | Three animals found together within 1 square meter actively moving on white sand in the open during the day. Found in the lee of a barrier island at approximately 3 m depth. |
| 33 | *Miamira sinuata* (van Hasselt, 1824) | 1 | 21 | 1 m at low tide on barrier reef with abundant live corals, sponges, weed and algae in an area that experiences extremely strong current at mid to high tide. |
| 34 | *Odontoglaja guamensis* Rudman, 1978 | 6 | 7 to 8 (n = 2) | Typically found under rocks in day on barrier reef with abundant corals, sponges, algae and weed. |
| 35 | *Phyllidia carlsonhoffi* Brunckhorst, 1993 | 3 | 30 to 70 (n=2) | 2 to 3 m under rocks in day in lee of island. |
| 36 | *Phyllidia elegans* Bergh, 1869 | 1 | 29 | Exposed and active in day, 1m at low tide in narrow cut between islands that alternates from strong current to no current depending on tide. |
| 37 | *Phyllidia madangensis* Brunckhorst, 1993 | 12 | 6 to 30 (n = 8) | Smaller animals usually under rocks in day, larger animals sometimes exposed and active in day, frequently in protected lee of islands. Often found eating yellow sponge. |

| | Genus & species (author citation) | Number observed | Size range in mm (number of animals measured) | Comments |
|---|---|---|---|---|
| 38 | *Phyllidia* sp. e359 (Scott Johnson) | 1 | 80 | 1m in cut between islands under rock in day. |
| 39 | *Phyllidia varicosa* Lamarck, 1801 | 1 | 62 | 2m depth, exposed in day on lagoon side of wide shallow barrier reef. |
| 40 | *Phyllidiella pustulosa* (Cuvier, 1804) | >20 | 10 to 45 (n = 6) | Often exposed and active in day but also under rocks. Found on ocean side wall of barrier reef at 3 m, on lagoon side of barrier reef, and in sheltered lee of barrier islands. |
| 41 | *Phyllidiopsis burni* Brunckhorst, 1993 | 8 | 15 to 45 (n = 5) | Usually found under rocks in day both in protected lee of islands and on barrier reef with strong current. |
| 42 | *Plakobranchus ocellatus* (van Hasselt, 1824) | 2 | n/a | Shallow reef, exposed in day. |
| 43 | *Platydoris formosa* (Alder & Hancock, 1864) | 4 | 80 (n=2) | 1 to 2 m in lee of barrier island. |
| 44 | *Platydoris* (?) sp. e835 (Scott Johnson) | 1 | 25 (est.) | 1 m depth at low tide under rock in day on barrier reef. |
| 45 | *Pleurehdera haraldi* (Ev. Marcus & Er. Marcus, 1970) | 1 | 17 | 1 m under rock in day in lee of barrier island. |
| 46 | *Roboastra gracilis* (Bergh, 1877) | 3 | 14 to 17 (n = 3) | 1 m at low tide on barrier reef both under rocks and exposed in day. |
| 47 | *Rostanga* sp. e485 (Scott Johnson) | 2 | 20 to 26 ( n = 2) | 0.5 to 1 m at low tide on lagoon side of barrier reef under rocks in day. |
| 48 | *Samla bicolor* (Kelaart, 1858) | 2 | 8 to 9 (n = 2) | Lagoon edge of barrier reef, 1m, under rocks with abundant sponges, corals, algae and weed. |
| 49 | *Tenellia lugubris* (Bergh, 1870) | 6 | 13 to 24 (n = 4) | Found 0.5 to 1 m depth under rocks in day on barrier reef with very strong current. |
| 50 | *Thuridilla vataae* (Risbec, 1928) | 8 | 5 to 8 (n = 5) | Found under rocks in day from 0.5 to 1.5 m, both on barrier reef with strong current and in protected lee of small islands. |
| 51 | *Veronica norba* (Er. Marcus & Ev. Marcus, 1970) | 2 | 9 to 20 (n = 2) | 0.5 to 1 m at low tide under rocks in day in lee of barrier island. |

**Discussion:**

For species that were seldom seen (less than 10 animals found in the survey) the numbers of animals are reported accurately based on supporting photographic records. For the commonly found species, accurate daily counts were not recorded, not all animals were photographed, and the numbers are estimated.

It was not possible to obtain measurements of all animals photographed, primarily due to physical difficulties with very strong currents. When examples of a species were accurately measured, the size range is presented in Table 1 with the number of individuals measured. If a size was estimated and not measured that is noted.

The 51 identifiable species found in Rongelap have all been previously reported from the Marshall Islands, primarily from Enewetak and/or Kwajalein atolls. (Johnson and Johnson, 2020). However, the 50 new records from Rongelap atoll provide new data for the distribution of these species within the widely scattered atolls of the Marshall Islands.

Animals identified as *Dendrodoris nigra* display a great deal of variability in appearance. Different animals displayed an intergrading extent of protruding dorsal bumps and white spots. Interestingly, there is a consistent negative correlation between bumps and spots for the 10 animals photographed. Examples are shown in Images 18, 19, 20, and 21. The individuals with the most spots had minimal bumpiness and the individuals with the most extreme bumps had no dorsal white spots. However, because of the intergrading levels of these characteristics between individuals, we suspect that they are all the same species. Further work is needed to collect extreme examples (lots of spots with no bumps, lots of bumps with no spots) for anatomical study and DNA analysis to confirm these variants are all forms of *D. nigra*, or possibly expose a novel species.

After seeing many examples of *Dendrodoris nigra*, an animal was observed (Image 22) that was also black with white tipped rhinophores, but was immediately recognized as significantly different in appearance due to the rough wrinkled texture of the skin surface, the larger open gill sack, the greater extent of undulations or “ruffles” in the mantle margin, and the lack of “bumps” or “pustules” compared to all other solid black animals identified as *D. nigra* from Rongelap. We initially believed this animal could be a form of *Dendrodoris arborescens* lacking the typical red marginal band and the white apices of the gills. The authors consulted with Dr. Gilianne Brodie, a leading expert on *Dendrodoris nigra* and *Dendrodoris arborescens*. (Brodie et.al., 1997), (Brodie and Calado, 2006). Dr. Brodie’s opinion based on the photograph is that the animal in question (Image 22) is *D. nigra*, not *D. arborescens*. We must therefore conclude that the animal is most likely *D. nigra* but we retain some doubts because of the significant differences in appearance of the animal compared to all other examples of *D. nigra* observed at Rongelap atoll. For the purpose of this survey we conclude that the animal in Image 22 cannot be identified with absolute certainty from a photograph alone and it is therefore not included in the survey count, but is presented as a probable form of *D. nigra* and an animal of interest.

The population of *Halgerda albocristata* found at Rongelap is also of particular interest. Individuals intergraded from the commonly reported yellow and black color form (Image 38) to a white and black color form (Image 40). A literature search found no mention of this unusual white dorsal base color form. The original description of *H. albocristata* (Gosliner and Fahey, 1998) describes only the yellow color form: “The ground color of the dorsum beneath the white ridges is yellow...”

The majority of species observed in Rongelap were easily identifiable from published descriptions and comparison to reference photographs. However, differentiation and positive identification of some examples of *Phyllidia tula* and *Phyllidia carlsonhoffi* remain difficult based on animal appearance alone. The animals shown in Image 54 display the *P. tula* characteristic of small irregular tubercles surrounding some of the larger dorsal tubercles, and also adjacent yellow capped tubercles sharing a confluent white base, but the majority of the tubercles look more characteristic of *P. carlsonhoffi*. Image 54 is included to show the challenge of distinguishing these species, but because the animals in Image 54 could not be positively identified based on visible morphology they are not included in the species count.

The unnamed Opisthobranchs found in this survey were matched by obvious morphological similarity to the animals in the photographic records available at the website http://www.underwaterkwaj.com. (Johnson and Johnson, 2020.) The 8 known but undescribed animals have all been previously assigned an identification number by Scott Johnson. The authors consulted with Scott Johnson who confirmed the assignment of his identification numbers to the 8 unnamed species this survey found in Rongelap Atoll.

This survey provides the first documentation of the presence of these 8 species in Rongelap and helps to establish the range of these undescribed species within the Republic of the Marshall Islands. Further work is needed to collect specimens for laboratory study and animal description.

In general, Rongelap atoll appears to have experienced very little human pressure on the marine ecosystem in recent years. There is a great abundance and diversity of marine life on the reefs and in the lagoon. The authors are confident that there are many more species of Opisthobranch living at Rongelap atoll than observed in this survey and further survey work is warranted.

**Acknowledgements:**

We thank Scott Johnson and Gilianne Brodie for generously sharing their time and knowledge and assisting with animal identification.

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**Appendix – Photographic Images:**

Image 1 – *Berthellina delicata*, orange (40mm) & yellow color forms, Rongelap

Image 2 – *Berthellina delicata*, 30mm (estimated) pale color form, Rongelap

Image 3 - *Berthellina delicata* with eggs, Rongelap

Image 4 - *Berthella caledonica*, 22mm, typical with mid-dorsal spot, Rongelap

Image 5 – *Berthella caledonica*, 45mm, no mid-dorsal spot, Rongelap

Image 6 – *Berthella martensi*, 35mm, Rongelap

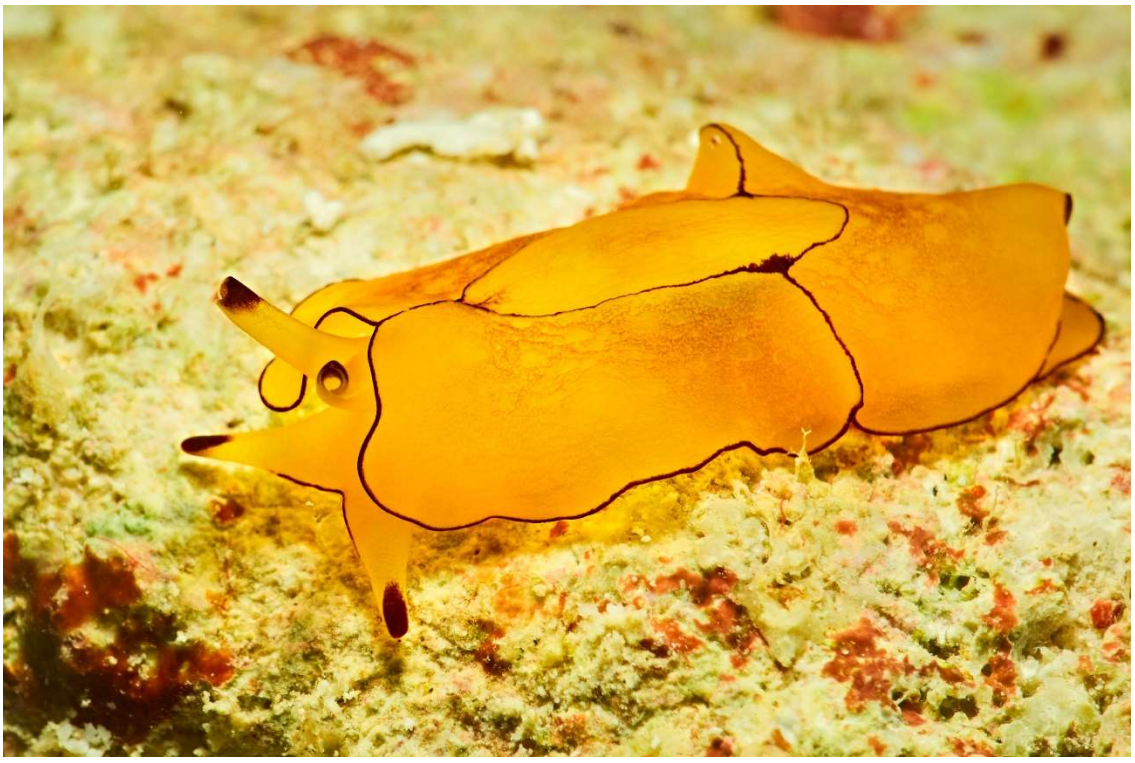

Image 7 – *Berthella martensi* tubular egg mass, Rongelap

Image 8 – *Bornella* sp. e468, 11mm, Rongelap

Image 9 - *Bornella stellifer*, 18mm, Rongelap

Image 10 – *Cadlinella ornatissima*, 9mm, Rongelap

Image 11 – *Caloria* sp. e562, 15mm, Rongelap

Image 12 – *Carminodoris grandiflora*, 36mm, Rongelap

Image 13 - *Chromodoris aspersa*, 23mm, Rongelap

Image 14 - *Chromodoris aspersa*, 25mm, with eggs, Rongelap

Image 15 – *Cyerce elegans*, 54mm, Rongelap

Image 16 – *Dendrodoris coronata*, 17mm, Rongelap

Image 17 – *Dendrodoris elongata*, Rongelap

Image 18 – *Dendrodoris nigra*, 20mm, densely spotted, Rongelap

Image 19 – *Dendrodoris nigra*, 28mm, Rongelap

Image 20 – *Dendrodoris nigra*, few spots, some bumps, Rongelap

Image 21 – *Dendrodoris nigra*, bumps no spots, 19mm, Rongelap

Image 22 - *Dendrodoris* sp., probably a form of *D. nigra*? 27mm, Rongelap

Image 23 - *Dendrodoris tuberculosa*, 80mm, Rongelap

Image 24 – *Dermatobranchus fortunatus*, 9mm, Rongelap

Image 25 - Discodorid sp. e606, 30mm, Rongelap

Image 26- *Discodoris coerulescens*, 22mm, Rongelap

Image 27 – *Doriprismatica atromarginata*, 22mm, Rongelap

Image 28 – *Doris viridis*, 8mm, blue color form, Rongelap

Image 29 - Doris viridis, 8mm & 6mm, blue & green color forms with eggs, Rongelap

Image 30 - Elysia sp. e543, 15mm, Rongelap

Image 31 - *Facelina bourailli*, 7mm, Rongelap

Image 32 - *Glossodoris hikuerensis*, 100mm, Rongelap

Image 33 – *Glossodoris rufomarginata*, 15mm, Rongelap,

Image 34 - *Glossodoris rufomarginata*, 25mm, with eggs, Rongelap

Image 35 – *Goniobranchus decorus*, 15mm, Rongelap

Image 36 - *Goniobranchus fidelis*, 16mm, with egg mass, Rongelap

Image 37 – *Goniobranchus geometricus*, 12mm, Rongelap

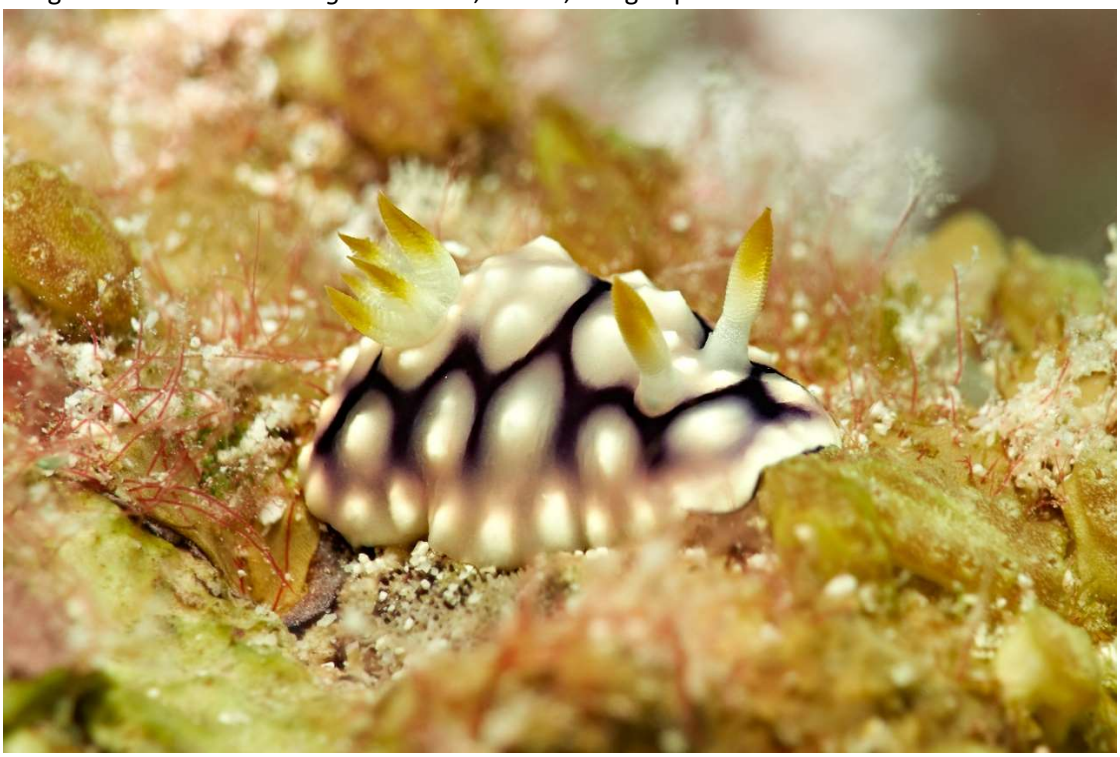

Image 38 – Halgerda albocristata, 16mm, Rongelap

Image 39 – *Halgerda albocristata*, intermediate color form with pale yellow dorsal base color, eggs of unconfirmed origin, Rongelap

Image 40 – *Halgerda albocristata*, 15mm, white dorsal base color form, Rongelap

Image 41 – *Halgerda* sp. e346, 8mm, Rongelap

Image 42 - *Halgerda tessellata*, 16mm, Rongelap

Image 43 – *Hypselodoris decorata*, 12mm, Rongelap

Image 44 – *Jorunna funebris*, 10mm, Rongelap

Image 45 - *Mariaglaja sandrana*, 19mm, Rongelap

Image 46 – *Miamira sinuata*, 21mm, Rongelap

Image 47 - *Odontoglaja guamensis*, 7mm, Rongelap

Image 48 - *Phyllidia carlsonhoffi*, 30mm, Rongelap

Image 49 - *Phyllidia carlsonhoffi*, 30mm, line on foot used for identification, Rongelap

Image 50 - *Phyllidia elegans*, 29mm, Rongelap

Image 51 - *Phyllidia madangensis*, 7mm & 30mm, Rongelap

Image 52 - *Phyllidia madangensis*, 30mm, no line on foot used for identification, Rongelap

Image 53 – *Phyllidia* sp. e359, with eggs, 80mm, Rongelap

Image 54 – *Phyllidia* sp. 45mm & 55mm, Rongelap

Image 55 - *Phyllidia varicosa*, 62mm, Rongelap

Image 56 – *Phyllidiella pustulosa*, 35mm, Rongelap

Image 57 - *Phyllidiella pustulosa*, 45mm, Rongelap

Image 58 - *Phyllidiella pustulosa* egg mass, Rongelap

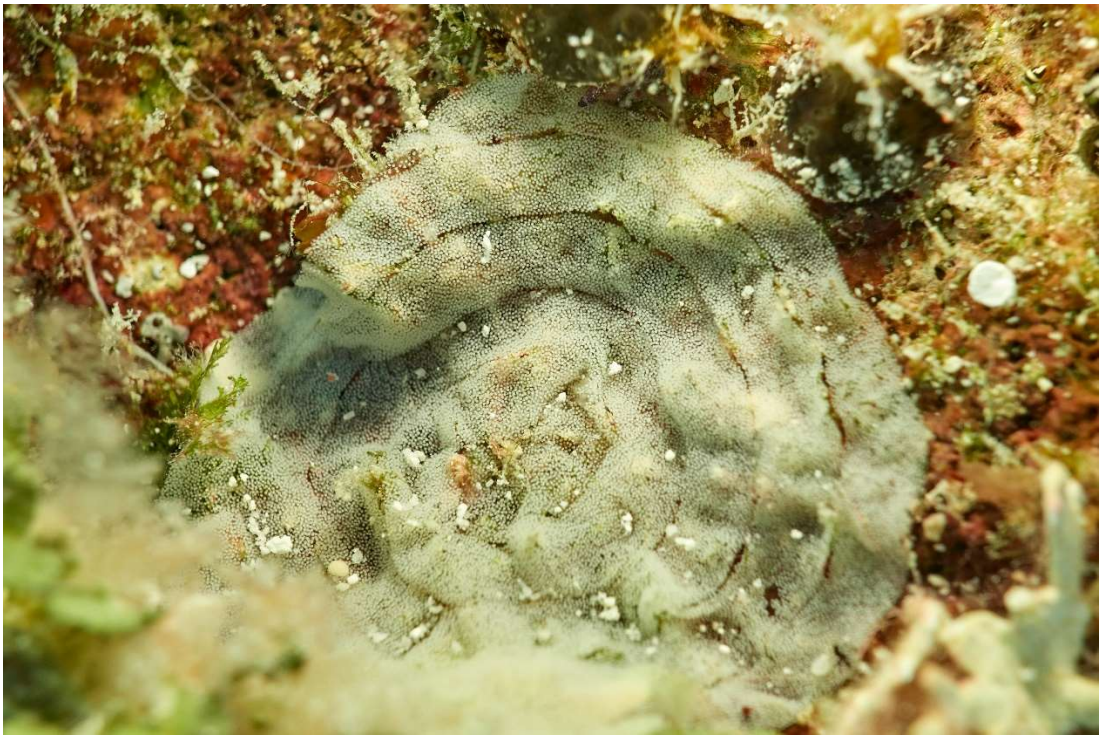

Image 59 - *Phyllidiopsis bruni*, 45mm, Rongelap

Image 60 – *Plakobranchus ocellatus*, Rongelap

Image 61 – *Platydoris formosa*, 80mm, Rongelap

Image 62 – *Platydoris formosa*, ventral view, 80mm, Rongelap

Image 63 – *Platydoris* sp. e835, 25 mm, Rongelap

Image 64 - *Pleurehdera haraldi*, 17mm, Rongelap

Image 65 - *Roboastra gracilis*, 17m, Rongelap

Image 66 - *Rostanga* sp. e485, 20mm, Rongelap

Image 67 - *Samla bicolor*, 9mm, Rongelap

Image 68 - *Tenellia lugubris*, 24mm, Rongelap

Image 69 – *Tenellia lugubris* with egg mass, Rongelap

Image 70 - *Thuridilla vataae*, 8mm, Rongelap

Image 71 - *Veronica norba*, 20mm, Rongelap