

# BETWEEN the TIDES

Friends of Fitzgerald Marine Reserve  
March 2020

## Fitzgerald's Own "History Detective" Delves into Seal Cove's Mysterious Past

by Tom Ciotti

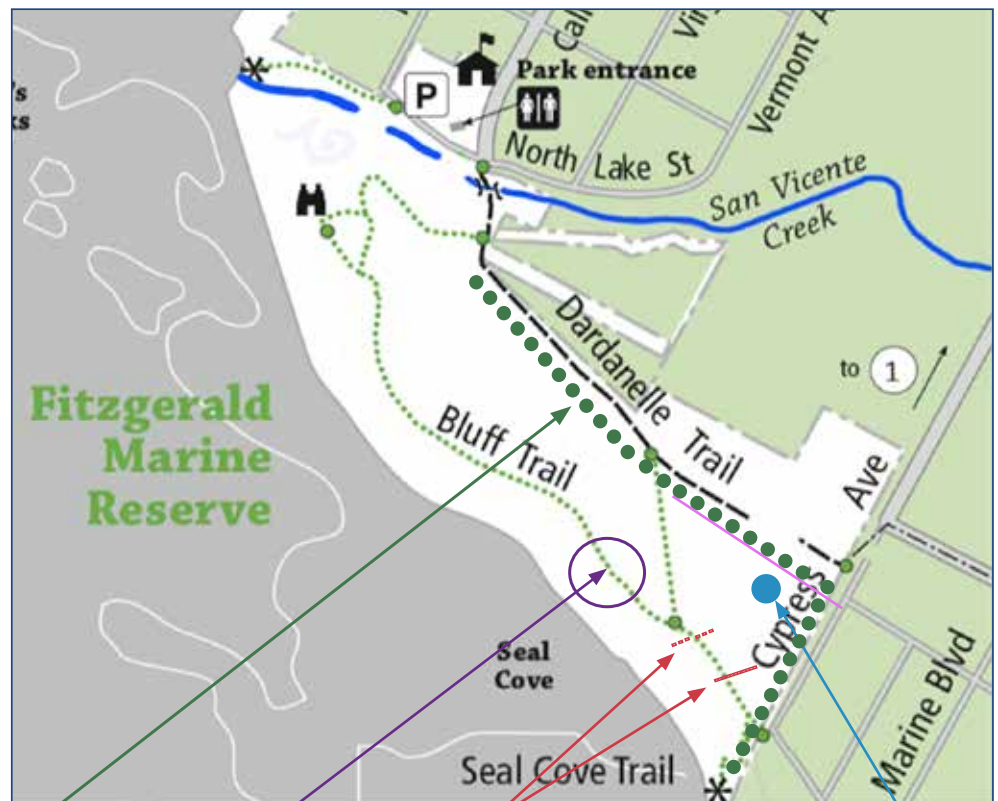
*Editor's Note:* FFMR President Tom Ciotti spent months searching for clues to Seal Cove's true history, from the day of the Chiguan natives to the more recent Westinghouse plans to subdivide the land of what is now Fitzgerald Marine Reserve. Here's his story.

.....  
Forget everything you learned previously about Seal Cove history, including anything I may have told you before. The following is the Gospel of Seal Cove, so help me Bob Breen.

For the purposes of this article, Seal Cove is the land portion of Fitzgerald Marine Reserve bounded on the south by Cypress Avenue, on the west by the Pacific Ocean, on the east roughly by the Dardanelle Trail, and on the north by San Vicente Creek (see map right).

It was Bob Breen, the first permanent ranger at the Fitzgerald Marine Reserve, who kindled my interest in the history of Seal Cove.

Since becoming an FMR Volunteer Naturalist I have had several additional occasions to pick up information about Seal Cove history. One was when I ran across an article in the Autumn 1996 edition of *Between the Tides* (BTT) written by Arthur Smith, the grandnephew of the couple who had built the first home on the Seal Cove property in 1887. Another was when I was boning up on the geography of the reserve and found Mark Hylkema's 1995 report on the 1994 archeological excavations made between the home sites and the Seal Cove staircase.



Cypress trees    Approx. site of Smith "Big red house" and "cottage house"    Trenches of the 1994 archeological excavations    Approx. Shell Mound Site

Still another was when I was doing research for the history presentation that was part of FMR's 50th Anniversary celebration, and I located online the Historic Resource Study for the Golden Gate National Recreation Area in San Mateo County. That study is full of historical information that relates to the history of the area. At that time we also located some 1928 aerial photos of Seal Cove (see page 2). Finally, last fall my wife Linda and another volunteer found some old photos relating to Seal Cove in a box in the FFMR storage room at FMR. I also had personal communications with Dave Cresson, founder of the Half Moon Bay Historical

*continued on page 3*

# Friends of Fitzgerald Marine Reserve

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**1928 aerial photo of Seal Cove showing that the line of cypress trees existed at that time.**



**See page 4, Who planted the FMR cypress trees.**

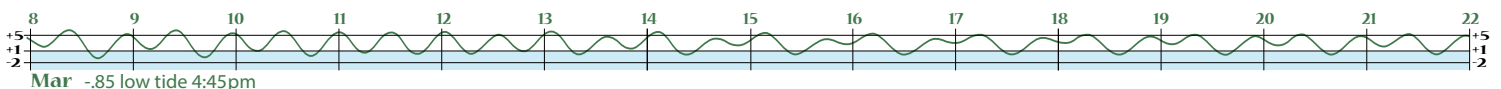
*Southeast corner of cypress trees*

The graph displayed across the page bottoms shows tides for 3/8/20 to 7/26/20 at Princeton Harbor. Where the date appears is midnight. The reefs are accessible for exploring during low tides—at least +1 or below. This area is shaded light blue. See: <http://www.fitzgeraldreserve.org/newffmrsite/resources/> and click on “Tides” for a more detailed tide chart.

*The winter afternoon low tides change to morning low tides in March. There are almost equally low tides several days before and several days after the noted low tide dates.*

The lowest tides this period at Princeton Harbor are:

-0.85	3/08	4:45 pm	-1.70	6/6	5:48 am
-0.89	4/10	7:07 am	lowest tide of 2020		
-1.56	5/9	6:50 am	-1.19	6/23	6:57 am
3rd lowest tide of 2020			-1.39	7/5	5:36 am
-0.96	5/25	7:12 am	5th lowest tide of 2020		
			-1.10	7/21	5:57 am



## Seal Cove, continued from page 1

Association; attempted, unsuccessfully, to conduct a title search of the Seal Cove property at the Recorders Office in Redwood City; and spent hours online trying to find out more about the people who had built the homes on the Seal Cove bluff. So, here it is.

10,000 years ago=8,000 bc.



Drawing of the approximately 10,000-year-old crescent shaped tool used by the native people at Seal Cove.

Until the arrival of the Spanish in the late 1700s, the vicinity of FMR had been inhabited by native people for at least 5,000 years and perhaps over 10,000 years. In Mark Hylkema's report on



Ohlone Hunter • M. Hylkema

the Seal Cove archeological excavations mentioned above (see map on page 1 for excavation sites) he reports the discovery of a crescent-shaped tool used by these ancient people that was at least 5,700 years old. It is the oldest artifact ever found in San Mateo County. It can be seen at the San Mateo County Historical Society in Redwood City. The excavation closest to the staircase revealed an ancient hearth used by the native people to cook food.

Recent seismic offsets in the hearth indicated the Seal Cove fault which runs along the bluff top had been active at about 700 year intervals—with the last occurring about 700 years ago! Shell fragments from mollusks cooked in the hearth can still be found in the soil along the bluff.

### 1769 Gaspar de Portolà discovers San Francisco Bay

#### 1769-1821 Spanish build Missions & Presidios, take over the land

At the time of the first Spanish contact in 1769, the vicinity of Seal Cove was controlled by a tribe called the Chiguan, one of the over 50 tribes occupying the greater San Francisco Bay Area. The Spanish called these tribes collectively Costenos, meaning coastal people. They are now commonly called the Ohlone. The Chiguan were a small tribe estimated by the Spanish to number less than 50 individuals. Between 1779 and 1791 a total of 44 Chiguan people were brought into Mission Dolores in San Francisco where they died from foreign disease or malnutrition. The Spanish named the vicinity of the current reserve the "corral de tierra" (earth corral) and used it as pasture land for Mission Dolores.

### 1822 Mexican independence from Spain

#### 1839 Rancho Coral de Tierra (included Seal Cove) granted to Francisco Guerrero Palomeres

#### 1849 Gold Rush: Americans and other immigrants take over Mexican lands on the Coastside

After Mexican independence from Spain was consummated in 1821, Mexico began seizing church lands and granting title to those lands to prominent citizens. In 1839 corral de tierra was split into two ranchos, with the northernmost—called Rancho Corral de Tierra, which included Seal Cove—being granted to Francisco Guerrero Palomeres. After the Mexican-American war ended in 1848 Guerrero successfully confirmed title to his rancho in the American courts.

Guerrero died in 1851 and his wife, Josefa, inherited his rancho. Two years later Josefa married James Denniston who had served as an American officer in the Mexican-American war. Under marital custom of the time Denniston took charge, if not outright title, of Rancho Corral de Tierra and it soon became known as Denniston Ranch. In 1867, two years before Denniston died, the ranch was divided between Josefa and her two sons by Guerrero, Victoriano and Augustine. A map showing how the ranch was so divided can be found on page 131 of the GGNRA Study mentioned above. Victoriano got the portion that includes Seal Cove.

#### 1879 First real road along the San Mateo Coast was built

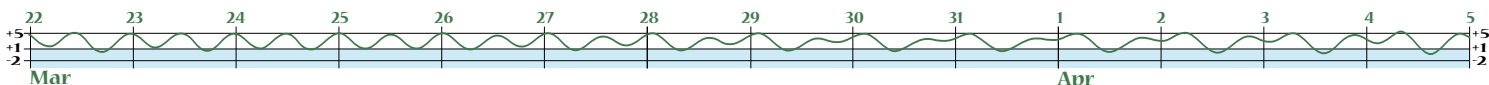
#### Half Moon Bay Colony Company formed to purchase and subdivide the Denniston Ranch

Until 1879 only rough logging roads and trails linked the coast with San Francisco and the interior San Francisco Bay Area. In 1879 the first real road along the San Mateo coast was built, opening the area for development. It didn't take long! In February 1879, the Half Moon Bay Colony Company was formed in San Francisco for the purpose of purchasing acreage of Denniston Ranch, subdividing it, and selling lots as homesteads. Indeed, later that year it purchased Victoriano's portion of the ranch and the area became known as "The Colony." The April 12, 1879 edition of *The Pacific Rural Press* has an ad placed by the Half-Moon Bay Colony stating:

### DENNISTON RANCHO

...containing 10,000 acres, more or less, have subdivided it into farms of 10, 20, 40, 80, and 100 acres and offer the same for sale at very low figures and easy terms. TO THE FIRST FIFTY SETTLERS PRICES WILL RANGE FROM \$15 to \$50 PER ACRE

One third cash, balance in one to two years, with 8% interest on deferred payments...



A map of The Colony Subdivision can be found on page 143 of the GGNRA Study.

### **1881 German immigrant Juergen Weinke purchases a section of the property which becomes known as Moss Beach**

A German immigrant, Juergen Weinke, saw such an ad and in 1881 purchased a large section of the Half Moon Bay Colony subdivision, which section became known as Moss Beach. Weinke built a hotel at the north end of the street now called Weinke Way. It is commonly reported in local history books that Weinke planted most, if not all, of the cypress trees in the area.

### **1887 George Sidney Smith builds a house and a cottage at Seal Cove**

Arthur Smith's 1996 BTT article says his great uncle and aunt, George Sidney Smith and Susan Moore Smith, built a house at Seal Cove in 1887. Who were the Smiths, from whom did they purchase their property, what did their house look like, what did they do at Seal Cove? Lots of questions! George Sidney Smith III was born in Dublin, Ireland in 1839. Susan Porter Moore Smith was born in Clinton, British Columbia in 1850. A wedding announcement of the Smith's granddaughter, Margaret, that appears in a November 1933 edition of the Oakland Tribune says she is "of an old English family whose ancestry may be traced in the peerage back to the reign of Charles the Second..."

### **Was there a "Sanitarium" in Seal Cove?**

George studied medicine at Trinity College in Ireland and at some point in time emigrated to California and enrolled in the University of California Department of Medicine, from which he graduated in 1879. Local Directories of Physicians and Surgeons from the late 1800s and early 1900s list him as located at either Steiner Street in San Francisco or Seal Cove. An 1895 University of California publication about the history of the university from 1868-1895 lists George among the alumni of the Department of Medicine and indicates he was "proficient in public immunization." Intriguingly, it identifies him as "Physician, Proprietor Seal Cove Sanitarium, Half Moon Bay. The Colony, San Mateo Co."

This information led me to ask Dave Cresson if he had any information about the "Seal Cove Sanitarium." He didn't, but said the Smiths had advertised the "Seal Cove Hotel" in various editions of the San Francisco Chronicle and San Mateo Times in the 1890s. Since the only known structure at Seal Cove at that time was the house built by the Smiths in 1887, it appears that house served as a sanitarium/hotel as well as the Smith's home for some period of time. Dave suggested that Dr. Smith likely advertised (pretentiously) the structure as a sanitarium to his academic colleagues and as a hotel to the general public.

### **Who planted the FMR cypress trees?**

Dave also advised me that the Smiths had purchased the Seal Cove property from the Half Moon Bay Colony Company. So my assumption that Weinke had purchased Seal Cove as part of his pur-



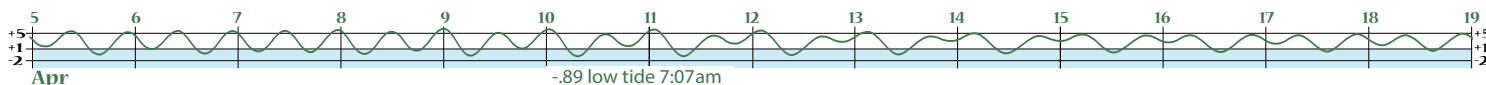
*Dr. George Sidney Smith and his wife, Susan Moore Smith*

chase of Moss Beach was incorrect. That led me to question whether Weinke had planted the Seal Cove cypress trees. Why would he plant trees on land he didn't own? It is much more likely that the Smiths planted the trees. The Smiths planting the trees is supported by a 1928 photo of Seal Cove, see page 2. The photo shows lines of trees along the north, south, east, and west boundaries of the Seal Cove property. Did the Smiths plant them as a way of delineating their property from adjoining properties?

### **Smith's Big Red House and the Cottage**

Arthur Smith's 1996 BTT article describes his visits to Seal Cove as a boy. The article can be accessed on the FFMR website and is fascinating reading. Arthur described his great uncle and aunt's home as "the big red house." A 1925 photo accompanies the article which shows Arthur, then 14, sitting on a Model T car with other children. In the background of the photo can be seen a structure which Arthur describes as the "cottage house." When I first ran across this article, I correctly concluded that the big red house and the cottage house were different structures. But what did the big red house look like and where was it located relative to the cottage house? I found part of the answer on page 51 of June Morrall's 2010 book "Images of America, Moss Beach." The photo at the top of that page was taken from the Seal Cove bluff looking south and shows two people standing next to a two-story structure, which, by its location, is undoubtedly the big red house. Unfortunately the photo shows only the northwest corner of the house. The photo is not dated, but the Marine View Hotel, which was built in 1913 on what is now known as Distillery Point, can be seen in the distance. So the photo was taken post 1913. Until recently that was the only photo of the big red house of which I was aware.

In the fall of 2019, my wife, Linda, and another FFMR volunteer were looking through some boxes in the FFMR storage room at the reserve and ran across an original photo, a sheet of paper on which three photos had been photocopied (one had been cut from the paper and was missing), and two separate photocopies of two photos. A handwritten note accompanied each photo/photocopy (including the missing one) describing what was shown. From the notes, they clearly related to Seal Cove. I was at the reserve that day and they brought the photo and photocopies to me. When I read the note that accompanied the now missing photocopy I realized that it described the photo that appeared with Arthur's article. So the handwritten notes had undoubtedly been made by Arthur and the photo, photocopies and notes had likely been given to





Structure at left probably the big red house, from "Images of America, Moss Beach," by June Morrall

Bart Oxley, then BTT editor, who selected the missing photo to accompany Arthur's article. After the article was published, Bart must have (fortunately) stuck the photo, remaining photocopies, and notes in a box for storage. And there they remained unnoticed for 23 years!

*This is the cottage that was where the Dolger house was that burned → (I am between the 2 boys in the front age 14)*



*The pile of rocks and whale bones in front of the old red house, where the road coming in turns around it*

The most interesting (at least to me) item in this new-found trove is the original photo. It shows a girl and two boys seated on rocks and on portions of two structures. The back of the photo says "Arthur Smith Jr. Grandnephew of Smiths." The two boys in the photo appear about the same age and the girl a bit older. Arthur had a girl cousin about three years older than him and a boy cousin about the same age. Arthur, who was born in 1911, appears to be about 4 in the photo. So the photo was likely taken around 1915 and is of Arthur and his cousins. Behind and to the left of the children one can see the front steps and southeast corner of the big red house. The rocks on which the children are seated appear to be only a few feet from the front steps.

To the right of the children can be seen what I believe is a portion of the west side of the cottage house which appears to be situated 50 to 100 ft eastward of the big red house. Since the photo was taken around 1915, this means the cottage house was built sometime between 1887 and 1915. The photo appears to have been taken looking northeast. If so, the line of cypress trees in the distance behind the children is the line extending roughly along the current Dardanelle trail. Note also that a treeless field appears between the line of trees and the structures.

### Where are the three palm trees?

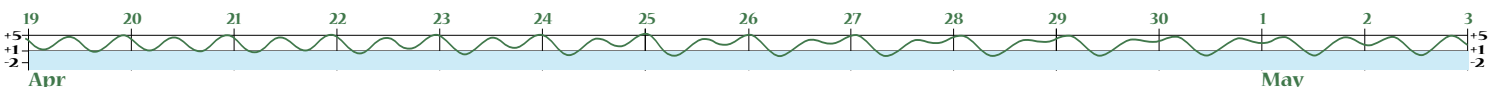
While this new photo gives a better picture of what the big red house looked like and its location relative to the cottage house, as well as the vintage of the cottage house, it raised yet another question. Where are the three palm trees that currently sit in front of the Smith house site? The photo in June Morrall's book doesn't show any palm trees, but they could be hidden by the house. I used a magnifying glass to try to find the palm trees in the 1928 aerial photo, but couldn't see any definitive sign of them. And there are clearly no palm trees shown in the 1915 photo of the three children. Bob Breen told me that the Smiths had a relative who was a seaman and botanist and had brought the palms from the Canary Islands as a gift for the Smiths. If true, based on the photos this likely occurred after at least 1915.

I recently visited the Smith home site in an attempt to locate the rocks on which the children had sat in the 1915 photo. Unfortunately the home site is heavily overgrown. The only rocks that I thought might fit the bill sit directly between the middle and easternmost palm trees. Directly adjacent to the east side of the bluff trail where it starts up the incline there are bricks which undoubtedly formed a portion of the foundation of the big red house. Based on those bricks and the photos I believe that house sat a few feet behind where the three palm trees are now located.

### Arthur, age 21 • Artichokes

Another interesting item in the trove is a photocopy of a 1932 photograph, see next page. It shows Arthur (age 21) about to leave Seal Cove in his 1928 Chevrolet cabriolet complete with rumble seat and dog on the running board. The photo was taken looking northeast, probably between the big red house and the

*continued on page 11*



# The Salt-and-Pepper Nudibranch Mystery: Why Does *Aegires albopunctatus* Say 'YES' to Fitzgerald Marine Reserve But 'NO' to Nearby Pillar Point?

by Robin Agarwal

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*There is some evidence that one of FMR's most interesting small sea slugs is found regularly on the reserve, yet not a single individual of this species has been reported from nearby Pillar Point since 2014*

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*A. albopunctatus, spend the first portion of their short lives as plankton...complete with an external shell that disappears as they mature.*

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Scientists love a good tidepool mystery. But even if you are not a scientist, if you spend some time tidepooling over a period of months or years, you begin to notice patterns in the distribution of the intertidal creatures you spot in your meanderings. You notice what species are living in particular areas of the reef—high, mid- and low intertidal zones—and you become accustomed to the “familiar faces” that greet your increasingly experienced eyes in different habitats.

So when something changes over time, you notice. You noticed, for example, that in 2013 there was a massive mortality event among the large starfish species, notably ochre sea stars (*Pisaster ochraceus*) and sunflower stars (*Pycnopodia helianthoides*), which scientists attribute to the effects of Sea Star Wasting Disease. You also noticed the hard-to-miss “bloom” of bright pink Hopkins’s rose nudibranchs (*Okenia rosacea*), a previously uncommon species, in 2017.

But what if the mystery you’re pondering isn’t a change in time, but a change in geography? And what if that difference is only a very slight change, like the distance between Fitzgerald Marine Reserve and the neighboring reef to the south, Pillar Point?

Such is the mystery before you today.

There is some evidence that one of FMR’s most interesting small sea slugs is found regularly on the reserve, yet not a single individual of this species has been reported from nearby Pillar Point since 2014, where one individual was seen at the farthest, rockiest end of the reef.

The nudibranch in question is *Aegires albopunctatus* (MacFarland, 1905). It is the sole representative of the Family Aegiretidae in the United States; its nearest cousin, *A. sublaevis*, has been found in the Atlantic, the Galápagos Islands in Ecuador, and Bahía de Banderas, the bay on which Puerto Vallarta, Mexico is located.

Commonly called the salt-and-pepper dorid, white spotted dorid or white knight dorid, *A. albopunctatus* is an elongate dorid nudibranch usually well under the 23 mm maximum length. This species’ range is from Alaska to Baja California. *A. albopunctatus* is white or light grey, with a scattering of small black or dark brown speckles that do look a lot like pepper. Its back (notum, if you prefer the science-y word) is covered with short, blunt tubercles that break up its body outline and make the nudibranch look like a tiny bleached piece of broken-off coralline algae. Even their two rhinophores—sensory organs used for detecting chemicals in the water—and three modest external gills, which look like tiny plumes—are sheathed in tubercles. Altogether, this is a surprisingly difficult nudibranch to spot in a sloshing, low-intertidal habitat filled with small white bits of things.

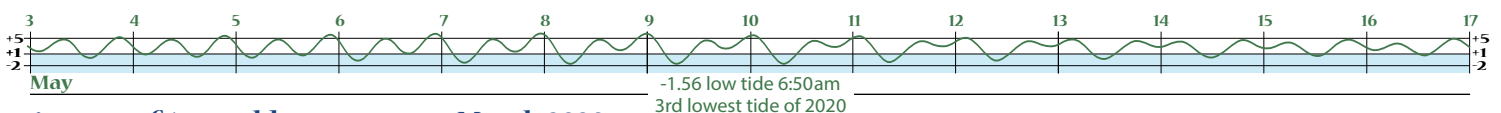


*Aegires albopunctatus*, photo: Robin Agarwal



*A colorful pair of Nudibranchs: Hopkins rose and salt and pepper*, photo: Robin Agarwal

Nonetheless, over the last decade, sharp-eyed docents and visitors to FMR have documented low but steady numbers of this cryptic species, usually less than ten sightings per year. Many of these same tidepoolers also investigate nearby Pillar Point, another intertidal nudibranch hotspot, yet there has been only one sighting of



*A. albopunctatus* there, in 2014, on the furthest point of the reef.

Why aren't the numbers similar?

Sea slugs are not particularly forthcoming about their reasons for doing things.

To begin to investigate this question, we need to know a little about “baby” nudibranchs. Many nudibranch species, including *A. albopunctatus*, spend the first portion of their short lives as plankton (planktotrophic development), complete with an external shell that disappears as they mature. Like adult nudibranchs, they are notoriously picky about water conditions, temperature, substrate, and prey choices. Planktotrophic nudibranch larvae remain in this free-swimming, open ocean pelagic (veliger) stage until chemical cues from their food source tell them they've found a good place to settle and complete their development into their adult nudibranch form. This form of dispersal is great for extending the range of a species, though they have a much lower survival rate than nudibranchs that reproduce through direct development (no pelagic stage—the eggs hatch as miniature nudibranchs directly on a food source) or the minimal pelagic time of a nudibranch species that reproduces through lecithotrophic development.

In short—when there's plenty of food, there's a greater likelihood that you'll see more nudibranchs.



Smooth urn sponge (*Leucilla nuttingi*)  
photo: Robin Agarwal

Which leads us to the humble yet fascinating smooth urn sponge (*Leucilla nuttingi*, Urban 1902). In 1980, Dr. Hans Bertsch documented *A. albopunctatus* preying upon *L. nuttingi*, a pale beige-white calcareous sponge

found from Baja California to British Columbia. Other Aegires nudibranch species in the tropical Western Pacific also feed on sponges.

Calcareous sponges are quite unique in the world of sponges: their skeletons are made of spicules (support structures) of calcium carbonate rather than the more common siliceous spicules found in demosponges, which comprise 95% of sponge species. In *L. nuttingi*, the spicules are arranged in a smooth, flat pattern that gives this sponge its common name.

Interestingly, a researcher at UC Davis is looking into the possibility that in response to stimuli, *L. nuttingi* can “sneeze” to close its osculum and prevent damage to the inner parts of the sponge. Pretty impressive for a creature with no nervous system.

So what makes a sponge happy?

At only 25 mm “high,” *L. nuttingi* often hang upside down in clusters, preferably “in shaded rocky crevices at extreme low-tide levels.” Other researchers agree: these calcareous sponges are “common in some areas under boulders, in caves, and on the sides of deeply shaded rocks, low intertidal zone on exposed rocky shores.”

Anecdotally—meaning completely unscientifically—I can back this up: the habitat found at Fitzgerald Marine Reserve generally appears to be rockier, with more small caves, shaded ledges, and deep channels, than the flat shelf reef one strolls along at Pillar Point. This could be the beginning of the two-part answer to our mystery: The nudibranchs have settled at FMR because their sponge prey prefers that rockier habitat. I would be delighted to see more photos on iNaturalist.org of sponges from FMR and Pillar Point to further this investigation, or perhaps completely disprove this theory.

So if you want to try to see a smooth urn sponge, wait for a very low tide, find a dark ledge, invert your head, and with a flashlight, examine the cave ceiling for clusters of these tiny, vase-like sponges. If you are very, very lucky, you may even see an *A. albopunctatus* nudibranch sheltering near its food source, waiting for the water to return. You may also see *A. albopunctatus* out in the open in a tidepool, transitioning from one patch of sponges to another, led by its chemical receptors to new prey. ♦

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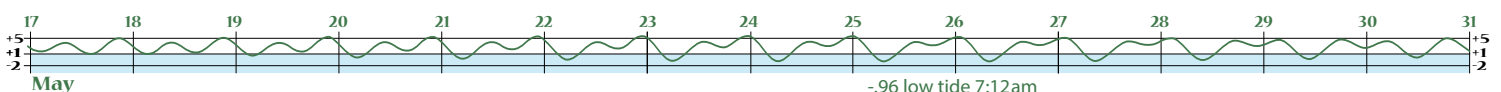
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# Encrusting Animals at Fitzgerald Marine Reserve

by Janet Pelinka

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Upon closer examination you will note these “blobs” are made up of many tiny, individual animals called zooids.

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It may come as a surprise to learn that they (encrusting tunicates) are actually more closely related to vertebrates like ourselves than to most other invertebrate animals.

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You may have seen several different species of colonial animals in the mid- to lower intertidal but dismissed them as uninteresting gelatinous blobs. Upon close examination you will note these “blobs” are made up of many tiny, individual animals called zooids. They come in many different colors: purple, red, orange, white and greenish-yellow. And you may be surprised that these animals have interesting features. Following are photos of the encrusting animals that inhabit Fitzgerald Marine Reserve. You may have to get on your knees and look deep into the crevices to find them

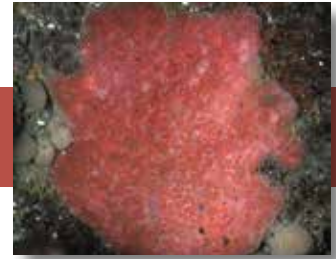
## Tunicates

The encrusting tunicate is often confused with other encrusting marine animals, such as sponges. It may come as a surprise to learn that they are actually more closely related to vertebrates like ourselves than to most other invertebrate animals. This is evidenced by their possession of a notochord or stiffening rod during their mobile larval stage when they resemble a tadpole. The tadpoles mature extremely quickly, in a matter of just a few hours. They do not feed at this stage of their lives, so they have no mouths. Their sole job is to find a suitable place to live out their lives as adults. When ready to settle, a sticky secretion helps them attach head first to the spot they have chosen. They then reabsorb all the structures within their tail and recycle them to build new structures needed for their adult way of life.

Some tunicates replicate by budding and become colonies, yet each unit remains a separate animal. They are filter feeders with a water-filled, sac-like body structure and two tubular openings, known as siphons, through which they draw in and expel water. Most adult tunicates are sessile, immobile and permanently attached to rocks or other hard surfaces.

A tunicate can regenerate part or all of its body, a useful feature since it has no means of escaping predators. Thus, if a fish bites off part of a siphon or even the neural complex, it can regrow the missing parts. Interest in this has grown of late because of the potential of pluripotent stem cells for treating various human maladies such as spinal cord injuries. And chemical substances which might help fight diseases like cancer or various viruses have been found in some species. The tunicate has a heart that can reverse itself and move blood in one direction at a time. Blood moves from the anterior heart region

throughout the body and back to the dorsal part of the heart where pressure builds and results in a reversal of blood flow in the opposite direction.



Red sea pork (*Aplidium solidum*), photo: David Cowels, Walla Walla University

One of the commonest compound tunicates is the red sea pork (*Aplidium solidum*). Jelly-like in consistency, it grows in a colony up to 8" and 1 to 3 cm thick, and varies in color from bright red to pink or orange-brown. Look for this tunicate in spring and summer when it is most abundant and you might also find the opalescent nudibranch (*Hermisenda crassicornis*).

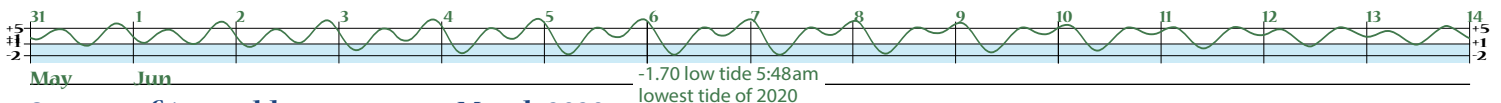


California sea pork (*Aplidium californicum*), photo: Wikipedia

The so-called California sea pork (*Aplidium californicum*) forms a colony that varies from yellowish to gray or brown. Its name comes from its color and slab-like shape that causes it to resemble pork fat. Its major enemies are the bat star (*Asterina Minata*) and the leather star (*Dermasterias imbricata*).



Lightbulb tunicate (*Clavelina Huntsmani*), photo: David Cowels, Walla Walla University





Each individual of the lightbulb tunicate (*Clavelina Huntsmani*) colony has a transparent outer tunic and pink to yellow lines visible inside that resemble filaments of a lightbulb and can be two inches tall but less than .50 of an inch in diameter. It may look fragile but is actually tough to the touch. This tunicate is most common in spring and summer.

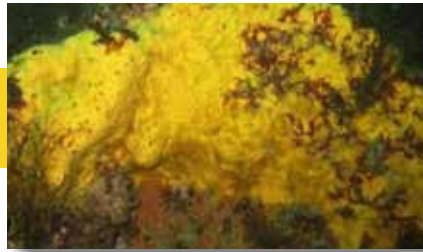
## Sponges

They are very basic and primitive and yet amazing animals. They are either soft or hard, invertebrate, with no heart, brain, eyes, mouth, bones, ears, no digestive system, no circulatory system. They survive by maintaining a constant water flow through their bodies to obtain food and oxygen and to remove waste. Recent studies show they were the first to branch off the evolutionary tree from the common ancestor of all animals, making them the sister group of all other animals (Wikipedia), and sponge fossils have been found dating back 590 millions ago. They have been known to live as long as 10 years.

Sponges are made of a jelly-like mass sandwiched between two main layers of cells. Some types of cells in their outer layers may move into the middle layer and change their functions. They feed by constantly filtering seawater through their pores. Having tremendous regenerating power, sponges can regrow lost parts and pieces cut off by the water current, settle and resupply to grow back into a clone of its original form. More amazingly, if a section of a sponge is forced through a sieve, breaking it down to individual cells, it can reassemble itself to form a new sponge. You can view this process at [www.youtube.com/watch?v=N462jZFr13k](http://www.youtube.com/watch?v=N462jZFr13k)

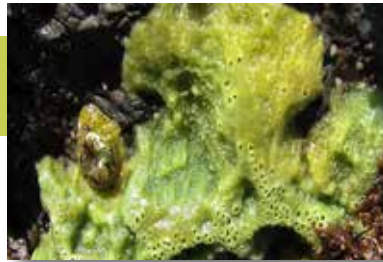
The type of sponge that was used domestically was so heavily overfished that the industry almost collapsed. Most sponge-like materials are now synthetic. The luffa “sponge,” also spelled loofah, which is commonly sold for use in the kitchen or the bath, is not derived from an animal but from the fibrous “skeleton” of a gourd.

From the sponge, scientists isolated two chemicals which were used as models for the development of a number of anti-viral and anti-cancer drugs. These include the HIV drug AZT, a breakthrough in AIDS treatment in the late 1980s, anti-viral drugs to treat herpes, and an anti-leukemia drug (Smithsonian Ocean).



Yellow boring sponge (*Cliona celata*), photo: Maria Schaefer

If you see a mollusc or barnacle shell covered with tiny holes you are most likely viewing the work of the yellow boring sponge (*Cliona celata*.) The bright lemon-yellow body can be seen protruding from the holes. It can sometimes cover the entire shell body.



Bread crumb sponge (*Halichondria panicea*), photo: Maria Schaefer

If the bread crumb sponge (*Halichondria panicea*) is broken it is said to smell like ignited gunpowder. It varies in color from yellow to light green. It grows to 2 inches and exhibits several volcano-shaped pores on its surface. Among the nudibranchs found on this sponge is the Monterey dorid (*Doris montereyensis*).



Red-encrusting sponge (*Ophlitaspongia pennata*), photo: Maria Schaefer

Bright red to red-orange in color the red-encrusting sponge (*Ophlitaspongia pennata*) has tiny, closely-spaced, star-like pores and can grow to thirty-nine inches. The red nudibranch (*Rostanga pulchra*) absorbs the pigment from this sponge on which it feeds. The egg masses of the nudibranch are also red and deposited on the sponge.

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*A tunicate can regenerate part or all of its body*

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*...if a section of a sponge is forced through a sieve, breaking it down to individual cells, it can reassemble itself to form a new sponge.*

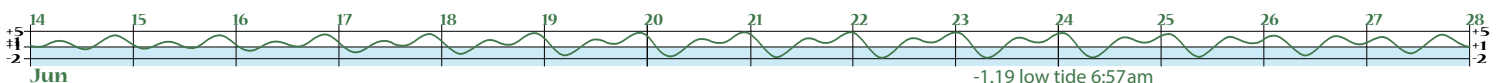
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*From the sponge, scientists isolated two chemicals which were used as models for the development of a number of anti-viral and anti-cancer drugs.*

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One compound produced by a common marine bryozoan, the drug bryostatin 1, is currently under serious testing as an anti-cancer drug.

Rose red or orange red in color, the Rosy bryozoan is the preferred food of the Hopkins rose nudibranch (*Okenia rosacea*) which gets its color from this bryozoan.



Purple encrusting sponge (*Haliclona permollois*), photo: Maria Schaefer

Volcano-shaped pores are also found on the soft purple encrusting sponge (*Haliclona permollois*). It varies in color from pink to purple and can also grow to thirty-nine inches. Several nudibranchs can be found feeding on this sponge. Look for the ringed-nudibranch (*Diaulula sandiegensis*) who detects this sponge by chemicals that the sponge releases in the water.

### Bryozoans

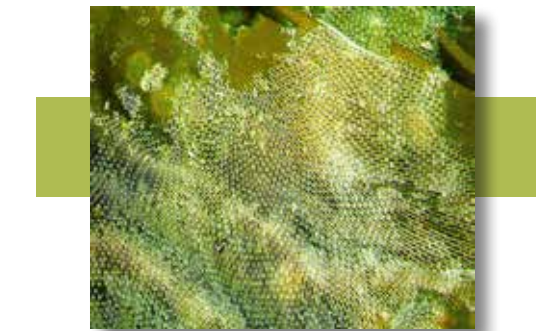
Bryozoans date back to about 470 million years. They recovered from the Permian/Triassic boundary (when almost all species went extinct). There are about 5,000 living species, and 15,000 fossil species. The most common form is encrusting, in which a one-layer sheet of zooids (individual animals) spreads over a hard surface or over seaweed. Some encrusting colonies may grow to over 50 centimeters (1.6 ft) and contain about 2,000,000 tiny zooids. The colony usually has a skeleton of calcium carbonate.

The zooids are all clones, produced by asexual reproduction. While most species produce different zooids with different functions, they cooperate within the colony. Some individuals gather food for the colony, others have specialized functions such as cleaning and strengthening the colony.

Bryozoans have a body with a U-shaped gut, opening at the mouth and at the anus. Although they do not have a respiratory nor a blood system, they do have a simple nervous system, and muscles. They are filter feeders that sieve food particles out of the water using a retractable lophophore, a “crown” of tentacles lined with cilia.



Hopkins rose, photo: Rob Cala



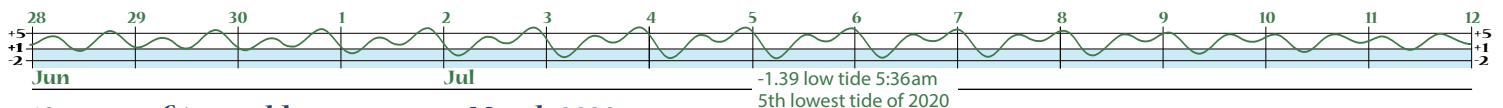
Kelp-encrusting bryozoan (*Membranipora membranacea*), photo: Wikipedia

You may find the lace-like, kelp-encrusting bryozoan (*Membranipora membranacea*) in the spring and fall existing on many species of kelp. This colony radiates from the center outward, reproducing by budding, from the oldest portion. It defends itself from predation by nudibranchs by producing spines for protection.



Rosy bryozoan (*Integripelta bilabiata*), photo: Sea Net

The rosy bryozoan (*Integripelta bilabiata*) is often called derby hat bryozoan because of the distinctive hat-shaped opening on each of its zooids. Rose red or orange red in color, it is the preferred food of the Hopkins rose nudibranch (*Okenia rosacea*) which gets its color from this bryozoan. The colony can grow to 2 inches in size. ◆





Arthur (age 21) about to leave Seal Cove in his 1928 Chevrolet cabriolet.

cottage house. Behind the car can be seen the same line of trees as seen in the 1915 photo and what appears to be a planted field.

In Arthur's 1996 article he states that when he visited Seal Cove "we would always have our fill of artichokes which grew in abundance in a field nearby."

### 1906 Smiths denied permit to subdivide Seal Cove

We also know from that article that the Smiths were relatively well off, having Martin and Martha, respectively handyman and maid, at hand, and a large Pierce Arrow automobile in which to drive into Half Moon Bay. Dave Cresson also told me that the Smiths tried their hand at real estate development in 1906. They made an application that year to San Mateo County to subdivide Seal Cove. Their application was denied because of the limited access to the property. Of course, the earthquake hit that year which delayed the Ocean Shore Railroad from reaching Moss Beach for a number of years.

### 1921–1952 The passing of the local Smiths

George Sidney Smith III, aged 82, passed away in November 1921 at Seal Cove. We know from the 1932 photograph that the Smith family continued their presence at Seal Cove well after George's passing. Susan Porter Smith died in February 1933, also aged 82 years, in Alameda County, home to much of the remaining Smith clan. Arthur's 1996 article says that when his great aunt Sue died she left Seal Cove to her son, Arthur's Uncle Harry (Henry "Harry" Lees-Smith) "who let the property deteriorate and finally sold it." Harry died in 1952.

### 1940+ Henry Doelger takes over but is rarely in residence

While I was unsuccessful in searching the title to Seal Cove, it is likely that Harry sold Seal Cove in the late 1940s to Henry Doelger, the real estate developer who had built many homes in Daly City. By the late 1940s Doelger had purchased large parcels of land on the Coastside that he planned to develop à la Daly City.

But he had bought Seal Cove for his personal use, and in 1947 he tore down the Smith houses and built a ranch style house on the Smith cottage house site.

According to Dave Cresson, Doelger's Seal Cove home didn't get much use. After all, Doelger was a very wealthy man who owned a large yacht he kept in the Mediterranean. Due to substantial and persistent opposition by the Coastside population to his plans to develop his Coastside properties, Doelger eventually abandoned those plans, sold off his properties, and retreated to his yacht in the Mediterranean. Seal Cove was sold to the Westinghouse Corporation, which had a land development division. According to Bob Breen that sale occurred in 1972. Because the Doelger house was effectively abandoned it fell into disrepair and the area became a popular party site for local teenagers.

### 1970 Doelger house burns down

When the James V. Fitzgerald Marine Reserve was formed in 1969, Seal Cove was not part of the San Mateo County parkland. All the County owned was the land now occupied by the parking lot, Visitor Center, and picnic area and the ramp adjacent to San Vicente Creek leading down to the beach. But because the reserve included state owned intertidal areas from the mean high tide line seaward from roughly the south end of the Point Montara lighthouse property to the north side of Pillar Point, San Mateo County park rangers regularly patrolled along that entire stretch, including Seal Cove. In the afternoon of October 27, 1970 the Doelger house met its end. The ranger's log entry for that day, made by Bob Breen, states "Doelger house on top of Strawberry Hill burned down—noticed smoke at 1430." Bob Breen told me that he knew who started the fire. It was unnamed local kids who started a fire in the house and accidentally burned it down. Aside from portions of the house's foundation, the only remaining vestige of the Doelger occupancy of Seal Cove is a portion of one of the metal street light standards that lined the road (now path) into the house from Cypress Avenue and lit the way at night. It is located on the east side of the path just north of the Seal Cove staircase.

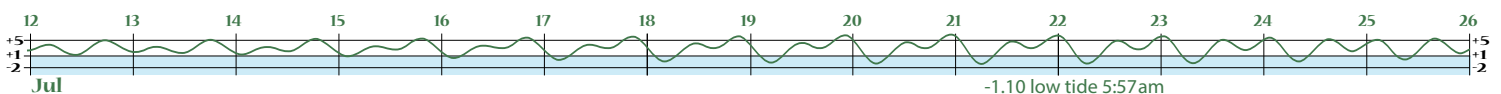
### Westinghouse plans to subdivide Seal Cove

### 1983 San Mateo County purchases the property and Seal Cove becomes part of Fitzgerald Marine Reserve

Westinghouse had plans to subdivide Seal Cove and build homes on it (which never came to fruition). According to Bob Breen, in 1983 San Mateo County purchased Seal Cove from Westinghouse for \$116,000 and a piece of County property in Half Moon Bay, and Seal Cove became part of the reserve. After that purchase, Bob, with the help of volunteers provided by the San Mateo County Sheriff, filled three large dumpsters with beer cans, bottles, and other refuse from the Smith/Doelger home site that had been discarded by revelers over the years.

### That's it—for now...

That's it—you now know everything I know about Seal Cove. But there are, of course, still Seal Cove mysteries to be solved by future history buffs. ♦



Seal pup resting on the beach,  
photo: Rob Cala



## January 2020 Sea Star Survey

by Julie Walters

Thanks to everyone for braving the cold and wind at yesterday's sea star count at Fitzgerald. We had a record 12 volunteers: Cathleen Coulman, Beth Roellig, Karen Madsen (who found the most stars: 37), Mike Davis, Paul Gater, Anne-Ly Crump-Garay, Christine and Graham Brew, Sandi Meyer, Freya and Cammie McCammant and Karen Kalumuck. Special thanks to Jan Pelinka for manning the sign in table and answering visitor questions about sea stars.

### Sea star count by the numbers: This is how the 125 stars break down:

12 wonderful volunteers	113	Ochre stars ( <i>Pisaster ochraceus</i> )
2 hour survey	4	Leather stars ( <i>Dermasterias imbricata</i> )
125 total sea stars observed	6	Bat stars ( <i>Patricia miniata</i> )
-1.3 low tide	2	Six ray stars ( <i>Leptasterias hexactis</i> )
	0	Knobby stars ( <i>Pisaster giganteus</i> )
	0	Pink bay stars ( <i>Pisaster brevispinus</i> )

How does this compare with previous counts? In July 2019, we saw 161 stars and in December 2018 we saw 163. We saw a decrease in the number of leather, bat and six ray stars in this most recent count. These stars are not as skilled as the ochre star at hanging on during heavy waves due to the ochre's amazing tube feet. Consequently, the other stars tend to recede into crevices and under rocks for protection; that may be why we were not able to observe as many during the most recent count.

On a positive note, we did not observe any signs of Sea Star Wasting Disease and all the stars looked plump and healthy.

Next sea star count will either be Sunday, June 7th or Sunday July 5th. Look for a future email with more information. ◆



## Harbor Seal Pupping Season

It is the beginning of pupping and the time to be particularly diligent in the protection of the harbor seals that haul out on the reserve's beaches. Keep your distance—the Marine Mammal Act requires that the public keep a distance of 300 feet or more from any harbor seal.

A lone pup does not necessarily mean it has been abandoned. If you see a lone pup or observe disturbance of harbor seals please contact:

Park Rangers 650-728-3584  
Marine Mammal Center  
416-289-7350 ◆

## Friends of Fitzgerald Marine Reserve

Donation Chair, P.O. Box 669, Moss Beach, CA 94038, or through our website: [www.fitzgeraldreserve.org](http://www.fitzgeraldreserve.org)

Contribution Levels:

- \$25   
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 \$50   
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