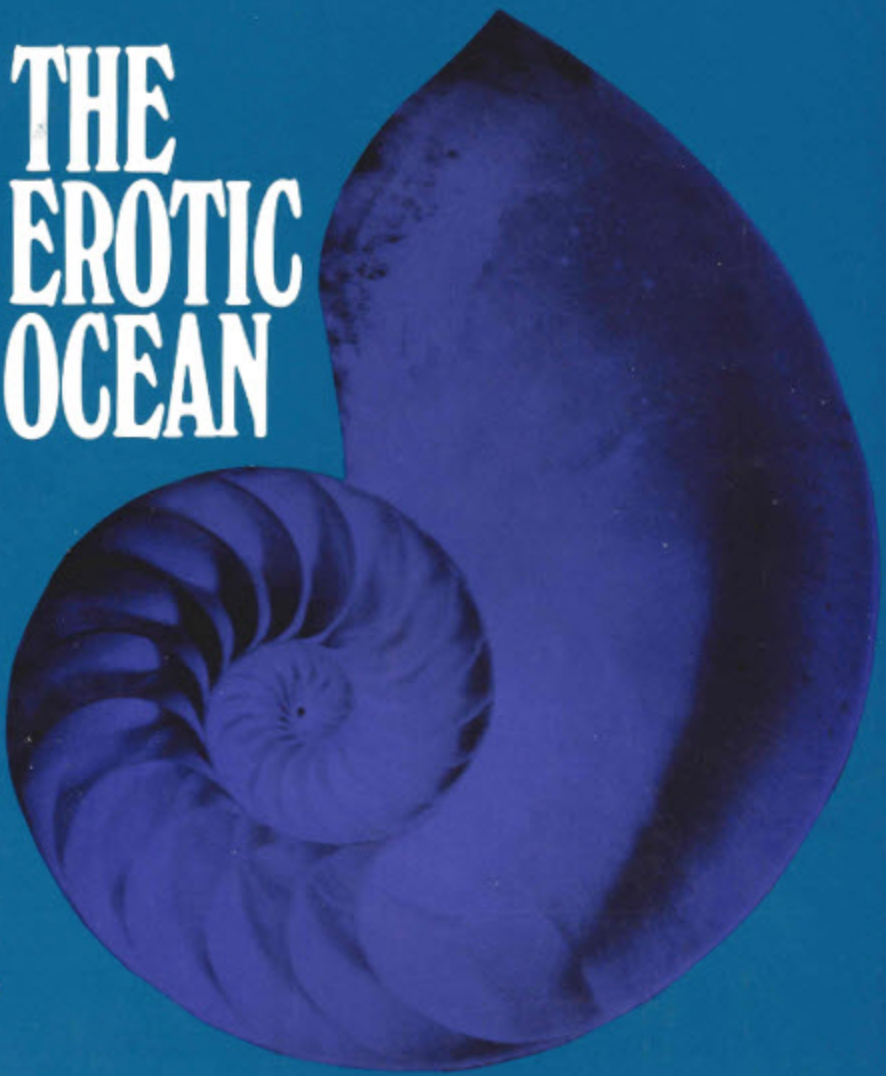
A Handbook for Beachcombers and Marine Naturalists

"The ocean does not give up easily the secrets of her animals. Only by traveling around and searching diligently in her rock piles and mudflats, day after day and year after year, will you learn when creatures spawn, and what they eat, and where they hide."

Jack Rudloe

THE EROTIC OCEAN



8.
Wharf Pilings

Although it is seldom realized, docks, wharf pilings and piers are often primary sources of marine invertebrates and certain fish. Any salt-water angler knows that if you fish with a fiddler crab off a wharf in mid-winter, you are likely to land yourself a large sheepshead.

Sheepshead (*Archosargus probatocephalus*) is one of the many fish that nose around the luxurious growths of algae, barnacles, hydroids, sponges, bryozoans and tunicates on the submerged portions of the pilings, taking their pick of xanthid crabs, young oysters, barnacles, minute snapping shrimp and probably a host of other creatures that dwell in the midst of the forests of colonial animals.

The wharf piling has a peculiar tidal zonation of its own. Naturally, when a pier extends from the dry upper beach down into the water, there will be various stages of colonization on each post as it extends further down into the sea, until you reach the very end of the pier where a great variety of subtidal creatures can grow in profusion.

But this luxurious growth, this goldmine to the collector, is a plague to the owner of the pier. First come the settling larvae of the barnacles, the growth of the hydroids and mussels or oysters, and then come the terrible shipworms. Actually shipworms are not "worms" as such, but belong to either of two phyla, Mollusks or Arthropods. Boring mollusks such as *Teredo* and *Bankia* have elongated bodies and very much resemble worms, and then there are the small buglike

isopods (*Limnoria rensiforms*). And if you ever turn over an untreated boat that has been in the water for six months or so and examine all the tiny pinholes in it and listen to the crunching, grinding sound of the little monsters eating away, then you know you've found a good source of *Limnoria*. This is not a comforting feeling, particularly if you own the boat, because there is a good chance that the entire bottom will have to be torn out and replaced.

Naturally a considerable industry of protective coatings and antifoulant agents has sprung up in recent years, and a great amount of study into the anatomy, physiology and behavior of boring organisms is under way by private investigators as well as the Office of Naval Research. Wooden test panels are set out in various locations and the number and variety of boring organisms and their rate of settlement is routinely checked.

Test panels are quite a saving in time and labor if you particularly want shipworms. Chopping away at logs and heavy chunks of wood is not only energy-consuming, but has a greater danger of bringing your hatchet or saw-blade squarely down on the beast you are seeking.

In proportion to the numerous creatures that will grow on wharves, the boring organisms are in the minority, as a rule. However, most of the arboreal attaching forms are found growing on rocks or sea grass so it is the wood borers that are the unique forms, and wharves, plaques and any particular wood, including eroded tree stumps, are habitats for these boring forms.

Wharf pilings are a blessing to a collector on a coast where rocks are few and far between, such as the Gulf coast. They permit access to multitudes of tunicate clusters, bryozoans, hydroids and numerous forms that would otherwise be obtainable only by dredging. There is an old dock in Panacea which I use as a source for hydroids by pulling up old steel cable that has been dumped by shrimp trawlers. During the winter these are overgrown with *Bougainvillia carolinensis*, and in the summer, *Bougainvillia* dies down only to be replaced with *Pennaria tiarella*. There is another floating dock in Alligator Harbor which becomes infested with bryozoans, and is therefore my source for *Bugula neritina*. And when there is need of this lacy, tufted mosslike creature, I have only to walk out on the dock and pick them off.

I know of no other location where the growth rate of marine organisms can be so carefully studied and measured. If you keep accurate records and watch a dock week after week, you can easily study the colonization of arboreal forms. If gorgonians happen to settle,

you can watch them mature and measure them without disturbing them; the same is true for hydroids and even sea squirts. On this same floating dock I have found substantial numbers of the small sea cucumber (*Thyonella pervicax*) growing in among *Styela plicata* tunicates, and on several occasions, upon tearing the tunicates apart I have found dozens of pink flatworms (*Prostheceraeus floridanus*). These tunicates can also be counted on to produce substantial quantities of *Petrolisthes*, the flattened anomuran crab. On occasion they yield pistol shrimp and other small reddish shrimp.

On the dark underside of the dock you will find a greater abundance of bryozoans, gorgonians and encrusting tunicates like *Didemnum candidum*, *Botryllus* and *Distaplia bermudensis*, although there will be fewer barnacles than on the light side. All these observations are easily made because the dock is accessible; it is easy to walk out, squat down and look at the same place day after day. Consider the difficulty you'd have if you were trying to make an ecological study of a sandy shore. A particular area must be carefully staked off, poles must be driven deep into the ground. How can you be sure how much the creatures have moved from one tide to the next? If something disappears from the habitat, or grows on it, you have no idea when it came and you have no way of knowing exactly when it leaves. The same is true for studying the rocky shore; unless a rock is very well staked off and marked, you may never find it again. And these areas usually are not easy to explore; you can't just walk down to the best location when you feel like it, and study the lacy designs of bryozoans, explore the encrusted mats of tunicates with a hand lens, and even sit there with a book to key out the organisms.

If you are barnacle-collecting, you can look down and select the biggest barnacles that you may wish to use for display purposes. Barnacles usually are on the uppermost region of the piling, then come oysters or mussels. The rich fauna is subtidal, almost never exposed except for the lowest of low tides and generally is too deep for wading. Consequently scuba- or free-diving is required to collect a good representation of this habitat.

As you dive you can immediately see numerous blennies and small gobies that cluster around the clumps of oysters on the pilings, and these dart and dive into the protective colonies, and hide among the hydroids, tunicate clusters and so on. Chasing them down with a net more often than not proves fruitless because they have very good eyes and are excellent at avoiding the net. A slurp-gun has proved

useful, but less expensive and sometimes even more efficient is a plastic bag.

The same plastic bag that catches flatworms, and octopuses can once again be put into action. It is clear, can be molded over the piling and, gradually working your fingers around the fouling assemblages, you can chase the fish out into the opening of the plastic prison and then squeeze the edges together. And it is little trouble to get a good collection of fish in one afternoon.

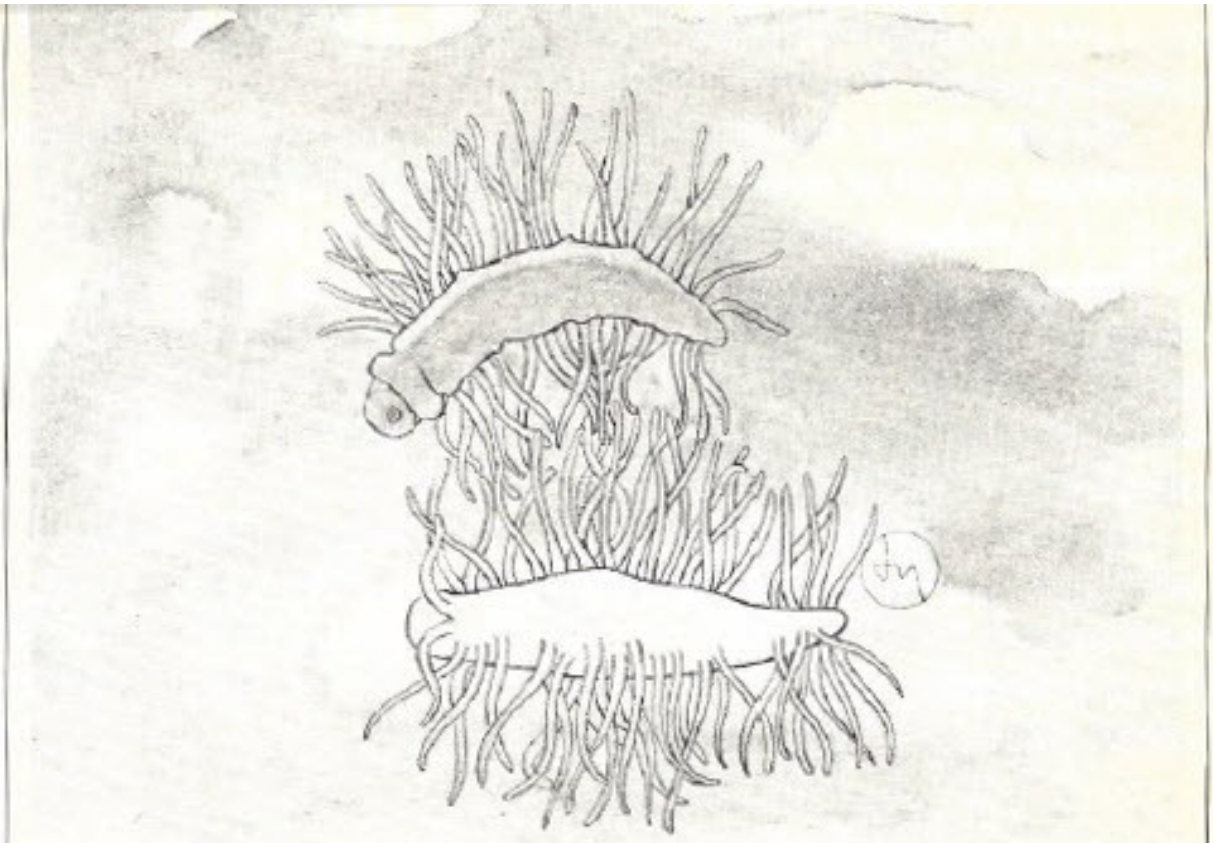
Diving around the base of piers, docks and other pilings should be done cautiously, and on calm days when there is little or no wave action, because it is very easy to get caught in a current or swept head first into a post and knocked senseless. The buddy system in diving should be used here to prevent drowning.

When the water is clear and calm, few experiences can be as rewarding as diving around a well-fouled dock. Swimming slowly, almost the way a sea hare glides through the surf, you lie flat watching the creatures below. Great waving clusters of brown hydroids tinged with pink polyps float gently with the lapping waves. Compound ascidians, looking like slabs of meat in a glistening array of colors ranging from warm pinks to dull grays and greens, clump around the bottom of the piling, and multitudes of barnacles do their jack-in-the-box dance from their white shells.

Of course, if you are collecting any quantity of these animals you will want to wear gloves to prevent the nasty cuts that oysters and barnacles give. These cuts are very slow in healing, another reason why diving should be restricted to calm days. It is easy to get washed into a clump of sharp barnacles.

However, collecting fouling assemblages can often turn into a living hell, especially if the clusters of hydroids are *Pennaria tiarella*, which discharge clouds of nematocysts into the water when you start to disturb them. Or even if you brush by them as you swim past, then thousands upon thousands of potent stinging cells find their way to your face, arms, chest, and so on. A wet suit helps, but if there is any exposed skin, the little fiery welts appear, and those coming from hydroids are every bit as bad as those from the larger jellyfish; and in many instances, when temperature and salinity are just right, even worse.

Hydroids are essential animals in most zoological collections, not only because they represent the simplest order of coelenterates, but



Eolid nudibranch

because they themselves are a habitat in which numerous other creatures feed, live and hide. Whether the genus is *Pennaria*, which is painful to collect and handle, or *Obelia* or *Bougainvillia*, which is handled without painful consequence, the results are all the same if the catch is placed in buckets of sea water and allowed to stagnate slightly. After a while a host of tiny dragonlike eolid nudibranchs will come floating to the surface and suspend themselves upside down. The surface film can be removed and the nudibranchs isolated. Uncountable quantities of caprellid amphipods (skeleton shrimp) bend back and forth like tiny wires, and seemingly millions of tiny copepods, amphipods and other creatures swim around in mad profusion.

If you look closely at a freshly collected quantity in a jar of water, you are not likely to see nearly as many creatures as in the stagnated water.

You might not dream that there are lots of crawling multilegged polychaetes in the hydroids, or terebellids under a clump of tunicates;

nor that flatworms abide there, and sometimes nemerteans. You can get good pistol shrimp, and in some places even find joint-legged sea spiders (pycnogonids) among the rubble.

But even though the hydroids produce many, many creatures, they themselves are still of major interest. At certain times of the year they produce reproductive medusae and release them into the water, and on a clear day if you sit on a dock and look down, the water appears studded with the minute jewel-like jellies that are for the most part, less than one-sixteenth of an inch across. And with a fine-meshed dip net you can scoop them up, invert your net into a bucket of water, and so collect many of them. But the time for their release must be just right.

The end of the pier is a great place for watching hydroids mature over a period of time. And it is a good place to sit with a dip net and catch medusa jellyfish as they swim by, and to dip up ctenophores; but that is no longer a wharf piling habitat but the open sea and its pelagic habitat, which we shall discuss in a later chapter.