

Splendid Serpulids:

A Close-up Look At Those Amazing Christmas Tree Worms

By Alan Hughes, NAUI #15256

Photos by Alan Hughes



Christmas tree worms (*Siphoonid* worms) are some of the most striking, most interesting, and yet most overlooked inhabitants of the coral reef. Members of the family Serpulidae, worms that live inside of hard calcareous tubes, Christmas tree worms often go completely unseen as scuba divers drift over or next to the corals

and sponges that make up the mass of the reef. Even though they're found all over the most popular dive sites in the Caribbean, they are missed both because they are very small, and because the body of each one lies hidden within a piece of living coral with just one end sticking out where we can see it.

Christmas tree worms, and their close relatives the feather-duster worms, are polychaetes. There are over 5,000 species of polychaetes in the world, ranging from tiny ones only 1 mm in length up to giants 3 meters long. Polychaetes have a segmented, cylindrical body structure, with a distinct "head"

and "tail." Each body segment bears a pair of fleshy appendages called parapodia, typically used like legs for locomotion.

When a Christmas tree worm is newly formed, it settles onto the surface of a piece of brain coral, star coral, or other suitable substrate, and

begins to burrow a hole into it. Not much is known about just how Christmas tree worms make the hole, but they do get the job done. As the animal grows, most of it never sees the light of day. The worm's body remains cozily concealed inside its coral den for all of its life.

The part of a Christmas tree worm that alert divers enjoy seeing as they investigate the reef, and from which it gets its name, is the prostomium, with its crown of colorful, feathery radioles. There are two radioles on each worm, spiraling in opposite directions, looking like perfect little festively decorated trees. These structures, winding their way down around the prostomium, perform a variety of important tasks for the worm, including the job of breathing. The radioles function like the gills of fish and extract life-giving oxygen from the water.

Christmas tree worms are filter feeders, like many of the stationary inhabitants of the coral reef. In addition to sieving oxygen, the radioles strain solid particles out of the water, and carry them down towards the mouth. Along the way, the particles are actually sorted by size. Larger ones are discarded, and smaller ones are used for food. Tube-building Serpulids, like some of the feather-dusters, even save the medium sized particles for use as raw material in tube construction.

As you know if you've ever seen Christmas tree worms, these tiny,

delicate creatures have an annoying habit of disappearing like a reverse jack-in-the-box just when you really want to get a good look at them. On the radioles are light sensitive spots. When it detects an abrupt change in light level, as from a shadow, or if it's touched, the worm in a blink of the eye, retracts its radioles into the safety of its tube. For extra protection, it then covers the opening with a lid, called the operculum (which looks a bit like the tail of a small fish sticking out from under the extended radioles). If you're patient, still, and wait a few minutes, you can watch the radioles slowly extend themselves into the current as they come out of hiding.

Christmas tree worms make excellent subjects for underwater photographers, particularly as macro subjects. Usually reaching a maximum height of only 1" to 1 1/2", they are perfect for shooting with a 1:2 or 1:1 extension tube. All you have to do is ease in, being careful not to bump them with your framer. They are colorful, coming in a variety of combinations of shades of brown, orange, yellow, maroon, and white. They have a lot of fine detail that normally goes unnoticed, even by attentive divers, with their feathery radioles and horny operculum. That makes them terrific candidates for big enlargements. And, best of all, they just sit there and pose for you! So, let's all pay attention and try to not overlook them anymore.

