



# ***Codi* and the Striped Pyjama Squid.**

**By Dr Stephen Skinner**

'Now I've done it!' muttered the Striped Pyjama squid, as it popped up to the surface of the rock pool.

'Done what?' asked the green, ropey plant

'Missed the tide, ...again!' muttered the squid, 'and I didn't know Dead Men's Fingers could talk!'

'Don't be so rude! My name is Codi the *Codium fragile*, and I live here. You don't!'

The squid headed for the sand on the bottom of the pool, between the sandstone boulders. There wasn't enough sand to bury in, so it just lay there and flashed to blend in.

'No point in sulking,' ventured the green alga, 'you have another three hours to wait before there is a hope of any wave action.'

'Really! Well, what's your name anyway?' asked Codi.

'It's silly, it's *Serpioloidea lineolata*, or the Striped Pyjama Squid! I'm really a cuttlefish. I live off the edge of the platform in the deeper sand among the rocks and seagrass. I bury myself out there all day, with my eyes watching, and then go hunting at night!'

'Then what are you doing here?' said Codi

'I'm a stickybeak and spent too much time looking round these rock pools last night.'

The squid flapped its fins and swam about for a bit. Then it positioned itself under the canopy of the *Codium* as the seaweed leaned gently out from the upper edge of the wall of the rock pool.

"So what do you do here? How do you hang on? Why is your skin all green? What do you eat and who do you hang out with?" Asked Squid

'One question at a time if you please!

"I live here, attached to the edge of this rock pool, and four times a day life gets a bit hectic, when the tide changes." Said Codi

'What do you mean 'hectic'?' said Squid

'I share my home with these two brown seaweeds and the skinny red one, hanging out along the upper edge of this rock pool. The yellow brown one with the narrow serrated leaves is called *Sargassum linearifolium*, and the dusky brown branching mass of knobbly floats is Neptune's Necklace or *Hormosira banksii*. When the tide is fully out we get to lie here on top of the calm water. We float, we get plenty of sunlight energy and we are still wet, it's pretty relaxing really!

But... when the tide turns, and the waves come back we are pushed on shore then dragged back to sea over and over again. At least it settles down at high tide, and we can stand upright and rock with the swell BUT THEN OUT GOES THE TIDE AGAIN!

'I get the picture', nodded the Squid.

How do you seaweeds hang on in all that wave action?'

'We all have a way of sticking ourselves down. The encrusters like the Pink Paint, it IS a living red alga, and those tan and chocolate blotches on the other wall, just hug the rock. It helps if you can put on a lime coat, as the Pink Paint does.

My friend the *Sargassum* makes a cone of tissue that is wide enough to have a good grip and steep enough to allow it to move every which way. I rope myself down. That base is called a Holdfast, because that is what it does.'

"What rope, I thought you were made up of tiny green circles?" said Squid

'All those tiny green circles, are the outer ends of the threads that make up the rope that is me, My insides are full of very long, thin tubes that fray once or twice before they make the micro baseball bats that end in the green circles. You missed the points on the circles!'

"No I didn't; I've felt them. You are gritty." complained Squid

'The other advantage about the rope and the circles is that water, and other things like sand and shell grit, pass through me without tearing me apart. Explained Codi

'What happens to the sand and the shell grit?'

'Most of it goes straight through. The bits that don't will shake down to the holdfast. They add weight to it and build up a matt around it that the very tiny single celled plants can live on. So I'm doing my bit to build the ecosystem.'

'So that's why, to my eyes, the bit of rock round your holdfast is covered in glistening plates.'

'Yes. The purple or dull green ones are Cyanobacteria (blue-green algae), the shiny green ones are green micro-algae, and the sparkly brown ones are diatoms...but that's a whole other story.'

#### **Microalgae**

Seaweeds are algae you can see. They have lots of relatives that are very much smaller...and you won't see without a microscope. These are the microalgae.

Many live a life floating in the oceans; others live on any surface that gets enough water. A select few live inside corals and sea anemones and feed them sugars while giving them colour. They make up most of the food of the grazing sea creatures, and the filter feeding sea life.

'It's getting a bit warm you know! And what's this lot doing coming in from on top!'

'Go and have a swim round to cool off, and then I'll tell you.

The Striped Pyjama Squid slid back into the shade, under the canopy of the Dead Men's Fingers and the *Sargassum*.

'Now tell me more...what are all these snails doing?'

'As the sandstone surrounding the rock pool dries and warms up, the snails that cannot reflect the sunshine move into the pools. That way they stay cool, and they can keep grazing. The neat spherical black ones are Nerites, the conical ones with the bulging base and the metal grey stripes and spots are Zebra Winkles, and the other cones, with the brown and white skirts are the Conniwinks. If you look carefully among the leaves of the *Sargassum*, you'll also see some very green, flat topped, coiled ones. They are baby Warreners. They grow as big as those pesky purple sea urchins as they get older.' Said Codi

'What's this grazing!'

'You know when you go out hunting for your food, well vegetarian animals graze. They find their favourite plants and nibble on them. These snails eat the things that grow at my base, and the ones that grow on the Sargassum leaves,' the *Codium* took a deep breath, '... and they eat my babies!'

"I'm sorry, shall we stop?" said Squid

'No, let's go on. I'll explain. If you look carefully, you can see on the sides of some of those circles of mine there are dark bags. That's where I grow my babies. They grow up in there into little individual one-celled plants with two special whips that they use to drive themselves through the water. There can be heaps of them in the one bag, 32, 64, 128 and more.'

'Why so many?' Squid probed

'That's where the Nerites and Conniwinks come in. Their absolute favourite food is fresh, new green algal plants, like my babies. Luckily sometimes these grazers can be a bit slow to clean up which means a couple of my little ones will be able to grow into adults! Explained Codi

'What was THAT!' asked the astonished Squid.

'Oh dear. That, my 50-millimetre-long friend, Feather Duster Worm saying 'good morning'. Surely, you've seen tube worms in the seagrass. 'They live here too, in those leathery grey pipes you can see near the base of that first rock. They filter the plankton from the water here, so it stays clear all the time. They are harmless. One of them will be back out again in a minute if you stay still.'

'That gave me quite a fright!' muttered Squid, anyway where was I, oh that's right, my next question, how do you eat?'

'My green circles are green because they have lots and lots of little green beads called chloroplasts in them. Chloroplasts are tiny solar panels. They collect energy from sunlight and use it to split water that can then be used in combination with carbon dioxide to make sugar. The green colour comes from special green chemicals that can be energized by the sunlight to do their job. You remember I said water is always going through me. Well that water has carbon dioxide in it, and I can collect it with my threads and have it ready when the water is split to make the sugar. I don't go hungry.'

'But that means you are feeding all the time!' said Squid

"Yes and no...I can store the sugar, in special parts of those chloroplasts as little beads of starch to eat later.'

The Squid was about to launch into another question when a wave rushed over the top of the pool.

"Looks like its time for me to go home now Codi but IT'S BEEN GREAT HANGING OUT WITH YOUUUUU" yelled Squid as he caught a current and swam back out to the deep blue sea!

**Stephen Skinner, May 2021.**

**List of characters:**

Striped Pyjama Squid	<i>Serpioloidea lineolata</i>
Dead Men's Fingers	<i>Codium fragile</i>
Sargassum/Southern Bladder Wrack	<i>Sargassum linearifolium</i>
Neptune's Necklace	<i>Hormosira banksii</i>
Agar-Agar Weed	<i>Crassiphycus (Gracilaria) secundata</i>
Pink Paint	<i>Lithothamnion</i> spp.
Coralline fans	<i>Jania rosea</i>
Diatoms	Bacillariophyceae
Nerites	<i>Melanerita atramentosa</i>
Zebra Snails	<i>Austrocochlea</i> spp.
Conniwink	<i>Bembicium nanum</i>
Warrener	<i>Turbo undulata</i>
Sea Lettuce, Bait Weed	<i>Ulva</i> spp.
	<i>Ceramium</i> sp
	<i>Polysiphonia</i> sp
Feather Duster Worm	<i>Sabellastarte australiensis</i>