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BY EMILY PARET ATWATER



ILLUSTRATED BY ELIZABETH M. FISHER



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IN OCEAN LAND



In Fact the Lagoon Was Like a Large Aquarium of Curious and Beautiful Fish.

IN OCEAN LAND

BY

EMILY PARET ATWATER



ILLUSTRATED BY
ELIZABETH M. FISHER

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*TO THE INHABITANTS
OF THE "GREEN SHELL"*

1881

For much of the Natural History part of this little volume the author is indebted to M. C. Cooke's "Toilers of the Sea," and Dr. G. Hartwig's "Denizens of the Deep." She has thought it desirable to mingle some fiction with the facts, but trusts that the "Gentle Reader" will easily distinguish the one from the other.

CONTENTS

HOW SAMMY WENT TO CORAL-LAND	13
I. HOW SAMMY WENT OUT TO SEE THE WORLD - - - - -	17
II. HOW SAMMY ESCAPED FROM THE SHARK AND MADE THE ACQUAINTANCE OF THE HERMIT-CRAB - - - - -	33
III. THE STAR-FISH, THE UNSOCIABLE OYSTERS AND THE PILOT - -	52
IV. ON TO CORAL-LAND - - - - -	68
V. IN CORAL-LAND - - - - -	86



"Sword-Fish!" Said the More Experienced Pilot.

How Sammy Went to Coral- Land

“WELL, children,” said grandma, “which shall it be, fairy stories, stories about giants, or ‘really truly,’ stories?”

They had been spending a month at the seashore, grandma, Bob and Eleanor. Little Bob had been very ill in the spring, and when hot weather came the doctor ordered sea air and sea bathing to bring back color to the pale cheeks, and strength to the thin little body.

But Bob’s father was a poor country parson and there seemed no way to fill the doctor’s prescription. At this juncture grandma, like the charming fairy

14 *How Sammy Went to Coral-Land*

godmother that she was, appeared on the scene. She knew a quiet spot (one of the few still in existence), where there were no big hotels, no board-walks, and no merry-go-rounds. It was the very place where she wanted to go to get rid of her rheumatism ; Bob and Eleanor should go with her, and their father and mother could follow later when the parson's vacation came.

It took but a short time to carry out this delightful plan, and at the opening of my story the children had already been a week at the seashore. Such fun as they had been having bathing, digging in the sand, gathering shells and seaweed, or sitting quietly with grandma under the big umbrella, watching the waves break and roll up on the shore ! And after supper there was always that pleasant half hour, on the little balcony

How Sammy Went to Coral-Land 15

overlooking the ocean, when grandma told her bedtime stories.

They were all sitting there on this particular evening, grandma in her big rocking-chair, and Bob and Eleanor on their favorite cushions at her feet. The little folks had been begging for their usual treat, for grandma's stories were delightful, and her fund of knowledge (to the children), quite limitless.

"I'm getting too old for fairy stories," said Eleanor, who was eleven and had advanced ideas. "Only real *little* children believe in goblins and giants, and I'm in the third reader now."

"I like 'em," said dreamy, nine-year old Bob, "fairies and giants can always do things that just ordinary people can't. Please do tell us some fairy stories, grandma."

"No, true stories," insisted Eleanor.

16 *How Sammy Went to Coral-Land*

“How would it do to make a compromise?” suggested grandma. “You were asking me some questions yesterday about the shells, seaweed and all the fascinating things found on the shore. Suppose I tell you a story about all the wonderful creatures that live in the ocean? The part of it that tells how they live and grow, and get their food will be all true, and I think Eleanor will find it more marvelous than the make-believe part, which will tell about the adventures, and the conversations that our hero had with the strange creatures that he met with in his wanderings.”

This proposition was agreeable; the children settled themselves comfortably to listen, and grandma, with her eyes on a passing sail, began —

CHAPTER I

HOW SAMMY WENT OUT TO SEE THE WORLD

ONCE upon a time there lived in the depths of a deep, tranquil pool a young salmon, whom we will call "Sammy," for short. He was a very handsome fish, and decidedly vain of his good looks. His flesh was a beautiful pink, and the scales that form the armor, or coat-of-mail of most fishes, were particularly handsome on Sammy, and glittered with many colors in the sunlight. He had a very graceful shape besides, and his fins were the envy of all the young fish of his acquaintance.

Almost all fishes have a great many fins, and although they differ sometimes

18 *How Sammy Went to Coral-Land*

in position and number according to the fish, the most important ones are the Dorsal fin, which stands straight up from the back, the Caudal fin, which is in the end of the tail, and the Pectoral fins, which are at the sides and take the place of feet in animals.

These fins all help to make the fish the splendid swimmers that they are, and are large and strong, or small and weak, according to which part of the water the fish inhabits. If he prefers the surface of the ocean, or a large body of water, his fins must be large enough, and strong enough to battle against fierce waves, and strong tides, while the fish who lives far below where the water is more calm finds his weaker fins ample for his needs. The long, oval body which most fishes possess is another great help in gliding rapidly through the water.

Like others of his kind Sammy had a very strong spine in which was an air-bladder. By pressing the air out of this he could swim easily at a great depth, and by inflating it to let the air in, like a balloon, he could rise and swim along the surface.

Sammy's eyes were large and round, and he could see splendidly, especially when the water was clear. His hearing, as well as his sense of smell was also good, and he breathed through the gills on each side of his throat. When taken out of the water the fish really dies of suffocation, for the water that enters its throat and flows out through the gills is the air that keeps it alive.

Sammy's maiden aunt, an old fish who lived in the same stream with him, used to tell strange tales of fish that can live several days out of water by reason

20 *How Sammy Went to Coral-Land*

of the different formation of their gills.

One of these is a tropical fish called the Anabas. It has very strong Pectoral fins which it uses like feet when on land, and it will even climb trees to catch the insects which it eats.

Another fish of this sort is the Frog-Fish, a hideous creature which is caught near Asia. It can crawl about a room, if shut up in one, and looks exactly like an ugly frog.

But the most wonderful of all is a South American fish called the Hassar. It usually lives in pools of water inland, and if the pool where it is happens to dry up, it will travel a whole night over land in search of a new home. It is an experienced traveler, and is said to supply itself with water for its journey. If the Hassar finds all the pools and

streams dried up, it will bury itself in the sand, and fall into a kind of stupor until the rainy season comes around and brings it back to life.

“Aunt Sheen,” so called from the beauty of her skin, used to tell Sammy another story about this famous fish. It seems that the Hassar builds a nest just like a bird, only hers is under water along the reeds and rushes of some shore. The nest is made of vegetable fibres, and is shaped like a hollow ball, flat at the top. From a hole in this ball the mother can pass in and out, and she watches over her nest with the most tender care, until the young ones leave it.

Fishermen catch the Hassar by holding a basket in front of the nest and beating it with sticks. When the poor mother comes out to defend her family, she falls into the basket and is captured.

22 *How Sammy Went to Coral-Land*

“And serves her right, too,” Aunt Sheen always concluded. “Building a nest and watching over it is a silly thing for a sensible fish to do. No one ever thinks of such behavior except some miserable little fish called Sticklebacks, and a few other inferior kinds. Why couldn’t she leave her spawn in a quiet place somewhere near the shore, and then let them hatch out and look after themselves? That’s the way I was brought up.”

Now, this speech may sound very unkind and even heartless, but leaving the young to look after themselves is the customary thing among fishes. And when you consider that one mother fish often has many hundreds of children, it is not to be wondered at that she finds it impossible to take care of such a very large family.

The deep sea fishes come to the shore

in the breeding season, deposit their eggs, or spawn, in some convenient spot, sometimes in the seaweed, or in vegetable matter, sometimes in the sand, on rocks, or in little, secluded pools, and then they bother themselves no more about their offspring.

The salmon, and some other kinds of sea fish go up the rivers and streams inland to deposit their young. Salmon are very strong, and they can make tremendous leaps and shoot up rapids with great swiftness. Indeed, the salmon is one of the most rapid swimmers in the fish family, and it is said that one salmon could make a tour of the world in a few weeks.

Sammy was very proud of his family, as well he might be, for his maiden aunt was always telling stories of their relations and connections.

24 *How Sammy Went to Coral-Land*

Aunt Sheen was a big fish, the oldest and largest, not only in her own pool, but in all the salmon stream. In her youth she had been a great traveler and seen many wonderful sights, and was regarded with awe and admiration by the younger fish. But she had grown fat and lazy with age, and was now content to spend the remainder of her days in this quiet stream which hid itself among the northern pines a good many miles from the sea.

It was a pleasant place, with deep, still pools here and there in the shade, nice, slippery mossy rocks to hide under, and sunlit shallows where the water rippled over the white pebbles, or leaped musically down a tiny waterfall.

Such merry times as Sammy and his companions had chasing each other up and down the stream, leaping the water-

fall, jumping over the rocks, and playing hide-and-seek in the shallows. Then there was always the excitement of watching for the flies and different insects that hovered near, and which made delicious meals when caught. The young salmon used to boast of the flies they had captured, just as boys and men do of their luck in fishing.

But our hero soon grew tired of this quiet life. It seemed very stupid and humdrum when compared with Aunt Sheen's marvelous tales of the great ocean, and the strange sights and thrilling adventures that there awaited the voyager. He was larger than his brothers and sisters, his sea-going instinct was strong within him, he longed for the wonders of the great, unknown world, and grew tired of Aunt Sheen's repeated warnings.

This old fish always professed to be

26 *How Sammy Went to Coral-Land*

entirely uninterested in the doings of her youthful relatives. It was a matter of creed with her. But in spite of this fact she was very fussy over the young fish, and gave them a great deal of what Sammy considered tiresome advice.

“There is safety in numbers,” was her favorite saying. “When you want to go on a journey wait until your companions are ready, and go in a school. Dreadful things always happen to young fish if they start out by themselves, they get eaten by sharks, or caught by those awful two-legged monsters on land, and the devil-fish is always on the lookout for them.”

“But,” Sammy would protest, “you have always said that some of the most terrible experiences you ever had came when you were with a lot of others. That time you were nearly speared going

up the rapids you were in a school, and when you were caught in the net and it broke —— ”

“ It wouldn’t have broken if there hadn’t been a school of fish in it,” interrupted his aunt, tartly. “ That just proves what I say ; the weight of so many made the hole, and so I escaped.

“ The only time when I came near getting caught was once when I was alone and got a hook in my gills. My ! it was terrible. I ought to have known better, but I was very hungry that morning, and when I saw that beautiful fly hanging over the water —— ”

But Sammy had heard this story many times before, and was tired of the conversation.

“ I don’t want to wait any longer for these lazy brothers and sisters of mine to get ready,” he said crossly. “ Besides,

28 *How Sammy Went to Coral-Land*

if I did go in a school, *I* might get speared, or caught so that the rest could get away, and that would not suit me a bit. I'd rather risk the flies."

"You are an impertinent young fish," said Aunt Sheen, and she retired under her favorite rock in a rage.

That night when everything was very still, and all the world seemed asleep, alone and unobserved Sammy swam quietly down stream and started alone on his wanderings.

It was a lovely moonlight night, and only the faint sighing of the wind in the pine-trees broke the silence.

On and on swam Sammy following the stream as it twisted and turned now in the shadow, now in the moonlight. Now it flowed along straight and smooth with scarcely a ripple, its banks sweet with dew-soaked wild flowers, and now it

dashed against a huge rock which partly blocked its path, or glided swiftly over shallow rapids.

All night long Sammy kept on his way, and all the time he felt that he was gradually going down, down, down, as the stream crept towards the sea.

The next morning he found himself in a strange country. The little stream down which he had been traveling had become a river. There were houses here and there on the shores, cultivated fields and pasture-lands, and in some places cattle browsed on the banks, or stood knee-deep in the water.

The strange sights and sounds filled Sammy with awe, and something like fear. He kept carefully in deep water and occasionally hid under a rock when he saw a big, strange fish approaching,

30 *How Sammy Went to Coral-Land*

for he knew that large fish often ate smaller ones.

Once in a while he stopped to ask a question of some brother salmon as to the right way to go, but the answer was always, "Follow the river and you can't go wrong," and follow the river he did.

When noon came he was fortunate enough to catch several fat flies, which made a delicious meal. Then he rested and dozed for a time in the shade of the bank, after which, feeling much refreshed, he started again on his journey.

For a day or so he traveled on, stopping only for a little rest and food, and getting more and more eager and excited all the time as he neared his destination.

Once the journey came near having an untimely ending for, unheeding Aunt Sheen's caution as to strange flies,

he leaped eagerly at a particularly beautiful one poised over his head. Fortunately for our hero a strong puff of wind blew the fly aside at that moment, but not before the cruel hook which was concealed in it had grazed his tender mouth.

A good deal scared by his adventure, and feeling much less self-confident, Sammy swam away, resolved to avoid all suspicious insects in the future. He had several other narrow escapes at this stage of his journey, but they are not important enough to mention here.

But always as he journeyed on the river grew wider and wider, deeper and deeper. Strange dark shapes passed over his head, strange fish swam past him, the banks seemed very far away, and the currents were strong and hard to swim against.

32 *How Sammy Went to Coral-Land*

For quite a while there had been a new and delightfully salt taste and smell to the water, it became stronger and stronger as he went on ; then there was a roar of breakers along the shores, and the swift tide swept Sammy away from the river's mouth, and out into the vast ocean.

CHAPTER II

HOW SAMMY ESCAPED FROM THE SHARK AND MADE THE ACQUAINTANCE OF THE HERMIT-CRAB

Oh a wily old crab is the Hermit-Crab,
And a crafty old crab is he !
His home he makes in a stolen cell,
And the passing stranger he loves full well
But beware of his hospitality !
For a hungry old crab is the Hermit-Crab,
And a wicked old crab is he.

“ DEAR me ! what a very large place the sea is,” said Sammy. He had gone quite a distance before he realized that the occasion for hurry was now over, and then he rose gracefully to the surface and looked about him. Overhead stretched the blue sky speckled with fleecy, white clouds, and off in the distance a long

34 *How Sammy Went to Coral-Land*

line of white sand showed the shore line, against which the incoming tide sent its undulating billows. Near the shore circled a flock of sea-gulls, and far away, where sea and sky seemed to meet, the white sails of a ship gleamed in the sun. In every other direction, as far as the eye could reach, stretched the blue waters of the ocean.

Presently a large fish sprang from the waves, his silvery scales sparkling in the sun, then fell back with a gentle splash. This recalled Sammy to himself, and diving hastily below, he swam slowly about looking at his surroundings with a good deal of curiosity.

It was a strange world on which he gazed. Water was everywhere, above, below, and on all sides, and strange weeds and vegetables grew up from hidden rocks. A graceful jelly-fish

floated past, expanding and contracting its umbrella-shaped body, and waving about its long arms or tentacles. Queer fish of all shapes and sizes swam about, the larger ones eying the stranger curiously, the smaller keeping at a respectful distance.

But Sammy had a very friendly feeling towards them all, and was just about to speak to a near-by fish, whose appearance seemed to indicate that he might belong to the Salmon family, when suddenly there was a general hurrying out of the way on all sides. Many of the fish dived quickly below to hide in some convenient spot, and the more rapid swimmers took to their fins with great haste.

Turning quickly to see the cause of the commotion, Sammy discovered a large, and very hungry-looking shark

36 *How Sammy Went to Coral-Land*

just behind him. The creature had a hideous mouth, with several rows of sharp teeth, and while not dangerous to man, this Dog-Fish, or Blue Shark, has a great liking for young and tender fish.

This fact our hero instantly divined, and sped away as fast as his fins could carry him, Mr. Shark in hot pursuit. Sammy had the advantage of being some distance from his enemy when discovered, but sharks are extremely swift swimmers, and for a time it seemed as if poor Sammy's fate was sealed. No matter how hard he swam the monster slowly gained on him. No race with his playfellows in the stream at home was ever so exciting as this. All the famous swimming qualities of his family were put to the test now, as he darted like an arrow through the water, the cruel shark close behind.



The Monster Slowly Gained on Him.

But presently Sammy began to tire. In another moment all would have been over, had he not spied far below him, partly hidden by seaweed, a ledge of large rocks. His instinct told him that under one of those he might find a hiding place. Down he darted, as quick as a flash, and in another instant just as the shark turned on his side and opened his huge jaws, Sammy lay safe, but quivering, in a friendly hollow under the sheltering rocks.

Mr. Shark, disappointed at losing his dinner, swam around and around the ledge vainly trying to find some way of squeezing his big body in among the crevices of the rocks, but at length abandoned the attempt as hopeless, and departed in a very bad humor to look for another victim.

It was some time before Sammy re-

38 *How Sammy Went to Coral-Land*

covered enough from his fright to look about him, but presently his ever-present curiosity overcame other feelings, and he began to examine his new quarters with much interest.

He was in a tiny cave, whose hard bottom was covered with sand and mud deposited by the constant washing of the tide. From the walls and ceiling hung curious weeds, and a few brightly colored shells lay in little holes and crevices formed in the rock.

While thus employed in viewing his surroundings Sammy discovered a crab partly hidden in the mud on the floor of the cave. It was a very strange-looking creature, for while the fore part of it had legs and claws like an ordinary crab, the rear part was concealed in the shell of a large sea-snail.

As Sammy gazed the crab slowly crept



Sammy Discovered a Crab Partly Hidden in the Mud.

out from the mud, still keeping a watchful eye on the intruder.

“Fine day,” said Sammy, pleasantly.

“Charming,” replied the Crab.

“Water’s a little cool, though,” said Sammy.

“It’s very comfortable in here,” said the Crab, “and the tide is very favorable this morning; it brought me in some fine fat snails for breakfast. By the way, have you had breakfast?” And as he spoke he again retreated into the mud.

“Oh, yes, indeed!” replied Sammy, politely, “I had a good meal some time ago before the shark got after me.” And, forthwith, he gave a thrilling account of his adventure, adding something to it after the manner of storytellers, and throwing in a description of his past life and present ambition. To

40 *How Sammy Went to Coral-Land*

all of which the Crab listened with most flattering interest.

“Remarkable,” he murmured. “You have no idea how delightful it is for a poor Hermit like me to hear something of the outside world. I lead such a retired life that it is a real pleasure to entertain a stranger in my humble abode. This little cave is mine by the right of possession, and in it I live, far from the whirl of society, and being secluded in my habits, and somewhat bashful, I always retire into the mud when strangers appear. Occasionally when crabs, (little ones), sea-snails, and small shell-fish wander in in search of apartments I consent to have a short conference with them, but it is a rare thing for me to speak to a fish as large as yourself.”

“I am highly honored,” said our hero.

“But tell me, how do you happen to have that large shell on your back?”

“That,” replied the Crab, proudly, “is the former home of a Sea-Snail, now alas! no more. You see my name of the Hermit-Crab comes from my liking to conceal my tail, which is long and soft, with two or three hooks on it, in the empty shell of some sea animal, snail, or the like. Unlike the ordinary crabs, our branch of the family all possess these tails. Our only hope of prolonging our existence is to protect this weak tail, so as soon as we are born we crawl into some empty shell, and holding on with the hooks, are thus fairly well protected from attacks in the rear. We can carry the shell about with us, and in time, as we grow bigger, it becomes necessary to find a larger one. The shell in which I now live once belonged to a big snail. It was

42 *How Sammy Went to Coral-Land*

just the right size for my needs, and, there being no other way out of the difficulty, I was compelled to eat him up in order to get possession of his home. It was a wrong act, the impulse of a moment, and I assure you that I have always deeply regretted the cruel deed," and the Hermit paused to sigh deeply.

Now Sammy had very small faith in the repentance of the Hermit. In fact he had a suspicion that he was a blood-thirsty old hypocrite, and that those unwary strangers who had come to look for apartments in the past, had never returned alive. This was an uncomfortable thought, so he kept a sharp eye on the Hermit, while he listened to the long description the other gave him of the habits and customs of his family.

Our hero was soon to learn that bragging about one's ancestors and connec-

tions was not a weakness confined alone to Aunt Sheen, for many other fish possessed it, and this seems strange when they openly declared that they sometimes devoured their younger and weaker relations.

The Hermit-Crab belonged to a large family called the Crustaceans. All kinds of crabs, lobsters, as well as shrimps, barnacles, sea-acorns, etc., are members of this family, though all belong to different branches of it. The lobster is first cousin to the crab, though somewhat larger, yet the two resemble each other very closely. The crab has four pairs of legs, as well as a large pair of claws. He is a rapid swimmer, though his sidewise motion gives him a very awkward appearance. And, although a great eater, it hardly seems likely that Mr. Crab ever suffers from indigestion, since nature has given

44 *How Sammy Went to Coral-Land*

him eight jaws, and a large stomach furnished with teeth. He has also a heart, and liver.

The crab, in common with the lobster, possesses one very convenient peculiarity. He can cast off a claw if it is hurt in any way, and he sometimes throws one or two away if he is frightened by thunder, for he is a great coward in a thunder-storm. But, no matter in what way the claw is lost, Mr. Crab can grow another one, although it will not be as large, or as strong as the first one.

The claws of a crab are his weapons, and terrible ones they are, too. With them he defends himself against his enemies, and with them he attacks his prey and tears it to pieces.

His bill of fare is composed of some kinds of fish and lower water animals; and it is said that some crabs feed on

sharks and whales. In return fishes, sea-stars, sea-urchins and some shell-fish eat the young crustaceans, and even attack the larger ones.

In the sand of the seashore the mother crab, or lobster, lays her eggs, and there she leaves them to be hatched by the sun. Several thousand eggs are laid at a time, but as many of the water animals feed on the eggs and young, of course all the members of this large family do not come to mature crabhood.

Lobsters like best to live along rocky shores, where the water is clear and deep; and there they are caught in small wicker baskets, or nets.

As for the crab, he loves to hide in the mud, and he can live longer than the lobster when taken out of the water, by reason of the different formation of his gills.

46 *How Sammy Went to Coral-Land*

The Hermit-Crab seemed particularly proud of some of his relations who live on land, and told Sammy marvelous tales of their strange habits. Some of these land-crabs will suffocate if dipped in the water. They live in the shades of the deep forest, often a long way from the sea, but come to the seashore at certain seasons to lay their eggs in the sand. When once they have started on their march to the sea nothing can turn them aside from the path in which they are traveling.

Another cousin of the Hermit lives in the East and West Indies. It is called the "Calling Crab," because it has a very large claw which it holds above its head when running, and this gives it the appearance of beckoning to some one. This Calling Crab makes its home in holes, or burrows on land.

Still another land relation is the East India Cocoa-Nut Crab, which lives upon the cocoanuts that fall from the trees. With its large, heavy claws it tears the husk from the cocoanut, and makes a hole in the nut, and takes out the meat. These crabs also make their homes in deep burrows, which they line with the husks and fibres from the cocoanuts. Though a land crab the Cocoa-Nut cousin is fond of the sea, and takes a bath in it every night. These crabs grow to a very large size.

Crabs, and all crustaceans multiply enormously, and are of all sizes from very tiny ones to one respectable Japan crab which covers twenty-five feet of ground. In the tropics they grow very large, and are of many different varieties.

Some crabs live in fresh water rivers and streams, some of the lower forms of

48 *How Sammy Went to Coral-Land*

the family in the extreme North, and others in dark, under-ground caves.

Like almost all of the crustaceans, the crabs and lobsters cast their shells every year. Besides indulging in this habit himself, the Hermit-Crab had once witnessed the toilet of a large lobster, and he gave Sammy a graphic description of the operation.

It seems that some days before it was time for him to get his new suit, Mr. Lobster retired to a quiet place, gave up all society, and fasted rigorously. Of course this severe treatment soon caused him to lose flesh ; he became thinner and thinner and the shell grew looser and looser. After awhile he grew restless. Evidently his peace of mind and body was much disturbed, for he rolled about, scratched himself, and crawled here and there as if distracted. Soon after this his shell split

clear up the back, and then such a wriggling, and tugging and squirming as there was until finally the whole outside shell of the lobster, legs, claws, and everything else was forced through the narrow slit in his back!

When the old shell was gotten off it looked exactly like the living lobster; and as for Mr. Lobster himself, lo! he was clothed in a bran new suit of clothes. But although undoubtedly proud of his fine apparel, he was too cautious to show it off as yet. He knew full well that his new shell was very soft and tender, and that his enemies liked him best in this condition, and that, alas! even his own family would not hesitate, if they discovered him, to have a feast at his expense. So, knowing his danger, and being pretty well tired after his struggle with his toilet, Mr. Lobster prudently re-

50 *How Sammy Went to Coral-Land*

tired from the gaze of the outside world, until his new shell hardened.

But, when that was accomplished and he sallied forth, courageous and very hungry, you may be sure that an unhappy fate awaited the weak and tender member of fishland that fell in his path!

Surely the life of a fish must be far from monotonous, since he has always the excitement of hunting his own meals, and keeping out of the way of others of his kind who are hunting for him! Still, nervous prostration is quite unknown in that big water-world, and so it is to be inferred that the fishes live only for the pleasures of the day, and do not worry over the possible unpleasant things of the morrow.

“Which,” said grandma, as she folded up her sewing, “is often a very good

principle to go on. So, children, off to bed with you, and another evening we will learn how Sammy met the Pilot.”

CHAPTER III

THE STAR-FISH, THE UNSOCIABLE OYSTERS AND THE PILOT

IT is not to be wondered at that our hero should feel a good deal of distrust concerning his host. To be sure the Hermit had declared that he never preyed upon fish as large as Sammy, since they invariably disagreed with him, and he was very polite and affable to his guest. But there was a certain suggestiveness about some of his remarks that was unpleasant, and his furtive, watchful gaze made Sammy nervous. The wicked old Hermit's mouth was really watering for this innocent, fresh-water fish, and he was only awaiting a favorable opportunity

to seize him with his cruel claws. Fortunately for Sammy his instinct told him that the crab was a dangerous companion. So he soon found an excuse to leave the cave on an exploring expedition, greatly to the Hermit's regret.

Sammy's experience with the shark was still fresh in his mind, and for a time he kept close to the ledge ready for a dash to safety should danger again threaten.

It was a most interesting place to explore, this ledge. There were big rocks and little rocks, flat rocks, rocks hidden by mud and sand, and sharp, jutting rocks full of peril to ships at low tide.

In one or two places near the ledge the ocean was so very deep that Sammy never ventured to explore its depths, while from another point he could clearly see the sand at the bottom of the sea, and loved

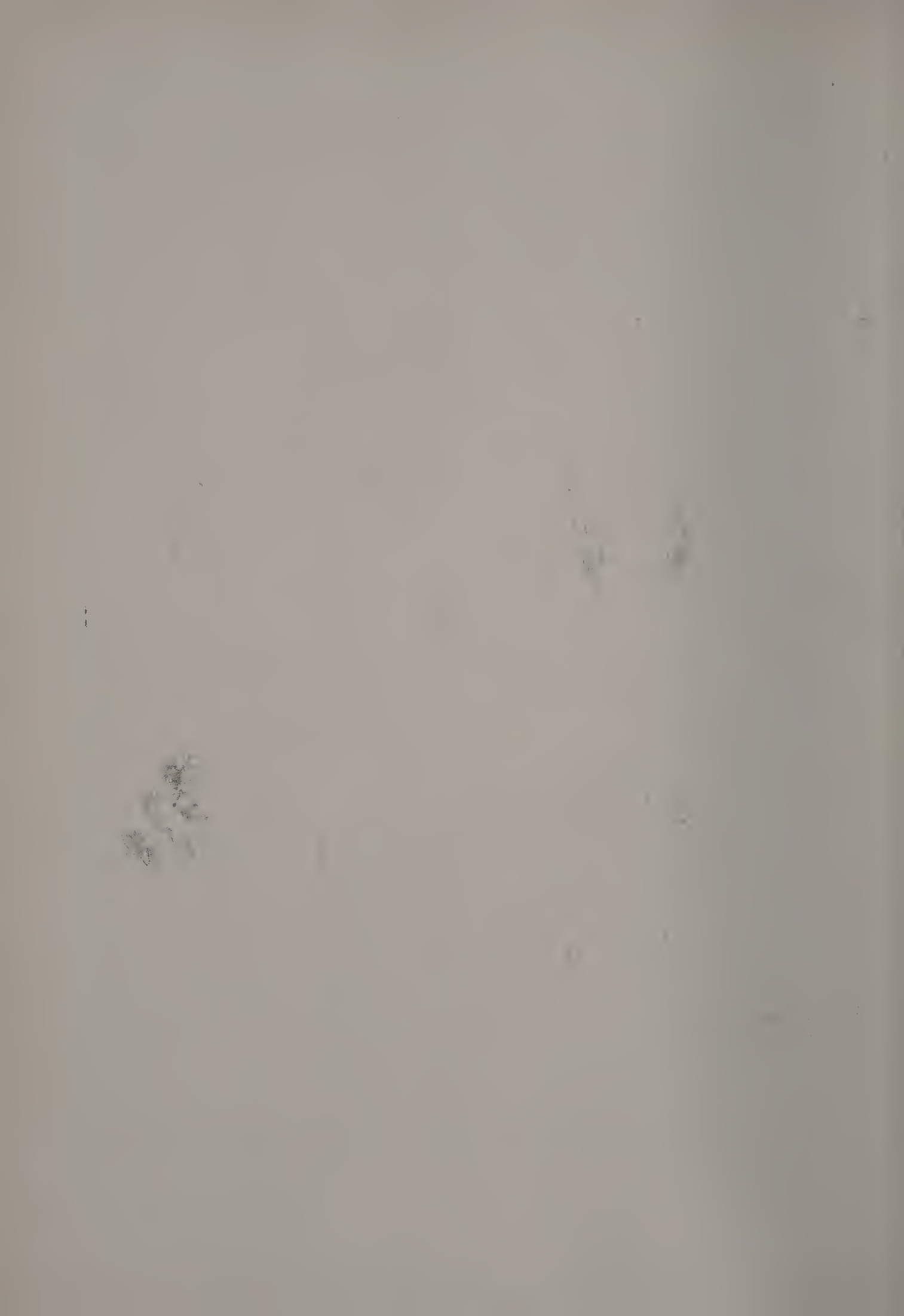
54 *How Sammy Went to Coral-Land*

to descend and swim lazily about examining the shell-fish, sea-snails and other curious creatures that made their home there.

The long ledge had many inhabitants and Sammy was soon on very good terms with a couple of jolly sea-urchins, whose round, prickly bodies were half hidden in the little holes which they had bored in the rock. The sea-urchins made him acquainted with some relations of theirs, a family of star-fish living on a flat shelf of rock near by. The star-fishes proved very agreeable companions, being both polite and pretty: They had lovely orange colored backs, out of which protruded their five arms, or rays, giving them the star-like appearance from which they get their name. Under these rays were rows of tiny feelers, or suckers which they used as feet. With these a



Sammy Was Soon on Very Good Terms With a Couple of Jolly Sea-Urchins.



star-fish can crawl about, or even turn himself over if he wishes to, and if he is disturbed or frightened these little feelers shrink up and conceal themselves in tiny holes in the rays.

Some star-fishes have the power of breaking off their rays, and, like the crab and lobster, can grow new ones to take their place. They have many beautiful relations in the star-fish family, one of the loveliest being the Brittle-star, so called because it will break in pieces when touched. Another relative is the Sun-star, which has twelve or fifteen rays, and often grows to a very large size. Its color is sometimes purple, sometimes red, with white rays tipped with red; truly a gorgeous creature, and no doubt very vain of his wonderful beauty!

All star-fishes have mouths and stomachs, which they put to good use, being

56 *How Sammy Went to Coral-Land*

exceedingly fond of oysters, and such like, which they suck out of their shells when opportunity offers.

One of this particular Star-Fish family, Meteor by name, proved very friendly indeed to Sammy, and through him our hero learned of a fine Oyster Colony which had established itself on a mud bank not very far distant.

Now Sammy was naturally of an inquisitive disposition, and an Oyster Colony being something new he was anxious to visit it. Meteor was also eager to pay a call, not so much from curiosity, as in the hope of extracting a fat bivalve from his shell for dinner.

So one fine day off the two started, Sammy swimming slowly to keep up with his companion, and presently they came in sight of the Colony. It was a large mud bank literally covered with oysters,

Some were half hidden, others piled one upon another, and still others in little groups apart. Such a quantity as there were, and such queer-looking, dirty things, with their rough shells hinged at the back! Every mouth was wide open, eagerly sucking in the tiny water animals and plants on which the oyster feeds.

They paid but small attention to Sammy, but as soon as Meteor came in sight, shell after shell quickly closed, and the whole Colony immediately became to all appearances, a deaf, dumb and blind asylum. Not a sign betrayed that they were living creatures, and the disgust of the two adventurers may well be imagined. In vain did Sammy ask questions, and put forth his best conversational powers; in vain did the Star-Fish attempt to conceal his identity by hiding in the mud, the cautious oysters were not

58 *How Sammy Went to Coral-Land*

to be fooled, and finally, much put out, the two companions were obliged to retire unsatisfied.

“It’s all my fault,” grumbled the Star-Fish, as they moved slowly away. “I should have had sense enough to creep along in a less conspicuous manner. You see so many different kinds of sea-folks, crabs, sea-snails, etc., as well as our own family feed on the oysters that it makes them very timid, and they close their shells at the least sign of danger. And, of course, once the shells are shut the sharpest and most experienced claw is of no use. It is much easier to hunt oysters before the shell hardens, though it is not considered as much sport.”

“Are oysters’ shells ever soft?” inquired Sammy in great surprise.

“Oh, yes, indeed!” said Meteor, in a very superior tone. “Why I supposed

that every fish in the sea knew that, but I forget, you are from the fresh water.

“The young oysters are hatched in the shell of the mother in the form of eggs. She keeps them for awhile, but presently sets them free, and although they are very tiny, they have eyes to see with, and can swim about. The oysters have large families, and I knew of one Lady Oyster who had two million young ones, but of course, only a few lived to grow up, since they are greatly prized as food by all fish, and delicious meals they make too, as I can tell you from experience.

“But about the young oysters: Well they are driven about by the currents and tides, and finally attach themselves to some object, like a rock, or hide in the sand and mud, and there they take up housekeeping for life, for, once their shell hardens, they cannot move.

“They are stupid creatures as compared with superior fish, like you and me for instance; but of course, since they have no head proper, they cannot be expected to use their brains. An Oyster has a large heart, however, as well as eyes, mouth, lips and liver, and he breathes through little tiny things like leaflets on each side of his body. I have heard that the oysters in the Indian Ocean contain very beautiful and costly pearls, as well as those in the Pacific, and other seas, and a good many common oysters have pearls in them too.

“They say that the two-legged land race value the oyster on account of the pearls, and that they are very fond of it as an article of food; and indeed I’ve been told that this horrible race of land creatures will devour or make use of in some way, almost anything that comes

out of the water. How glad I am that I live in the sea, instead of on shore!

“However, as I was saying, the oysters have lots of enemies, and they make few friends outside of their own family, and no wonder when you consider how very stuck-up they are.”

“They are certainly very unsociable,” agreed Sammy. “Still it has been nice to learn as much about them as you have been able to tell me, and I am greatly obliged to you.”

“Don’t mention it,” returned the Star-Fish, affably. “I make it my business to know the manner of life and habits of the creatures I live upon, and a good deal about those I have to avoid, and it will give me great pleasure to give you any information in my power. And above all things beware of that old hyp-

62 *How Sammy Went to Coral-Land*

ocrite the Hermit-Crab, and all his family.”

This friendly advice proved of great benefit to Sammy during his stay at the ledge, and indeed, all through his life in the ocean. As he acquired a greater knowledge of the ways of the sea he lost much of his timidity, though none of that caution that is the safeguard of every wise fish.

Each day as he took longer trips about the ledge, he made new discoveries and new acquaintances, and though these were all interesting, yet he longed to leave the ledge entirely and journey to Coral-Land. Of this wonderful, faraway country he had heard marvelous tales from Aunt Sheen, although she herself had never seen it. Ever since his smallest fishhood Sammy had longed to see with his own eyes the glories of this de-

lightful place, where the coral grew, sea-flowers bloomed, and hundreds of lovely fish swam about in the calm, blue water. But it was a long distance, and he knew that many dangers awaited the inexperienced traveler. So, although he never abandoned his intention of visiting the spot which he had come so far to see, he wisely decided to wait until some fish more versed in the ways of the sea than himself, should be going in his direction.

To this end, guided by the advice of Meteor, he accosted several fish who might prove desirable companions, but for a time with no success. The Herring was unwilling to leave the school which he was going to join; the Cod was bound for Newfoundland with his family, and feared that a warmer climate would not agree with the children.

A short conversation with a Mackerel

64 *How Sammy Went to Coral-Land*

proved more satisfactory. Mr. Mackerel was in a great hurry, for having heard that a school of herring had gone on ahead, he anticipated a good meal, and was anxious to be off.

“This is my busy day,” he said impatiently in answer to Sammy’s question. “No, I am not going to Coral-Land, it’s too far south for me at this season. But if you will wait here awhile you may see a cousin of mine who might act as guide. He is a Pilot-Fish and is out of a job at present. You will know him by the three dark blue bands about his body. Now, I really must say good-day,” and away he swam in a tremendous hurry.

For some time longer Sammy lingered near examining the different fish that passed, but none with three bands about his body was to be seen. At length a

large fish of a silver color appeared, and as he swam leisurely nearer Sammy saw that the stranger was indeed marked with three dark blue bands. Surely this must be the Pilot, and as such he addressed him.

“Yes, that is my name,” replied the Pilot, who had a very shrewd fish-of-the-sea expression; “and so Cousin Mack. told you I was out of a job, did he? Well so I am, but I was intending to take a rest before going to work again. However, I would be willing to take charge of you this trip as a special favor.

“Oh, yes! I’ve been to Coral-Land a great many times, and know all the regular inhabitants as well as the ordinary visitors. But as this is your first trip, and as it is always more trouble to pilot an inexperienced fish, I think I

66 *How Sammy Went to Coral-Land*

will have to make a little extra charge. My terms are usually one-half of all the feed, but in your case I think I should have to ask a little more, say three-quarters. Is that satisfactory?"

"Perfectly," replied Sammy, delighted to make any arrangement, although he had a suspicion that the sly Pilot was taking advantage of his greenness.

"Very well then," said the Pilot, "I will take you to Coral-Land on those terms, and will guarantee to protect you as far as possible, from all danger. I am well known as an excellent guide, the White Shark will testify as to my ability in that line. But don't get frightened," he added, as Sammy began to shiver at the mention of the Shark's name. "I forgot that you are not on as good terms with the sharks as I am. However I am not on 'speaking acquaintance with

them at present, and since I know their habits, will promise to keep you well out of their way.

“ And now suppose we look about for a bite for supper; talking always makes me very hungry, then to-morrow I will meet you at the ledge, and we can start fresh on our journey.”

CHAPTER IV

ON TO CORAL-LAND

For him who goes a-traveling
Upon the stormy sea,
A tried and trusty pilot
Is the safest company.

“AND did the Pilot really take good care of Sammy?” asked Bob, anxiously, as he and Eleanor took their places on the little balcony with grandma, and eagerly awaited the continuation of the ocean story.

“I don’t believe he did,” said his sister positively. “I just know that old Pilot was a hypocrite like the Hermit-Crab and ate up poor Sammy the first chance he got.”

“Time will show,” said the old lady

as she snipped her silk with her silver scissors. "It is a very bad plan to read the last chapter of a book first."

As for the Pilot, he had his weaknesses and faults like all people and all fish, and what they were we will find out as we go along.

* * * * *

Bright and early the next morning Sammy bade farewell to his friends at the ledge, and in company with his guide started forth on his long journey to Coral-Land. All the Star-Fishes and Sea-Urchins assembled to see him off, and wish him a safe and prosperous voyage. Even the Hermit peered cautiously out from his cave, and waved an adieu with one claw. But his crafty eyes had a wistful expression as though he said to himself, "My what a fool I was to let that fellow escape!"

70 *How Sammy Went to Coral-Land*

“Speaking of sharks,” remarked the Pilot, as he and his companion glided easily through the water, “many unjust things have been said about me because I am sometimes seen with the White Shark. They say a fish is always known by the company he keeps, but I think it is very unfair to judge me in that way, particularly as I never stayed with the shark because I liked him. I knew him for a heartless and ferocious monster who would attack anything that came in his way, and I was a good deal afraid of him. I only went with him as a matter of convenience to myself. But it was commonly supposed that I accompanied him as a guide in order to show him the best feeding places, and tell him what dangers to avoid, and that was how I got my name of the Pilot-Fish. But the real reason was that I got better food when in

company with the White Shark than any other way.

“Our usual plan was to follow some ship, which we often did for weeks, or months at a time, for a great deal of nice fish food is always thrown overboard from vessels; and as the White Shark only cared for the big pieces, all the tender little morsels fell to my lot. I lived well in those days, but I had to give up the job after awhile, the nervous strain was too great.

“You see the White Shark that I was with then was a very big fellow, (fully thirty feet long), and just as strong and ugly as he was big. Once, down in the tropics where he usually lives, I saw him break a man’s leg with one stroke of his tail. His temper was awful, and he would stop at nothing when angry. He had enormous jaws, with six rows of flat

72 *How Sammy Went to Coral-Land*

teeth, and to see him turn on his side, and open those jaws was enough to give you cold chills for a week.

“The good food that we got from our ship usually kept the White Shark in a fairly good humor, but, knowing him as I did, I was well aware that if the food should happen to run short, he would not hesitate to make a meal off of me; and although I am an excellent swimmer, and stood a good chance of being able to escape (else I should have never been there at all), still there was always a possibility of something unpleasant happening, and it got to be rather wearing.

“So, one day when we were following a particularly promising vessel, I made an excuse to stay behind, while the White Shark went on alone, and when he and the ship were both out of sight, I took the opportunity to escape. Since

then I have carefully avoided the society of all sharks, but what I have learned about them and their ways has been of great benefit to me, and will be a help to us now, since they prefer the warm waters of the tropics, and that is where we are bound. However, you may trust me to keep as far out of their course as possible.

“ We will need to keep a sharp lookout for the Blue Shark, whom you have already had the pleasure of meeting, and we may catch a glimpse of the Hammer-headed Shark, a terribly fierce monster with a head shaped like a hammer.

“ But the enemy that I dread most of all is the Sword-Fish, so named from the long sword-shaped snout on his upper jaw. This sword is very strong, and so sharp that it will easily pierce a boat. The White Shark is bad enough, but the

74 *How Sammy Went to Coral-Land*

Sword-Fish is even worse. His aim is unerring, and his disposition so fierce that he will attack anything that comes in his path, large or small. I saw one once that measured twenty feet, but that was from a safe distance, for I make it a rule to give them all a wide berth.

“Then there is the Saw-Fish, whose long snout has teeth on both sides like a saw, and his company is not desirable either.

“Fortunately for us the Sea-Wolf prefers the northern ocean, and fortunate it is for the northern fish that he is a slow swimmer, else the next census would show a decided decrease in the fish family. The Sea-Wolf has a tremendous appetite, and his huge jaws, armed each with six rows of teeth, can easily crush the toughest shell-fish, of which food he is very fond. They are often to be seen over seven feet long, and being desperate

fighters they are almost as much dreaded as the Sword-Fish.”

With these, and many other stories of the fish world the Pilot beguiled the tedium of the journey. He told about the famous Sucking-Fish, or Remora, which has a wonderful flat apparatus on its head by which it sticks to any object, fish, rock, or ship to which it attaches itself, and once fixed it is impossible to make it loose its hold. The natives in Africa use this fish to catch turtles with. They tie a long, stout string to the Remora, and throw the fish overboard. When the Remora finds a turtle it presses its head tightly against it, sticks fast, and both are hauled up together. Sometimes the Remora will lift a turtle weighing many pounds.

Another of the Pilot's favorite yarns was about the Torpedo-Fish which makes

76 *How Sammy Went to Coral-Land*

its home in the Mediterranean Sea, and which possesses powerful electric batteries with which it paralyzes its prey.

Altogether the Pilot was a most interesting companion, his knowledge of the sea was both useful and entertaining, and the sharp outlook that he kept more than once saved them from unsuspected danger. To this watchfulness Sammy owed his escape from the Sea-Devil. This treacherous creature makes its home in the mud, which it stirs up in order the better to conceal itself. While thus hidden, it waves about in the cloudy water two long, slender feelers, which to an unwary fish look like some tempting article of food. Feeling decidedly hungry Sammy was darting towards this apparently delicious meal, when the Pilot interfered and explained the nature of

the bait which was meant to attract him within reach of the Angler hidden in the mud.

Truth to tell our hero often went hungry during his somewhat lengthy journey, for, in spite of his other most admirable qualities, the Pilot-Fish was very greedy. Few indeed were the morsels that fell to poor Sammy's share when his guide had finished his meals, and the young salmon had occasion more than once to wish that he had driven a sharper bargain. But, although he was growing thin, he comforted himself with the reflection that they were quickly nearing the promised land, where the Pilot assured him delicious food of all kinds abounded.

For now the water was growing warmer, more and more brilliant were the fish and ocean plants, and strange and

78 *How Sammy Went to Coral-Land*

beautiful rocks, like fairy castles rose up from the bed of the ocean.

One morning they saw a strange sight. Away off in the distance the surface of the water was dark with some large moving substance.

“It is a school of Flying-Fish,” said the Pilot. “Wait here and you will see them leap.”

As he spoke the vast body sprang into the air, and the sun gleamed brightly on beautiful blue bodies, and silver wings, as the fishes sailed off in different directions. It was a wonderful sight, but lasted only for a moment, then splash, splash, one after another fell back into the water, while the sea-gulls circling near seemed to utter a scream of derision. Again and again, by hundreds at a time, the beautiful fish leaped and sailed, only to fall back as before.



“It Is a School of Flying-Fish,” Said the Pilot.

“They cannot really fly, you know,” explained the Pilot, “for they are not able to raise themselves in the air after their first leap, and can only sail for a few feet on a level. And those things that look like wings are simply very large Pectoral fins, which can support them for awhile in the air. And a very silly practice the whole thing is too. Those fish would be a great deal better off if they only kept to their own element, and stayed pretty well under water. As it is they are in constant danger, for the sea-gulls are always watching for them above, and the Bonito beneath. And that reminds me that it would be safer for us to dive below, for the Bonito is always to be met following the Flying-Fish, and he is not particular, (being always hungry) as to what kind of fish he dines on. His usual plan is to

80 *How Sammy Went to Coral-Land*

follow the Flying-Fish, keeping near the surface, and when the fish he has picked out drops, the Bonito has his reward. He is a clever fish, and being a rapid swimmer, is fond of following vessels, like myself. The presence of the Flying-Fish proves that we are nearing our destination, and after a few more miles our journey will be over."

This was a cheering thought, and the two companions swam gaily along in the best of spirits. Sammy would have liked to stop occasionally to examine some particularly interesting object, but his guide hurried him on. "For," said he, "this is by far the most dangerous part of our voyage. The most vicious of our enemies lurk outside of Coral-Land waiting for a chance to grab the tourist, but, once inside that long reef that you see some distance ahead, and we are safe. I have

a special entrance known to myself alone, and no very large fish, or shark can get through it. I only hope that we can reach it without being seen."

But it was a vain hope. No sooner were the words uttered, than some instinct caused the Pilot to glance hastily behind him, and there, well in the rear to be sure, but moving towards them with uncomfortable swiftness, were two large, dark moving bodies.

"Sharks!" cried Sammy in terror.

"Sword-Fish!" said the more experienced Pilot. "Follow me and swim for your life!"

Away he darted, heading in a straight line for the high reef, away darted Sammy after him, and on came the murderous Sword-Fish. Faster and faster swam the pursued, and faster and faster the pursuers. On they came, nearer,

82 *How Sammy Went to Coral-Land*

nearer and still nearer, their huge shapes and cruel swords suggesting a fearful death.

Sammy's strength was almost gone, his fins were growing weaker, and he swam more and more slowly, while the mouth of the monster nearest him watered in eager anticipation.

But the dauntless Pilot still kept on his course, and showed no sign of weakening. Straight at the large reef, now very near, he dashed, and then, just as destruction seemed certain, he swerved to the right and disappeared from view in a mass of weeds that grew out from the rock. With one last desperate effort Sammy followed, the weeds closed behind him, and passing quickly through a small hole in the reef, he lay, quivering, exhausted, but safe on the other side.

Furious at their disappointment the

Sword Fishes rushed at the reef, striking it again and again with their sharp swords in a vain attempt to pierce, or batter down the rock. Then they swam wildly about looking for an entrance large enough for them to pass through, but none was to be found, for the high, circular reef shut in the lagoon where the two refugees lay, like a wall.

At length, tired out with their exertions, the two Sword-Fish gave up the chase, and being in a very ill-temper, and having no one else to vent it on, they began to quarrel with each other.

“It’s all your fault anyway,” snarled Slasher, the biggest and crossiest fish. “How often have I told you to take my advice in these matters! We should have kept further under water, as I suggested in the first place, then we would

84 *How Sammy Went to Coral-Land*

not have been seen so soon. I've no patience with your stupidity!"

"Stupid yourself!" snapped his brother Jabber. "You know as well as I do that it is much the best plan to keep on a straight line with the prey we are hunting. We can't half see if we are far above or below. If you hadn't splashed so loudly with your tail——"

"I didn't splash with my tail," retorted Slasher angrily.

"You did," insisted Jabber.

"I say I didn't!"

"I say you did!"

* * * * *

"Well, well," said grandma, as she paused to gather up her fancy work, "everybody knows that a family quarrel is the worst kind of quarrel. But in this case the dispute had a speedy ending, for the two brothers fiercely at-

tacked each other, and right there and then they fought a terrible duel, which only ended with the death of both combatants, for each died pierced through the body with his brother's sword.

“So perished the two dreaded sentinels of Coral-Land, and Sammy was at his journey's end.”

CHAPTER V

IN CORAL-LAND

Oh ! do you know
Where the sea-flowers blow,
Down deep in the ocean's bed ?
Where the shy plants hide
'Neath the swelling tide,
And the Anemone lifts its head ?
Where the Nautilus frail,
To set his sail,
Creeps forth from the silver sand ?
Then come with me,
And you will see
The wonders of Coral-Land.

“ So this is Coral-Land ! ” exclaimed Sammy, wonderingly. “ What a beautiful place it is ! ”

He and his companion had soon recovered from the fright caused by their recent unpleasant experience, and now, filled with a comforting sense of tran-

quillity, they swam leisurely along in the placid water. The dangers and privations of the journey were over, they had made an excellent meal on some delicious tidbits found among the weeds, and nothing now remained but to enjoy to the full the delights of their new home.

It was truly a charming place, being in reality a good sized lagoon, or lake, shut off from the outside world by the protecting coral-reefs which encircled it like a large ring.

There are many such lagoons, and this one, called by the fish-world, "Coral-Land," because of the beautiful coral within its depths, was only one of many coral-lands, for coral-islands, and coral-reefs are found everywhere in tropical seas. Sometimes these coral-reefs are found near the shores of large islands, or continents, and then they are called

88 *How Sammy Went to Coral-Land*

Shore-Reefs. There are also Barrier-Reefs, usually enclosing an island in the deep sea, and Lagoon Islands or Atolls, which enclose a lagoon, or lake, such as the one where Sammy now was.

Near the centre of this Lagoon arose another ring of coral-reef, like a small circle within a larger circle, and in the centre of the second little lake so formed, was a tiny coral-island, dotted here and there with gay flowers, and waving palm-trees.

Outside the reefs the white-topped breakers thundered on unceasingly, but the calm waters of the Lagoon were undisturbed by their fury. Far above and below towered the magnificent rocks, forming so complete a barricade that sharks and very large fish found it difficult to gain an entrance to the Lagoon, and could never penetrate to the inner lake, where

the inhabitants of Coral-Land sometimes took refuge.

As for the smaller fish, the reefs were punctured with innumerable little passages and caverns through which they could easily gain access to the outside ocean, if they wished, but most of them preferred the quiet and security of the Lagoon. Many had been born there and knew no other life, and many, like the Sun-Fish had grown so fat with good living that it would have been almost impossible for them to squeeze through the largest opening.

In fact the Lagoon was like a large aquarium of curious and beautiful fish. Floating lazily along was a round, prickly Globe-Fish, and close behind him drifted a cross looking Porcupine-Fish, an odd, countrified sort of creature, with his gaping mouth, the sharp spines on his ugly

90 *How Sammy Went to Coral-Land*

body raised in preparation for a possible attack from the strangers. Away off among the distant rocks some dazzling Gold-Fish chased each other merrily hither and thither; a brilliant blue fish darted out from a near-by thicket, and a company of scarlet fish swam past, making a beautiful picture, with the clear, blue waters of the Lagoon as a setting.

Far down below myriads of gorgeous shells lay scattered about on the white sand like gay figures in a carpet, every color showing plainly through the wonderfully transparent water. Here a tree of coral rose up from the depths, its branches covered with lovely star-shaped flowers; farther below a bed of shrubbery sprang from hidden rocks, and close at hand a colony of beautiful Sea-Anemones lifted their proud heads, and swayed gracefully in the water. Some of these



Floating Lazily Along Was a Round, Prickly Globe-Fish.

flowers were shaped like chrysanthemums with rows of fringed petals, some were shorter and stouter, like dahlias, and all formed a mass of brilliant color, pink, purple, orange, blood-red, and sea-blue, striped with pink.

Never had Sammy seen such a sight as this bed of Anemones, and, struck with admiration, he stopped to examine them more closely. But the experienced Pilot warned him to be careful.

“They look very fine,” said he, “but they are not to be trusted.” You know, of course, that the Sea-Anemones, like almost all flowers and plants which grow in the ocean, are living animals, polyps, we call them. The Anemones are polyps, and the coral big and little, living and dead is being made, or has been made by polyps.

“You see that bed of pink flowers over

92 *How Sammy Went to Coral-Land*

there, and those green rushes, and those fern-like plants? Well, they are all living polyps, or colonies of polyps, some kinds of which leave coral when they die, like the coral polyps proper.

“ As for the Anemones ; those innocent looking flowers really possess powerful weapons in the shape of tiny lassos, which are concealed in lasso-cells. These lasso-cells, which are very small, are carefully hidden in the walls of those petal-like tentacles, or feelers of the Anemone. Still other lasso-cells are hidden in the mouth of the Anemone, and inside its stomach. In the cells the long, slender, thread-like lassos lie coiled up ready for use. The lassos escape from the cells by turning themselves inside out with lightning-like swiftness, and woe to the crab, or small water animal that comes in contact with this lovely flower! It is

immediately pierced by the lassos, and poisoned by the deadly fluid hidden in the cells. Even big fish have been known to die in great agony when touched by the Sea-Anemone.

“The Anemone frequently swallows a whole crab (if it is a good size itself) and is particularly fond of gulping down its food in this manner, keeping it for awhile in its stomach to squeeze out the juice ; after which what is left is thrown out through its mouth.

“All Anemones have mouths and stomachs, and some have rows of eyes like a necklace around the body. The mouth is a small opening in the centre of the disk, or head of the Anemone, and this leads into the stomach below.

“Sometimes the Anemone uses the tentacles around the disk to help feed itself, and it also uses the mouth, lips and

94 *How Sammy Went to Coral-Land*

disk for the same purpose. When the Anemone is at rest it expands its disk and draws in the sea water, and when it is disturbed it contracts, and throws out the water from its mouth. The Anemones are very sensitive to touch, and will shrink up like a sensitive plant. They are of all sizes too; that little blue one over there is only about one-eighth of an inch, and that big purple fellow stands over a foot from its base.

“ You see that the body of the Anemone is shaped like a column, the flat head, or disk, being at the top, with rows of tentacles, like petals, fringing the edge. The bottom of the Anemone is also flat, and with this flat base it holds fast to the rocks to which it attaches itself. The Sea-Anemones are able to move about from rock to rock, and in that they differ from their first cousins, the

Coral Polyps, for they are always stationary.

“The Anemone has several curious ways of reproducing itself. Sometimes one animal will divide itself and become two individuals, and sometimes pieces from the bottom of the Anemone will become separate Anemones. Another strange way is by throwing out the young through the mouth, and it doesn't seem to make much difference whether they come out in the shape of eggs, or whether they are fully formed, as is frequently the case.

“Still another process of reproduction is by budding. A small lump appears on the parent Anemone ; this keeps on growing and growing until it soon has a mouth, disk and tentacles like the mother ; after which it separates, and starts out in life for itself. Whole colonies of Anemones are formed in this way.

96 *How Sammy Went to Coral-Land*

“ But come,” said the Pilot. “ Here we have spent all this time talking about the Anemones, and the coral is far more interesting and beautiful. Suppose we take a look at this large tree,” he went on in his most school-master manner. “ See how lovely it is with its trunk and branches covered with little star-shaped flowers ! Those flowers are the polyps, and they, or rather their ancestors, made the tree. You know that the most important of the coral polyps live in groups, or colonies. They usually reproduce themselves by budding in very much the same way as do the Anemones, but the Coral Polyp does not separate from the parent when it gets its growth ; it stays fastened to the mother, and soon imitates her example by producing a bud which becomes a coral flower. And so it goes on until there is a whole colony of animals, each

one having a separate mouth and stomach for his support, and yet continuing as a part of the family.

“I told you that the Anemones and Coral Polyps were first cousins, and so they are, for almost the only difference between them is that the Anemones have no coral in their make-up. Then too, the Coral Polyps cannot move about like the Anemones, and they are somewhat different in appearance, being more like lovely daisies, or stars, than chrysanthemums.

“The coral is made from the lime of which the water of the ocean contains a large quantity, and is hidden in the sides and lower part of the polyp, there being none in the stomach and disk. When the polyp dies the fleshy part decays, and the coral, which is the skeleton of the polyp, is left. It is very hard, being

98 *How Sammy Went to Coral-Land*

composed of carbonate of lime, and will last for ages. The inside of this tree that we are looking at is all dead coral, or corallum, while the flowers that are on the outside of the trunk and branches are the living animals.

“Some kinds of coral polyps bud and extend in different directions, and that accounts for the many wonderful shapes in which coral grows. Some species divide in two, like the Anemones, but the majority live in families, or colonies. There are coral reefs and coral trees, domes and balls of coral, graceful vases, and all sorts and kinds of different plants and odd growths.

“You know that living coral cannot exist above the surface of the ocean, for exposure to the sun and air kills the polyps; yet it is always growing upward and outward, the living animals making

their homes upon the tombs of their ancestors, so to speak, until they in their turn perish and add their skeletons to the growing structure.

“The most wonderful of all coral is that found in the coral reefs, which are so old that the most ancient fish in all fishdom, or his great-grandfather before him, could not tell when they were begun; and so hard and enduring that the storms of centuries have never been able to destroy them. But strong as they are, the mighty ocean, (both friend and foe to the coral), is still stronger, and in time the constant washing and beating of the tides wear away portions of the hard rock, changes the formation of the reefs, and helps in a large measure in the making of the lovely coral islands. But still the coral goes on growing, the living polyps protecting the dead coral below

100 *How Sammy Went to Coral-Land*

and beneath, and then dying to make way for the next generation. And so the coral holds its own in spite of the fury of the sea, and the many little boring water animals that strive to penetrate the dead coral, and crumble the rock into ruins. But the coral has its friends, as well as enemies, and the most useful of the first are various weeds and plants which grow on the reefs, and beside protecting the upper parts from exposure, help in their formation by leaving a kind of coral behind them when they die.

“If you will look about you,” went on the Pilot, “you will see what beautiful colors some of the coral has. See that big piece over there like a large red toadstool, and this curious vase all covered on the outside with tiny polyps like purple stars! You will find it in many lovely colors, and still more fantastic shapes. I

have heard that some varieties of pink and red coral are very highly valued for jewelry by the two-legged land race.”

In this manner the learned Pilot discoursed to his pupil, being only too glad to have an excuse for showing off his superior knowledge ; and Sammy drank it all in, having in mind the time when he should return to his far-away home and brag of his adventures to the simple fresh-water fish.

Beside acting as guide, and explaining to his companion the mysteries of Coral-Land, the Pilot kindly introduced Sammy to some of his acquaintances and friends. One of these was a very large odd-looking Sun-Fish, a curious creature, all head and no body. This fish, being very haughty in his manners, and exclusive in his tastes, was considered very aristocratic : and having spent the greater

part of his life in the Lagoon, was acknowledged as the great social leader of Coral-Land.

The Sun-Fish presented Sammy to the Trunk-Fish, (so named from his curious shape), and the Trunk-Fish in turn introduced him to the Globe-Fish and the Porcupine-Fish, and they made him acquainted with the family of scarlet fish, and some handsome gold-fish. Two of the gold-fish, called respectively Gay and Gilt, were particularly friendly to Sammy, who soon found them much more entertaining than the worthy, but somewhat prosy Pilot.

So, as the days went on, our hero spent more and more of his time in the company of his new friends, while the Pilot was content, now that his duty was done, to gossip with the Sun-Fish, or betake himself to some particularly good feeding

ground of which he knew. Coral-Land abounded in quantities of good things such as fishes love, and Sammy soon grew fat, for Gay and Gilt were much less greedy than the Pilot, and always shared their meals evenly with their friend. It did not take him long to learn what to enjoy and what to avoid, both in the way of food and acquaintances, and he found it a most useful form of knowledge.

Thus he learned to beware of the graceful jelly-fishes who were constantly to be met floating about, their long tentacles streaming behind, and their umbrella-shaped disks expanding and contracting as they swam, for he knew that the Jelly-Fish was a cousin of the Sea-Anemone, and that its tentacles could sting most unpleasantly. So he admired them from a distance, and very beautiful they were, especially at night, when their gleaming

104 *How Sammy Went to Coral-Land*

phosphorescent bodies lighted up the darkness of the sleeping Lagoon.

Sammy learned that the affectionate embrace of the many-armed Octopus was not to be desired ; and that a thicket of seaweed is a good hiding-place from a chance enemy, and is apt to contain many delicious tidbits in the way of fish food. He knew the manners and habits of the many brilliant-hued fish who live in Coral-Land ; and he knew that the floor of the Lagoon had as many curious and beautiful inhabitants as its waters. There the Star-Fish sprawled on the sand, the Sea-Cucumber crawled along, expanding and contracting its worm-like body ; there the Sea-Urchin hid himself in the rock, and shells large and small, pink, blue, red and all the colors of the rainbow lay scattered about on the sand and rocks.

All these shells had, of course, their living inhabitants, for a shell is always the home of some water animal, and when the owner dies the shell is left as a monument, and very beautiful monuments most of them are.

The Sea-Snail, the Cockle, the Razor-shell and many others have each a good-sized foot which helps them in crawling along, or in boring holes for themselves in the rocks.

Sammy had taken some pains to become acquainted with the Nautilus and his family, whose beautiful little boats he had often seen sailing gaily along on the surface of the Lagoon, especially after a storm when the water was calm.

The Nautilus has a beautiful spiral mother-of-pearl shell, and when on a voyage it uses part of its body as a sail, and the long tentacles about its mouth

help it in swimming. It spends a good deal of its time on the bottom of the ocean near the coral reefs, and can creep along very quickly, supporting itself with its head and tentacles. The head is flat and muscular and acts as a defense to the opening of the shell, and the Nautilus also possesses very strong jaws which it makes good use of in crushing crabs and other shell-fish on which it feeds.

Sammy found it rather difficult at first to come to a friendly understanding with the Nautilus, for the gallant little mariner was somewhat shy of strangers, and would frequently show his distrust by suddenly drawing in his tentacles, upsetting his shell, and dropping to the bottom of the Lagoon, thus effectually cutting short any conversation. But this was only his way of protecting himself; after a time he grew bolder, and being a



Sammy Was Daily Growing More and More Weary of This Peaceful Lagoon.

true sailor spun many a wonderful yarn about his voyages.

To the Nautilus Sammy was indebted for a most important piece of information. It happened in this wise. He had now spent several weeks in Coral-Land. He knew the Lagoon thoroughly from end to end, the best feeding and hiding-places, the delightful caverns and caves in the reefs, and was on friendly terms with almost all its inhabitants. But a fish is a restless creature, and, strange to say, Sammy was daily growing more and more weary of this peaceful Lagoon. It was all very wonderful to be sure, the beautiful coral in its lovely colors and fantastic shapes, the gay flowers and plants, the strange shells, and the brilliant, sparkling fish; but then the warm water *was* certainly enervating, and the mountain stream that he called home had many

108 *How Sammy Went to Coral-Land*

charms, now that he was no longer there.

The Pilot-Fish had long since departed for other scenes, and Sammy wished that he had consented to accompany him. Now it was too late, and the only thing to do was to wait and hope for some way of beating a retreat. Not caring to confide his weakness to his two friends, who would not understand it, he kept his secret to himself, longing more and more for that quiet mountain stream so very far away.

One fine day as Sammy was swimming sadly along, and alone, near the outer reef of the Lagoon, his friend, the Nautilus approached him in great excitement.

“I’ve seen such a strange sight,” he exclaimed eagerly, sailing close up to the salmon in his haste. “This morning I thought I would have a little adventure,

for it's very tiresome spending so much time in the Lagoon, so I found my way, through a passage known only to myself, out to the ocean, and such fun as I had sailing up and down! To be sure I had to keep a pretty sharp outlook, for it is a dangerous place out there. However, nothing of any consequence happened, and I was beginning to feel a little disappointed, when suddenly, only a short distance away, I saw a school of large, pink fish, very much like you in appearance, and all swimming north. Never before in all my experience have I known a school of fish of that kind in our neighborhood! It will be the talk of Coral-Land for a week. Excuse me, but I really must go and tell my family," and abruptly upsetting his shell the Nautilus disappeared at once from view.

For a moment Sammy hesitated. Gay

and Gilt, with his other friends, were far away. Should he try to find them and say good-bye? No, it would take too much time, and they would be sure to protest against his going, and then the school would be out of sight. One swift glance about him, and away he dashed; another moment and he was at the reef, a passageway out was found, and darting through the breakers, he rose to the surface and looked forth once more on the broad ocean. Behind him lay all the wonders and beauties of Coral-Land, and there, far away towards the north, a mass of moving fish darkened the surface of the water. Could he reach them before they disappeared, or before some hideous monster saw and intercepted his flight? Away he darted, faster, faster, and still faster. Now the school was getting larger, he was surely gaining; still

nearer, and he could see the sun gleam on countless scales; nearer still, one final effort, and the school of salmon opened to receive him, and then swept on northward and homeward.

There was a pause. Grandma dropped her work, and leaning idly back in her rocking-chair, gazed dreamily out over the ocean, sparkling in its sunset glory.

“Is that all?” inquired Eleanor. “Didn’t Sammy really get home?”

“That is all,” said grandma. “What became of our hero after he joined the school of salmon I never knew. In all likelihood he never left his companions. But whether he guided them to the pleasant waters of that mountain stream, or whether they took him with them to some lake or inland river, I cannot tell.”

As for Gay and Gilt, they long mourned

112 *How Sammy Went to Coral-Land*

the mysterious disappearance of their playfellow, and often now when the sun shines brightly on the blue waters of the Lagoon, when the Nautilus sails forth on his voyage, and the sea-flowers sway and nod in their deep beds, the two gold-fish swim sadly about amid the depths of Coral-Land and tell stories to the passing stranger of the merry young salmon who came from the north, so long ago.

THE END.





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